



**BHARAT HEAVY ELECTRICALS LIMITED**  
**PROJECT ENGINEERING MANAGEMENT, NOIDA**

Date-3-Jan-26

**CORRIGENDUM- 06**

|            |   |                                                  |
|------------|---|--------------------------------------------------|
| PROJECTS   | : | 1X800 MW HPGCL YAMUNANAGAR STPP                  |
| PACKAGE    | : | Water Treatment Package                          |
| ENQUIRY NO | : | 77/25/6221/AMI dated 10-12-2022                  |
| SUBJECT    | : | Techno-commercial changes and due date extension |

| Type of Corrigendum     |                                     |                          |                                     |
|-------------------------|-------------------------------------|--------------------------|-------------------------------------|
| Technical Corrigendum - | <input checked="" type="checkbox"/> | Commercial Corrigendum - | <input checked="" type="checkbox"/> |

Bidders are requested to note the following -

- Amendment to technical specifications is enclosed herewith.
- Revised delivery schedule (annexure-A to NIT) is enclosed herewith. Accordingly, time period mentioned in clause no. 21 of NIT to be read as 33 months.
- Due date & time of bid submission has been extended up to 07.01.2026 @ 12.00 PM. Bid opening shall be done at 04:00 PM on the due date.

All the other terms and conditions of the tender enquiry remain unchanged. All the bidders are requested to quote accordingly.

Yours faithfully,  
For and on behalf of BHEL

Upendra Chaudhary  
DGM/BOP



**AMENDMENT TO TECHNICAL SPECIFICATION FOR  
WATER TREATMENT PACKAGES  
YAMUNANAGAR**

BHEL DOCUMENTS NO.:

TECHNICAL AMENDMENT NO # 1

REV. NO. 00

DATE:

Page 1 of 4

The following modifications with respect to Technical Specification for Water Treatment Packages. BHEL's Technical specification no PE-TS-510-404-W001 shall apply.

Bidder to note that existing clauses/ details as appearing in the specification stands deleted and clauses/details as mentioned in "Modified to or Read as" column shall be applicable and complied by the bidder as listed below in **SCHEDULE A**.

**SCHEDULE-A**

**MODIFIED CLAUSES/ PAGE NUMBERS:**

| SL NO. | SECTION | SUB-SECTION/ DESCRIPTION | CLAUSE NO | PAGE NO                 | EXISTING                                                                                                                                                                                                                                                                                                                                                                                     | ADDITION/ MODIFICATION                                                                                                                                                                                                                                                                                                                                             |
|--------|---------|--------------------------|-----------|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.     | -       | -                        | Sl no.1   | Pdf pg.no. 3693 of 3818 | "Measuring instruments (primary & secondary), SWAS equipment offered for this package shall have at least one year's satisfactory operation prior to the date(14.09.2023) of Techno-Commercial bid opening in one power station having unit rating of 660 MW or above." To qualify to this point bidder to submit the performance feedback from the End users.                               | To be read as-<br>Measuring instruments (primary & secondary), SWAS equipment offered for this package shall have at least one year's satisfactory operation prior to the date of Techno-Commercial bid opening in one power station having unit rating of 660 MW or above. To qualify to this point bidder to submit the performance feedback from the End users. |
| 2.     | -       | -                        | Sl no.6   | Pdf pg.no.3693 of 3818  | BHEL shall submit credentials/details furnished by Bidder (SHS/System Integrator) vendor with their offers to customer and await customer's decision for a maximum of one month from the date of PQ bid opening. If approval is not received within above period, BHEL shall treat the offer as "NOT Meeting PQ" criteria and offer shall be rejected. Confirmation from bidder is required. | DELETED                                                                                                                                                                                                                                                                                                                                                            |
| 3.     | -       | -                        |           | Pdf pg.no.3694 of 3818  | Note: In case Bidder does not submit details mentioned in above clauses (AA) or meet the requirements of Pre-qualification requirements                                                                                                                                                                                                                                                      | DELETED                                                                                                                                                                                                                                                                                                                                                            |



**AMENDMENT TO TECHNICAL SPECIFICATION FOR  
WATER TREATMENT PACKAGES  
YAMUNANAGAR**

BHEL DOCUMENTS NO.:

TECHNICAL AMENDMENT NO # 1

REV. NO. 00

DATE:

Page 2 of 4

|     |   |                                           |                      |                                 |                                                                                                                                                                                            |                                                                                                                                                                                                                                |
|-----|---|-------------------------------------------|----------------------|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |   |                                           |                      |                                 | (AA), Offers will be summarily rejected and Bidder's Technical offers/proposals will not be evaluated. Please read carefully the GENERAL INSTRUCTIONS in Section A of this specifications. |                                                                                                                                                                                                                                |
| 4.  | - | -                                         | Sl no. 2a            | Pdf pg.no. 3696 of 3818         | CONDUCTIVITY (SPECIFIC, CATION) ANALYSER - SINGLE CHANNEL – Quantity 17                                                                                                                    | Quantity shall be read as 19 (instead of 17)                                                                                                                                                                                   |
| 5.  | - | -                                         | Sl no.10             | Pdf pg.no.3696 of 3818          | SUPERVISION OF ERECTION, TOTAL COMMISSIONING AND HANDING OVER OF SWAS SYSTEM                                                                                                               | To be read as- COMPLETE ERECTION AND COMMISSIONING AND HANDING OVER OF SWAS SYSTEM                                                                                                                                             |
| 6.  |   |                                           |                      | Pdf pg.no. 3696 of 3818         | SL no.11 & 12                                                                                                                                                                              | DELETED                                                                                                                                                                                                                        |
| 7.  |   |                                           | Vendor List for SWAS | Pdf pg.no. 3765 of 3818         | Vendors to note that components of Sample Handling System and Analysers, above indicated vendors only will be acceptable.                                                                  | To be read as- Vendor List is Indicative. BHEL approved vendor only would be accepted which shall be finalised during detailed engineering.                                                                                    |
| 8.  |   |                                           |                      | Pdf pg.no. 3716 to 3731 of 3818 | SWAS SCHEME                                                                                                                                                                                | EDN shall be read as Water Treatment Package Vendor, PEM shall be read as BHEL However, sample piping from tapping point to entry of Primary rack and from outside of Primary rack to SWAS Wet Panel shall be in BHEL's scope. |
| 9.  |   |                                           |                      | Pdf pg.no. 3730 & 3731 of 3818  | DMCW (SG), DMCW (TG)                                                                                                                                                                       | These pages shall be replaced by Annexure-I                                                                                                                                                                                    |
| 10. |   |                                           |                      | <b>Addition</b>                 |                                                                                                                                                                                            | Annexure-II shall be added after page 3711 of 3818                                                                                                                                                                             |
| 11. |   | MAIN PRICE FORMAT WATER TREATMENT PACKAGE | 1.0 (B5)             | Pdf pg no. 1 of 12              | Supervision of E&C for SWAS                                                                                                                                                                | "Deleted".<br><br>Explanation: - Accordingly, the price of E&C of SWAS shall be quoted in 1.0 (B2) by bidder.                                                                                                                  |



**AMENDMENT TO TECHNICAL SPECIFICATION FOR  
WATER TREATMENT PACKAGES  
YAMUNANAGAR**

BHEL DOCUMENTS NO.:

TECHNICAL AMENDMENT NO # 1

REV. NO. 00

DATE:

Page 3 of 4

|     |  |                                                    |       |                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----|--|----------------------------------------------------|-------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |  |                                                    |       |                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Accordingly, clauses related to supervision of E&C stands deleted.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 12. |  | MAIN PRICE<br>FORMAT_WATER<br>TREATMENT<br>PACKAGE | 1.0   | Pdf pg no. 5 of<br>12 | Total lump sum firm price for SUPPLY PART, SERVICES PART & MANDATORY SPARES (Mechanical, Electrical Works & Civil Works) comprising of design .....and jointing kits, trefoil clamps, local motor starters, push buttons, insulating mats, VFD etc.), Steam and Water Analysis System (SWAS) & Civil Works, <b>Erection &amp; commissioning (only Supervision of E&amp;C applicable for SWAS)</b> , trial run at site, carrying out Performance guarantee tests at site and training of customer/ client O&M staff for the turnkey packages, Operation and Maintenance of CW treatment plant and final handing over to end customer in flawless condition for project and packages specified above, complete with all accessories for the total scope defined as per BHEL NIT & tender technical specification, amendment & agreements till placement of order. | To be read as "Total lump sum firm price for SUPPLY PART, SERVICES PART & MANDATORY SPARES (Mechanical, Electrical Works & Civil Works) comprising of design .....and jointing kits, trefoil clamps, local motor starters, push buttons, insulating mats, VFD etc.), Steam and Water Analysis System (SWAS) & Civil Works, <b>Erection &amp; commissioning</b> , trial run at site, carrying out Performance guarantee tests at site and training of customer/ client O&M staff for the turnkey packages, Operation and Maintenance of CW treatment plant and final handing over to end customer in flawless condition for project and packages specified above, complete with all accessories for the total scope defined as per BHEL NIT & tender technical specification, amendment & agreements till placement of order". |
| 13. |  | MAIN PRICE<br>FORMAT_WATER<br>TREATMENT<br>PACKAGE | 2.2.2 | Pdf pg no. 6 of<br>12 | Total lumpsum firm prices inclusive of all prevailing taxes.....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | "Deleted". Accordingly, prices for E&C of SWAS to be quoted in 2.2.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 14. |  |                                                    |       | <b>Addition</b>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | The successful bidder shall finalize the supplier(s) for the outsourced package(s), and convey the same to BHEL within                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |



AMENDMENT TO TECHNICAL SPECIFICATION FOR  
WATER TREATMENT PACKAGES  
YAMUNANAGAR

BHEL DOCUMENTS NO.:

TECHNICAL AMENDMENT NO # 1

REV. NO. 00

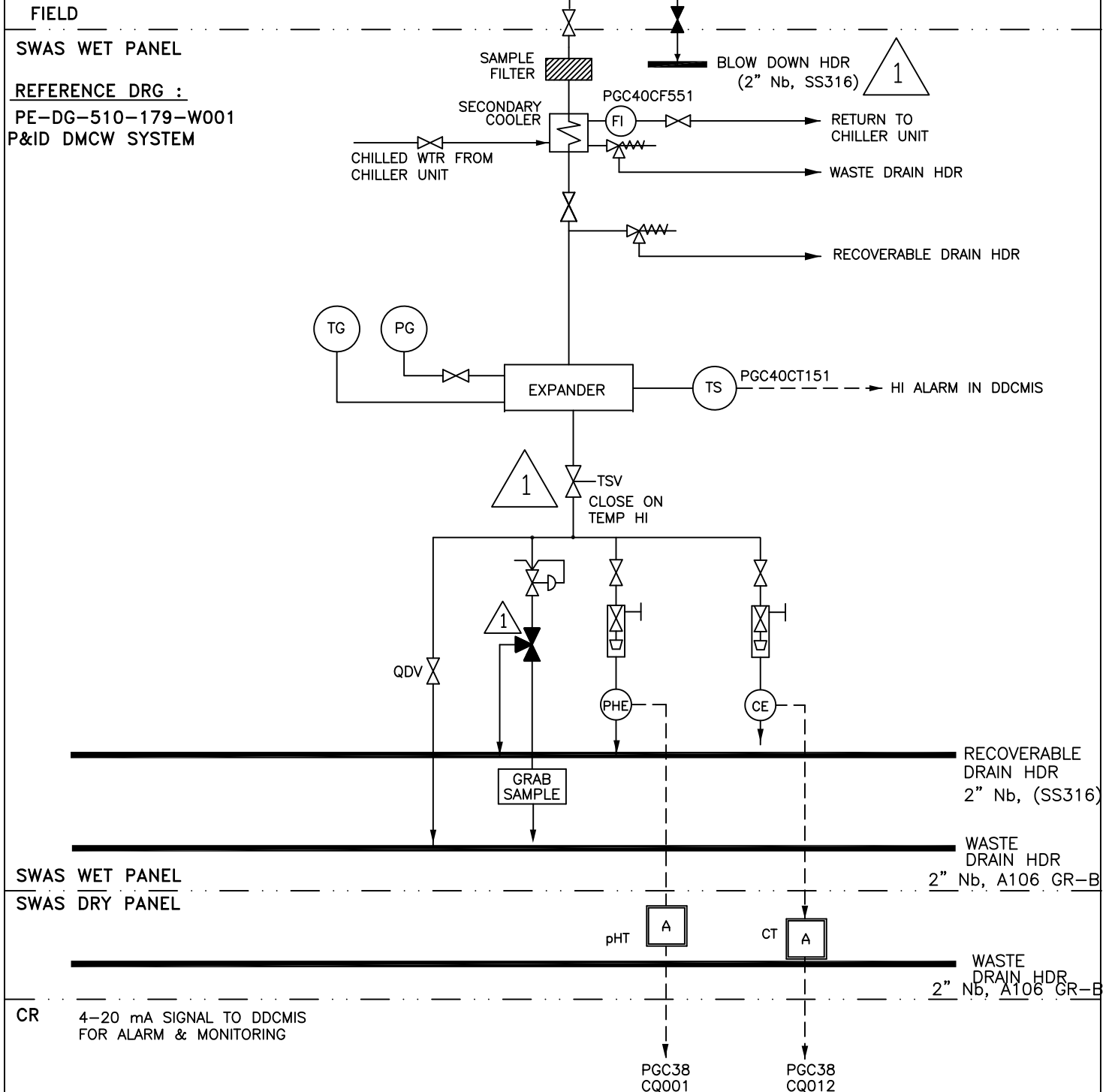
DATE:

Page 4 of 4

|     |  |  |  |          |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----|--|--|--|----------|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |  |  |  |          |  | forty-five (45) days from the date of award of the LOI/LOA. The successful bidder shall furnish the unpriced PO copies to BHEL, failing which, BHEL reserves the right of taking necessary action including the withdrawal/offloading of the respective work(s) and execute as per the provisions of the contract and at the cost of the successful bidder. In view of this, it is expected that the successful bidder will take advance action to avoid delay in ordering of the packages after LOI/LOA placement. |
| 15. |  |  |  | Addition |  | For bought-out items (including instruments, analysers etc.) of this complete package, prior approval of BHEL would have to be obtained before placement of orders to ensure that only proven and best available items in the market are supplied. Uniformity in make of instruments and analysers shall be ensured.                                                                                                                                                                                                |

## PROCESS :

| PARAMETER | DGN | ENGG UNIT              |
|-----------|-----|------------------------|
| PRESS     | 10  | Kg/cm <sup>2</sup> (g) |
| TEMP      | 60  | Deg C                  |



HPGCL

1X800 MW YAMUNANAGAR

TITLE

DMCW (SG)

DRG. NO.

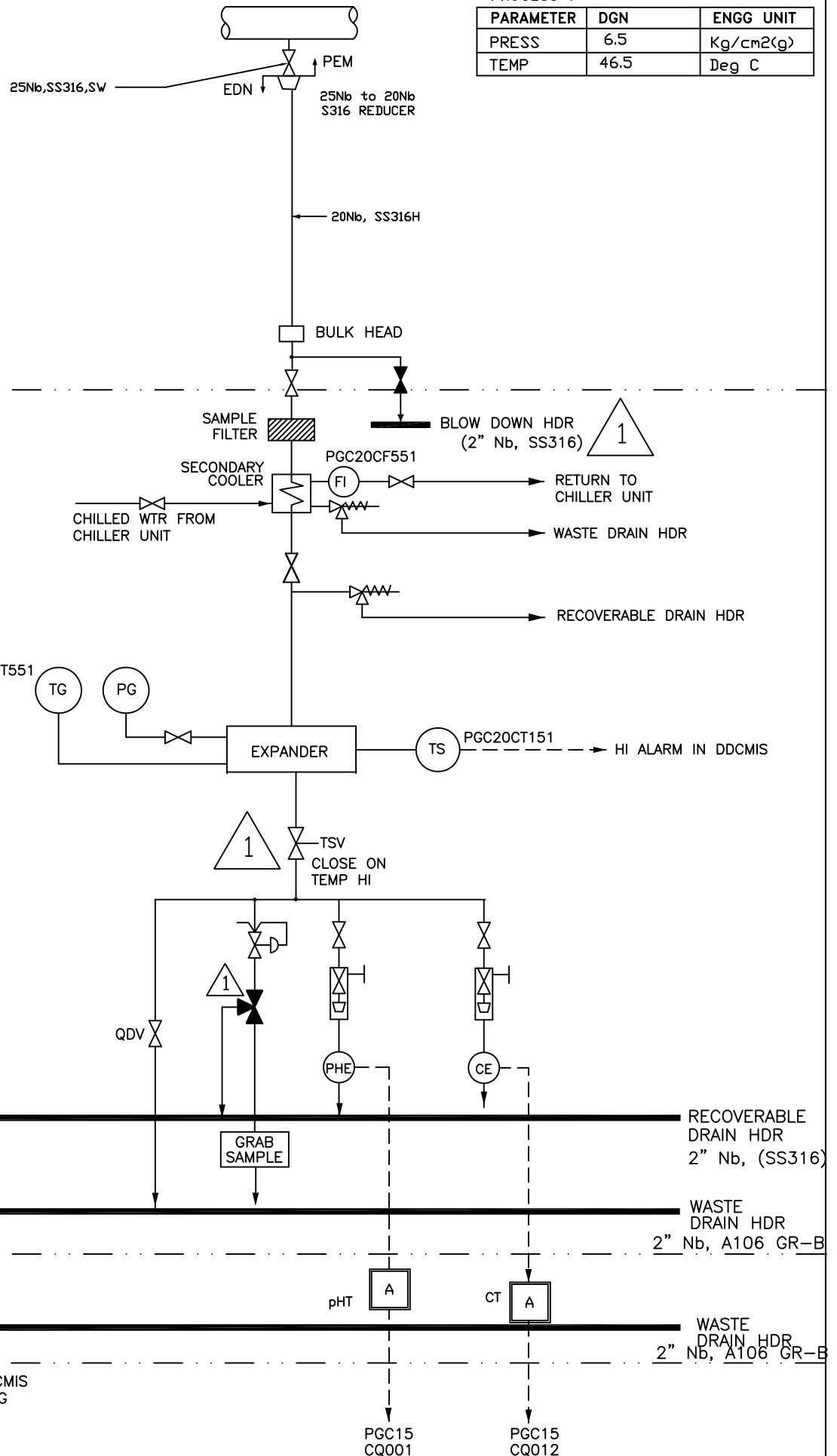
PE-DG-510-145-H110

SHEET 16 OF 17

REV 01

## PROCESS :

| PARAMETER | DGN  | ENGG UNIT              |
|-----------|------|------------------------|
| PRESS     | 6.5  | Kg/cm <sup>2</sup> (g) |
| TEMP      | 46.5 | Deg C                  |



SWAS WET PANEL  
SWAS DRY PANEL

CR 4-20 mA SIGNAL TO DDCMIS  
FOR ALARM & MONITORING



HPGCL

1X800 MW YAMUNANAGAR

TITLE

DMCW (TG)

DRG. NO.

PE-DG-510-145-H110

SHEET 17 OF 17

REV 01

**F CONTRACT QUANTITIES FOR SWAS**

**LIST OF ANALYSERS:**

| Sample                                                        | Measurements                                                                                                                                                                                                                                                                    |
|---------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Makeup DM water                                               | Specific Conductivity, Cation Conductivity, Silica, Sodium, Dissolved Oxygen                                                                                                                                                                                                    |
| CEP discharge                                                 | Specific Conductivity, Cation Conductivity, Silica, Sodium, pH, Dissolved Oxygen                                                                                                                                                                                                |
| CPU outlet                                                    | Specific Conductivity, Cation Conductivity, Silica, Sodium, pH                                                                                                                                                                                                                  |
| Deaerator                                                     | Silica, pH, Dissolved Oxygen                                                                                                                                                                                                                                                    |
| FW at Eco inlet                                               | Specific Conductivity, Cation Conductivity, Silica, Sodium, pH, Hydrazine, Dissolved Oxygen                                                                                                                                                                                     |
| Separator outlet                                              | Specific Conductivity, Cation Conductivity, Sodium                                                                                                                                                                                                                              |
| Separator O/L - LTSH I/L                                      | Specific Conductivity, Cation Conductivity, Silica, Sodium, Hydrazine                                                                                                                                                                                                           |
| Main Steam - HTSH O/L                                         | Specific Conductivity, Cation Conductivity, Silica, Sodium, pH                                                                                                                                                                                                                  |
| Reheated steam                                                | Specific Conductivity, Cation Conductivity, Silica, Sodium, pH                                                                                                                                                                                                                  |
| Closed circuit CW (TG & SG)                                   | pH, Specific Conductivity (Separate each type of analyser for TG and SG circuit).                                                                                                                                                                                               |
| Hotwell                                                       | Specific Conductivity (on each side)                                                                                                                                                                                                                                            |
| Condenser CW                                                  | Specific Conductivity, pH                                                                                                                                                                                                                                                       |
| Condenser Tube Leak detection at each inlet & outlet CW line. | Cation Conductivity (Insertion /Retractable Type)                                                                                                                                                                                                                               |
| <b>Note</b>                                                   | (i) Multi channel/stream for Silica & sodium Analysers shall be acceptable. Multi channel/stream analysers shall have at least one stream as spare without external sequencer. Multi channel/stream analysers shall have at least 50% streams as spare with external sequencer. |



|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>Any other analyser except Silica and Sodium shall be single channel only.</p> <p>(ii) Quantities &amp; Type of Analysers for OTHER BOP/Offsite packages shall be as specified elsewhere in the specification.</p> <p>(iii) The above indicated quantity are minimum and if the process requirement calls for any other services for measurement and performance of the plant the same shall be included in addition to the above services.</p> <p>(iv) The system shall be designed to provide 20% more than the maximum sample flow requirement.</p> <p>(v) Triple and Dual analysers shall be provided for DM Plant Controls and chemical/O2 dosing controls.</p> |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**Water Treatment Package - 1X800 MW HPGCL YAMUNANAGAR STPP**  
**Annexure-A to NIT for Delivery Schedule (Rev-01)**

| Scope                                                                           | Design & Engineering                                                                                                                                                                                    | Main Supply                | Mandatory Spares                                                                                                             | Erection & Commissioning<br>(Mechanical & Electrical)<br>including Civil as applicable | Operation & Maintenance |
|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|-------------------------|
| Package Name                                                                    |                                                                                                                                                                                                         |                            |                                                                                                                              |                                                                                        |                         |
| Chemical Dosing System (CDS)                                                    | Drawing/Documents submission & re-submission schedule shall be as per Technical Specification. BHEL shall provide observation / approval within 21 days from the date of document submission by bidder. | 21 Months from date of LOA | To be delivered along with the last consignment of main supply within the contractual delivery period of respective package. | 27 Months from LOA                                                                     |                         |
| Oxygen Dosing System (ODS)                                                      |                                                                                                                                                                                                         | 21 Months from date of LOA |                                                                                                                              | 27 Months from LOA                                                                     |                         |
| Chlorine Dioxide Dosing System                                                  |                                                                                                                                                                                                         | 16 Months from date of LOA |                                                                                                                              | 26 Months from LOA                                                                     |                         |
| Sewage Treatment Plant                                                          |                                                                                                                                                                                                         | 24 Months from date of LOA |                                                                                                                              | 33 Months from LOA                                                                     |                         |
| Effluent Treatment Plant                                                        |                                                                                                                                                                                                         | 21 Months from date of LOA |                                                                                                                              | 29 Months from LOA                                                                     |                         |
| Condensate Polishing Plant                                                      |                                                                                                                                                                                                         | 21 Months from date of LOA |                                                                                                                              | 29 Months from LOA                                                                     |                         |
| CW Chemical Treatment                                                           |                                                                                                                                                                                                         | 22 Months from date of LOA |                                                                                                                              | 30 Months from LOA                                                                     |                         |
| Pre Treatment Plant                                                             |                                                                                                                                                                                                         | 20 Months from date of LOA |                                                                                                                              | 26 Months from LOA                                                                     |                         |
| Demineralization Plant                                                          |                                                                                                                                                                                                         | 18 Months from date of LOA |                                                                                                                              | 26 Months from LOA                                                                     |                         |
| COLTCS                                                                          |                                                                                                                                                                                                         | 21 Months from date of LOA |                                                                                                                              | 25 Months from LOA                                                                     |                         |
| Plate Heat Exchanger (PHE)                                                      |                                                                                                                                                                                                         | 18 Months from date of LOA |                                                                                                                              | 23 Months from LOA                                                                     |                         |
| Self-Cleaning Strainer                                                          |                                                                                                                                                                                                         | 18 Months from date of LOA |                                                                                                                              | 22 Months from LOA                                                                     |                         |
| Miscellaneous Pumps (VERTICAL)                                                  |                                                                                                                                                                                                         | 18 Months from date of LOA |                                                                                                                              | 22 Months from LOA                                                                     |                         |
| Miscellaneous Pumps (HORIZONTAL)                                                |                                                                                                                                                                                                         | 18 Months from date of LOA |                                                                                                                              | 22 Months from LOA                                                                     |                         |
| Sump Pumps/ Submersible Pumps                                                   |                                                                                                                                                                                                         | 20 Months from date of LOA |                                                                                                                              | NA                                                                                     |                         |
| Clarified and Service Water System (excluding Miscellaneous Pumps)              |                                                                                                                                                                                                         | 18 Months from date of LOA |                                                                                                                              | 24 Months from LOA                                                                     |                         |
| DM Water Storage Tank and DM Make up system (excluding Miscellaneous Pumps)     |                                                                                                                                                                                                         | 18 Months from date of LOA |                                                                                                                              | 24 Months from LOA                                                                     |                         |
| SWAS                                                                            |                                                                                                                                                                                                         | 22 Months from date of LOA |                                                                                                                              | 33 Months from LOA                                                                     |                         |
| Completion Schedule of all Water Treatment Packages (excluding AMS & O&M Scope) | 33 Months from LOA                                                                                                                                                                                      |                            |                                                                                                                              |                                                                                        |                         |

For PVC purpose, contractual delivery shall be considered as 33 months from the date of LOA.