Quality Clinic Process Overview
L.A. Site
What is a Quality Clinic?

- The Quality Clinic is a place that encourages open communications around quality issues (triage)

- Quality Clinics analyze product and process nonconformances, determine root causes, and ensures changes to standard work, processes and/or designs

- Staffed by associates who have an in-depth knowledge of the products produced by the Clinic business unit, the measurement instruments contained within the Clinic, and problem solving skills

- Real-time triage investigations performed
  - Alert notification system designed to provide immediate notice of nonconformance in manufacturing areas
Document Structure

Control & Documentation of Nonconforming Product

Nonconforming Material Control

Escape Management Process

Quality Clinic Process

Enterprise Level

L.A. Site Level

Quality Clinic Process Standard Work Instructions

Does not contain any ITAR or EAR Technical Information

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Key Elements

People

Review And Analysis

Performance/Metrics

Visual and Structured Process

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People

• Focal point leadership established
  • Standard work developed
  • Interface networking driven by Ops/Quality Tier II Correction Action Board (CAB)

• Clear Instructions to Manufacturing Engineer, Process Engineer, and Quality Engineer
  • Drive the process forward – Daily routine

• Enterprise “Continuous Improvement” philosophy drives employee engagement at all levels
Nonconforming Material Flow

Event

Nonconformance Happens

Nonconformance Generated In System

Inspection Notifies Manager and Clinic

Material Review Engineer Completes Pre-Disposition

NWT Completes Investigation

NWT Completes Corrective Action Determination and Tier I Action (If Appropriate)

Part Moved To Appropriate Area Until Disposition Is Complete

Hardware Tracked

Aging Monitored in Quality Clinic

Pre-disposition through Corrective Action Determination Flow

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Quality Clinic Process
Physical Visual Management

Quality Clinic Status Board and Product Lanes

Cones, Lanes and Check Out Cards Color-Coded To Product

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**Andon** is derived from a Japanese term for a type of paper lantern “warning”

- **Andon system** provides a visual feedback to the manufacturing floor and support teams
  - Indicates assistance is needed
  - Empowers “stop the production” for quality issues
  - Brings immediate attention to problems as they occur in the manufacturing process
  - Provides consistent communication to the shop floor
  - Improves accountability of operators by increasing their responsibility for “good” production and taking action when problems occur
  - Improves the ability of supervisors to quickly identify and resolve manufacturing issues

Zone/machine where nonconformance occurred indicated on TV monitor map
Performance and Metrics

Managing Hardware Velocity - Quality Clinic Health

Types of nonconformances sent to Clinic

Types of nonconformances sent to Clinic by Program

Quality Clinic Processing Backlog

Hardware Processed Cycle Time

Corrective Action Determination Closure Age

Current Clinic Hardware Aging

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Performance and Metrics

Managing Performance: Product and Process

- Internal Escapes
- Nonconformance Rate
- Cost of Poor Quality In-House
- Corrective Action Plan Approval
- Corrective Action Implementation Cycle
Performance and Metrics

- NCs
- Turnbacks

Fabrication

Assembly

Supplier Quality Assurance

Analysis

Internal NCs

Supply NCs

Function
Type
Issue
P line
Cause
Responsible Department

Nonconformance
Material Review

Rework
Repair
Scrap

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Quality Clinics leverage off a strong Root Cause Analysis (RCA) and tiered corrective action board (CAB) structure.

Quality Clinic leadership are trained in incident investigation, RCA, mistake proofing and have expertise in the facilitation of problem resolution activity.

In addition, as part of the process structure, systemic identification, NC trending and value stream interruption analysis is supported with the utilization of:

- Concentration diagrams
- Concentration mapping
Concentration Diagram

• Designed to provide a visual of process areas that hinder product and quality

• Repetitive nonconformances evident in the value stream

• Seen over time or from unit to unit

Product Value Stream

Units / Parts

Assembly Process

Manufacturing

Warehousing

Process in the product value stream that requires attention

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Concentration Mapping

- Designed to provide a visual of processes that hinder product quality
- Factory map showing the different processes
- High quantity of nonconformances in an individual process
Summary

• Quality Clinic comprised of four elements
  • People / Process / Performance-Metrics / Analysis

• Quality Clinic encourages open communications, analyzes product and process nonconformances and facilitates the investigative process
  • Staffed by experienced individuals with in-depth knowledge of product/ processes

• Typical focus areas: Core Manufacturing, Assembly and Supply Chain

• Designed as a Visual Management Tool
  • Concentration diagrams and mapping
  • Posted health and performances metrics
  • Embedded in close proximity to operational activity

• Focused on real-time triage, containment and action response