



Swagelok Energy Advisors

Your Trusted Resource for Optimizing
Steam System Performance



Swagelok

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Discover the Swagelok Energy Advisors Client Experience

With engineering services, training, system evaluation and roadmap implementation services, Swagelok Energy Advisors (SEA) is your full-service provider for optimizing energy system performance.

Here's what to expect from us:

A true team member

We work together with you to positively impact your in-plant reliability, optimization, energy systems, emission reduction and your bottom line.

Dedication to your success

We are committed to providing high-impact engineering services and training.

Hands-on support

Regardless if we're providing best-in-class training or leveraging our expansive experience during an evaluation, we work shoulder-to-shoulder with your team in your plant.

Flexibility

Our engineering service offerings are tailored to meet your exact needs.

Confidentiality

We earn your trust and confidence and we protect your information.

Values

Every day, our business lives and breathes the Swagelok corporate values of quality, innovation, continuous improvement, integrity, respect and customer focus.

Your System, Our Services

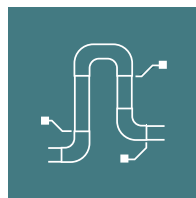
You expect **performance, efficiency, reliability** and **safety** from your in-plant utility systems. You deserve a consulting and training expert who shares those priorities and is committed to your success with quantifiable results.

Swagelok Energy Advisors, Inc. (SEA), wholly owned by Swagelok Company, helps clients around the world strengthen performance and efficiency by providing high-impact consulting and training services for steam, condensate and compressed air systems. Our highly experienced steam system engineering consultants and senior field engineers have been involved in thousands of steam system projects around the world.

Our global team, supported by a network of more than 200 authorized Swagelok sales and service centers, delivers immediate and ongoing impact with:



Steam and
Condensate
System Training



Steam System
Evaluation



Steam System
Roadmap
Implementation



Steam Trap Station
Management
Program



Ultrasonic Leak
Detection for
Compressed Air
Systems

Your system, our services –
your success



Steam & Condensate System Training

Incorporating Best Practices and The Real World

Experience can be a great teacher, especially when your team is able to benefit from the knowledge of our steam system engineering consultants and senior field engineers, who have been involved in thousands of steam system projects around the world. Our professionals offer both best practices instruction and real-world guidance, yielding tangible, bottom-line benefits:

- Productivity growth and decreases in system downtime
- Lower emissions and more value for your energy dollar
- Worker safety improvements and greater job satisfaction
- Wiser investments in new equipment

In the SEA team training setting, we utilize our unique steam group concept to enable students to learn the same way they solve problems on the job – by helping one another and sharing ideas on the job floor.





Training That Answers Every Need

Given the varied needs of steam system users, we offer both standardized and customized programs – covering more than 40 steam subjects. This includes training on steam systems, steam generation (boilers), safety and custom in-plant programs. And our training has been validated and delivers real value for clients. Our trainees earn highly valued CEU credits, and we test participants at the conclusion of every program. Our hands-on training methods lead to high retention levels among participants.

Many of our clients first engage us for training. When they see the experience and value we can provide, they contract with us for additional training, engineering services, system evaluations and roadmap implementation.

SEA Training Courses

Steam Systems

- Steam System Training (Levels 1-4)
- Steam Trap Examiner (Levels 1-2)
- Ten Action Points for Your Steam System (Levels 1-2)
- Steam Distribution System
- Steam System Winterization

Steam Generation (Boilers)

- Boiler Plant Operation (Levels 1-2)
- Boiler Plant Optimization (Levels 1-2)

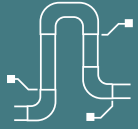
Safety

- Steam Safety Management Training
- Standard Operating Procedure (SOP)

Custom In-Plant Programs

What
Our Clients
Experience

“I would like to thank you for a successful steam training class. You have opened up the eyes and ears of our facilities department. Our mechanical engineers and management team are now working on a plan of action to solve our steam nightmare. We have ‘steam guys’ out here, but not with your caliber of knowledge.” – Facility engineering manager



Steam System Evaluation

Analyzing and Addressing Whole-System Performance

The Swagelok Energy Advisors steam system evaluation program looks at all four key parts of the steam system – generation, distribution, steam-consuming equipment and condensate recovery. Our goal is to improve the safety, productivity, efficiency and reliability of your overall steam system.

Immediate Return on Investment

Best of all, our solutions and recommendations pay for themselves in terms of improved productivity, efficiency and reliability. Many of our solutions and recommendations require little or no cost to implement (although some require capital expenditures). We delineate near-term needs from longer-term considerations, up to a 15-year period of upgrades and changes.

Five Categories of Recommendations:

- 1 Safety and/or code issues; must be corrected immediately
- 2 Cost savings and/or performance upgrade with ROI in 18 months or less
- 3 Cost savings and/or performance upgrade with ROI in 24 months or less
- 4 Cost savings and/or performance upgrade with ROI in 36 months or less
- 5 System improvement opportunity to align with best practices, but not necessarily associated with cost savings



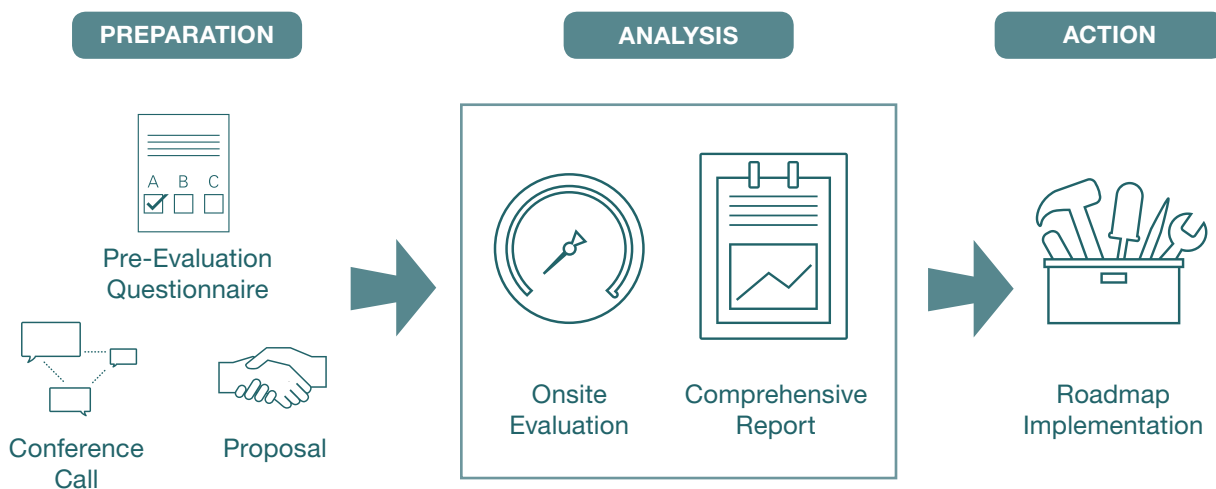
What Our Clients Experience

“SEA’s evaluation team worked closely with our team to understand our unique situation. The report was so complete and customized that we were able to bring your engineering calculations and cost estimates right into our planning. Implementing your recommendations has significantly reduced our energy costs.” – Corporate energy engineer

Comprehensive, Systematic, Methodical

Our comprehensive, systematic approach to steam system evaluation is divided into three phases: Preparation, Analysis and Action. We begin every engagement with a pre-evaluation questionnaire and development of mutually agreed upon goals and objectives. During the entire analysis phase, our evaluation team is a part of your team. We are on site throughout the evaluation and work shoulder to shoulder with your team members. When the evaluation is finished, we deliver an in-depth report that documents calculated cost factors, installation cost estimates, energy savings calculations and payback estimates – helping you make the all-important “business case.” Our roadmap is a practical plan that helps you easily translate recommendations into implemented changes.

Our Process:





Steam System Roadmap Implementation

Project Management Skills Deliver Results

The success and impact of steam system evaluations depend on what you do with the information – how well the roadmap is followed and implemented. Our roadmap implementation services address those critical needs, are customized for each client and highly scalable. Using the in-depth steam system evaluation as a starting point, project management and overall roadmap coordination and implementation are our core strengths. We can manage the complete project from design and drawings, specifying and purchasing equipment, all the way through to installation and start-up.

- Design steam and condensate systems
- Provide AutoCAD drawings
- Complete purchasing process for equipment and materials, including specs, RFQs and procurement
- Install equipment, repair leaks and manage any mechanical work
- Write Standard Operating Procedures (SOPs), train operators on SOPs and evaluate SOP compliance
- See project through to completion, start-up and commissioning





According to one DOE statistic, only about 20 percent of all steam system recommendations are actually followed up on. That follow-up and attention to detail are assured when you team up with Swagelok Energy Advisors for project management and roadmap implementation support, which results in a high percentage of action against the evaluation recommendations. It also delivers bottom-line benefits that everyone in the organization – from the CEO to the environmental staff, from the financial folks to the operations team – can appreciate.

The Value We Provide

Our proven project management and roadmap implementation services help clients attain their operational goals in the areas of efficiency, reliability and risk reduction.

We can provide value in many ways:

- ✓ System optimization
- ✓ Reduced energy costs – savings of 10 percent or more
- ✓ Reduced emissions of CO₂, NO_x and SO₂
- ✓ Less production downtime
- ✓ Production improvements
- ✓ Improved worker health and safety – code compliance, water hammer issues
- ✓ Real cost savings – thousands of dollars saved even from correcting one 1/8- or 3/8-inch leak

What Our Clients Experience

“After seeing SEA at work during our system evaluation, we immediately requested your help in implementing the recommendations. The result was fantastic – all five phases of the project were completed on time and under budget with no downtime. In addition, the implementation project paid for itself within 11 months.” – Facility manager



Steam Trap Station Management Program

We offer a comprehensive, unbiased assessment of the steam trap station with a goal of reducing steam trap failure rates to 3 percent or less. Our program is entirely focused on the performance of your complete steam trap station and includes:

- Steam trap testing
- Root cause analysis of the failures
- Proper sizing
- Isolation valve operation
- Steam trap station design
- Check valve operation
- Electronic report
- Training – steam trap testing techniques



Ultrasonic Leak Detection for Compressed Air Systems

We have found that about two-thirds of energy costs for compressed air can be significantly reduced without large capital outlay. The solution is a comprehensive evaluation program that utilizes innovative technology such as ultrasonic leak detection. We will teach your people to use this technology, and/or we can work with your in-house team to improve system performance and reduce operational costs.

Our process is as follows:

- Initial discussion to review your unique situation and needs
- Customized proposal
- In-plant evaluation, in concert with your team
- Detailed report with prioritized recommendations
- Customized project management assistance



Your Trusted Steam System Resource

Decades of real-world, in-plant experience combined with best practices make Swagelok Energy Advisors your trusted resource for optimizing steam system performance. We deliver tangible client results, make an impact on your bottom line and add value every step of the way. You can trust in us.

Value beyond the expectedSM

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