FOUNDRY TECHNOLOGY
CENTRAL FOUNDRY FORGE PLANT
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NOTIFICATION FOR EXPRESSION OF INTEREST

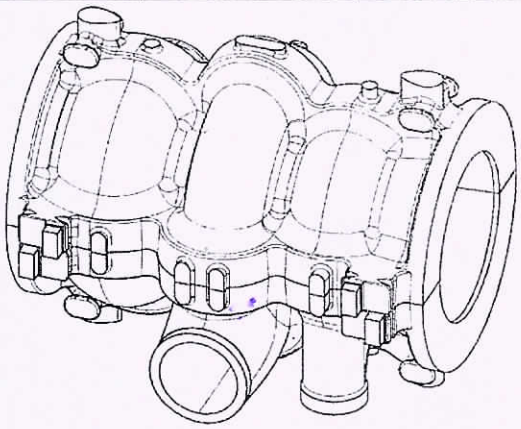
Consultancy services for improvement in manufacturing of IP Inner casing (UH/LH) in GX12CrMoWVNbN10-1-1 grade

Central Foundry Forge Plant, CFFP, a unit of Bharat Heavy Electricals Ltd. manufactures Forgings and intricate Steel castings mainly for power plant equipment. The castings manufactured are in various steel grades and in weight range of 0.5 MT to 60 MT single piece weight.

CFFP is equipped with 3 EAFs of 10 MT, 30 MT and 70 MT and secondary refining units VAD and VOD (each 70 T capacity). At present the product profile includes all steel castings of steam turbines (upto 800 MW), Hydroturbine, smaller industrial turbines, castings for shipyards, etc. These castings are in various material grades such as Plain Carbon, 1.5% Mn steel, Creep resistant grades, 13%Cr4%Ni Stainless Steel, GX12CrMoVNbN9-1, GX12CrMoWVNbN10-1-1 etc.

It is intended to seek consultancy services for improvement in manufacturing of following castings:

SN	Casting's Name	Drawing no.	Dispatch Weight (Kgs)	Material Grade	Application
1	IP Inner Casing – Upper Half	0-106-02-58901	34200	GX12CrMoWVNbN10-1-1 (G911)	800MW Supercritical Steam Turbine
2	IP Inner Casing – Lower Half	0-106-02-58901	37700		



3D view of IP Inner Casing Upper and Lower half

Current situation: CFFP is manufacturing IP Inner casing (UH/LH) in GX12CrMoWVNbN10-1-1 (G911) material grade for 800MW Supercritical Steam Turbines. However, in manufacturing of this casting, following major problems have been faced at different stages affecting cost, quality and delivery:

- Problems of cracks after knock out, heat treatment and MP & UT defects have been observed leading to longer upgradation in manufacturing.

In view of above following deliverables are expected from the consultancy services:

(a) Review of existing methoding and suggestion for improvement measures.
(b) Advice on means to reduce liquid metal requirement or improvement in casting yield.
(c) Technological measures to improve feeder efficiency.
(d) Melting and pouring technology for manufacturing of liquid metal in above mentioned grade using EAF and VAD.
(e) Solution for cracks at parting plane, transition zones or inside surface observed after knockout or after heat treatment of casting.
(f) Revisit of defect repair procedure
(g) Production of IP Inner casings with permissible limit of welding ratio as per prevailing norm.
(h) Solutions for no sand fusion/metallization in casting facilitating easier and faster preparing for MP test.
(i) Advice for new molding materials (refractory materials, insulating material for feeders etc.) for minimizing inclusion defects

Eligible interested parties are requested to confirm their willingness in offering services to CFFP, BHEL Haridwar for the above work. They are required to submit copies of requisite documents ascertaining their capability & experience for the mentioned work.

In case of any query regarding this expression of interest (EOI) or requirement of any further details, pl feel free to contact undersigned.

The applications to reach by post or email within 30 days of issue of this EOI.

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