

**BHARAT HEAVY ELECTRICALS LIMITED**  
**MATERIALS MANAGEMENT/BOUGHT OUT ITEMS**

**CORRIGENDUM**

**Date: 04.08.2025**

**TENDER REFERENCE: 1802500267**

**TENDER ID: 2025\_BHEL\_51351\_1**

Enquiry for procurement of Gravimetric Feeder for Lara, Singrauli and Sipat Projects

Following Corrigendum is issued

1. NTPC approved RQP (Reference Quality Plan) is applicable. Applicable QP are attached for each project.



A Maharatna Company

एन टी पी सी लिमिटेड

(भारत सरकार का उद्यम)

NTPC Limited

(A Govt. of India Enterprise)

(Formerly National Thermal Power Corporation Ltd.)

(केंद्रीय कार्यालय नोएडा)

Corporate Center NOIDA

Reference : CC-ENGG-9587-001-102-QVM-Q-042

Date : 17/04/2024

From : RAMESH CHANDRA SHIAL  
ENGINEER

To : BHARAT HEAVY ELECTRICALS LTD  
NEW DELHI  
110049  
IN

Cc : singhjp@bhel.in

Subject : EPC Package

Please find enclosed following drawings/ documents for necessary action at your end.

Vendor Drg. No. : HPBP-00-9587-171  
Orgn. Drg. No. : 9587-001-102-QVM-Q-042  
Revision No. : 00  
Drg. Title : MQP for Gravimetric feeder  
App. Category : CAT-I  
Release Date : 17/04/2024



Scan to verify

Comments : Reviewed for approval in Cat I.



Engineering Division  
ISO 9001:2008 Certified



अभियंत्रिकी कार्यालय परिसर, प्लॉट नं.- ए 8ए, सेक्टर-24, पोस्ट बॉक्स नं.- 13, नोएडा (उ.प्र.) पिन-201 307

टेलिफोन नं.- 0120-2410333, 2410116 फैक्स-0120-2410136, 2410137

पंजीकृत कार्यालय: एनटीपीसी भवन, स्कोप कॉम्प्लेक्स, 7 इन्स्टीट्यूशनल एरिया, लोधी रोड, नई दिल्ली-110 003

टेलिफोन नं.- 011-24361018 फैक्स-011-24361018, वेबसाइट: www.ntpc.co.in

ENGINEERING OFFICE COMPLEX, Plot No: A-8A, Sector-24, Post Box No: 13, Noida (UP), Pin-201 307

Telephone No: 0120-2410333, 2410116 Fax-0120-2410136, 2410137

Registered Office: NTPC Bhawan, Scope Complex, 7 Institutional Area, Lodhi Road, New Delhi-110 003

Telephone No: 011 24360100 Fax: 011 24361018, Website: www.ntpc.co.in

| Endorsement Sheet For Drawing/Document- CQP                                                                                                                                                                         |                                                                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| TO BE FILLED IN BY SUPPLIER AT TIME OF SUBMISSION                                                                                                                                                                   |                                                                               |
| Project Name                                                                                                                                                                                                        | LARA SUPER THERMAL POWER PLANT - STAGE-II (2x800 MW)                          |
| Contract No                                                                                                                                                                                                         | CS-9587-001R-2-FC-NOA-7332 Dated :29/08/23<br>(BHEL Work order no 1834 &1835) |
| Package Name                                                                                                                                                                                                        | EPC PACKAGE -SG                                                               |
| Main Supplier                                                                                                                                                                                                       | BHEL                                                                          |
| Manufacturer Name                                                                                                                                                                                                   | M/S BHEL-TIRUCHIRAPPALLI / NTPC APPROVED<br>SUBCONTRACTORS/VENDORS OF BHEL    |
| Project/package Specific Document No.                                                                                                                                                                               | 9587-001-102-QVM-Q-042 Rev-00 (CQP:6702 Rev-00)                               |
| Drawing Title                                                                                                                                                                                                       | MQP for Gravimetric Feeders                                                   |
|                                                                                                                                                                                                                     |                                                                               |
| Reference Project Name                                                                                                                                                                                              | PATRATU STPP —PHASE 1 (3X800 MW)-                                             |
| Reference Contract No                                                                                                                                                                                               | 01 /PVUNL-CS-9585-001-2/NOA -SC                                               |
| Reference Package Name                                                                                                                                                                                              | EPC PACKAGE -SG                                                               |
| Reference Main Supplier                                                                                                                                                                                             | BHEL                                                                          |
| Reference Manufacturer Name                                                                                                                                                                                         | M/S BHEL-TIRUCHIRAPPALLI / NTPC APPROVED<br>SUBCONTRACTORS/VENDORS OF BHEL    |
| Reference Project/package Specific document No.                                                                                                                                                                     | 9585-001-102-QVM-Q-067 Rev00 (CQP:5980 Rev-00)                                |
| Reference Drawing Title                                                                                                                                                                                             | Gravimetric Feeders                                                           |
|                                                                                                                                                                                                                     |                                                                               |
| <input checked="" type="checkbox"/> Certified that the item/component is identical to that considered for reference document approval.                                                                              |                                                                               |
| <input type="checkbox"/> That there are minor changes in the item/ component with respect to that considered for reference document approval and the same affect the reference document slightly as indicated below |                                                                               |
| <p>(IN CASE OF MINOR CHANGES , CHECK BOX TO BE MARKED AS ABOVE)</p>                                                                                                                                                 |                                                                               |

SIGN: (Main Supplier)

Date: 10.04.2024

NTPC (Approved by/Date/Seal)



Md. Fahad, Dy.Manager/QA

CTF

BHEL

CUSTODIAN NAME



Reference: null102:486

Date:01-08-18

|                                                                                                                  |                                |     |                                 |
|------------------------------------------------------------------------------------------------------------------|--------------------------------|-----|---------------------------------|
| From:                                                                                                            | SAMIR KUMAR BHOWMICK<br>GM(TF) | To: | BHEL<br>BHEL sirifort New delhi |
|                                                                                                                  |                                | CC: |                                 |
| SUBJECT : PSTPP, EPC - STEAM GENERATOR                                                                           |                                |     |                                 |
| Please find enclosed following drawings/documents for necessary action at your end as indicated in purpose code. |                                |     |                                 |
| VENDOR DRG NO:                                                                                                   | null                           |     |                                 |
| NTPC DRG NO:                                                                                                     | 9585-001-102-QVM-Q-067         |     |                                 |
| REVISION NO:                                                                                                     | 00                             |     |                                 |
| DRG TITLE:                                                                                                       | MQP for Gravimetric feeder     |     |                                 |
| APP CATEGORY:                                                                                                    | I                              |     |                                 |
| RELEASE DATE:                                                                                                    | 01-08-18                       |     |                                 |
| COMMENTS:                                                                                                        | Cat-I                          |     |                                 |



Engineering Division  
ISO 9001:2008 Certified

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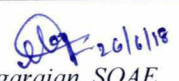
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# ENDORSEMENT SHEET FOR QP

## REFERENCE / STANDARD / FIELD QUALITY PLAN (RQP / SQP/RFQP/SFQP)

|                                                                                                                                                                                            |                                                                             |                                                                 |                                                                                                                                                                     |                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| <i>TO BE FILLED IN BY SUPPLIER AT TIME OF SUBMISSION</i>                                                                                                                                   |                                                                             | <b>BHEL QP No.</b><br><b>CQP:5980 Rev. :00 Date: 26-06-2018</b> |                                                                                  | <b>To be filled in by NTPC</b> |
| PROJECT NAME                                                                                                                                                                               | PATRATU STPP PHASE-1 (3X800MW)                                              |                                                                 | <b>REVIEW &amp; ENDORSEMENT BY NTPC</b><br>PROJECT SPECIFIC QP NUMBER ALLOTTED<br>QP NO.: 9585-001-102-QVM-Q-067<br><br>REV. NO.:          DATE:                    |                                |
| CONTRACT NO.:                                                                                                                                                                              | 01/PVUNL-CS-9585-001-2/NOA-SC<br>BHEL WORK ORDER NO. 1828,1829 & 1830       |                                                                 |                                                                                                                                                                     |                                |
| MAIN SUPPLIER                                                                                                                                                                              | M/S BHEL-TIRUCHIRAPALLI                                                     |                                                                 |                                                                                                                                                                     |                                |
| MANUFACTURER WORKS & ADDRESS                                                                                                                                                               | M/S BHEL-TIRUCHIRAPALLI /NPTC APPROVED<br>SUBCONTRACTORS OF BHEL            |                                                                 |                                                                                                                                                                     |                                |
| ITEM /EQUIPMENT / SYSTEM/<br>SUB-SYSTEM DETAILS i.e. MODEL<br>TYPE/SIZE/RATING etc.                                                                                                        | GRAVIMETRIC FEEDERS<br>(BHEL REF. QP NO. CQP:1488 REV. 01 DATED 18/06/2014) |                                                                 |                                                                                                                                                                     |                                |
| APPROVED QP NO.: RQP/SQP/RFQP/SFQP                                                                                                                                                         |                                                                             | 0000-999-QVM-P259      REV. NO.: 03      DATE: 19/10/2015       |                                                                                                                                                                     |                                |
| Confirmation by Main Supplier (TICK WHICHEVER APPLICABLE)                                                                                                                                  |                                                                             |                                                                 | (TICK APPLICABLE)                                                                                                                                                   |                                |
| I. That the item/ component is identical to that considered for QP approval. OR.    ✓                                                                                                      |                                                                             |                                                                 | The QP is endorsed for this project without any change ✓                                                                                                            |                                |
| II. That there are minor changes in the item/ component with respect to that considered for QP approval, however the same do not affect the contents of QP. OR                             |                                                                             |                                                                 |                                                                                                                                                                     |                                |
| III. That there are minor changes in the item/ component with respect to that considered for QP approval, however the same affect the QP slightly, as indicated below / in attached sheet. |                                                                             |                                                                 | The QP is endorsed for this project with changes as indicated.                                                                                                      |                                |
|                                                                                                                                                                                            |                                                                             |                                                                 | <u>DISTRIBUTION OF ENDORSEMENT OF</u><br>A) RQP/SQP:<br>1. MAIN SUPPLIER (WITH A COPY OF QP)<br>2. MANUFACTURER<br>3. RIO<br>4. CQA-SPL<br>5. CQA-O/C<br>6. CQA-O/C |                                |
| <br>J.V.V. Aruna Kumar, SDGM/ QA<br>SIGN.: (Main Supplier)      DATE: 26-06/2018                        |                                                                             |                                                                 | <br>K. Nagarajan, SQAE<br>SIGN.: (Manufacturer )      DATE: 26-06/2018           |                                |
| FORMAT NO.: QS-01-QAI-P-10/ F5-R0                                                                                                                                                          |                                                                             |                                                                 | 1/1                                                                                                                                                                 |                                |

Signature Not Verified

Digitally signed  
by R.K. Niranjan  
Date: 2018.08.01  
09:27:28 IST  
Reason: CAT  
Location: NTPC  
NTPC  
CQA-SPL  
CQA-O/C

NTPC (Reviewed /Approved by/ Date & Seal)

ENGG. DIV./ QA&I

|                                                                                   |                                                                                                              |                                                                       |                                             |               |                                                                                                  |                                                                                    |                                    |                  |                 |       |  |         |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------|---------------|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------|------------------|-----------------|-------|--|---------|
|  | MANUFACTURER'S NAME AND ADDRESS :<br>BHEL : TIRUCHIRAPPALLI/<br>APPROVED SUB-CONTRACTORS/ <del>VENDORS</del> | REFERENCE QUALITY PLAN                                                |                                             |               |                                                                                                  |  | TO BE FILLED IN BY NTPC            |                  |                 |       |  |         |
|                                                                                   | ITEM /EQUIPMENT:<br>GRAVIMETRIC FEEDERS<br><br>SUB-SYSTEM : SG                                               | QP NO.: CQP: 1488<br>REV. NO.: 01<br>DATE : 18/06/2014<br>Page 1 of 5 | SIGN. OF MFGR'S<br><br><i>(R. RAMASAMY)</i> |               | QP No.: 0000-999-QVM-P-259<br>Rev.: 03 Date: 19/10/2015<br>Page 1 of 5<br>VALID UPTO: 18/10/2018 | REVIEWED BY:<br><i>(Signature)</i>                                                 | APPROVED BY:<br><i>(Signature)</i> |                  |                 |       |  |         |
| SL. NO                                                                            | COMPONENT & OPERATIONS                                                                                       | CHARACTERISTICS                                                       | CLASS                                       | TYPE OF CHECK | QUANTUM OF CHECK<br>M C/N                                                                        | REFERENCE DOCUMENT#                                                                | ACCEPTANCE NORMS                   | FORMAT OF RECORD | AGENCY<br>M C N |       |  | REMARKS |
| 1.                                                                                | 2.                                                                                                           | 3.                                                                    | 4.                                          | 5.            | 6.                                                                                               | 7.                                                                                 | 8.                                 | 9.               | D*              | ** 10 |  | 11.     |

| 1.0 | MATERIAL #                                                                              | # Materials shall be as per Drawing.         |   |                      |        |   |                                                  |    |  |   |   |   |                                                        |
|-----|-----------------------------------------------------------------------------------------|----------------------------------------------|---|----------------------|--------|---|--------------------------------------------------|----|--|---|---|---|--------------------------------------------------------|
| 1.1 | PLATES:<br>IS 2062 Gr A & B,<br>IS 1079, ASTM A36,<br>SA 240 TP 304                     | Chemical and<br>Mechanical<br>Properties.    | A | T.C.<br>Verification | 100%   | @ | As per material Specification.                   | TC |  | P | V | V | @ Verification for SS<br>& Alloy steel only            |
| 1.2 | CASTINGS:<br>ASTM A216 WCB<br>IS305Gr AB1,<br>ASTM A48<br>Cl. 30A, 35A &<br>Cast AL 319 | Chemical (#) and<br>Mechanical<br>Properties | A | T.C.<br>Verification | 100%   | @ | -do-                                             | TC |  | P | V | V | (#) No chemical<br>Analysis for cast iron/<br>SG iron. |
| 1.3 | Tubes & Pipes<br>SA 213 TP 304,<br>SA 106 Gr. B & C,<br>SA 210 Gr.A1                    | Chemical and<br>Mechanical<br>Properties     | A | T.C.<br>Verification | 100%   | @ | As per Material Specification.                   | TC |  | P | V | V |                                                        |
| 1.4 | FORGINGS:<br>SA105<br>AISI-C-1020                                                       | Chemical &<br>Mechanical<br>Properties       | A | T.C.<br>Verification | 100%   | @ | As per Material Specification.                   | TC |  | P | V | V |                                                        |
|     |                                                                                         | Soundness (UT) *                             | A | T.C.<br>Verification | 100% * | @ | ASTM A388/ ASME Sec VIII<br>Div. 2, Clause 3.3.4 | TC |  | P | V | V | * For dia. > 50mm                                      |

**LEGEND:** \* RECORDS, IDENTIFIED WITH "TICK" (✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. CLASS: A- CRITICAL B – MAJOR C- MINOR  
 \*\* M: MANUFACTURER/SUB-SUPPLIER C: MAIN SUPPLIER, N: NTPC P: PERFORM W: WITNESS AND V: VERIFICATION. AS APPROPRIATE. **CHP:** NTPC SHALL IDENTIFY IN COLUMN "N" AS 'W'

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

FORMAT NO.: QS-01-QAI-P-09/F1-R1

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|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|-----------------|--------------------------------------------------------------------------------------------|---------------|--------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------------------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-------------------------------------------------------------------------------------|--|--|---------|
|  | MANUFACTURER'S NAME AND ADDRESS :<br><b>BHEL : TIRUCHIRAPPALLI/ APPROVED SUB-CONTRACTORS/ VENDORS</b> |                 | <b>REFERENCE QUALITY PLAN</b>                                                              |               |                                                                                                                                |  |                                    |                  | <b>TO BE FILLED IN BY NTPC</b>                                                                                                                                                                       |    |                                                                                     |  |  |         |
|                                                                                   | ITEM /EQUIPMENT:<br>GRAVIMETRIC FEEDERS                                                               |                 | QP NO.: <b>CQP: 1488</b><br>REV. NO.: <b>01</b><br>DATE : <b>18/06/2014</b><br>Page 2 of 5 |               | SIGN. OF MFGR'S<br><br><b>(R. RAMASAMY)</b> |  | QP No.: 0000-999-QVM-P-259<br>Rev.: <b>03</b> Date: <b>19/10/2015</b><br>Page 2 of 5<br>VALID UPTO: <b>18/10/2018</b> |                  | REVIEWED BY: <br>APPROVED BY:  |    |  |  |  |         |
| SL. NO                                                                            | COMPONENT & OPERATIONS                                                                                | CHARACTERISTICS | CLASS                                                                                      | TYPE OF CHECK | QUANTUM OF CHECK<br>M C/N                                                                                                      |  | REFERENCE DOCUMENT#                                                                                                   | ACCEPTANCE NORMS | FORMAT OF RECORD                                                                                                                                                                                     |    | AGENCY<br>M C N                                                                     |  |  | REMARKS |
| 1.                                                                                | 2.                                                                                                    | 3.              | 4.                                                                                         | 5.            | 6.                                                                                                                             |  | 7.                                                                                                                    | 8.               | 9.                                                                                                                                                                                                   | D* | ** 10                                                                               |  |  | 11.     |

|       |                                                                             |                                              |   |                     |      |      |                                                          |    |  |   |   |   |                                                 |
|-------|-----------------------------------------------------------------------------|----------------------------------------------|---|---------------------|------|------|----------------------------------------------------------|----|--|---|---|---|-------------------------------------------------|
| 1.5   | Rounds<br>SA 193 B7<br>ASTM A27& A47                                        | Chemical & Mechanical properties             | A | T.C Verification@   | 100% | @    | As per Material Specification                            | R  |  | P | V | V | @ Verification for SS & Alloy steel only        |
|       |                                                                             | Soundness (UT*)                              | A |                     |      |      |                                                          | TC |  | P | V | V | * For Dia. > 50mm                               |
| 1.6   | Sub-Deliveries                                                              |                                              |   |                     |      |      |                                                          |    |  |   |   |   |                                                 |
| 1.6.1 | Feeder Belts, Bulls eye lens                                                | Compliance to purchase order                 | A | Review of Documents | 100% | 100% | BHEL Purchase Specification (CAT-III Item) \$            | CC |  | P | V | V |                                                 |
| 1.6.2 | Gear box Assembly including motor, Feeder Main & Clean-out Conveyor Drives. | Run test, Type & Routine test for motors     | A | Review of Documents | 100% | 100% | BHEL Purchase Specification. (CAT-III Item) & IS :325 \$ | TC |  | P | V | V | \$ Procured with TC from BHEL approved sources. |
| 1.6.3 | Remote and local Cabinets,                                                  | Overall Dimensions Functional Test H.V. Test | C | Review of Documents | 100% | 100% | NTPC approved QP & CHP Clearance reports.                | TC |  | P | V | V |                                                 |
| 1.6.4 | Feeder Electronics such as Load cell etc.                                   | Compliance to P.O                            | C | Review of Documents | 100% | 100% | BHEL purchase specification (Cat-III Item)               | CC |  | P | V | V |                                                 |

**LEGEND:** \* RECORDS, IDENTIFIED WITH "TICK" (✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. CLASS: A- CRITICAL B – MAJOR C- MINOR  
 \*\* M: MANUFACTURER/SUB-SUPPLIER C: MAIN SUPPLIER, N: NTPC P: PERFORM W: WITNESS AND V: VERIFICATION. AS APPROPRIATE. **CHP:** NTPC SHALL IDENTIFY IN COLUMN "N" AS 'W'

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

FORMAT NO.: QS-01-QAI-P-09/F1-R1

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|                                                                                   |                                                                                                                        |                                                                              |                                                                                            |                                                                                                                                      |                                                                                                                       |                                                                                                            |                                                                                                            |                                                                                     |                         |                                |               |          |          |                |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------|--------------------------------|---------------|----------|----------|----------------|
|  | <b>MANUFACTURER'S NAME AND ADDRESS :</b><br><b>BHEL : TIRUCHIRAPPALLI/</b><br><b>APPROVED SUB-CONTRACTORS/ VENDORS</b> | <b>REFERENCE QUALITY PLAN</b>                                                |                                                                                            |                                                                                                                                      |                                                                                                                       |                                                                                                            |                                                                                                            |  |                         | <b>TO BE FILLED IN BY NTPC</b> |               |          |          |                |
|                                                                                   |                                                                                                                        | <b>ITEM /EQUIPMENT:</b><br>GRAVIMETRIC FEEDERS<br><br><b>SUB-SYSTEM : SG</b> | <b>QP NO.: CQP: 1488</b><br><b>REV. NO.: 01</b><br><b>DATE : 18/06/2014</b><br>Page 3 of 5 | <b>SIGN. OF MFGR'S</b><br><br><b>(R-RAMASAMY)</b> | <b>QP No.: 0000-999-QVM-P-259</b><br><b>Rev.: 03</b> Date: 19/10/2015<br><b>Page 3 of 5</b><br>VALID UPTO: 18/10/2018 | <b>REVIEWED BY:</b><br> | <b>APPROVED BY:</b><br> |                                                                                     |                         |                                |               |          |          |                |
| <b>SL. NO</b>                                                                     | <b>COMPONENT &amp; OPERATIONS</b>                                                                                      | <b>CHARACTERISTICS</b>                                                       | <b>CLASS</b>                                                                               | <b>TYPE OF CHECK</b>                                                                                                                 | <b>QUANTUM OF CHECK</b>                                                                                               |                                                                                                            | <b>REFERENCE DOCUMENT#</b>                                                                                 | <b>ACCEPTANCE NORMS</b>                                                             | <b>FORMAT OF RECORD</b> |                                | <b>AGENCY</b> |          |          | <b>REMARKS</b> |
|                                                                                   |                                                                                                                        |                                                                              |                                                                                            |                                                                                                                                      | <b>M</b>                                                                                                              | <b>C/N</b>                                                                                                 |                                                                                                            |                                                                                     |                         |                                | <b>M</b>      | <b>C</b> | <b>N</b> |                |
| 1.                                                                                | 2.                                                                                                                     | 3.                                                                           | 4.                                                                                         | 5.                                                                                                                                   | 6.                                                                                                                    |                                                                                                            | 7.                                                                                                         | 8.                                                                                  | 9.                      | D*                             | ** 10         |          |          | 11.            |

|     |                                                 |                                            |   |                                     |      |      |                                                  |            |  |   |   |   |  |                                                                                                                    |
|-----|-------------------------------------------------|--------------------------------------------|---|-------------------------------------|------|------|--------------------------------------------------|------------|--|---|---|---|--|--------------------------------------------------------------------------------------------------------------------|
| 2.0 | INPROCESS                                       |                                            |   |                                     |      |      |                                                  |            |  |   |   |   |  |                                                                                                                    |
| 2.1 | Cold rolling: Body Shell                        | Length & Diameter                          | B | Measurement                         | 100% | 100% | As per Drawing                                   | R          |  | P | V | V |  |                                                                                                                    |
| 2.2 | Welding                                         | Procedure & Personnel Qualification        | B | Review of Documents                 | 100% | 100% | AWS D 1.1                                        | WPS & List |  | P | V | V |  |                                                                                                                    |
| 2.3 | Weld joints                                     | Weld size                                  | C | Visual                              | 100% |      | Note 1                                           | -          |  | P | P | - |  |                                                                                                                    |
|     |                                                 | Weld quality                               |   | LPI/MPI                             | 10%  | 10%  | BHE: NDT: PB: PT01/ 13<br>BHE: NDT: PB: MT01/ 11 | R          |  | P | P | V |  | Welds in the casing / pulley fabrication shall be checked with MPI                                                 |
| 2.4 | Machining                                       | Overall dimensions. Orientation and Finish | B | Measurement                         | 100% | 100% | As per relevant Drawings                         | R          |  | P | P | V |  |                                                                                                                    |
| 2.5 | Feeder body                                     | Strength                                   | A | Hydro test * (Explosion proof test) | #    | #    | Test pr. At 50 PSI as per Drawing (Type test):   | R          |  | P | W | V |  | # Type test already Performed for 24" & 36" Feeders. Hence, review of test report clearance from NTPC Engineering. |
| 2.6 | Weigh span roller, Head Pulley & Take up pulley | Dimensions                                 | C | Measurement                         | 100% | 100% | As per Drawing                                   | OPS        |  | P | P | V |  |                                                                                                                    |

**LEGEND:** \* RECORDS, IDENTIFIED WITH "TICK" (✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. CLASS: A- CRITICAL B – MAJOR C- MINOR  
 \*\* M: MANUFACTURER/SUB-SUPPLIER C: MAIN SUPPLIER, N: NTPC P: PERFORM W: WITNESS AND V: VERIFICATION. AS APPROPRIATE. **CHP:** NTPC SHALL IDENTIFY IN COLUMN "N" AS 'W'

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

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|                                                                                   |                                                                                                                 |                 |                                                                                                   |               |                                                                                                                               |  |                                                                                                                              |                  |                                                                                                                             |    |                                                                                                                          |  |         |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------|---------------------------------------------------------------------------------------------------|---------------|-------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------|----|--------------------------------------------------------------------------------------------------------------------------|--|---------|
|  | MANUFACTURER'S NAME AND ADDRESS :<br><b>BHEL : TIRUCHIRAPPALLI/</b><br><b>APPROVED SUB-CONTRACTORS/ VENDORS</b> |                 | <b>REFERENCE QUALITY PLAN</b>                                                                     |               |                                                                                                                               |  |                                           |                  | <b>TO BE FILLED IN BY NTPC</b>                                                                                              |    |                                                                                                                          |  |         |
|                                                                                   | ITEM /EQUIPMENT:<br>GRAVIMETRIC FEEDERS                                                                         |                 | QP NO.: <b>CQP: 1488</b><br>REV. NO.: <b>01</b><br>DATE : <b>18/06/2014</b><br>Page <b>4 of 5</b> |               | SIGN. OF MFGR'S<br><br><b>(R-RAMASAMY)</b> |  | QP No.: 0000-999-QVM-P-259<br>Rev.: <b>03</b> Date: <b>19.10.2015</b><br>Page <b>4 of 5</b><br>VALID UPTO: <b>18.10.2018</b> |                  | REVIEWED BY:<br><br><b>R. Siva Kumar</b> |    | APPROVED BY:<br><br><b>P.C. Noida</b> |  |         |
| SL. NO                                                                            | COMPONENT & OPERATIONS                                                                                          | CHARACTERISTICS | CLASS                                                                                             | TYPE OF CHECK | QUANTUM OF CHECK<br>M C/N                                                                                                     |  | REFERENCE DOCUMENT#                                                                                                          | ACCEPTANCE NORMS | FORMAT OF RECORD                                                                                                            |    | AGENCY<br>M C N                                                                                                          |  | REMARKS |
| 1.                                                                                | 2.                                                                                                              | 3.              | 4.                                                                                                | 5.            | 6.                                                                                                                            |  | 7.                                                                                                                           | 8.               | 9.                                                                                                                          | D* | ** 10                                                                                                                    |  | 11.     |

|     |                                          |                                                                                        |   |                           |                  |      |                                                         |   |  |   |   |    |                                                                                                             |
|-----|------------------------------------------|----------------------------------------------------------------------------------------|---|---------------------------|------------------|------|---------------------------------------------------------|---|--|---|---|----|-------------------------------------------------------------------------------------------------------------|
| 2.7 | Feeder leak test                         | Feeder housing leakage                                                                 | A | Air test                  | 100%             | 100% | As per drawing                                          | R |  | P | P | W  |                                                                                                             |
| 2.8 | Feeder & Cabinet Final & Electrical test | Functional & Calibration                                                               | A | Visual & Measurements     | 100%             | \$   | As per drawing & approved VQP                           | R |  | P | P | W  | \$ Random Two numbers per boiler                                                                            |
| 2.9 | Feeder performance                       | Weighing accuracy                                                                      | A | Type test                 | #                | #    | QA:CI:STD:PR:11/ Rev.02                                 | R |  | P | P | V  | # Type test already performed for 24" & 36" Feeders. Hence review of test report clearance from NTPC Engg.. |
| 3.0 | FINAL                                    |                                                                                        |   |                           |                  |      |                                                         |   |  |   |   |    |                                                                                                             |
| 3.1 | Verification of completion               | Orientation, Completeness, Overall dimensions & All accessories intact in its position | B | Measurements Verification | 100%             | 100% | As per drawing & the approved QP                        | R |  | P | P | W  |                                                                                                             |
| 3.2 | Painting, & Preservation                 | Paint Finish Coat thickness Identification                                             | C | Visual Measurement Visual | 100% Random 100% | --   | As per specific painting scheme* & Drawing              | R |  | P | V | -- | *Approved by NTPC Engg.                                                                                     |
| 3.3 | Data folder                              | QP Compliance Project                                                                  | B | Compliance of records     | 100%             | --   | TC s for SS & AS Material & NTPC CHPs clearance records | R |  | P | V | -- |                                                                                                             |

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 \*\* M: MANUFACTURER/SUB-SUPPLIER C: MAIN SUPPLIER, N: NTPC P: PERFORM W: WITNESS AND V: VERIFICATION. AS APPROPRIATE. **CHP:** NTPC SHALL IDENTIFY IN COLUMN "N" AS 'W'

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

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|                                                                                   |                                                                                                       |                                                                |                                                                                            |                                                                                                                                |                                                                                                                             |                                                                                                     |                                                                                                     |                                                                                     |                  |                                |                 |  |  |         |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------|--------------------------------|-----------------|--|--|---------|
|  | MANUFACTURER'S NAME AND ADDRESS :<br><b>BHEL : TIRUCHIRAPPALLI/ APPROVED SUB-CONTRACTORS/ VENDORS</b> | <b>REFERENCE QUALITY PLAN</b>                                  |                                                                                            |                                                                                                                                |                                                                                                                             |                                                                                                     |                                                                                                     |  |                  | <b>TO BE FILLED IN BY NTPC</b> |                 |  |  |         |
|                                                                                   |                                                                                                       | ITEM /EQUIPMENT:<br>GRAVIMETRIC FEEDERS<br><br>SUB-SYSTEM : SG | QP NO.: <b>CQP: 1488</b><br>REV. NO.: <b>01</b><br>DATE : <b>18/06/2014</b><br>Page 5 of 5 | SIGN. OF MFGR'S<br><br><b>(R. RAMASAMY)</b> | QP No.: 0000-999-QVM-P-259<br>Rev.: <b>03</b> Date: <b>19/10/2015</b><br>Page <b>5 of 5</b><br>VALID UPTO <b>18/10/2018</b> | REVIEWED BY:<br> | APPROVED BY:<br> |                                                                                     |                  |                                |                 |  |  |         |
| SL. NO                                                                            | COMPONENT & OPERATIONS                                                                                | CHARACTERISTICS                                                | CLASS                                                                                      | TYPE OF CHECK                                                                                                                  | QUANTUM OF CHECK<br>M C/N                                                                                                   |                                                                                                     | REFERENCE DOCUMENT#                                                                                 | ACCEPTANCE NORMS                                                                    | FORMAT OF RECORD |                                | AGENCY<br>M C N |  |  | REMARKS |
| 1.                                                                                | 2.                                                                                                    | 3.                                                             | 4.                                                                                         | 5.                                                                                                                             | 6.                                                                                                                          |                                                                                                     | 7.                                                                                                  | 8.                                                                                  | 9.               | D*                             | ** 10           |  |  | 11.     |

**NOTE 1: VISUAL INSPECTION**

- a) Visual inspection of welds shall be performed after completion of all welding and subsequent cooling to room temperature.
- b) All welds shall be cleaned to remove the slag, spatter etc. and visually examined for defects like crack, undercut, porosity lack of fusion etc.
- c) The welds shall be examined as below for size, shape and Reinforcement.

| Nature of defects                  | Accepted norms | Disposition                          |
|------------------------------------|----------------|--------------------------------------|
| i) Crack, Lack of fusion & overlap | Not accepted   | To be repaired & retested by LPI/MPI |
| ii) Crater                         | Not accepted.  | Fill up by weld deposit.             |

- iii) Undercut                      up to 0.8 accepted                      ----  
                                                  >0.8 mm not accepted                      Fill and grind smooth
- iv) Porosity for                      One pore of Dia. <=2.4                      ----  
     butt / fillet welds                      mm in every 100mm  
                                                  length is permitted.  
                                                  However, pore Dia. >2.4  
                                                  mm is not permitted                      To be repaired
- v)        **WELD CONTOUR**
- Face of fillet                      Flat or concave accepted.  
                                                  Convexity up to < 0.1S + 1.5mm  
                                                  is acceptable, where S is the  
                                                  fillet size
- Size (Minimum)                      As per drawing.  
                                                  Under size up to 1.6mm for a  
                                                  cumulative length of 10% of  
                                                  total length permitted
- Reinforcement :                      Maximum 3mm up to 19mm;  
                                                  Maximum 5mm above 19mm

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A Maharatna Company

एन टी पी सी लिमिटेड

(भारत सरकार का उद्यम)

NTPC Limited

(A Govt. of India Enterprise)

(Formerly National Thermal Power Corporation Ltd.)

(केंद्रीय कार्यालय नोएडा)

Corporate Center NOIDA

Reference : CC-ENGG-1150-001-102-QVM-Q-042

Date : 30/07/2024

From : Anirudh Sood  
SENIOR MANAGER

To : BHEL PEM,NOIDA

Cc :

Subject : EPC package of Singrauli Stage-III

Please find enclosed following drawings/ documents for necessary action at your end.

Vendor Drg. No. : CQP6745  
Orgn. Drg. No. : 1150-001-102-QVM-Q-042  
Revision No. : 00  
Drg. Title : MQP for Gravimetric Feeders  
App. Category : CAT-I  
Release Date : 30/07/2024



Scan to verify

Comments : Approved as endorsed



Engineering Division  
ISO 9001:2008 Certified



अभियंत्रिकी कार्यालय परिसर, प्लॉट नं.- ए 8ए, सेक्टर-24, पोस्ट बॉक्स नं.- 13, नोएडा (उ.प्र.) पिन-201 307

टेलिफोन नं.- 0120-2410333, 2410116 फैक्स-0120-2410136, 2410137

पंजीकृत कार्यालय: एनटीपीसी भवन, स्कोप कॉम्प्लेक्स, 7 इंस्टीट्यूशनल एरिया, लोधी रोड, नई दिल्ली-110 003

टेलिफोन नं.- 011-24361018 फैक्स-011-24361018, वेबसाइट: www.ntpc.co.in

ENGINEERING OFFICE COMPLEX, Plot No: A-8A, Sector-24, Post Box No: 13, Noida (UP), Pin-201 307

Telephone No: 0120-2410333, 2410116 Fax-0120-2410136, 2410137

Registered Office: NTPC Bhawan, Scope Complex, 7 Institutional Area, Lodhi Road, New Delhi-110 003

Telephone No: 011 24360100 Fax: 011 24361018, Website: www.ntpc.co.in

# Endorsement Sheet For Drawing/Document- CQP

TO BE FILLED IN BY SUPPLIER AT TIME OF SUBMISSION

|                                                                                                                                                                                                                     |                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| <b>Project Name</b>                                                                                                                                                                                                 | Singrauli Thermal Power Plant - 2x800 MW (Stage III)                            |
| <b>Contract No</b>                                                                                                                                                                                                  | CS-1150-001(R)-2-FC-NOA-7407 Dated :05/03/24<br>(BHEL Work order no 1840 &1841) |
| <b>Package Name</b>                                                                                                                                                                                                 | EPC PACKAGE -SG                                                                 |
| <b>Main Supplier</b>                                                                                                                                                                                                | BHEL                                                                            |
| <b>Manufacturer Name</b>                                                                                                                                                                                            | M/S BHEL-TIRUCHIRAPPALLI / NTPC APPROVED SUBCONTRACTORS/VENDORS OF BHEL         |
| <b>Project/package Specific Document No.</b>                                                                                                                                                                        | 1150-001-102-QVM-Q-042 (CQP:6745 Rev-00)                                        |
| <b>Drawing Title</b>                                                                                                                                                                                                | MQP for Gravimetric Feeders                                                     |
| <b>Reference Project Name</b>                                                                                                                                                                                       | PATRATU STPP —PHASE 1 (3X800 MW)-                                               |
| <b>Reference Contract No</b>                                                                                                                                                                                        | 01 /PVUNL-CS-9585-001-2/NOA -SC                                                 |
| <b>Reference Package Name</b>                                                                                                                                                                                       | EPC PACKAGE -SG                                                                 |
| <b>Reference Main Supplier</b>                                                                                                                                                                                      | BHEL                                                                            |
| <b>Reference Manufacturer Name</b>                                                                                                                                                                                  | M/S BHEL-TIRUCHIRAPPALLI / NTPC APPROVED SUBCONTRACTORS/VENDORS OF BHEL         |
| <b>Reference Project/package Specific document No.</b>                                                                                                                                                              | 9585-001-102-QVM-Q-067 Rev00 (CQP:5980 Rev-00)                                  |
| <b>Reference Drawing Title</b>                                                                                                                                                                                      | Gravimetric Feeders                                                             |
| <input checked="" type="checkbox"/> Certified that the item/component is identical to that considered for reference document approval.                                                                              |                                                                                 |
| <input type="checkbox"/> That there are minor changes in the item/ component with respect to that considered for reference document approval and the same affect the reference document slightly as indicated below |                                                                                 |
| (IN CASE OF MINOR CHANGES , CHECK BOX TO BE MARKED AS ABOVE)                                                                                                                                                        |                                                                                 |

SIGN: (Main Supplier)

Date: 16.07.2024

NTPC (Approved by/Date/Seal)



Md. Fahad, Dy.Manager/QA

CTF

BHEL

CUSTODIAN NAME



Reference: null102:486

Date:01-08-18

|                                                                                                                  |                                |     |                                 |
|------------------------------------------------------------------------------------------------------------------|--------------------------------|-----|---------------------------------|
| From:                                                                                                            | SAMIR KUMAR BHOWMICK<br>GM(TF) | To: | BHEL<br>BHEL sirifort New delhi |
|                                                                                                                  |                                | CC: |                                 |
| SUBJECT : PSTPP, EPC - STEAM GENERATOR                                                                           |                                |     |                                 |
| Please find enclosed following drawings/documents for necessary action at your end as indicated in purpose code. |                                |     |                                 |
| VENDOR DRG NO:                                                                                                   | null                           |     |                                 |
| NTPC DRG NO:                                                                                                     | 9585-001-102-QVM-Q-067         |     |                                 |
| REVISION NO:                                                                                                     | 00                             |     |                                 |
| DRG TITLE:                                                                                                       | MQP for Gravimetric feeder     |     |                                 |
| APP CATEGORY:                                                                                                    | I                              |     |                                 |
| RELEASE DATE:                                                                                                    | 01-08-18                       |     |                                 |
| COMMENTS:                                                                                                        | Cat-I                          |     |                                 |



Engineering Division  
ISO 9001:2008 Certified

अभियांत्रिकी कार्यालय परिसर, प्लॉट नं.- ए 8ए, सेक्टर-24, पोस्ट बॉक्स नं.- 13, नोएडा (उ प्र) पिन-201 307

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# ENDORSEMENT SHEET FOR QP

## REFERENCE / STANDARD / FIELD QUALITY PLAN (RQP / SQP/RFQP/SFQP)

|                                                                                                                                                                                            |                                                                             |                                                               |                                                                                                                                                              |                                           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|---------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| TO BE FILLED IN BY SUPPLIER AT TIME OF SUBMISSION                                                                                                                                          |                                                                             | BHEL QP No.<br>CQP:5980 Rev. :00 Date: 26-06-2018             |                                                                           | To be filled in by NTPC                   |
| PROJECT NAME                                                                                                                                                                               | PATRATU STPP PHASE-1 (3X800MW)                                              |                                                               | REVIEW & ENDORSEMENT BY NTPC<br>PROJECT SPECIFIC QP NUMBER ALLOTTED<br>QP NO.: 9585-001-102-QVM-Q-067<br><br>REV. NO.:          DATE:                        |                                           |
| CONTRACT NO.:                                                                                                                                                                              | 01/PVUNL-CS-9585-001-2/NOA-SC<br>BHEL WORK ORDER NO. 1828,1829 & 1830       |                                                               |                                                                                                                                                              |                                           |
| MAIN SUPPLIER                                                                                                                                                                              | M/S BHEL-TIRUCHIRAPALLI                                                     |                                                               |                                                                                                                                                              |                                           |
| MANUFACTURER WORKS & ADDRESS                                                                                                                                                               | M/S BHEL-TIRUCHIRAPALLI /NPTC APPROVED<br>SUBCONTRACTORS OF BHEL            |                                                               |                                                                                                                                                              |                                           |
| ITEM /EQUIPMENT / SYSTEM/<br>SUB-SYSTEM DETAILS i.e. MODEL<br>TYPE/SIZE/RATING etc.                                                                                                        | GRAVIMETRIC FEEDERS<br>(BHEL REF. QP NO. CQP:1488 REV. 01 DATED 18/06/2014) |                                                               |                                                                                                                                                              |                                           |
| APPROVED QP NO.: RQP/SQP/RFQP/SFQP                                                                                                                                                         |                                                                             | 0000-999-QVM-P259 REV. NO.: 03 DATE: 19/10/2015               |                                                                                                                                                              |                                           |
| Confirmation by Main Supplier (TICK WHICHEVER APPLICABLE)                                                                                                                                  |                                                                             |                                                               | (TICK APPLICABLE)                                                                                                                                            |                                           |
| I. That the item/ component is identical to that considered for QP approval. OR. ✓                                                                                                         |                                                                             |                                                               | The QP is endorsed for this project without any change ✓                                                                                                     |                                           |
| II. That there are minor changes in the item/ component with respect to that considered for QP approval, however the same do not affect the contents of QP. OR                             |                                                                             |                                                               |                                                                                                                                                              |                                           |
| III. That there are minor changes in the item/ component with respect to that considered for QP approval, however the same affect the QP slightly, as indicated below / in attached sheet. |                                                                             |                                                               | The QP is endorsed for this project with changes as indicated.                                                                                               |                                           |
|                                                                                                                                                                                            |                                                                             |                                                               | DISTRIBUTION OF ENDORSEMENT OF<br>A) RQP/SQP:<br>1. MAIN SUPPLIER (WITH A COPY OF QP)<br>2. MANUFACTURER<br>3. RIO<br>4. CQA-SPL<br>5. CQA-O/C<br>6. CQA-O/C |                                           |
| Digitally signed by R.K. Nagarajan<br>Date: 2018.08.01 09:27:28 IST<br>Reason: CAT<br>Location: NTPC<br>CQA-SPL<br>CQA-O/C                                                                 |                                                                             |                                                               | Signature Not Verified<br>Date: 2018.08.01 09:27:28 IST<br>Reason: CAT<br>Location: NTPC<br>CQA-SPL<br>CQA-O/C                                               |                                           |
| J.V.V. Aruna Kumar, SDGM/ QA<br>SIGN.: (Main Supplier) DATE: 26-06/2018                                                                                                                    |                                                                             | K. Nagarajan, SQAE<br>SIGN.: (Manufacturer ) DATE: 26-06/2018 |                                                                                                                                                              | NTPC (Reviewed /Approved by/ Date & Seal) |
| FORMAT NO.: QS-01-QAI-P-10/ F5-R0                                                                                                                                                          |                                                                             | 1/1                                                           |                                                                                                                                                              | ENGG. DIV./ QA&I                          |

|                                                                                   |                                                                                                              |                                                                       |                                      |               |                                                                                                  |                                                                                    |                                 |                  |                 |       |  |         |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|--------------------------------------|---------------|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------------------------------|------------------|-----------------|-------|--|---------|
|  | MANUFACTURER'S NAME AND ADDRESS :<br>BHEL : TIRUCHIRAPPALLI/<br>APPROVED SUB-CONTRACTORS/ <del>VENDORS</del> | REFERENCE QUALITY PLAN                                                |                                      |               |                                                                                                  |  | TO BE FILLED IN BY NTPC         |                  |                 |       |  |         |
|                                                                                   | ITEM /EQUIPMENT:<br>GRAVIMETRIC FEEDERS<br><br>SUB-SYSTEM : SG                                               | QP NO.: CQP: 1488<br>REV. NO.: 01<br>DATE : 18/06/2014<br>Page 1 of 5 | SIGN. OF MFGR'S<br><br>(R. RAMASAMY) |               | QP No.: 0000-999-QVM-P-259<br>Rev.: 03 Date: 19/10/2015<br>Page 1 of 5<br>VALID UPTO: 18/10/2018 | REVIEWED BY:<br><br>[Signature]                                                    | APPROVED BY:<br><br>[Signature] |                  |                 |       |  |         |
| SL. NO                                                                            | COMPONENT & OPERATIONS                                                                                       | CHARACTERISTICS                                                       | CLASS                                | TYPE OF CHECK | QUANTUM OF CHECK<br>M C/N                                                                        | REFERENCE DOCUMENT#                                                                | ACCEPTANCE NORMS                | FORMAT OF RECORD | AGENCY<br>M C N |       |  | REMARKS |
| 1.                                                                                | 2.                                                                                                           | 3.                                                                    | 4.                                   | 5.            | 6.                                                                                               | 7.                                                                                 | 8.                              | 9.               | D*              | ** 10 |  | 11.     |

| 1.0 | MATERIAL #                                                                              | # Materials shall be as per Drawing.         |   |                      |        |   |                                                  |    |  |   |   |   |                                                        |
|-----|-----------------------------------------------------------------------------------------|----------------------------------------------|---|----------------------|--------|---|--------------------------------------------------|----|--|---|---|---|--------------------------------------------------------|
| 1.1 | PLATES:<br>IS 2062 Gr A & B,<br>IS 1079, ASTM A36,<br>SA 240 TP 304                     | Chemical and<br>Mechanical<br>Properties.    | A | T.C.<br>Verification | 100%   | @ | As per material Specification.                   | TC |  | P | V | V | @ Verification for SS<br>& Alloy steel only            |
| 1.2 | CASTINGS:<br>ASTM A216 WCB<br>IS305Gr AB1,<br>ASTM A48<br>Cl. 30A, 35A &<br>Cast AL 319 | Chemical (#) and<br>Mechanical<br>Properties | A | T.C.<br>Verification | 100%   | @ | -do-                                             | TC |  | P | V | V | (#) No chemical<br>Analysis for cast iron/<br>SG iron. |
| 1.3 | Tubes & Pipes<br>SA 213 TP 304,<br>SA 106 Gr. B & C,<br>SA 210 Gr.A1                    | Chemical and<br>Mechanical<br>Properties     | A | T.C.<br>Verification | 100%   | @ | As per Material Specification.                   | TC |  | P | V | V |                                                        |
| 1.4 | FORGINGS:<br>SA105<br>AISI-C-1020                                                       | Chemical &<br>Mechanical<br>Properties       | A | T.C.<br>Verification | 100%   | @ | As per Material Specification.                   | TC |  | P | V | V |                                                        |
|     |                                                                                         | Soundness (UT) *                             | A | T.C.<br>Verification | 100% * | @ | ASTM A388/ ASME Sec VIII<br>Div. 2, Clause 3.3.4 | TC |  | P | V | V | * For dia. > 50mm                                      |

**LEGEND:** \* RECORDS, IDENTIFIED WITH "TICK" (✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. CLASS: A- CRITICAL B – MAJOR C- MINOR  
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**Note:** # NTPC Inspection Engineer to check, approval date/ revision no. of reference documents at the time of Inspection

FORMAT NO.: QS-01-QAI-P-09/F1-R1

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|                                                                                   |                                                                                                   |                                                                       |                                             |               |                                                                                                  |                                                                                         |                                                                                     |                         |                  |    |                 |  |  |         |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------|---------------|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------|------------------|----|-----------------|--|--|---------|
|  | MANUFACTURER'S NAME AND ADDRESS :<br>BHEL : TIRUCHIRAPPALLI/<br>APPROVED SUB-CONTRACTORS/ VENDORS | REFERENCE QUALITY PLAN                                                |                                             |               |                                                                                                  |                                                                                         |  | TO BE FILLED IN BY NTPC |                  |    |                 |  |  |         |
|                                                                                   | ITEM /EQUIPMENT:<br>GRAVIMETRIC FEEDERS<br><br>SUB-SYSTEM : SG                                    | QP NO.: CQP: 1488<br>REV. NO.: 01<br>DATE : 18/06/2014<br>Page 2 of 5 | SIGN. OF MFGR'S<br><br><i>(R. RAMASAMY)</i> |               | QP No.: 0000-999-QVM-P-259<br>Rev.: 03 Date: 19/10/2015<br>Page 2 of 5<br>VALID UPTO: 18/10/2018 | REVIEWED BY: <i>Sina Kumar</i><br>APPROVED BY: <i>(Signature)</i><br>अनुमोदित<br>आयुक्त |                                                                                     |                         |                  |    |                 |  |  |         |
| SL. NO                                                                            | COMPONENT & OPERATIONS                                                                            | CHARACTERISTICS                                                       | CLASS                                       | TYPE OF CHECK | QUANTUM OF CHECK<br>M C/N                                                                        |                                                                                         | REFERENCE DOCUMENT#                                                                 | ACCEPTANCE NORMS        | FORMAT OF RECORD |    | AGENCY<br>M C N |  |  | REMARKS |
| 1.                                                                                | 2.                                                                                                | 3.                                                                    | 4.                                          | 5.            | 6.                                                                                               |                                                                                         | 7.                                                                                  | 8.                      | 9.               | D* | ** 10           |  |  | 11.     |

|       |                                                                             |                                              |   |                     |      |      |                                                          |    |  |   |   |   |                                                 |
|-------|-----------------------------------------------------------------------------|----------------------------------------------|---|---------------------|------|------|----------------------------------------------------------|----|--|---|---|---|-------------------------------------------------|
| 1.5   | Rounds<br>SA 193 B7<br>ASTM A27& A47                                        | Chemical & Mechanical properties             | A | T.C Verification@   | 100% | @    | As per Material Specification                            | R  |  | P | V | V | @ Verification for SS & Alloy steel only        |
|       |                                                                             | Soundness (UT*)                              | A |                     |      |      |                                                          | TC |  | P | V | V | * For Dia. > 50mm                               |
| 1.6   | Sub-Deliveries                                                              |                                              |   |                     |      |      |                                                          |    |  |   |   |   |                                                 |
| 1.6.1 | Feeder Belts, Bulls eye lens                                                | Compliance to purchase order                 | A | Review of Documents | 100% | 100% | BHEL Purchase Specification (CAT-III Item) \$            | CC |  | P | V | V |                                                 |
| 1.6.2 | Gear box Assembly including motor, Feeder Main & Clean-out Conveyor Drives. | Run test, Type & Routine test for motors     | A | Review of Documents | 100% | 100% | BHEL Purchase Specification. (CAT-III Item) & IS :325 \$ | TC |  | P | V | V | \$ Procured with TC from BHEL approved sources. |
| 1.6.3 | Remote and local Cabinets,                                                  | Overall Dimensions Functional Test H.V. Test | C | Review of Documents | 100% | 100% | NTPC approved QP & CHP Clearance reports.                | TC |  | P | V | V |                                                 |
| 1.6.4 | Feeder Electronics such as Load cell etc.                                   | Compliance to P.O                            | C | Review of Documents | 100% | 100% | BHEL purchase specification (Cat-III Item)               | CC |  | P | V | V |                                                 |

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

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|                                                                                   |                                                                                                                        |                                                                              |                                                                                            |                                                                                                                                      |                                                                                                                       |                                                                                                            |                                                                                                            |                                                                                    |                         |                                |                        |  |  |                |
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|  | <b>MANUFACTURER'S NAME AND ADDRESS :</b><br><b>BHEL : TIRUCHIRAPPALLI/</b><br><b>APPROVED SUB-CONTRACTORS/ VENDORS</b> | <b>REFERENCE QUALITY PLAN</b>                                                |                                                                                            |                                                                                                                                      |                                                                                                                       |                                                                                                            |                                                                                                            |  |                         | <b>TO BE FILLED IN BY NTPC</b> |                        |  |  |                |
|                                                                                   |                                                                                                                        | <b>ITEM /EQUIPMENT:</b><br>GRAVIMETRIC FEEDERS<br><br><b>SUB-SYSTEM : SG</b> | <b>QP NO.: CQP: 1488</b><br><b>REV. NO.: 01</b><br><b>DATE : 18/06/2014</b><br>Page 3 of 5 | <b>SIGN. OF MFGR'S</b><br><br><b>(R-RAMASAMY)</b> | <b>QP No.: 0000-999-QVM-P-259</b><br><b>Rev.: 03</b> Date: 19/10/2015<br><b>Page 3 of 5</b><br>VALID UPTO: 18/10/2018 | <b>REVIEWED BY:</b><br> | <b>APPROVED BY:</b><br> |                                                                                    |                         |                                |                        |  |  |                |
| <b>SL. NO</b>                                                                     | <b>COMPONENT &amp; OPERATIONS</b>                                                                                      | <b>CHARACTERISTICS</b>                                                       | <b>CLASS</b>                                                                               | <b>TYPE OF CHECK</b>                                                                                                                 | <b>QUANTUM OF CHECK</b><br>M C/N                                                                                      |                                                                                                            | <b>REFERENCE DOCUMENT#</b>                                                                                 | <b>ACCEPTANCE NORMS</b>                                                            | <b>FORMAT OF RECORD</b> |                                | <b>AGENCY</b><br>M C N |  |  | <b>REMARKS</b> |
| 1.                                                                                | 2.                                                                                                                     | 3.                                                                           | 4.                                                                                         | 5.                                                                                                                                   | 6.                                                                                                                    |                                                                                                            | 7.                                                                                                         | 8.                                                                                 | 9.                      | D*                             | ** 10                  |  |  | 11.            |

|     |                                                 |                                            |   |                                     |      |      |                                                  |            |  |   |   |   |                                                                                                                    |
|-----|-------------------------------------------------|--------------------------------------------|---|-------------------------------------|------|------|--------------------------------------------------|------------|--|---|---|---|--------------------------------------------------------------------------------------------------------------------|
| 2.0 | INPROCESS                                       |                                            |   |                                     |      |      |                                                  |            |  |   |   |   |                                                                                                                    |
| 2.1 | Cold rolling: Body Shell                        | Length & Diameter                          | B | Measurement                         | 100% | 100% | As per Drawing                                   | R          |  | P | V | V |                                                                                                                    |
| 2.2 | Welding                                         | Procedure & Personnel Qualification        | B | Review of Documents                 | 100% | 100% | AWS D 1.1                                        | WPS & List |  | P | V | V |                                                                                                                    |
| 2.3 | Weld joints                                     | Weld size                                  | C | Visual                              | 100% |      | Note 1                                           | -          |  | P | P | - |                                                                                                                    |
|     |                                                 | Weld quality                               |   | LPI/MPI                             | 10%  | 10%  | BHE: NDT: PB: PT01/ 13<br>BHE: NDT: PB: MT01/ 11 | R          |  | P | P | V | Welds in the casing / pulley fabrication shall be checked with MPI                                                 |
| 2.4 | Machining                                       | Overall dimensions. Orientation and Finish | B | Measurement                         | 100% | 100% | As per relevant Drawings                         | R          |  | P | P | V |                                                                                                                    |
| 2.5 | Feeder body                                     | Strength                                   | A | Hydro test * (Explosion proof test) | #    | #    | Test pr. At 50 PSI as per Drawing (Type test):   | R          |  | P | W | V | # Type test already Performed for 24" & 36" Feeders. Hence, review of test report clearance from NTPC Engineering. |
| 2.6 | Weigh span roller, Head Pulley & Take up pulley | Dimensions                                 | C | Measurement                         | 100% | 100% | As per Drawing                                   | OPS        |  | P | P | V |                                                                                                                    |

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

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|                                                                                   |                                                                                                                        |                                                                              |                                                                                            |                                                                                                                                      |                                                                                                                                     |                                                                                                            |                                                                                                                                                  |                                                                                     |                  |                                |                 |  |  |         |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------|--------------------------------|-----------------|--|--|---------|
|  | <b>MANUFACTURER'S NAME AND ADDRESS :</b><br><b>BHEL : TIRUCHIRAPPALLI/</b><br><b>APPROVED SUB-CONTRACTORS/ VENDORS</b> | <b>REFERENCE QUALITY PLAN</b>                                                |                                                                                            |                                                                                                                                      |                                                                                                                                     |                                                                                                            |                                                                                                                                                  |  |                  | <b>TO BE FILLED IN BY NTPC</b> |                 |  |  |         |
|                                                                                   |                                                                                                                        | <b>ITEM /EQUIPMENT:</b><br>GRAVIMETRIC FEEDERS<br><br><b>SUB-SYSTEM : SG</b> | <b>QP NO.: CQP: 1488</b><br><b>REV. NO.: 01</b><br><b>DATE : 18/06/2014</b><br>Page 4 of 5 | <b>SIGN. OF MFGR'S</b><br><br><b>(R-RAMASAMY)</b> | <b>QP No.:</b> 0000-999-QVM-P-259<br><b>Rev.:</b> 03 <b>Date:</b> 19.10.2015<br><b>Page 4 of 5</b><br><b>VALID UPTO:</b> 18.10.2018 | <b>REVIEWED BY:</b><br> | <b>APPROVED BY:</b><br><br>अनुमोदित<br>Approved<br>P.C. Noida |                                                                                     |                  |                                |                 |  |  |         |
| SL. NO                                                                            | COMPONENT & OPERATIONS                                                                                                 | CHARACTERISTICS                                                              | CLASS                                                                                      | TYPE OF CHECK                                                                                                                        | QUANTUM OF CHECK<br>M C/N                                                                                                           |                                                                                                            | REFERENCE DOCUMENT#                                                                                                                              | ACCEPTANCE NORMS                                                                    | FORMAT OF RECORD |                                | AGENCY<br>M C N |  |  | REMARKS |
| 1.                                                                                | 2.                                                                                                                     | 3.                                                                           | 4.                                                                                         | 5.                                                                                                                                   | 6.                                                                                                                                  |                                                                                                            | 7.                                                                                                                                               | 8.                                                                                  | 9.               | D*                             | ** 10           |  |  | 11.     |

|     |                                          |                                                                                        |   |                                 |                        |      |                                                         |   |  |   |   |    |                                                                                                             |
|-----|------------------------------------------|----------------------------------------------------------------------------------------|---|---------------------------------|------------------------|------|---------------------------------------------------------|---|--|---|---|----|-------------------------------------------------------------------------------------------------------------|
| 2.7 | Feeder leak test                         | Feeder housing leakage                                                                 | A | Air test                        | 100%                   | 100% | As per drawing                                          | R |  | P | P | W  |                                                                                                             |
| 2.8 | Feeder & Cabinet Final & Electrical test | Functional & Calibration                                                               | A | Visual & Measurements           | 100%                   | \$   | As per drawing & approved VQP                           | R |  | P | P | W  | \$ Random Two numbers per boiler                                                                            |
| 2.9 | Feeder performance                       | Weighing accuracy                                                                      | A | Type test                       | #                      | #    | QA:CI:STD:PR:11/ Rev.02                                 | R |  | P | P | V  | # Type test already performed for 24" & 36" Feeders. Hence review of test report clearance from NTPC Engg.. |
| 3.0 | FINAL                                    |                                                                                        |   |                                 |                        |      |                                                         |   |  |   |   |    |                                                                                                             |
| 3.1 | Verification of completion               | Orientation, Completeness, Overall dimensions & All accessories intact in its position | B | Measurements Verification       | 100%                   | 100% | As per drawing & the approved QP                        | R |  | P | P | W  |                                                                                                             |
| 3.2 | Painting, & Preservation                 | Paint Finish<br>Coat thickness<br>Identification                                       | C | Visual<br>Measurement<br>Visual | 100%<br>Random<br>100% | --   | As per specific painting scheme* & Drawing              | R |  | P | V | -- | *Approved by NTPC Engg.                                                                                     |
| 3.3 | Data folder                              | QP Compliance Project                                                                  | B | Compliance of records           | 100%                   | --   | TC s for SS & AS Material & NTPC CHPs clearance records | R |  | P | V | -- |                                                                                                             |

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|                                                                                   |                                                                                                       |                                                                |                                                                                            |                                                                                                                                |                                                                                                                             |                                                                                                     |                                                                                                     |                                                                                     |                  |                                |                 |  |  |         |
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|  | MANUFACTURER'S NAME AND ADDRESS :<br><b>BHEL : TIRUCHIRAPPALLI/ APPROVED SUB-CONTRACTORS/ VENDORS</b> | <b>REFERENCE QUALITY PLAN</b>                                  |                                                                                            |                                                                                                                                |                                                                                                                             |                                                                                                     |                                                                                                     |  |                  | <b>TO BE FILLED IN BY NTPC</b> |                 |  |  |         |
|                                                                                   |                                                                                                       | ITEM /EQUIPMENT:<br>GRAVIMETRIC FEEDERS<br><br>SUB-SYSTEM : SG | QP NO.: <b>CQP: 1488</b><br>REV. NO.: <b>01</b><br>DATE : <b>18/06/2014</b><br>Page 5 of 5 | SIGN. OF MFGR'S<br><br><b>(R. RAMASAMY)</b> | QP No.: 0000-999-QVM-P-259<br>Rev.: <b>03</b> Date: <b>19/10/2015</b><br>Page <b>5 of 5</b><br>VALID UPTO <b>18/10/2018</b> | REVIEWED BY:<br> | APPROVED BY:<br> |                                                                                     |                  |                                |                 |  |  |         |
| SL. NO                                                                            | COMPONENT & OPERATIONS                                                                                | CHARACTERISTICS                                                | CLASS                                                                                      | TYPE OF CHECK                                                                                                                  | QUANTUM OF CHECK<br>M C/N                                                                                                   |                                                                                                     | REFERENCE DOCUMENT#                                                                                 | ACCEPTANCE NORMS                                                                    | FORMAT OF RECORD |                                | AGENCY<br>M C N |  |  | REMARKS |
| 1.                                                                                | 2.                                                                                                    | 3.                                                             | 4.                                                                                         | 5.                                                                                                                             | 6.                                                                                                                          |                                                                                                     | 7.                                                                                                  | 8.                                                                                  | 9.               | D*                             | ** 10           |  |  | 11.     |

**NOTE 1: VISUAL INSPECTION**

- a) Visual inspection of welds shall be performed after completion of all welding and subsequent cooling to room temperature.
- b) All welds shall be cleaned to remove the slag, spatter etc. and visually examined for defects like crack, undercut, porosity lack of fusion etc.
- c) The welds shall be examined as below for size, shape and Reinforcement.

| Nature of defects                  | Accepted norms | Disposition                          |
|------------------------------------|----------------|--------------------------------------|
| i) Crack, Lack of fusion & overlap | Not accepted   | To be repaired & retested by LPI/MPI |
| ii) Crater                         | Not accepted.  | Fill up by weld deposit.             |

- iii) Undercut                      up to 0.8 accepted                      ----  
                                                  >0.8 mm not accepted                      Fill and grind smooth
- iv) Porosity for                      One pore of Dia. <=2.4                      ----  
     butt / fillet welds                      mm in every 100mm  
                                                  length is permitted.  
                                                  However, pore Dia. >2.4  
                                                  mm is not permitted                      To be repaired
- v)                      WELD CONTOUR
- Face of fillet                      Flat or concave accepted.  
                                                  Convexity up to < 0.1S + 1.5mm  
                                                  is acceptable, where S is the  
                                                  fillet size
- Size (Minimum)                      As per drawing.  
                                                  Under size up to 1.6mm for a  
                                                  cumulative length of 10% of  
                                                  total length permitted
- Reinforcement :                      Maximum 3mm up to 19mm;  
                                                  Maximum 5mm above 19mm

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A Maharatna Company

एन टी पी सी लिमिटेड

(भारत सरकार का उद्यम)

NTPC Limited

(A Govt. of India Enterprise)

(Formerly National Thermal Power Corporation Ltd.)

(केंद्रीय कार्यालय नोएडा)

Corporate Center NOIDA

Reference : CC-ENGG-8003-001-102-QVM-Q-004A

Date : 24/02/2025

From : Vikas Khare  
ADDL. GENERAL MANAGER

To : BHARAT HEAVY ELECTRICALS LTD  
NEW DELHI  
110049  
IN

Cc : pmgvijay@bhel.in  
ksbura@bhel.in

Subject : EPC Package, Sipat-Stage-III

Please find enclosed following drawings/ documents for necessary action at your end.

Vendor Drg. No. : CQP6745  
Orgn. Drg. No. : 8003-001-102-QVM-Q-004A  
Revision No. : 00  
Drg. Title : MQP for Gravimetric Feeders  
App. Category : CAT-I  
Release Date : 24/02/2025



Scan to verify

Comments : CAT-I with minor comments



Engineering Division  
ISO 9001:2008 Certified



अभियंत्रिकी कार्यालय परिसर, प्लॉट नं.- ए 8ए, सेक्टर-24, पोस्ट बॉक्स नं.- 13, नोएडा (उ.प्र.) पिन-201 307

टेलिफोन नं.- 0120-2410333, 2410116 फैक्स-0120-2410136, 2410137

पंजीकृत कार्यालय: एनटीपीसी भवन, स्कोप कॉम्प्लेक्स, 7 इन्स्टीट्यूशनल एरिया, लोधी रोड, नई दिल्ली-110 003

टेलिफोन नं.- 011-24361018 फैक्स-011-24361018, वेबसाइट: www.ntpc.co.in

ENGINEERING OFFICE COMPLEX, Plot No: A-8A, Sector-24, Post Box No: 13, Noida (UP), Pin-201 307

Telephone No: 0120-2410333, 2410116 Fax-0120-2410136, 2410137

Registered Office: NTPC Bhawan, Scope Complex, 7 Institutional Area, Lodhi Road, New Delhi-110 003

Telephone No: 011 24360100 Fax: 011 24361018, Website: www.ntpc.co.in

# Endorsement Sheet For Drawing/Document- CQP

TO BE FILLED IN BY SUPPLIER AT TIME OF SUBMISSION

|                                                                                                                                                                                                                     |                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Project Name                                                                                                                                                                                                        | Sipat Super Thermal Power Project, Stage III (1X800 MW)                             |
| Contract No                                                                                                                                                                                                         | CS-8003-001-2-FC-NOA-7491 Dated :20/09/24<br>(BHEL Work order no 1856)              |
| Package Name                                                                                                                                                                                                        | EPC PACKAGE -SG                                                                     |
| Main Supplier                                                                                                                                                                                                       | BHEL                                                                                |
| Manufacturer Name                                                                                                                                                                                                   | M/S BHEL-TIRUCHIRAPPALLI / NTPC APPROVED SUBCONTRACTORS/ <del>VENDORS OF BHEL</del> |
| Project/package Specific Document No.                                                                                                                                                                               | 8003-001-102-QVM-Q -004A (CQP:6848 Rev-00)                                          |
| Drawing Title                                                                                                                                                                                                       | CQP for Gravimetric Feeders                                                         |
| Reference Project Name                                                                                                                                                                                              | -                                                                                   |
| Reference Contract No                                                                                                                                                                                               | -                                                                                   |
| Reference Package Name                                                                                                                                                                                              | -                                                                                   |
| Reference Main Supplier                                                                                                                                                                                             | BHEL                                                                                |
| Reference Manufacturer Name                                                                                                                                                                                         | M/S BHEL-TIRUCHIRAPPALLI / NTPC APPROVED SUBCONTRACTORS/ <del>VENDORS OF BHEL</del> |
| Reference Project/package Specific document No.                                                                                                                                                                     | 0000-999-QVM-P-259, Rev-04 (CQP:1488 Rev-02)                                        |
| Reference Drawing Title                                                                                                                                                                                             | RQP for Gravimetric Feeders                                                         |
| <input checked="" type="checkbox"/> Certified that the item/component is identical to that considered for reference document approval.                                                                              |                                                                                     |
| <input type="checkbox"/> That there are minor changes in the item/ component with respect to that considered for reference document approval and the same affect the reference document slightly as indicated below |                                                                                     |
| (IN CASE OF MINOR CHANGES , CHECK BOX TO BE MARKED AS ABOVE)                                                                                                                                                        |                                                                                     |

SIGN: (Main Supplier)

Date: 15.02.2025

NTPC (Approved by/Date/Seal)

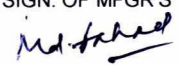


Md. Fahad, Dy.Manager/QA

CTF

BHEL

CUSTODIAN NAME

|                                                                                   |                                                                                                                                |                                                                                     |              |                                                                                                  |                                  |                                                                                                                                  |                            |                                                                                                                   |                         |                                                                                                                                                                     |                        |                                                                                                                                   |  |                |
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|  | <b>MANUFACTURER'S NAME AND ADDRESS</b><br><b>BHEL: TIRUCHIRAPPALLI/</b><br><b>APPROVED SUB –</b><br><b>CONTRACTORS/VENDORS</b> | <b>REFERENCE QUALITY PLAN</b>                                                       |              |                                                                                                  |                                  |                                                                                                                                  |                            |                                |                         | <b>TO BE FILLED IN BY NTPC</b>                                                                                                                                      |                        |                                                                                                                                   |  |                |
|                                                                                   |                                                                                                                                | <b>ITEM /EQUIPMENT:</b><br><b>GRAVIMETRIC FEEDERS</b><br><br><b>SUB-SYSTEM : SG</b> |              | <b>QP NO.: CQP: 1488</b><br><b>REV. NO.: 02</b><br><b>DATE: 20.01.2025</b><br><b>Page 1 of 6</b> |                                  | <b>SIGN. OF MFGR'S</b><br><br><b>MD FAHAD</b> |                            | <b>QP No.: 0000-999-QVM-P-259</b><br><b>Rev.: 04 Date: 20.01.2025</b><br><b>Page 1 of 6</b><br><b>VALID UPTO:</b> |                         | <b>REVIEWED BY:</b><br><b>SRINIVASA RAO</b><br><b>USIRIKAYALA</b><br><small>Digitally signed by SRINIVASA RAO USIRIKAYALA Date: 2025.01.28 11:43:05 +05'30'</small> |                        | <b>APPROVED BY:</b><br><b>HEMA NT PAWGI</b><br><small>Digitally signed by HEMA NT PAWGI Date: 2025.01.28 11:43:05 +05'30'</small> |  |                |
| <b>SL. NO</b>                                                                     | <b>COMPONENT &amp; OPERATIONS</b>                                                                                              | <b>CHARACTERISTICS</b>                                                              | <b>CLASS</b> | <b>TYPE OF CHECK</b>                                                                             | <b>QUANTUM OF CHECK</b><br>M C/N |                                                                                                                                  | <b>REFERENCE DOCUMENT#</b> | <b>ACCEPTANCE NORMS</b>                                                                                           | <b>FORMAT OF RECORD</b> |                                                                                                                                                                     | <b>AGENCY</b><br>M C N |                                                                                                                                   |  | <b>REMARKS</b> |
| 1.                                                                                | 2.                                                                                                                             | 3.                                                                                  | 4.           | 5.                                                                                               | 6.                               |                                                                                                                                  | 7.                         | 8.                                                                                                                | 9.                      | D*                                                                                                                                                                  | ** 10                  |                                                                                                                                   |  | 11.            |

|     |               |                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |                   |        |      |                                               |    |   |   |   |    |                                                |  |
|-----|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------------|--------|------|-----------------------------------------------|----|---|---|---|----|------------------------------------------------|--|
| 1.0 | MATERIAL #    | # Materials shall be as per Drawing.<br>In case of outsourcing, all the raw materials for fabrication shall be supplied by BHEL. The sub-contractor shall ensure traceability of raw material grades at their works. A register shall be maintained at sub-contractor works for receipt of raw material. Hard stamping / stenciling/ engraving (as applicable) of the material specification and grade shall be carried out on plates. |   |                   |        |      |                                               |    |   |   |   |    |                                                |  |
| 1.1 | PLATES        | Chemical and Mechanical Properties. UT**                                                                                                                                                                                                                                                                                                                                                                                               | A | T.C. Verification | 100%   | 100% | As per material Specification.                | TC | √ | P | V | V@ | @ TC verification for AS & SS only             |  |
| 1.2 | CASTINGS      | Chemical (#) and Mechanical Properties                                                                                                                                                                                                                                                                                                                                                                                                 | A | T.C. Verification | 100%   | 100% | -do-                                          | TC |   | P | V | V@ | **For t >40 mm                                 |  |
| 1.3 | Tubes & Pipes | Chemical and Mechanical Properties                                                                                                                                                                                                                                                                                                                                                                                                     | A | T.C. Verification | 100%   | 100% | As per Material Specification.                | TC | √ | P | V | V@ | # No chemical Analysis for cast iron/ SG iron. |  |
| 1.4 | FORGINGS      | Chemical & Mechanical Properties                                                                                                                                                                                                                                                                                                                                                                                                       | A | T.C. Verification | 100%   | 100% | As per Material Specification.                | TC |   | P | V | V@ |                                                |  |
|     |               | Soundness (UT) *                                                                                                                                                                                                                                                                                                                                                                                                                       | A | T.C. Verification | 100% * | 100% | ASTM A388/ ASME Sec VIII Div. 2, Clause 3.3.4 | TC |   | P | V | V  | * For dia. > 50 mm                             |  |

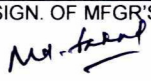
**LEGEND: \* RECORDS**, IDENTIFIED WITH “TICK” (√) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. **CLASS:** A- CRITICAL B – MAJOR C- MINOR R-RECORD TC- TEST CERTIFICATE COC – CERTIFICATE OF CONFORMANCE  
**\*\* M:** MANUFACTURER/SUB-SUPPLIER **C:** MAIN SUPPLIER, **N:** NTPC **P:** PERFORM **W:** WITNESS AND **V:** VERIFICATION. AS APPROPRIATE. **CHP:** NTPC SHALL IDENTIFY IN COLUMN “N” AS ‘W’

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

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|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------|----|-----------------|--|--|---------|
|  | <b>MANUFACTURER'S NAME AND ADDRESS</b><br><b>BHEL: TIRUCHIRAPPALLI/</b><br><b>APPROVED SUB –</b><br><b>CONTRACTORS/VENDORS</b> | <b>REFERENCE QUALITY PLAN</b>                                                       |                                                                                                  |                                                                                                                                  |                                                                                                                   |                                                                                                                                                                     |                                                                                                                                                                                                                                     |  | <b>TO BE FILLED IN BY NTPC</b> |    |                 |  |  |         |
|                                                                                   |                                                                                                                                | <b>ITEM /EQUIPMENT:</b><br><b>GRAVIMETRIC FEEDERS</b><br><br><b>SUB-SYSTEM : SG</b> | <b>QP NO.: CQP: 1488</b><br><b>REV. NO.: 02</b><br><b>DATE: 20.01.2025</b><br><b>Page 2 of 6</b> | <b>SIGN. OF MFGR'S</b><br><br><b>MD FAHAD</b> | <b>QP No.: 0000-999-QVM-P-259</b><br><b>Rev.: 04 Date: 20.01.2025</b><br><b>Page 2 of 6</b><br><b>VALID UPTO:</b> | <b>REVIEWED BY:</b><br><b>SRINIVASA RAO</b><br><b>USIRIKAYALA</b><br><small>Digitally signed by SRINIVASA RAO USIRIKAYALA Date: 2023.01.28 11:43:29 +05'30'</small> | <b>APPROVED BY:</b><br><b>HEMA NT PAWGI</b><br><small>Digitally signed by HEMANT PAWGI DN: cn=HEMA NT PAWGI, o=PERSCNALL, serialNumber=2025076416a5, email=HEMA NT PAWGI@PERSCNALL, c=IN, Date: 2025.01.28 12:50:04 +05'30'</small> |                                                                                     |                                |    |                 |  |  |         |
| SL. NO.                                                                           | COMPONENT & OPERATIONS                                                                                                         | CHARACTERISTICS                                                                     | CLASS                                                                                            | TYPE OF CHECK                                                                                                                    | QUANTUM OF CHECK<br>M C/N                                                                                         |                                                                                                                                                                     | REFERENCE DOCUMENT#                                                                                                                                                                                                                 | ACCEPTANCE NORMS                                                                    | FORMAT OF RECORD               |    | AGENCY<br>M C N |  |  | REMARKS |
| 1.                                                                                | 2.                                                                                                                             | 3.                                                                                  | 4.                                                                                               | 5.                                                                                                                               | 6.                                                                                                                |                                                                                                                                                                     | 7.                                                                                                                                                                                                                                  | 8.                                                                                  | 9.                             | D* | ** 10           |  |  | 11.     |

|       |                                                                             |                                              |   |                     |      |      |                                           |     |  |   |   |    |                                                 |
|-------|-----------------------------------------------------------------------------|----------------------------------------------|---|---------------------|------|------|-------------------------------------------|-----|--|---|---|----|-------------------------------------------------|
| 1.5   | Rounds                                                                      | Chemical & Mechanical properties             | A | T.C Verification    | 100% | 100% | As per Material Specification             | R   |  | P | V | V@ | @ Verification for SS & Alloy steel only        |
|       |                                                                             | Soundness (UT*)                              | A |                     |      |      |                                           | TC  |  | P | V | V  | * For Dia. > 50 mm                              |
| 1.6   | Sub-Deliveries                                                              |                                              |   |                     |      |      |                                           |     |  |   |   |    |                                                 |
| 1.6.1 | Feeder Belts, Bulls eye lens                                                | Compliance to purchase order                 | A | Review of Documents | 100% | 100% | BHEL Purchase Specification               | COC |  | P | V | V  |                                                 |
| 1.6.2 | Gear box Assembly including motor, Feeder Main & Clean-out Conveyor Drives. | Run test, Type & Routine test for motors     | A | Review of Documents | 100% | 100% | BHEL Purchase Specification. & IS :325 \$ | TC  |  | P | V | V  | \$ Procured with TC from BHEL approved sources. |
| 1.6.3 | Remote and local Cabinets,                                                  | Overall Dimensions Functional Test H.V. Test | C | Review of Documents | 100% | 100% | NTPC approved QP & CHP Clearance reports. | CHP |  | P | V | V  |                                                 |
| 1.6.4 | Feeder Electronics such as Load cell etc.                                   | Compliance to P.O                            | C | Review of           | 100% | 100% | BHEL purchase specification               | COC |  | P | V | V  |                                                 |

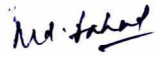
**LEGEND: \* RECORDS**, IDENTIFIED WITH “TICK” (✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. **CLASS:** A- CRITICAL B – MAJOR C- MINOR R-RECORD TC- TEST CERTIFICATE COC – CERTIFICATE OF CONFORMANCE  
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|  | <b>MANUFACTURER'S NAME AND ADDRESS</b><br><b>BHEL: TIRUCHIRAPPALLI/</b><br><b>APPROVED SUB –</b><br><b>CONTRACTORS/VENDORS</b> | <b>REFERENCE QUALITY PLAN</b>                                                       |                                                                                                  |                                                                                                                                  |                                                                                                                   |                                                                                                                                                                     |                                                                                                                                                     |  | <b>TO BE FILLED IN BY NTPC</b> |    |                 |  |  |         |
|                                                                                   |                                                                                                                                | <b>ITEM /EQUIPMENT:</b><br><b>GRAVIMETRIC FEEDERS</b><br><br><b>SUB-SYSTEM : SG</b> | <b>QP NO.: CQP: 1488</b><br><b>REV. NO.: 02</b><br><b>DATE: 20.01.2025</b><br><b>Page 3 of 6</b> | <b>SIGN. OF MFGR'S</b><br><br><b>MD FAHAD</b> | <b>QP No.: 0000-999-QVM-P-259</b><br><b>Rev.: 04 Date: 20.01.2025</b><br><b>Page 3 of 6</b><br><b>VALID UPTO:</b> | <b>REVIEWED BY:</b><br><b>SRINIVASA RAO</b><br><small>Digitally signed by SRINIVASA RAO USIRIKAYALA Date: 2025.01.28 11:43:46 +05'30'</small><br><b>USIRIKAYALA</b> | <b>APPROVED BY:</b><br><b>HEMA</b><br><b>NT</b><br><b>PAWG</b><br><small>Digitally signed by HEMA NT PAWG Date: 2025.01.28 12:35:13 +05'30'</small> |                                                                                     |                                |    |                 |  |  |         |
| SL. NO                                                                            | COMPONENT & OPERATIONS                                                                                                         | CHARACTERISTICS                                                                     | CLASS                                                                                            | TYPE OF CHECK                                                                                                                    | QUANTUM OF CHECK<br>M C/N                                                                                         |                                                                                                                                                                     | REFERENCE DOCUMENT#                                                                                                                                 | ACCEPTANCE NORMS                                                                    | FORMAT OF RECORD               |    | AGENCY<br>M C N |  |  | REMARKS |
| 1.                                                                                | 2.                                                                                                                             | 3.                                                                                  | 4.                                                                                               | 5.                                                                                                                               | 6.                                                                                                                |                                                                                                                                                                     | 7.                                                                                                                                                  | 8.                                                                                  | 9.                             | D* | ** 10           |  |  | 11.     |

|     |                          |                                            |   |                                   |                      |                      |                                                |            |  |   |   |   |  |                                                                                                      |
|-----|--------------------------|--------------------------------------------|---|-----------------------------------|----------------------|----------------------|------------------------------------------------|------------|--|---|---|---|--|------------------------------------------------------------------------------------------------------|
| 2.0 | INPROCESS                |                                            |   |                                   |                      |                      |                                                |            |  |   |   |   |  |                                                                                                      |
| 2.1 | Cold rolling: Body Shell | Length & Diameter                          | B | Measurement                       | 100%                 | 100%                 | As per Drawing                                 | R          |  | P | V | V |  |                                                                                                      |
| 2.2 | Welding                  | WPS, Procedure & Personnel Qualification   | B | Review of Documents               | 100%                 | 100%                 | AWS D 1.1/ASME SEC IX                          | WPS & List |  | P | V | V |  |                                                                                                      |
| 2.3 | Weld joints              | Weld size                                  | C | Visual                            | 100%                 |                      | Note 2                                         | -          |  | P | P | - |  |                                                                                                      |
|     |                          | Weld quality                               |   | LPI/MPI                           | 10%                  | 10%                  | BHE: NDT: PB: PT01<br>BHE: NDT: PB: MT01       | R          |  | P | P | V |  | Welds in the casing / pulley fabrication shall be checked with MPI                                   |
| 2.4 | Machining                | Overall dimensions. Orientation and Finish | B | Measurement                       | 100%                 | 100%                 | As per relevant Drawings                       | R          |  | P | P | V |  |                                                                                                      |
| 2.5 | Feeder body              | Strength                                   | A | Hydro test (Explosion proof test) | # one /type and size | # one /type and size | Test pr. At 50 PSI as per Drawing (Type test): | R          |  | P | W | V |  | # If Type test has already been performed for the same type and size of Feeders, clearance from NTPC |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| <b>LEGEND: * RECORDS</b> , IDENTIFIED WITH “TICK” (✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. <b>CLASS:</b> A- CRITICAL B – MAJOR C- MINOR R-RECORD TC- TEST CERTIFICATE<br><b>COC – CERTIFICATE OF CONFORMANCE</b><br><b>** M:</b> MANUFACTURER/SUB-SUPPLIER <b>C:</b> MAIN SUPPLIER, <b>N:</b> NTPC <b>P:</b> PERFORM <b>W:</b> WITNESS AND <b>V:</b> VERIFICATION. AS APPROPRIATE. <b>CHP:</b> NTPC SHALL IDENTIFY IN COLUMN “N” AS ‘W’ | <b>Note:# NTPC Inspection Engineer to check, approval date/ revision no. of reference documents at the time of Inspection</b> |
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|                                                                                   |                                                                                                                                |                                                                                     |                                                                                                  |                                                                                                                                  |                                                                                                                   |                                                                                                                                                                                                                     |                                                                                                                                                                                       |                                                                                     |                                |    |                 |  |  |         |
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|                                                                                   |                                                                                                                                | <b>ITEM /EQUIPMENT:</b><br><b>GRAVIMETRIC FEEDERS</b><br><br><b>SUB-SYSTEM : SG</b> | <b>QP NO.: CQP: 1488</b><br><b>REV. NO.: 02</b><br><b>DATE: 20.01.2025</b><br><b>Page 4 of 6</b> | <b>SIGN. OF MFGR'S</b><br><br><b>MD FAHAD</b> | <b>QP No.: 0000-999-QVM-P-259</b><br><b>Rev.: 04 Date: 20.01.2025</b><br><b>Page 4 of 6</b><br><b>VALID UPTO:</b> | <b>REVIEWED BY:</b><br><b>SRINIVASA RAO</b><br><small>USIRIKAYALA</small><br><small>Digitally signed by SRINIVASA RAO</small><br><small>DN: cn=SRINIVASA RAO, o=USIRIKAYALA, email=usirika@nptc.co.in, c=IN</small> | <b>APPROVED BY:</b><br><b>HEMA NT PAWGI</b><br><small>Digitally signed by HEMA NT PAWGI</small><br><small>DN: cn=HEMA NT PAWGI, o=USIRIKAYALA, email=usirika@nptc.co.in, c=IN</small> |                                                                                     |                                |    |                 |  |  |         |
| SL. NO                                                                            | COMPONENT & OPERATIONS                                                                                                         | CHARACTERISTICS                                                                     | CLASS                                                                                            | TYPE OF CHECK                                                                                                                    | QUANTUM OF CHECK<br>M C/N                                                                                         |                                                                                                                                                                                                                     | REFERENCE DOCUMENT#                                                                                                                                                                   | ACCEPTANCE NORMS                                                                    | FORMAT OF RECORD               |    | AGENCY<br>M C N |  |  | REMARKS |
| 1.                                                                                | 2.                                                                                                                             | 3.                                                                                  | 4.                                                                                               | 5.                                                                                                                               | 6.                                                                                                                |                                                                                                                                                                                                                     | 7.                                                                                                                                                                                    | 8.                                                                                  | 9.                             | D* | ** 10           |  |  | 11.     |

|     |                                                 |                                   |   |                       |                     |                     |                                                 |     |  |   |   |    |                                                                                                                                                                                        |
|-----|-------------------------------------------------|-----------------------------------|---|-----------------------|---------------------|---------------------|-------------------------------------------------|-----|--|---|---|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2.6 | Weigh span roller, Head Pulley & Take up pulley | Dimensions                        | C | Measurement           | 100%                | 100%                | As per Drawing                                  | R   |  | P | P | V  | engineering will be provided based on review of type test report. Else, type test shall be performed and witnessed by NTPC                                                             |
| 2.7 | Feeder leak test                                | Feeder housing leakage            | A | Air test              | 100%                | 100%                | As per drawing                                  | R   |  | P | P | W  |                                                                                                                                                                                        |
| 2.8 | Feeder & Cabinet Final & Electrical test        | Functional & Calibration          | A | Visual & Measurements | 100%                | \$                  | As per drawing & approved separate quality plan | CHP |  | P | P | -  |                                                                                                                                                                                        |
| 2.9 | Feeder performance                              | Weighing accuracy & Repeatability | A | Type test             | #One/ type and size | #One/ type and size | QA:CI:STD:PR:11, QA:CI:STD:PR:19, Drawings      | R   |  | P | P | V# | # If Type test has already been performed for the same type and size of Feeders, clearance from NTPC engineering will be provided based on review of type test report. Else, type test |

**LEGEND: \* RECORDS, IDENTIFIED WITH "TICK" (✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. CLASS: A- CRITICAL B – MAJOR C- MINOR R-RECORD TC- TEST CERTIFICATE COC – CERTIFICATE OF CONFORMANCE**  
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|------------|----------------------------|--------------------------------------------------------------------------------------------------------|---|------------------------------|------------------------|------|--------------------------------------------------------|---|---|---|---|----|------------------------------------------|
|            |                            |                                                                                                        |   |                              |                        |      |                                                        |   |   |   |   |    | shall be performed and witnessed by NTPC |
| <b>3.0</b> | FINAL                      |                                                                                                        |   |                              |                        |      |                                                        |   |   |   |   |    |                                          |
| <b>3.1</b> | Verification of completion | Final Assembly, Orientation, Completeness, Overall dimensions & All accessories intact in its position | B | Measurements Verification    | 100%                   | 100% | As per drawing & the approved QP                       | R | √ | P | P | W  |                                          |
| <b>3.2</b> | Painting, & Preservation   | Paint Finish<br>Coat thickness<br>Identification                                                       | C | Visual Measurement<br>Visual | 100%<br>Random<br>100% | --   | As per specific painting scheme* & Drawing             | R |   | P | V | -- | *Approved by NTPC Engg.                  |
| <b>3.3</b> | Data folder                | QP Compliance Project                                                                                  | B | Compliance of records        | 100%                   | --   | TCs for SS & AS Material & NTPC CHPs clearance records | R |   | P | V | -- |                                          |

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|                                                                                   |                        |                                                                                                                         |       |                                                                       |                           |                                                                                                  |                     |                                                                                     |                  |                                                                                              |                 |                                                                                                                                                |  |                                                                                                                   |
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|                                                                                   |                        |                                                                                                                         |       | ITEM /EQUIPMENT:<br><b>GRAVIMETRIC FEEDERS</b><br><br>SUB-SYSTEM : SG |                           | QP NO.: <b>CQP: 1488</b><br>REV. NO.: <b>02</b><br>DATE: <b>20.01.2025</b><br>Page <b>6 of 6</b> |                     | SIGN. OF MFGR'S<br><br>MD FAHAD                                                     |                  | QP No.: 0000-999-QVM-P-259<br>Rev.: 04 Date: 20.01.2025<br>Page <b>6 of 6</b><br>VALID UPTO: |                 | REVIEWED BY:<br>SRINIVASA RAO<br>USIRIKAYALA<br><small>Digitally signed by SRINIVASA RAO USIRIKAYALA Date: 2025.01.28 11:45:04 +05'30'</small> |  | APPROVED BY:<br>HEMANT PAWGI<br><small>Digitally signed by HEMANT PAWGI Date: 2025.01.28 12:38:15 +05'30'</small> |
| SL. NO                                                                            | COMPONENT & OPERATIONS | CHARACTERISTICS                                                                                                         | CLASS | TYPE OF CHECK                                                         | QUANTUM OF CHECK<br>M C/N |                                                                                                  | REFERENCE DOCUMENT# | ACCEPTANCE NORMS                                                                    | FORMAT OF RECORD |                                                                                              | AGENCY<br>M C N |                                                                                                                                                |  | REMARKS                                                                                                           |
| 1.                                                                                | 2.                     | 3.                                                                                                                      | 4.    | 5.                                                                    | 6.                        |                                                                                                  | 7.                  | 8.                                                                                  | 9.               | D*                                                                                           | ** 10           |                                                                                                                                                |  | 11.                                                                                                               |

Note 1: For all NDT and other BHEL procedures referred in this RQP, the latest versions are applicable.

## NOTE 2: VISUAL INSPECTION

- a) Visual inspection of welds shall be performed after completion of all welding and subsequent cooling to room temperature.
- b) All welds shall be cleaned to remove the slag, spatter etc. and visually examined for defects like crack, undercut, porosity lack of fusion etc.
- c) The welds shall be examined as below for size, shape and Reinforcement.

| Nature of defects                                         | Accepted norms | Disposition                          |
|-----------------------------------------------------------|----------------|--------------------------------------|
| i) Crack, Lack of fusion & overlap                        | Not accepted   | To be repaired & retested by LPI/MPI |
| ii) Crater                                                | Not accepted.  | To be repaired                       |
| iii) Undercut, porosity, undersize and weld reinforcement | AWS D1.1       |                                      |

## iv) WELD CONTOUR

|                |                                                                                                               |
|----------------|---------------------------------------------------------------------------------------------------------------|
| Face of fillet | Flat or concave accepted.<br>Convexity up to $< 0.1S + 1.5\text{mm}$ is acceptable where S is the fillet size |
| Size (Minimum) | As per drawing.                                                                                               |
| Reinforcement  | As per AWS D 1.1                                                                                              |

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