
COYLE
SUPPLY
EMPLOYEE OWNED
Reducing Waste Through
Steam System Efficiency

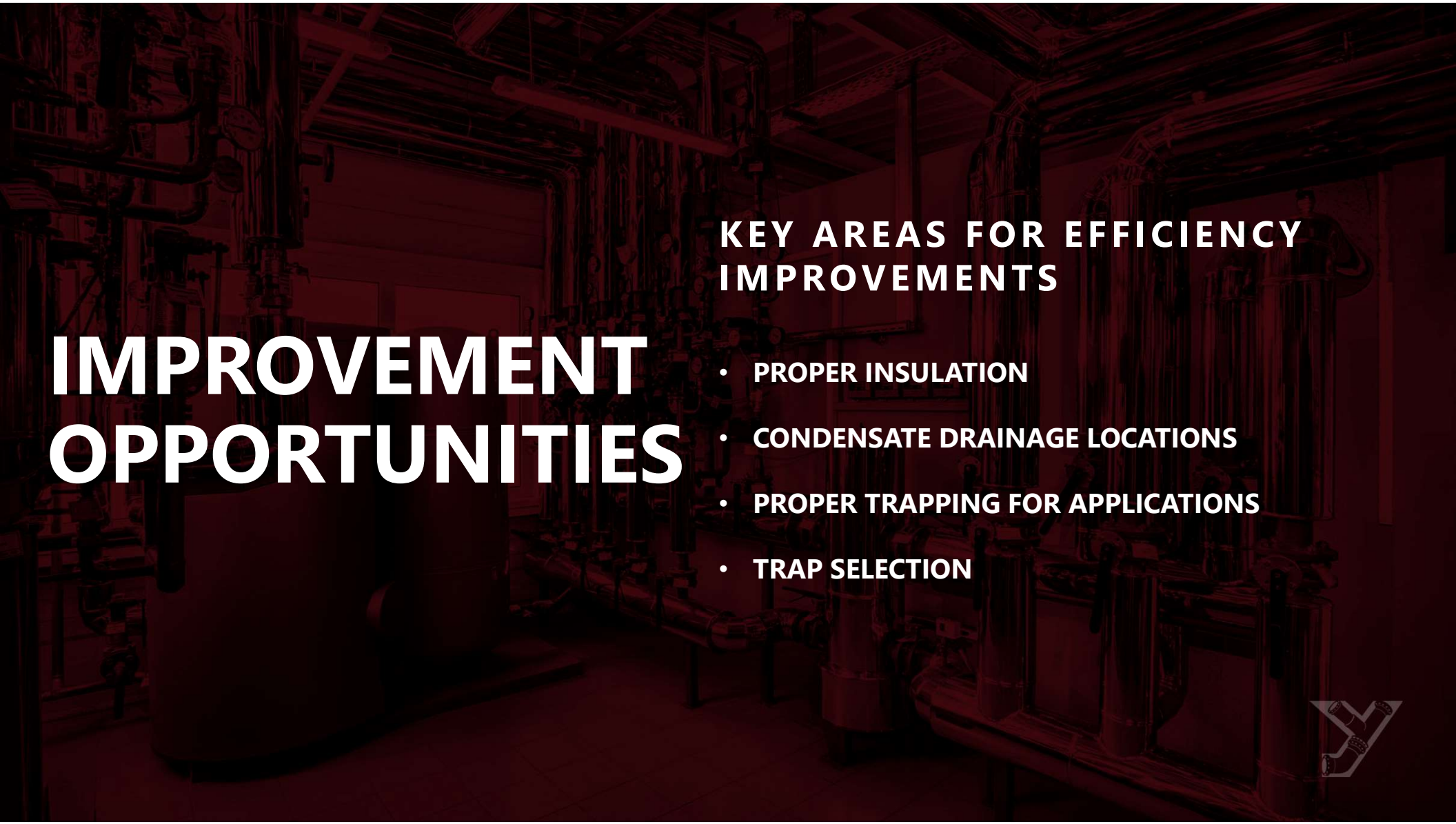
ENERGY LOSS RESULTING FROM WET STEAM

The loss of BTUs in Latent Heat is in direct proportion to your percentage of condensate in your steam.

At 100psig if 5% of your steam has condensed you loose 5% of your BTUs.

880 BTUs in the Latent Heat880 X .05= 44 lost BTUs per pound of steam

If your plant boilers produce 5,000 pounds of steam per hour you would be losing 220,000 BTUs per hour.



IMPROVEMENT OPPORTUNITIES

KEY AREAS FOR EFFICIENCY IMPROVEMENTS

- PROPER INSULATION
- CONDENSATE DRAINAGE LOCATIONS
- PROPER TRAPPING FOR APPLICATIONS
- TRAP SELECTION

INSULATION IS CRITICAL TO STEAM SYSTEM MANAGEMENT

- **THE LACK OF PROPER INSULATION ON STEAM PIPING IS FIRST A SAFETY ISSUE**
- **ONE OF THE MOST PERVASIVE ENERGY LOSS ISSUES IS RADIANT HEAT LOSS**
- **STEAM CONDENSES AT A MUCH FASTER RATE IN BARE PIPE. INSULATION HOLDS IN THE TEMPERATURE**
- **THE RESULTING ENERGY LOSS IS ENORMOUS**

PIPE SIZE	INSULATION THICKNESS	INSULATED HEAT LOSS *(BTU/ft/hr)*	UNINSULATED HEAT LOSS ***(BTU/ft/hr)***
½″	½″	36	200
2″	1″	70	500
4″	1 ½″	86	850
12″	2″	170	2200

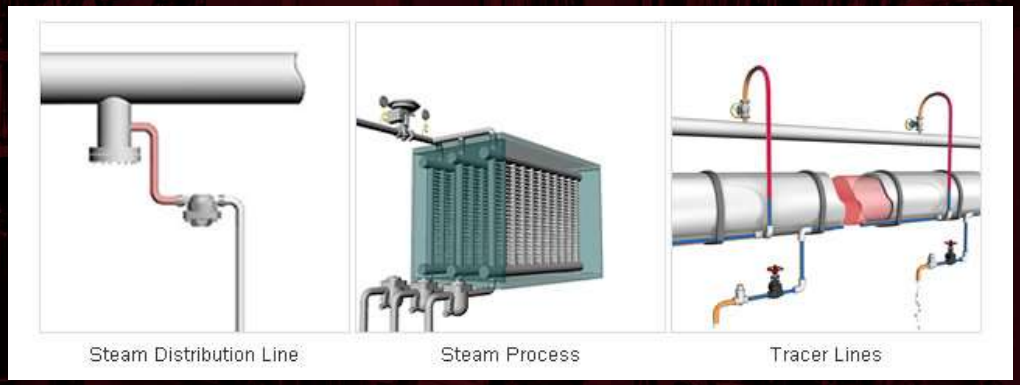
CONDENSATE DRAINAGE LOCATIONS

IT IS IMPORTANT TO BE AWARE OF NECESSARY PLACEMENT OF CDL'S:

- **EVERY 150 FEET OF STEAM PIPING**
- **AT THE BOTTOM OF ALL ELEVATION RISES**
- **BEFORE VALVES, PARTICULARLY CONTROL OR EXPENSIVE VALVES**
- **BOTTOM OF LARGE DROPS**
- **END OF STEAM MAIN AND DEAD ENDS IN GENERAL**
- **A TRAP IS NEEDED AT ALL LOW POINTS**

PROCESS APPLICATION

- AIR HANDLING UNITS
- JACKETED TANKS
- SUBMERGED COILS
- HEAT EXCHANGERS
  - SHELL & TUBE
  - PLATE & FRAME



TRAP TYPES

THERMODYNAMIC (DISC)

- OPERATE ON PRESSURE
- TYPICALLY, HIGH CAPACITY

FLOAT & THERMOSTATIC (FREE FLOAT)

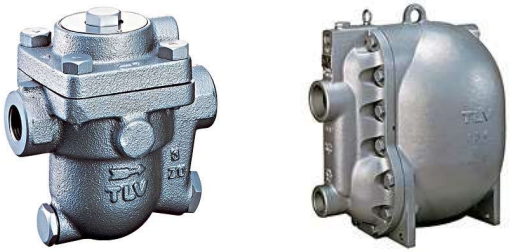
- PROCESS TRAPS
- GREAT MODULATING APPLICATIONS

THERMOSTATIC

- OPERATE ON TEMPERATURE
- RELEASE AIR IN THE SYSTEM

THERMODYNAMIC

FLOAT & THERMOSTATIC



THERMOSTATIC

WHY HAVE A STEAM TRAP MANAGEMENT SYSTEM?

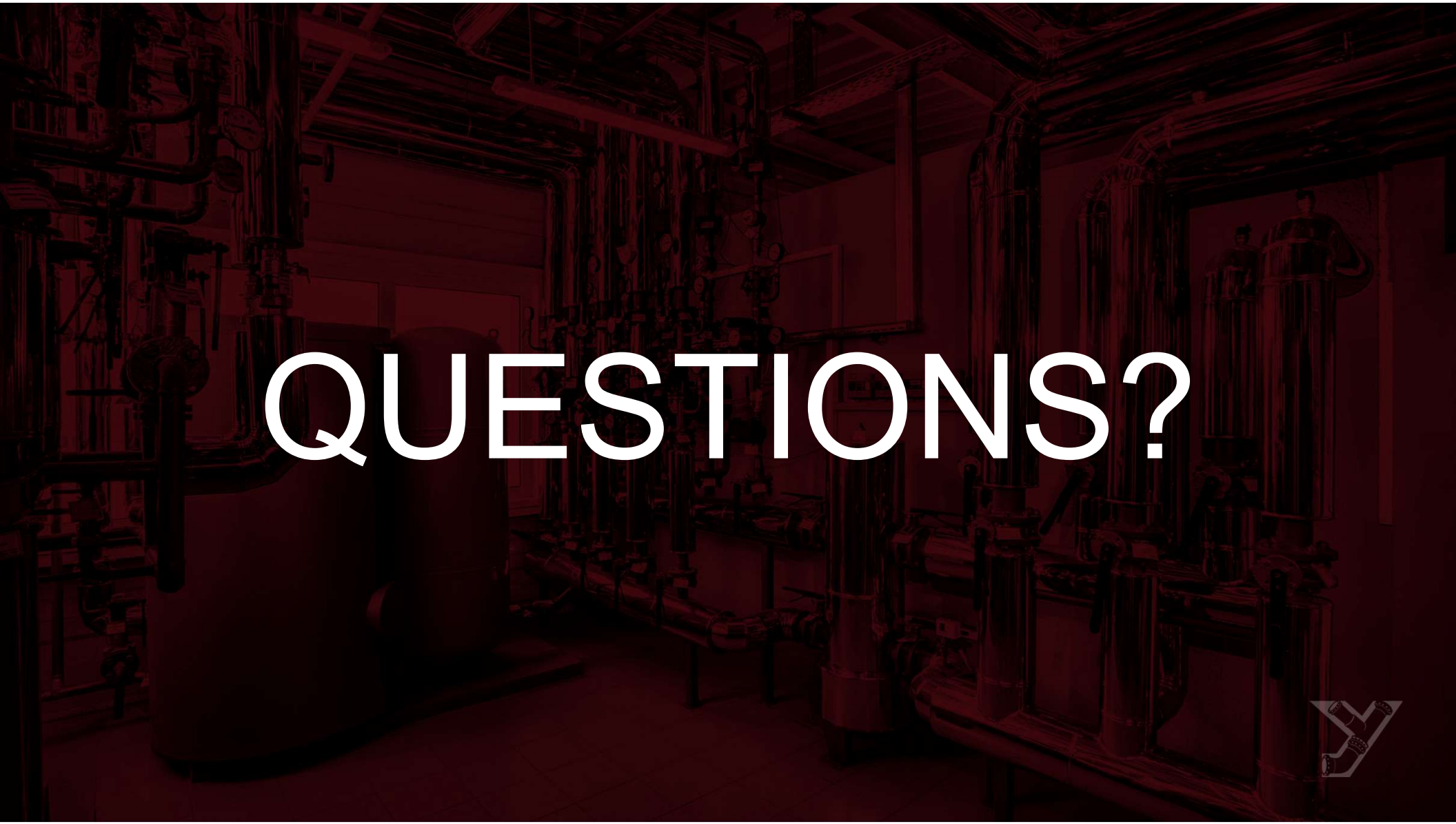
- THE AVERAGE STEAM LOSS, TAKING INTO ACCOUNT SMALL/MEDIUM/LARGE LEAKS, IS $1000 PER TRAP PER YEAR
- 10% OF YOUR TRAP POPULATION FAILS ANNUALLY ON A NATIONAL AVERAGE
- UNMANAGED FOR TWO YEARS, A SYTEM WITH 1000 TRAPS WOULD LOSE OVER $100,000

TAKEAWAYS

- CORRECT INSULATION YIELDS LESS ENERGY WASTE THROUGH RADIANT HEAT LOSS
- PROPER TRAPPING REMOVES CONDENSATE FROM THE SYSTEM WHICH LOWERS LATENT HEAT TRANSFER
- PROPER TRAPPING ON PROCESS EQUIPMENT CAN PRESERVE LIFESPAN OF EQUIPMENT AND ALLOW FOR BETTER PRODUCTION QUALITY AND STARTUP TIMES
- STEAM SYSTEM MANAGEMENT CAN BE A LEADER IN ENERGY CONSERVATION AND WASTE REDUCTION

HOW WE CAN HELP

- STEAM SYSTEM MANAGEMENT PROGRAMS
- STEAM TRAP SURVEYS / TESTING
- ENERGY EFFICIENCY IMPROVEMENTS
- INCENTIVIZED PROGRAMS WITH ENERGY PROVIDERS
- TRAINING AND SYSTEM TROUBLESHOOTING


QUESTIONS?