

Saving Energy, Increasing Power and Reducing Emissions: Making a Strategy Work

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7 REACTOR CATOFIN UNIT



FIGURE 1: CATOFIN DEHYDROGENATION PROCESS

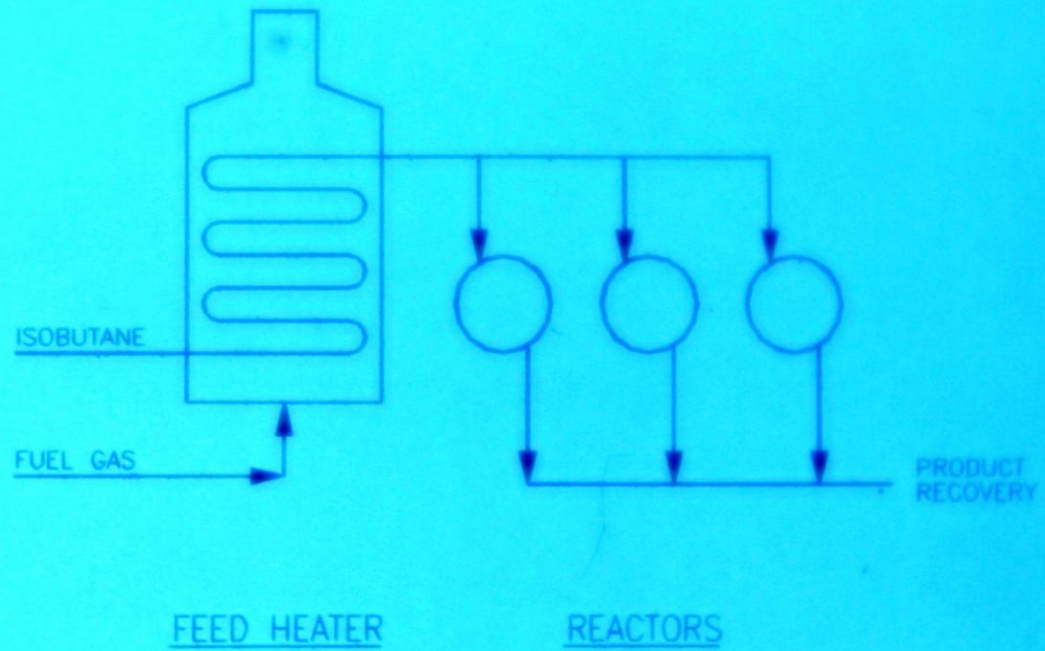
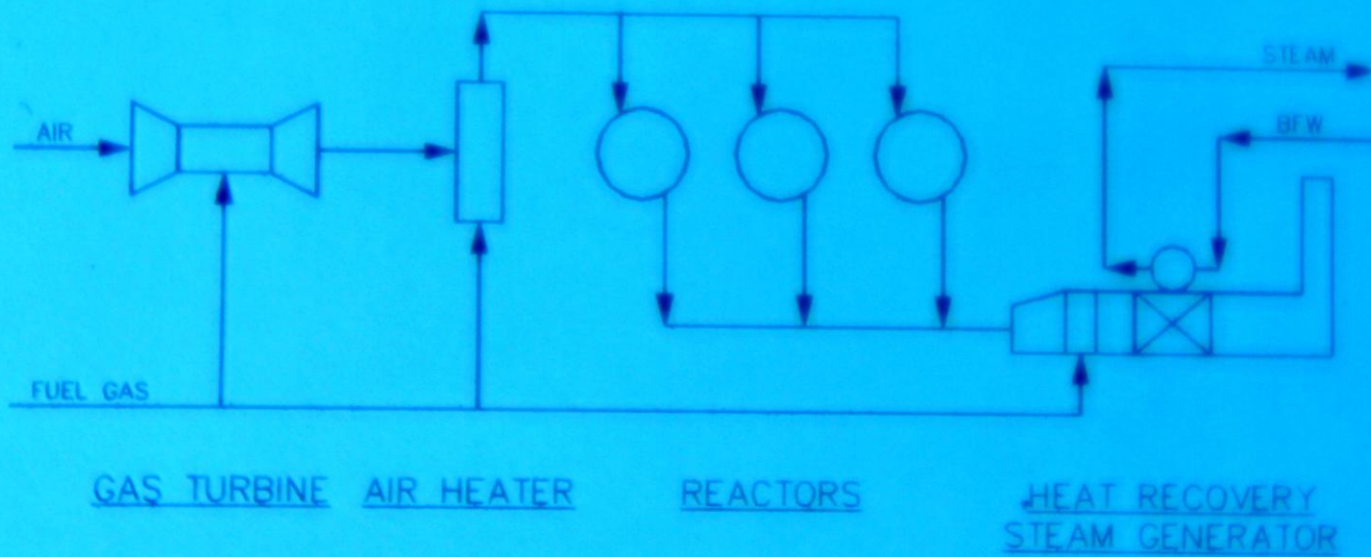


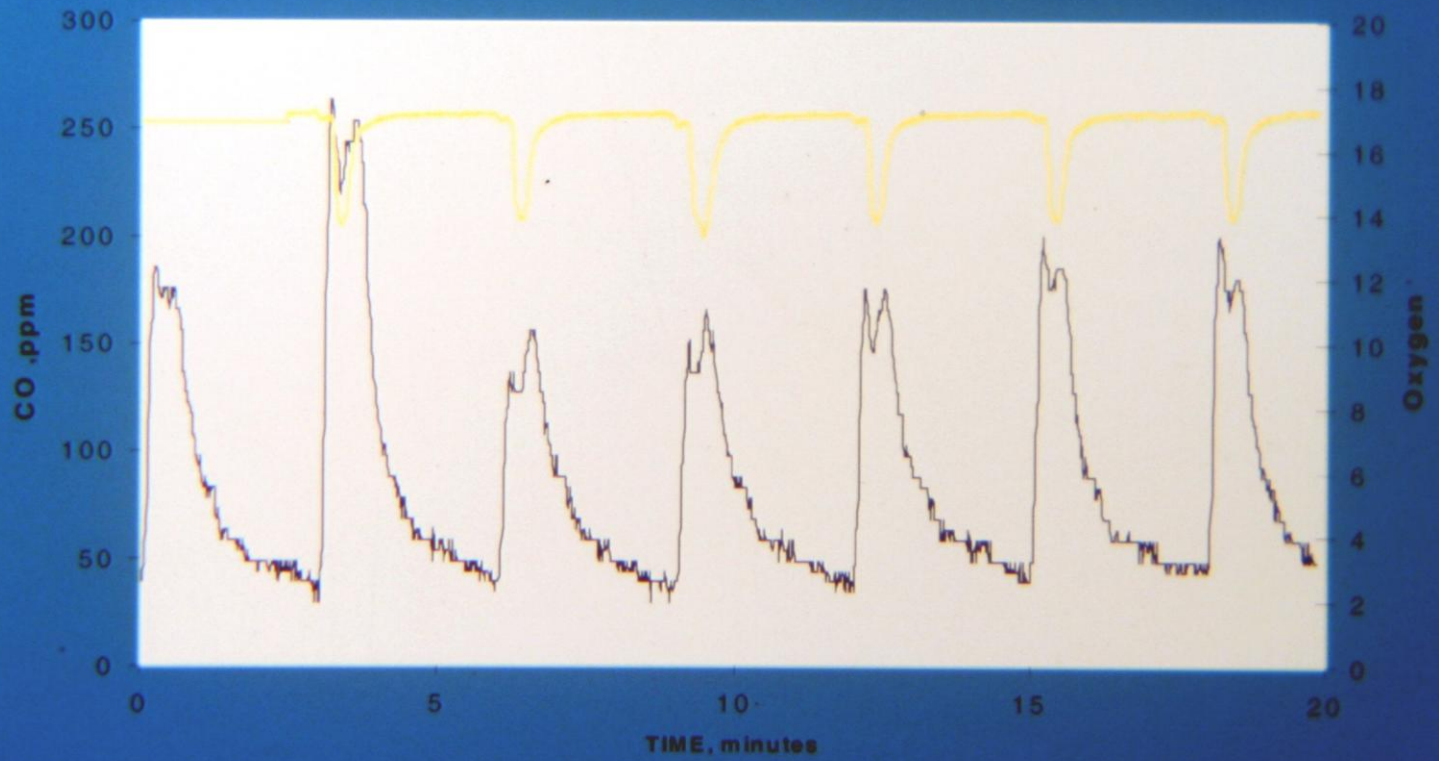
FIGURE 2: REGENERATION AIR SYSTEM



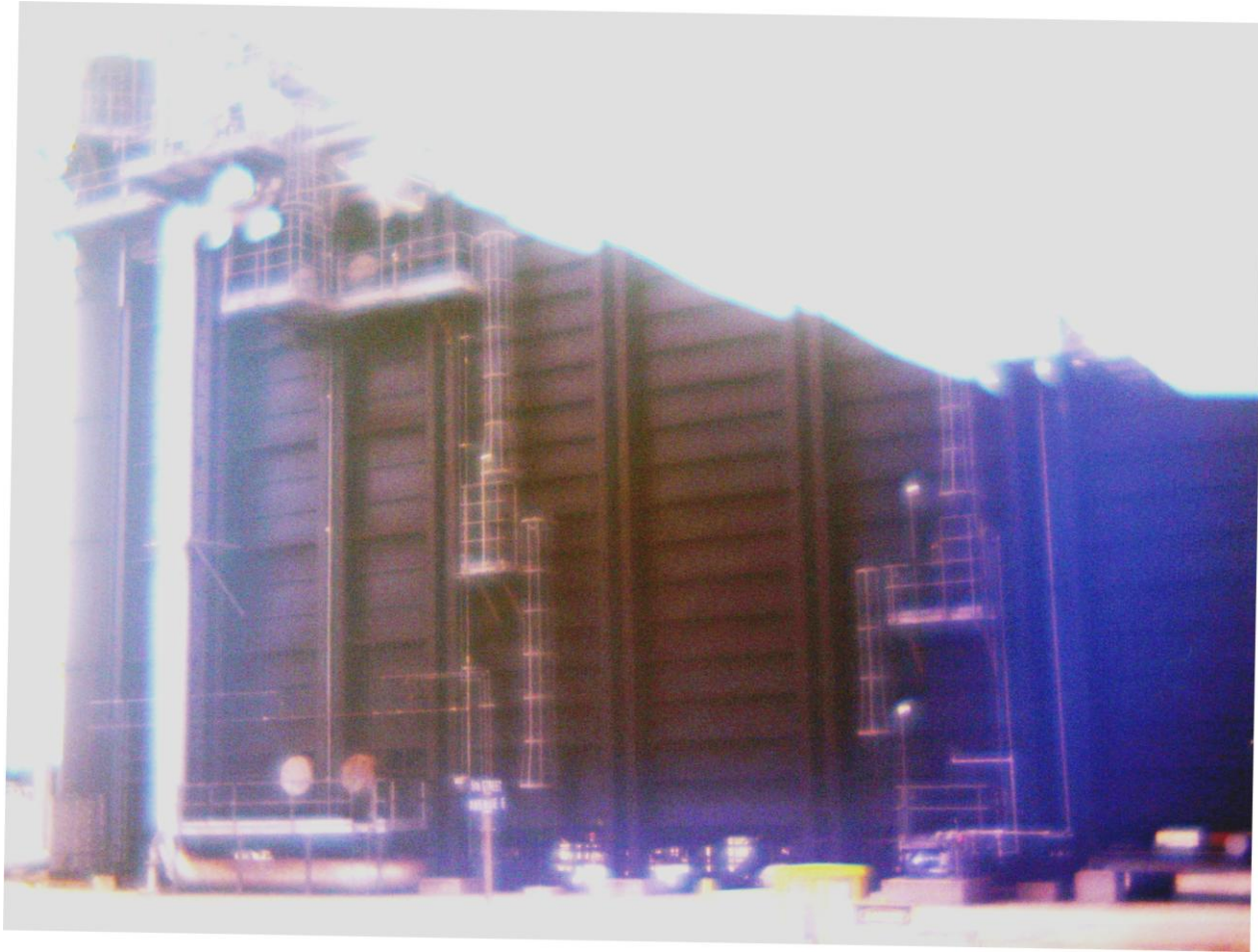
7 REACTOR CATOFIN UNIT



Duct Burner Inlet



Deltak HRSG

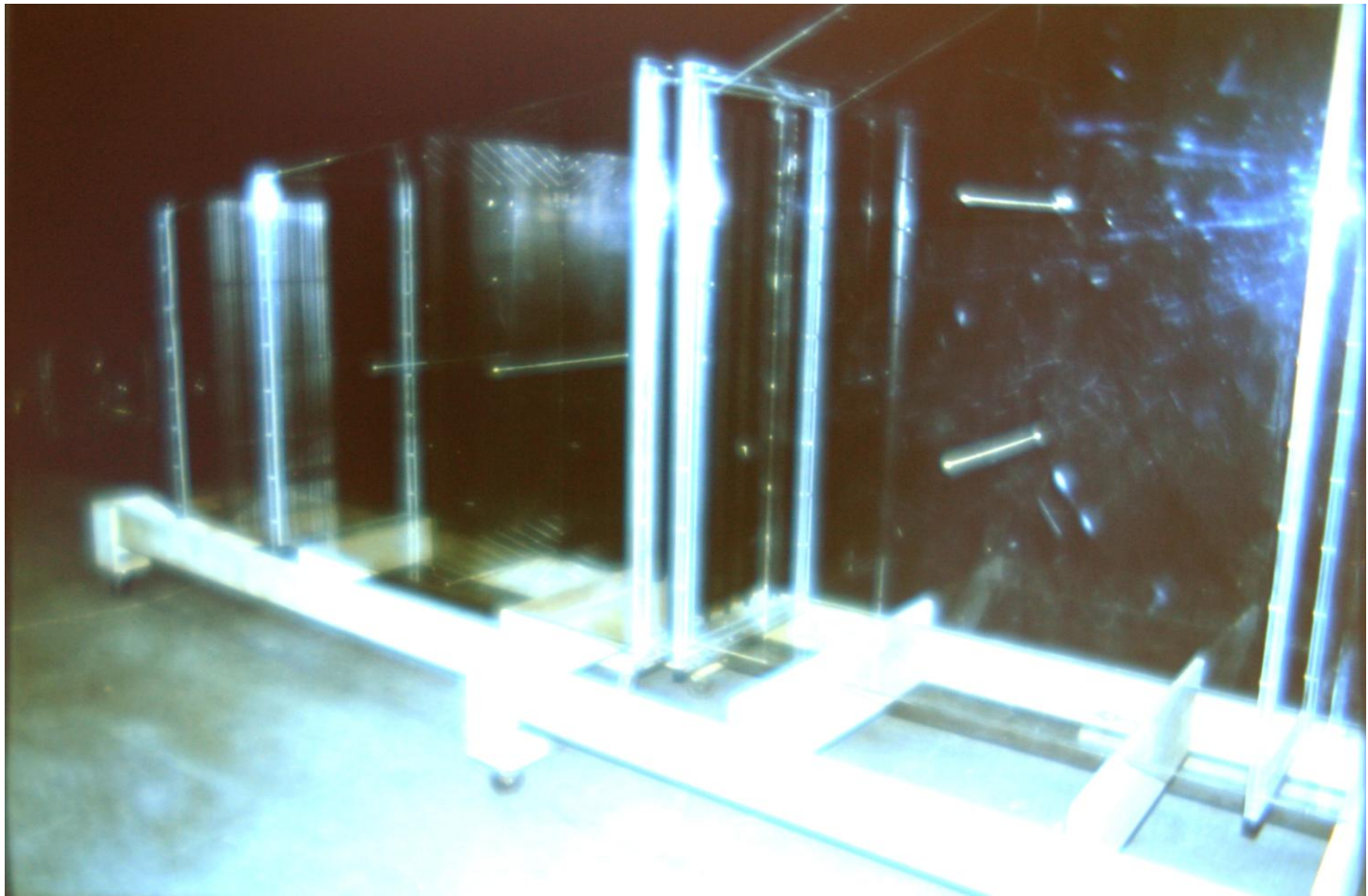


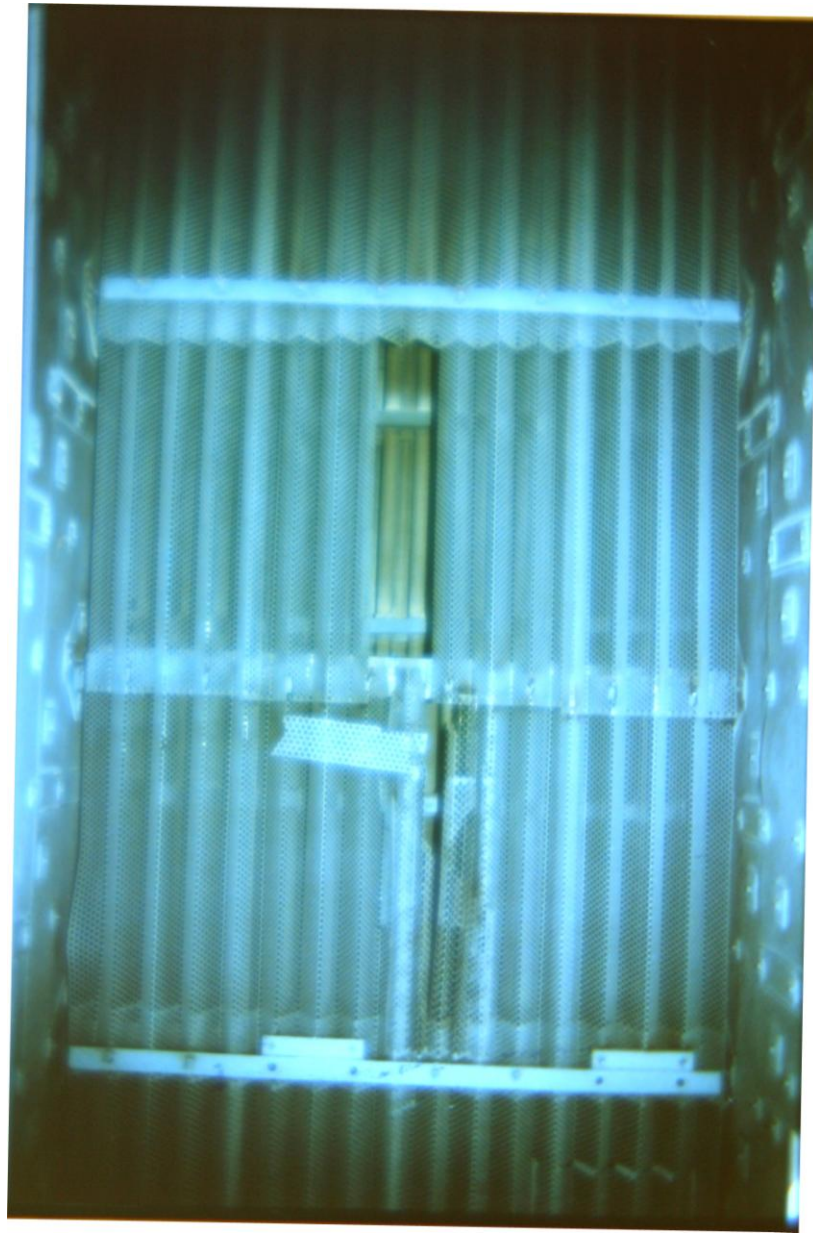
INLET TRANSITION



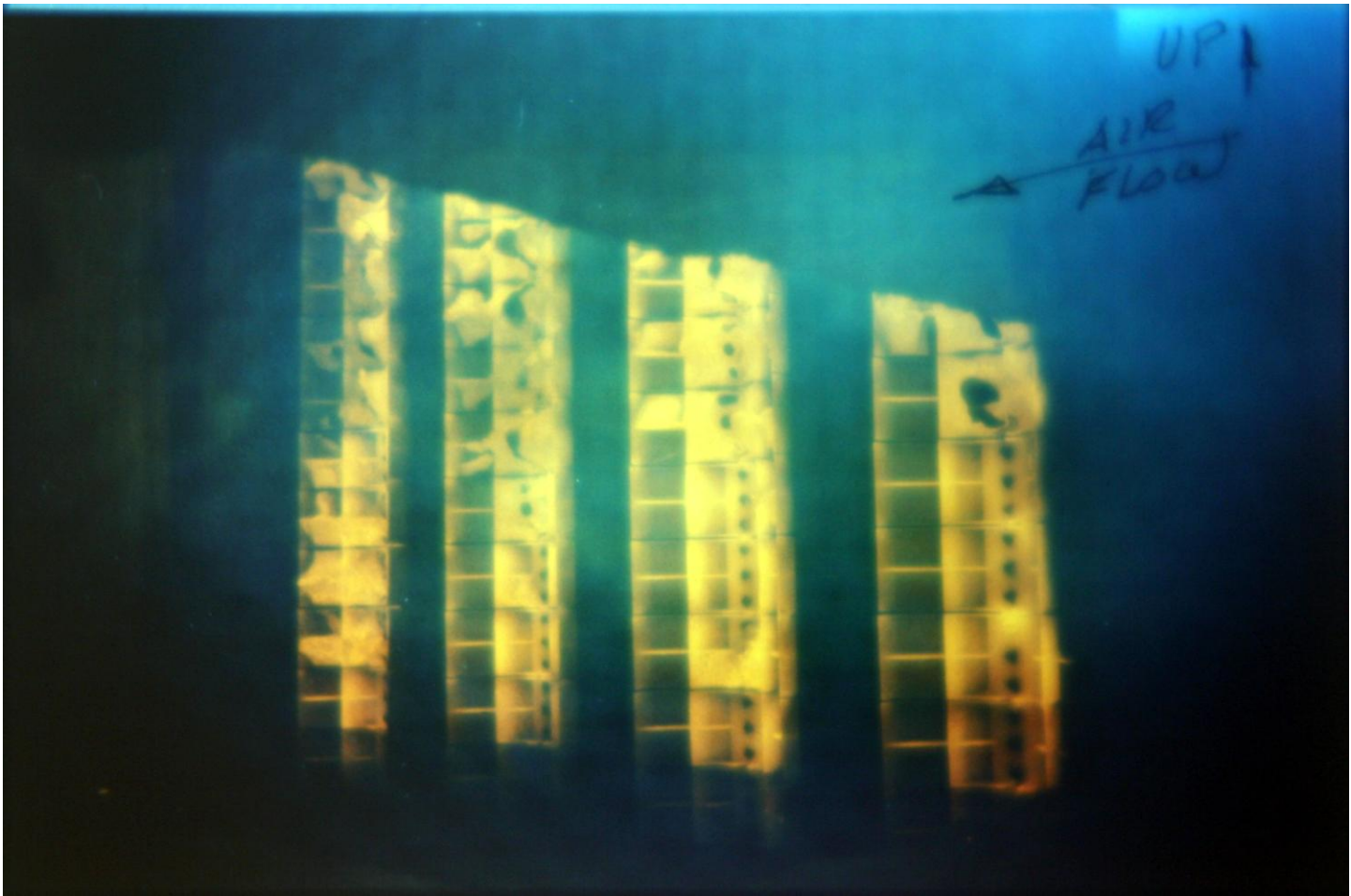
54 in
Header

Plexiglass Model For Modeling Turbulent Flow

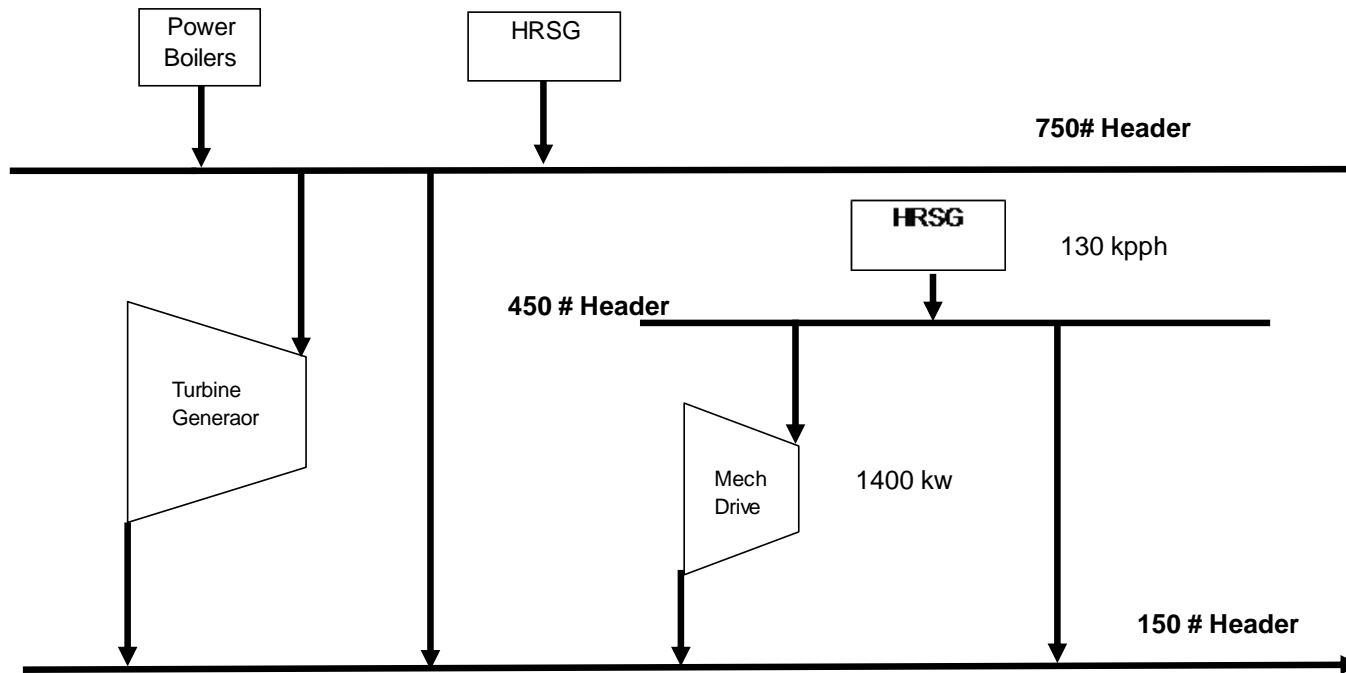




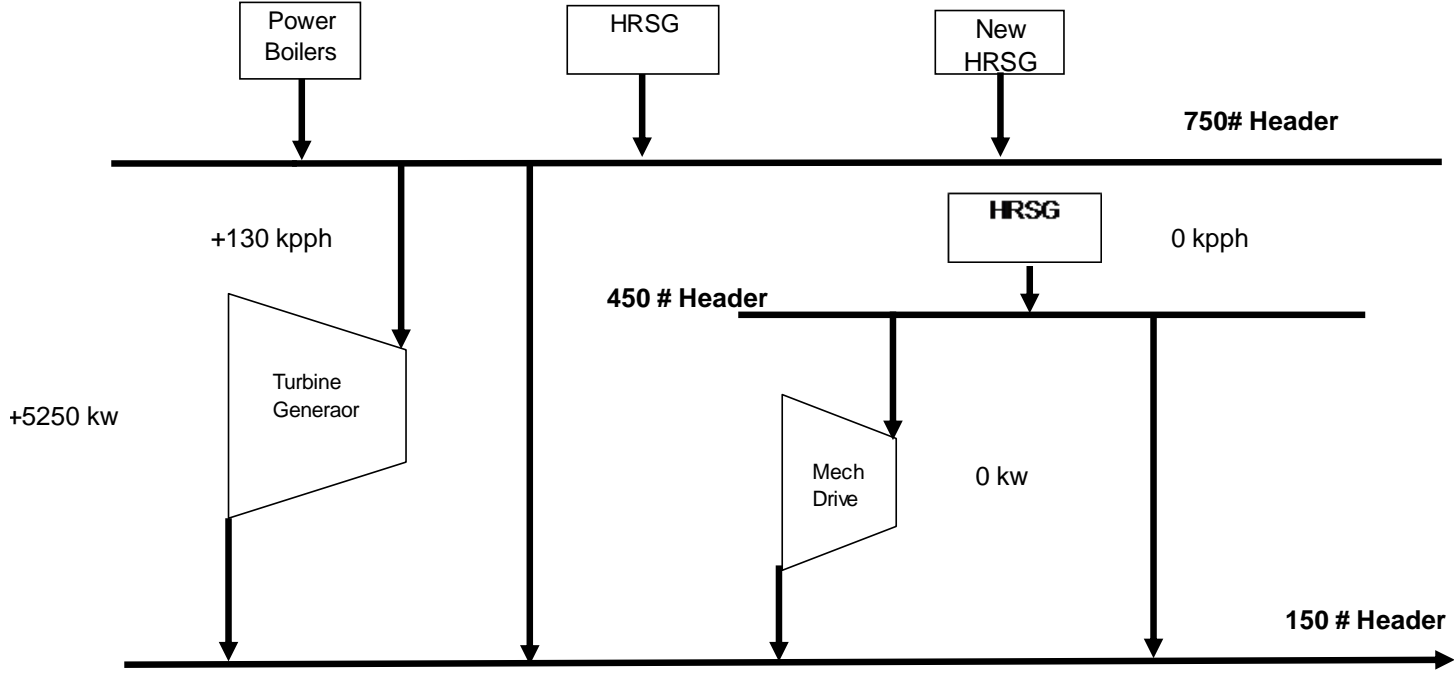
Vertical Duct Burner Elements



Steam System with old HRSG



Increase Power Output by Locating New HRSG on 750 Header



BENEFITS

- Energy Saving 1 Trillion Btu/yr
- Carbon Dioxide Reduction 58,000 tons/yr
- VOC Reduction 230 tons/yr
- Carbon Monoxide Reduction 300 tons/yr
- NOx Offset 130 tons/yr
- Increase Turbine Generator Power 3850 kw
- American Chemical Council Energy Award
- Reliable- No Forced Outages in 6 Years

CONCLUSIONS

- Waste Heat Recovery Saves Energy and Reduces Emissions
- Integrating Power and Thermal Use Maximizes Energy Savings
- Waste Heat Recovery Often Requires More Engineering and Innovation

