REC POWER DISTRIBUTION COMPANY LIMITED
(A wholly owned subsidiary of REC Ltd.)
Corporate Office: 1016-1023, 10th Floor, Devika Tower, Nehru Place, New Delhi-110019
Phone (011) 44128752,53,60,68 Fax (011) 44128768
Regd. Office: Core-4, SCOPE Complex, 7, Lodhi Road, New Delhi-110003, Phone (011) 24365165

No. RECPDCL/DGM/Tech (Vol-I)/6/EOI/4621 **Dated:09.04.12**

Notice Inviting Expression of Interest (EoI)

For

Empanelment of Consultants for Energy Audit and Residual Life Assessment study of Power Plants and Transmission & Distribution Networks

REC Power Distribution company limited (RECPDCL) is a wholly owned subsidiary of Rural Electrification Corporation Limited (A '*Navratna'* company with Ministry of Power, Government of India) and have been providing Third Party Inspection works for RGGVY works, Feeder Renovation Program (FRP) and High Voltage Distribution System (HVDS), Evaluation of HVDS, Preparation of Detailed Project Reports (DPR), Lender's Engineer Services for various power utilities/institutions across country.

RECPDCL intends to empanel technically qualified and professionally managed Power/Energy Consultancy Firms/Institutions to carry out the Energy Audit and Residual Life Assessment Study of Thermal Power Plants and Transmission & Distribution Networks.

Description of task, qualification required, EOI submission format and procedure as well as EOI Evaluation methodology is provided in the "Detailed Expression of Interest Document available on REC website (www.recindia.com) , RECPDCL's website (www.recpdcl.in). A hard copy of the Detailed EOI document can also be collected from RECPDCL's office at the address mentioned above by submitting a written request on company's letter head for the same.

(i) Date of Release of EOI : 11 April 2012

(ii) Last Date for Submission of EOI response: 02 May 2012
(Time: Upto 15:00 hrs)

(iii) Date of Opening of EOI response : same day at 15:30 hours

(S.C. Garg)
Dy. General Manager (Tech)

Detailed Expression of Interest from Consultancy firms/ Institutions for

Empanelment with RECPDCL

1. **REC Power Distribution Company Limited (RECPDCL)** is a wholly owned subsidiary of Rural Electrification Corporation Limited (A '*Navratna'* company with Ministry of Power, GOI) and have been providing Third party inspection works for RGGVY works, Feeder Renovation Program (FRP) and High Voltage Distribution System (HVDS), Evaluation study of HVDS, Preparation of Detailed Project Reports (DPR), Lenders' Engineer Services for various power utilities/ institutions across country..

2. As a part of its expansion RECPDCL is planning to provide consultancy in Residual Life Assessment Studies and Energy Audit in respect of Thermal Power Plants, Grid Sub- stations, Transmission & Distribution systems of various central/ state power utilities.

3. Brief outline of work for which RECPDCL is looking for consultants for empanelment is mentioned below.

Energy Audit will be done to identify the areas of heat rate loss in major systems like steam and water cycle, Boiler and auxiliaries, Turbine and auxiliaries, Balance of plant equipments and Electrical systems. Performance assessment of major equipments in the plant will be done to assess the overall plant efficiency.

The consultant will conduct, super wise and complete the energy audit in a time bound manner.

Presentation of the audit report will be made to the REC-PDCL and a draft copy will be submitted for comments. Consultant shall also assist REC-PDCL for making presentation before the client.

After incorporation of comments and approval of client the final report will be submitted.

Broad scope of work for Energy Audit of Power plants and Transmission & Distribution Networks but not limited to the followings:

A) Power Plant

- Present performance level of all major equipments will be evaluated.
- Controllable losses will be identified.
- Remedial measure to restore the parameters will be suggested.
- Cost benefit analysis and payback period for expenditure incurred on remedial measures will be given.

In order to have a broad understanding of the topics of Energy Audit a list of major mechanical and electrical equipments involved are being given herewith. The detailed scope of work along with the specific requirements shall be intimated while seeking for the financial bid.

Boiler and its auxiliaries

a) Boiler

For assessment and calculation of Boiler efficiency following tests will be made to determine:

- Heat loss in dry flue gas
- Heat loss due to evaporation of moisture and H2 in fuel
- Heat loss due to moisture in air
- Heat loss due to incomplete combustion to CO
- Heat loss due to un burnt carbon
- Heat loss due to blow down
- Heat loss due to radiation

b) Economizer

Effectiveness of Economizer will be checked.

c) Air heater performance test –

Monitoring of air pre heater performance involves measurement of several critical parameters to determine air heater gas side efficiency (how well the APH is transferring heat from the gas side to the air side).

Following tests/ measurements are suggested:

- measurement of exit flue gas temperature and its analysis
- Air side and gas side pressure loss across APH
- Gas side efficiency – As ratio of gas temperature drop corrected for air leakage to temperature head expressed as a percentage.
- Air leakage as percentage of air passing from airside to gas side
- X-ratio i.e. heat capacity of air passing through the air heater to the heat capacity of gas passing across the air heater.

d) Performance test of ID, FD & PA fans

Following tests/ measurements will be done:

- Loading and combine efficiency of fan and motor and their specific power consumption will be calculated.
- Performance Evaluation of Fans for comparison with its design and identify energy conservation measures such as pulley change, VSD, Inlet guide vanes & FRP Blades etc

e) Coal mills

The dirty air/coal flow test is done to:

Detect imbalance, if any, in the air and coal flows between the discharges pipes of a Pulverizer.

The following tests will be carried out for air balancing through the discharge pipes of Mills:

- Clean air flow test
- Dirty air flow test
- Collect a representative, iso-kinetic, sample of pulverized coal from different pipes for determination of fineness fractions
- Crosscheck the readings of the station instrumentation e.g. primary airflow through the mill, mill outlet temperature, coal flow through the feeder etc.

Turbine and its auxiliaries

a) **Turbine**

The purpose of HP/IP Turbine Enthalpy Drop Test is to determine the efficiency of HP and IP sections of the turbine, trend their performance and generate data to pinpoint the probable cause of degradation.

The following tests are carried out for Turbine performance test:

- Turbine cycle heat rate test
- HP/IP Cylinder efficiency
- Turbine Pressure survey

b) Condenser performance

Condenser tests are done to assess the thermal performance of the condenser in terms of tube fouling, air-in leakage and to optimize condenser-cleaning schedules.

The following tests will be carried out:

- Terminal Temperature Difference (TTD)
- C W Water velocity in tubes

- Sub cooling of Air Steam mixture and condensate
- C W temperature rise
- Flow of Air Steam mixture
- Absolute back pressure deviation from expected value

c) CW pumps, Boiler feed pump, Condensate Extraction pump, Vacuum pump

Following parameters will be measured:

- Comparing Measurement of flow at operating speed to design speed with that of expected flow.
- Calculation of pump efficiency
- Specific power consumption
- Checking BFP Auto Re-circulation valve for passing during normal operation for need of their replacement by Multi Stage Pressure reduction Valves
- Checking of System leakages, Excess recirculation and Discharge Valves' throttling for all pumps for recommendations for resolving the problems
- The Discharge Head & Flow of the operation points of pumps measured during audit will be plotted on their design QH curves and the extent of deterioration determined for rectification / replacement of impellers
- Evaluation of Pumps' performance against their design characteristics to recommend Energy Conservation measures e.g. use of VFDs, Impeller trimming / changing and conducting water balance studies

d) H P Feed water heaters

The purpose of Feed water heater tests is to assess the current performance and to provide data to assist in optimization of normal operation of the heater.

The following tests will be carried out for HP Heaters:

- Terminal Temperature difference (TTD)
- Drain cooler approach (DCA)

e) Ejector efficiency

Operating efficiency of ejector will be checked and reasons for deterioration will be identified.

f) Passing of water / steam through valves

Passing of water / steam will be checked using various relevant techniques. Passing valves will be identified for rectification.

g) De-aerator

The following test will be carried out on De-aerator

- De-aerator drop test will be carried out to determine the water/steam leakage in the system.

<u>Balance of plant equipments</u>

a. Coal Handling Plant

- Power measurement of all equipments like Coal crushers, Coal feeders, conveyers, wagon tippler etc.
- Idle running analysis

b. Ash Handling Plant

- Performance test of all pumps by power and flow measurement

- Ash water ratio optimization

c. DM plant

Performance test of various system and equipment will be done to evaluate efficiency of DM plant.

d. Air conditioning and ventilation

- Performance evaluation of AC Plant with respect to net cooling capacity along with heat load of Air handling unit and energy requirements at the operating conditions vis-a-vis design condition to be determined.

e. Compressor.

- Capacity evaluation of compressor.
- Volumetric efficiency
- Specific power consumption.
- Pressure monitoring
- Identification of leakage

f. Cooling tower

- Cooling Tower performance test will be carried out to determine
  - Range
  - Approach
  - Capability of Cooling Tower
- Fan efficiency
- Fan power consumption.

- Recommendations for Energy Conservation measures like FRP fans, On-Off controls &VSD etc.

Insulation

- Surface temperature measurement at location of damage insulation and hot spot area.
- Estimation of heat loss.

Water Balance Study

Water Balance Study will be done to establish water consumption for different application in Thermal Power Station and to identify and quantify the areas of losses and suggest ways and means for reduction in wastages.

Following assessments will be done:

1) Assessment of
    - Water Circulation in Condensers of units
    - Raw water Consumption
    - Clarified/ Service water Consumption for equipment cooling.
2) Study of Ash water Consumption.
3) Steam and DM water audit for assessment of loss, suggesting measures for improvement.
4) Performance evaluation of various pump of water supply system.
5) Evaluate specific energy consumption (KW/ M3) of major water pump.
6) Evaluate
    - Water loss in the system
    - Energy losses in the system

- Specific water consumption (Litre /Kwh)

7) Total water balancing of following:

- Raw water
- Makeup water
- Circulating water
- Ash water
- Service water
- DM water

Electrical system

- **Transformer :-**
  - Assessment of the health & Transformer load of GT,UAT, Station Service transformers etc.
  - Identification of possible Energy conservation options in this area
- **Motors:-**
  - Assessment of loading condition of HT and LT motors of Boiler area, Turbine area and balance of plant area
  - Assessment of operating parameters like load variation, power factor, of HT and LT motors consuming power more than 50KW.
  - Assessment of capacitor rating for PF correction of motors. Analysis for use of energy efficient motors.

Identification of possible Energy conservation options in this area (with latest techniques).

Plant lighting system

- A survey of lighting will be done and areas of reducing power consumption for lighting will be identified.
- Determine if existing lighting level are higher than required level use a meter to measure light level.
- Measurement of Lux level at Work Place to compare with reference standards and recommend energy conservation measures such as use of CFL,HPSV, HF Electronic ballast, Mirror optic luminaries, LED, Efficient lighting system controls, Occupancy sensors etc.

General

1. The following will be checked in TG Cycle which are responsible for deterioration of performance. These may also be ascertained after proper checking of records/ historical data:
    - Estimation of heat content of Blow Down for utilizing it for condensate heating or for efficacy of Vapor Absorption HVAC System to replace Vapor compression HVAC.
    - Effect of excess loading / power consumption of ID Fans.
    - In general IGV & Damper Controls in PA & FD Fans may be examined for replacement with VFD control.
    - If ejectors are being used for vacuum pulling, the impact of their replacement by Vacuum Pumps will be examined.
    - HP / LP Bypass valves' passing
    - HP / LP Heaters' individual / Group bypass valves' passing
    - Passing of Alternate Drains' to condenser
    - Erosion / Salt deposition on turbine blades

- Increased Turbine flow path clearances / worn out seals
- Steam / Feed water / Condensate leakages in TG cycle
- Condenser tubes' fouling / satisfactory operation of on line tube cleaning system if employed
- Condenser tubes' leaking / TDS – PH of circulating DM water
- Air ingress to vacuum system
- Increased CW inlet temperature due to cooling tower problems in closed cycle
- Inlet / outlet gasket leaks of HP / LP Heaters
- HP /LP Heaters' tubes' leakages
- Heaters' Extraction / Drain valves' passing / stuck up problems
- Problems in maintaining Heaters levels
- Heaters' Extraction Steam High parameters
- Throttling due to oversize pumps in the system
- Pumps recirculation valve passing
- Insufficient Pumps' NPSH leading to inefficient operation / cavitations
- Erosion of Pumps impeller blades
- Variation in Main & HRH Steam Parameters from Rated Conditions
- Higher RH **/** SH Spray
- HP Heaters Outages **/** Performance Deterioration
- System Valves **/** Vents Passing

- Steam Leakages **/** Passing in Turbine Glands **/** Drain Valves etc
- Condenser Performance Deterioration
- Cooling Water Temperature **/** Condenser Vacuum
- Coal Quality Variation
- Part Load Operation
- Aging

B) Transmission & Distribution

For 11 /33 KV Feeders:

(1) Verification of Transmission Company bill

(2) Assessment of Monthly energy & demand for Divisions and Subdivisions of Discom using the Load survey data of feeder meters

(3) Loss assessment in specific 11 KV feeders (from Feeder to DTs)

(4) Loss assessment in specific areas (from 11 KV up to end consumers)

(5) Analysis & verification of Energy flow from feeder to DTs & HT consumers with load survey data and recommendations for system improvement

(6) HV level Energy Loss Reports for each Subdivision & division Assessing HV level Energy Loss by taking Division / Subdivision input at start of 11 kV Feeders & Matching the sum of feeder energy with Energy reconciled at DTs & HT consumers at Division / Subdivision levels

(7) Energy balance reports for Grid Substations using the feeder Meter Data

(8) Feeder MIS Reports using feeder Meters data, which will cover the Power factor, Reactive demand, Voltage profile & other important parameters

(9) Loss assessment in specific DTs (from DTs to end consumers)

(10) MIS report on DT (Based on DT meter data)

C) Residual Life Assessment Studies (RLA)

To assess the condition and remaining life of power plant components, GSS components operating at high temperatures and at high stresses to optimize inspection and maintenance schedules, to make RUN, REPAIR, REPLACE decisions and to avoid unplanned outages. Residual Life Assessment of Power Plant components based on periodic examination of critical components is to be carried out involving.

A. To identify the critical areas where failures are likely to occur and select suitable NDE techniques for detection of such failures. Based on design criticality, past experience and previous failure information, suitable approach in inspection methodologies is adopted.

B. Various NDE techniques for detection of cracks, effects of corrosion / erosion etc. in addition to commonly adopted techniques such as Ultrasonic thickness gauging, Ultrasonic flaw detection, Penetrant testing, Flourescent magnetic particle testing, Specialised techniques such as assessment of hydrogen damage by Ultrasonics, measurement of steam side oxide scale by in-situ ultrasonics, boresonic inspection of rotors, eddy current examination of rotor blades and root, video probe examination of critical components are employed.

C.Metallurgical tests such as in-situ metallographic using replica method, in-situ chemical analysis by metal spectroscope / X-ray fluorescence method, in-situ hardness measurement etc.

D. Sampling of component specimens for detailed laboratory analysis.

4. Eligibility/ Qualification Criteria:

The Consultant intending to be empanelled for such above mentioned tasks should fulfill the following eligibility criteria and shall provide documentary evidence towards the following:-

I. The Consultant must be a registered legal entity in India (An organization, which is legally permitted to enter into a contract).

II. The consultants shall be well acquainted with the Regulatory environment in the

power sector, and functioning of Utility /Central or State Electricity companies, Central/Public Sector Units/Central or state electricity regulatory commissions and possess experience in dealing with such similar matters on wide range. For the purpose of eligibility criterion the same can be demonstrated by submitting testimonials of successful work completion in power sector as a part of its response.

III. The Consultant must have completed at least one assignment of consultancy in Power Sector with State / Central / CPSUs/ IPPs/TSPs for value not less than Rs 40.0 lakhs (Rs. Forty Lakhs only) or two assignments of Rs 25.0 lakhs each or three assignments of Rs. 20.0 lakhs each during the last 2 years ending last day of month previous to the one in which proposals are invited. Documentary evidence of above must be submitted along with proposals.

Assignments of Consultancy in Power Sector especially in field of Thermal Power Station and Transmission & Distribution Networks shall only be taken into consideration for meeting up the qualifying criteria.

IV. The consultant should have a minimum annual turnover of Rs. 3 crore in each financial years of last three consecutive years or total turnover of at least Rs. 10 crores in last three years.

V. The Consultant must have minimum 05 full time consultants graduate / Post graduate engineers working in the firm out of which at least two must be Certified Energy Auditors, one having Electrical engineering background and other having Mechanical Engineering back ground. These certified Energy Auditors must have minimum 5 years of post certified energy auditor experience either in

"conducting Energy Audits or conducting performance efficiency testing of thermal power plant's equipment such as Steam TG, Condenser Heaters, Pumps Boiler, GSS equipments and Fans etc."

OR

"conducting Energy Audit or conducting performance efficiency testing of T&D

equipments such as Power Transformers, Distribution Transformers & PF improvement devices etc."

VI. The responder should submit its valid documentary proof for Sales Tax/ VAT Number, Service Tax registration number (if applicable) and the PAN No. etc.

VII. No Consortium or Joint venture responses are allowed, in any case.

VIII. A specific technical proposal for indicating clear detail of all technical parameters related to the task shall be submitted along with the offer. The technical proposal should contain description of approach, methodology and detailed write up about how the activities can be done along with the case studies.

a. An indicative time schedule for carrying out each element of the task should also be submitted with justification for procedures to be adopted

b. A case study with complete scenario planning of how an agency is going to execute the above mentioned work for a utility should be attached with the proposal covering the scope of work briefly defined for the task as mentioned above.

IX. Responses of responder(s) not fulfilling the eligibility criteria/pre-qualification conditions given above shall be summarily rejected.

X. RECPDCL reserves the right to verify/confirm all original documentary evidence submitted by responder(s) in support of above mentioned clauses of eligibility criteria. The consultant has to submit relevant documents to support the credentials, experience etc. Each page of the document should be signed by authorized signatory.

5. Empanelment shall be initially for a period of Two years, which may be renewed for further period(s) at the sole discretion of RECPDCL.

6. Empanelment with RECPDCL does not confer any right to the agencies to be invited for participating in any bids, tenders etc. floated by RECPDCL. RECPDCL reserves the right to call bids/assign work/associate the agency/agencies in any area as may be

deemed fit by REC PDCL depending upon the profile provided by the agencies and requirement of assignment.

7. REC PDCL reserves the right to accept or reject any or all requests for empanelment without assigning any reason thereof.

8. RECPDCL reserves its right to call agencies for detailed presentations, without any liability, if so required.

9. The RECPDCL reserves the right to waive off any shortfalls; accept the whole, accept part of or reject any or all responses to this EoI.

10. RECPDCL reserves the right to cancel or annul the Expression of Interest (EoI) at any stage and call for fresh EoI and/or tender for any and /or all of the tasks

11. RECPDCL reserves the right to call for fresh tenders at any stage even if the EOI is in evaluation stage or the responders have been empanelled.

12. RECPDCL reserves the right to procure /to avail services of any items in any task from sources other than those empanelled with RECPDCL during the period of empanelment.

13. The RECPDCL at its discretion may use the complete proposed solution and/or a part of, technical specifications as submitted by any responder(s) with the response(s) for further stages. The said usage does not confer any right and/or claim of any sort and/or manner on the responder(s) for this EoI and/or tender irrespective of the outcome of this EoI.

14. The responder shall bear all costs associated with the preparation and submission of its response, and RECPDCL will in no case be responsible or liable for these costs, regardless of the conduct or the outcome of the EoI process.

15. Processing Fee :

The EOI shall be accompanied with **non-refundable** processing fee of Rs. 15,000/- (Fifteen thousand only) in the form of demand draft / pay order issued in favour of "**REC Power Distribution Company Ltd"** and payable at New Delhi. If the response is not

accompanied with the prescribed processing fee or if the processing fee attached with the response is not in order, then that response shall be liable to be summarily rejected. Processing fee shall be non-refundable.

16. Submission of EOI Response

1. The consultancy firm/Institution qualifying under the above criteria should submit only technical prequalification response in a sealed cover containing documents in support of the eligibility criteria as mentioned above along with the following documents:

    a) Processing Fee
    b) Eligibility Criterion Documents
    c) Expression of Interest Performa-Form-I
    d) Professional Experiences –Form-II, III & IV
    e) Details of Methodology and work plan proposed-Form-V

2. EOI shall be submitted in a sealed cover super scribing "EOI for Empanelment of Consultants for Energy Audit and RLA Studies" and shall contain three separately sealed envelopes super scribed as Envelope-I, Envelope-II and Envelope-III and also clearly mentioning bidder's name and address.

3. Envelope-I shall contain the Bank DD/Banker's cheque against the Processing Fee for an amount of Rs. 15,000/-

4. Envelope-II shall contain documents pertaining to qualifying criteria including technical and commercial terms and conditions and the detailed information as per formats mentioned at Form-I & Form-II, III & IV of the documents may be submitted with this envelope.

5. Envelope-III shall contain the "Technical Proposal / Report (FormV) including case study" for the task."

6. The Envelope-I of the response and the Envelope-II & III of those who have submitted processing fee in Envelope-I will be opened on the same day in the presence of the responders or their representatives who choose to remain present.

7. The response as per the 'Expression of Interest' document shall be submitted in sealed envelopes through a letter of transmittal.

17. Evaluation of EOIs

Stage 1

RECPDCL will identify the eligible responders based on the evaluation of the technical pre-qualification response.

Stage 2

Such shortlisted responders will be required to make a detailed presentation of their organizational strength/weaknesses, experience, understanding of the work mentioned above, before the evaluation committee. The date, venue and time allocated for presentation shall be informed to each of the shortlisted responders. The evaluation of the presentation will be done based on

i. Technical Proposal along with case study.

ii. Technical Discussion/Presentation.

RECPDCL may consider to make either one panel of agencies covering both Power Plant and Transmission & Distribution or separate panels of agencies for “Power Plant” and “Transmission & Distribution”. In case of single empanelment RECPDCL may consider to empanel 10 to 15 agencies for both the areas or in case of separate empanelment, maximum 10 agencies may be considered for each area. However, RECPDCL reserves the right to increase or decrease the number of agencies to be empanelled.

Whenever, RECPDCL is likely to get/ bid a project where the services of empanelled parties would be required, the detailed work requirements along with technical details would be intimated to the empanelled agencies inviting their financial bid. The empanelled agency would also submit their acceptance of the proposal along with terms and conditions/ prescribed EMD at the time of submission of financial bid to REC-PDCL.

18. Last date for submission of EOIs :

1. Response should be kept in a sealed envelope, addressed to Chief Executive Officer,, REC PDCL, Corporate office 1016-1023, 10th Floor, Devika Tower, Nehru Place, New Delhi-110019 and shall be dropped in the Tender box, which is placed in the office premises of REC RDCL or may be sent by registered/ speed post in order to reach the RECPDCL office within stipulated date and time. REC PDCL would not be responsible for any misplacement /loss/late receipt of response.

2. Only complete EOI response received on or before the due date and time shall be considered. The EOI received by telegraphic/fax/email mode or incomplete or after due date or time shall not be considered.

3. The responses complete in all respects are required to be submitted latest by on or before 02/05/2012 up to 15:00 hrs and shall be opened on the same day at 15:30 hrs and the agencies or their authorized representative may, if they so desire, be present at the time of opening.

(S.C. Garg)
Dy. General Manager (Tech),
RECPDCL

FORM-I

Responder's Particulars

To

Chief Executive Officer, RECPDCL,
Corporate office 1016-1023,
10th Floor, Devika Tower,
Nehru Place, New Delhi-110019

Sir,

We wish to apply for empanelment with RECPDCL as associate for

Task _____for EOI No._____ as per details enclosed.

1. Name of Organization
2. Address & Contact No. with Name of Contact Person
3. Legal Status of the organization
4. Professional Experience of the consultant – to be enclosed as per Form II
5. Year of Establishment
6. Name of Consultants (CVs as in form IV)
7. Range of Services Offered (To be enclosed separately in not more than two pages).
8. Brief of Major Assignment: To be enclosed as per Form-III
9. Service Tax Registration Copy : To be enclosed
10. PAN Number : To be enclosed

11. Sales Tax/ Vat Number : To be enclosed

12. Name of the Authorized Signatory, who is authorized to respond to this EoI and in case of short listing quote in the tender and enter into the contract (Power of attorney to be submitted)

13. Additional information if any :

14. _____

15. _____.

(Authorized Signatory on & behalf of the organization)

FORM-II

PROFESSIONAL EXPERIENCE OF THE AGENCY

In years :

Collaborations/JVs (If any) :

Areas of Professional experience :

Experience in India:

No of Assignments undertaken in Power Sector (distribution/ transmission):

List of assignments with clients' name

Experience in Abroad:

No of Assignments undertaken in Power Sector (distribution/ transmission & Power Plant):

List of assignments with clients name & location against each assignment, duration in Months.:

(Authorized Signatory on behalf of the organization)

FORM-III

BRIEF ON MAJOR ASSIGNMENTS (Separate sheet for Each Assignment)

Undertaken for electric power Generation/ distribution & transmission companies/ utilities/Central Public Sector Utilities (copy of the Letter of award, experience certificate etc. to be enclosed)

Name of assignment	:
Name of Client	:
Location of Assignment	:
Originally agreed time to complete the	: Assignment in months
Actual time taken to complete the	: Assignment in Months
Scope of work of assignment in detail	: (may attach sheets)
Deliverables of the assignment	:

(Authorized Signatory on behalf of the organization)

FORM-IV

BRIEF CVs OF KEY PERSONNEL

(Separate sheet for each key personnel)

Name :

Date of Birth :

Educational Qualification :

Total experience in Number of years:

(Whether certified Energy Auditor (Yes/ No) :

If yes, give experience details as certified energy auditor:

Experience (List of positions held, giving dates/ duration, names of organizations, and brief responsibilities):

Assignments worked on in the Power Sector along with title of assignment, client's name, location & scope of work in not more than two lines each.

(Authorized Signatory on behalf of the organization)

FORM-V (Response Format)

The following notes offer guidance to proposing responders in the form of a model outline for their response document. All the headings indicated below must be addressed in the sequence shown, providing as much relevant detail as possible. (Conformance to this outline will assist the subsequent evaluation and selection activities, and any variations should be documented).

Additional headings and information may be provided by the proposing responder where they are required to include additional details or explanations.

1. Description of The Proposing Responder: (Specifically include legal status, ownership, and the name of the person within the company who is responsible for this project.)
2. The Proposing Responder's General Understanding of the Project Requirements and the Proposed Total Solution.
3. The Main Features of the Proposed Solution and Any Areas of Risk.
4. Documentation: (Describe the documentation that will be provided.)
5. Maintenance and Support: (Describe the maintenance and continuing technical support services, escalations etc that will be provided for the proposed systems.)
6. Benchmarking/Testing Procedures And Test Data Specification: (Details of the proposed benchmarking / testing procedures for equipments /systems.)
7. Warranties and Guarantees: (Details of the warranty and guarantee conditions.)
8. References and Experience in Appropriate Fields: (Details of relevant references

(including contact names) and experience of the proposing responder in the supply, installation, commissioning and maintenance of similar systems environments.)

9. Other Relevant Information: (Any other information, details, and observations that the proposing vendor considers relevant to the understanding and delivery of their proposed solution.)

Signature of Authorized Signatory

Name of the Signatory

Company Name

Date Place Company Seal