



OUTSOURCING FOR QUALITY CALIBRATIONS

Proactive partnering with your calibration vendor can save you time, money, and auditing hassles

By Shannon M. Spizzirri

They say, "If you want it done right, do it yourself." You've said it, I've said it, everyone has said it. But what happens when you must rely on an outside party to provide a service over which you'd prefer to have control? How do you identify work that can be performed in-house and work that should, or must, be performed elsewhere? How do you decide who should do the work? And how do you maintain compliance to your quality program when a third party does the work?

What often begins as a simple procurement process can quickly become a complex quality issue. This is particularly true with outsourcing calibration services. The calibration of test and measurement instrumentation must meet quality requirements that are critical to employees' safety, your product's quality, and maintaining your accreditation programs and auditability. Trusting a third party to meet these requirements means not only making that leap of faith but also establishing a well-defined process for outsourcing calibrations.

Should you outsource?

Before beginning such a process, you should ensure there's a need for outsourcing. Third-party calibration services might be required for a number of reasons. Most often, in-house calibration isn't possible because adequate measurement standards or technical expertise in a given measurement discipline are lacking. Outsourcing instrumentation in this instance must be weighed against purchasing appropriate capital equipment or training. If the costs related to these purchases are prohibitive, then outsourcing to a competent calibration laboratory or the original equipment manufacturer is an obvious alternative. It's sometimes wise to outsource all calibrations, thus eliminating capital and administrative overhead.

For metrology laboratories with comprehensive measurement capabilities, outsourcing is often only necessary for maintaining traceability to a nationally recognized standard, most often that of the National Institute of Standards and Technology. Such outsourcing obviously entails choosing a high-quality, reliable calibration lab. Because these instruments represent the source for all calibrations and/or tests performed in-house, the quality and accuracy of such calibrations are imperative. Lacking traceability is often all it takes to shut down a calibration program completely.

Sometimes organizations outsource in order to validate and verify their own processes and procedures. When a measurement's accuracy or predictability is critical to a process or service, comparing in-house tests against those of an independent party can provide a high level of confidence and reliability.

Furthermore, cooperative test and measurement programs are instrumental in advancing metrological science and can help fine-tune quality programs.

OEMs vs. comprehensive labs

Once you've decided to outsource calibration of an instrument, you have to decide where to send it. This is somewhat dependent on why you've decided to outsource. For cases in which calibration must be done elsewhere because of a simple inability to perform the test in-house, the OEM is often the obvious choice. After all, the OEM designed and manufactured the instrument, so the OEM's calibrations would be

specifically designed for the unit being tested. OEMs generally calibrate only the instruments they manufacture and the cost is usually higher.

Some less-than-obvious considerations when selecting the OEM are turnaround time and auditability. Because OEMs are in the business of manufacturing, calibrations are often performed as a value-added service, a fact that can affect turnaround and measurement scope; in exchange for lower costs, turnaround for the tests can--in some instances--stretch into months. If the unit to be tested is critical to production or service, a slow turnaround can result in lost revenues and low productivity.

The ability to audit an OEM, as required by some quality programs, can also be hindered by the nature of its business. An OEM can't shut down its production line to accommodate an auditor. Furthermore, it may have proprietary procedures and methods that it must protect in order to maintain competitiveness in its industry, thus preventing an auditor from performing a comprehensive review. This can sometimes disqualify the OEM as an approved service supplier, depending on the quality program's requirements.

In the event that outsourcing to the OEM is inappropriate, plenty of professional calibration laboratories are available, and they're concerned with only one thing: quality measurements. Because they're not manufacturers, they can devote their attention entirely to measurement science. They also understand the importance of meeting every customer's specific quality requirements and the necessity of performing those services in a timely manner. And, because they're focused on metrology, they've generally developed very high-precision procedures and processes.

When a professional calibration lab is required, there are typically two types from which to choose: specialized and comprehensive. A specialized laboratory provides calibrations in a sole measurement discipline. For example, Homer Dulin, of Long Beach, California, provides calibrations only in gas- and liquid-flow technology. Because it has focused on this technology for years, it can provide measurements for flowmeters of all types, and it can do so with a great degree of accuracy and competence. A specialized calibration lab is a great choice when you have a limited number of instruments to outsource.

But what if you have many different types of instrumentation? These could certainly be sent to each of the relevant specialized labs, but the resulting paperwork and quality review could become a nightmare. Comprehensive calibration laboratories are staffed by both specialists and generalists and can perform measurements within a broad range of disciplines. Using comprehensive laboratories like these can significantly reduce administrative overhead, chain-of-custody tracking and paperwork.

Also, because these labs must maintain adequate staffing to accommodate so many different disciplines, turnaround is usually quick.

Another benefit of using a comprehensive calibration laboratory is the ability to transfer all of your quality issues to it. Because these labs address many disciplines and requirements, they not only perform calibrations but manage entire quality programs. Many companies have written their quality programs to provide complete calibration outsourcing, which greatly saves on capital and administrative costs. In addition to performing calibrations, your calibration supplier will also maintain your quality program by managing traceability, audit trails, instrument failure, documentation and quality reviews.

Maintaining quality in outsourced services

So far, we've dealt with the administrative practicalities of outsourcing calibrations. But our real concern, after all, is quality. Quality programs are so important that entire departments have been created to support them, and the industry continues to expand the scope and precision of measuring, quantifying and maintaining its programs. Without such a firm commitment to quality, success is impossible for any industry in today's demanding business climate. How, then, can we impose a quality regimen on processes that are out of our direct control? The answer is research, documentation and review.

Prior to outsourcing calibrations, do your homework. Specifically, check for industry accreditations. Calibration laboratories accredited to such standards as the National Voluntary Laboratory Accreditation Program or ISO 17025 have been audited to meet extremely high quality and technology expectations.

Ask for a copy of the company's quality manual. The processes contained therein will provide a good indication as to whether the lab meets your quality requirements. If it doesn't have a quality manual, seriously consider looking elsewhere for service.

Also ask for a list of companies that have approved the lab as their supplier. If the list includes companies from industries that demand an extremely high degree of quality, such as aerospace or pharmaceutical, it's a good bet that the lab holds to a high standard of compliance. If the lab is the OEM, check to see if it reports to any regulating agencies, such as the FDA or the FAA. If so, it's probably required to maintain a rigid quality program.

Finally, when in doubt, perform a physical audit of the facility in question.

When your research is completed and you've selected the calibration lab that meets your requirements, thoroughly document those requirements. Never assume the vendor knows what you want. List every requirement in extreme detail, no matter how trivial or ridiculous it may seem. This will fulfill two aims: It ensures that you've made your vendor aware of your needs, and it provides accountability after the fact. For instance, when sending a temperature instrument out for calibration, don't simply instruct them to "calibrate from -20°C to +50°C." While this may seem like a complete instruction, critical information is missing, such as how many temperature points you need measured and which ones. If you want calibration performed to a manufacturer's specifications, review the user's manual and make note of those specifications. All of this may seem like overkill, but it'll prove invaluable when audit time arrives.

When you receive your instrument back from the calibration lab, meticulously review the calibration documents, and be sure to compare them against the aforementioned requirements list. Because you've already established a list of criteria, you can go through the calibration documents point by point, ascertaining compliance. You'll be able to easily identify any mistakes and/or omissions and have them corrected prior to returning your instrument into service. Furthermore, because you've notified the vendor of your requirements prior to calibration, it's obligated to meet them. Also, note any special remarks pertaining to the calibration, particularly as they apply to out-of-tolerance conditions or repairs. This information can be critical to your quality program because it will assist in determining if any of the tests performed with this instrument must be redone. In any event, because you've been proactive in choosing a supplier and providing instructions, your documentation review will be effective and complete.

Summary

Outsourcing calibration services is sometimes inevitable and sometimes a matter of choice. In either case, your concern for quality compliance is well-justified. These concerns can be mitigated through detailed research and documentation. By identifying your critical quality requirements and communicating them--without ambiguity--to your vendor, you'll have applied quality controls to a third-party process. When you identify the service provider that best meets your needs, establish its commitment to quality compliance, provide it with detailed instructions and review its documentation, you create a valuable relationship with your vendor. Rather than being an uninvolved third party, you're a partner in quality with your calibration vendor, and your quality program is enhanced by this collaboration. Through a mutual commitment to quality, accuracy and meeting your customers' needs, you and your vendor will raise the level of expected quality throughout your industry.

About the author

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