CASE STUDY

Efficiency improvement of a 12MW turbine

INTRODUCTION

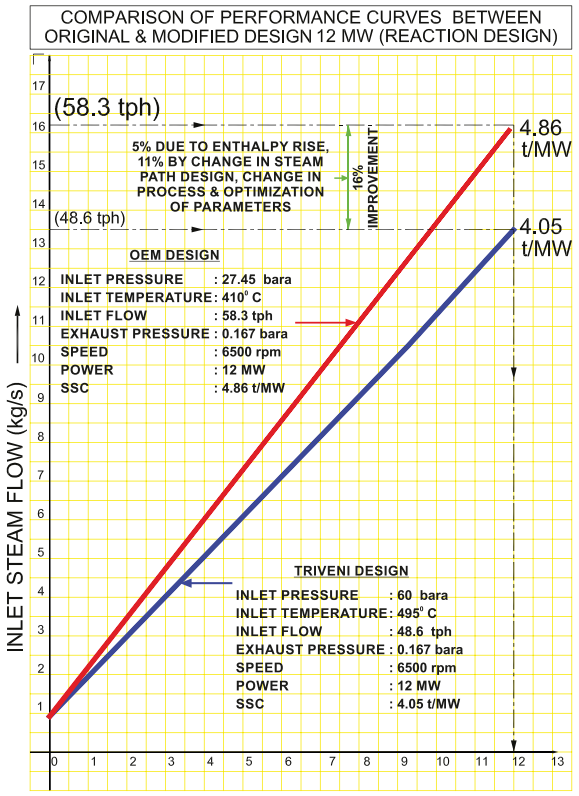
The customer is a **copper manufacturing** Industry in **India**. The turbine was sent to Triveni Refurbishing for repair, modification and **efficiency improvement**. Client's turbine was an old running turbine sourced by them in **1983**, which was sent to us in **2016** for refurbishing.

CHALLENGE

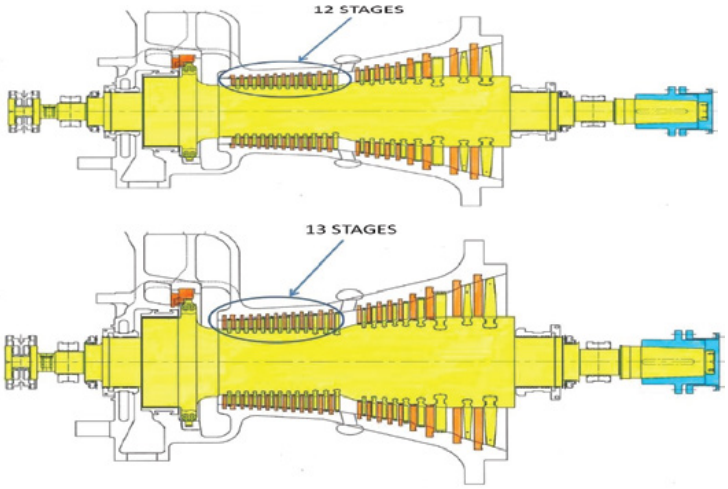
The challenge was to modify the turbine in the existing turbine boundary conditions of the casing by redesigning it for higher efficiency which convert the low inlet steam parameters to high inlet steam parameters.

SOLUTION

Triveni Refurbishing redesigned the steam path within in the existing turbine boundary conditions of the casing. The efficiency of the turbine **improved by 16%** and the **payback period** was just **6 months.**



Parameter	Unit	Without extraction		With extraction	
		Original design	Modified design	Original design	Modified design
Inlet steam pressure	bar (a)	27.45	60	27.45	60
Inlet steam temperature	°C	410	495	410	495
Inlet enthalpy	kJ/kg	3259.5	3410.4	3259.5	3410.4
Exhaust pressure (vacuum)	bar(a)	0.17	0.17	0.17	0.17
Inlet Steam Flow	tph	58.8	49.2	68.4	57.6
Extraction steam pressure (Uncontrolled)	bar (a)	....	....	6.8	6
Extraction steam flow	tph	0	0	20	13
Exhaust steam flow	tph	58.8	49.2	48.4	44.6
Speed	rpm	6500	6500	6500	6500
Power	MW	12	12	12	12
Specific Steam Consumption	t/MW	**4.9**	**4.1**	**5.7**	**4.8**
No. of stages		1+21	1+22	1+21	1+22



CUSTOMER SPEAK

"The TG has been rolled successfully at 12 MW Power & RUNNING SUCCESSFULLY . Thanks to your entire team for relentless efforts."

Triveni TURBINES REFURB

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SCAN FOR ENQUIRY

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