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**GOVERNMENT OF INDIA**  
**DEPARTMENT OF ATOMIC ENERGY**  
**NUCLEAR FUEL COMPLEX**  
COMPUTER DIVISION & INFORMATION TECHNOLOGY

Ref: NFC/CITD/ SW-10/2017

Date: May 29, 2017

Dear Sir,

Sub: Development of enhancements to existing Material Accounting & Production Data Processing System for Nuclear Fuel Complex, Hyderabad-500062.

On behalf of President of India, sealed quotations are invited for Study, Design, Development, Testing and Support for development of enhancements to existing Material Accounting & Production Data Processing System at Nuclear Fuel Complex, Hyderabad-500062, as per enclosed tender.

Vendors should submit offers on line at <http://www.tenderwizard.com/DAE>.

In case of any clarifications a mail can be sent to [pris-t@nfc.gov.in](mailto:pris-t@nfc.gov.in).

(G R Seshagiri Rao)  
Manager, CD&IT  
For & On behalf of the President of India

The Material Accounting and Production Data Processing System (MAPDPS), software is Java based application to record weight of the material being processed. Weight is captured at Predefined Key Measuring Points (KMP). The software captures weight from weighing scale connected to the system and also facilitates capture of barcode. Facility to record other details such as Empno Etc., and various data validations are incorporated. Several reports are generated by the Software. Presently, the software caters to 19 element fuel bundle manufacturing activities. The Software is used in two separate manufacturing plants viz., CFFP and NUFAP.

**a) Scope of work.**

- a) Enhancements to existing Material Accounting & Production Data Processing System.
  - a. MAPDPS software has provision to cater to the 19 element fuel assembly manufacturing, software is to be modified to cater to manufacturing of 37 element fuel assemblies also.
  - b. Provision shall be made to record Design Concession Request details, Nitrogen values etc., for specific set of fuel assemblies.
  - c. Separate reporting module for generating packing list, packing summary, dispatch note and shipping release shall be developed for NUFAP.
  - d. The consolidated list of requirements are given in annexure III.
- b) Vendor need to provide onsite support for day to day activities and to correct the problems encountered in the software as and when arises. Onsite support is required for two shifts a day.
- c) Vendor is required to complete the development work mentioned in point 'a' above in one year followed by three months onsite support at NFC (i.e., onsite) by deploying 4 (four) developers for first year and 4 (four) developers for next 3 months. The developers shall have basic qualification of BE (CS or IT) / MCA and with a minimum of 3 (three) years of experience in developing applications using Struts, Tiles, JSF & Hibernate. These developers will be stationed onsite at NFC for complete 15 (fifteen) calendar months period. NFC reserves the right to select competent developer/designer based on the capability and command over subject. NFC may, at its option, conduct interviews to assess suitability of candidate. Above developers need to carryout modifications/improvements to software during the warranty period.
- d) Vendor should bring personal computer systems and furniture indicated in annexure-II on a **nonreturnable basis**. Payment for the same shall be made after supply.
- e) The Contractor shall provide comprehensive and coordinated services involving the following for the realization of complete assignment.

Functional & Systems Study	Study of existing systems and procedures, business processes, user requirements and finalize the baseline requirement.
Development	Development of the application software (modification/new) based on the system specifications frozen during Systems study. NFC software team will review the code developed by the vendor.
Testing	Product developed shall be tested by the vendor.
Acceptance Criteria	Test Results shall be accepted by NFC.

Warranty & Onsite Support	<p>The vendor shall warrant that the systems developed shall fully satisfy the functional requirements as per Work Order and shall have no defects arising from design or workmanship or any act or omission by them.</p> <p>The warranty &amp; onsite support shall remain in valid for a period of <b>3(Three) calendar months</b> from the date of acceptance and sign off of the application software.</p>
Documentation	Preparation of documents as indicated in the list of deliverables given below. The developed/modified source code will become NFC property.

f) The List of deliverables for the current project

- Prototype in the form of screen shots for all screens involving redesign.
- Application software with complete Source Code and configuration settings along with every release.
- Revised User Manual for enhanced modules.

Note: All the above documents shall be submitted as a set of 1 hard copy and 1 soft copy on CD media.

- The environment for the above Application software is
  - i. Operating System : Enterprise linux
  - ii. Database Server : Compatible to Enterprise Linux version
  - iii. Application Server : Compatible to Enterprise Linux version
  - iv. Application Server : JBoss Server
  - v. RDBMS : Open source RDBMS
  - vi. CLIENTS:
  - vii. PC's/ Thin client with Mozilla Firefox/Internet Explorer browsers
  - viii. O/S : Windows 7/10/2008R2/2012
  - ix. Browser : Mozilla Firefox ESR ver 45  
Internet Explorer 11
  - x. Architecture : J2EE (JSF & Hibernate)

g) Imparting training about Java & Hibernate to NFC IT staff (Maximum 5 members) at NFC by a corporate IT Trainer (Oracle/Sun certified java Faculty) having minimum 3 years of teaching experience.

1. Postgres database Administration Training for 3 persons for 10 days.
2. Core Java Training through web/virtual class room for 3 persons for 3 months.
3. JSF & hibernate training through Web for 3 persons for 3 months.
4. Configuration & documentation of Jboss in HA mode with onsite support for 1 month & offsite support for 6 months.

## **b) Time Period**

- a) The time for execution of this work is **one year** followed by **Three months** of onsite support & warranty and will be reckoned from 10<sup>th</sup> day after the date of issue of work order.

## **c) Instructions to Contractors:**

- a) Detailed NIT is also available on website [www.nfc.gov.in](http://www.nfc.gov.in)
- b) Estimated Cost : Rs.40,00,000/- (Rupees forty lakhs only)
- c) Tender Cost: Nil.
- d) Transaction fee for Tender Processing : Rs.2,300/- (Rupees two thousand three hundred only) in favour of **M/s. ITI Ltd, New Delhi**. The payment shall be made through Internet Banking/ Credit Card/ Debit card.
- e) Earnest Money deposit (EMD): Vendor has to submit an Earnest Money Deposit (EMD) of Rs.80,000/- (Rupees eighty thousand only) in the form of crossed demand draft from any nationalized or scheduled bank in favor of "Pay and Accounts Officer, NFC" payable at Hyderabad.
- f) Tender Opening: The tenders will be opened at 3:00 PM on 15/06/2017.
- g) Contractors are required to register after getting class III Digital signature from any reputed IT organization like e-mudra, TCS, MTNL,GNFC etc. Subsequently, **User ID and password shall be obtained** for participation in tendering by registering in website by logon to [www.tenderwizard.com/DAE](http://www.tenderwizard.com/DAE) under icon "**Enroll me**".
- h) Tender Submission Procedure: The tender should be submitted online at <http://www.tenderwizard.com/DAE> from 30/05/2017 9.00 AM to 15/06/2017 2.30 PM. Tender submission date cannot be extended in any circumstances. Vendors should upload scanned copies of DD/BC for Tender processing Fee and EMD during online tender submission. Physical copies of Tender Fee and EMD should be forwarded to Manager, CD&IT, Nuclear Fuel Complex, Moula Ali, ECIL Post, Hyderabad – 500062 on or before tender opening date as mentioned in point 'f' above. If physical copies are not received on or before tender opening date, tenders belong to such vendors will be disqualified.
- i) Pre bid Meeting: Pre bid meeting will be conducted on 07/06/2017 at 10.30 am at Conference Hall, Ground floor, Saradhi Building. Vendors willing to participate for this pre bid meet may communicate the details of participants @ two (2) per vendor to [prist@nfc.gov.in](mailto:prist@nfc.gov.in) by email on or before 16 hrs on 06/06/2017.
- j) NFC is committed to a corruption free work environment (All the purchase and Contract commitments of NFC will be honored without the citizen having to pay any bribe). In case any person demands any bribe, it is the duty of a responsible citizen to inform the matter to the Vigilance Officer, NFC, Hyderabad (Telephone – 27122181).
- k) **SAFETY** : Works should be carried out in compliance with AERB Safety guidelines on control of works guide, which is available at <http://www.aerb.gov.in/AERBPortal/pages/English/t/publications/CODESGUIDES/NRF-SG-IS-1.pdf>.

## **d) Terms & Conditions:**

- a) Working Hours: The onsite development and onsite warranty support shall be carried out between 08.45 & 16.45 hours on all NFC working days (6 Day week). In addition, the onsite warranty support shall ensure resolution of issues in a time bound manner so that manufacturing activities are not hampered. The work will be overseen by staff at NFC.
- b) Vendor has to arrange necessary Police Verification Certificate for arranging temporary monthly entry pass. NFC will not provide any boarding, transport facility to vendor's staff.
- c) Equipments & Tools: NFC will provide necessary development environment (Test servers & clients) for developers.
- d) Contractor shall sign on a non-disclosure agreement.

- e) Warranty: Onsite support cum warranty for 3 (three) months is required from the date of acceptance of work by NFC for software developed.
- f) Commencement & Completion of Work: The work shall be taken up within 10 days after placement of work order and completed within 12 (Twelve) calendar months.
- g) Bid Validity: The financial Offer shall be valid for a minimum period of 120 (one hundred twenty) days from the date of opening of offer.
- h) Performance Guarantee: The tenderer whose offer is accepted is required to submit Performance Guarantee. **Performance Guarantee shall be 5% of tendered & accepted value** in the form of Demand Draft/Pay Order/Banker's cheque/Deposit at Call receipt/FDR of a Scheduled Bank issued in favour of "Pay and Accounts Officer NFC" payable at Hyderabad or Bank Guarantee from any scheduled Bank valid till completion of contract and warranty period plus 60 days beyond that along with an additional claim period of six months. Extension of time for submission of PG **The period beyond mentioned in Letter of Award (LOA) may be extended with a late fee of 0.1% per day of PG amount.** PG shall be submitted within the period mentioned in LOA.
- i) Security Deposit: During execution of work, Security Deposit (SD) will be deducted from Running account and final bills. Security Deposit shall be @ **2.5 %** of tendered and accepted value. The EMD submitted along with the offer will be returned after receiving Performance Guarantee (PG). The security deposit will be deducted at the rate of **2.5%** of bill value till the total SD amount is recovered. If so desired by the contractor, the total SD amount can be deposited in the form of Demand Draft or Pay Order or Banker's Cheque or Deposit at call Receipt or FDR in favor of "Pay and Accounts Officer, NFC" payable at Hyderabad.
- j) Performance guarantee will be released within one month from the date of completion of entire work including onsite support and warranty on production of satisfactory work completion certificate from concerned engineer-in-charge.
- k) Security deposit will be released after three months from the date of completion of entire work or after the payment of final bill whichever is later without interest.
- l) Payment: The payment for software development will be paid as per following schedule.

Project Stage	Deliverables	Payment Terms
Completion of training to IT Staff on Core Java, Advanced java and Java Server Faces	1. Training through class room / web based 2. Course material	Total amount for training as indicated in Item 2 of schedule of quantities of work order.
Supply of Hardware	Supply of Furniture and PC Systems as per annexure-II	Total amount after supply of hardware and furniture as per Item 3 of schedule of quantities of work order.
System Study	Study of the existing Software and prepare the system understanding document	10% of Value of item 1 of schedule of quantities of work order.

System Analysis	Submission of Software Requirement Specification document for approval by NFC.	10% of Value of item 1 of schedule of quantities of work order.
Application Design	Prototype in the form of screen shots, reports for approval by NFC where screen re-design is involved.	10% of Value of item 1 of schedule of quantities of work order.
Application Development	Application development along with Source Code and configuration details	25% of Value of item 1 of schedule of quantities of work order.
Testing	Preparation of test cases, test cases should be submitted for approval by NFC	10% of Value of item 1 of schedule of quantities of work order.
Implementation	Data migration and training to end users.	10% of Value of item 1 of schedule of quantities of work order.
Documentation	Submission of User manual and system configuration document	10% of Value of item 1 of schedule of quantities of work order.
Post Warranty	Application source code	15% of Value of item 1 of schedule of quantities of work order after completion of every 3 (three) months of warranty period.

m) Income tax at the rate of 2% (two percent) and VAT @ 5% (five percent) as applicable will be deducted at source on the gross payment made to you from your bills. Tenderer shall quote the rates inclusive of all taxes, ESI and EPF except service tax. Payment towards service tax will be reimbursed only on submission of documentary evidence towards its payment to concerned authorities. PAN and Service tax registration number shall be indicated on your bills.

n) Vendor Eligibility:

- a. Vendor should have executed works of similar nature of following value in last seven years.
  - i.
    1. One similar completed work value not less than 80% of Estimated cost i.e. Rs. 32.00 lakhs "OR"
    2. (2) Two similar completed works each value not less than 60% of estimated cost i.e., Rs. 24.00 lakhs "OR"
    3. (3) Three similar completed works each value not less than 40% of Estimated cost i.e., Rs.16.00 lakhs.

And

- ii. One completed work with value not less than 40% of Estimated cost i.e., Rs.16.00 lakhs shall be from Central Govt./state Govt./Central autonomous/ CPSU).
- b. **Turnover:** Average annual financial turnover should be at least **60% of the estimated cost** i.e., **Rs. 24.00 Lakhs during the immediate last 3 consecutive** financial years. They should not have incurred any loss in more than two years during last 5 years period ending with **31.03.2017**. The turnover shall be a certificate from Chartered Accountant for last three years as mentioned in the bid document, should be uploaded and further details, if required by the department shall be submitted during/after opening of bid. There is no need to upload entire voluminous balance sheet.

**Copy of Auditor's Balance sheet should be uploaded and submitted by bidders in support of this.**

- c. **Solvency:** Contractor should have the solvency for an amount equal to 40% of the estimated cost of the work i.e., **Rs. 16.0 Lakhs**. Copy of Certificate issued by any scheduled Bank is required to be uploaded and submitted.
- d. All the above documents as proof evidence are to be uploaded online and the physical copies should reach Manager, CD&IT, Nuclear fuel Complex, Hyderabad – 500062 on or before tender opening date.
- e. Trainer (in case of training at NFC).
  - i. Should be a Sun Certified Java trainer with 3 years of teaching in advanced java & JSF.
  - ii. Should have imparted training in at least two corporate trainings in the last one year.
  - iii. Vendor should submit the details of trainers and syllabus to NFC for approval.
  - iv. Vendor should arrange a demo class by each trainer before commencing actual training. NFC reserves the right to reject the trainer based on the demo or subsequent actual class.

e) Developers:

- f. Vendor should submit the CV's of proposed developers to Manager, CDIT, NFC. NFC may conduct interviews for finalizing the developers after submission of CV's.
- g. Vendor should ensure that the selected developers should work for at least for twelve months at NFC. In case of resource replacement, there should be 60 days overlapping period for knowledge transfer.
- h. The developers may have to work beyond 7 p.m. in the presence of NFC IT staff during deployment/warranty period for attending/solving problems encountered on priority.

- i. Contractor shall submit Police verification Certificate (PVC) of selected developers to be engaged for the work to get entry pass for working personnel/staff. All stipulations and instructions given by Security personnel, CISF from time to time shall scrupulously be followed for entry, exit of men and materials and as also during execution of work for security purpose.
- j. Vendor has to ensure that manpower attrition should not delay project progress.



**Tender Ref: NFC/CITD/SW-10/2017**

**Dt:**

**Scheduled of Quantities  
(To be filled by Vendor)**

Sub: Development of enhancements to existing Material Accounting & Production Data Processing System for Nuclear Fuel Complex, Hyderabad-500062.

**Format-A: Financial Offer /Quotation**

S No	Description	Unit	Qty	Unit rate in Figures & words	Total
1	Development of enhancements to material accounting software and 3 months onsite support as per the scope indicated in tender document	Lump sum	Lump sum as per scope of work		
2	Training Charges as per the Item No. g of Scope of work				
	Postgress training for 3 persons	Batch (of 3 persons)	1		
	Core Java Training for 3 persons	Batch (of 3 persons)	1		
	JSF & Hibernate training for 3 persons	Batch (of 3 persons)	1		
	Configuration of Jboss in HA mode	lump sum	1		
3	Cost of Personal computers and Furniture specifications as indicated in annexure - II				
	Cost of Personal Computers	Nos	8 Nos		
	Cost of chairs	Nos	4 Nos		
	Cost of Tables	Nos	4 Nos		
	Cost of 2 TB external Hard disks	Nos	5 Nos		
	Cost of Adobe Photoshop License for 3 years	lump sum	1		
	Cost of acrobat pro dc license for 3 years	lump sum	1		
				<b>TOTAL in Rs.</b>	

Rupees \_\_\_\_\_ only)

**Name of Contractor:**

**Pan No:**

**Bank A/c No:**

**IFSC Code:**

**Name of Bank & Branch:**

Note: All the prices quoted above are inclusive of all taxes except service tax. Lowest bidder will be determined based on total cost.

## **Annexure-II**

1. PC Specifications: Qty 8 (eight) Nos Branded (HP/Dell) business class desktop PC system with latest Intel i5 (6<sup>th</sup>/7<sup>th</sup> generation) based processor, 12 GB RAM, minimum 1 TB hard disk, 21" LCD/LED monitor or better with wireless network card, DVD r/w drive, licensed windows 10 Professional Operating System and with 3 years onsite comprehensive warranty from the date of supply/this work order, whichever is later.
2. Furniture:
  - Four (4) Nos Computer tables of standard make (Godrej model C11 or equivalent) suitable for computer operations.
  - Four (4) Nos Computer chairs of Godrej make or equivalent (model Pulse full Back support) suitable for long hours of working.
3. 5 No's of 2 TB external Hard disks of Make Seagate Backup plus / Westron Digital - Mypassport ultra.
4. Vendor should supply Adobe Photoshop, acrobat pro dc licenses for one PC.

- A. Enhancements for software deployed in Shop floor.
1. Pellet Loading area
    - a. Provide a check on Zr alloy wt also (i.e empty tube tray weight), The valid range will be provided for each of tube-tray (based on tube diameter).
  2. End Cap Welding(ECW) area
    - a. Provision to change End Cap lot number by supervisor, incase if operator saves a wrong value.
    - b. Provision for displaying alert after welding 34 trays and request for setup after every 34 welds.
  3. Metallography
    - a. A report is required for displaying the machine wise production made within given two dates.
  4. Ultrasonic Testing
    - a. New field for recording, whether 100% inspection is made, to accept tray.
  5. EVI stage
    - a. Screen modification to record rejects and corresponding defects, with a check on sum (defects count) shall be equal to number rejected elements.
  6. EPW stage
    - a. The existing Machines list is to be modified covering all machines at NUFAP
    - b. System is not generating Bundle card for 37 Fuel assembly.
    - c. The differences in Bundle card formats of NUFAP and CFFP are to be sorted out.
    - d. Provision for displaying alert after welding '*n*' assemblies and request for setup after every '*n*' welds.
  7. Provisions shall be made available for recording DCR details, Nitrogen values etc. (These values shall be populated back to respective Tray/Bundle, so that they are available in Tray/Bundle card).
  8. Reports for Packing List, packing Summary, Dispatch Note and Shipping release shall be specific to NUFAP, as there are few differences in formats between the NUFAP and CFFP.
  9. The following requirements are specific to NUFAP and feasibility for the same is to be studied.
    - a. Provision for modifying the quantity of type of elements in BT to overcome mismatching of elements (there is no Process control in shop floor, hence change is software is required).
    - b. Provision to maintain separate bundle number series SRs for different types of fuels i.e DU,DDU, Thoria etc
    - c. Interface of equipment database with MAPDPS regarding HLT and DI.
    - d. Provision for entry of type of fuel in packing list, packing summary, dispatch note etc.

B. **Requirements in MAPDPS for Block A from NUMAC perspective** (Separate report for assembly type, each source country and in excel as well as PDF format).

1. Report of IAEA declared fuel Bundles with bundle number & Uranium weight in Kg for any given Period of time.
2. IAEA declared packed bundle stock report with Box number, bundle number and Uranium weight in Kg and other report with Box number, number of bundles, starting bundle number - end bundle number & total Uranium weight in Kg at any given date .

3. IAEA declared unpacked bundle stock report with bundle number and Uranium weight in Kg at any given date.
4. QC cleared Packed bundle stock report at any given date with Box number, bundle number and Uranium weight in Kg and other report with Box number, number of bundles, starting bundle number -end bundle number & total Uranium weight in Kg at any given date .
5. QC cleared bundle stock report with bundle number and Uranium weight in Kg at any given date.
6. Report of fresh fuel bundle dispatches with FDN number, date of dispatch, reactor/facility name, number of bundles, Uranium weight in Kg & source material for given period.

C. **Requirements in MAPDPS for Block B from NUMAC perspective** (Separate report for each source country, assembly type and in excel as well as PDF format).

1. QC cleared Packed bundle stock report at any given date with Box number, bundle number and Uranium weight in Kg and other report with Box number, number of bundles, starting bundle number -end bundle number & total Uranium weight in Kg at any given date.
2. Total QC cleared bundle stock report with bundle number and Uranium weight in Kg at any given date.
3. Report of fresh fuel bundle dispatches with FDN number, date of dispatch, reactor name, number of bundles, Uranium weight in Kg & source material for given period.

D. Two years onsite support needed for any modifications/ new requirements/ problems encountered in NUMAC software.