

GAS & POWER PLANT DIVISION**Scope of Work**

Subject: Preventive/routine/breakdown maintenance and replacement of service pipelines from GPX security gate upto various columns in-side factory blocks on actual execution basis for a period of 24 months.

- 1.0 The work involves preventive maintenance/ routine maintenance and attending day to day breakdowns in pipeline system of compressed air, gases [LPG, acetylene, oxygen, Nitrogen & LPG based metal cutting (MCG)], steam and steam condensate and replacing old leaking/damaged/corroded pipelines with new service pipelines including all fittings and valves, from GPX security gate up to columns in-side factory blocks, as per details given in below tables.

(A) Work inside Blocks

S.No.	Description		Approx. qty. Per Month
1.	Repair of Leakages through glands		
	i)	1/2" to 1" N. B. Valve	55 Nos.
	ii)	Above 1" to 3" Valve	85 Nos.
	iii)	Above 3" Valve	12Nos.
2.	Repair/ installation of new Flanges		
	i)	1/2" to 1" N. B. Pipe	32 Nos.
	ii)	Above 1" to 3" N. B. Pipe	22 Nos.
	iii)	Above 3" Pipe	12 Nos.
3.	Replacement of Gaskets/ Rubber Diaphragm		
	i)	1/2" to 1" N. B. Pipe	93 Nos.
	ii)	Above 1" to 3" N. B. Pipe	70 Nos.
	iii)	Above 3" Pipe	50 Nos.
4.	Replacement of Corroded/ damaged Pipe Lines of gases & compressed air & painting of replaced pipelines as per IS 2379: 1990, Reaffirmed in 2006 (IS for pipeline coding)		
	i)	1/2" to 1" N. B. Pipe	125 Mtr
	ii)	Above 1" to 3" N. B. Pipe	75 Mtr
	iii)	Above 3" Pipe	50 Mtr
5.	Repair/Replacement of Steam & condensate pipelines including thermal insulation with insulation material cladded by Aluminium sheet (Insulation material and aluminium cladding shall be provided by BHEL, free of cost) & painting of replaced pipelines as per IS 2379: 1990, Reaffirmed in 2006 (IS for pipeline coding)		
	i)	1/2" to 1" N. B. Pipe	60Mtr
	ii)	Above 1" to 3" N. B. Pipe	60 Mtr
	iii)	Above 3" Pipe	20 Mtr
6.	Checking of all the steam traps of steam pipeline in complete factory		
	i)	1/2" to 1" steam traps	134 nos
	ii)	Above 1" to 2" steam traps	4 nos.
7.	Repair/Replacement/ Preventive maintenance (cleaning of strainers etc) of Steam traps		
	i)	1/2" to 1" steam traps	67 Nos.
	ii)	Above 1" to 2" steam trap	2 Nos.
8.	Repair/ checking of Flash back arrester		125 Nos.
9.	Periodic checking (Only Physical) of LPG, MCG & acetylene Lines		290 Mtr/month
10.	Misc. Works such as changing of Unions, Tees, Nipples etc.		80 Nos.
11.	Fabrication of support structures of pipelines, condensate system, level gauges of tanks etc.		6 Mtr

The above quantity may vary $\pm 15\%$

(B) Work outside Blocks

S.No.	Description	Approx. qty. Per Month
1.	Repair of Leakages through glands	
	i) 1/2" to 3" Valve	15 Nos.
	ii) Above 3" Valve	6 Nos.
2.	Repair/ installation of new Flanges	
	i) 1/2" to 3" Pipe	10 Nos.
	ii) Above 3" Pipe	10 Nos.
3.	Replacement of Gaskets/ Rubber Diaphragm	
	i) 1/2" to 3" Pipe	16 Nos.
	ii) Above 3" upto 8" Pipe	6 Nos.
4.	Replacement of Corroded/ damaged gases & compressed air Pipe Lines & painting of replaced pipelines as per IS 2379: 1990, Reaffirmed in 2006 (IS for pipeline coding)	
	i) 1/2" to 3" Pipe	12 Mtr
	ii) Above 3" upto 8" Pipe	6 Mtr
5.	Repair/Replacement of Steam & condensate Pipe Lines including thermal insulation with insulation material cladded by Aluminium sheet (Insulation material and aluminium cladding shall be provided by BHEL, free of cost) & painting of replaced pipelines as per IS 2379: 1990, Reaffirmed in 2006 (IS for pipeline coding)	
	i) 1/2" to 3" Pipe	20 Mtr
	ii) Above 3" upto 6" Pipe	10 Mtr
6.	Repair/Replacement/ Preventive maintenance (cleaning of strainers etc) of Steam traps	9 nos.
7	Periodic (Only Physical) checking of LPG, MCG & acetylene Lines	100 Mtr/month

The above quantity may vary $\pm 15\%$

- 2.0 The contractor has to engage sufficient manpower/staff on regular basis to attend the above complaints on day-to-day basis and to satisfaction of concern Engineer-Incharge. They should be regularly available during 1st and 2nd shift working i.e. from 7.00 A.M to 4.00 PM and 4:00 PM to 01:00 AM.
- 3.0 The contractor has to work during nights as well as during holidays and Sundays according to the exigencies of the works, without extra cost.
- 4.0 The contractor shall appoint supervisor with minimum work experience of 5 years in above works related to pipeline maintenance OR with minimum qualification of Diploma in Mechanical/ Production engineering for supervision of the work.
- 5.0 Contractor shall be completely responsible for getting IBR approval from Director of Boilers (M.P) for all the works done by him which requires IBR approvals as per IBR guidelines.
- 6.0 During the course of work order if the validity of IBR welder certificate expires than contractor has to apply for new certificate and submit the necessary documents to BHEL along with the renewed certificate when obtained. Failing to do so might lead to cancellation of Work Order without sighting any reasons and the Security deposit submitted by the agency shall be forfeited and work shall be awarded to another agency on risk and cost of executing agency.
- 7.0 All the utility pipelines that are to be replaced as per above scope of work above, shall be painted with the specific colour paint as per IS 2379:1990, Reaffirmed in 2006 (IS for pipeline coding) also marking the direction of the flow by arrows in black colour after every 6 meters on the pipeline.
- 8.0 All the break – down should be completed on day-to-day basis and urgent break – down reported at late hours should be attended same day during 2nd shift timing

(i.e. after 4:00 PM). The work may also involve installation and commissioning of new gas/air/steam valves, diaphragms valve, various fittings etc. in service pipelines of different sizes ranging from ½" to 10" NB.

- 9.0 Contractor has to maintain a break down register and have to submit the weekly break down report on every Monday to Engineer In-Charge.
- 10.0 Contractor has to take the permit for "Working at height" as per BHEL norms for any work which involves working at a height of 2.5 meters or more. Contractor has to use safety net wherever feasible while working at height.
- 11.0 All tools & tackles including hand tools, welding machine, hand grinder, gas cutting facility etc. are to be arranged by the party.
- 12.0 All pipelines, fittings, valves, hardware, gaskets, valves, flash back arrestors and welding electrodes, cutting gases, paint, electricity and other consumable items shall be supplied by BHEL free of cost.
- 13.0 Contractor shall provide all the PPEs and other safety appliances to his workers at his own cost & maintain the same, which may be required under the rules/regulations/law.
- 14.0 Since all the above works are inter-related to each other. So work contract shall be awarded only to a single party on total overall L-1 price.

Sign & seal of contractor