

Government of India
Advanced Ultra Supercritical Project Facility, Kokilamedu – 603 104
Tender Notice No. IGCAR/AUSC/04/2018

Name of work: Operation and maintenance of creep testing machines and equipments at AUSC project facility, Kokilamedu.

Sealed Tenders are invited on behalf of the President of India by Chairman, Project Execution Committee (PEC), Advanced Ultra Supercritical Project Facility (AUSC-PF), Kokilamedu, Kanchipuram District, Tamilnadu - 603104 for the above work from the eligible Contractors.

Estimated Cost	: Rs. 15,14,446/-
Earnest Money Deposit	: Rs. 30,289/-
Security Deposit	: 2.5% of the tendered value
Performance guarantee	: 5% of the tendered value
Cost of Tender Document	: Rs. 525/-
Time allowed for completion of work	: 11 Months from the Date of work order

Tender document can be had from the PAO, IGCAR, Kalpakkam - 603 102 on written request duly recommended by Chairman, PEC, AUSC-PF or his authorized representative, on any working day from 03.07.2018 to 17.7.2018 on payment of cost of tender document by cash or Demand Draft (this amount is not refundable). Tenders will be received up to 15.00 Hrs. on 18.7.2018 and will be opened at IGCAR, Kalpakkam on the same day at 15.30 Hrs. in the presence of attending tenderers.

TENDER NOT ACCOMPANIED BY THE FOLLOWING ARE LIABLE TO BE REJECTED

- a. EMD shall be in the form of a Deposit at call receipt or Demand Draft of scheduled Bank guaranteed by Reserve Bank of India in favour of Pay and Accounts Officer, Indira Gandhi Centre for Atomic Research, Kalpakkam - 603 102. The tenderer shall be required to place the "EMD" & the "Tender" in separate sealed envelope marked EMD & Tender respectively. Both envelopes shall then be placed in another sealed envelope.
- b. Proof of being in the approval list of PWD, CPWD, EMS, etc, showing the appropriate eligible class to which they belong.
- c. A valid income tax clearance certificate in the latest approved form for the firm and the individual partners.
- d. Permanent account number in their application for purchase of tender documents in case of Income Tax payers.
- e. Proof of executing similar work* in IGCAR or elsewhere in the form of work orders / completion certificates as indicated below:
 - 40% of the value of estimated cost: 3 work orders / completion certificates
 - 60% of the value of estimated cost: 2 work orders / completion certificates
 - 80% of the value of estimated cost: 1 work orders / completion certificates
- f. Solvency certificate for 40% of the estimated cost for the latest one year.

* Similar work shall mean material testing / operation & maintenance of testing machines / material characterisation and allied works.

The tender for works shall remain open for acceptance for a period of ninety days from the date of opening of tender. The acceptance of tenders will rest with the Chairman PEC, AUSC-PF, Kokilamedu - 603 104 who does not bind himself to accept the lowest or any others and allot parts of the work to different agencies without assigning any reasons therefor.

Chairman PEC, AUSC-PF
For and on behalf of the President of India

Technical Specifications

Ref.: IGCAR/AUSC/04/2018

Name of work:

Operation and maintenance of creep testing machines and equipments at AUSC project facility, Kokilamedu.

A. SCOPE OF WORK:

Operation and maintenance of the following testing machines and equipments for creep studies, which are being procured as part of the AUSC project facility, Kokilamedu. Following is the broad scope of works involved:

I. Mechanical testing

The mechanical testing includes creep tests under air and steam environment, transient loading conditions, biaxial creep and Small Punch Creep test. Work involves regular machine calibration, providing assistance in loading/unloading of test specimens, test data collection and maintenance of machines as directed by the Engineer-in-Charge.

II. Post-test analysis

It involves analysis of results and report preparation. Metallographic sample preparation including cutting, mounting, polishing and etching of samples (for viewing under optical, Scanning Electron Microscopy (SEM) and Transmission electron Microscopy (TEM)).

III. Heat treatment

Various types of heat treatments including solution annealing, stress-relieving, normalising, thermal ageing etc. as required.

IV. Material transport

Materials transfer between Central Stores/Central Workshop/Zonal Workshop and AUSC PF site as per requirement. Assistance during erection/commissioning of testing machines.

B. List of equipments:

Sl. No.	Systems	Quantity (Nos.)
1	Single lever Creep machine	20
2	Steam creep facility	2
3	Electromechanical Instrumented Creep Test system	3
4	Small Punch Creep system	1
5	High capacity and Biaxial creep test	5

C. List of tests / work to be performed:

Sl. No.	Type of test	Number of tests
1	Single lever creep machine tests	110
2	Steam creep tests, Instrumented creep, Small Punch Creep	44
3	Metallography sample preparation (OM, SEM, TEM)	220
4	Heat treatments	55
5	Material shifting (number of times)	165
6	Report preparation	11
7	Metallographic investigations using optical microscope	132
8	Test-wise data collection, analysis and plotting of results	143
9	Assistance during erection/commissioning of test machines	2

D. Qualification

Minimum qualifications and the estimated number of man-days required to carry out the work specified in (A) and (C) above are as follows:

Qualification	Man-days
ITI (Fitter)	825
Diploma in Metallurgical / Mechanical Engg.	276
Diploma in Electronics with communication / instrumentation/ Electrical	276
B.E / B. Tech. in Mechanical / Metallurgical Engg./ M.Sc. Materials Science	550

Note: Candidates must have secured a minimum of 60% marks in the respective qualifying examination to be eligible for performing the work mentioned in (A) and (C). Those with prior experience would be preferred.

E. TERMS AND CONDITIONS

1. The contractor shall have adequately qualified and experienced personnel to carry out the above mentioned works. Minimum qualification for the works mentioned in the *schedule of quantities* shall be as follows:
 - A. Data analysis and microscopy:
B.E / B. Tech. in Mechanical / Metallurgical Engg./ M. Sc. Physics / Materials Science
 - B. Monitoring of Mechanical tests:
 - (i) **Diploma in Metallurgical / Mechanical Engg** (preferably with CAD knowledge).
 - (ii) **Diploma in Electronics with Communication/Instrumentation/Electrical**
 - C. Operation and maintenance of testing machines and miscellaneous works:
ITI (Fitter)

The suitability of the candidates for carrying out the different works as described in the *schedule of quantities* will be adjudged by a specially constituted committee of the AUSC-PF. Prior experience in similar works would be desirable.

2. The contractor shall carry out the assigned works as and when required by the user department. The contractor shall be liable for any deficiency in the works. Any test which needs to be repeated due to errors from contractor shall not be chargeable.
3. If the expertise of the personnel employed by the contractor is found to be inadequate for the job assigned, the department reserves the right to ask for alternate manpower.
4. Place of work: AUSC project facility, Kokilamedu.
5. Duration of work: 11 (eleven) months.
6. All materials and tools required for the above mentioned works will be provided by AUSC project facilities. However, the contractor shall arrange any other additional tools necessary to carry out the works at no extra cost.
7. The bidder shall get the clarifications from the concerned engineer(s) and shall visit the site for familiarization before submitting the bid.
8. All safety precautions shall be observed as stipulated by the engineer-in-charge. The contractor shall be liable for any damage to the man and material due to non-observance of safety precautions during currency of the contract.
9. The contractor shall be liable for safety of the personnel working under the contract.
10. No escalation clause is applicable during currency of the contract.
11. The scope of work can vary $\pm 10\%$ at the discretion of the department and the same unit rates shall be applicable.
12. Sequence of work shall be decided by the engineer-in-charge depending on the site conditions.
13. The rates offered by the contractor shall include all taxes and levies.
14. No transport facilities will be provided by the department for the contract personnel.
15. Payment will be made to the contractor on quarterly basis against the number of tests and maintenance activities carried out by the contract personnel.
16. The contractor shall ensure payment of at least the minimum daily wages to the contract personnel within the 1st week of every month during the operational period of the contract.
17. The contractor shall maintain the records of work performed by each of the personnel, duly signed by the respective engineer-in-charge on daily basis.

Special terms and condition with respect to EMD

1. As per Clause 19.8 "Forfeiture of earnest money" of the CPWD Works Manual 2010 published by Director General (Works), CPWD the following condition shall be applicable:

19.8 Forfeiture of earnest money

(1) If any tenderer withdraws his tender before the expiry of the validity period, or before the issue of letter of acceptance, whichever is earlier, or makes any modification in the terms and conditions of the tender which are not acceptable to the department, then the Government shall, without prejudice to any other right or remedy, be at liberty to forfeit 50% of the earnest money absolutely. This provision would naturally apply only to the lowest tenderer once the earnest money of all the tenderers except those of the lowest is refunded as per provisions under para 19.5(1).

(2) If contractor fails to furnish the prescribed performance guarantee within the prescribed period, the earnest money is absolutely forfeited to the President ***automatically without any notice (modified as per OM/MAN/164).***

(3) In case the contractor fails to commence the work specified in the tender documents on the 15th day or such time period as mentioned in letter of award, after the date on which the Engineer-in-charge issues written orders to commence the work, or from the date of handing over of the site, whichever is later, the Government shall, without prejudice to any other right or remedy, be at liberty to forfeit whole of the earnest money absolutely.

(4) If only a part of the work as shown in the tender is awarded, and the contractor does not commence the work, the amount of the earnest money to be forfeited to the Government should be worked out with reference to the estimated cost of the work so awarded.

(5) In case of forfeiture of earnest money as prescribed in 1 to 4 above, the tenderer shall not be allowed to participate in the retendering process of the work.

Engineer-in-charge

SCHEDULE OF QUANTITIES

A. Operation and maintenance of creep testing machines and miscellaneous works

Sl. No.	Test facility / type of work	Estimated number of days /activity	Rate/day, Rs.	Total cost, Rs.
1	Assistance in loading/unloading of specimens in single lever creep machines.	110		
2	Assistance in loading/unloading of specimens during instrumented creep, Small Punch creep tests.	22		
3	Assistance in loading/unloading of specimens during steam creep, high capacity creep system, biaxial creep system.	22		
4	Routine maintenance activities related to single lever creep machines.	110		
5	Routine maintenance activities related to steam creep, instrumented creep and Small Punch Creep testing machines	110		
6	Assistance during erection / commissioning of testing machines	11		
7	Metallography sample preparation (OM, SEM, TEM)	220		
8	Heat treatments	55		
9	Material shifting (number of times)	165		

B. Monitoring of mechanical tests and quantities

Sl. No	Type of test	Estimated number of days	Rate/day, Rs.	Total cost, Rs.
1	Single lever Creep machine	220		
2	Small Punch Creep system	110		
3	Steam creep and biaxial creep system	200		
4	Instrumented and high capacity creep test systems	22		

C. Data Analysis and Microscopy

Sl. No.	Type of work	Estimated number of mandays/work	Rate/day, Rs.	Total cost, Rs.
1	Test-wise data collection	35.75		
2	Analysis and plotting of results of creep tests	393.25		
3	Report preparation	55		
4	Metallographic investigations using optical microscope	66		
	TOTAL, Rs.			

* Rates quoted shall be inclusive of all taxes.

Total (A+B+C) = Rs.

Signature of Engineer-in-charge

Signature of Contractor / Authorised Representative