

H. M. Dunn Company

3301 House-Anderson Rd. Euless, Tx. 76040

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**ISO-9001: 2008 REGISTERED
AS9100 B 2001 REGISTERED**

MANUAL NUMBER

NO. 0005



QUALITY PROGRAM MANUAL

REVISION LEVEL
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7/3/10

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| Introduction |
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H. M. Dunn Co. developed and implemented a quality management system to demonstrate its ability to provide product that meets customer and applicable statutory and regulatory requirements, and the risks associated with the environment.

The quality system complies with the international standard ISO 9001 (2008) and AS 9100 Rev. C.

The manual is divided into six sections modeled on the sectional organization of the ISO 9001 (2008) and AS 9100 Rev C standards. Sections are further subdivided into several subsections representing main quality system elements or activities. Each subsection starts with a general policy statement expressing the commitment to implement the basic principles of the pertinent quality system element or activity. The general policy statement is followed by more specific procedural policies outlining how the general policy is implemented, and referencing applicable operational procedures.

The purpose of this manual is to define and describe the quality system, to define authorities and responsibilities of the management personnel involved in the operation of the system, and to provide general procedures for all activities comprising the quality system.

Another purpose of this manual is to present the quality system to our customers and other external interested parties, and to inform them what specific controls are implemented at H. M. Dunn Co. to assure quality.

President _____

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SCOPE

H.M. Dunn Company is a manufacturer of precision aerospace components and assemblies.

The scope of the Quality Management System includes all processes that produce the products. The scope of the Quality Management System does not include processes that are governed by other management systems, such as environmental management, occupational safety and health, or financial management.

HM Dunn is committed to maintain its industry leadership in high technology, high reliability, manufacturing time-critical aviation, space and defense industry products and solutions. Should there be a conflict between the requirements of this standard and applicable statutory or regulatory requirements, the latter shall take precedence

HM Dunn demonstrates the ability to consistently provide product of the highest quality and aims to enhance customer satisfaction through the effective application of the Quality Management System, consistently meeting customer requirements, ISO 9001:2008, and AS9100 Rev C statutory and regulatory requirements and continual improvement.

At this time, any reference in the QMS in regards to “alignment with AS9100 Rev. C” is specific to the Euless, TX. Campus.

GENERAL POLICY

The quality management system shall be relevant to the nature of our organization, the organizational environment, changes to the environment, and risk associated the environment and products as they apply to aviation, space and defense industry requirements, also customer, and statutory and regulatory requirements. For this reason, those requirements of ISO 9001:2008 and/or AS 9100 Rev C that do not apply are excluded from the scope of our quality system.

Definition: **Risk** - An undesirable situation or circumstance that has both a likelihood of occurring and a potentially negative consequence.

Exclusions

Definition: **Special Requirement** - Define new term "special requirements"

Those requirements that have high risks to being achieved thus requiring their inclusion in the risk management process.

Definition: **Critical Item** - Those items having significant effect on the product realization and use of the product (e.g. functions, parts, software, characteristics, processes); including safety performance, form, fit, function, producibility, service life, etc. that require specific actions to ensure they are adequately managed.

PROCEDURAL POLICIES

Following rules and criteria are used for excluding irrelevant requirements:

1. An ISO 9001:2008 and/or AS 9100 Rev C requirement may be excluded only when both of the following conditions are met:
 - The requirement must be within ISO 9001 Clause 7, Product Realization; and
 - The exclusion may not affect our ability, nor absolve us from the responsibility, to provide product that meets customer and applicable regulatory requirements.
2. Quality Assurance Manager is responsible for identifying those requirements of ISO 9001:2008 and AS 9100 that do not apply to our organization or products, and to propose exclusions of such requirements from the scope of the quality system.
3. Top executive management has the responsibility and authority for evaluating whether the proposed exclusions are appropriate, and for approving them. Evaluation and approval of exclusions are conducted within the framework of management reviews of the quality system (refer to Operational Procedure [QOP-56-01](#), Management Review).
4. Any exclusion taken is documented in this section of the quality manual. The excluded requirements are precisely identified with reference to specific clauses and/or statements in the standard. There is also a brief justification why the exclusion is taken and why it is appropriate.

EXCLUSIONS

1. **Exclusion:** ISO 9001:2008 Section 7.3, Design and/or Development, including all subsections

Exclusions

Justification: H. M. Dunn Co. does not design or develop products. All principal product characteristics are specified by the customers thru placement of formal customer purchase order. Our engineering activities are limited to developing methods and means of production and fabrication.

- 2. Exclusion:** AS 9100 Rev C Section 7.5.1.5 Control of Service Operations, including all subsections.

Justification: H. M. Dunn Co. does not provide service as defined in AS 9100 Rev. C section 7.5.1.5 Control of Service Operations. Service is limited to rework, repair or replacement of nonconforming product.

QUALITY MANAGEMENT SYSTEM

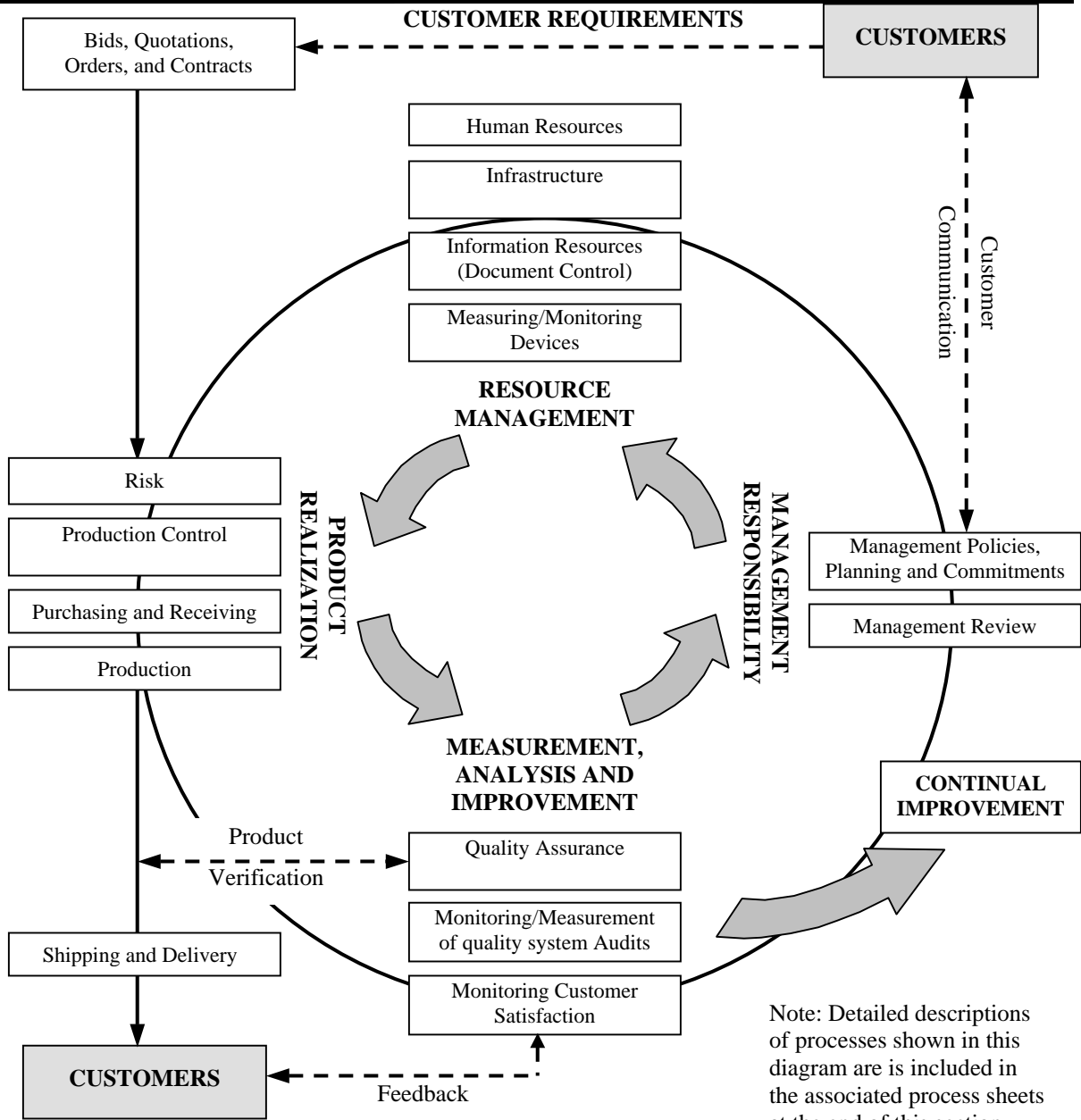
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Quality System Processes



Note: Detailed descriptions of processes shown in this diagram are included in the associated process sheets at the end of this section.

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Quality System Processes

1. Process approach

1.1 The quality management system is designed as a system of interrelated processes. All main activities in the company are determined as Quality System Processes (QSPs) and are grouped into the following six activities categories to produce the desired outcome (refer to the diagram at the top of this section):

- Customer Requirements,
- Product Realization,
- Risk,
- Measurement, Analysis and Improvement,
- Management Responsibility,
- Resource Management, and
- Continual Improvement,

And are organized into a Plan-Do-Check-Act loop.

1.2 The sequence and interrelation between the six groups and individual QSPs are illustrated in a diagram at the beginning of this section (Quality System Processes Diagram). Every QSP is further defined in process sheets at the end of this section (Quality System Processes Sheets).

1.3 QSPs and their sub-processes are documented in this quality manual and in associated operational procedures and work instructions. The documentation defines these quality system processes and their sequence and interaction, and instructs on how to implement and apply them throughout the organization.

1.4 Quality system documentation also defines criteria and methods needed to ensure that the operation and control of quality system processes are effective. This includes assignment of responsibilities and allocation of resources for the process, instructions on how to carry out (or operate) the process, and definition of methods for monitoring and/or measuring the effectiveness of the process.

1.5 Quality Manual Section 4.2 and the corresponding Operational Procedure [QOP-42-01](#), Quality System Documentation, explain in more detail how quality system processes are defined and documented.

2. Resources and information

2.1 Quality Assurance manager is responsible for determining resource and information

Quality System Processes

requirements necessary to support the operation and monitoring of quality system processes, and for communicating these requirements to the top management. The top management is responsible for ensuring the availability of necessary resources and information. Quality Manual Section 6.1, Provision of Resources, explains in more detail how resource requirements are identified and satisfied.

3. Monitoring and measurement

- 3.1 Performance of quality system processes is systematically monitored and measured. This is to ensure their effectiveness and identify opportunities for improvement.
- 3.2 Performance of quality system processes is monitored through internal quality audits (refer to Quality Manual Section 8.2 and Operational Procedure [QOP-82-02](#), Internal Quality Audits). The overall performance of the quality system is monitored by measuring customer satisfaction (refer to Quality Manual Section 8.2 and Operational Procedure [QOP-82-01](#), Customer Satisfaction).
- 3.3 Quality system processes are reviewed and analyzed by the management review of the quality system (refer to Quality Manual Section 5.6 and Operational Procedure [QOP-56-01](#), Management Review).

4. Continual improvement

- 4.1 Quality management system processes are regularly reviewed by the top management to identify any possible failures or breakdowns, as well as opportunities for improvement. Actions necessary to address actual or potential problems and to improve the quality system are implemented through corrective and preventive actions and through quality objectives.
- 4.2 Quality Manual Section 8.5 and Operational Procedures [QOP-56-01](#), Management Review, [QOP-54-01](#), Quality objectives, and [QOP-85-02](#), Corrective and Preventive Actions, define how the quality management system itself ensures its own compliance and continual improvement.

5. Outsourced processes

- 5.1 When processes that affect product conformity are outsourced, special controls are implemented to ensure that these processes meet specified requirements. Such controls may include, as appropriate:
 - Evaluation and pre-qualification of suppliers;
 - Assessment of supplier realization processes and quality system;
 - Flow-down of customer (contract) requirements,
 - Monitoring of supplier quality performance;

Quality System Processes

- Requirements for process control, inspection, testing or other records demonstrating product conformity; and
- Verification of the supplied product.

Quality Manual Section 7.4 and Operational Procedures [QOP-74-01](#), Supplier Evaluation, [QOP-74-02](#), Purchasing, and [QOP-74-03](#), Verification of Purchased Product, define these purchasing control processes.

5.2 Ensuring control over outsourced processes does not absolve HMD of the responsibility of conformity to all customer requirements.

QUALITY SYSTEM PROCESSES (QSP) SHEETS

| RISK (SOP) | |
|-------------------------------|---|
| Purpose | To identify any potential risk and mitigate. |
| Owners | Program Managers, Purchasing, Production, Maintenance, Planning, Quality |
| Process Inputs | <ul style="list-style-type: none"> ▪ Statements of product requirements and customer requirements received from customers on P/O's ▪ Legal, statutory and regulatory requirements ▪ Product information, and information regarding lead times, engineering capabilities, production capabilities, capacities and risk analysis, etc. ▪ Customer profiles and previous orders ▪ Planning |
| Sub-Processes | <ul style="list-style-type: none"> ▪ Risk 7-1-2 ▪ Determining product requirements –QOP-72-02 ▪ Determining customer requirements –QOP-72-02 ▪ Evaluating capability and capacity to meet requirements –QOP-72-02 ▪ Preparing quotations, bids and tenders –QOP-72-02 ▪ Entering orders, contract review (or signing contracts) –QOP-72-02 ▪ Preparing production work orders –QOP-72-02 ▪ Receiving, entering and processing change orders – QOP-72-02 |
| Process Outputs | <ul style="list-style-type: none"> ▪ Production work orders ▪ Change orders (design and/or production) ▪ Sales records |
| Measure of Effectivity | Customer Satisfaction |

Quality System Processes

| BIDS, QUOTATIONS, ORDERS AND CONTRACTS (COP) | |
|---|--|
| Purpose | To determine customer requirements, prepare bids and quotations, submit tenders, and take orders from, or enter into contracts with, customers. |
| Owner | Program Manager |
| Process Inputs | <ul style="list-style-type: none"> ▪ Statements of product requirements and customer requirements received from customers (requests for quotations, inquiries, orders, etc.) ▪ Legal, statutory and regulatory requirements ▪ Product information, and information regarding lead times, inventory levels, engineering capabilities, production capabilities, capacities and risk analysis, etc. ▪ Customer profiles and previous orders |
| Sub-Processes | <ul style="list-style-type: none"> ▪ Determining product requirements –QOP-72-02 ▪ Determining customer requirements –QOP-72-02 ▪ Evaluating capability and capacity to meet requirements –QOP-72-02 ▪ Preparing quotations, bids and tenders –QOP-72-02 ▪ Entering orders, contract review (or signing contracts) –QOP-72-02 ▪ Preparing production work orders –QOP-72-02 ▪ Receiving, entering and processing change orders – QOP-72-02 ▪ Risk Management QOP-71-01 |
| Process Outputs | <ul style="list-style-type: none"> ▪ Order confirmations ▪ Production work orders ▪ Change orders (design and/or production) ▪ Sales records |
| Measure of Effectivity | Contracts awarded |

| PRODUCTION CONTROL (SOP) | |
|---------------------------------|---|
| Purpose | To plan and develop processes needed for product realization. |
| Owners | Manufacturing Engineering Manager |
| Process Inputs | <ul style="list-style-type: none"> ▪ Product design record (specifications, drawings, mathematically based data, material and parts lists, etc.) ▪ Customer requirements ▪ Legal, statutory and regulatory requirements ▪ Experience from similar processes |

Quality System Processes

| | |
|-------------------------------|--|
| Sub-Processes | <ul style="list-style-type: none"> ▪ Determining quality objectives and requirements for products – QOP-72-02 and QOP-72-03 ▪ Developing, verifying and documenting production processes (process flowcharts, work orders, equipment setup instructions, tooling specifications, operator instructions, etc.) – QM 7.1, QOP-75-01 and QOP-75-02 ▪ Establishing product acceptance criteria and product verification requirements (measuring, inspections, tests, etc) - QOP-72-02, QOP-74-03, QOP-82-04 and QOP-82-05 |
| Process Outputs | <ul style="list-style-type: none"> ▪ Process flowcharts, work orders, equipment specifications, tooling requirements, etc. ▪ Process operator instructions ▪ Production process verification and validation records ▪ Product acceptance criteria and product verification plans |
| Measure of Effectivity | Product throughput as determined by GSS |

PURCHASING AND RECEIVING (COP)

| | |
|------------------------|---|
| Purpose | To select qualified vendors and to purchase from them materials, components, and services necessary for the manufacture and delivery of the product (for full scope of application refer to QOP-74-02 , Purchasing). |
| Owners | Purchasing Manager |
| Process Inputs | <ul style="list-style-type: none"> ▪ Purchasing requisitions, to include product description and identification, specification, quantity, required date, etc. ▪ Quality requirements (quality system, product testing requirements, etc.) ▪ Legal, statutory and regulatory requirements ▪ Other requirements (packaging, marking, delivery, etc.) |
| Sub-Processes | <ul style="list-style-type: none"> ▪ Evaluating and selecting suppliers and subcontractors - QOP-74-01 ▪ Maintaining a list of approved suppliers - QOP-74-01 ▪ Preparing, reviewing and issuing purchasing documents - QOP-74-02 ▪ Receiving purchased products - QOP-74-03 ▪ Inspecting or otherwise verifying conformity of purchased products - QOP-74-03 ▪ Applying, maintaining and recording purchased product identification and traceability - QOP-75-03 ▪ Monitoring quality performance of suppliers - QOP-74-01 ▪ Communicating with suppliers regarding their quality performance (notifications, requests for corrective actions, etc.) - QOP-74-01 |
| Process Outputs | <ul style="list-style-type: none"> ▪ Approved supplier list ▪ Purchase orders ▪ Purchased products ▪ Purchased product verification records ▪ Identification of purchased product and its status ▪ Records of supplier quality performance history ▪ Records of communication with suppliers (notifications, CARs, etc.) |

Quality System Processes

| | |
|-------------------------------|------------------------------|
| Measure of Effectivity | Supplier quality performance |
|-------------------------------|------------------------------|

| PRODUCTION (COP) | |
|-------------------------------|--|
| Purpose | To manufacture products conforming to requirements. |
| Owners | Manufacturing Manager |
| Process Inputs | <ul style="list-style-type: none"> ▪ Product design records (specifications, drawings, mathematically based data, material and parts lists, etc.) ▪ Product acceptance criteria ▪ Manufacturing process design record (specifications, drawings, equipment, tooling, parameters, etc.) ▪ Process operator instructions ▪ Production work orders ▪ Purchased products (materials, components, etc.) |
| Sub-Processes | <ul style="list-style-type: none"> ▪ Training process operators (on-the-job) - QOP-62-01 ▪ Carrying out manufacturing processes - QOP-75-01 ▪ Maintaining and recording product identification and traceability - QOP-75-03 ▪ Handling, moving, storing and preserving materials and products - QOP-75-04 ▪ Managing and operating storage areas and warehouses - QOP-75-05 ▪ Maintaining production equipment and tooling - QOP-63-01 |
| Process Outputs | <ul style="list-style-type: none"> ▪ Finished products ▪ Finished product identification, configuration and traceability records ▪ Production records ▪ Inventory records |
| Measure of Effectivity | Product throughput as determined by GSS |

| SHIPPING AND DELIVERY (COP) | |
|------------------------------------|---|
| Purpose | To package and dispatch finished products and deliver them to customers. |
| Owners | Shipping Manager |
| Process Inputs | <ul style="list-style-type: none"> ▪ Shipping orders ▪ Finished product release records (authorization) ▪ Packaging requirements and specifications ▪ Shipment labeling and marking requirements |
| Sub-Processes | <ul style="list-style-type: none"> ▪ Packaging products - QOP-75-06 ▪ Labeling and marking shipments - QOP-75-06 ▪ Preparing shipping documents - QOP-75-06 ▪ Dispatching shipments (loading, fastening, protecting, and/or transferring custody to shippers) - QOP-75-06 |

Quality System Processes

| | |
|-------------------------------|---|
| Process Outputs | <ul style="list-style-type: none"> ▪ Products delivered to customers on time and in good condition ▪ Shipping records |
| Measure of Effectivity | On time delivery as determined by customer feedback |

QUALITY ASSURANCE (COP)

| | |
|-------------------------------|---|
| Purpose | To verify conformity of products (in-process and final). |
| Owners | Quality Assurance Manager |
| Process Inputs | <ul style="list-style-type: none"> ▪ Monitoring and measuring devices ▪ Inspection and testing procedures (instructions) |
| Sub-Processes | <ul style="list-style-type: none"> ▪ Monitoring, measuring, and testing products - QOP-74-01, QOP-82-04 and QOP-82-05 ▪ Identifying and controlling nonconforming products - QOP-83-01 ▪ Applying and maintaining inspection status identification - QOP-75-03 ▪ Releasing products - QOP-82-05 |
| Process Outputs | <ul style="list-style-type: none"> ▪ Product verification records ▪ Identification of nonconforming products ▪ Identification of product status (pass/fail) ▪ Product release records |
| Measure of Effectivity | Scrap rate as measured in OPM |

MONITORING AND MEASUREMENT OF QUALITY MANAGEMENT SYSTEM, AUDITS (QMS) (SOP)

| | |
|-----------------------|--|
| Purpose | To verify conformity of the quality management system, and to evaluate its effectiveness and efficiency |
| Owners | ISO 9000 Program Coordinator |
| Process Inputs | <ul style="list-style-type: none"> ▪ QMS requirements (ISO 9001 and AS 9100 standard) ▪ Internal audit (QMS) plans ▪ Internal audit (QMS) checklists ▪ Results of previous QMS audits ▪ Quality system performance records, to include corrective and preventive actions, customer feedback and complaints, and customer satisfaction data. |
| Sub-Processes | <ul style="list-style-type: none"> ▪ Conducting internal audits of the quality system - QOP-82-02 ▪ Analyzing and evaluating results of internal, third-party and customer audits – QOP-56-01 ▪ Analyzing and evaluating quality system performance and customer satisfaction data and trends – QOP-56-01 |

Quality System Processes

| | |
|-------------------------------|--|
| Process Outputs | <ul style="list-style-type: none"> ▪ Internal audit findings and associated corrective actions ▪ Results of third-party and customer audits ▪ Conclusions regarding the conformity, effectiveness and efficiency of the quality system. |
| Measure of Effectivity | Results of internal and third party audits |

MONITORING CUSTOMER SATISFACTION (MOP)

| | |
|-------------------------------|--|
| Purpose | To process customer feedback and complaints and to measure customer satisfaction |
| Owners | Program Manager |
| Process Inputs | <ul style="list-style-type: none"> ▪ Customer feedback and complaints ▪ Notifications, CARs and performance reports from customers ▪ On-time delivery and quality performance records ▪ Customer-returned product |
| Sub-Processes | <ul style="list-style-type: none"> ▪ Receiving and logging customer feedback and complaints - QOP-72-03 ▪ Processing and responding to customer complaints - QOP-72-03 ▪ Handling and evaluating customer-returned product - QOP-83-01, QOP-85-01 ▪ Gathering of information and data about customer satisfaction - QOP-82-01 ▪ Analyzing, reporting and presenting customer satisfaction information and data (preparing reports, plotting charts, holding meetings, etc) - QOP-82-01, QOP-56-01 |
| Process Outputs | <ul style="list-style-type: none"> ▪ Response actions to customer complaints ▪ Returned product identification, documentation and disposition ▪ Customer satisfaction information and data |
| Measure of Effectivity | Quality and on time delivery ratings |

MANAGEMENT REVIEW (MOP)

| | |
|----------------|---|
| Purpose | To review the suitability and effectiveness of the quality system; to consider changes to the quality system, quality policy and quality objectives, and to identify opportunities for improvement. |
| Owners | ISO 9000 Program Coordinator |

Quality System Processes

| | |
|-------------------------------|---|
| Process Inputs | <ul style="list-style-type: none"> ▪ Follow-up actions from previous management reviews ▪ Results of internal and external audits, ▪ Customer feedback and complaints ▪ Product conformity data ▪ Status of preventive and corrective actions ▪ Changes that could affect the quality system ▪ Customer satisfaction ▪ Awareness and training programs ▪ Quality policy and quality objectives |
| Sub-Processes | <ul style="list-style-type: none"> ▪ Presentation, discussion and evaluation of review input information (outlined in Process Input above) - QOP-56-01 ▪ Determining changes required (if any) for the quality policy, quality objectives and the quality management system - QOP-56-01 ▪ Identifying opportunities for improvement and defining improvement objectives and goals - QOP-56-01 |
| Process Outputs | <ul style="list-style-type: none"> ▪ Revised quality policy (if changed) ▪ New quality objectives ▪ Actions to change/improve the quality management system, quality performance, and products. |
| Measure of Effectivity | Results of management review meetings |

| | |
|------------------------|---|
| Sub-Processes | <ul style="list-style-type: none"> ▪ Determining competency requirements for jobs/positions affecting product quality- QOP-62-01 ▪ Providing training and/or taking other actions to satisfy competency requirements – QOP-62-01 ▪ Evaluating the effectiveness of training - QOP-62-01 ▪ Providing awareness programs to ensure employee motivation, empowerment, and knowledge of quality-related issues. – QOP-62-01 |
| Process Outputs | <ul style="list-style-type: none"> ▪ Defined competency requirements ▪ Personnel competency and training records |
| | |

Infrastructure (SOP)

| | |
|----------------|--|
| Purpose | To ensure appropriate and adequate facilities, production equipment and supporting services. |
| Owners | Plant Manager |

Quality System Processes

| | |
|-------------------------------|---|
| Process Inputs | <ul style="list-style-type: none"> ▪ Manufacturing process requirements (capacity, raw materials, equipment, power, water, waste, etc) ▪ Equipment maintenance requirements ▪ Work environment and safety requirements ▪ Requirements for supporting services |
| Sub-Processes | <ul style="list-style-type: none"> ▪ Plant, facility and equipment planning - QM 6.3 ▪ Maintaining plant, facilities and manufacturing process equipment - QOP-63-01 |
| Process Outputs | <ul style="list-style-type: none"> ▪ Plant, facility and equipment plans (floor plans, flowcharts, etc.) ▪ Maintenance plans and records |
| Measure of Effectivity | Maintenance records |

MEASURING AND MONITORING DEVICES (SOP)

| | |
|-------------------------------|--|
| Purpose | To identify, maintain and calibrate monitoring and measuring devices. |
| Owners | Calibration Coordinator |
| Process Inputs | <ul style="list-style-type: none"> ▪ Monitoring and measurement requirements |
| Sub-Processes | <ul style="list-style-type: none"> ▪ Selecting monitoring and measuring equipment - QOP-76-01 ▪ Calibrating monitoring and measuring equipment – QOP-76-01 ▪ Controlling monitoring and measuring equipment – QOP-76-01 |
| Process Outputs | <ul style="list-style-type: none"> ▪ Verified and calibrated monitoring and measuring equipment ▪ Records of monitoring and measuring equipment calibration status and accuracy |
| Measure of Effectivity | Calibration records |

Documentation and Records**DISTRIBUTION:**

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GENERAL POLICY

Scope of the quality system documentation is defined. Establishment and revision of documents, and their distribution, are controlled. New documents and revisions are reviewed and approved prior to issue; and are identified with respect to their revision level. Appropriate documents are available at locations where they are used. Obsolete documents are removed from points of use. Documents of external origin are identified and their distribution is controlled.

*Quality records are identified and indexed to facilitate their retrieval, and are stored in a suitable environment to minimize deterioration. Quality records are retained for a period of time of **ten years** or as defined by contract.*

PROCEDURAL POLICIES**1. Scope**

1.1 H. M. Dunn Co. quality system documentation comprises the following types of documents:

- Quality manual (including a documented quality policy);
- Documented statements of quality objectives
- Operational procedures;
- Work instructions;
- Standards and other technical reference materials;
- Engineering documents, including drawings, specifications, procedures, and other documents defining products;
- Customer engineering documents;
- Product realization and control plans.

Purpose, scope, and responsibility for controlling various types of documents are defined in Operational Procedure QOP-42-01, Quality System Documentation.

Documentation and Records

2. Quality Manual

- 2.1 The top-level document defining the overall quality management system is the Quality Manual. It includes:
- The scope of the quality system, including details of and justification for any exclusions (refer to Section 0.3);
 - Description of quality system processes, their sequence, and interrelation; and
 - References to documented procedures; when referencing the documented procedures, the relationship between the requirements of the International Standard and the documented procedures is clearly shown.
 - Quality system requirements imposed by the applicable regulatory authorities.

3. Document control

- 3.1 H. M. Dunn Co. is gradually transitioning from paper to electronic documentation. As this transition progresses, new categories of documents are transferred from paper to electronic document control system. Both systems are currently used, and are defined in Procedure QOP-42-02, Control of Documents.
- 3.2 New documents and document changes may be initiated by anyone in the organization, but may only be issued by an authorized function. The authorized functions and the rules governing the issue of documents are defined in procedures QOP-42-01, Quality System Documentation, and QOP-42-02, Control of Documents. All documents are reviewed and approved prior to issue.
- 3.3 A paper document is officially issued for use when it is approved by authorized function. An electronic document is issued by being placed in a public directory accessible from the network.
- 3.4 Documents are distributed to personnel and locations where they are used. When appropriate and relevant, documents display a distribution list. Electronic documents are available on the network and are accessible at relevant terminals and computers. Document placement is regulated by Procedure QOP-42-02. Customer and/or regulatory authorities are granted access to all quality system documentation.
- 3.5 Obsolete documents are removed from points of use. Retained masters or copies of obsolete documents are properly marked and are kept separate from active documents. Obsolete electronic documents are removed from the network and, if retained, are stored in archive folders that are only accessible to authorized personnel.

Documentation and Records

- 3.6.1 Document changes are reviewed and authorized by the same function that issued the original document. Revised documents are distributed with a change brief summarizing the changes. Each department issuing paper documents maintains a master list specifying the latest issues and revisions of its documents. For electronic documents such list is not necessary, as only the latest issue and revision of a document is available on the network.
- 3.6.2 Changes to documents are coordinated with customer and /or statutory and regulatory authorities in accordance with contract or regulatory requirements.

4. Control of quality records

- 4.1 Quality records are established and maintained to provide evidence that:
- Materials, components, and production processes meet specified requirements;
 - Finished products conform to specifications: and
 - The quality system is operated in accordance with documented procedures and that it is effective.

Where required, quality records also include traceability information.

- 4.2 Records are established by personnel performing the task, operation, or activity the results of which need to be recorded. Records are dated; and identify the product, person, or event to which they pertain.
- 4.3 Records are indexed and grouped to facilitate their retrieval. Cabinets, binders, computer disks, and other storage media containing records are clearly labeled with identification of their content.
- 4.4 Records are normally stored by the same department that initially established the record. Records are stored in dry and clean areas, and electronic records are backed up daily and the data is rotated weekly. Backup of rotated data is stored in another building on a mirrored computer to ensure disaster recovery. Quality records and documents may not be stored in private desk drawers, unauthorized computer drives, or other obscure locations that are not generally known.
- 4.5.1 Retention period for quality records is ten years or as defined by statutory, regulatory and contractual requirements.
- 4.5.2 Records that have reached the time period defined by section 4.5 or by statutory and regulatory, or contractual requirements will be destroyed by any means that will

Documentation and Records

- prevent any possibility of use (i.e. Shredding, burning etc.). This will include deletion of electronic records.
- 4.6 All categories of quality records maintained by H. M. Dunn Co. are listed in Operational Procedure QOP-42-03, Control of Quality Records. The list identifies specific types of records for each category; their storage location; and retention period.
- 4.6.1 QOP-74-02 Purchasing defines the method for controlling records that are created by and/or retained by suppliers. It also defines the right of entry and access to records for H. M. Dunn Co., customers and statutory or regulatory authorities.
- 4.6.2 H. M. Dunn Co. has established, documented and maintains a configuration management process appropriate to the product. This process is documented in operational procedure QOP- 75-08 Configuration Management

ASSOCIATED DOCUMENTS

- [Operational Procedure QOP-42-01: Quality System Documentation](#)
- [Operational Procedure QOP-42-02: Control of Documents](#)
- [Operational Procedure QOP-42-03: Control of Quality Records](#)
- [Operational Procedure QOP-74-02 Purchasing](#)

| |
|---------------------------|
| QUALITY MANAGEMENT SYSTEM |
|---------------------------|

| | | | |
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| |
|---------------------------------|
| Configuration Management |
|---------------------------------|

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GENERAL POLICY

I. Configuration Management is used by H. M. Dunn Co. to ensure the integrity of the product to meet all customer engineering requirements.

PROCEDURAL POLICIES

1. Scope

The requirements for configuration management are defined in QOP-43-01.

II Associated Documents

[QOP-43-01 Configuration Management](#)

MANAGEMENT RESPONSIBILITY

Section 5.1

Section Rev.: A

Rev. Date: 03/31/03

Section Page 1

Management Commitment**DISTRIBUTION:**

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GENERAL POLICY

The top executive management is ultimately responsible for establishing, implementing, maintaining, and improving the quality system. Management commitment is demonstrated by communicating to the organization the importance of meeting requirements, establishing the quality policy and quality objectives, conducting management reviews of the quality system, and ensuring the availability of necessary resources.

PROCEDURAL POLICIES**1. Top management**

- 1.1 For the purpose of administrating the quality management system, top management includes the President and a group of managers defined in this manual in Section 5.5, Organization and Communication.

2. Customer requirements

- 2.1 Top management is committed to communicate the importance of meeting customer as well as statutory and regulatory legal requirements. The Management representative is responsible for implementing this commitment by promoting awareness of customer requirements throughout the organization. The management representative has the organizational freedom to resolve matters pertaining to quality. This responsibility of the management representative is stipulated in Section 5.5, Organization and Communication.

3. Quality policy and quality objectives

- 3.1 Top management defines the purpose and objectives for the quality management system. They are documented and communicated in the form of quality policy and quality objectives. Processes for establishing the quality policy and quality objectives are defined in this manual in Section 5.3, Quality Policy, and Section 5.4, Quality System Planning.

Management Commitment

4. Management reviews

- 4.1 Top management periodically reviews the quality management system to ensure its continuing suitability, adequacy, and effectiveness. The review evaluates current status and performance of the quality system and initiates actions for further improvement of the system. The process for conducting management reviews is defined in Section 5.6 of this manual and in Operational Procedure QOP-56-01, Management Review.

5. Resources

- 5.1 Top management is committed to providing resources necessary for establishing, implementing, and improving the quality management system. Section 6.1 of this manual defines processes for identifying resource requirements and allocation of resources for specific activities and projects.

ASSOCIATED DOCUMENTS

- [Operational Procedure QOP-56-01: Management Review](#)

MANAGEMENT RESPONSIBILITY

Section 5.2

Section Rev.: A

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Section Page 1

Customer Focus**DISTRIBUTION:**

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GENERAL POLICY

The principal objective of the quality management system is to focus our organization on the customer, and in particular, on customer satisfaction. The key to achieving high customer satisfaction is a good understanding of customer requirements and a capability to consistently fulfill these requirements.

PROCEDURAL POLICIES**1. Determining customer requirements**

- 1.1 Customer requirements are understood broadly to include all aspects of product offering and associated services that are relevant to customer satisfaction. When appropriate, this may also include customer needs and expectations, which include statutory and regulatory requirement that are applicable.
- 1.2 Customer requirements are determined and verified through the process of contract review. This process is defined in this manual in Section 7.2, Customer-related Processes, and in operational procedure QOP-72-02 Contract Review.

2. Meeting customer requirements

- 2.1 Nearly all processes and elements of the quality system are designed and implemented specifically to ensure that customer requirements are met. This starts with provision of required training, and adequate infrastructure and suitable work environment (Section 6, Resource Management). Next follows planning and implementation of reliable and effective product realization processes (Section 7, Product Realization). And finally, activities related to product and process monitoring and verification (Section 8, Measurement, Analysis and Improvement).
- 2.2 Meeting of customer requirements including on time delivery is monitored and/or verified by variety of methods defined in Section 8.2, Monitoring and Measurement, and in associated operational procedures. Results of these verification activities are recorded to provide evidence of product conformity, as defined in Section 4.2, Documentation and Records.

Customer Focus

3. Customer satisfaction

- 3.1 Focusing on customer requirements and on meeting these requirements should result in enhancing customer satisfaction. In fact, the level of customer satisfaction is used as a measure of the effectiveness of the whole quality system.
- 3.2 Specific methods for determining customer satisfaction are defined in quality manual Section 8.2 and in the associated operational procedure QOP-82-01, Customer Satisfaction. This valuable information is reported and used as described in Section 5.6, Management Review.

ASSOCIATED DOCUMENTS

- [Operational Procedure QOP-72-02:Contract Review](#)
- [Operational Procedure QOP-72-03: Customer Feedback and Complaints](#)
- [Operational Procedure QOP-82-01: Customer Satisfaction](#)
- [Operational Procedure QOP-56-01: Management Review](#)

GENERAL

Section 5.3

Section Rev.: B

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Section Page 1

Quality Policy**DISTRIBUTION:**

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General Quality Policy

It is our Goal at HM Dunn Company to provide World Class performance with continual improvements, on time delivery of products and a commitment to exceed our customer's expectations through quality objectives.

“First Time Every Time”

PROCEDURAL POLICIES**1. Authority**

- 1.1 Quality policy is established by the top management and is approved by the President and top management. Any changes to the policy must be likewise approved by the President and top management.

2. Role of the policy

- 2.1 The main role of the quality policy is to communicate the company's commitments and aspirations with regard to quality, and to define principal objectives for the quality management system.
- 2.2 The quality policy provides a framework for establishing specific quality objectives, and provides direction for the continual improvement effort. The use of quality policy in setting quality objectives is addressed in this manual in Section 5.4, Quality Planning. The use of the policy to facilitate continual improvement is explained in Operational Procedure QOP-85-01, Continual Improvement.

3. Communication

- 3.1 The quality policy is posted throughout the company, and its role is explained and discussed at the general orientation training provided to all employees.
- 3.2 The quality policy is also communicated to customers, consumers and other interested parties. For this purpose, it is displayed in the reception area and posted on the company's internet site.

Quality Policy

4. Review

- 4.1 The quality policy is periodically reviewed within the framework of management reviews of the quality system. This is to ensure its continual relevance and suitability. The process for reviewing the quality policy is defined in Operational Procedure QOP-56-01, Management Review.

ASSOCIATED DOCUMENTS

- [Operational Procedure QOP-56-01: Management Review](#)
- [Operational Procedure QOP-85-01: Continual Improvement](#)

MANAGEMENT RESPONSIBILITY

Section 5.4

Section Rev.: B

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Section Page 1

Quality System Planning**DISTRIBUTION:**

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GENERAL POLICY

Quality objectives are established to support and implement the quality policy and continual improvement. Quality planning includes identification and determination of quality system processes (including any exclusions of ISO 9001 requirements); priorities for continual improvement; and resources needed to achieve quality objectives and to maintain and improve the quality system. Quality plans are periodically reviewed and updated to maintain the integrity of the quality system during organizational and other changes.

PROCEDURAL POLICIES**1. Quality objectives**

- 1.1 Quality objectives are established throughout the organization to implement the quality policy, to meet requirements for products and processes, and to improve quality system and quality performance.
- 1.2 Quality objectives are established at the management reviews of the quality system. Management reviews also monitor progress of ongoing projects for achieving quality objectives and close out completed projects. These processes for establishing and monitoring of quality objectives are defined in Operational Procedure QOP-56-01, Management Review.
- 1.3 Quality objectives define the direction and priorities for continual improvement. Use of quality objectives for facilitating continual improvement is explained in Operational Procedure QOP-85-01, Continual Improvement.

2. Quality system planning

- 2.1 Quality system processes are planned to ensure that the system is appropriate for its intended purpose, and that it is effective and efficient. The purpose of the quality system is:
 - To achieve the quality policy;
 - To ensure and demonstrate our ability to provide consistently product that meets

Quality System Planning

customer statutory and regulatory requirements;

- To ensure high level of customer satisfaction;
- To facilitate continual improvement; and
- To comply with requirements of ISO 9001 and AS 9100 standards.

2.2 The output of quality system planning is documented in this quality manual, in associated operational procedures, and in other referenced documents. These documents identify and define all elements and processes of the quality system.

2.3 Changes to the quality system are planned within the framework of management reviews (refer to Operational Procedure QOP-56-01, Management Review). These changes may be in response to changing circumstances, such as product, process, capacity, or other operational or organizational change; or to improve the effectiveness and efficiency of the quality system.

3. Product realization and verification planning

3.1 Planning of product realization, verification, and validation processes is addressed in Section 7.1 of this manual.

ASSOCIATED DOCUMENTS

- [Operational Procedure QOP-54-01: Quality Objectives](#)
- [Operational Procedure QOP-56-01: Management Review](#)
- [Operational Procedure QOP-85-01: Continual Improvement](#)

MANAGEMENT RESPONSIBILITY

Section 5.5

Section Rev.: B

Rev. Date: 05/11/09

Section Page 1

Organization and Communication**DISTRIBUTION:**

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GENERAL POLICY

Functions and their interrelation within the company are defined and communicated.

Top management appoints a management representative responsible for establishment and maintenance of the quality system, and for reporting to the top management on the performance of the system.

Issues regarding the quality system are communicated internally through distribution of pertinent documents, meetings, training and awareness programs, and management reviews.

PROCEDURAL POLICIES**1. Responsibility and authority**

- 1.1 Departments, groups and functions within the company, and their interrelations, are defined in the organizational chart enclosed at the end of this section.
- 1.2 All departments and functions in the company are responsible for implementing, maintaining, and improving the quality system.

Following specific responsibilities and authorities are assigned:

Top Management

- Formulates the quality policy
- Provides resources necessary to maintain and improve the quality system
- Conducts management reviews of the quality system

Throughout this manual, the term Top Management refers to a management team including the President and managers responsible for operations, engineering, program management, human resources, and quality assurance.

Engineering

- Develops NC programs

Organization and Communication

- Develops work instructions
- Develops manufacturing tooling
- Assists in product realization and verification planning

Production Control

- Schedules production
- Establishes production work orders

Production

- Plans production facilities, equipment, and processes
- Develops production processes
- Develops process operator and set-up instructions
- Controls and monitors processes
- Conducts in-process inspections
- Applies and maintains in-process product identification
- Maintains production equipment
- Provides training for its personnel

Purchasing

- Selects qualified supplies and subcontractors
- Prepares and approves purchasing documents
- Monitors and evaluates supplier performance

Receiving

- Receives purchased products
 - Performs first-stage receiving inspection
 - Applies or verifies product identification for purchased products
 - Operates the material stockroom
-

Organization and Communication

Shipping

- Packages products (secondary packaging)
- Ships products to customers
- Operates the finished product stockroom

Program Management

- Conducts market research to anticipate customer expectations
- Determines customer satisfaction
- Monitors the quality performance of competitors
- Carries out contract and order reviews
- Provides customer liaison and service
- Provides product information
- Handles customer feedback and complaints

Human Resources

- Defines personnel qualification requirements
- Implements measures to motivate personnel
- Helps Conduct company-wide training

Quality Assurance and Quality Control

- Works with the management Representative to help maintain the quality management system
 - Audits implementation and effectiveness of the quality system
 - Identifies opportunities for improvement of the quality system
 - Develops quality plans and control plans
 - Initiates corrective and preventive actions
 - Maintains and calibrates measuring and test equipment
 - Performs inspections and testing
-

Organization and Communication

- Identifies the need for the use of statistical techniques
- Handles nonconforming products
- Maintains, or coordinates the maintenance of quality records
- Coordinates collection of quality performance data
- Provides required training for its personnel.

2. Management representative

2.1 H. M. Dunn Co. appoints as the management representative the ISO 9000 Program Coordinator. Management representative has the authority and responsibility to:

- Ensure that the quality management system is implemented, maintained and continually improved;
- Promote awareness of customer requirements throughout the organization;
- Report to the top management on the performance of the quality system, including needs for improvement; and
- Coordinate communication with external parties on matters relating to the quality system and ISO 9001 and AS 9100 registration.
- Resolve matters pertaining to quality by having unrestricted access to top management to resolve quality management issues.

3. Internal communication

3.1 Internal communication regarding the quality system flows two ways:

The management communicates to the organization the quality policy and objectives; customer and regulatory requirements; product and process specifications; verification and validation requirements; and instructions on how to implement and use the quality system.

The organization communicates to the management information and data regarding customer needs and expectations, customer satisfaction, quality performance, the effectiveness of the quality system, and opportunities for improvement.

3.2 The information is communicated through manuals, procedures, instructions, drawings, specifications, quality records, reports, etc.; and through training, on-the-job instruction, and meetings. Operational Procedures QOP-42-01, Quality System

Organization and Communication

- Documentation; QOP-42-02, Control of Documents; and QOP-61-01, Training and Awareness, regulate these activities.
- 3.3 Management review meetings have a special role in ensuring proper communication between the top management and the organization. The meeting provides the framework for the organization to report on the status of quality-related issues and activities, and for the management to formulate policies and directives to change and/or improve the quality system. This process is defined in Operational Procedure QOP-56-01, Management Review.
- 3.4 Quality Assurance Manager has the overall responsibility for ensuring that all pertinent documents, reports and records are distributed to appropriate departments and functions, and that information and data about quality performance and the effectiveness of the quality system are reported to the top management.

ASSOCIATED DOCUMENTS

- [Operational Procedure QOP-56-01: Management Review](#)
- [Operational Procedure QOP-62-01: Training and Awareness](#)
- [Operational Procedure QOP-42-01: Quality System Documentation](#)
- [Organizational Chart](#)

MANAGEMENT RESPONSIBILITY

Section 5.6

Section Rev.: B

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Section Page 1

Management Review**DISTRIBUTION:**

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GENERAL POLICY

Top management conducts periodical reviews of the quality system. The review evaluates the suitability and effectiveness of the system, identifies opportunities for improvement, and considers the need for changes to the quality policy and quality objectives. Results of the review are documented.

PROCEDURAL POLICIES**1. General**

1.1 The purpose of management reviews is to:

- Evaluate the suitability, adequacy and effectiveness of the quality system;
- Consider changes to the quality management system and to the quality policy and quality objectives; and
- Identify opportunities for improvement of the quality system, processes and products.

1.3 Management reviews are conducted at least once a year. More frequent reviews are scheduled in periods when organizational or product changes, or other circumstances require increased attention and input from the top management.

2. Review input

2.1 Input into the management reviews consists of information and data related to quality performance of the organization. At a minimum, this includes:

- Results of audits,
- Customer feedback and complaints,
- Process performance and product conformance data,
- Status of preventive and corrective actions,
- Changes that could affect the quality system,

Management Review

- Follow-up actions from earlier management reviews, and
- Recommendations for improvement.

Section 8.4 of this manual, Analysis of Data, and Operational Procedure QOP-56-01, Management Review, define the scope, and method of presentation, of the input information and data.

3. Review output

- 3.1 Management reviews are concluded with actions related to improvement of the quality management system, and improvement of processes and products to better meet customer requirements. The review also identifies resource needs to implement these actions.
- 3.2 Results of management reviews are documented in minutes of the review meeting. The minutes include improvement actions, and assign responsibilities and allocate resources for implementation of these actions.

ASSOCIATED DOCUMENTS

- [Operational Procedure QOP-56-01: Management Review](#)

RESOURCE MANAGEMENT

Section 6.1

Section Rev.: B

Rev. Date: 01/26/10

Section Page 1

Provision of Resources**DISTRIBUTION:**

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GENERAL POLICY

Top executive management is committed to provide adequate resources for the implementation and improvement of the quality system, and for addressing customer satisfaction.

PROCEDURAL POLICIES**1. General**

- 1.1 Resources required for implementation and improvement of the quality system, and for addressing customer satisfaction, may include people, suppliers, information, infrastructure, work environment, and financial resources.

2. Determination of resource requirements

- 2.1 Quality Assurance manager and other management personnel involved in the quality system are responsible for determining resource requirements for the implementation and improvement of the system.
- 2.2 The President is responsible for determining resource requirements for addressing customer satisfaction. This is based on input from other management personnel responsible for activities relevant to particular aspects of customer satisfaction. Operational Procedure QOP-82-01 explains how information about customer satisfaction is collected and analyzed.
- 2.3 The principal forum for determining and communicating resource requirements are management reviews of the quality system. Operational Procedure QOP-56-01, Management Review, explains this process.

3. Provision of resources

- 3.1 Top executive management has the responsibility and authority for provision of resources.
- 3.2 Allocation of resources for particular activities is integrated with the process of

Provision of Resources

- defining and initiating the activity. It may take the form of personnel assignments, allocation of space or equipment, training, procurement decisions, budgets, etc.
- 3.3 Allocation of resources may be documented in the quality manual, operational procedures, minutes of meetings, memoranda, or any other form. Approvals of resource allocations may be also communicated verbally.
- 3.4 Management review of the quality system is the principal forum for allocation of resources for the operation and improvement of the system. All actions initiated by the review are supported by allocation of specific resources necessary for their implementation. Operational Procedure QOP-56-01, Management Review, defines this process.

ASSOCIATED DOCUMENTS

- [Operational Procedure QOP-56-01: Management Review](#)
- [Operational Procedure QOP-82-01: Customer Satisfaction](#)

RESOURCE MANAGEMENT

Section 6.2

Section Rev.: C

Rev. Date: 02/09/10

Section Page 1

Competence, Training and Awareness**DISTRIBUTION:**

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GENERAL POLICY

H. M. Dunn Co. where applicable, identifies personnel training needs, provides required training, and evaluates the effectiveness of the training provided. Personnel assigned to perform specific tasks, operations, and processes are qualified on the basis of appropriate education, experience, or training. Employees are made aware of the relevance and importance of their activities and how they contribute to the achievement of quality objectives. Personnel performing work affecting conformity to product requirements shall be competent on the basis of appropriate education, training, skills and experience. Records of personnel qualifications and training are maintained. The Primary source of training is OJT and on as-needed basis, Company sponsored career training.

PROCEDURAL POLICIES**1. Identification of training needs and awareness programs**

- 1.1 Department Managers and Supervisors and or the Human Resources department is responsible for identifying training needs and awareness programs for company-wide participation, such as: general orientation, rules and regulations, quality system, safety, and other company-wide systems and issues.
- 1.2 Departmental managers and supervisors are responsible for identifying competency requirements and training needs in their departments, and for establishing departmental training programs. Departmental training is primarily focused on increasing the level of skills in operating equipment and processes, conducting inspections and testing, using analytical and statistical techniques, and so forth.
- 1.3 In addition, training needs are often identified in response to corrective or preventive action requests (CARs), as nonconformities could lead to training opportunities.

2. Awareness and training programs

- 2.1 H. M. Dunn Co. provides, or supports, the following categories of company-wide and departmental training and awareness programs:
 - **General orientation and quality system awareness training** — Explains how the

Competence, Training and Awareness

product is used and how the quality system works to ensure product quality.
Provided to all employees.

- **Safety training** — Instructs in safe working practices, use of personal protective equipment, first aid, etc. Provided to all employees.
- **Use of company-wide systems** — Explains interdepartmental systems, such as product coding/numbering system, bar-code system, use of computers, etc. Provided to wide groups of employees.
- **External training** — External seminars, conferences, and courses. Provided to individual employees on as-needed basis.
- **Self-study** — Reading magazines, books, and reports. While all employees are encouraged to broaden their knowledge through reading, in some cases self-studying may be required as formal training.
- **Skill training in engineering, production, and quality control** — departmental training in specific skills. Often provided as (OJT) on-the-job training.

2.2 Operational Procedure QOP-62-01, Training and Awareness, describes in detail the training and awareness programs provided by H. M. Dunn Co.

3. Effectiveness of training

3.1 Effectiveness of training is evaluated using the following approaches:

- Supervisory review through OJT, assigned job duties and continual floor level interaction with trained employees
- Review of the overall performance in areas relevant to particular training programs;
- Consideration of competency and training when investigating causes of quality system failures and product or process nonconformities; and
- A review of all training and awareness programs, conducted within the framework of management reviews of the quality system.

Operational Procedures QOP-62-01, Training and Awareness, and QOP-56-01, Management Review, prescribe more specific methods for evaluating particular categories of training and awareness programs.

4. Training records

4.1 Training records are established for all types of training. Records are normally

Competence, Training and Awareness

established and maintained by the department that provides the training. Human Resources maintain as-hired qualification records, and may also have copies of some departmental training.

ASSOCIATED DOCUMENTS

- [Operational Procedure QOP-62-01: Training and Awareness](#)
- [Operational Procedure QOP-56-01: Management Review](#)

RESOURCE MANAGEMENT

Section 6.3

Section Rev.: B

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Section Page 1

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GENERAL POLICY

Suitable, facilities, process equipment, supporting services, information systems and other necessary infrastructure are determined, provided and maintained, as required to achieve conformity to product requirements.

PROCEDURAL POLICIES**1. Infrastructure and Facilities**

- 1.1 Planning of new, and/or modification of existing infrastructure and facilities is usually conducted in conjunction with product or process changes; capacity and/or work force expansions; and other such events. Facilities may also be expanded or modified to improve productivity and/or quality, or to improve the work environment.
- 1.2 Departmental managers are responsible for identifying the need and requirements for new, and/or modification of existing infrastructure and facilities in their departments. Requests for significant changes and/or expansions of facilities are submitted to the top management for review and approval.
- 1.3 When relevant, Quality Assurance reviews the proposed facilities or changes to ensure that they enhance the achievement of product conformity and quality.
- 1.4 Plant manager is responsible for monitoring and control of utilities and supplies such as water, compressed air, electricity and chemical products to the extent they affect product quality.

2. Supporting services and maintenance of facilities

- 2.1 Supporting services required by H. M. Dunn Co. include transportation, communication, and IT services:
 - Transportation services are usually purchased from parcel delivery and courier services, and from trucking or other transportation companies or consolidators. Purchasing of these services is managed by Shipping, and is conducted in accordance with operational procedures QOP-74-01, Supplier Evaluation and

Infrastructure

Monitoring, and QOP-74-02, Purchasing.

- Communication services are provided by various telephone, wireless, and internet access companies. System Administration is responsible for administrating and coordinating these contracts.
 - IT systems are designed and implemented by external consultants, and are operated internally by System Administration. IT consultants are selected, and are contracted with, in accordance with applicable purchasing procedures (QOP-74-01 and QOP-74-02). These contracts are managed by System Administration. Control of documents and data on the internal network system is governed by operational procedure QOP-42-02, Control of Documents.
- 2.2 Maintenance of buildings and facilities is performed by the maintenance department and or external contractors. This includes regularly scheduled maintenance of lighting systems, air conditioning and heating systems, landscaping, and cleaning. Purchasing is responsible for coordinating and managing maintenance contracts.
- 3. Process equipment maintenance**
- 3.1 Key process equipment, machines, hardware, and software are regularly maintained in accordance with maintenance plans specified by equipment manufacturers or departmental managers responsible for the equipment. Requirements for the maintenance of production equipment are specified in Operational Procedure QOP-63-01, Equipment Maintenance.

ASSOCIATED DOCUMENTS

- [Operational Procedure QOP-63-01: Equipment Maintenance](#)

RESOURCE MANAGEMENT

Section 6.4

Section Rev.: B

Rev. Date: 02/09/10

Section Page 1

Work Environment**DISTRIBUTION:**

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GENERAL POLICY

H. M. Dunn Co. provides for its employees suitable work environment needed to achieve conformity to product requirements. The term “work environment” relates to those conditions under which work is performed including physical, environmental and other factors (such as noise, temperature, humidity, lighting and weather).

PROCEDURAL POLICIES**1. Human factors**

- 1.1 Human Resources and departmental managers are responsible for ensuring suitable social and psychological conditions in the workplace. This is to include such aspects as interaction and communication between employees, employee harassment, conflict resolution, and so forth. Relevant workplace policies are implemented mainly through training and awareness programs and, where necessary, disciplinary actions. (Refer to Operational Procedure QOP-62-01, Training and Awareness.)

2. Physical factors

- 2.1 Production and Quality Assurance are responsible for identifying those operations where extreme environmental conditions could impact quality performance of personnel and result in product nonconformities. Where appropriate, limits of exposure and/or mitigating measures shall be defined and implemented for these operations.

3. Health and safety

- 3.1 Health and safety management system is an integral part of the quality management system. It is administrated by Health and Safety Coordinator and is documented in procedures throughout the Quality Manual

ASSOCIATED DOCUMENTS

- [Operational Procedure QOP-62-01, Training and Awareness](#)

Work Environment

PRODUCT REALIZATION

Section 7.1

Section Rev.: B

Rev. Date: 01/11/10

Section Page 1

Planning of Product Realization**DISTRIBUTION:**

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GENERAL POLICY

Planning of product realization processes includes determination of requirements and quality objectives for products; development of required processes and process documentation; and establishment of product verification and validation programs including monitoring and measurement. The plan also defines requirements for records necessary to demonstrate process and product conformity.

PROCEDURAL POLICIES**1. Product requirements and quality objectives**

- 1.1 Product requirements and quality objectives for product are defined and communicated in drawings and specifications, contract documents, internal and external standards, product samples and workmanship standards, and applicable legal and regulatory requirements.
- 1.2 For custom products manufactured to customer design, product requirements and quality objectives are specified in the technical documentation provided by the customer. Sales, Production Control and Quality Assurance review these specifications before acceptance of the contract and commencement of production, as instructed in Operational Procedure [QOP-72-02](#), Contract Review
- 1.3 Section 7.2 of this manual explains in more detail how customer and product requirements are determined and reviewed.

2. Product realization planning

- 2.1 Product realization planning includes, as applicable:
 - Definition and evaluation of manufacturing operations and processes,
 - Development of adequate and capable processes,
 - Identification of special processes and consideration of associated risks and consequences,

Planning of Product Realization

- Establishment and implementation of appropriate process control measures,
 - Development of instructions and training for process operators, and
 - Requirements for records necessary to demonstrate process conformity.
 - Identification of resources to support operation and maintenance of the product.
 - Quality objectives and requirements for the product.
 - Product and personal safety
 - Reliability, availability and maintainability
 - Producibility and inspect ability
 - Suitability of parts and materials used in the product
 - Selection and development of embedded software, and recycling of final disposal of the product at the end of its life.
- 2.2 Product realization plans are established in collaboration between Production, Engineering, and Quality Assurance. The plans are defined in various types of production documents, such as process flowcharts, production work orders, control plans, operator instructions, inspection checklists, etc.
- 2.3 Operational procedures related to Section 7.5, Operations, explain how outputs of product realization planning are used.
- 3. Product verification and validation planning**
- 3.1 Product verification and validation plans determine the inspection and testing program for a product, and for materials and components incorporated into the product. This includes:
- Identification of inspection and testing points,
 - Inspection and testing scope, frequency, and method,
 - Acceptance criteria, and
 - Requirements for records necessary to demonstrate product conformity.
- 3.2 Quality Assurance and Engineering are responsible for development of product verification plans. The plans are defined in various types of documents, such as product drawings and specifications, production work orders, purchasing documents, inspection and testing procedures, inspection check lists and so forth. Documents
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Planning of Product Realization

defining the inspection and testing program for a product are collectively referred to as control plans.

- 3.3 Operational Procedures QOP-74-03, Verification of Purchased Product; QOP-82-04, In-process Inspections; and QOP-82-05, Final Inspection, explain how outputs of product verification and validation planning are used.

4.1 Project Management

- 4.1.1 Program Managers have been assigned the responsibility to initiate and manage product realization, mitigate risks and meet resource and schedule restraints.

4.2 Risk Management

- 4.2.1 Program Managers are responsible to mitigate risk. Risk opportunities are listed below, but not limited to this list, they include:

- a. Long lead material exposure
- b. Disaster recovery plan
- c. On time delivery
- d. Out sourced processing
- e. Capability study
- f. FAI process
- g. Maintenance of equipment
- h. Sole source suppliers
- i. Rev Changes
- j. Critical features

4.3 Configuration Management

- 4.3.1 See 4.3

- 4.4 **Control of Work Transfers** are handled in accordance with Purchasing 7.4 and procedure QOP 74-02

Planning of Product Realization

4.4.1 See 7.5

ASSOCIATED DOCUMENTS

- [Operational Procedure QOP-72-02: Contract Review](#)
- [Operational Procedure QOP-74-03: Verification of Purchased Product](#)
- [Operational Procedure QOP-82-04: In-process Inspections](#)
- [Operational Procedure QOP-82-05: Final Inspection](#)
- [Operational Procedure QOP-71-01: RISK](#)

PRODUCT REALIZATION

Section 7.2

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Rev. Date: 11/12/10

Section Page 1

Customer-Related Processes**DISTRIBUTION:**

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GENERAL POLICY

Product requirements are determined to include customer requirements both statutory, regulatory, and other necessary requirements that may not be specified by customers. Orders are reviewed to ensure that product and order requirements are defined and can be met, and to resolve any incomplete or conflicting requirements. Verbal orders are confirmed before acceptance. Order amendments and changes are likewise reviewed and are communicated to all relevant functions. Order reviews are recorded.

Arrangements for communication with customers relating to product information, order handling, and customer feedback and complaints are defined and implemented. Where appropriate, operational procedures and instructions for these activities are established and implemented.

PROCEDURAL POLICIES**1. CUSTOMER AND PRODUCT REQUIREMENTS****1.1 Product requirements**

1.1.1 Product requirements are determined and reviewed by the Program Manager. This often involves input from Engineering, Production, Purchasing, and Quality Assurance, depending on the nature and complexity of the order, and whether a similar order has been recently processed.

1.1.2 Product requirements are determined and reviewed with regard to requirements specified by the customer and/or statutory and regulatory authorities; other relevant product requirements not specified by the customer, and the company's capacity and capability to meet all applicable requirements. Operational Procedure QOP-72-02, Contract Review, instructs on how to carry out this review. Risks are also evaluated see (QOP-71-01). This includes statutory and regulatory requirements that may be applicable.

1.2 Incomplete or conflicting requirements

1.2.1 Any incomplete or conflicting requirements are resolved with the customer before

Customer-related Processes

acceptance of the order.

1.3 Verbal orders

- 1.3.1 Verbal orders are confirmed in writing before acceptance. This may be by sending a confirming fax or e-mail.

1.4 Amendments

- 1.4.1 Change orders are received and reviewed by the same functions that are responsible for the review of the initial orders. Change orders are communicated to all functions within the organization that may be affected by the change of customer requirements. Operational Procedure QOP-72-02, Contract Review, provides instructions on how to process change orders.

1.5 Record

- 1.5.1 Reviews of product requirements are recorded. Records are entered into the record of contract review database. Establishment and maintenance of contract review records are explained in Operational Procedures QOP-72-02, Contract Review, and QOP-42-03, Control of Quality Records.

2. CUSTOMER COMMUNICATION

2.1 Inquiries and order handling

- 2.1.1 Program management is responsible for receiving customer inquiries and orders. Inquiries and orders for custom products are reviewed by the Program Manager. Engineering, Production, Purchasing, and Quality Assurance may be called to assist with the review of orders for custom products. Data from this review is recorded in the Record of Contract Review Database.
- 2.1.2 Handling of order amendments is controlled to the same extent as the handling of initial orders. Amendments are reviewed to verify that the new or modified requirements can be met, and a confirmation of acceptance is sent back to the customer.
- 2.1.3 Operational Procedure QOP-72-02 instructs how to handle inquiries, orders, and amendments for custom products.

Customer-related Processes

2.2 Customer feedback and complaints

- 2.2.1 Program Management and the Quality Assurance departments are responsible for receiving and processing customer feedback and complaints. Received customer complaints are recorded in the complaints log. Ref: to [PWI 74-01](#) (CAB activity.)
- 2.2.2 Customer feedback and complaints are classified into categories to allow for better tracking of trends and evaluating improvement in specific aspects. Complaints are communicated to relevant functions within and outside the organization. Program Management, the responsible department, and Quality Assurance decide how to respond to the customer and, when appropriate, what corrective or preventive actions should be implemented internally.
- 2.2.3 Procedure QOP-72-03, Customer Feedback and Complaints, provides detailed instructions how to receive, process, and respond to customer feedback and complaints.

ASSOCIATED SECTIONS AND DOCUMENTS

- [Operational Procedure QOP-72-02: Contract Review](#)
- [Operational Procedure QOP-72-03: Customer Feedback and Complaints](#)
- [Operational Procedure QOP-71-01: Risk](#)
- [Operational Process Work Instruction PWI 74-01 In-House and Supplier Nonconformances](#)

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| PRODUCT REALIZATION |
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GENERAL POLICY

H. M. Dunn Co. does not engage in the design activity of any product. All product design is furnished by the customer and this section has been claimed as an exclusion under section 0.3 of this manual.

- [Quality Manual section 0.3: Exclusions](#)

PRODUCT REALIZATION

Section 7.4

Section Rev.: C

Rev. Date: 02/16/10

Section Page 1

Purchasing**DISTRIBUTION:**

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GENERAL POLICY

H. M. Dunn Co. does not approve all of its vendors/suppliers and purchases from only those that can satisfy quality requirements and are on the Approved Supplier List. In most cases the suppliers are chosen by our customers and the customer has preformed the formal quality audits to qualify their suppliers, they in-turn specify on their drawings or manufacturing instructions which suppliers are to be used.

In those cases where the customer has not specified the approved supplier HM Dunn will qualify them in accordance with procedure QOP-74-01 Approved Suppliers

Quality performance of suppliers is monitored VIA the supplier report card. Purchasing documents clearly and completely describe ordered products, including quality requirements. Purchasing documents are reviewed and approved prior to release. Purchased products are verified before they are used or shipped. HM Dunn is responsible for the conformity of all products purchased from suppliers, including product from sources defined be the customer.

PROCEDURAL POLICIES**1. Supplier evaluation**

1.1.1 H. M. Dunn Co. helps evaluate its suppliers and purchases only from those who can satisfy quality requirements. Purchasing and Quality Assurance monitor supplier performance. Suppliers who meet requirements are entered on the Approved Supplier List. The process for evaluating and selecting suppliers is defined in Operational Procedure QOP-74-01, Supplier Evaluation and Monitoring. H. M. Dunn Co. is responsible for the quality of all products purchased from suppliers, including customer-designated sources.

1.2 When required by contract, H. M. Dunn Co. will use customer-approved sources.

Purchasing

2. Supplier quality performance monitoring

- 2.1 Quality Assurance continually monitors supplier quality performance. Suppliers showing inadequate performance are requested to implement corrective actions. If the corrective actions are not implemented and/or are not effective, the supplier in conjunction with our customer may be removed from the Approved Supplier List. The process for monitoring suppliers is defined in Operational Procedure QOP-74-01, Supplier Evaluation and Monitoring.

3. Approved supplier list

- 3.1 Purchasing / Document control maintains an approved supplier list. Orders may only be placed with vendors that are on the list.
- 3.2 The function having the responsibility for approving supplier quality systems has the authority to disapprove the use of sources.
- 3.3 Determine and manage Risk when selecting suppliers.

4. Purchasing information

- 4.1 Purchasing documents are prepared by the Purchasing department. The documents clearly and completely describe ordered products, including precise product identification and quality requirements. Purchasing documents are reviewed and approved prior to release. The processes for the preparation, review, and approval of purchasing documents are defined in Operational Procedure QOP-74-02, Purchasing.

5. Verification of purchased product

- 5.1 Purchased products are verified prior to use in production and/or dispatch to customers. Quality Assurance is responsible for selecting appropriate methods for purchased product verification and acceptance. Operational Procedure QOP-74-03, Verification of Purchased Product, defines the processes for verifying, identifying and releasing purchased products.
- 5.2 When verification of purchased product is to be performed at supplier's premises, purchasing documents specify the intended verification arrangements and method of product release.

ASSOCIATED DOCUMENTS

Purchasing

- [Operational Procedure QOP-74-01: Supplier Evaluation and Monitoring](#)
- [Operational Procedure QOP-74-02: Purchasing](#)
- [Operational Procedure QOP-74-03: Verification of Purchased Product](#)

PRODUCT REALIZATION

Section 7.5

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Section Page 1

Production

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GENERAL POLICY

Product and process information and appropriate work instructions are established and are communicated to relevant personnel. Production processes are monitored and controlled, and are validated where appropriate. Machines and equipment used in production and for monitoring and measurement activities are maintained. Methods for product release and delivery are defined.

Materials, components, parts, subassemblies, and finished products are identified. When required, traceability of materials and processes is recorded and maintained. Inspection and test status of product is identified to ensure that only product that has passed the required inspections is used, installed, or dispatched.

Customer-supplied products are normally controlled in the same manner as are purchased products. Customer-owned tools, equipment, software, or other property are marked to indicate ownership. Loss, damage, or unsuitability of a customer's product is recorded and reported to the customer.

Appropriate handling, storage and preservation methods are implemented to prevent product damage or deterioration. Receipt and dispatch to and from storage areas are controlled. The condition of products in stock is regularly assessed. Product packaging materials and methods are specified and controlled.

PROCEDURAL POLICIES**1. OPERATIONS CONTROL****1.1 Product and process information**

- 1.1.1 Information specifying product characteristics is communicated to production in the form of drawings, specifications, samples, instructions, work orders, and product-specific templates and other tooling. This information is controlled in accordance with Operational Procedure QOP-42-02, Control of Documents. Engineering, Production and Quality Assurance determine the scope, form, and distribution of product specifications.

Production

Production process verification

First Article Inspection will be carried out in accordance with Operational Procedures QOP-82-05 Final Inspection. Moved from 8.2.4.1

A representative item from the first production run of a new part of assembly to verify that the production processes, production documentation and tooling are capable of producing parts and assemblies that meet requirements. This process shall be repeated when changes occur that invalidate the original results (e.g., engineering changes, manufacturing process changes, tooling changes).

- 1.1.2 Product and process information required by process operators is communicated through the work order or is included in work instructions. Where required for custom products, engineering drawings and specifications may be enclosed with the work order. Operational Procedures QOP-75-01, Production Control, and QOP-75-02, Work Instructions, explain how to establish and use these documents.

1.2 Work instructions

- 1.2.1 Work instructions and workmanship standards may be in the form of manuals, procedures, sheets, flow charts, travelers, routers, work orders, inspection documents, posted signs, or samples. They instruct on how to carry out a process or perform an operation or task. The need for work instructions is evaluated on the basis of criticality, importance and complexity of the process; the ability to verify results of the process; operator qualifications; and history of quality problems associated with the process. Workmanship standards are provided when acceptability of the process output can only be determined by comparison with a standard sample.
- 1.2.2 Procedure QOP-75-02, Work Instructions, specifies criteria for determining when work instructions are needed, and provides guidelines for issuing, authorizing and controlling work instructions.

1.3 Equipment maintenance

- 1.3.1 Maintenance of key process equipment, machines, hardware, and software are addressed in Section 6.3 of this manual and in Operational Procedure QOP-63-01, Equipment Maintenance.

1.4 Measuring and monitoring equipment

- 1.4.1 Requirements for measuring and monitoring equipment are determined by Production

Production

and Quality Assurance. This is in accordance with process control and product verification programs defined in product realization planning (refer to Section 7.1 of this manual).

- 1.4.2 Control system for measuring and monitoring equipment is defined in Operational Procedure QOP-76-01, Measuring and Monitoring Equipment.

1.5 Process monitoring and control

- 1.5.1 Processes are monitored and controlled through variety of approaches, activities and techniques. The system is designed to control:

- Information, material and human (operator) input into the process;
- Technology, tools and equipment used;
- Process environment and performance; and
- Process output.

Process monitoring activities are further defined in Section 8.2 of this manual. Activities related to process control are defined in Operational Procedures QOP-75-01, Production Control; PWI-75-02, Work Instructions; and QOP-82-03, Statistical Process Control.

1.6 Product release and delivery

- 1.6.1 Products are released for delivery only after all specified activities have been satisfactorily completed and conformity of the product has been verified. Operational Procedure QOP-82-05, Final Inspection, define the system for final product verification and release.

2. VALIDATION OF PROCESSES

2.1 Special processes

- 2.1.1 Processes where the resulting output cannot be verified by subsequent measurement or monitoring are designated as special processes.
- 2.1.2 Production and Quality Assurance are responsible for identifying, validating, and documenting special processes. Where applicable, Engineering may assist with establishing validation specifications and testing of samples.

Production

2.2 Validation

- 2.2.1 Special processes are validated and controlled by applicable methods, such as destructive testing of product samples, equipment and personnel qualification, and work instructions and process procedures. Customer approval must be obtained when required by contract prior to performing the special process.
- 2.2.2 Production and Quality Assurance are responsible for selecting and implementing appropriate process validation and control measures for each special process. At a minimum, all special processes are documented in work instructions. Significant operations and parameters of special processes will be controlled by specific documented process specifications which shall include a revision history.
- 2.2.3 Special process records are established and maintained as appropriate. Depending on the control measures implemented, these records may include process qualification and validation reports, equipment qualification and maintenance records, SPC charts, first article inspections and tests, operator qualification and training records, and so forth.

3. IDENTIFICATION AND TRACEABILITY

3.1 Product identification

- 3.1.1 Purchased products are identified with unique numbers throughout the product realization, codes, or names. The identification is the same as, or is cross-referenced with, the designations used in drawings, specifications, bills of materials, parts lists, purchase orders, etc. Purchased products are identified by marking, labeling, or tagging the products or their packaging, or by identification of the area where the products are held.
 - 3.1.2 During all stages of production, products are usually identified by work orders and other documents that accompany them through the production cycle. Parts and components may also be identified by labels or tags, or the containers in which they are held.
 - 3.1.3 Final products are identified by their part number, which is labeled or marked on the products and/or is printed on the primary product packaging.
 - 3.1.4 Rules and activities related to identification of products are governed by Operational Procedure QOP-75-03, Product Identification and Traceability. Additional relevant procedures are: QOP-75-01, Production Control; QOP-74-03, Verification of
-

Production

Purchased Product; QOP-82-05, Final Inspection.

3.2 Traceability

- 3.2.1 When required by contracts, laws and regulations, or voluntary standards traceability is implemented to the extent specified. Traceability may also be implemented for internal reasons, to facilitate corrective action.
- 3.2.2 As required, traceability may apply to materials, components, parts, production processes, environmental conditions, inspection and testing, and personnel responsible for processing and verification of products. The scope of traceability is documented in product manufacturing specifications or the production work order.
- 3.2.3 Activities related to establishment and maintenance of traceability are regulated by Operational Procedures QOP-75-03, Product Identification and Traceability, and QOP-75-01, Production Control.

3.3 Inspection status identification

- 3.3.1 Following every inspection or test, products are identified to indicate whether they have passed or failed the inspection. This is to prevent nonconforming product from being used or dispatched.
- 3.3.2 QC inspectors, receiving clerks, and production personnel authorized to carry out inspections and testing are responsible for identifying product inspection status. All personnel handling products are responsible for maintaining the identification.
- 3.3.3 Products that have passed the receiving inspection are moved to the material stockroom or designated material staging areas in production. Where intermingling with other product is a possibility, the inspected items are also appropriately tagged or labeled. Detailed rules for identifying inspection status of purchased products are provided in procedure QOP-74-03 Verification of Purchased Product.
- 3.3.4 Status of an in-process inspection is usually identified by a sign-off (stamp or initial) in the work order accompanying the product. Operational procedure QOP-75-09 Inspection and Test Status provides details on how stamps are controlled. The status may be also identified by tagging or labeling, or holding products in designated containers. Operational procedure QOP-82-04, In-process Inspections, provides more detailed instructions.
- 3.3.5 Products that pass the final inspection are placed in the finished product area that is designated and used only for this purpose. In addition, finished products are labeled

Production

with YELLOW sticker or tag to signify that the parts are ready for processing. After parts return from processing they are given a final inspection after processing and their release is signed off in the work order on the line where the final inspection is called out. Rules for identifying inspection status of finished products are provided in procedure QOP-82-05, Final Inspection.

- 3.3.6 Products that fail any inspections or tests are labeled with RED sticker or tag, and are segregated and/or quarantined. Whenever a nonconforming product is identified, the nonconformity is documented using a product nonconformity report. Procedure QOP-83-01, Control of Nonconforming Product, instructs on how to identify and process nonconforming product.

4. CUSTOMER PROPERTY

4.1 Receiving

- 4.1.1 Customer-supplied products are received and inspected following the same procedure that applies to purchased products, i.e., Operational Procedure QOP-74-03, Verification of Purchased Product. In the event the supplied products fail receiving inspection, or are not suitable for any other reason, the customer is contacted.

4.2 Marking, storage, and handling

- 4.2.1 Marking, storage, handling, and preservation of customer-supplied products follow the same procedures that apply to purchased products. The applicable procedures are QOP-75-03, Product Identification and Traceability; QOP-75-04, Handling, Storage, Packaging, Preservation and Delivery; and QOP-75-05, Storage Areas.
- 4.2.2 Customer-owned tooling and returnable packaging are permanently marked so that ownership of each item is visually apparent.
- 4.2.3 Customer's software, documents, and other intellectual property are protected to the same extent, as would internal HMD's documents of similar content, unless there are contractual requirements for special measure to protect customer's intellectual property and personal data.

4.3 Special requirements

- 4.3.1 When specified in a contract, special handling instructions from customers will take precedent over the company's standard procedures.

Production

4.4 Loss or damage

- 4.4.1 Customers are contacted in the event of loss, damage, deterioration, or unsuitability of their products.

5. PRESERVATION OF PRODUCT

5.1 Product handling and preservation

- 5.1.1 Production is responsible for the product handling and preservation; and in particular for ensuring that containers holding products are suitable and are in good condition, that equipment used for internal transportation of products is well maintained and is properly operated, and that the products are adequately protected during production and storage in order to maintain conformity to requirements. As applicable, preservation shall include identification, handling. Preservation where applicable will also be in accordance with product specifications and applicable Statutory and Regulatory requirements. Procedure QOP-75-04, Handling, Storage, Packaging, Preservation, and Delivery describes in detail how these policies are implemented.

5.2 Storage

- 5.2.1 Stockrooms, storage, staging and holding areas are controlled by the department that brings in new stock or uses the area. Only products that are properly identified and that have passed required inspections are authorized to enter and leave the stockrooms
- 5.2.2 When special storage conditions are specified (for example, temperature or humidity), products are stored in special rooms, boxes, or containers where the specified conditions can be continuously maintained. These special conditions are monitored to ensure that they are maintained without interruption and that the product is not compromised at any time.
- 5.2.3 Products with limited shelf life are identified with expiration dates. These perishable products are also rotated in the stockroom to ensure that the oldest product is used first.
- 5.2.4 Material and finished product stockrooms are controlled using an inventory management system. The system can report available in stock quantities, product and location. The system is used to optimize and minimize inventory levels.

Packaging and labeling - The specifications are compatible with requirements of commonly used carriers and for intended means of delivery (ground, sea, air).

Production

Packaging specifications are documented in drawings, written standards, and/or packaging instructions. Packaging specifications are maintained and controlled by Shipping.

- 5.3.5 Packaging and labeling activities are governed by Customer Procedures or Commercial packaging standards.

5.4 Shipping and delivery

- 5.4.1 Moved to 8.2.4 paragraph 4.3.2

ASSOCIATED DOCUMENTS

- [Operational Procedure QOP-63-01: Equipment Maintenance](#)
- [Operational Procedure QOP-75-01: Production Control](#)
- [Operational Procedure QOP-75-02: Work Instructions](#)
- [Operational Procedure QOP-75-03: Product Identification and Traceability](#)
- [Operational Procedure QOP-75-04: Handling, Storage, Packaging, Preservation and Delivery](#)
- [Operational Procedure QOP-74-03: Verification of Purchased Product](#)
- [Operational Procedure QOP-82-04: In-process Inspections](#)
- [Operational Procedure QOP-82-05: Final Inspection](#)
- [Operational Procedure QOP-83-01: Control of Nonconforming Product](#)
- [Operational Process Work Instruction PWI 82-07 Inspection Plan for Production lots](#)

PRODUCT REALIZATION

Section 7.6

Section Rev.: B

Rev. Date: 05/13/10

Section Page 1

Measuring and Monitoring Equipment**DISTRIBUTION:**

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GENERAL POLICY

Appropriate measuring and monitoring instruments are maintained and selected to ensure that measurement capability is consistent with the measurement requirements. Equipment used for assuring product conformity is calibrated using calibration standards traceable to the national standard. Calibration status of measuring equipment is identified with calibration stickers. Measuring equipment is properly maintained and its placement and use are controlled.

PROCEDURAL POLICIES**1. Controlled and uncontrolled equipment**

1.1 The scope of the calibration control system extends to the measuring and test equipment, comparative reference hardware (such as gauges and templates), and test software used for:

- Setup and monitoring of production processes;
- Monitoring of environmental conditions;
- Verification of product conformity; and
- Operations where defined accuracy of a measurement is required to assure product conformity.

1.2 Equipment used for other purposes may be exempted from calibration. Those items such as (ex. gauges, etc.), that comes as part of standard, purchased (OEM) equipment and does not directly affect integrity/acceptability or verification of product will not require labeling as to calibration status by H.M. Dunn Co. Inspection equipment such as gage pins, snap gages etc., must be verified for accuracy before each use.

Measuring and Monitoring Equipment

2. Measurement identification and selection of equipment

- 2.1 Identification of measurements to be made and the tolerance of the measured characteristics are documented in control plans and/or in product drawings and specifications.
- 2.2 Gauges, instruments, and other measuring and monitoring equipment are selected on the basis of their capability to provide the necessary accuracy of the measurement. Quality Assurance is responsible for selecting appropriate measuring and monitoring equipment.

3. Equipment calibration and maintenance

- 3.1 Quality Assurance is responsible for calibrating and maintaining measuring and monitoring equipment. All active equipment is inventoried in a controlled list, indicating equipment calibration status and location.
- 3.2 Measuring equipment is calibrated using written instructions, unless calibration is simple and obvious. Only calibration instruments and standards having known relationship to the nationally recognized standards are used for calibrating measuring and test equipment.
- 3.3 Calibration is recorded in a calibration certificate and the calibrated equipment is labeled with a calibration sticker.
- 3.4 Calibration-related activities are regulated by Procedure QOP-76-01, Measuring and Monitoring Equipment.

4. Validation of software

- 4.1 In-house developed inspection, test, and monitoring software is validated before it is used for product assurance or verification. Commercial software is purchased with validation certificates where available. Software is revalidated or re-certified when conditions for which it was initially validated are materially changed.

ASSOCIATED DOCUMENTS

- [Operational Procedure QOP-76-01: Measuring and Monitoring Equipment](#)

Planning of Monitoring and Measurement**DISTRIBUTION:**

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GENERAL POLICY

Measurement and monitoring activities required to demonstrate conformity to product requirements, and to achieve improvement, are planned and defined. When applicable, statistical techniques are used for analyzing measurement data.

PROCEDURAL POLICIES**1. Planning**

- 1.1 Measurement and monitoring activities to assure and verify product conformity are defined in engineering specifications and drawings, production work orders, inspection checklist, testing procedures, and process control procedures. These activities are further defined in this manual in Section 8.2, Measurement and Monitoring, and in several operational procedures referenced at the end of this section.
- 1.2 The effectiveness of the quality system is monitored by internal audits and by measuring quality performance and customer satisfaction. Results of these activities are reported to the top management and are used to identify opportunities for improvement. Activities related to internal audits and to measuring customer satisfaction and quality performance are further defined in this manual in Sections 8.2.

2. Statistical techniques

- 2.1 Statistical techniques may be applied to:
 - Set up of process equipment;
 - Testing and validation of processes;
 - Control of process stability and performance (SPC);
 - Establishment of sampling plans for inspections and testing;
 - Evaluation of measurement systems; and

Planning of Monitoring and Measurement

- Analysis of quality performance and other company-level data.
- 2.2 Departmental managers are responsible for identifying the need for using statistical techniques in their departments and in other activities for which they are responsible. Quality Assurance may be called upon to assist other departments in selecting and documenting specific techniques.

ASSOCIATED DOCUMENTS

- [Operational Procedure QOP-82-01: Customer Satisfaction](#)
- [Operational Procedure QOP-82-02: Internal Audit](#)
- [Operational Procedure QOP-82-03: Statistical Process Control](#)
- [Operational Procedure QOP-82-04: In-process Inspections](#)
- [Operational Procedure QOP-82-05: Final Inspection](#)
- [Operational Procedure QOP-74-03: Verification of Purchased Product](#)

Monitoring and Measurement**DISTRIBUTION:**

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GENERAL POLICY

Customer satisfaction is the principal objective of the quality system, and the level of customer satisfaction is the most important measure of the effectiveness of the system. Customer satisfaction is measured by collecting and analyzing direct customer feedback, and by measuring secondary indicators of customer satisfaction. Customer satisfaction data is used by the top management to identify opportunities and priorities for improvement.

All activities and areas relevant to the quality system are audited at least once a year. Audits (Programme) are scheduled on the basis of the status and importance of the activity. Internal auditors are independent of those having direct responsibility for the audited activity. Identified nonconforming conditions are brought to the attention of the responsible managers and corrective actions are implemented in response to audit findings.

Quality system processes are monitored to ensure that they achieve planned results. Relevant product characteristics are measured through inspections, tests, and other product verification activities, as specified in control plans. Evidence of product conformity is recorded. Products are released for delivery only after all specified activities have been satisfactorily completed and verified.

PROCEDURAL POLICIES**1. CUSTOMER SATISFACTION****1.1 General**

- 1.1.1 Program Management is responsible for developing suitable indicators of customer satisfaction, and for defining methods for collecting and analyzing the pertinent information.
- 1.1.2 Information and data pertaining to customer satisfaction are collected from several sources. Specifically, these are:
 - Customer feedback and surveys,
 - Awards and recognitions,

Monitoring and Measurement

- Product returns,
- Customer data on delivered product quality,
- User opinion surveys,
- Lost business analysis
- Compliments.

1.1.3 Operational Procedure QOP-82-01, Customer Satisfaction, defines the system for collecting and analyzing the pertinent information and data, and for reporting results to the top management.

1.2 Customer feedback and surveys

1.2.1 Customer complaints, spontaneous expressions of satisfaction, and other unsolicited customer feedback are collected and processed by the Program Management department. These activities are defined in Operational Procedure QOP-72-03. The resulting data is periodically analyzed and is presented and discussed at management review meetings.

1.2.2 Program Management conducts customer satisfaction surveys. Survey results are reviewed and are combined with customer satisfaction data for compatible aspects of products and services. Conclusions are presented and discussed at management review meetings.

1.3 Awards and recognitions

1.3.1 H. M. Dunn Co. encourages customers to rate its performance, and seeks to participate in customer's award and recognition programs. These recognitions and ratings are considered as an important input into determining customer satisfaction.

1.4 Product returns

1.4.1 Information about the rate of product returns is extracted from accounting and quality records. Results and trends are reported and analyzed at management review meetings.

Monitoring and Measurement

2. INTERNAL AUDIT

2.1 Planning and scheduling

2.1.1 ISO 9000 Program Coordinator establishes an internal audit plan and schedule in accordance with Procedure QOP-82-02, Internal Quality Audits. Every activity and area is audited at least once a year. Selected activities are audited more frequently, depending on their importance and quality performance history.

2.2 Audit team and preparation for audit

2.2.1 Only personnel independent of the audited activities are assigned to conduct internal audits.

2.2.2 Auditors prepare for audits by reviewing applicable standards and procedures, analyzing quality records, and establishing questionnaires and checklists. Selection of auditors and preparation for the audit are explained in Procedure QOP-82-02, Internal Quality Audits.

2.3 Conducting the audit

2.3.1 Conducting the audit, auditors seek objective evidence indicating whether the audited activities comply with the requirements of the documented quality system and ISO 9001 and AS 9100, and whether the quality system is effective. The evidence is collected by observing activities, interviewing personnel, and examining records.

2.3.2 Nonconforming conditions are documented and recorded using the audit nonconformity report. Refer to Procedure QOP-82-02.

2.3.3 Audits are conducted in a way that minimizes disruption of the audited activities.

2.3.4 Audits must include contractual requirements.

2.4 Corrective action and follow up

2.4.1 When nonconforming conditions are identified, the manager responsible for the affected area or activity is requested to propose and implement any necessary corrections and corrective action. Implementation and effectiveness of the action are verified by a follow-up audit. The audit nonconformity report form is used for monitoring and recording the implementation of the corrective actions.

Monitoring and Measurement

2.5 Reporting

- 2.5.1 When the auditing cycle is completed, all nonconformity reports established during the cycle are compiled and analyzed, and are presented at the management review meeting.

3. MONITORING OF QUALITY SYSTEM PROCESSES

3.1 Process monitoring

- 3.1.1 Quality system processes are monitored by variety of approaches and techniques, as appropriate for a particular process and its importance. These include:

- Conducting internal audits of the quality system;
- Monitoring trends in corrective and preventive action requests;
- Analyzing product conformity and other quality performance data and trends;
- Measuring and monitoring customer satisfaction;

3.2 Response actions

- 3.2.1 When a quality system process does not conform with requirements, Quality Assurance may request the manager responsible for the process to implement a corrective action, to evaluate whether the process nonconformity has resulted in product nonconformity and identify and control the nonconforming product in accordance with Operational Procedure QOP-83-01 Control of Nonconforming Product and Operational Procedure QOP-85-02, Corrective and Preventive Action.

- 3.2.2 *NOTE: When determining suitable methods, it is advisable the organization should consider the type and extent of monitoring or measurement appropriate to each of its processes in relation to their impact on the conformity to product requirements and on the management system*

4. MONITORING AND MEASUREMENT OF PRODUCT

4.1 Product verification

- 4.1.1 Inspection and testing program for a product is defined in various types of documents, such as product drawings and specifications, production work orders, purchasing documents, inspection and testing procedures, and so forth. Documents defining the inspection and testing program for a product are collectively referred to as control

Monitoring and Measurement

- plans. Section 7.1 of this manual defines the process for establishing control plans.
- 4.1.2 **Verification of purchased product:** All purchased products are subjected to a visual inspection by the receiving clerk, and then some designated products are subjected to a more detailed and technical QC inspection. Operational Procedure QOP-74-03, Verification of Purchased Product, sets forward detailed rules for performing receiving and QC inspections.
- 4.1.3 **In-process inspections:** In-process inspections may be in the form of first article inspections, operator or QC inspections, or statistical process control (SPC). The focus is on defect prevention rather than detection. In-process inspection activities are regulated by Operational Procedures QOP-82-04, In-process Inspections, QOP-82-03, Statistical Process Control.
- 4.1.4 **Final inspection:** Finished products are subjected to the final QC inspection. First, inspectors verify that all specified receiving and in-process inspections have been carried out satisfactorily. Then they perform the remaining inspections and tests necessary to complete the evidence of product conformity. Only products that pass the final inspection can be shipped. Procedure QOP-82-05, Final Inspection, regulates these activities.
- 4.1.5 **First Article Inspection:** First Article Inspection will be carried out in accordance with the International Standard AS 9102 and Operational Procedures QOP-82-05 Final Inspection. Moves to 7.5 and drops Ref to AS9102
- 4.2 Inspection, test and monitoring records**
- 4.2.1 Results of inspections and tests are recorded. Instructions for establishing records for specific types of inspections are defined in Operational Procedures QOP-74-03, QOP-82-04, and QOP-82-05. Filing and maintenance of inspection records are regulated by Operational Procedure QOP-42-03, Control of Quality Records.
- 4.3 Product release**
- 4.3.1 Products are released for delivery only after all specified activities have been satisfactorily completed and conformity of the product has been verified. Only personnel performing final product inspections and tests have the authority to release products. The identity of the person authorizing product release is recorded. Operational Procedure QOP-82-05, Final Inspection, defines specific methods for product release.
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Monitoring and Measurement

- 4.3.2 Shipping of finished products is initiated by the shipping order. The order identifies the shipping consignee address, shipping due date, products to be shipped, labeling requirements, and transportation mode or carrier. Before products are dispatched, the shipping supervisor verifies that the shipment contains the same products and quantities as specified in the shipping order, and that packaging and labeling conform with customer and/or carrier requirements. Only orders that have been verified and signed off by the shipping supervisor can be loaded for shipment.

Activities related to shipping and delivery operations are regulated by Procedure QOP-75-04, Handling, Storage, Packaging, Preservation and Delivery.

ASSOCIATED DOCUMENTS

- [Operational Procedure QOP-82-01: Customer Satisfaction](#)
- [Operational Procedure QOP-82-02: Internal Quality Audits](#)
- [Operational Procedure QOP-82-03: Statistical Process Control](#)
- [Operational Procedure QOP-82-04: In-process Inspections](#)
- [Operational Procedure QOP-82-05: Final Inspection](#)
- [Operational Procedure QOP-74-03: Verification of Purchased Product](#)

Control of Nonconforming Product**DISTRIBUTION:**

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GENERAL POLICY

Nonconforming product is identified, documented, evaluated, and prevented from being used or shipped. Repaired or reworked products are reinspected. Appropriate actions are taken when product nonconformity is identified after delivery. When appropriate, corrective and preventive actions are implemented to prevent recurrence of identified nonconformities.

PROCEDURAL POLICIES

- 1.1 H. M. Dunn Co. where applicable identifies and documents all product nonconformities, regardless of how insignificant they seem to be or how easily they can be repaired or reworked. Product nonconformity records are invaluable for tracking performance and trends, and for identifying areas where corrective or preventive actions should be implemented.
 - 1.2 Nonconforming products are documented using a nonconformity report IRR / CCA. It describes the nonconformity, documents the disposition decision, and records close-out of follow-up activities (reinspection, concessions, corrective actions, etc.). The use of nonconformity report and its processing are explained in Operational Procedure QOP-83-01, Control of Nonconforming Product.
 - 1.3 To prevent nonconforming products from being used or shipped, the products are marked with a RED tag and are segregated.
- 2. Nonconformity review**
- 2.1 The Quality Assurance Manager or his designees will make the decision to rework a nonconforming product when it is obvious that the product can be returned to engineering requirements. All other nonconformities must be documented and submitted to customer for disposition.
 - 2.2 When material is customer furnished all discrepancies must be dispositioned by customer. HMD purchased material for trial / tape proof parts etc, may be deemed scrap by the Quality Assurance Manager when applicable.

Control of Nonconforming Product

- 2.3 Detailed outline for nonconformity review is provided in Operational Procedure QOP-83-01, Control of Nonconforming Product.
- 3. Re-verification of repaired or reworked product**
- 3.1 Repaired or reworked products are reinspected in accordance with applicable engineering and or customer disposition instructions.
(Procedures QOP-74-03, Verification of Purchased Product; QOP-82-04, In-process Inspections; or QOP-82-05, Final Inspection, as applicable).
- 4. Product returns and recalls**
- 4.1 When product nonconformity is reported by the customer as an escape, the customer is instructed to return the product, or a part, to HMD for corrective measures.
- 4.2 When product nonconformity is detected internally after delivery, customers are immediately informed of issue and consulted as to further action needed.

ASSOCIATED DOCUMENTS

- [Operational Procedure QOP-83-01: Control of Nonconforming Product](#)
- [Operational Procedure QOP-74-03: Verification of Purchased Product](#)
- [Operational Procedure QOP-82-04: In-process Inspections](#)
- [Operational Procedure QOP-82-05: Final Inspection](#)
- [PWI 7401 IRR / CCA for In-House and Supplier Nonconformances](#)

Analysis of Data**DISTRIBUTION:**

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GENERAL POLICY

H. M. Dunn Co. collects, complies and analyzes information and data required for evaluating the suitability and effectiveness of the quality system and for identifying opportunities for continual improvement.

PROCEDURAL POLICIES**1. General**

- 1.1 Data and information recorded in quality records are compiled and analyzed periodically to determine trends in the performance and effectiveness of the quality system and to identify opportunities for improvement.
- 1.2 Quality Assurance is responsible for coordinating these activities, and for reporting conclusions and trends to the top management. This is usually done within the framework of management reviews of the quality system, in accordance with Operational Procedure QOP-56-01, Management Review.

2. Scope

Following categories of information and data are recorded, compiled and analyzed:

- 2.1 Characteristics of processes and products:
 - Process performance variation — recorded in process control charts (Procedure QOP-82-03) and evaluated by Production Engineering.
 - Cycle times — recorded in production work orders (Procedure QOP-75-01) and reviewed for trends by Production.
 - Unscheduled machine downtime (including cost) — recorded in equipment maintenance log (Procedure QOP-63-01) and reviewed for trends by Production Engineering.
- 2.2 Conformity to product and customer requirements:

Analysis of Data

- Scrap, rework, repair rates (including cost) — recorded in product nonconformity reports (Procedure QOP-83-01) and reviewed for trends by QA.
- On-time delivery performance — recorded in delivery performance reports (Procedure QOP-75-06) and evaluated for trends by Program Management and executive management.

2.3 Suppliers:

- Supplier quality performance — recorded in subcontractor quality performance files (Procedure QOP-74-01) and evaluated for trends by Purchasing and Quality Assurance.

2.4 Customer satisfaction and dissatisfaction:

- Customer satisfaction levels — recorded in customer satisfaction surveys and reports (Procedure QOP-82-01) and evaluated for trends by executive management.
- Customer complaints — recorded in customer complaints log (Procedure QOP-72-03) and evaluated for trends by executive management.

2.5 Quality System:

- Effectiveness of training — recorded in training evaluation reports (Procedure QOP-62-01) and evaluated for trends by departmental managers.
- Effectiveness of quality system — recorded in internal audit reports (Procedure QOP-82-02) and evaluated for trends by executive management.

ASSOCIATED DOCUMENTS

- [Operational Procedure QOP-56-01: Management Review](#)
- [Operational Procedure QOP-85-01: Continual Improvement](#)

Continual Improvement**DISTRIBUTION:**

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GENERAL POLICY

H. M. Dunn Co. deploys continual improvement philosophy throughout the entire organization. The improvement effort is driven by goals defined in the quality policy and quality objectives. Improvement opportunities are identified by analyzing quality performance data and information. Improvement projects are defined and implemented through the system of corrective and preventive actions and management review actions.

Causes of identified nonconformities are investigated and, where appropriate, corrective actions are implemented to ensure that nonconformities do not recur. Preventive actions are implemented to eliminate the causes of potential nonconformities. Corrective and preventive actions taken are recorded and are followed up to ensure that they have been properly implemented and that they are effective.

PROCEDURAL POLICIES**1. Continual Improvement**

- 1.1 H. M. Dunn Co. continually improves the effectiveness of the quality management system through the use of the quality policy, quality objectives, audit results, analysis of data, corrective and preventive actions and management review. Operational Procedure QOP-85-01, Continual Improvement, defines this process.
- 1.2 Internal audit results and quality performance data are analyzed by management review to assess the effectiveness of the quality system and current organizational performance. Opportunities and priorities for improvement are identified by comparing present quality performance to goals and aspirations defined in the quality policy. This process is defined in Operational Procedure QOP-56-01, Management Review.
- 1.3 Improvement projects are defined either as corrective and preventive actions or as quality objectives. These processes are defined in Operational Procedures QOP-85-02, Corrective and Preventive Actions, and QOP-54-01, Quality Objectives, respectively.

Continual Improvement

2. Corrective and preventive action

- 2.1 H. M. Dunn Co. takes corrective actions to eliminate causes of actual nonconformities in order to prevent their recurrence. The company also takes preventive actions to eliminate causes of potential nonconformities in order to prevent their occurrence.
- 2.2 Preventive actions are taken when there are trends of decreasing quality capability and/or effectiveness of the quality system that create a risk for a potential nonconformity. Corrective actions are used when an actual nonconformity is identified.
- 2.3 Processes for initiating, implementing and verifying the effectiveness of corrective and preventive actions are defined in Operational Procedure QOP-85-02, Corrective and Preventive Action.

ASSOCIATED SECTIONS AND DOCUMENTS

- [Operational Procedure QOP-54-01: Quality Objectives](#)
 - [Operational Procedure QOP-56-01: Management Review](#)
 - [Operational Procedure QOP-85-01: Continual Improvement](#)
 - [Operational Procedure QOP-85-02: Corrective and Preventive Action](#)
 - [Operational Procedure QOP-85-03: Preventive Action](#)
-