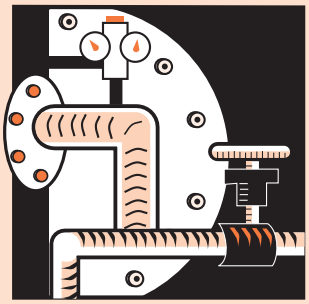

Recommended Steam Trap Testing Intervals

- High Pressure (150 psig and above): Weekly to Monthly
- Medium Pressure (30 to 150 psig): Monthly to Quarterly
- Low Pressure (Below 30 psig): Annually

Adapted from an Energy TIPS fact sheet that was originally published by the Industrial Energy Extension Service of Georgia Tech. For additional information on steam system efficiency measures, contact the Information Clearinghouse at (800) 862-2086.

Inspect and Repair Steam Traps

In steam systems that have not been maintained for 3 to 5 years, between 15% to 30% of the installed steam traps may have failed—thus allowing live steam to escape into the condensate return system. In systems with a regularly scheduled maintenance program, leaking traps should account for less than 5% of the trap population. If your steam distribution system includes more than 500 traps, a steam trap survey will probably reveal significant steam losses.

Example

In a plant where the value of steam is $4.50 per thousand pounds ($/1,000 lbs), an inspection program indicates that a trap on a 150 psig steam line is stuck open. The trap orifice is 1/8 inch in diameter. The table shows the estimated steam loss as 75.8 lbs/hr. By repairing the failed trap, annual savings are:

Savings = 75.8 lbs/hr x 8,760 hrs/yr x $4.50/1,000 lbs = $2,988/yr

Leaking Steam Trap Discharge Rate

Trap Orifice Diameter (inches)	Steam Loss (lbs/hr)			
	Steam Pressure (psig)			
	15	100	150	300
1/32	0.85	3.3	4.8	-
1/16	3.4	13.2	18.9	36.2
1/8	13.7	52.8	75.8	145
3/16	30.7	119	170	326
1/4	54.7	211	303	579
3/8	123	475	682	1,303

From the Boiler Efficiency Institute. Steam is discharging to atmospheric pressure.

Steam Trap Testing Facts

Steam traps are tested to determine if they are functioning properly and not cold plugging or failing in an open position and allowing live steam to escape into the condensate return system. There are four basic ways to test steam traps: temperature, sound, visual, and electronic.

Suggested Actions

Steam traps are tested primarily to determine whether they are functioning properly and not allowing live steam to blow through. Establish a program for the regular systematic inspection, testing, and repair of steam traps. Include a reporting mechanism to ensure thoroughness and to provide a means of documenting energy and dollar savings.

About DOE's Office of Industrial Technologies

The Office of Industrial Technologies (OIT), through partnerships with industry, government, and non-governmental organizations, develops and delivers advanced energy efficiency, renewable energy, and pollution prevention technologies for industrial applications. OIT is part of the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy.

OIT encourages industry-wide efforts to boost resource productivity through a strategy called Industries of the Future (IOF). IOF focuses on the following nine energy and resource intensive industries:

Agriculture	Chemicals	Glass	Mining	Steel
Aluminum	Forest Products	Metal Casting	Petroleum	

To help industries begin to save energy, reduce costs, and cut pollution right away, IOF technical assistance programs offer a comprehensive portfolio of emerging technology, practices, tools, information, and resources in a variety of application areas, for example, motor systems, steam systems, compressed air systems, and combined heat and power systems. Likewise, IOF has Industrial Assessment Centers (IAC) throughout the U.S. that offer energy, waste, and productivity assessments to small and medium-sized manufacturers. Users can take advantage of the abundant resources, such as software, fact sheets, training materials, etc. available from the IOF technical assistance programs.

Motor Systems — helps industry increase productivity and reliability through energy-efficient electric motor-driven systems.

Documents -

- ☐ Buying an Energy-Efficient Electric Motor
- ☐ Optimizing Your Motor-Driven System
- ☐ Frequently Asked Questions on: The Impacts of the Energy Policy Act of 1992 on Industrial End Users of Electric Motor-Driven Systems
- ☐ Energy Management for Motor Driven Systems
- ☐ Improving Pumping System Performance: A Sourcebook for Industry

Software –

- ☐ MotorMaster+ 3.0 and training CD
- ☐ ASDMaster
- ☐ Pumping System Assessment Tool

Training –

- ☐ MotorMaster+ 3.0 Software
- ☐ Adjustable Speed Drive Application
- ☐ Pumping System Optimization
- ☐ Pumping System Assessment Tool

Access the Web site at ***www.motor.doe.gov***.

Steam Systems — helps industry enhance productivity, increase profits, and reduce emissions through better steam system management.

Documents –

- ☐ Energy Efficiency Handbook
- ☐ Plant Services Article - *The Steam Challenge*
- ☐ Energy Manager Article - *Steaming Ahead*
- ☐ Oak Ridge National Laboratory's Insulation Guidelines
- ☐ 1998 IETC Steam Session Papers

Case Studies –

- ☐ Georgia Pacific Achieves 6-Month Payback
- ☐ Bethlehem Steel Showcase Demonstration

Software –

- ☐ 3EPlus Software for Determining Optimal Insulation Thickness

Access the Web site at ***www.oit.doe.gov/steam***.

Compressed Air Systems — dedicated to improving the efficiency and performance of industrial compressed air systems.

Documents –

- ☐ Improving Compressed Air System Performance: A Sourcebook for Industry

Training –

- ☐ Fundamentals of Compressed Air Systems (For schedule and location, call (800) 862-2086)

Access the Web site at ***www.knowpressure.org***.

Industrial Assessment Centers — enable small and medium-sized manufacturers to have comprehensive industrial assessments performed at no cost to the manufacturer.

Documents –

- ☐ IAC Database

Access the Web site at ***www.oit.doe.gov/iac***.

For more information, simply check the box next to the product, fill out the form below and fax back to (360) 586-8303:

Name: _____ Title: _____

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Phone: _____ Fax: _____ E-mail: _____

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For more information on Motor, Steam, Compressed Air Systems, and IACs, call the Information Clearinghouse at (800) 862-2086. For overall OIT and IOF information, contact the OIT Resource Room at (202) 586-2090 or access the Web site at *www.oit.doe.gov*.