



SOUTHERN CALIFORNIA  
**EDISON**

An EDISON INTERNATIONAL Company

# LARGE APPARATUS REPAIR SHOP QUALITY SYSTEM MANUAL

REVISION 1

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# QUALITY POLICY

The hallmark of the Large Apparatus Repair Shop is complete customer satisfaction.

Unequivocally, our actions, attitudes, products, and services must be recognized as an expression of our commitment to complete customer satisfaction. To this end the Large Apparatus Repair Facility shall:

1. Thoroughly understand our customer expectations, needs, and requirements so that each delivery creates a recommendation for further business.
2. Perform our work right the first time in a cost effective, timely, safe, and professional manner.
3. Continually ensure that our products and services satisfy our customer expectations.
4. Continuously re-evaluate, develop, and enhance the skill sets of our personnel and the processes in which production is controlled.

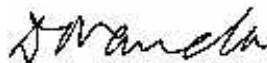
The achievement of this policy is paramount to the success of the Large Apparatus Repair Shop. Our stability in the transformer repair market will be determined by the dedication of each of our employees in our work and in our attitude towards quality.



\_\_\_\_\_  
Manager, Large Apparatus Repair Shop



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Manager, Electrical Shop Services



\_\_\_\_\_  
Manager, Shop Services and Instrumentation Department



## STATEMENT OF AUTHORITY

Southern California Edison (SCE) Large Apparatus Repair Shop (LARS), recognizes the importance of quality in industry and is committed to continuous improvement in the quality of work controlled under this Quality Management System.

This manual has been prepared to document the processes that control activities affecting quality and contractual agreements between the customer and LARS.

This program meets the requirements of ISO 9001:2000 (Draft).

Contractual arrangements between the customer and LARS which specify requirements in addition to those specified by this quality management system, shall be applied providing such requirements do not compromise the quality of our service or this quality management system.

LARS scope of work includes coil assembly design and transformer repair, modification, and test.

## **Section 4.1 - Management Responsibility**

### **4.1.1 SCOPE**

This section of the Quality Manual describes the LARS organizational structure and defines the responsibilities, authority, and interrelations of organizations that influence quality.

### **4.1.2 QUALITY POLICY**

The Quality Policy at LARS is affirmed in a statement from the Manager, Shop Services and Instrumentation Department (SSID) and Electrical Shop Services Manager and is located in the front of this Quality System Manual. This policy shall be understood, implemented, and maintained by all personnel. A copy of the Quality Policy has been distributed to all LARS employees.

### **4.1.3 ORGANIZATION**

#### **4.1.3.1 Responsibility and Authority**

Personnel with defined responsibilities throughout this manual have the authority to perform the following within their "Area of Responsibility" (AOR):

- Initiate preventative action.
- Identify and record problems.
- Initiate, recommend or provide solutions.
- Verify implementation of solutions.
- Control further processing of nonconforming conditions until corrected.

The organization is comprised of the following major sections: Manager of SSID; LARS, Metrology Laboratory; Quality Assurance; Purchasing; and Warehousing.

The Manager of SSID reports to the Vice President of Southern California Edison Company and is responsible for all aspects of the operation; is authorized to make contractual and binding commitments; develops policy, and is responsible for the growth and development of new business. The Manager of SSID maintains responsibility for this quality management system.

The Electrical Shop Services Manager reports to the Manager of SSID and is responsible for the implementation of LARS activities and for the implementation of this quality management system.

The LARS Shop Manager reports to the Electrical Shop Services Manager and is responsible for all LARS activities **including shop scheduling activities and maintaining direct communication with LARS customers.**

LARS Shop **Production** Supervisor(s) report directly to the LARS Shop Manager and are responsible for assigning and supervising production personnel in daily work scope activities, ensuring that work is completed within approved shop schedules, and other sundry tasks defined in implementing procedures.

LARS Shop Engineering reports directly to the LARS Shop Manager and is responsible for interfacing with, and providing technical direction to, shop personnel **assembling all requests for quotation and** additional responsibilities are delineated in implementing procedures.

Quality Control **Supervisor** reports directly to the LARS Shop Manager and is responsible for performing and documenting inspections in accordance with approved procedures, stopping work activities whenever product quality is outside engineering specifications and design limits, **issuing work order packages for release to** production and final shipment. **The LARS Quality Control Inspector is the Management Representative.** Additional responsibilities are delineated in implementing procedures.

LARS Foremen report directly to the Shop Supervisors and are responsible for ensuring that trained and qualified personnel are assigned to work activities, directing assigned crew activities, and for ensuring that work activities are performed in accordance with the work order package. Additional responsibilities are delineated in implementing procedures.

LARS Material Handler reports indirectly to the **Warehouse Supervisor** and is responsible for issuing material service requests, receiving, receipting, and transferring inventory and non-inventory items. Additional responsibilities are delineated in implementing procedures.

The Quality Assurance Manager reports directly to the Business Support Services Manager and is responsible for performing independent audits of LARS activities, qualifying auditors, preparation, approval, and distribution of the Quality Assurance Procedures; and supplier qualification.

Purchasing (SCE or ESI) is responsible for translating procurement requirements into purchase orders. Translation of procurement requirements and issuance of procurement documents are purchasing functions, controlled by corporate procedures, which are outside the scope of this quality management system. LARS personnel review procurement requests, select approved suppliers for critical items, and inspect parts and equipment at receipt to verify compliance to procurement document requirements.

In the event that any individual in the organization is absent or otherwise unavailable to perform functions or responsibilities, those functions and responsibilities may be performed by a superior or delegated to a qualified subordinate within the organization.

All employees are responsible for the quality of the products and services under their control and for following procedural requirements during all processes that they are involved in. All employees have the responsibility and authority to identify quality problems; to initiate and provide solutions to quality problems; to verify implementation; and, to resolve deficiencies that affect quality.

#### 4.1.3.2 **Resources**

The LARS Shop Manager will assign trained personnel to manage, perform and verify activities affecting quality. Personnel assigned these tasks are qualified on the basis of experience and/or training.

#### 4.1.3.3 **Management Representative**

The Management Representative has been appointed by the Electrical Shop Services Manager and LARS Shop Manager and is responsible for ensuring this quality management system is maintained, understood and implemented at all levels of the organization. *The Management Representative is also responsible for reporting to executive management on the adequacy of the quality system, **needs for quality system improvement, and for maintaining awareness of customer needs, expectations, and requirements.***

### 4.1.4 **MANAGEMENT REVIEW**

A formal management review of the quality system will be performed annually to ensure it's continuing suitability and effectiveness in satisfying LARS Quality Policy and objectives.

The Manager of SSID will chair the annual management review meeting. Attending this management review meeting will be the Electrical Shop Services Manager, LARS Shop Manager, Management Representative and the Quality Assurance Manager.

The aforementioned review meeting shall include the evaluations of:

- .1 Results of internal and customer audits.
- .2 Results of corrective/preventive action reports.
- .3 Results of supplier corrective action reports.
- .4 ***Customer satisfaction (surveys/complaints).***
- .5 LARS goals, objectives.
- .6 Suitability and effectiveness quality system in meeting LARS strategic goals and objectives.
- .7 Training needs.

The results of this review as well as any resulting action assignments shall be documented and transmitted to all participants. The Manager of SSID is responsible for ensuring that all action items resulting from the management review are reconciled in a timely manner.

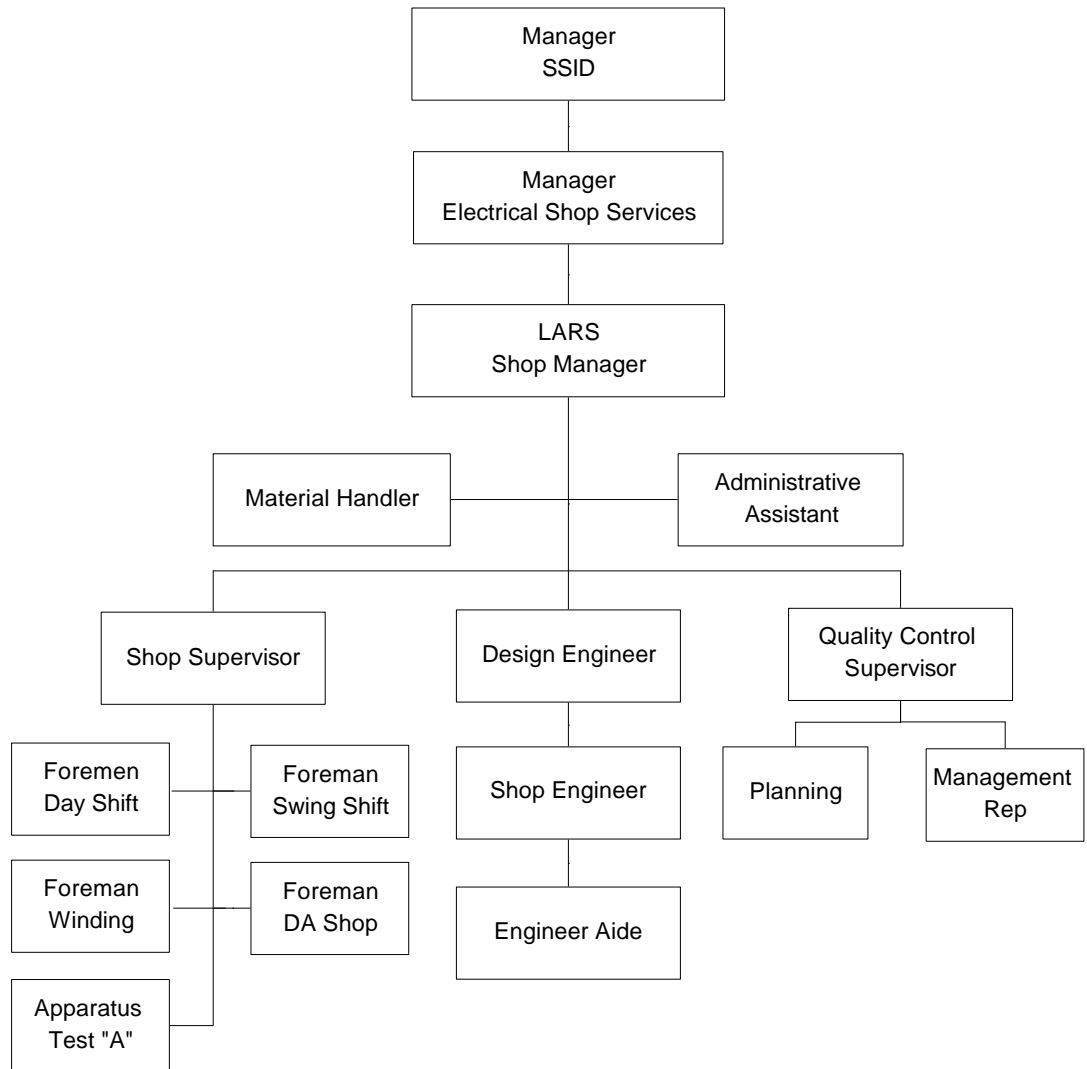
Records of the management review meeting and associated completed action items shall be maintained in accordance with documented procedures.

**4.1.5 REFERENCE PROCEDURES**

LARS-ADM-001, LARS Administrative Processes

LARS-ADM-008, Personnel Training and Qualification

## Southern California Edison Large Apparatus Repair Shop



## Section 4.2 - Quality System

### 4.2.1 SCOPE

This section defines the applicability and the system for planning, defining, implementing, and managing this Quality Management System.

### 4.2.2 GENERAL

The Quality Management System described in this manual encompasses the control systems necessary for qualified personnel to provide transformer repair services in accordance with contractual requirements. This system provides for activities affecting quality to be achieved under controlled conditions in an appropriate environment and it takes into account the need for test equipment, tools, and skills to achieve the required quality.

The Quality Management System consists of:

- .1 Quality Manual
- .2 Production Control Procedures - documents specific production functions and activities.
- .3 Administrative Procedures - documents the administrative functions performed in LARS.
- .4 Engineering Procedures - documents engineering design and design control functions performed within LARS.
- .5 Apparatus Test Procedures - documents tests parameters and tests criteria for equipment tested in LARS.
- .6 Quality Assurance Procedures - documents generalized quality assurance functional responsibilities and conduct of activities.
- .7 Chemical Control Procedures - documents site controls for chemicals used at SCE.
- .8 Department Policies – Administrative and Safety Policies applicable to all SSID business units.
- .9 Controlled Forms

### 4.2.3 QUALITY SYSTEM PROCEDURES

Quality Assurance and Chemical Control Procedures have been developed to define controls necessary for the LARS functions to satisfy the requisites of the aforementioned standard.

Production Control Procedures provide controls for performing specific activities affecting quality that are not unique to other business units.

Department Policies are general management administrative policies applicable to all SSID business units.

Forms used as a method of documenting completion of activities affecting quality have been established.

*Annually, the Management Representative shall cause the quality system procedures to be reviewed and revised as necessary.*

#### **4.2.4 QUALITY PLANNING**

LARS has implemented a system of procedures defining specific requirements that are to be implemented by trained and qualified personnel. The work order package generated within LARS incorporates all customer requirements and expectations and specifies the way in which all customers orders are fulfilled.

## Section 4.3 - Contract Review

### 4.3.1 SCOPE

This section defines the requirements for review of customer orders to ensure that all customers' expectations, needs, and requirements can be fully achieved.

### 4.3.2 GENERAL

The controls defined in this Quality Management System apply to all customer orders received by LARS. Customer orders can be by hard copy purchase order, including blanket orders, fax, or by other instructions provided by the customer.

### 4.3.3 CUSTOMER ORDER REVIEW

The LARS **Manager** receives and reviews the customer orders to ensure that: (1) the customer procurement document agrees with the offered quote (if applicable); and, (2) LARS can meet the customer expectations, needs, and requirements.

If LARS is unable to meet the customers' requirements, the LARS **Manager** shall contact the customer to notify them of the circumstances and attempt to resolve concerns. If resolution cannot be achieved the customers' order will not be processed and, if applicable, the customers' equipment returned.

If LARS is able to meet the customers' requirements, the **QC Supervisor** shall interpret and document the repair or modification activity required, and any special requirements, in the Work Order Package.

Verbal orders are not accepted.

Amendments to customer orders are processed, as was the original order.

Records of contract reviews shall be maintained in accordance with documented procedures.

### 4.3.4 REFERENCES

LARS-ADM-001, LARS Administrative Processes

LARS-ADM-010, Quality Records

## Section 4.4 - Design Control

### 4.4.1 SCOPE

LARS **designs** and fabricates transformer coil assemblies. Additionally, LARS modifies and/or repairs transformers to meet customer specifications and industry standards. Modifications and repairs are supported by technical input derived by LARS Shop Engineering. Technical input may be in the form of drawings, specifications, material listings, or workmanship standards. This section establishes criteria for all design control activities performed within LARS.

### 4.4.2 Design and Development Planning

Design planning begins with the tear down of the customer coil assembly. Tear down data is given to the Shop Engineer in accordance with approved procedures. Tear down data is used by the Shop Engineer to determine the physical condition of the coil, availability and condition of salvageable parts, if any needed modification is necessary, or if complete replacement is required.

Design development consists of the creation of job assembly specifications, drawings, material lists, and a job specific design specification.

### 4.4.3 Organizational and Technical Interfaces

Organizational and technical interfaces are defined in implementing procedures.

### 4.4.4 Design Input

Design input requirements relating to coil assemblies, including statutory and regulatory requirements, shall be identified in a Job Specific Design Specification and their selection reviewed and approved for adequacy. Design inputs shall take into consideration the results of any contract review activities.

### 4.4.5 Design Output

Design output shall be documented and expressed in terms that can be verified against design-input requirements and validated.

Design output shall contain or reference acceptance criteria, meet the design-input requirements, and identify the critical performance characteristics of transformer and coil assemblies. Design output shall be reviewed before release.

### 4.4.6 Design Review and Verification

Design review and verification shall be performed prior to any coil assembly activity where LARS modification or design is necessary.

Design review and verification shall be conducted by a formal review of all design documents prior to release to production. Personnel performing this activity shall have adequate knowledge and experience in transformers and coils.

The design review and verification shall be documented in accordance with approved procedures.

#### **4.4.7 Design Validation**

Design validation shall be performed to ensure that the coil assembly conforms to customer needs and requirements. Design validation of the coil assembly occurs in two phases: pre-dry out validation testing and final testing prior to shipment. Required tests are defined in approved procedures and the job work order package.

#### **4.4.8 Design Changes**

All design changes shall be identified, reviewed, and approved in accordance with documented procedures.

#### **4.4.9 REFERENCES**

LARS-ENG-001, Administrative Design Control Activities

LARS-ENG-002, Design Control

LARS-ADM-010, Quality Records

## **Section 4.5 - Document and Data Control**

### **4.5.1 SCOPE**

This section defines the criteria established for control of all documents and data pertaining to the Quality System and which affects product quality.

### **4.5.2 DOCUMENT AND DATA APPROVAL AND ISSUE**

The Quality System Manual is reviewed and approved by the Manager of SSID, the Electrical Shop Services Manager, and the Manager, Large Apparatus Repair Shop.

Review of administrative, engineering, and production control procedures is performed by the LARS management team. Approval of these documents is the responsibility of the Electrical Shop Services Manager. Review and approval of drawings, specifications, workmanship standards, and material lists is defined in implementing procedures. Forms are controlled by use of a control register. External documents that affect product quality and are used or referenced in the quality management system shall be controlled.

Master lists and logs identifying all quality management system documentation and data by revision and date have been established. These lists and logs identify either the assigned individual or the location where the documents are located.

Control of documents and data ensures that the pertinent issues are available to all personnel performing activities. Obsolete or invalid documents are promptly removed from all points of issue and use.

### **4.5.3 DOCUMENT AND DATA CHANGES**

Revisions to documents and data shall be reviewed and approved by the original approving organization, unless specifically designated otherwise. The designated organizations shall have access to historical background information to assist in review.

Changes to documents shall be identified by use of a side bar indicating the text change.

### **4.5.4 REFERENCES**

LARS-ENG-001, Administrative Design Control Activities

LARS-ENG-002, Design Control

QAP-002, Procedures

QAP-006, Document Control

## Section 4.6 - Purchasing

### 4.6.1. SCOPE

This section defines the requisites to assure adequate requirements are included or referenced in documents for procurement of critical items or services. A critical item or service is defined as an item or service whose failure will have a direct impact on the use, or operation, of the repaired or modified transformer

### 4.6.2 PURCHASING DATA

The **electronic PSST** is used as the means of procuring critical parts, components and services. These procurement documents contain data describing the product or service, including where applicable:

- the type, class, grade, or other precise identification;
- specifications, standards or other technical information;
- the title, number, and issue of the quality system standard to be applied.

**Electronic PSST** critical items or services are reviewed and approved by authorized individuals prior to release. Amendments to procurement documents are subject to the same requirements and controls utilized in the preparation of the original.

### 4.6.3 VERIFICATION OF PURCHASED PRODUCT

When source surveillance is used as the method of product verification and release the **electronic PSST**, shall identify specific requirements to the supplier.

When specified by contract, customers shall be afforded the right to verify the product or service conforms to specified procurement requirements at LARS supplier's facilities. When customer verification is required, LARS shall retain the responsibility for product conformance and release.

### 4.6.4 REFERENCES

LARS-ADM-003, Procurement

LARS-ADM-004, Receiving Inspection

LARS-ADM-010, Quality Records

QAP-015, Supplier Qualification

## Section 4.7 - Control of Customer Supplied Product

### 4.7.1 SCOPE

This section describes the controls necessary to ensure that customer owned equipment is verified upon receipt and properly stored and maintained until returned.

### 4.7.2 GENERAL

Customer equipment received at LARS shall be received and verified against the customers supplied documents as applicable. Assigned personnel shall verify the customer's equipment is adequately identified, there is no apparent damage (unless pre-identified by the customer), and the equipment identification matches the customer paperwork.

A work order identification number distinctive to the customer is assigned to the customer's equipment for traceability through LARS.

Any concerns regarding the acceptability of the customer's equipment upon receipt shall be reconciled with the customer prior to repair or modification.

The LARS Shop Manager shall review any problems to the customer's equipment caused by LARS after receipt and determine with the Quality Control **Supervisor** if a nonconformance report is required. A nonconformance report shall be written if the customer's equipment is lost, damaged, or is otherwise unsuitable for use. The Quality Control Inspector shall ensure further processing of the equipment is halted and shall consult with LARS Shop Manager to determine if the customer is to be notified.

### 4.7.3 REFERENCES

LARS-ADM-001, LARS Administrative Processes

LARS-ADM-004, Receiving Inspection

LARS-ADM-005, Nonconformance Reports

LARS-ADM-010, Quality Records

LARS-043, Control of Customer Equipment

LARS-044, Identification and Traceability

LARS-045, Handling, Storage, Packaging, Shipping, and Delivery

## Section 4.8 - Product Identification and Traceability

### 4.8.1 SCOPE

This section establishes measures for the identification and control of customer equipment and LARS critical items used for repair and/or modification of transformers.

### 4.8.2 GENERAL

Identification and traceability of critical items begins with the receipt inspection process defined in implementing procedures. Acceptable critical items are stored in the warehouse or released to production for a specific scope of work. Nonconforming items are identified and processed in accordance with implementing procedures. Customer equipment is controlled as described in Section 4.7 of this quality system manual.

After receipt inspection has been performed, the Material Handler shall ensure that the customer name and job number **are** placed on the items.

Traceability to purchase order ends with the issuance of the critical item to production.

The Material Handler shall ensure that critical items issued to the Transformer area are identified with job number, customer name.

Critical items in the Transformer production area shall be bagged, tagged, or segregated with job number, customer name.

Insulation materials issued to the Winding Area for a specific job shall be segregated, identified, marked, or tagged with customer name and job number.

Miscellaneous insulation materials may be temporarily stored in the Winding Area as stock material.

### 4.8.3 REFERENCES

LARS-ADM-004, Receiving Inspection

LARS-ADM-005, Nonconformance Reports

LARS-043, Control of Customer Equipment

LARS-044, Identification and Traceability

LARS-045, Handling, Storage, Packaging, Shipping, and Delivery

## Section 4.9 - Process Control

### 4.9.1. SCOPE

This section establishes controls for ensuring that LARS production activities are planned, documented, and implemented by qualified personnel using approved work documents.

### 4.9.2 GENERAL

The LARS **Manager or designee** maintains a database to provide current information for managing the flow of work through LARS. This database generates job travelers, is used to track production activities and provides management with cost and manpower data.

Measuring and test equipment used to accept product quality shall be calibrated at defined intervals and traceable to nationally recognized standards, accepted intrinsic values, or natural physical constants.

Preventive maintenance of fixed and portable equipment shall be performed as required by implementing procedures.

Environmental conditions during material storage, such as temperature and humidity are not critical to the repair/modification of transformers. Coils shall be dried and wrapped to prevent excessive humidity exposure.

Date sensitive materials used in the repair/modification of transformers shall be identified and controlled in accordance with approved procedures.

Acceptance criteria shall be documented in procedures job travelers.

Personnel performing transformer repair/modification shall be qualified in accordance with criteria established in approved procedures.

### 4.9.3 REFERENCES

LARS-ADM-001, LARS Administrative Processes

LARS-ADM-006, Preventive Maintenance Program

LARS-ADM-007, LARS Measuring and Test Equipment

LARS-ADM-008, Personnel Training and Qualification

LARS-ADM-010, Quality Records

LARS-046, Shelf Life Control

## Section 4.10 - Inspection and Testing

### 4.10.1 SCOPE

This section defines the system for performing inspections and tests. The provisions of this section are applicable to receipt of critical parts and components used in the repair/modification of transformers, receipt of customer equipment, and for in-process and final inspections and tests.

### 4.10.2 RECEIPT INSPECTION

Critical parts, components and materials used in the repair/modification of transformers shall be inspected at receipt by the Quality Control **Supervisor or designee** to ensure that the items procured meet procurement document requirements.

Production personnel, in accordance with approved procedures, will inspect customer equipment received by LARS. If the item is unacceptable it is put on hold until adequate reconciliation is performed. If the item is acceptable the customer equipment is released to production.

The Warehouse Material Handler receipt inspects parts and materials to verify quantity, damage, and part number, when applicable.

### 4.10.3 INPROCESS AND FINAL INSPECTIONS AND TESTS

Quality Control hold points shall be identified in job travelers. Quality Control hold point inspections shall be performed and documented in accordance with approved procedures. Performance tests shall be identified on the job traveler and shall be performed and documented in accordance with approved procedures. Production witness points may be placed on the job traveler at the discretion of the LARS Shop Manager.

Qualified personnel, in accordance with approved test procedures, perform final tests. Shipment of customer equipment will occur after release by Quality Control.

### 4.10.4 INSPECTION AND TESTS RECORDS

Receiving, in-process, and final test and inspection records shall be maintained in accordance with documented procedures.

### 4.10.5 REFERENCES

LARS-ADM-001, LARS Administrative Processes

LARS-ADM-002, LARS Quality Control Inspection

LARS-ADM-004, Receiving Inspection

LARS-ADM-005, Nonconformance Reports

LARS-ADM-008, Personnel Training and Qualification

LARS-ADM-010, Quality Records

## **Section 4.11 - Control of Inspection, Measuring and Test Equipment**

### **4.11.1 PURPOSE**

This section defines the controls to ensure that measuring, test, and inspection tools used to accept product quality are calibrated and controlled.

### **4.11.2 GENERAL**

Inspection, measuring, and test equipment shall be controlled, calibrated, and adjusted at specified intervals to maintain accuracy within necessary limits.

Equipment shall be of proper type, range, accuracy, and tolerance to determine conformance of an item to the specified requirements.

### **4.11.3 CALIBRATION CONTROLS**

Calibration shall be performed in accordance with approved procedures or instructions using standards traceable to NIST or physical constant where such standards exist. Where such standards do not exist, calibration shall be performed to meet the manufacturer's recommended specifications or the basis for calibration shall be documented.

Calibration and adjustment shall be performed at prescribed intervals or prior to use.

Initial and subsequent calibrations shall be documented.

Calibration may be performed internally or by an approved supplier.

Calibration stickers shall identify the standard device by identification number, calibration date, and next due date, and shall be affixed to the device.

Calibration records shall be traceable to the device and shall be maintained.

Environmental conditions within LARS are suitable for the measurements and tests performed.

Handling, preservation and storage controls shall assure that the accuracy and fitness of measuring and test equipment are maintained.

Equipment safeguards, when applicable, shall be identified and implemented.

Calibration records shall be maintained as quality records in accordance with documented procedures.

### **4.11.4 REFERENCES**

LARS-ADM-005, Nonconformance Reports

LARS-ADM-007, LARS Measuring and Test Equipment

LARS-ADM-010, Quality Records

## Section 4.12 - Inspection and Test Status

### 4.12.1 SCOPE

This section describes the process for documenting and maintaining the inspection and test status of all production activities within the Large Apparatus Repair Shop.

### 4.12.2 STATUS CONTROLS

#### Quality Control Inspections

Quality Control **or designee** performs receipt inspections on critical items procured in accordance with approved procedures and documents the status of the inspections.

Quality Control performs inspections at designated hold points in accordance with approved procedures. Individual checklists are used to document the inspections as well as the Hold Point sign-off step on the job traveler.

Nonconforming conditions identified during Quality Control Inspections (Hold Points and Receiving Inspections) shall be documented in accordance with approved procedures.

#### Apparatus Tests

Functional testing of transformers, bushings, and miscellaneous appurtenances shall be performed when specified in the job traveler and in accordance with approved Apparatus Test Procedures.

#### Production Witness Points

The LARS **QC Supervisor** shall place production witness points in the job traveler when required by the LARS Shop Manager.

### 4.12.3 REFERENCES

LARS-ADM-002, "LARS Quality Control Inspection"

LARS-ADM-003, "Procurement"

LARS-ADM-004, "Receiving Inspection"

LARS-ADM-005, "Nonconformance Reports"

Apparatus Test Procedures Manual

## Section 4.13 - Control of Nonconforming Product

### 4.13.1 SCOPE

This section defines the process for the identification, documentation, evaluation, segregation, and disposition of nonconforming product.

### 4.13.2 GENERAL

If a deficiency or a deviation from a customer or engineering design requirement is discovered a nonconformance report shall be generated and the appropriate Hold Tag (s) applied.

The NCR shall be issued to the LARS Shop Manager for review and disposition.

The LARS Shop Manager, or designee, shall prepare a proposed disposition for the NCR and complete the disposition blocks of the NCR. The disposition of a nonconformance describes how the nonconforming condition was resolved. There are four dispositions: reject, rework, repair and accept-as-is:

1. Reject disposition -A reject disposition is for materials/components that are unacceptable and cannot be returned to specification requirements by rework or repair. The nonconforming item shall be removed from the work area and either scrapped or returned to the customer in accordance with purchase order or contract requirements. In the event that SSID should scrap a customer's item, the customer must be notified.
2. Rework disposition- A rework disposition may be recommended when the nonconforming item does not meet original specifications. The item shall be removed and reworked to meet the original specifications. The LARS Shop Manager, or designee, shall ensure that authorization to perform the necessary rework activities has been received from the customer, when applicable. Rework activities are performed in accordance with approved procedures, drawings, or specifications.
3. Repair disposition- A repair disposition may be appropriate where the nonconforming item does not meet the original specifications but is repaired to meet different specifications. The LARS Shop Manager, or designee, shall ensure that authorization to perform the necessary repair activities has been received from the customer when applicable. Repair activities shall be performed in accordance with approved procedures, customer requirements, drawings, and specifications.

4. Accept-as-is disposition- An accept-as-is disposition means that the nonconforming item is accepted with the nonconforming condition. The LARS Shop Manager, or designee, shall ensure that the customer approves the disposition, when applicable.

Dispositions of NCR's shall be approved as follows:

1. LARS Shop Manager, or designee.
2. Customer - This approval may be in the form of a note or record of telephone conversation that must be appended when used. The LARS Shop Manager, or designee, shall ensure that all customers' instructions are properly incorporated into the repair workscope or rework traveler.
3. The LARS Shop Engineer shall approve all NCR dispositions that affect coil design.

After the approved corrective action has been performed the QC Inspector shall inspect the item to ensure that the corrective action taken met the work order package requirements.

#### **4.13.4 REFERENCES**

LARS-ADM-005, Nonconformance Reports

LARS-ADM-010, Quality Records

QAP-008, Corrective Action

## Section 4.14 - Corrective and Preventive Action

### 4.14.1 SCOPE

This section defines the system to identify and correct conditions that are adverse to quality and preclude recurrence.

### 4.14.2 GENERAL

Conditions which are adverse to quality, either item related, process, or programmatic, shall be identified and corrected in a timely manner.

### 4.14.3 CORRECTIVE ACTION

When it is determined that an adverse quality condition exists, a Corrective Action Report (CAR) shall be issued to the **Quality Assurance** Manager. The Corrective Action Report shall identify the appropriate information as indicated.

The **QA** Manager, shall complete the CAR by documenting the root cause of the issue; action taken to correct the issue; **and** action taken to prevent recurrence.

When a resolution cannot be achieved, the matter shall be deferred to the Manager, Electrical Shop Services or the Manager of SSID.

The Quality Assurance Manager shall verify implementation and effectiveness of the corrective action.

Supplier Corrective Action Reporting shall be accomplished in accordance with approved written procedures.

Customer satisfaction (surveys/complaints) shall be evaluated in accordance with approved procedures.

### 4.14.4 PREVENTIVE ACTION

The Quality Assurance Manager is responsible for evaluating preventive actions reported through the corrective action system. During the audit of the quality system the Quality Assurance Manager shall evaluate work operations; customer complaints; previous audit results and corrective action documents to determine if a negative trend has developed. Actions will be taken to eliminate negative trends.

Records of corrective and preventive actions shall be maintained as quality records and shall be reviewed by executive management during the periodic management review of the quality system.

#### **4.14.5 REFERENCES**

LARS-ADM-001, LARS Administrative Processes

LARS-ADM-010, Quality Records

QAP-008, Corrective Action

DP-008, Process Assessment Review for Continuous Improvement

## **Section 4.15 - Handling, Storage, Packaging, Preservation and Delivery**

### **4.15.1 SCOPE**

This section defines the controls for handling, storage, packaging, preservation, and delivery of transformers and miscellaneous electrical apparatus.

### **4.15.2 GENERAL**

The requirements defined below apply to critical materials, parts, and components within LARS and to all customer transformers and miscellaneous electrical apparatus.

### **4.15.3 HANDLING**

Transformers, coil assemblies, bushings, load tap changers, and other electrical apparatus equipment, parts, or components processed in LARS shall be handled in a manner that prevents damage or deterioration. The LARS Shop Engineer, if required, will specify special handling requirements in a job specific procedure.

### **4.15.4 STORAGE**

The Material Handler maintains access control to the LARS Warehouse inventory and ensures that critical items are stored in a manner that prevents damage and deterioration.

The Material Handler and/or Shop Supervisor shall ensure that critical item identification and traceability is maintained while the items are stored in the LARS Warehouse or in the production area.

Items issued from the LARS Warehouse shall be accounted for either by an electronic scanning process (e.g., in the case of calibrated equipment) or by the Warehouse Issues and Return Log.

The principle of "First In, First Out" (FIFO) shall be applied to material coded critical items.

Housekeeping practices shall be defined in approved procedures.

### **4.15.5 PACKAGING**

Customer equipment, including loose appurtenances, shall be prepared and shipped in accordance with approved procedures.

Critical items that are returned to the vendor shall be packaged in the original vendor package or packaged in accordance with approved Warehouse Instructions.

### **4.15.6 PRESERVATION**

Critical items shall be properly stored to protect them from physical damage and harmful environmental effects. Items stored with limited shelf life shall be marked and controlled in accordance with approved procedures.

#### **4.15.7 DELIVERY**

Return of customer equipment outside of the immediate service district shall be by freight carriers designated by the customer (SCE approval not required) or selected by LARS Shop Manager. *Freight services are not considered critical to product quality.*

#### **4.15.8 REFERENCES**

LARS-ADM-001, Administrative Processes

LARS-043, Control of Customer Equipment

LARS-044, Identification and Traceability

LARS-045, Handling, Storage, Packaging, Preservation, and Delivery

LARS-046, Shelf Life Control

## **Section 4.16 - Control of Quality Records**

### **4.16.1 SCOPE**

This section establishes requirements to ensure records shall be maintained to furnish evidence of activities affecting quality. The records shall include at least the following: results of management reviews, inspections, tests, audits, corrective and preventive action reports, contract review records, records of acceptable subcontractors, records of calibration, and training records.

### **4.16.2 QUALITY RECORDS**

Procedures have been developed to define controls for the identification, collection, indexing, access, filing, storage, maintenance, and disposition of quality records.

All quality records shall be legible and stored in a manner that permits timely retrievable and prevents damage, deterioration and loss. Record retention times have been established for all quality records.

### **4.16.3 REFERENCES**

QAP-007, Quality Records

LARS-ADM-010, Quality Records (LARS)

DP-012, Personal Computer Guidelines

## **Section 4.17 - Internal Quality Audits**

### **4.17.1 SCOPE**

This section defines the system to plan, schedule, and perform audits to verify compliance with all aspects of the quality assurance program and to determine its effectiveness.

### **4.17.2 GENERAL**

Personnel who do not have direct responsibility for performing the activities audited shall perform audits in accordance with documented procedures or checklists.

Audit results shall be documented, reported to, and reviewed by the Quality Assurance Manager.

### **4.17.3 AUDIT SCHEDULING**

The Quality Assurance Manager shall prepare and maintain an annual internal audit schedule. The LARS Quality Program shall be assessed annually to ensure continuous compliance to committed requirements.

The audit schedule shall be reviewed and revised as appropriate by the Quality Assurance Manager to assure that coverage is maintained current, and commensurate with the status and importance of the activities.

Regularly scheduled audits shall be supplemented by additional audits when significant changes are made in function, organization, or procedure.

### **4.17.4 AUDIT PERSONNEL**

The Quality Assurance Manager shall ensure audit team members are qualified. Procedures are in place for auditor qualification.

Audit personnel shall be independent and not have direct responsibility for the activities being audited.

### **4.17.5 AUDIT PERFORMANCE**

Audits shall be performed in accordance with approved documented checklists.

Auditors shall have access to previous audit checklists and reports to aid in checklist preparation.

Selected program elements shall be evaluated against specific requirements.

Objective evidence shall be examined as necessary to determine program elements are effectively implemented.

**4.17.6 AUDIT REPORTING**

Audit reports shall be written and issued within 30 calendar days of post audit conference. Audit reports shall contain a brief summary of what was assessed by the audit team and a description of each audit finding or observation in sufficient detail to enable the audited organization to implement corrective action.

**4.17.7 AUDIT RESPONSE**

The LARS Shop Manager shall investigate audit findings and determine corrective action and measures to be taken to prevent recurrence of the adverse conditions.

Corrective action and measures necessary to prevent recurrence shall be documented on the finding report or on documents traceable to the report and shall specify completion dates.

**4.17.8 AUDIT FOLLOW-UP**

Follow-up audit activities shall verify and record the implementation and effectiveness of the corrective action taken.

Records of audits and associated corrective actions shall be maintained as required by documented procedures.

**4.17.9 REFERENCES**

QAP-007, Quality Records

QAP-008, Corrective Action

QAP-017, Audits and Surveillance

## **Section 4.18 - Training**

### **4.18.1 SCOPE**

This section describes the requirements for training of all personnel who manage, perform and verify activities affecting quality.

### **4.18.2 TRAINING REQUIREMENTS**

All personnel employed as of January 1, 1999 are qualified based on their training and/or experience as of that date. Records of training and qualification for personnel who performed and verified work affecting quality are available.

As of January 1, 1999, all personnel who manage, perform, and verify activities affecting quality must be trained in the requirements of the Quality System to enable them to fully participate in the operation of the system.

All new employees hired after January 1, 1999 must be qualified in accordance with implementing procedures and trained in the quality system.

Training needs other than those defined herein shall be identified and documented during the annual management review.

All internal audit personnel must be qualified in accordance with implementing procedures.

Training records shall be maintained as quality records as required in documented procedures.

### **4.18.3 REFERENCES**

LARS-ADM-008, Personnel Training and Qualification

LARS-ADM-010, Quality Records

## **Section 4.19 - Servicing**

Servicing is not applicable to the scope of services provided by the Large Apparatus Repair Shop.

## **Section 4.20 - Statistical Techniques**

Statistical techniques are not applicable to the processes applied by, or the scope of services provided by, the Large Apparatus Repair Shop.