

Guide to Implementing an Effective Layered Process Auditing System



INSIGHT
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Preparing for LPA System Implementation

If you or your team have been tasked with implementation or revision of your company's LPA System, you may be wondering where to start and what steps to take.

Insight Lean Solutions has created this 19 Step Guideline to help map out the implementation steps and ease the stress of managing such a large task.

This tool will also help your company establish your level of management commitment and understand what you want to accomplish from your LPA program

Questions	Activity	Reasoning	Options	Best Practices
1. Why Do LPA?	Decide why you're investing time to do LPA	Know what you expect to gain for your efforts	<ol style="list-style-type: none"> 1. Meet a customer requirement 2. Meet ISO/TS requirements 3. Improve Quality throughout your organizations 	Improve Quality throughout your organization for all customers. Understand how to measure the effectiveness of your LPA program
2. What do we know/need to know about LPA systems?	Gain knowledge about LPA systems	Gaining & Applying LPA system knowledge provides the ability to implement an effective and robust system from Day # 1	<ol style="list-style-type: none"> 1. Seminars 2. Websites 3. Books 4. Coaches (proven experts) 5. Lessons Learned from other successful plants or companies 	Use any or all of these options to gain knowledge about LPA systems
3. Who should be on the implementation team?	Identify & select the VARSITY team for LPA implementation (the team you select should be chosen as if the future of the company depended on LPA success)	Identifying a cross-functional team of people (chosen from all shifts) with profound knowledge of the manufacturing processes & the ability to relate to all aspects of manufacturing and quality concerns	<ol style="list-style-type: none"> 1. People who are not busy 2. Only Quality professionals 3. Find people who are very busy 4. Operators 5. Technicians 6. Set-up Personnel 	<ol style="list-style-type: none"> 1. Find people who are very busy! They are your team players and doers 2. Choose representation (across all shifts) from all areas Engineering, Manufacturing, Maintenance, Operators, Techs, and Quality 3. Everyone should understand why they are on the team and what is expected of them

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<p>4. Who will own the LPA system?</p>	<p>Determine who will own and be responsible for your LPA system. (This does not mean the person or people who maintain the system)</p>	<p>The owners should be those people who use and interact with the system the most</p>	<ol style="list-style-type: none"> 1. Quality owns the system 2. Manufacturing owns the system 	<p>Manufacturing owns the system with Quality supporting Quality owning the system has not proven to be successful Include the group that has the process knowledge required to continuously improve audit questions</p>
<p>5. How will the facility be organized to be audited?</p>	<p>Decide how the facility will be divided up to be audited</p>	<ol style="list-style-type: none"> 1. Identifying the primary & secondary organizational units will allow you to identify the number of audits in each area assign audit questions 2. Identifying product groupings will become very useful to sort data for reports 	<ol style="list-style-type: none"> 1. Primary Units: Department, Business Units, Value Streams, etc. 2. Secondary Units: Workstations, Cells, Operations, etc. 3. Product Groupings: Platform, Product Type, Product Grouping, etc. 	<p>Primary Units: Department, Business, Value Streams, etc. Secondary Units: Workstations, Cells, Operations, etc. Product Groupings: Platform, Product Type, Product Grouping, etc.</p>

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<p>6. What process areas are at the highest risk for quality spills?</p>	<p>Write audit questions to address all high risk process elements. (Writing a definition for high risk for your facility will be very helpful)</p>	<p>Questions for process audits should verify that the environment of the element or elements being audited are correct to produce quality products</p>	<ol style="list-style-type: none"> 1. Choose processes known by supervision, technicians, maintenance, and operators to have continual variation 2. Select areas on PFMEAs that have a high risk priority number (RPN) 3. Utilize D-6 of the 8-D process: confirmation that the fixes implemented via corrective action remain in place and working by using the same indicator (metric) that demonstrated the problem. 	<p>Utilize all the options listed to develop questions. Questions should be written so that the answer is yes or no. Yes indicates conformance and no indicates non-conformance. Use the What, How, and Why format when writing each question. Provide a Reaction Plan for the Auditor describing what action should be taken if the question is non-conforming.</p>
<p>7. What error proofing devices are present in high risk areas?</p>	<p>Write audit questions to monitor error proofing devices in high risk areas</p>	<p>Error proofing audit questions should validate that the error proofing devices will catch defective production conditions or defective products.</p>	<ol style="list-style-type: none"> 1. Choose processes known by supervision, technicians, maintenance, and operators to have continual variation 2. Select error proof devices that support processes with a high Severity ranking on the PFMEA. 	<p>Forming audits with only Error Proofing questions allows you to assign these audits to auditors with unique skills and could reduce training time. Note: the same audits will be performed and the same audit questions will be asked by the auditors on each layer.</p>

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<p>8. How should audit questions be divided into audit areas?</p>	<p>Divide audits questions into unique/specific audits for each high risk secondary unit</p>	<p>Creating unique audits (Process & Error Proofing) for high risk secondary units helps to maintain process controls without burdening your auditors with long audits</p>	<ol style="list-style-type: none"> 1. Create separate unique Error Proofing audits and Process audits for each area. 2. Build audits with both Error Proofing and Process questions for each area. 3. Create the same audit questions to be used for all areas 	<ol style="list-style-type: none"> 1. Create each unique audit with an average of 3 to 9. Audits should require fifteen minutes or less to complete. 2. Forming audits with only Error Proofing questions allows you to assign these audits to auditors with unique skills and could reduce training time. 3. Creating unique audits for each area allows you to focus on reducing specific causes of variation for that process.
<p>9. How many audit layers should be created?</p>	<p>Determine the number of management layers that will conduct the audits.</p>	<p>The number of layers will vary depending on your management structure and the span of authority for each structural layer LPA systems must have at least two layers of auditors</p>	<ol style="list-style-type: none"> 1. One Layer 2. Two Layers 3. Three or More Layers 	<p>Three or more layers is recommended, but each organization must identify the value for adding more than two layers. If you are not gaining from additional layers, they should not be implemented.</p>

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<p>10. How frequently should each layer perform audits?</p>	<p>Decide the frequency of each layer and the time allowed to complete each assigned audit</p>	<p>1. Completing Layer 1 audits each shift/day will allow you to limit the exposure of a quality spill to a single shift/day.</p> <p>2. The Layer of auditors that includes the Plant Manager must complete at least 1 audit/week and may be given up to 5 days to complete their audits.</p> <p>3. Auditors in layers above 1 participate in order to gain knowledge about the processes, insure those processes are performing to expectations, and foster relationships with all workers.</p>	<p>Layer 1 audits MUST be completed Daily (Automotive may be required to complete Layer 1 audits every shift)</p> <p>Layer 2 audits may be 1 or 2 per week and allowed 2 to 5 days to complete.</p> <p>Layer 3 is usually scheduled once a week and given 3 to 5 days to complete.</p> <p>Higher layers may be scheduled bi-weekly, monthly, or quarterly.</p>	<p>Completing Layer 1 audits every shift will allow you to limit the exposure of a quality spill to a single shift.</p> <p>Layer 1 audits MUST be completed everyday.</p> <p>Layer 2 audits may be 1 or 2 per week and allowed 2 to 5 days to complete.</p> <p>Layer 3 is usually scheduled once a week and given 3 to 5 days to complete.</p> <p>Higher layers may be scheduled bi-weekly, monthly, or quarterly.</p> <p>Your LPA system must not become a head hunting expedition to discover who is not doing something correctly or to place blame.</p>

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<p>11. Who should do the auditing?</p>	<p>Select different management personnel for each layer and decide which audit(s) each layer should be expected to complete</p>	<ol style="list-style-type: none"> 1. Each layer needs to have unique auditors 2. Selecting layer 1 auditors to audit the areas they are already responsible allows them to utilize existing job knowledge and requires the least travel time. 3. Layer 2 and higher auditors may be selected in any way that the implementation team agrees is appropriate. 	<ol style="list-style-type: none"> 1. Typical layer 1 auditors are Team Leads, Supervisors, Maintenance and/or Techs 2. Layer 2 auditors are often Engineers / Area Managers 3. Layer 3 auditors might include the Plant Manager, and functional area managers such as Engineering, Quality, Human Resources, Supply Chain, etc. 	<ol style="list-style-type: none"> 1. Layer 1 auditors are Team Leads, Supervisors, Maintenance and/or Techs 2. Layer 2 auditors are Engineers and Area Managers 3. Layer 3 auditors include the Plant Manager, and functional area managers such as Engineering, Quality, Human Resources, Supply Chain, etc. 4. The LPA implementation team are ALL auditors. They can lead by example and show others that they believe in the LPA program.

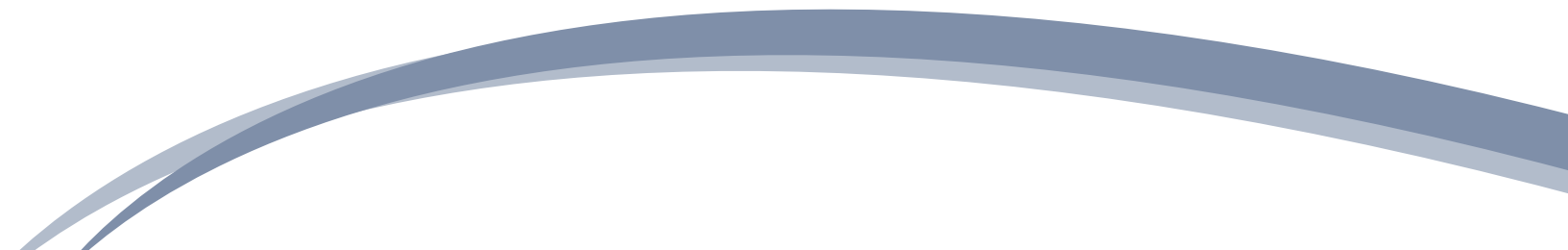
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<p>12. How will management review the effectiveness of the LPA activities?</p>	<p>Incorporate the review of your LPA activities and its effectiveness into:</p> <ol style="list-style-type: none"> 1. Daily management quality and production meetings. 2. Management Review of your Quality Management System (QMS). 	<ol style="list-style-type: none"> 1. Underscore the importance of your LPA system through active daily reviews of non-conformances & corrective actions taken/needed to resolve the issues 2. Management should review LPA activities during formal Management Review. This should include trends in quality & performance as well as LPA Completion and Compliance %. Data trends should be compared against business objectives/targets & lead to appropriate action for continued suitability & effectiveness of your LPA system. 	<ol style="list-style-type: none"> 1. Management review reports daily and either approve containment and corrective actions for non-conformities or make modifications to the containment and/or corrective action 2. LPA data and activities should be incorporated into the formal Management Review of quality systems 	<ol style="list-style-type: none"> 1. Management completes their audits on time (walk the talk). Management reviews reports daily and either approves containment and corrective actions for non-conformities or makes modifications to the containment and/or corrective action 2. Incorporate LPA data and activities into the formal Quality Management Review system

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<p>13. What type of system should you develop, design, or purchase to organize and manage your LPA activities?</p>	<p>Determine what type of system you need to service your internal customers (including auditors, administrators and management).</p>	<p>1. The system must be easy for administrators to manage and auditors to use, allow them to quickly view their schedule and record audit results, including recording any corrective action taken for non-conformances. 2. Management should be able to obtain audit reports quickly with real-time data and have the ability to approve corrective action and containment of questionable materials.</p>	<ol style="list-style-type: none"> 1. Paper System 2. Email notification 3. Database to enter data and recover information for reports 4. Computer application 	<p>LPA Admin, the lean approach to managing layered process auditing (LPA) and up to seven other audit types. LPA Admin has the capability to manage Mistake Proofing, 5S, ISO 14001, Safety and an additional 3 custom audits types such as Security, Lean Sustainability, PFMEA and Control Plan, etc. LPA Admin meets all the requirements of AIAG CQI-8 and is designed to aid management in proactive process controls and risk mitigation.</p>
<p>14. Where will you document your LPA process?</p>	<p>Decide where to document LPA process.</p>	<p>Find a place to formally document your LPA process where everyone can easily locate information with minimal time or maintenance required</p>	<ol style="list-style-type: none"> 1. Document the LPA process as part of its own system 2. Document the LPA process in your current Quality Management System. 	<p>Document the LPA process in your current Quality Management System</p>


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<p>15. How fast and to what extent should the LPA system be implemented?</p>	<p>Decide the how quickly and how broadly you want or need to implement your LPA system.</p>	<p>Setting realistic goals and benchmarks for implementation will keep the team focused.</p>	<ol style="list-style-type: none"> 1. Implement for a few customers' processes across the entire facility. 2. Implement across the entire facility including all high risk processes for all customers. 3. Implement in one area or department for all high risk processes for all customers. Then continue to implement in other areas until the entire facility is completed. <p>(Note: It is not recommended to only implement for one customer)</p>	<ol style="list-style-type: none"> 1. Organizations that utilize their varsity team from all locations of their facilities choose to implement their LPA system across their entire plant at once for all their external customers' products. 2. The focus, discipline, training time, and implementation time will be much better if one completes the implementation for all processes at the same time. 3. Large facilities (over 700 employees) may choose to implement their LPA system in phases by area.

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<p>16. How should auditors be trained?</p>	<p>Develop and implement a Layered Process Auditor training plan.</p>	<p>1. LPA auditors need to understand the philosophy of layered process auditing and your LPA system. Knowing when, where, and how to complete an audit is critical to the system.</p> <p>2. Training should ensure that auditors demonstrate the ability to record audit results including non-conformances, containment activities, and corrective actions.</p> <p>3. Successful containment and the success of your LPA system depend on your auditors understanding what to do when they discover non-conformances.</p>	<ol style="list-style-type: none"> 1. Train everyone at once. 2. Train by layers and/or areas 3. Train by layers by shift 4. Have auditors read the AIAG CQI-8 Layered Process Audit Guideline 5. Give an overview of LPA and discuss your facility's audit process. 	<ol style="list-style-type: none"> 1. Auditor training should include an overview of Layered Process Auditing, information about how to complete audits, and sample audits for practice. 2. Trainers must insure that auditors demonstrate the ability to record audit results including non-conformances, containment activities, and corrective actions. 3. Spend time to discuss the concept of corrective actions with your auditors. 4. Auditor training should take about two hours.

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<p>17. What should non-auditing employees know about LPA?</p>	<p>Develop non-auditing employee training</p>	<p>All employees need to understand the purpose of doing layered process audits</p>	<ol style="list-style-type: none"> 1. Train everyone at once. 2. Train by shift 3. Train by area 4. Give an overview of LPA and discuss your facility's audit process. 	<ol style="list-style-type: none"> 1. Training for non-auditing employees is done in groups small enough that everyone feels comfortable enough to ask questions. 2. Employees need to understand that LPA will audit the process and will not be a blaming system 3. Emphasize that LPA is designed to improve quality by reducing variation in the processes. 4. Employee training should take about 30 minutes.
<p>18. When should the audits begin?</p>	<p>Plan and decide when to begin auditing</p>	<ol style="list-style-type: none"> 1. It is important to have your system designed and ready to: schedule audits, handle audit data including containment & Corrective actions taken 2. Auditors should be well trained to your LPA system 	<ol style="list-style-type: none"> 1. Start auditing as you are building the system 2. Start auditing in a few pilot areas after the system is designed and built 3. Start auditing in all areas after the system is designed and built. 	<ol style="list-style-type: none"> 1. Begin the audits when your LPA system is built and non-auditing employees and auditors have been trained 2. Auditors need to be comfortable with the checklists 3. Your audits should follow your implementations plan



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19. Can changes be made to the LPA system?	Evaluate effectiveness of your LPA system and make recommendations for changes	Your LPA system should be a dynamic, living system that adds value to your organization	<ol style="list-style-type: none">1. Encourage everyone to make suggestions on how to improve your LPA system2. Define a documented process for how changes are reviewed and implemented3. Select and implement appropriate changes in a timely manner	<ol style="list-style-type: none">1. On a regular basis, ask your auditors, operators, and others how to improve your LPA system2. Make changes in a timely fashion according to a documented review and implementation process



Thank you for taking the time to review our Guide to Implementing an Effective LPA System.

If you have questions regarding LPA implementation or wish to inquire LPA Admin software for LPA system automation, please contact us



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