

## AUDITS THAT MAKE A DIFFERENCE

Judith A. Malsbury  
Manager, Quality Assurance  
Princeton Plasma Physics Laboratory  
P.O. Box 451  
Princeton, New Jersey 08543  
phone: 609-243-2415  
email: jmalsbury@pppl.gov

CFP-3970

**RECEIVED**  
**FEB 12 1999**  
**OSTI**

### SUMMARY

This paper presents guidance on how to perform internal audits that get management's attention and result in effective corrective action. It assumes that the reader is already familiar with the basic constructs of auditing and knows how to perform them. Instead, it focuses on additional techniques that have proven to be effective in our internal auditing program. Examples using a theoretical audit of a calibration program are included.

### KEY WORDS

Audits, Customer satisfaction, Processes

### INTRODUCTION

Many of the techniques described in this paper initially resulted from a cross functional task force convened in 1995 to identify opportunities for improvement in the internal audit process. Since then, the techniques have been refined and additional ones added. This paper presents these techniques.

### EFFECTIVE TECHNIQUES

While audits can be an effective tool to improve programs and assure that requirements are satisfied, this does not always happen. In my career, I have heard many quality professionals lament that it is sometimes impossible to get the required attention necessary to fix the problems identified in the audit and that frequently the fix is only superficial, fixing the outward symptoms of the audit, but not addressing the root cause. Therefore the problem will most likely recur in the future. In this section, I will discuss those considerations that I believe will increase the likelihood that your audit will be effective.

**Recognize the Customer.**

## **DISCLAIMER**

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, make any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

## **DISCLAIMER**

**Portions of this document may be illegible in electronic image products. Images are produced from the best available original document.**

One of the initial mistakes that many auditors make is recognizing who is their customer. Ask quality professions to identify their customer; most of them will say "top management." However, who will have to solve the problem that the audit team identifies? The owner of the system or program being audited. Aren't these the individuals for whom the audit is being done, who is most interested in the state of his program and will have to correct the problems identified in the report? If this is indeed the situation, shouldn't the needs of this individual be kept in the forefront when performing the audit?

I can hear the dissenters now. Without top management's support, what guarantee do we have that the audit will be taken seriously and correct any identified problems? There are many ways to guarantee this. First, top management, along with all program and system managers, should be involved in the selection and scheduling of audits; they should know what audits are occurring and when. At our Laboratory, the Director issues the audit schedule; this, hopefully, also provides the message that these audits are important to him. Second, and only as an absolute last measure, the audit team should reserve the right to go up the management chain as high as top management when audits or the findings are not being taken seriously. However, be careful of this action; once done, the customer's confidence in the integrity of the audit program may be greatly reduced.

What is the impact of having the owner of the program as the customer of the audit? This will require much more interaction between the program owner and the audit team than in traditional audits as we will see later.

*For our theoretical calibration audit, the customer is the individual who is directly responsible for the calibration program — the individual who collates and clarifies the requirements, sets up the program, and monitors its effectiveness.*

### **Identify the Audit Team.**

One of the most effective ways to assure that the audit results are effective is to choose an audit team in whom the customer has confidence. While I strongly believe that it is important that the audit team leader be independent of the activity being audited, why not include a representative from the system or program owner on the audit team. I have usually asked for the following characteristics of this individual:

- The individual should be knowledgeable in the area being audited.
- The individual must have the trust and respect of line management.
- The individual must be open minded and willing and able to identify problems within his or her own work area.

In addition to improving the knowledge of the audit team as a whole, the involved individual will also obtain a better understanding the specific problems identified by the report and therefore be able to better support the problem resolution. Also, this individual will have a better understanding of the audit process in general and, hopefully, a better appreciation for the value and benefits of audits.

Do be aware that some managers could not work with this type of arrangement. Such an arrangement could potentially impact the working relationship between the potential auditor and his or her line management. If this were likely, do not use the individual as an auditor, but as a technical specialist, someone to escort the audit team, but not actually part of the audit team.

Another important representative on the audit team, when feasible, is the customer for the program being audited — the customer's customer. This individual best knows what features are most important to him or her.

*For our calibration audit, I would request someone who works in the calibration shop as the program representative and someone who uses the shop's services to calibrate his or her tools as the customer.*

### **Work with the customer to understand the system or program being audited.**

The audit team should meet with the customer to obtain a better understanding of the system or program. Some issues to address are:

- Where are the requirements of the system or program defined?
- Who are the customers? What do you believe are their expectations? How did you determine this? How do you know how well you meet their expectations?
- What features of the system or program are most important to you?
- What parts of the system or program are most problematic to you?
- What parts of the system or program were most problematic in the past but are believed to have been resolved?
- How is the program staffed? Have there been recent changes in the staffing?
- By what criteria, would you consider this system or program to be successful?
- When was the last audit of this area and what were the results?

### **Work with the customer to establish the scope of the audit.**

From the above information, the audit team, working with the customer, establishes the official scope of the audit. This does not mean that the customer can define the scope of the audit to those areas that he or she believes is working well. This would have no value to the customer or the organization. The process described in this paper has no value in a game playing organization. The organization must desire to improve, to try to do the best job possible. Everyone must be in agreement with this goal.

*For the calibration audit, the scope might be limited to those tools used on a particular high risk project with the understanding that focusing on these tools would still provide the audit team with a good understanding of the calibration program in general but provide a more manageable scope.*

## **Work with the customer to formalize the performance objectives and criteria for the audit.**

Using the agreed upon scope, the customer and audit team should jointly formalize the performance objectives and criteria for the audit, further refining the purpose of the audit. These performance objectives and criteria should reflect those necessary to have a successful program.

*A calibration program is successful if inspections and tests are performed using properly calibrated measuring and test equipment. Specific objectives derived from this, the areas on which the audit team will focus their review, might be as follows:*

- *Tools used by the project have current evidence of calibration either on them or accessible to the user.*
- *The users of the tool are aware of the significance of calibration and assure that only calibrated tools are used.*
- *The users know what to do if an out-of-calibration tool is identified.*
- *The calibration shop has the necessary equipment to perform the required inspections and tests.*
- *Appropriate procedures exist for the calibration shop.*
- *Personnel performing calibrations are qualified for the task and trained on these procedures.*
- *Calibration standards are traceable to the National Institute for Standards and Technology (NIST) or equivalent.*
- *Suppliers or vendors performing calibrations meet the same standards as the internal calibration shops.*

Using these performance objectives and criteria, the audit team can determine how to perform this audit, which individuals should be interviewed, what work activities should be observed, what records should be reviewed. This is an appropriate time to generate the checklist to serve as guidance for the direction of the audit. Dependent upon the environment at your site, you may even want to share the checklist in advance with the audited organization. This demonstrates the willingness of the audit team to be open and honest and helps confirm that the audit is not purely looking for non-compliances (the “gotcha” mentality).

## **Identify in advance the distribution of the audit report.**

Clarify in advance with the customer to whom the report will be distributed. In general, it is desirable to limit the distribution to the minimum number of people who need to know the results. Other individuals desiring copies should contact the customer, not the auditors. Typically, I encourage the customer to willingly share the results of the audit with the staff who support the system or program. However, the final decision is the customer’s, not ours. There might be some exceptions to this rule that are reasonable for a facility. For instance, in our company, copies of all audits with environment, safety, or health (ES&H) impact are

automatically sent to the Head, ES&H Executive Board. However, we make certain that the customer knows about this in advance.

Based on this decision, individuals will be interviewed by the audit team who may not have access to the final audit report. Because of this, we clarify to these individuals why they are being audited, what will happen with the information that we provide, and how the report will be distributed. Surprisingly, no one has complained about the fact that they may not see the audit report itself.

*For the calibration audit, the report might be distributed to the manager of the calibration shop(s) and the manager who is responsible for establishing the calibration program requirements. If problem were detected that resulted in environment, safety, or health concerns, the group responsible for ES&H oversight would also receive a copy.*

### **Keep the customer informed about the status of the audit.**

Throughout the audit, the customer must be kept informed about its progress — what the audit team is doing, what it has seen, what questions remain open. Effective methods for doing this includes daily debriefing meetings, informal customer visits by the audit leader when deemed appropriate to discuss audit issues, and daily electronic mail reports. My suggestion is to provide as much detail as possible. Some auditors may be concerned about providing such details since issues may not have been adequately investigated yet to provide an accurate report. However, with some caveat words, the auditors should still identify these issues. The customer may have heard that the auditors are investigating a particular issue; mentioning the issue and indicating that investigation is still in progress will provide greater confidence by the customer that the audit team is open and honest.

*For the calibration audit, the daily debriefing might indicate that two instances of the use of uncalibrated tools were detected and that the scope of this program remains to be determined.*

### **Allow the audited organization time to provide additional information or refute the information contained in your debriefings.**

Keeping the customer informed on identified issues has the added benefit that the audit team may be wrong. It is far better that mistakes or misunderstandings be identified as early in the process as possible, definitely prior to issuing the audit report. Mistakes or inaccuracies in the audit report have a significant impact on the rest of the report and can result in loss of credibility in the real and important issues.

Even if the audit team is correct in its observations, take the time to make certain that the customer understands what you are saying even if this delays issuing the report. The benefits include:

- Greater accuracy and completeness in the audit report
- A better understanding of the concern

- Increased buy-in by the audited organization
- Increased confidence in the audit team and its capabilities

I am a great believer that it takes effort and time to assure that the customer of an audit believes in the accuracy of the audit and will make improvements. The audit team has a choice to do this either prior to issuing the audit report as a preventive measure or after the audit report is issued as a corrective measure. The choice is obvious.

### **Relate the findings to the performance objectives and criteria.**

Much time was spent working with the customer identifying those performance objectives and criteria relating to success of the audited program. These performance objectives and criteria were used to generate the checklists. It makes sense that the findings should also relate to them. An actual finding may be a combination of various pieces of information obtained during the audit, both information concerning compliance to requirements and information concerning only performance issues.

*For the calibration audit, there might be one finding concerning the fact that tools were found in the field that were out-of-calibration (compliance issue), users did not recognize this (compliance issue), and that the indicators for the calibration status were not easy to read (performance issue). In addition, the finding might emphasize that the long turn-around time for calibrating instruments further impacts this concern (performance issue). Provide as many details about the finding as possible including what out-of-calibration tools were found, where they were found, what decisions were made using these tools, and what potential impacts of these decisions were identified.*

### **Write the report using the customers terminology .**

Reports are frequently written using terms that are natural to the quality professional but not to the customer. The customer is more likely to take appropriate corrective action if the report is written in language that is appropriate for the program or system audited and if the consequences of the issues in the report are clearly identified.

### **Include an executive summary in the front of the audit report.**

Managers reading the report want to quickly get a summary of the report prior to delving into the details. An executive summary at the beginning of the report satisfies this need.

### **Include recommended corrective action or suggestions in your report.**

A frequent caveat in many books on auditing is that the auditors should be extremely careful about making recommendations for corrective action or suggestions on how to improve the



program. Doing so presents the risk of the audited organization implementing “what the auditors wanted” instead of doing what should be done.

However, the audit team has spent a significant amount of time reviewing a program. They have a good understanding of the program, its weaknesses, and the opportunities for improvement. They are bright and capable individuals. Encourage them to make suggestions with the caveat that these are indeed suggestions only; the final decisions belong to the customer of the audit as long as appropriate corrective action is taken.

From experience, we have found that in the majority of cases the suggestions are accepted and implemented because they have value.

*For the calibration audit and the finding on tools used that were out-of-calibration, the recommended corrective action might include improvements to the calibration status tag to make it easier to determine the current status, reductions in the amount of time required to calibrate tools, providing loaner tools, and increasing awareness of the importance of calibration. In addition to providing written suggestions within the report, sometimes non-written (verbal) guidance on how other groups within the facility have solved similar problems may be helpful.*

#### **Include a comprehensive report of the audited program in your report.**

Many traditional audits document findings, concerns, and suggestions only. Reading the report would not provide adequate information on what was reviewed during the audit or how the system as a whole is working. This has limited value to the manager. A suggestion is to provide one or two paragraphs describing what was found for each performance objective and criteria.

*For the calibration audit, for example, the report would contain a paragraph or two on each of the eight objectives identified earlier. There would exist information on the evidence of calibration on the tools, users' assuring that calibrated tools are used, handling of out-of-calibration tools, etc.*

#### **Provide the customer an advanced copy of the draft audit report for review and comment.**

Rarely does an audit team issue a report that is 100% correct. Allow the audited organization the opportunity to review your draft report and provide you with additional information that you may have missed during the audit. If the customer objects to specific information contained within the report or specific words, the audit team and the customer can frequently compromise on the words of the report without compromising the most important content. However, and this is extremely important, the audit team still retains responsibility for the audit report and its content and has the final decision on what is included in the report.

#### **Include the proposed corrective action in the report.**

Allowing the audited organization to specify the corrective action in the issued report provides a complete picture to anyone who may read the report. The report would then indicate what was

audited, what the audit team saw, what issues were significant enough to become findings, and how the audited organization proposed to correct these problems. This is another indicator to the reader that the audit was effectively accepted and that problems will be resolved.

### **Have all involved in the audit sign the report.**

At the formal exit meeting held after the corrective action has been incorporated into the report, the audit report should be signed by all members of the audit team, not just the audit leader. The report is the work of the entire team. Equally important is the signature of the customer of the audit report, indicating acceptance. On our audit reports, we include the words "Accepted by" above the signature of the customer.

### **Get customer feedback.**

Once the audit report is issued, obtain feedback from the customer about the degree the audit met expectations and was beneficial. If the customer did not find the audit beneficial, the team should question whether the audit was not performed as well as it should be and how it could have been improved. Typical questions that we ask in our manager survey include questions on the adequacy of planning the audit, conduct of the audit (e.g. professionalism, objectivity, thoroughness of investigation), quality of the report (e.g. understandability, completeness, accuracy), and value of the audit to the customer. We also provide short questionnaires to individuals interviewed during the audit asking about basic questions about their interaction with the audit team (e.g. they knew why they were being audited, they understood what would happen with the information they provide). The results of the surveys for each audit are evaluated and process improvements identified.

For a specific audit, generate a simple report presenting the results of the surveys. The report might, as appropriate, provide responses by the audit team. For instance, a survey may express concern with an area of investigation by the team that did not appear to be consistent with the performance objectives for the audit. The audit team might provide words on why the area was investigated. This report should be given, for informational purposes, to the customer for the audit.

In addition, annually publish, to a larger audience, the overall results of surveys for all audits performed during the year. This documents the effectiveness of the audit program and identifies opportunities for improvement. It also demonstrates that those responsible for the audit program are sincerely working to improve the program to assure that it is a valuable resource for the organization.

## **CONCLUSION**

We have been using and refining these techniques in our facility for four years. The results have been outstanding. Customer satisfaction with the program has been outstanding. The last question that we ask on the customer survey is to rate the value of this audit to your organization on a scale of 1 (no value) to 5 (most valuable). Audits consistently are rated between 4 and 5.