



General Technical Conditions for Refurbishing of Fuel Nozzle Assembly Etc.

1. The scope of work indicated covers but not limited to what is described in technical specification and scope of work enclosed. The work carried out should be as per GE standards and specification indicated in relevant manuals. Tenderer should indicate in the offer the scope of work he intends to carryout, if it differs from what is specified.
2. **Competency of Tenderer**

Tenderer should indicate the name, address and location of the works the refurbishing is to be carried out. He should produce details of similar work carried out indicating the customers name, type of units and no. of such work carried out earlier.
3. **Prices**
 - i. Separate unit price for refurbishment of fuel nozzle assembly, Testing of Fuel Nozzles, liquid fuel check valve, purge air check valve and for replacement of parts should be indicated in the offer.
 - ii. Details of spare parts like part name and part no. that are part of the Fuel Nozzle, liquid fuel & purge value assemblies and require replacement is as per List A enclosed. These spare parts are to be replaced based on inspection after stripping and clearing after approval of FEWA. Parts that require replacement will either be supplied by FEWA if stocks are available or have to be supplied by contractor at FEWA's request as per unit prices quoted in the offer.
 - iii. Consumables and other gaskets not indicated in above list should be provided by contractor free of cost and should be included in the refurbishing cost quoted. Tenderer is required to indicate details of such parts in List B.
 - iv. Tenderers should however quote for other unforeseen items, if any, not covered in either List A or List B indicated above, giving details such as name, part number, unit price, quantity estimated and total price in List C. The cost of this part will be paid only if replacement is required. The contractor should however obtain prior approval for replacing these parts.
 - v. Refurbishing prices quoted should include cost of collecting and delivery of items and spare parts to and from power station/Main Stores as indicated.



4. Completion Period

Completion period after receipt of written information for one set of 10 Nos. of fuel nozzle, liquid fuel check valve and purge check valves (or part of the set) for carrying out refurbishing work including collection and delivery shall be 10 days.

Completion period for more than 1 set upto a maximum of four sets if given together should be indicated by the tenderer in the offer.

Time taken by FEWA for issuing parts or for carrying out inspection will not be counted in the completion period.

5. Schedule of work.

The refurbishing work required to be carried out shall be in accordance with FEWA requirement as and when intimated. The contractor should collect the items from FEWA power station as and when intimation is received by fax and deliver the refurbished item after completion to the respective power station or as indicated.

6. Pre-Despatch Test

FEWA Engineers reserves the right to witness the flow and final pre-despatch test, if required. Contractor shall intimate in advance the date of such test.

7. Validity.

The order placed under this agreement shall valid for executing the work for a period of one year from date of signing the order. The period of contract is extendable by mutual agreement.

8. Guarantee Period.

The work carried out should be guaranteed for one year from the date of delivery.



Refurbishing of Fuel Nozzle Assembly Etc. Technical Specification and Scope of Work

Brief Description: -

The technical specification and scope of work described herein covers but not limited to following. The work carried out should be as per scope of work specified by GE or their licensees in the relevant manuals.

The items covered are duel fuel nozzle assemblies, liquid fuel check valves and purge air check valves fitted on GE/EGT/KEG Fr-6 and GE/John Brown/Alsthom Atlantique FR-5 Gas Turbine generating units operating in various FEWA Power Stations in northern Emirates of Ajman, Ummul Quwain, Dhaid, New Qidfa (Fujeirah), Nakheel and Ghalilah Power Stations.

Item details covered

S. N.	Part Name	Part Nos.			
		Frame 5	Frame 6		Frame 9
			KEG/EGT	GE	
1	Duel Fuel Nozzle Assembly	149D 2986G013 or 91-110-203 G12	1U149DE2983G003 or 1U149DE2983G009	103E3748G023 superceded by 112E1616 G010	169D 3922G022/G023
2	Liquid Fuel check Valve	311A5487P003 superceded by 348A5821P002	311A5487 P003 superceded by 348A5821P002	311A5487 P003 superceded by 348A5821P002	361 A 2943P001
3	Purge Air Check Valve	336A2436P001	336A2436P001	336A2436P001	361 A 2943P002

Scope of Work

1. Collect the Nozzle set/liquid fuel check valves, purge check valves from FEWA Power Stations as indicated by FEWA fax and obtain acknowledgement from power station.
2. Carryout pressure leakage test prior to disassembly in appropriate fixture and as per OEM procedures
3. Dismantle to component parts.
4. Strip, clean and inspect all parts.
5. Crack detect exposed weld and gas cap faces.
6. Check all critical dimensions.



7. Advise FEWA of any parts that require replacement which are covered under free replacement or at cost at unit price quoted.
8. Collect replacement parts from FEWA Stores and obtain approval for replacing unforeseen parts or carrying out unforeseen works like thread repair etc.
9. Check and inspect all collected parts for suitability and matching.
10. Reassemble replacing all gasket, consumable components and defective replacement parts. (Replacement parts will be either supplied by FEWA or to be supplied by contractor as per unit prices in the offer).
11. Replace liquid fuel/purge air 'T' piece, if required at cost. Repair damage threads, if required at cost. Carryout pressure leakage test after final assembly.
12. Fuel nozzle liquid flow, spray pattern, gas nozzle effective area check
13. Record results and prepare thermal balance chart in accordance with specification.
14. Finish paint all bodies with H/T paint.
15. Tag the item with contract No. Contractor's name, part no. and date of completion etc.
16. Pack and transport back to the stations as indicated by FEWA in fax and obtain acknowledgement.
17. Issue report with certificate.



Schedule of Prices & Completion Period for Refurbishing Fuel Nozzle Assy.

Sl No.	Description	Qty.	Unit Price Dhs.	Value Dhs.	Completion Period - Days			
					1 Set	2 Set	3 Set	4 Set
1	Refurbishing of Duel Fuel Nozzle Assy. Fr-5/Fr-6	350						
2	Refurbishing of Liquid Fuel Check /Purge Valve Fr-5/Fr-6	700						
3	Refurbishing of Duel Fuel Nozzle Assy. Fr-9	70						
4	Refurbishing of Fr-9, GT Liquid Fuel Check/Purge Valve	140						
5	Testing of Duel Fuel Nozzle Assy. Fr-5/Fr-6	50						
6	Testing of Duel Fuel Nozzle Assy. Fr-9	28						

Note:

1. For Fr-5 /Fr-6 GTs. Set means 10 nos. of Fuel Nozzle Assy, 10 Nos. of Liquid Fuel Check Valve & 10 Nos. of Purge Valve
2. For Fr-9 GTs. Set means 14 Nos. of Fuel Nozzle Assy., 14 Nos. of Liquid Fuel Check Valve & 14 Nos. of Purge Valve
3. Completion period for 1 Set should be max. 10 days. Indicate completion period for more than 1 set given together in the above schedule.



List A

1. List of Items that require replacement

This is the list of items, which require replacement and will either provided by FEWA free of cost if stocks are available or is to be supplied by contractor as per unit prices quoted at FEWA request.

Sl. No.	Part Name	Part No.	Remark
I	Spare parts for duel fuel nozzle Assy. For Fr-6 KEG/EGT Make GTs. P/No. of Fuel Nozzle Assy. GE 149D 2983 G009		
1	Nozzle Tip Assy.	1U149D 2984 G008 S/S by 193D2289 G009	
2	Cone, fuel Nozzle	H2927A004/ 237 C5235 G001	
3	Transition Piece	1U251B1552 G001 S/S by 213B 1587 P001	
4	Transition Piece	1U 251B 1551 P001	
5	Retainer, Fuel Nozzle	GE 251B 1506 P001	
6	Pilot, fuel nozzle	GE 251B 1550 P002 S/S by 213B1575P003	
7	Gasket	GE 298A 0472 P004	
8	Locking plate	GE 287A 1683 P008	
9	Washer, disc spring	GE 324A 9151 P003	
II.	Spare parts for Duel Fuel Nozzle Assy for GE Fr-6 GTs P/No. Fuel Nozzle Assy. 103E3748G023 S/S by 112E1616G010		
1	Nozzle Tip	149D 2984 G004 S/S By 193D22 89G008	
2	Air Cone	251 B 1572 P001 S/S by 227 C 9685 G001	
3	Air Swirler	207C 3768 P001	
4	Cartridge Assy. Fuel Nozzle	227C 5695 G004	
5	C Seal	355A7386 P002	
6	Nozzle Ring	315A 4069 P003	
7	Gasket	324A 9143 P001	
8	BMPD Plate	356A 1868P001	
III	Spare Parts for Duel Fuel Nozzle Assy. for GE/JB/Alsthom Atlantique Fr-5 GT's P/No. of Fuel Nozzle Assy. P/No. 143D6701 G001 OR [91-110203 G12]		
1	Cap	164B 1825 P001	
2	Transition Piece Assy. Fuel Nozzle	145C 5104 G006 S/S by 207C3578G001	

3	Swirl chamber	215A 3177 P001	
4	Gasket	298A 0472 P004	
5	Pilot	197B 8957 P001 S/S by 197B8957P005	
6	Fuel Nozzle Cap	205B 1599P003	
IV	Parts for liquid fuel check valve/purge check valve Fr-6/Fr-5		
1	'O' Ring	V 170-8CK4	
2	'O' Ring	V 190-8CK4	
3	Repair Kit for check valve	MS-8/6C-4392	
4	Gasket for fuel check valve	9931-039293	
5	Gasket for fuel purge valve	9931-039293A	
V	Spare Parts for Dual Fuel Nozzle Assy. of Fr-9 for GE/Alsthom Make GTs. P/No. of Dual Fuel Nozzle Assy. P/No. 169D3422G002/G023		
1	Nozzle Tip, Fuel Gas	242B9166G024/G023	
2	Body, Atomizing Air Nozzle	178C6620 P002	
3	Nozzle Ring	196 B 1755 P002	
4	Transition Piece Assy., Fuel Nozzle.	196B1787G006	
5	Locking plate, Fuel Nozzle	287A1638P004	
6	Check Valve Set Kit	362A 2596P001	
7	Purge Air Valve Seal Kit	362A1331P002	
8	Inner Fuel Nozzle Tip	219B6748 P001	
9	Nozzle Retainer	298A8221P001	
10	Nozzle Pilot	215A4752 P001	
11	Gasket	261A 1600 P001	
12	Retaining Ring for transition piece	298A 8221P001	



List B

2. List of parts & consumables of Fuel Nozzle Assembly to be replaced by contractor free of cost.

Sl. No.	Part Name	Part No.	Qty.	Remark
1	Fr-6 KEG GT Unit			
2	Fr-6 GE GT Units			
3	Fr-5 GE/Alsthom/JB Units			
4	Fr-9 GE/Alsthom Units			