

भारत सरकार  
GOVERNMENT OF INDIA

पंजीकृत

दूरभाष /Tel No: (01792)-273105,273377  
वेबसाईट/Website:www.crikasauli.nic.in  
ई-मेल/email : [director-crik-hp@gov.in](mailto:director-crik-hp@gov.in)

संख्या / No.:I-53/App/2021-22/St.  
केन्द्रीय अनुसंधान संस्थान,  
CENTRAL RESEARCH INSTITUTE,  
कसौली /KASAULI

दिनांक /Dated the: 04 AUG 2022

प्रेषक / From :

निदेशक / DIRECTOR,  
केन्द्रीय अनुसंधान संस्थान, कसौली (हि0प्र0)-173204  
CENTRAL RESEARCH INSTITUTE,  
KASAULI (HP) - 173 204. INDIA

To

Nodal Officer, Website Committee, CRI, Kasauli

विषय : संस्थान द्वारा 1 No. Pure Steam Generator हेतु आमंत्रित Tender बारे सूचना

महोदय

इस संस्थान द्वारा 1 No. Pure Steam Generator की खरीद हेतु केन्द्रीय सार्वजनिक खरीद पोर्टल (Central Public Procurement Portal [CPPP]) [www.eprocure.gov.in](http://www.eprocure.gov.in) तथा संस्थान की बैवसाईट [www.crikasauli.nic.in](http://www.crikasauli.nic.in) में निविदा सूचना (Tender notice) प्रकाशित की गयी है । यदि आप संस्थान को Pure Steam Generator की आपूर्ति करने के इच्छुक हैं तो टेंडर दस्तावेज Central Public Procurement Portal अथवा संस्थान की बैवसाईट से मुफ्त डाउनलोड किये जा सकते हैं तथा तदनुसार आप अपनी निविदायें दिनांक 23 अगस्त, 2022 दोपहर 2:00 बजे तक प्रस्तुत कर सकते हैं । टेंडर दस्तावेज संस्थान के भण्डार अनुभाग से भी प्राप्त किये जा सकते हैं ।

टेंडर की प्रति आपकी सूचनार्थ संलग्न की जा रही है ।

संलग्नक: उपरोक्त

भवदीय  
  
भण्डार अनुभाग  
केन्द्रीय अनुसंधान संस्थान,  
कसौली

टेलीफोन नं:01792-273105,273207

ई-मेल : [crikasaulistore@gmail.com](mailto:crikasaulistore@gmail.com)

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संख्या /No.I-53/App/2021-22-23/St.  
केन्द्रीय अनुसंधान संस्थान,  
CENTRAL RESEARCH INSTITUTE,  
दिनांक / Dated the:

निविदा सूचना

निदेशक केन्द्रीय अनुसंधान संस्थान, कसौली, जिला सोलन (हि0प्र0), भारत सरकार के राष्ट्रपति की ओर से निम्ननिर्दिष्ट वस्तु की खरीद हेतु दिनांक 23-08-2022 दोपहर 2:00 बजे तक मुहरबंद निविदायें आमंत्रित की जाती हैं।

क्रम संख्या	वस्तु का नाम	मात्रा	धरोहर राशि
1	Pure Steam Generator	01 No. (One complete unit)	Rs. 60,000/-

उपरोक्त निर्दिष्ट वर्ग से सम्बन्धित विनिर्देश एवं निविदा प्रलेखों (tender documents) को इस संस्थान से किसी भी कार्य दिवस पर अधोहस्ताक्षरी के कार्यालय से बिना किसी शुल्क के प्राप्त किया जा सकता है। निविदा प्रलेखों (tender documents) को इस संस्थान की बैबसाईट [www.crikasauli.nic.in](http://www.crikasauli.nic.in) से तथा भारत सरकार के केन्द्रीय सार्वजनिक खरीद पोर्टल (Central Public Procurement Portal) [www.eprocure.gov.in](http://www.eprocure.gov.in) से भी download किया जा सकता है। निविदायें दिनांक 23-08-2022 को दोपहर 2:30 बजे निविदाकर्ता अथवा उनके अधिकृत प्रतिनिधि, जो भी उस समय उपस्थित होना चाहें, के समक्ष खोली जायेंगी।

प्रत्येक निविदा के साथ उपरोक्त निर्दिष्ट प्रलेखों की प्रति जिसके प्रत्येक पृष्ठ पर निर्धारित नियमों के स्वीकृति के प्रतीक के रूप में निविदा दाता द्वारा विधिवत हस्ताक्षर किये गये हों अवश्य होनी चाहिए अन्यथा निविदायें अस्वीकृत की जा सकती हैं।

निविदा खोलने की तिथि को इस संस्थान में अवकाश होने की स्थिति में निविदायें पहुंचने और खोलने की तिथि स्वतः ही अगले कार्य दिवस तक बढ़ा दी जायेगी। समय तथा स्थान में कोई परिवर्तन नहीं किया जायेगा। किसी भी कारण निर्धारित समय और तिथि के पश्चात पहुंचने वाली निविदाओं पर विचार नहीं किया जायेगा और उन्हें सीधे ही अस्वीकृत कर दिया जायेगा।

सक्षम अधिकारी को बिना कोई कारण बताये निविदा को स्वीकृत अथवा अस्वीकृत करने का प्राधिकार प्राप्त है।

**Important Note:-**

1. It will be mandatory to the participating firms to attach point-wise compliance sheet for the attached specifications of the Pure Steam Generator and
2. Participating firms may submit their financial bid for (1) supply, installation, commissioning etc. of Pure Steam Generator and (2) year wise CMC charges for 5 years after the expiry of warranty period.

(डा0 डंपल कसाना)  
निदेशक

भारत सरकार  
**GOVERNMENT OF INDIA**

दूरभाष /Tel No: (01792)-273105,273377  
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संख्या / No.I-53/App/2021-22-23/St.  
केन्द्रीय अनुसंधान संस्थान,  
CENTRAL RESEARCH INSTITUTE,  
दिनांक / Dated the:

**TENDER NOTICE**

Sealed tenders are hereby invited by the Director, Central Research Institute, Kasauli, Distt. Solan(HP) on behalf of the President of India, upto **2:00PM on 23.08.2022** for the supply of under mentioned article to this Institute..

SI. No.	Name of Article/Item	Quantity	EMD amount
1	Pure Steam Generator	01 No. (One complete unit)	Rs. 60,000/-

Prescribed specifications and Tender documents for above item can be obtained free of cost during any working day from the office of undersigned. Tender Documents can also be downloaded from the website of the institute [www.crikasauli.nic.in](http://www.crikasauli.nic.in) or from Central Public Procurement Portal (CPPP) of Government of India [www.eprocure.gov.in](http://www.eprocure.gov.in). Tenders will be opened on 23.08.2022 at 2:30PM in presence of intending tenderer(s) or their authorized representative(s) who may wish to be present at that time.

Each tender must be accompanied by one complete copy of the above mentioned tender documents duly signed by the tenderer on each page as a token of acceptance of the prescribed terms and conditions failing which the tender shall be liable to rejection.

In case the date of receiving and opening of tender mentioned above falls on holiday in the institute, the date for receiving and opening the tender shall automatically be extended to the next working day, time and place remaining unaltered. Tender received after the prescribed date and time will not be considered.

The competent authority reserves the right to accept or reject the tenders received without assigning any reason thereof.

**Important Note:-**

1. It will be mandatory to the participating firms to attach point-wise compliance sheet for the attached specifications of the Pure Steam Generator and
2. Participating firms may submit their financial bid for (1) supply, installation, commissioning etc. of Pure Steam Generator and (2) year wise CMC charges for 5 years after the expiry of warranty period.

  
(Dr. Dimple Kasana)  
Director

(This letter along with **Earnest Money Deposit** be submitted in the Envelop No.1)

From:

M/s \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

To

The Director,  
Central Research Institute,  
**KASALI(HP)-173204.**

Subject: **EMD - Tender for supply of "Pure Steam Generator" at C.R.I. Kasauli**

Ref.: No.I-53/App/2021-22-23/St. dated \_\_\_\_\_

Sir,

Please find enclosed herewith Earnest Money Deposit(EMD) of Rs.60,000/- (Rupees Sixty Thousand only) in shape of a Demand Draft/Deposit-at-call/FDR issued by \_\_\_\_\_(Name of Bank) on \_\_\_\_\_ drawn in favour of the Director, Central Research Institute, Kasauli valid for a period of \_\_\_\_\_ months/years.

Thanking you,

Yours faithfully,

Enclosed : EMD

SIGNATURE  
Seal of the firm with full address.

(This letter alongwith **Financial Bid** be submitted in the Envelop No.2 )

From:-

M/s \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

To

The Director,  
Central Research Institute,  
Kasauli.

Subject: **Financial Bid for supply of "Pure Steam Generator" at Central Research Institute, Kasauli(HP).**

Ref.: No. I-53/App/2021-22-23/St. dated \_\_\_\_\_

Sir,

Please find enclosed Financial Bid containing (1) Financial Bid for supply, installation and commissioning etc. of Pure Steam Generator and (2) CMC proposal/charges for 5 years after completion of warranty period of Pure Steam Generator (duly signed and stamped) at Central Research Institute, Kasauli(HP).

Thanking you,

Yours faithfully,

Enclosed:- Financial Bid.

Signature  
Seal of the firm with full address.

This letter alongwith Technical Bid and Tender Documents to be submitted in the Envelop No.3 (from page No. 1 to .....)

From:

M/s \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

To

The Director,  
Central Research Institute,  
KASAULI(HP)-173204.

Subject: Technical Bid - Tender for supply of one Pure Steam Generator at Central Research Institute, Kasauli(HP).

Ref.: No.I-53/App/2021-22-23/St. dated \_\_\_\_\_

Sir,

Being duly authorized to represent and act on behalf of .....(herein after referred to as "the applicant"), and having reviewed and fully understood the instructions and terms & conditions, the undersigned hereby apply in response to the Tender for supply of one Pure Steam Generator. We are enclosing all the documents with annexures as per the requirements.

I have read, understood and agree to the terms and condition of the tender documents. I also hereby declare that the information submitted by me herewith is true and if any information is found to be false/wrong/misleading on any aspect mentioned in the documents, I am liable to be disqualified from the process of bidding and opening tender or later stage.

Thanking you,

Yours faithfully,

SIGNATURE  
Seal of the firm with full address.

Enclosures:

1. Technical Bid.
2. Affidavit (Annexure-IV)
3. Point-wise Compliance sheet in respect of specifications of the institute(Annexure-V)
4. Statement of contracts undertaken (Annexure-VI )
5. Copy of GST Registration.
5. Signed & stamped tender document (Part-1 & Part-II)
6. Copy of latest Audited Balance Sheet.

AFFIDAVIT

I/We \_\_\_\_\_ (Name)  
Contractor/Partner/Sole Proprietor (strike out which is not applicable) of  
\_\_\_\_\_ (firm) do hereby solemnly affirm and declare that the  
individual/firm/companies are not black listed by any Government Department or any  
Autonomous Body.

Dated the: \_\_\_\_\_

Address: \_\_\_\_\_

DEPONENT

VERIFICATION

Verified that the Content of above Affidavit is true and correct to the best of my/our  
knowledge and belief. No part of it is false and nothing has been kept concealed therefrom.

Dated the : \_\_\_\_\_

DEPONENT

**Note : To be furnished on non-judicial stamp paper (Rs.10 Denomination) duly  
attested by a Magistrate/Notary Public**

## PART-I

# **Tender for supply of Pure Steam Generator at Central Research Institute, Kasauli**

### **I Guidelines/instructions for submission of tender**

- A. Tender should contain the following envelop:
- i. In Envelop No.1: Bid Guarantee containing **Earnest Money Deposit** instrument along with forwarding letter (Annexure-I)
  - ii. In Envelop No.2 : Financial Bid (Specimen enclosed as Annexure-II)
  - iii. In Envelop No.3: Technical Bid (Annexure-III, IV, V & VI and Part-I & II) along with Tender Documents, signed on all pages.
- B Documents to be submitted by the tenderer(s):
- i. EMD in the shape of FDR **OR** EMD Waiver Certificate to be put in Envelop No.1.
  - ii. Financial Bid containing Quote for (1) Pure Steam Generator and (2) 5 years CMC charges to be put in Envelop No.2
  - iii. Following documents are to be put in the Envelop No.3 only:
    - a) Technical specifications/literature/brochure of quoted item
    - b) Affidavit in the Non-judicial stamp paper worth Rs.10/- in respect of non-blacklisting (as per Annexure-IV)
    - c) Point-wise compliance sheet (mandatory to be attached) to our specifications for requisite equipment (Annexure-V).
    - d) Copies of GST Registration Certificate
    - e) Statement of contracts undertaken(Annexure-VI). Copies of two latest Purchase Order(s) alongwith satisfactory installation/commissioning report to be attached.
    - f) Balance sheet of latest audit

All these three envelops should be enclosed and sealed in an outer envelope which should be clearly superscribed as "**tender for supply of Pure Steam Generator**" due on **23.08.2022 at 2:30 PM**.

### **II Instructions for submission of tenders:**

- 1 Each envelop should be clearly superscribed viz. Envelop-1 : Bid Guarantee(EMD); Envelop-2 : Financial/Financial Bid and Envelop-3 : Technical Bid. **Unsealed tender(s) will be rejected.**
- 2 Tender must be accompanied with **Earnest Money Deposit of Rs.60,000/- (Rupees Sixty Thousand only)** duly pledged in favour of the Director, Central Research Institute, Kasauli, (HP) in the shape of FDR of any nationalized bank valid for six months.
- 3 **Tender(s) received without Earnest Money shall be rejected straightway.** Appropriate certificate need to be attached in case of "**EMD waiver**".
- 4 Earnest Money deposited with the Central Research Institute, Kasauli, in connection with any other tender will not be considered against this tender.
- 5 Offer in the Financial Bid should be preferably typed or written in neat/legible handwriting. Overwriting should be avoided and initialed if any overwriting is there.
- 6 Tender will be regarded as constituting an offer open to acceptance at the discretion of the Director, CRI for a period of six months from the date fixed for the receipt of the tender.
- 7 The Director (CRI) reserves all rights to accept or reject any tender without assigning any reason.



- 8 The tenderer(s) will be responsible to ensure that the tender is received on or before the due date and time in the office at Central Research Institute, Kasauli (HP). Tender box will be available in Store/Dak Receipt Section for depositing the tender envelope.
- 9 **Each page of the complete tender document (along-with its Annexures) should be signed by the tenderers) with stamp of the firm duly affixed on each page.**
- 10 The last date and time for receipt of tenders is **02:00 PM on 23.08.2022** Tender(s) received after the due date and time shall not be considered.
- 11 The tender i.e. Bid Guarantee and Technical Bid shall be opened **at 2:30 PM on 23.08.2022** Financial bids of technically qualified firms will be opened later and informed to the bidder accordingly.
- 12 In the event of date of receipt or opening of tender being declared a holiday in the Central Research Institute, Kasauli next due date for receipt/opening of the tender will be the following working day at the same time.
- 13 The tender(s) shall be opened in the presence of intending tenderer(s) or their authorized representatives(s) if they wish to be present at that time.
- 14 Conditional Financial bid offer shall be rejected.
- 15 Any attempt direct or indirect, to cast influence, negotiation on the part of the tenderer with the officials/authority to whom he will submit the tender or the tender accepting official/authority before the finalization of tenders will render the tenderer liable for exclusion from consideration.

## PART-II

### Terms & Conditions of Tender and Contracts for supply of Pure Steam Generator at C.R.I. KASAULI

#### 1. Introduction and location of the Institute

Central Research Institute, Kasauli is an institution of the Government of India functioning under the Directorate General of Health Services and the Ministry of Health & Family Welfare, New Delhi. The Institute is located in Solan District of Himachal Pradesh (India). It is at a distance of approx.35 kms. from the nearest Broad Gauge Railway Station at Kalka (Northern Railway) and 13 kms. from the nearest narrow gauge Railway Station at Dharampur – Himachal Pradesh (Northern Railway) and is connected by metalled road with both the places. It is connected with Kalka by another metalled road also which is only 23kms.in length. Locally, the institute is situated at a distance of about 200 meters from the Bus Stand and is connected by metalled road. Motor vehicles can ply upto the delivery points in the Manufacturing Wing and R&T Wing of the institute.

#### 2. Submission of Tenders

##### a) Method for submission of tenders

Tenders should be submitted in thick sealed covers superscribed with the words "**Tender for Pure Steam Generator**" in the left hand upper corner of the envelopes addressed to the Director, Central Research Institute, Kasauli. Distt. Solan (HP)-173204, India by designation and not to anybody – else by name or by designation. Tenders should be either sent by registered post or dropped into the Tender Box kept under the custody of Stores Officer of this institute for the purpose. Telegraphic tenders and also those tenders who are not submitted in the manner prescribed herein will not be taken for consideration in any case.

##### b) Direction for quoting the rates

- (i) Incidental charges in respect of all articles **should be F.O.R. destination i.e. delivery points in the Institute premises godown**, and should be inclusive of all incidental charges, **such as loading and un-loading charges**, octroi charges, terminal taxes, other taxes and duties, carriage upto the delivery points, insurance etc. that may have to be paid by the contractors on the supplies to be made to this institute. No taxes or incidental charges will be paid to the contractors in addition to the rates accepted by the competent authority.

##### (ii) Goods & Service Tax (GST)

GST at the prescribed rate will be paid to the contractors who are duly registered dealers in this regard. Contractors claiming the GST will have to indicate their GST Registration Numbers in their Bills and will also have to furnish the following certificate alongwith their bills otherwise payment of GST will not be allowed to them :

"Certified that the goods on which GST has been charged have not been exempted under the GST Act or the rules made thereunder and that the charges on account of GST on these goods are correct under the provisions of that Act or the rules made thereunder and that in case of supplies against regular contract the relevant contract includes a specific provision that GST is payable by the Government".

##### (iii) Packing Charges

In case of goods which have to be supplied duly packed, the tenderers should include packing charges in their tendered rates as the packing materials will be retained by this institute and no additional charges on this account will be paid to the contractors.

c) **Units for quoting the rates**

Tenderers should quote the rates of articles strictly according to the units indicated in the Detailed Tender Notice e. g. per quintal, per kilogram, per set, etc. Rate shall be quoted FOR destination. Tax, if any shall be quoted separately. Any erasing/overwriting shall be signed.

3. **Opening of Tenders**

Tenders must reach the Director of this institute not later than the time and date prescribed for the purpose. Tenders received in time will be opened at this institute at the date and time prescribed for this purpose and will be declared in the presence of tenderers or their authorized representatives who may be present on the occasion, by the Director or any other officer deputed by him for the purpose. Tenders received after the prescribed date and time for any reasons whatsoever, will not be considered.

In case the date prescribed for receiving and opening of tenders falls on a holiday in this institute, the date for receiving and opening the tenders shall automatically be extended to the next working day of this institute, time and place remaining un-altered.

4. **Validity period of Tenders**

Tenders once submitted must be valid for a period of 180 days from the date of opening thereof. The tenders will not be entitled to withdraw the tenders or to suggest any change therein within the aforesaid period. The tenders will however, be subject to negotiations at the direction of the competent authority. A bid valid for a shorter period shall be rejected by the purchaser as non-responsive.

5 **Late bids**

Any bid received by purchaser after the deadline for submission of bids prescribed by the purchaser will be rejected and/or returned unopened to the bidder.

6 **Earnest Money**

a) **Furnishing of Earnest Money**

The tenderer must furnish, alongwith the tenders, Earnest Money Deposit as indicated in the Advertised Tender Enquiry, preferably in the form of **FDR only** issued by any scheduled Bank in India in favour of Director, Central Research Institute, Kasauli(HP) failing which the tenders will be liable to rejection. Cash amounts, Cheques and Bank Drafts, are not acceptable. In case the firm is participating in different items, the Earnest Money shall be submitted separately for each group. FDR should be valid for minimum six months. For exemption of EMD, necessary EMD Waiver Certificate needs to be attached by the firm (viz. MSME, NSIC etc.)

b) **Forfeiture of Earnest Money**

(i) Earnest Moneys of tenderers whose tenders are accepted by the Competent Authority within the period prescribed in Clause No.4 and who fail to execute the contract agreements within the periods mentioned in our letters conveying acceptance of his tender, will be liable to forfeiture by the Government. Besides this, the defaulting tenders shall be liable to make good the losses, if any suffered by the Government as a result of their failure to take up the contracts within the prescribed period. The amount of losses so sustained by the Government will be recoverable from them as "Arrears of Land Revenue" if the same are not paid by the defaulting tenderer himself on demand.

(ii) Earnest Moneys will also be liable to forfeiture by the Government if the samples of articles which needs sometime for manufacturing are not supplied by the tenderers concerned within the period and/or on the conditions laid down in Clause No.7 of these terms and conditions.

- c) **Release of Earnest Money**  
Subject to the provisions contained in Clause No.6(b), the Earnest Moneys received will be released to the tenderers concerned only after the tenders have been finalized and the contract agreements have been executed by the successful tenderers in the respective groups or on the expiry of the validity period of tenders prescribed in Clause No.4 of these terms and conditions whichever is earlier.
- 7 **Financial status and property of tenderers**
- a) **Financial status of tenderers**  
While selecting the tenders for acceptance, the financial status of the tenderers will be taken into consideration in additions to all other, relevant factors. The competent authority whose decision in this behalf will be final and conclusive, reserves to itself the right to reject any tender if in its opinion; the financial status of the tenderer concerned is not sound.
8. **Acceptance of terms and conditions binding**  
The terms and conditions prescribed herein are binding on the tenderers/contractors and they are not allowed to make any change in them. Tenders who propose any additions or alterations in these terms and conditions or do not fulfill these terms and conditions would be liable to rejection. A complete copy of these tender documents, duly signed by the tenderers on each page in token of their acceptance of these terms and conditions must, therefore, be attached to the tender otherwise the tender would be liable to rejection.
- 9 **Negotiation with tenderers**  
After opening the tenders no post tender Negotiation will be conducted except in case of deals with the lowest tenderer as per the CVC instructions.
- 10 **Acceptance or rejection of tenders**  
The right to accept the tenders will rest with the Director of this Institute, or any other competent authority, who does not bind himself/itself in any way to accept the lowest tenders and reserves to himself/itself the right to accept any tender or to reject any or all the tenders received by him/it without assigning any reason thereof.
- 11 **Communication of acceptance of tenders**  
The successful tenderer will, normally, be informed of the acceptance of the tenders within a month of the opening of tenders or as soon thereafter as possible within the period prescribed in Clause No.4 and they will be required to furnish the security deposits to execute the formal contract agreements and to furnish such other documents as are required from them in these terms and conditions, to the Director of this Institute within the periods indicated in the letters conveying the acceptance of their tenders.
- 12 **Security Deposits**
- a) **Amount of Security Deposits**  
To ensure satisfactory discharge of contractual obligations by the successful tenderer, they will be required to furnish to the Director of this Institute lump sum Security Deposits at the rate of 3% of contract values within prescribed time in token of acceptance of their tenders by the competent authority. The contract values will be worked out at the rates of articles which are accepted by the competent authority. The amount of Security Deposits will, however, be rounded off to the nearest thousand of rupees.
- b) **Manner of furnishing Security Deposits**  
The securities can be furnished either in the shape of FDR or in the form of Bank Guarantees. Bank Guarantees for appropriate amounts should be duly furnished by any scheduled bank in India on behalf of the tenderers concerned in favour of the Director, Central Research Institute, Kasauli(HP) and should be valid till the end of sixty days over and above the relevant contract period. The Bank Receipts or Bank Guarantee Deeds in original, as the

case may be, must be delivered to this institute by the tenderers concerned with the period prescribed in this regard.

c) **Adjustment of losses from Security Deposits etc.**

The Director of this Institute will have the power to adjust from the contractor's security deposits, including other contracts taken or any other amounts lying with him to the contractor's credit on any account the loss sustained by the Institute due to the failure of the successful tenderer either to take up the contract within the prescribed period after acceptance of his tender or to perform the contract according to its terms and conditions after taking it up.

a) **Release of Security Deposits**

Subject to the provisions contained in Clause No.16, the Security Deposits will be released only after satisfactory fulfillment of contractual obligations by the contractors concerned and provided that no liabilities are outstanding against them.

13. **Quality and delivery of supplies**

All supplies must conform to the specifications given in the relevant Advertised Tender Enquiry and should be of the best quality and to the entire satisfaction of the Director of this Institute. The specifications and important notes contained in the Advertised Tender Enquiry relating to various groups of articles form part of these terms and conditions.

14. **Provision for extension of Delivery period/Delay in the Supply**

Delivery of the goods and performance of services shall be made by the supplier in accordance with the time schedule specified by the purchase in the schedule to tender enquiry and supply order.

Any unexcused delay the supplier in the performance of its delivery obligations shall render the supplier liable to any or all of the following sanctions:

- a) Forfeiture of its performance security
- b) Imposition of liquidated damages and/or
- c) Termination of the contract for default.

If at any time during the performance of contract, should the supplier encounter conditions impeding timely delivery of the goods and performance of services, the supplier shall promptly notify the purchaser in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the supplier's notice, the purchaser shall evaluate the situation and may at its discretion extend the suppliers time for performance, in which case the extension shall be ratified by the parties by amendment of the contract.

15. **Rejection and replacement of supplies**

a) **Return of rejected stores to supplier**

The firm will take back the rejected stores from the depots/consignees place and replaced with fresh stock duly inspected within a reasonable period stipulated in the notice issued to the firm at their own cost upto the consignees or depots upon payment of testing charges etc. The rejected stock will be handed over by the depots or consignees to the firm upon payment of cost of the rejected stocks by the firm to the consignees. Failure of the firm may amount to breach of contract on the part of the firm and firm shall be liable for recovery of consonant damages besides other remedies and right available to the purchaser.

b) **Acceptance or rejection of perishable articles**

In case of perishable articles, the contractor concerned will have to give a declaration that the articles sold to the Director of this Institute(hereinafter also called the "Purchaser"), under the contract, shall be of the best quality and shall be strictly in accordance with the specifications and particulars mentioned in the respective detailed Tender specifications and the contractor

will have to give guarantee that the said articles would continue to conform to the description and quality of aforesaid for a period of one day from the date of delivery of the said articles, if during the aforesaid period of one day, the fact that the purchaser may have inspected and/or approved the said articles, the said articles be discovered not to conform to the description and quality aforesaid or have deteriorated and the decision of the purchaser in that behalf will be final and conclusive, the purchaser will be entitled to reject the said articles or such portions thereof as may be discovered not to conform to the said description and quality. On such rejection, the articles will be at the contractor's risk and all the provisions herein contained relating to rejection of goods, articles, etc. shall apply. The contractor shall, if so, called upon to do, replace the articles etc. or such portion thereof as is rejected by the purchaser, free of cost at the ultimate destination, otherwise the contractor shall pay to the purchaser such damages as may arise by reason of the breach of the conditions herein contained. Nothing herein contained shall prejudice any other right of the purchaser in that behalf under this contract or otherwise.

16 **Condition regarding actual purchases of articles**

No guarantee is given as to the quantity/number of articles that may be ordered for during the period of contract provided, however, that orders for the articles required for the working of this institute shall, in the first instance, be placed with the successful tenderers concerned. The successful Tenderers (hereinafter also called "Contractors") shall be liable to supply the quantities/number of articles as may be ordered for during the period of contract, within the period mentioned in the supply orders.

17 **Penalty Clause**

If the supplier fails to deliver any or all of the goods or fails to perform the services within the time period(s) specified in the contract, the purchaser shall without prejudice to its other remedies under the contract, deduct from the contract Financial as liquidated damages a sum equivalent to 0.5% of the delivered Financial of the delayed goods or unperformed services for each week of delay or part thereof until actual delivery or performance, upto a maximum deduction of 10% of the delayed goods or services contract Financial. Once the maximum is reached the purchaser may consider termination of the contract.

18 **Payment of supplies made to the Institute**

Payment of all supplies will be made to the contractors concerned strictly on bill basis from them and not on supply-to-supply basis under any circumstances. Bills submitted on supply-to-supply basis will not be entertained.

19 **Revocation or cancellation of contracts**

The Director of this institute, or any other competent authority, shall have the right to revoke or cancel the contract if in his opinion (and in this respect such opinion shall be final and binding on the contractor), the contractor has failed to perform the contract in whole or in parts or has committed breach of any of the terms and conditions of the contract. Upon such revocation or cancellation, the Director of this Institute, or any other competent authority, shall be entitled to make purchase from open market or to enter into contract with any other party at the entire risk and costs of the defaulting contractor.

20 **Contacting the Purchaser**

No bidder shall contact the purchaser on any matter relating to its bid from the time or the bid opening to the time the contract is awarded.

Any efforts by the bidder to influence the purchaser in the purchaser's bid evaluation, bid comparison or contract award decision shall result in the rejection of the bidder's bid and also banning of business dealing with the bidder for a period of three years from the date of such ban.

21 **Decisions of the Director and jurisdiction of courts**

The decision of the Director of this institute shall be final and binding in all respects regarding any question of interpretation or in each of any dispute arising under the contract. However, in case of legal dispute arising in connection with the contract, it shall be subject to the exclusive jurisdiction of the Courts in Kasauli, Solan District of Himachal Pradesh.

22. **Arbitration**

(a) **Appointment of Arbitrators**

Except where otherwise provided in the terms and conditions, of contract, all questions and disputes relating to the meaning of specifications, quality etc. of articles or as to any other question, claim, right, matter or thing whatsoever, in any way arising out of or relating to the contract, specifications, quality, instructions, orders, or these conditions or otherwise concerning the supplies, or the execution or failure to execute the same whether arising during the period of contact or after the completion or abandonment thereof, shall be referred to the sole arbitration of the person to be appointed by the Director, General of Health Services, Government of India. There will be no objection to any such appointment that the arbitrator so appointed is a Government official, that he had to deal with the matters to which the contract relates and that in the course of this duties as Government official, he had expressed views on all of any of the matters in dispute of difference.

The arbitrator to whom the matter is originally referred being transferred or vacating his office or being unable to act for any reasons, the Director General of Health Services shall appoint another person to act as arbitrator in accordance with the terms of the contract. Such person shall be entitled to proceeded with the reference from the state at which it was left by his predecessor. It is also a term of this contract that no person other than a person appointed by such Director General of Health Services as aforesaid should act as arbitrator and it, for any reason that is not possible, the matter is not to be referred to arbitration at all.

(b) **Applicability of Arbitration Act, 1940**

Subject as aforesaid, the provisions of Arbitration Act, 1940, or any statutory modification or re-enactment thereof and the rules made thereunder and for the time being in force shall apply to the arbitration proceedings under this clause.

(c) **Extension of time for making arbitration awards**

The arbitrator(s) may, from time to time, with the consent of the parties, extend the time for making and publishing the awards.

23. **Cash Receipt issued by the Institute**

No receipt for any amount paid by the contractor to this institute will be valid unless it is signed by the Director, Accounts Officer or any other authorized officer of this institute.

**Declaration:**

I/We hereby affirm that I/We accept all the terms and conditions of tenders and Contract stipulated above without any reservation.

Signatures and full address of the tenderer





Point wise compliance sheet of Pure Steam Generator for Engineering (Workshop) Division

Sr. No.	Specifications	Compliance (Yes/No)	Remarks
1.	<p><b>Acceptance Criteria:</b>            The steam condensate should meet the requirements of water for injection (bulk) as per IP 2019:-</p> <ul style="list-style-type: none"> <li>▪ Conductivity : <math>\leq 1.3 \mu\text{S/cm}</math> at 25°C</li> <li>▪ TOC : <math>&lt; 500</math> ppb</li> <li>▪ Endotoxin : <math>&lt; 0.25</math> EU/ml</li> <li>▪ Bacteria (TVC) : <math>\leq 10</math> CFU/100 ml</li> </ul> <p>The vendor shall perform the steam quality tests as stated in HTM 2010 (Sterilization Part 3: Validation and verification). The test shall be considered satisfactory as stated in the below.</p> <ul style="list-style-type: none"> <li>▪ Non Condensable Gas : Less than 3.5 % by volume</li> <li>▪ Dryness fraction : It should not less than 0.90</li> </ul> <p>Degree of Superheat : Degree of super heat measured in free steam at atmospheric pressure should not exceed 25</p>		
2.	<p><b>Responsibility of the vendor:</b></p> <ul style="list-style-type: none"> <li>▪ To provide input utilities as specified in the point 9.0 in <u>Utility Requirements</u> of this document.</li> <li>▪ The representative of the vendor must visit the site for space verification as per their design and drawing of PSG before initiation of the work.</li> <li>▪ To provide adequate General arrangement (GA) of PSG PLANT at the site as per space available in the proposed area of installation.</li> <li>▪ To provide boiler steam inlet with PRV, Moisture Separator, Steam Trap and Strainer.</li> <li>▪ Unbox the machine in presence of respective firm engineer.</li> <li>▪ Main header in the system will be erected and connected to drain header is under the scope of vendor.</li> <li>▪ Approval &amp; Performance of SAT/FAT as per protocol completion is under the scope of vendor.</li> <li>▪ Validation of quality of Pure Steam as per regulatory requirements is under the scope of vendor.</li> <li>▪ Vendor to perform the following tests: Drainability, Ra finish &amp; Passivation during OQ</li> </ul>		

<ul style="list-style-type: none"> <li>▪ All parts in contact with purified water or pure steam are executed in AISI standards SS316L (Electro Polished).</li> <li>▪ Followings documents shall be verified at the time of FAT           <ul style="list-style-type: none"> <li>a) Dimension as per G.A drawing</li> <li>b) Certificates for material of construction</li> <li>c) Components and its specifications as per the P &amp; I Diagram</li> <li>d) Pressure test certificate</li> <li>e) Instruments and calibration certificate.</li> <li>f) Functional design specification</li> </ul> </li> <li>▪ To provide Installation Qualification and Operation Qualification protocol and to assist to carry out Performance Qualification is in the scope of vendor.</li> <li>▪ To provide training of the following:-           <ul style="list-style-type: none"> <li>a) Initial start-up</li> <li>b) Safe operation of equipment</li> <li>c) Handling emergency situation</li> <li>d) Trouble shooting &amp; Preventive maintenance</li> </ul> </li> <li>▪ Firm has to ensure the execution activities and design the machine as per CRI User Requirement Specifications.</li> <li>▪ Merging/interconnection of existing pure steam line is under the scope of vendor. (Refer. <b>Job no.:2 diagram ANNEXURE 1</b>). The firm must calculate and provide the line measurements for interconnection of steam lines once after the completion of work to CRI engineers.</li> <li>▪ Extending the (black) steam pipe to new PSG. (Approx: 20 meter)</li> <li>▪ Extending the purified water pipe to new PSG. (Approx: 20 meter)</li> </ul>	
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3. Responsibility of the User

- CRI Engineering Head / CRI Quality Assurance Head to approve all protocols w. r t design and drawings as per print format submitted by the respective vendor as per URS.
- CRI Engineering to provide the support and feasibility for connecting the electrical cable termination of the equipment.

4. Technical Specifications:

Sr. No.	Heading	Design Provision	Compliance (Yes/No)	Remarks
1	Model	500 PSG		
2	Capacity	500 kg /hr. at 6 kg/cm <sup>2</sup> Boiler Steam.		
3	Operation	Automatic with real time printing		
4	PLC	Good brand of HMI PLC (With slot for memory card. CF card (1GB) will be provided for logging text message alarm only) HMI Size: 7" Inch or above touch screen with stylus pen		
5	Control panel	Vendor should provide at least limited controls (HMI, Emergency Push Button, Main Supply Switch, Cooling Fan, Auto/Manual Switch)		

5. General Design Specifications:

Sr. No.	Heading	Design Provision	Compliance (Yes/No)	Remarks
1	Application	To Produce Pure Steam at max. 3 kg/cm <sup>2</sup>		
2	Capacity	Working: 500 kg/hr. at 3 kg/cm <sup>2</sup> with input of 6 kg/cm <sup>2</sup> . Plant Steam.		
3	Design	As per ASME Section VIII, Div-I, 2013 or as per any standard guidelines.		
4	Skid	MOC – SS304 Square/Rectangle pipe (As Vendor recommend as per their design) Mounting – Leg mounting (Adjustable 50 mm) Surface finish – Mirror (Mechanical Polished)		

5	Insulation	Cladding – Riveted, Cladding MOC – SS 304 Outer surface – Mirror finish (Mechanical polished) Insulation thickness – 50 mm (Uncompressed) Insulation material – Rock wool with “K” Factor 0.039 W/mk (As per vendor recommendation)
6	Gasket	MOC – Tygon /PTFE/Silicon (Should meet FDA 21 CFR 177.2600) Type - Food Grade Temperature – 200°C
7	Construction Features	Vendor should meet the construction features of contact surfaces, fittings and other parameters as per ASME BPE standards.
8	Welding	<ol style="list-style-type: none"> <li>1. Pipe joints – Orbital/TIG welded, Finish&lt;1.2µm Ra.</li> <li>2. Fabricated Parts– TIG welded</li> <li>3. Orbital weld joints shall be passivated.</li> <li>4. Contact Parts: Electro-polished, SS 316L (Ra: ≤0.6 µm), external finish 180 grit.</li> </ol>
9	Specific requirement	<ol style="list-style-type: none"> <li>1. Radiography of Column, Condensers and Cooler.</li> <li>2. Boroscopy of WFI and Pure Steam Piping</li> <li>3. Sampling valves must be Crane/Gemu or any good brand make.</li> <li>4. Piston valve must be Spirax make or any good brand in boiler steam line</li> <li>5. Interconnecting Piping with internal finish of ≤ 0.6 Ra and ≤ 0.75Ra on weld line (&lt;1.2µm Ra. as per Point no 15.1)</li> <li>6. PLC Validation after FAT</li> <li>7. Soft copy of PLC programme</li> <li>8. Sanitary safety valve of Inoxpa make or any good brand at Pure Steam outlet</li> <li>9. Ensure the conductivity in drain line before PQ</li> <li>10. Noise level shall be less than 70dB measured after 1 meter periphery of the equipment</li> <li>11. Two NRV's will also have to be included.</li> </ol> <p><b>Vendor should comply with all the above mentioned (1-11) specific requirements as per cGMP guidelines.</b></p>

**6. Utility Requirements:**

Sr. No.	Utility	Supply	Compliance (Yes/No)	Remarks
1	Boiler Steam to PSG	6-8 kg/cm <sup>2</sup> pr. Saturated & dry at PRV inlet		
2	Feed Water	1-2 kg/cm <sup>2</sup> Pressure @ 25°C		
3	Cooling water In to HE1 & HE2	At 1.5-2 kg/cm <sup>2</sup> Pressure & 32°C Temperature		
4	Electricity (available at CRI)	400 V ± 5%, 50 Hz, 3 Phase		
5	Compressed Air (available at CRI)	6 kg/cm <sup>2</sup> Pressure		
6	Pure Steam outlet	Max. at 3 kg/cm <sup>2</sup> pressure		
7	Drain header outlet	Vendor to specify as per their design.		
8	Drain header air vent	Vendor to specify as per their design.		
9	Cooling water Out from HE1 & HE2	Vendor to specify as per their design.		
10	Nozzle for connecting Pure Steam Quality Test Kit	Vendor to specify as per their design.		

**7. Safety Features:**

Sr. No.	Safety	Safety Provision	Compliance (Yes /No)	Remarks
1	Condenser Assembly	Vendor should provide and follow the safety futures/alarm systems as per standard guidelines.		
2	Feed Pump			
3	Column Waste Water Level Control			
4	Auto / Manual Switch			
5	Operational safety (Alarm list)			

**8. System Description & Operational Parameters Required:**

Sr. No.	System Description & Operational Parameters Required:	Compliance (Yes /No)	Remarks
1.	Start & Stop sequences need to be functioning proper.		
2.	HMI Factory settings for all the system parameter needs to be proper.		
3.	Settable parameter ranges should be specified clearly in protocols.		
4.	Internal process should not be hanging while running mode.		
5.	Input/ Output Analogue and Digital lines should be detailed in protocols.		
6.	Password & Access control parameters 3 levels required. (Operator, Supervisor and Admin).		

9. Printing Format: (As per CRI format mentioned below or Vendor to specify covering all the major/critical parameters)

**OPERATION REPORT FOR PURE STEAM GENERATOR**

COMPANY NAME : M/s CENTRAL RESEARCH INSTITUTE. (40 ALPHANUMERIC)  
 JOB NO. : (10 ALPHANUMERIC)  
 EQUIPMENT ID : XXXXXXX (12 ALPHANUMERIC)  
 DATE : DD/MM/YYYY  
 TIME : HRS:MIN:SEC

**SET PARAMETER AS FOLLOWS :**

BOILER STEAM TEMP. (SET)	165.0 DEG C	TS1: BOILER STEAM TEMP. IN DEG C
BOILER STEAM TEMP. (LOW)	140.0 DEG C	TS2: PURE STEAM TEMP. IN DEG C
FEED WATER CONDUCTIVITY	1.3 uS/cm	TS : GRC STEAM TEMP. IN DEG C
PURE STEAM CONDUCTIVITY	1.3 uS/cm	CS1: FEED WATER COND. IN us/cm
PURGING TIME	30 SEC	CS2 : PURE STEAM COND. IN us/cm
PURGING FAULT ON TIME	20 MIN	PT1 : PURE STEAM PRES. IN Kg/cm <sup>2</sup>
PURGING FAULT OFFTIME	20 MIN	
INITIAL HOOTER OFFTIME	180 SEC	
PRINTING TIME PRE	60 SEC	
HEATINGTIME	60 SEC	
PURE STEAM PRESSURE HIGH	4.0 kg/cm <sup>2</sup>	
PURE SYEAM PRESSURE LOW	2.5 kg/cm <sup>2</sup>	
PURE STEAM PRESSURE HIGH DELAY	300 SEC	
PURE STEAM PRESSURE LOW DELAY	300 SEC	
PARAMETER PRINT TIME	30 MIN	
HIGH LEVEL DELAY TIME	10 SEC	
PARA. PRINT DISABLE / ENABLE GRC	0	0 = ENABLE, 1 = DISABLE
DRAIN TIME	15 SEC	
GRC TEMPERATURE SET	65.0 DEG C	
PURE STEAM PRESS CONT. SET	3.5 kg/cm <sup>2</sup>	

DATE	TIME (24 hrs)	TS1 DEG C	TS2 DEG C	TS3 DEG C	CS1 uS/cm	CS2 uS/cm	PT1 kg/cm <sup>2</sup>	MESSAGE

09/08/2021	09:16:43	118.2	75.7	77.5	1.30	1.35	0.55	BOI STEAM TEMP LOW
09/08/2021	09:17:43	164.9	143.0	75.2	1.25	0.97	3.05	PROCESS OK
09/08/2021	09:18:46	165.1	143.1	76.5	1.20	0.97	3.05	EMERGENCY STOP
09/08/2021	09:19:49	165.5	143.3	76.9	1.25	0.97	3.10	PROCESS OK

Checked By: \_\_\_\_\_

Date : \_\_\_\_\_

Verified By: \_\_\_\_\_

Date : \_\_\_\_\_

NOTE: EQUIPMENT ID CAN BE OF MAXIMUM 12 DIGITS Ex: (CRI/UTILITY/.....)

Compliance to printing format  
(Yes/No)

Remarks

10. Test Certificates:

Sr. No.	Name	Document	Compliance (Yes/No)	Remarks
1	Pump	OEM Certificate copy		
2	Pneumatic Valve	OEM Certificate copy		
3	Pressure Gauges	OEM Certificate copy		
4	Temperature indicator and sensor	OEM Certificate copy		
5	Pressure Switch	OEM Certificate copy		
6	Safety Valve	OEM Certificate copy		
7	Non Return Valve	OEM Certificate copy		
8	Ball Valves	OEM Certificate copy		
9	Pneumatic Valve & Diaphragm Valve	OEM Certificate copy		
10	Steam Inlet Valve	OEM Certificate copy		
11	Steam Trap	OEM Certificate copy		
12	Conductivity Meter & Conductivity Sensor (to be supplied by vendor: Make - Rosemount)	OEM Certificate copy		
13	Material of Construction (For Column Assly & Pipe Line)	OEM Certificate copy		
14	Level Controller	OEM Certificate copy		
15	Flow indicator	OEM Certificate copy		
16	Disposable Vacuum Break Filter	OEM Certificate copy		

List of Drawings:		Compliance (Yes/No)	Remarks
11.	GA Diagram		
1.	P & I Diagram and Components List		
2.	Electrical Wiring Diagram		
3.	I/O List of Components		
4.	Control Panel Diagram and Components List		
5.	Process Flow Diagram		
6.			

**12. List of Documents:**

Vendor should provide the following certificates along with qualification protocols for the equipment.

Sr. No	Title of Documents	Compliance (Yes/No)	Remarks
1	Material Test Certificates		
2	Hydro Test Certificate		
3	Running Trial Certificate		
4	Calibration Certificate		
5	Operation and Maintenance Manual (1 Set)		
6	AS BUILT' Drawing		
7	Certificates of Bought-out Components		
8	Factory Acceptance Test Report		
9	WPS/PQR and Orbital Welding Report		
10	Functional Qualification of Instruments		
11	Boroscopy Report		
12	PLC Programme backup		
13	Electric Circuit Diagram		
14	List of Spare Parts		
15	Welder Qualification Certificate		
16	Equipment Warranty Certificate by Vendor		
17	IQ, OQ and PQ Protocols		



### 13. Details of Components:

Sr. No	Name of Component	Specification	Compliance (Yes/No)	Remarks
1	Feed Pump	Make: Grundfos, Alfa laval, Scon or better Function: To pressurize feed water		
2	Flow indicator	Make: Krohne Marshall or better MOC of Wetted Parts: Tube - SS 316L, Float - SS 316, Qty: 1 No Function: To indicate the flow of feed water		
3	HMI & PLC	Make: Allen Bradley, Siemens, Mitsubishi Qty: 1 No Function: To monitoring and interact with control process		
4	Pneumatic valve	Make: Gemu, or better MOC of Body: SS 316L Type: Pneumatically Operated Angle Seat Valve Seal: PTFE, Actuator: Single Acting (Spring Return) Qty: 1 No, Location: At column purging water line		
5	Plant Steam In valve	Make: Spirax, or better or Model: Non-IBR Type: Pneumatically Operated Globe/Angle Seat Valve Qty: 1 No, Function: To allow plant steam entry in plant when plant is started		
6	Sanitary Non return valve	Make: Alfa Laval, or better MOC: SS 316L, Size: DN 25 (Triclover End Connection)(vendor recommended) Qty: 4 No's Function: To allow one directional flow. Location: At the conductivity sampling line (NRV1), At vacuum break line of GRC (NRV2), At Outlet side of Feed Pump (NRV3), Drain Header Line(NRV4)		
8	Diaphragm valves	Make: Crane Process or better MOC: SS 316L Size: DN 25 (Triclover End Connection)(vendor to specify) Diaphragm: PTFE / EPM, Operation: Manual Qty: 1 No, Function: At Feed Water Inlet to Column		
9	Air regulator (Filter, Regulator, Lubricator)	Make : Festo or better Model: (vendor to specify) Range: 0 – 16 Kg / Cm <sup>2</sup> , Qty: 1 No Function: To control pressure of compressed air and lubricate it for working of pneumatic valves		

10	Steam Traps	<p>Make: Spirax Marshall or Better Model: (vendor to specify) Type: Balanced pressure thermostatic trap Max. Working Pressure: 21 Kg / Cm<sup>2</sup> Max. Working Temperature: 285° C, Qty: 2 No's Function: To remove air and gases from boiler steam (at First column air vent line), To trap the steam and allow condensate to go through (At Boiler Steam Condensate line of first condenser to pre-heater).</p>		
11	Sanitary Safety Valve	<p>Make: Spirax Marshall or better Model: (vendor to specify) MOC: SS 316L, Range: 75-125 psi Qty: 1 No, Function: To protect system from overpressure</p>		
12	Pressure Gauges	<p>Make: Baumer, Wika, Forbes Marshall or Better MOC: SS 316 / SS 316L (Threaded End Connection/TC End or (vendor to specify), Dial Size: 100mm Type: Bourdon tube / Diaphragm (as per vendor recommendation), Mounting: Direct &amp; Sanitary TC End Range: 0-16 Kg/cm<sup>2</sup> &amp; 0-7 Kg/Cm<sup>2</sup>, Qty: 3 No's Function: To indicate pressure of Plant Steam, To indicate pressure of Feed Water after Pump, To indicate pressure of pure steam</p>		
13	Manual Ball Valve	<p>Make: Audco (L &amp; T), Zoloto, President MOC: SS 316L Size: DN20/25 or (vendor to specify), Seal: PTFE, Qty: 1 No Function: To isolate steam trap line in case of steam trap maintenance</p>		
14	Control Panel	<p>Model, Make, Electrical and Electronics components, MCB, PLC, Emergency push button and Display switch</p>		
15	Conductivity Meter	<p>Make: Rosemount, Mettler Toledo or better Input : From Conductivity Sensor Channel : Dual channel, Output: 4-20 mAmp - 2 Nos. Alarm: Relay type - 2 Nos. Location: inside control panel Function: To house various electrical &amp; electronic components for controlling system</p>		
16	Conductivity Sensors	<p>Make: Rosemount, Mettler Toledo or better MOC: SS 316L, Temp. Range: upto 100°C, Range: 0 – 10 µS Qty: 2 No's</p>		

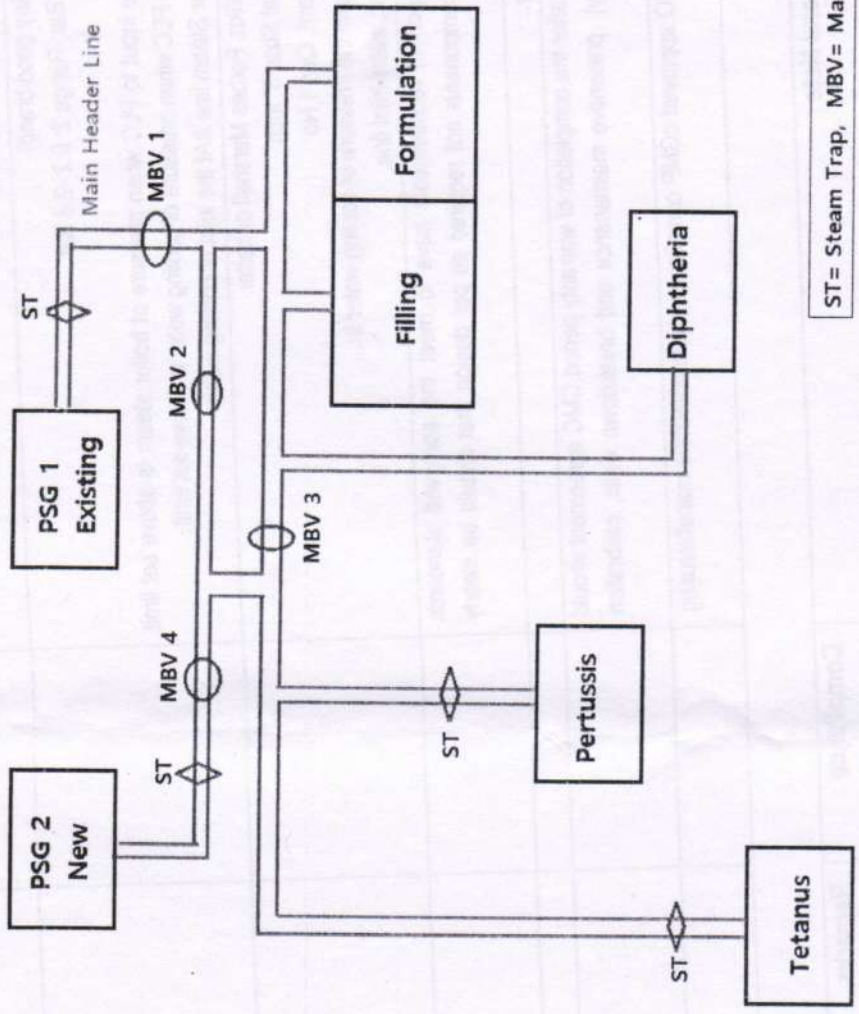
		<p>Function: To get signal from conductivity sensor and give output to PLC for controlling system Location point: (At GRC Column Bottom &amp; At Pure Steam Condensate Sampling Point)</p>	
17	Temperature Sensors with indicator	<p>Make: Radix or better Model: PT 100, MOC: SS 316L Range: 0 to 200° C, Connection: TC Ended Qty: 2 No's Function: To measure temperature and give input to PLC (for plant steam and pure steam line)</p>	
18	Sanitary Pressure Transmitter	<p>Make: Jumo or better MOC: SS 316L, Range: -1 to 5 Bar G (0 to 6 Bar Absolute) Connection: TC Ended, Output: (vendor recommended) Qty: 1 No Function: To measure and give input to PLC about pure Location: Pure Steam Line</p>	
19	Sanitary Pressure switch	<p>Make &amp; Model: (Any good brand) MOC: SS 316L, Range: 1-15 Bar Qty: 1 No, Function: To give input to PLC when pressure of feed water coming out from pump is above set limit Location: Feed Pump Outlet Line</p>	
20	Sanitary Pressure switch	<p>Make &amp; Model: (Any good brand) MOC: SS 316L, Range: 0.5-7.0 Bar Qty: 1 No Function: To give input to PLC when pressure of pure steam is below low and above high set limit Location: Pure Steam Line</p>	
21	Pressure switch	<p>Make &amp; Model: Danfoss or better MOC: Aluminium (Threaded End Connection) Range: 0.5-7.0 Bar, Qty: 1 No Function: To give input to PLC when pressure of compressed air is above set limit Location: At air pressure line</p>	
22	Liquid level Sensor	<p>Make &amp; Model: (Vendor to specify as per their design) MOC: SS 316L, Qty: 1 No Function: To give input to PLC when water level in column rises to particular level Location: On column</p>	
23	Printer	<p>Make &amp; Model: (vendor to specify)</p>	

24	Pneumatic Valves	<p>Qty: 1 No, Function: To print complete process  Location: Near panel board</p> <p>Make: Gemu or better  MOC: SS 316L  Size &amp; Type: (vendor recommended)  Seal: PTFE,  Qty: 3 No's</p> <p>Function: Removal of gases from NCGR as per signal from PLC, Drain NCGR Column as per signal from PLC, Allow to flow boiler steam along with condensate for heating of water coming to NCGR  Location: At gas removal line from gas cooler to atmosphere, At Drain Line of Gas Removal Column, At Boiler Steam Condensate Bypass line</p>
25	Liquid level Sensor at Gas removal column Assembly	<p>Make: (vendor to specify as per their design)  MOC: SS 316 L, Connection: TC Ended  Qty: 1 or 2 (vendor recommended)  Function: To give input to PLC when water level in NCGR column rises to particular level  Location: At Gas removal column</p>
26	Temperature sensor at Gas removal column Assembly	<p>Make: Radix or better or (Vendor to specify as per their design)  Model: PT 100, MOC: SS 316L  Range: 0 to 200° C  Qty: 1 No  Function: To measure temperature and give input to PLC  Location: At Gas removal column</p>
27	Manual ball valve	<p>Make: Audco (L&amp;T) or better  Model &amp; Size: (vendor to specify)  MOC: SS 316, Seal: PTFE, Qty: 2 No's  Function: To Control flow of cooling water to sample taking pre heater HE2, &amp; To Control flow of cooling water to conductivity measurement pre heater HE1  Location: At cooling water line for Sample taking pre heater – HE2 , At cooling water line for conductivity measurement pre heater – HE1</p>
28	Diaphragm Valve	<p>Make: Crane process or better  Model &amp; Size: (vendor to specify)  MOC: SS 316 L, Diaphragm: PTFE / EPM  Qty: 2 No's, Operation: Manual  Function: To allow Pure Steam to flow for taking sample &amp; To isolate outlet of system for maintenance  Location: At the sample taking line &amp; At Pure Steam Outlet to PSG Line</p>

29	Disposable Vent Filter	<p>Make: Millipore, Sartorius, Membrane Inc, Cobetter, Pall  Medium: PTFE, Removal rate: 0.2 micron, Qty: 1 No  Function: To allow steam breathing  Location: At GRC vacuum break line</p>		
30	Pressure Switch	<p>Make &amp; MOC: (Any good brand)  Range 1: 0.5-7.0 Bar, Range 2: 0.2 -2.6 Bar  Qty: 2 No's  Function: To give input to PLC when pressure of boiler steam is above set limit  &amp; To give input to PLC when pressure of cooling water is above set limit  Location: At Boiler Steam line &amp; At the inlet of cooling water</p>		
31	Pressure gauge for cooling water In	<p>Make: Baumer, Wika, Forbes Marshall or better  MOC: SS 316, Dial Size: 6" Inch  Range: 0 - 7 Kg/cm<sup>2</sup>, Qty: 1 No  Function: To indicate the pressure of cooling water In.  Location: At cooling water Inlet line.</p>		
32		Vendor should ensure all the above mentioned component requirements have to meet the approved standards ASME/ANSI/BPE and if any of the above mentioned components not required as per design that should be clearly mentioned by the vendor		
33		OEM warranty: minimum one year manufacturer warranty.		
34		Five years comprehensive annual maintenance contract after the completion of warranty period. CMC agreement should cover spares & consumables, software updates( if any), preventive maintenance and breakdown visits, calibration activities and 24X7 technical supports.		
35		Provide the satisfactory performance certificate from WHO approved cGMP compliance pharma/vaccine manufacturing (GMP) company (national/international).		

General Note		Compliance (Yes/No)	Remarks
14.			
1.	Wet steam & low flow rate of the Boiler steam (raw steam) results in, no or less evaporation of feed water.		
2.	Poor quality of feed water supplied, affects the purity of the pure steam generated.		
3.	High flow rate of feed water results in, no or less evaporation of the same.		
4.	To retain the memory, power should be given to PLC & HMI at least once in 3 months after dispatch date.		
5.	Header Air vent, and GRC Vent are not to be connected to header. Care should be taken by vendor, so that there should not be any back pressure on these lines.		

PSG Interconnection of Existing Pipe Lines in DPT Facility



**PSG Main Header Line Piping On/Off Process:**

**PSG 1 Existing Supply To Full Section:**

1. MBV 1=Open
2. MBV 2=Close / System off
3. MBV 3=Open
4. MBV 4=Close / System off

**PSG 2 Supply To 'T' and 'P' Section:**

1. MBV 1=Close / System off
2. MBV 2=Close
3. MBV 3=Close
4. MBV 4=Open

**PSG 1 & 2 Supply To Full Section:**

1. MBV 1=Open
2. MBV 2=Close
3. MBV 3=Close
4. MBV 4=Open

Compliance to PSG interconnection of existing pipe lines in DPT facility (Yes/No)	Remarks