



TO:

ATT:

SUBJ: Request for Information (RFI)

Reference:

IEC Rutenberg Power Station. Unit No. 3

- Full C-INSPECTION of both Low Pressure (LP) steam turbines.
- NDT examination and removal of defects (cracks) in rotor steeples at L-0 and L-1 fir tree groove.
- Implementation of stress optimized contours of L-0, L-1 Fir tree groove.
- Feathering of ND 37 L-0 Blades in both LP rotors (4 rows).
- Turbine HP, IP valves LP By-pass valve overhaul

Dear Sir/Madam,

The Israel Electric Corporation Ltd. ("IEC") is in process of preparing a list of potential suppliers which IEC may request to participate in a purchasing process to supply the above referenced services

1. Scope of supply

- Full C inspection of both LP turbines.
- Feathering of ND 37 L-0 Blades in both LP rotors (4 rows).
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- Inspection of L-0, L-1 blades : NDT examination of the blade root grooves, removal of found defects and re-machining of affected area. Preventive machining of both LP rotors 2 steeples at L-0 fir-tree groove according to recommendation from GE Engineering and experience.
- Preventive machining of both LP rotors 1 steeple at L-1 fir-tree groove according to recommendation from GE Engineering and experience
- Overhaul of :
 - 4 HP control valves and 2 stop valves.
 - 2 IP control valves and 2 stop valves.
 - 2 LP By-Pass valves.
- Tools:
 - Five axis milling machine
 - Blading Tools
 - NDT Tools



- Commissioning Tools

2. Original General Unit Data

The steam turbine is originally manufactured by former ABB Kraftwerke (Alstom).
 Year of commissioning: 2001.

Turbine #:

Original Condensing Turbine Type	Reaction Type steam turbine with Two double flow LP turbines	
Type	HD4R0-MD4L-2ND37AU	
Rated Speed	3000	rpm
Turbine Nominal Rate	550	MW
Maximal Turbine Rate	575	MW
Throttle steam pressure	169	ata
Throttle steam temperature	538	° C
Reheat throttle steam temperature	538	° C
Throttle Steam Flow	1553623	kg stm/h
Condenser Flow	1042049	kg stm/h
Last Stage Blade Length (ND37)	37	inch
Number of last stage exhausts	4	
Total exhaust annulus area	28.8	m ²
Generator frequency	50	Hz
Exhaust pressure to the condenser	0.05	ata
LP rotor material	23 Cr Ni Mo 747	DIN
LP rotor blades material	X 22 Cr Mo V 121	DIN

A general view of two low pressure steam turbines is in attachment 1.

The last stage (L-0) blades are with a fir tree fastening to the LP rotors.

Fir Tree Fastening Last Stage Blades picture see in Attachment 2.

3. Required Information

The Information supplied by Participant shall include at least the following (also can provide information for separate clauses in the scope):

3.1. General possibility of such kind work.

3.2. Participant shall provide a reference list of similar projects for LP steam turbines rotors. The reference list shall include:



- 3.2.1. Customer company name and facility location (country/region).
- 3.2.2. Steam Turbine Type
- 3.2.3. Steam Turbine Output
- 3.2.4. Steam Turbine Manufacturer
- 3.2.5. Scope of work performed
- 3.2.6. Parts supplied
- 3.2.7. Project time schedule
- 3.2.8. Customer's contact person name and telephone/ e-mail data
- 3.2.9. List of potential subcontractors for manufacturing and/or services

- 3.3. L-0 and L-1 Blades and Rotors NDT inspection and machining schedule.

- 3.4. The on-site reverse engineering schedule (if necessary).

- 3.5. Typical LP turbine C-Inspection schedule.

- 3.6. Capabilities of engineering support in case of special findings.

- 3.7. Capabilities in supplying spare parts (L-0, L-1 blades) in case of special findings.

- 3.8. Budgetary price for equipment and consumables required for this work (including delivery).

- 3.9. Budgetary price (by completion of the table herewith).

Type of specialist	Rate for Regular working hour up to the first 8 hours in standard time (Sunday-Thursday)	Rate for over-time (i.e , for working hours beyond the first 8 hours) on Sunday- Thursday	Rate for working hour on Friday	Estimated cost of rental tools (including delivery roundtrip).
TFA (turbine & valves)				
Blader				
NDT Specialist				
Machining Specialist				
Commissioning engineer Process - system engineer				
I&C Commissioning engineer - system engineer				
Valve Specialist				
Fact Finder (turbine & valves)				

4. Commercial Terms



- a. Applicable law would be Israeli.
- b. Contractor will be liable for buy back obligations towards the state of Israel, as may be applicable.
- c. IEC will be issuing its standard contract for LTSA services with the RFP.

5. Corporate Information

The following documents/information shall be provided:

- a. Company's history with special emphasis upon corporate reorganization in the last ten years, licensee and licensor agreements.
- b. ISO 9000 certification approval for design, manufacturing and services including the certification date and validity.
- c. Annual audited report (or the equivalent thereof if not available) for the past three years, products catalogues, company description and any other information relevant to the company, its financial, commercial or professional status/situation.
- d. Company's place within the corporate structure (if applicable), with indications regarding parent companies, subsidiaries and/or affiliates.
- e. Affidavit by a legal counsel or accountant that you are a company in good standing with no current actions or claims regarding bankruptcy, insolvency, liquidation, voluntary or otherwise placing under administration, receivership, trusteeship or judicial management.
- f. A local Israeli agent name (if applicable), address, phone, fax, E-mail, availability of technical support in Israel.

6. Instructions to the Participants

- a. A participant who wishes to be considered for further evaluation towards inclusion in the contemplated purchasing process shall provide all the details and information requested in this RFI and other prequalification document which may be sent to you.
 - b. The sole purpose of this RFI and prequalification process is to provide IEC with certain information. Neither participation in this RFI and prequalification process, nor the provision of any information to IEC hereunder or otherwise shall grant participant any right, legal or otherwise, regarding participation in any current and/or future purchasing process conducted by IEC.
 - c. Based on participant's responses to this questionnaire, the information stated therein, the opinions received from references listed herein and all other relevant
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information gathered by IEC, IEC will determine whether to include participant in its list of approved suppliers for this type of contract.

- d. Subject to disclosure requirements under Israeli law, IEC shall keep all information provided in this RFI confidential and shall use it only for its own purpose, in connection with this RFI and prequalification process and/or any other purchasing process undertaken by IEC.
- e. IEC shall not be required, whether pursuant to this document or otherwise, to enter upon any purchase process of any type or kind.
- f. Please note that IEC reserves the right to request further information from parties who choose to participate in this process.
- g. Provision of references to IEC shall be deemed your agreement for IEC to apply to the referenced power station or other named facility for verification, review and receipt of opinions regarding your company.
- h. IEC shall be under no obligation to enter any transaction with any party whomsoever who responds to or participates in any procedure for the Receipt of Information to be used for the purposes of acquisition of services/equipment/systems/goods or data which is the subject of the Request for Information (hereinafter referred to as: "**RFI**") or for purposes of their development, application, production or construction.
- i. IEC shall be entitled to use the information obtained by way of the RFI, as well as any data, solution, process, technique or suggestion contained in any of the responses or documents/response material submitted to IEC related thereto. Without derogating from the above, IEC shall keep any information/data received from any person responding to the RFI in strict confidence and shall not permit the use or use same for any purpose than for its own needs unless such information must be disclosed subject to a right granted by law.
- j. A response to an RFI shall not bestow upon any person responding thereto (hereinafter referred to as the "**Respondent**") any advantage in any procurement procedure, if such procedure should be publicized at all, and IEC shall not be obliged to include the Respondent in the procurement process.
- k. Any exceptions, changes or additions to these above instructions (whether contained in any response to the RFI or otherwise) shall be devoid of validity and legal effect and shall not obligate IEC.

7. Submission Dead Line

- a. If your company is interested in being considered for possible further participation in this purchasing process, you are requested to submit the above required information by no later than _____2017.
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Responses to this RFI received after the above mentioned date may result in the information supplied being disregarded.

Sincerely,

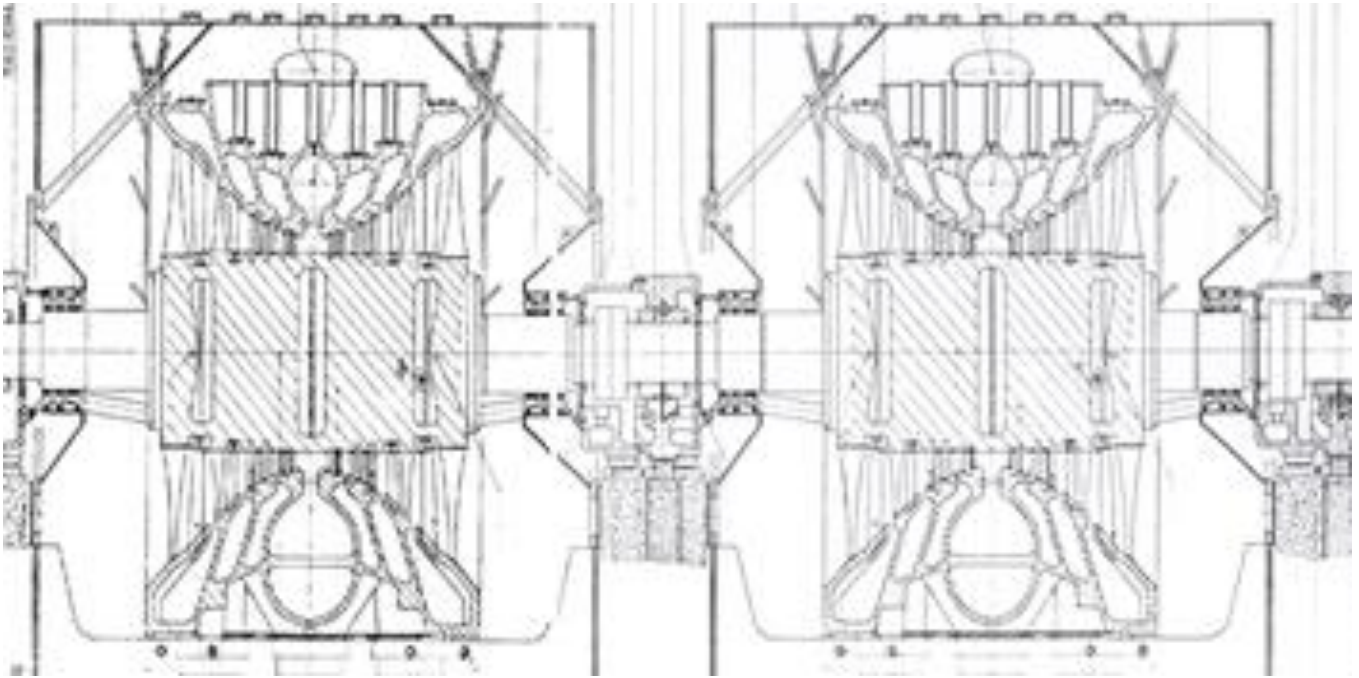
Shimon Ohayon

אדם זילברברג
 סגן מנהל
 אגף הייצור למכונות

עופר גרין ערויד
 31.8.05
 חבי החשמל לנשר א"ל בע"מ



Attachment 1: Low Pressure Steam Turbines. General View.



Attachment 2: Fir Tree Fastening Last Stage Blades

