Heat Transfer Efficiency

Operating Efficiency Saves Energy and Money

Deposits of any sort in heat transfer tubes will reduce the efficiency of the tunes and restrict the flow of fluids. Deposits left for any length of time will, in addition, cause corrosion and pitting of the tubes. therefore, when conservation of energy and fuel savings are major considerations in plant operation, it is imperative that tubes in all kinds of heat transfer apparatus be kept clean at all times.

Scaled Boiler Tubes	*Hard Scale Loss*	*Soft Scale Loss*		*Soot in Boiler Tubes*	*Heat Loss*	*Increased Fuel Consumption*
1/32"	*8 %*	*4 %*		*1/32"*	*12 %*	*2.5 %*
1/16"	*12 %*	*10 %*		*1/16"*	*24 %*	*4.5 %*
1/8"	*20 %*	*15 %*		*1/8"*	*47 %*	*8.5 %*

Example: Increased Fuel Consumption through Loss of Boiler Efficiency.

Plant X uses a 200 hp boiler, burns No. 6 oil (150,000 BTU per gallon) producing 7,000 lbs. of steam per hour. The boiler is in operation 260 - 10 hour days per year and the cost of the fuel oil is $.70/ gallon. At 80% efficiency, approximately 145,000 gallons of oil would be needed to produce the required steam.

If the efficiency were allowed to drop to 65 %, 180,000 gallons would be required.

Dollar savings by maintaining the 80% efficiency:

(180,000 - 145,000) x $.70 - 35,000 x 4.70 - $24,500 SAVINGS