GUIDELINES

For Selecting a Compressed Air System Service Provider

Compressed air is one of the most important utility requirements of the typical industrial manufacturer. Compressed air is used throughout many processes such as pneumatic tools, pneumatic controls, compressed air operated cylinders for machine actuation, product cleansing, and blow-offs. Without a consistent supply of quality compressed air, a manufacturing process can stop functioning.

The **Compressed Air Challenge**© (CAC) is a national collaboration that was created to assist industrial facilities in achieving greater reliability, improved quality control, and lower operating costs for their compressed air systems. The CAC encourages facilities to take a *systems approach* to optimizing compressed air operation. Taking a systems approach means looking beyond individual components to assess how well your compressed air system meets actual production needs. This is known as "matching supply with demand." It also means identifying the root causes of system problems, rather than treating the symptoms.

For most industrial facilities, this approach will require specialized knowledge and equipment, both to assess system needs and to continue to service those needs over time. Outside assistance frequently is required. System assessment services and ongoing system maintenance may require the use of separate firms, although there is a growing market trend toward more fully integrated services. The process of selecting the right mix of services can be confusing. The CAC worked with the compressed air industry to develop guidelines to help industrial compressed air users become informed consumers. *Guidelines for Selecting a Compressed Air System Service Provider* offer guidance to assist you in selecting a firm that offers integrated services. Independent compressed air system specialists typically provide comprehensive system assessment services as their principal business; many are not involved in sales of equipment, other products, or maintenance.

The CAC also developed guidelines to define three levels of system analysis services, independent of the type of firm offering these services. These three levels of service include: a walk-through evaluation, a system assessment, and a fully-instrumented system audit. More information on analysis services guidelines can be found under the CAC Levels of Analysis of Compressed Air Systems on page three, or you can visit the CAC website at www.compressedairchallenge.org.
In selecting a service provider, a compressed air user should consider the following guidelines:

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What to Look For When Selecting a Service Provider

In selecting a service provider, a compressed air user should consider the following guidelines:

I. Familiarity with the systems approach

The Compressed Air Challenge© (CAC) provides Fundamentals of Compressed Air Systems and Advanced Management of Compressed Air Systems training to end users and service providers. One way to gauge a service provider's commitment to the systems approach is whether they have staff who have received CAC training. If they do, ask whether these individuals will be providing or supervising services for your facility. Providers who are familiar with using a systems approach are much more likely to address situations, both inside and outside the compressor room, that are having an effect on the reliability of your compressed air supply.

II. Availability of compressed air system assessment services

Does the provider offer compressed air system analysis services? If yes, how well do these services fit your needs? If no, can the provider outsource these services to an experienced system specialist? How experienced are the individuals who will be providing these services? Once a walk-through, assessment, or audit is performed, what kind of follow-up services are available to ensure that the recommendations are properly implemented and produce the desired results? Ask for a sample of similar work that the provider has done for others, resumes of the personnel who will be performing the work, and client references. Please note that while leak detection is a useful element of a system assessment, a true system assessment should include much more. See Fact Sheet #7, Compressed Air System Leaks at https://www.compressedairchallenge.org/library for additional guidance.

Important Note: recommendations resulting from system analysis activities should provide product-neutral solutions to system problems and include, only if needed, performance-based rather than brand-based equipment recommendations.

III. Compressor Knowledge and Expertise

Does the service provider have the expertise to work on your equipment? Can the service provider work on all types of compressors in your facility? How much experience do the service technicians have? How are the service technicians trained? Is formal schooling involved? Knowledgeable service technicians are worth the premium price they may demand because of their ability to troubleshoot and get equipment back online efficiently and effectively.

The personnel certification program for compressed air system specialists (CCASS) developed by CAGI provides a means of verifying the capabilities of professionals in the compressed air system industry. The program allows customers, utilities, employers, and others to have confidence in the skills and abilities of the professionals who design, service, sell, and install compressed air systems and the associated equipment. For more information on CAGI's CCASS program or a directory of certified compressed air system specialists, please click **here**.

IV. System Components and Controls Knowledge and Expertise

Treatment, accessory, and ancillary equipment-Does the service provider have the expertise to perform refrigeration and other work on dryers and related equipment? Is the service provider capable of servicing the types of filters, drains, distribution and point of use equipment found in your facility?

System controls- Does the service provider have the diagnostic and technical controls capability to determine how to optimize your existing control configuration and make recommendations for improvements? Can they help network compressors together or through remote monitoring, if necessary? Advanced controls can save energy as well as improve reliability through automatic start and stop, as well as turning compressors off that can then serve as back-ups. Warnings through remote monitoring may help identify a problem before it turns into a major shutdown.

V. Company Capabilities

Ask about the standards of performance that the prospective service provider has established for:

- Emergency service response
- Parts shipments
- Other factors which may influence your decision, such as:
  - Installation capabilities internally or through a mechanical contractor
  - Emergency rental fleet availability – electric or portable diesel driven
- Your company may request information on the service provider's
  - Financial stability
  - Insurance coverage
  - Compliance with specific government regulations or those of your company

VI. Service Facilities

Visit the facilities of two or three service providers under consideration to see first-hand the type of repair shop and parts warehouse with which you will be dealing.

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LEVELS OF ANALYSIS OF COMPRESSED AIR SYSTEMS

OVERVIEW

The Levels of Analysis of Compressed Air Systems listed below have been developed in an effort to provide commonality of terminology, methods, and procedures to be used by service providers and the results that should be expected by end users.

Energy utilities are actively involved in these efforts, and some provide incentives to use these analyses to improve the energy efficiency of compressed air systems. For more information, please visit the Database of State Incentives for Renewables & Efficiency website **here**.

Conducting a Walk-through Evaluation is the first step in analyzing a compressed air system. Depending on individual needs, this can be conducted either by plant personnel or by an experienced compressed air system services provider. A Walk-through Evaluation is not intended to provide the level of detail found in a System Assessment or a System Audit but significant reductions in energy (25% or more) and lower maintenance costs frequently have resulted from a Walk-through Evaluation alone. Once initial opportunities have been identified, a decision should be made concerning whether additional analysis services are required to further define system dynamics and corresponding system improvement opportunities. This decision will depend, in part, on the size and complexity of the system being examined (both supply and demand) and whether critical issues surfaced during the Evaluation that require further investigation to understand the root cause and suggest potential remedies.

LEVELS OF ANALYSIS

Walk-through Evaluation (1/2 -2 days)

A walk-through evaluation is an overview of a plant compressed air system by identifying the types, needs, and appropriateness of end uses, pressures and air quality requirements.

- The distribution system is analyzed for any apparent problems of size, pressure drops, storage, leaks, and drains.
- The supply side is analyzed for types of compressors, and the types, suitability and settings of capacity controls.
- A simple block diagram of the system is drawn.
- Maintenance procedures and training also are analyzed.
- Written report of findings and proposed solutions is submitted.
- Solution and product neutrality should be maintained with any recommendations.

System Assessment (2-5 days)

A system assessment is more detailed than a walk-through evaluation of a plant compressed air system.

- In addition to identifying the items and problems of the walk-through evaluation, readings are taken at appropriate locations from the compressor discharge to multiple end uses. This will identify the dynamics of the system.
- A simple block diagram of the system is drawn, also a pressure profile and a demand profile, to help identify potential problems and how they could be resolved.
- Again, maintenance procedures and training are reviewed.
- A written report of findings and recommendations is submitted.
- Solution and product neutrality should be maintained with any recommendations.

System Audit (3-10 days)

A system audit is similar to a system assessment but in more depth and detail.

- Data logging of readings throughout the system is conducted for a more in-depth analysis of the dynamics of the system and resulting problems.
- Again, maintenance procedures and training are reviewed.
- The objective is a proper alignment of the supply side and the demand side for optimum efficiency, energy savings, and reliability. A baseline is established, against which the results of any proposed changes are measured.
- A comprehensive written report of all findings, recommendations, and results is submitted.
- Solution and product neutrality should be maintained with any recommendations.

About Compressed Air Challenge©

The Compressed Air Challenge© (CAC) is a voluntary collaboration of industrial users; manufacturers, distributors and their associations; facility operating personnel and their associations; energy efficiency organizations; and utilities. The purpose of the CAC is to improve the performance of industrial compressed air systems through a systems approach to optimization. The CAC educates suppliers and users of industrial compressed air systems on the benefits of taking a "systems approach" through various means such as training sessions, publications, software and other media. The Challenge sponsors one-day Fundamentals of Compressed Air Systems and two-day Advanced Management of Compressed Air Systems classes throughout the United States. More information on the CAC's services and products may be found on the web at **www.compressedairchallenge.org.**

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