

SID RICHARDSON CARBON CO.  
201 MAIN STREET  
FORT WORTH, TEXAS 76102

# QUALITY ASSURANCE MANUAL

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Approved

By: *William R Jones*  
President

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- a. Quality Organization Chart
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- c. Revision History
- d. Manual Distribution List (Intranet Only).

*Note: Each Separate appendix uses inclusive page numbering.*

### **III. OWNERSHIP**

This QA Manual is the property of Sid Richardson Carbon Co. (hereinafter referred to as SRCC). All rights, privileges, and obligations associated with this manual belong to SRCC, including the exclusive right to make changes and issue revisions as deemed appropriate.

The policies and procedures described in the QA Manual are applicable as appropriate to the following SRCC locations.

- 1. Corporate Office  
201 Main Street  
Fort Worth, TX 76102**
- 2. Fort Worth Research Center  
4825 North Freeway  
Fort Worth, TX 76106**
- 3. AR&D Pilot Plant  
Located at Big Spring Plant**
- 4. Sales and Technical Service Office  
3560 W. Market Street, Suite 420  
Akron, OH 44333**
- 5. Addis Carbon Black Plant  
5221 Sid Richardson Road  
Addis, LA 70710**
- 6. Big Spring Carbon Black Plant  
1211 North Midway Road  
Big Spring, TX 79720**
- 7. Borger Carbon Black Plant  
9455 FM #1559  
Borger, TX 79007**

#### IV. MANUAL CONTROL

1. The SRCC QA Manual shall be approved by the president of the company.
2. The Director QA shall be responsible for maintaining the contents of the QA Manual and issuing/controlling all revisions to the manual. An electronic copy of the manual shall be made available on the company intranet site for access to all employees. Appendix c shall contain a log showing the history of all revisions to the manual which affect the SRCC quality system.
3. All internal copies of the QA Manual shall be controlled copies. As such, they shall be issued with manual no., revision no., assignee, and date. Where appropriate, manuals assigned to a facility may show only the facility name as assignee. Further distribution of facility assigned manuals shall be the responsibility of the facility manager. Controlled copies of the manual which become obsolete shall be destroyed once the cover page is returned to the Director QA. A list shall be maintained by QA showing the recipients of all controlled copies and kept in this manual as appendix d.
4. Unless requested otherwise by the recipient, QA Manuals issued to persons or organizations external to SRCC shall be for informational purposes only and shall be non-controlled copies. Non-controlled copies shall be issued without a manual number or designated assignee. All non-controlled copies of the QA Manual shall be stamped "UNCONTROLLED COPY" in red ink on the cover page. Return of non-controlled copies to QA shall not be required.

## **V. INTRODUCTION AND SRCC HISTORY**

The Sid Richardson Carbon Co., originally founded by Sid W. Richardson, a Texas oil man, is privately owned by the Bass Group, a diversified company with substantial production activities in oil, natural gas, carbon black, liquid petroleum gas, and natural gasoline. The Bass Group's beginnings can be traced back more than fifty years to the boom days of newly discovered Texas oil. Dr. E. P. (Doc) Bass and his brother-in-law, Sid W. Richardson, were both independent producers and drilling contractors. By 1935, Sid had become one of the important oil finders in the Permian Basin.

Perry R. Bass, son of Doc Bass, joined his uncle, Sid Richardson, in 1937, and together they successfully extended oil exploration to Louisiana and New Mexico. The company flourished in the ensuing two decades. In 1948, the company expanded with the formation of Sid Richardson Carbon and Gasoline Co. A government channel black facility at Odessa, Texas, was purchased, and the company entered the carbon black business. Sid Richardson Carbon Co. entered the furnace black market with the Big Spring, Texas, plant in 1961. Based on the company's success with furnace black, a second plant in Addis, Louisiana, was opened in 1968. In April 1986, the company was successful in acquiring the Borger, Texas, plant from Phillips Petroleum Company. The Borger plant, built in 1943, was once the largest furnace black plant in the world. Its acquisition expanded the Sid Richardson product line from nine to over 20 grades and enhanced the company's capability to serve the entire rubber and plastics industries.

With this strong manufacturing base to work from, Sid Richardson Carbon Co. is entering a new phase of development and growth. In keeping with our corporate philosophy of providing our customers with the highest quality carbon blacks at competitive prices, we are investing the capital necessary to make our plants state of the art operations. In doing so, we will see significant capacity growth which would make us the largest rubber grade carbon black manufacturer in North America.

Sid Richardson's corporate headquarters is located in downtown Ft. Worth, Texas, where our company officers, manufacturing, management, traffic, accounting, and central engineering staffs are located.

Sales and Technical Service staffs operate out of Akron, Ohio. All customer relations, including sales, order entry, forecasting, customer service and customer technical contacts are controlled through this location.

The Sid Richardson Carbon Co. Research Center, equipped with the latest carbon black testing equipment, has been in operation in Fort Worth, Texas, since 1972. In addition to providing technical service for customers, which includes specification evaluation and approval, design and development planning and control, and production quality control coordination, this facility is also involved in product application development, environmental control, and quality assurance programs. In 1989 a Basic Research Group responsible for defining a fundamental understanding of the interaction of carbon black and elastomeric materials was formed. That group is also located in this facility.

## V. INTRODUCTION AND SRCC HISTORY

Applied Research & Development operates a pilot plant, located adjacent to the Big Spring, Texas, production plant to assist both R&D and corporate process development staffs with design and development projects, as well as other duties. However, as stated above, all D&D activities are coordinated by the Fort Worth Research Center.

Sid Richardson's three production facilities include Big Spring, TX, Addis, LA, and Borger, TX.

**VI. QUALITY SYSTEM REQUIREMENTS**

**QA-01**

**SCOPE & APPLICATION**

Ref: ISO 9001-2008, 1.0

## VI. QA-01 SCOPE AND APPLICATION

1. The purpose of the QA Manual shall be to document the quality assurance system and the responsibility for carrying out the quality mission of Sid Richardson Carbon Co. Conformance to the policy described in the QA Manual provides assurance that the quality system of SRCC will meet or exceed requirements of the ISO 9001 standard and the appropriate parts of any other standards specified by SRCC customers as applicable.
2. The scope of registration is the “Design” and manufacture of carbon black. Design control performed at 4825 North Freeway, Ft. Worth, TX 76106, contract review performed at 3560 W. Market Street, Suite 420, Akron, OH 44333, and manufacturing at 9455 FM1559, Borger, TX 79007, 1211 N. Midway Rd., Big Spring, TX 79720, and 5221 Sid Richardson Road, Addis, LA 70710.”
3. The Fort Worth Research Center shall be the location of all activities relating to the design and development of carbon black products. The production plants shall be separately registered and shall exclude design and development responsibilities.
4. Carbon black is used up quickly as one of a number of raw materials incorporated into the customer's end product. As such, there is no contractual servicing of supplied carbon black as service is normally defined, nor is there a need to identify and plan for “post delivery” requirements.
5. The existence of specifications for the process output, which are fully verifiable by subsequent inspection/testing of the product, precludes classification of carbon black manufacturing operations as a special process requiring pre-qualification of process capability.
6. Sid Richardson Carbon Co. does not use, nor does it solicit the use of customer supplied material in any part of its manufacturing process, nor does it anticipate that this might become a practice in the future. Should the customer ever supply SRCC with a material intended for use in the carbon black process, it shall be handled by the same procedures to be applicable if the material were purchased directly by SRCC (Ref. QA-07.4).
7. It is intended that the QA Manual serve as a permanent reference for implementing, maintaining, and auditing the SRCC QA system. As such, the manual shall establish policy, specify responsibility for carrying out policy, and provide instructions for maintaining procedures to support the quality system.
8. It is not intended that the QA Manual contain actual instructions for doing the work. However, where appropriate, the manual shall be permitted to provide enough detail to make a separate second level procedure unnecessary.

End QA-01

**VI. QUALITY SYSTEM REQUIREMENTS**

**QA-02**

**QUALITY POLICY**

Ref: ISO 9001-2008, 5.3

## VI. QA-02 CORPORATE QUALITY POLICY

The Quality Mission Statement and the Corporate Quality Objectives represent the SRCC Quality Policy and manifest the SRCC commitment to total customer satisfaction.

### 1. QUALITY MISSION

Sid Richardson Carbon Co. is committed to the development, production and marketing of the highest quality carbon black in the most efficient manner possible and is actively involved in the pursuit of excellence and continuous process and product improvement.

The Corporate mission and quality objectives are management's assurance to all our customers that the Company will provide products and services that exceed their requirements and expectations so that world-class quality standards will be achieved.

*Note: Copies of this Mission Statement on display at all SRCC locations have been signed by the President and corporate department heads.*

## VI. QA-02 CORPORATE QUALITY POLICY

### 2. CORPORATE QUALITY OBJECTIVES

#### **Make every transaction totally satisfactory to the customer, Specifically:**

- Error free paperwork
- Proper packaging
- Delivery timed to meet individual customer's inventory requirements
- Conformance to specifications
- Process capability indices at or above customer requirements
- Efficient unloading and handling
- Consistent processability

#### **Apply quality management techniques throughout the company, Specifically:**

- Maintaining a "make it right the first time" philosophy throughout the company.
- Maintaining appropriate attention to detail at all levels
- Maintaining certification to international quality system standards (ISO)
- Continuing to provide training to:
  - Increase quality awareness
  - Enhance technical and problem solving skills
  - Ensure a qualified workforce

End QA-02

**VI. QUALITY SYSTEM REQUIREMENTS**

**QA-03**

**DEFINITIONS AND ABBREVIATIONS**

Ref: ISO 9001-2008, 3.0

## VI. QA-03 DEFINITIONS AND ABBREVIATIONS

The following definitions are the intended meanings of selected terms and abbreviations as used in the QA Manual.

1. **ASTM** - American Society for Testing and Materials.
2. **Bin** - A rubber or metal sided container designed to package approximately two to eight thousand pounds of carbon black.
3. **CBO** - Carbon Black Oil.
4. **COA** - Certificate of Analysis.
5. **Contract** - Agreed requirements between SRCC and a customer transmitted by any means.
6. **Contract Review (Akron)** - A preliminary review of a customer order by Akron personnel prior to transmitting the order to the Manager of Logistics (ML) and a producing plant to ensure that all required information has been documented in the proper format, is understood, and contains only requirements that the plant can be expected to meet.
7. **Contract Review (ML)** - A review of incoming non-forecast (spot business) to determine the appropriate producing plant for capability, availability, approval status and business balance. This also includes monitoring forecast business for seasonality, and Vendor Managed Inventory (VMI) levels on an ongoing basis.
8. **Contract Review (Plant)** - A final review by plant personnel of a shipping order received from Akron to ensure that the plant has the capability to comply with all requirements on the order.
9. **Corporate Wide Procedure** - Procedure issued by Akron, Fort Worth, or FWRC which is applicable at other locations, or issued by a plant with required input from other corporate departments. A procedure issued by any location for use at that location only is not a corporate wide procedure.
10. **Customer** - A customer of SRCC. One who receives or is subject to receiving a product or service provided by SRCC.
11. **Customer Supplied Material** - Material furnished by the customer specifically to be used to manufacture a product shipped to the customer.
12. **Document** - Noun; A written policy, procedure, or instruction. Verb; To make official by putting into written form.

## VI. QA-03 DEFINITIONS AND ABBREVIATIONS

13. **Documentation** - Documents and/or data relevant to the matter at hand.
14. **Finished Product** - Carbon black which is through being processed and ready to be shipped.
15. **Forecast Business** – Any business for which an annual agreement or contract has been negotiated with a customer. The business should be specific as to grade, volume, package, shipping location(s) and specifications.
16. **FWRC** - Fort Worth Research Center.
17. **In-Process** - Refers to carbon black at any stage of production where something still needs to be done to it to make it ready to ship.
18. **ISO** - International Standards Organization.
19. **Local** - Applicable or pertaining to only one location or department.
20. **Manual** - A book established to be a permanent collection of procedures organized together for a common purpose. A manual must have a title and a table of contents. Procedures put into a notebook simply to keep them together should not be called a manual.
21. **Material** - What SRCC uses to produce the carbon black (product).
22. **Nonconforming** - Failing to meet a requirement necessary for satisfactory performance.
23. **P&I Report** - Production and Inventory Report.
24. **P.O.** - Purchase Order.
25. **Pallet** - Individual bags of carbon black stacked and bound together to make a single shipping unit.
26. **Product** - The carbon black which SRCC produces.
27. **QA** - Quality Assurance, pertaining to the systems making quality possible.
28. **QC** - Quality Control, pertaining to the testing and control of product quality.
29. **Sack** - A special soft sided container designed to package a quantity of carbon black for shipment.
30. **Signature** – The actual signature of the person or an electronic version consisting of the name, title, meaning (e.g. review, approval or acknowledgement), date and time.

**VI. QA-03 DEFINITIONS AND ABBREVIATIONS**

- 31. **SOP** - Standard Operating Procedures.
- 32. **SPC** - Statistical Process Control.
- 33. **SRCC** - Sid Richardson Carbon Co.
- 34. **Supplier** - A supplier or subcontractor to SRCC. One who supplies a product or service purchased by SRCC.
- 35. **Vendor Managed Inventory (VMI)** - The monitoring and control of a customer's inventory by the office of the ML using usage and onsite inventory data reported regularly by the customer location.

End QA-03

**VI. QUALITY SYSTEM REQUIREMENTS**

**QA-04**

**QUALITY MANAGEMENT SYSTEM**

Ref: ISO 9001-2008, 4.0

## **VI. QA-04 QUALITY MANAGEMENT SYSTEM**

### **4.1. Definition of Processes**

1. Annually, the Sales Department, with input from manufacturing, QC, Logistics and Finance, solicit and enact supply agreements / contracts, with established customers, covering as much of the projected production capacity as is determined to be acceptable. During this process, any product requirements are reviewed and resolved both with the customer and between all interested parties within SRCC.
2. Orders, for both forecasted and non-forecasted business, are received by the Sales/Technical Service Department and coordinated through the Logistics Department with the production plants. Forecasted business under Vendor Managed Inventory (VMI) control is monitored by the Logistics Department and coordinated with Customer Service. Any delivery or packaging issues are coordinated by Customer Service with the customers.
3. Specification issues and testing requests are directed by Technical Service to R&D, who coordinates approval with QC, QA, and Manufacturing. Any acceptance issues and / or sample requests are coordinated by Technical Service with the customer.
4. Customer complaints are handled by Technical Service and coordinated with QC and the affected manufacturing facility. All dialogue with the customer is handled by Technical Service.
5. Future customer needs are monitored by the Sales/Marketing Department. Many corporate meetings are held as needed throughout the year to allow the coordination of these needs with interested parties within the organization. Needs relating to availability, packaging, coding, etc. are coordinated with Manufacturing and Marketing Services. R&D and other technical needs are coordinated with QA, QC, R&D, AR&D, Manufacturing, and Engineering.
6. Based on the Carbon Black Material Flow Diagram (QP-11), and with input from QC and QA, each manufacturing facility develops and maintains a Process Control Plan for that facility. QC determines minimum sampling and testing schedules and establishes product warning limits based on established customer specification limits. QA provides input on process control points and limits based on an analysis of facility process control data.
7. The facility control plan is used to generate the quality impact materials and services list, an approved supplier list and a list of equipment and measuring devices requiring calibration and/or preventive maintenance. Plant and lab managers are responsible to maintain these lists, which may be in a database.

## VI. QA-04 QUALITY MANAGEMENT SYSTEM

### 4.1. Definition of Processes(continued)

8. Quarterly, each facility reviews their objectives, audit results, customer satisfaction metrics, CAR/PARs and resource needs and sends input to QA. The Director of QA, includes these facility inputs in the quarterly corporate management review.
9. During these quarterly meetings top management reviews customer satisfaction, audit results, continual improvement metrics and the use of and need for additional resources. The remainder of the system, including the Quality Policy, and corporate level Quality Objectives, is reviewed annually, in the 1<sup>st</sup> quarter. These documents are disseminated to the individual facilities for use in establishing local annual objectives.
10. No processes affecting conformity of the product with requirements are outsourced by SRCC. When services, such as equipment calibration are outsourced, the control over such services is specified in the purchasing contract.
11. Details beyond this level are found within this manual and its related procedures.

### 4.2. Documentation Requirements

#### A. Quality Manual

1. The quality system of SRCC shall be documented by a Quality Assurance Manual with the primary function being to:
  - a. Describe policy.
  - b. Specify responsibility.
  - c. Identify procedures.
2. The scope of the quality system and all procedures/instructions developed in support of it shall be sufficient to comply with ISO 9001 plus any additional requirements necessary to satisfy stated or anticipated customer expectations not included in ISO 9001. Quality system procedures which support each quality system element shall be either referenced directly in this manual or found in appendix *b*. At the discretion of the SRCC Director of QA, revisions may be made to any Section or appendix without reissue of the entire manual.
3. The production plan shall be documented by the Carbon Black Material Flow Diagram (QP-11), which shows the sequence of each major step in the process. The material flow diagram is applicable to all producing locations and shall be maintained by the Director of QA. It is available from the Corporate Procedures Manual.

## VI. QA-04 QUALITY MANAGEMENT SYSTEM

### 4.2.B. Control of Documents

1. It is the policy of Sid Richardson Carbon Co. that sufficient documentation be available to effectively operate and maintain the SRCC quality system and that a control procedure be provided to ensure that the latest revision to documentation is maintained in a legible and readily identifiable condition at all locations where needed.
2. The Director QA shall be responsible to develop, document, and maintain procedures for controlling documentation pertinent to the SRCC quality system (ref. QP-01). Documentation is defined as both procedure and the applicable forms and data pertinent to performing the procedure.
3. Methods provided to control the issue of new documentation and revision/reissue of existing documentation shall be adequate to preclude the use of invalid and/or obsolete documents and shall require:
  - a. Procedures to be written in a standard format where appropriate. The recommended format shall be provided by the Director of QA (ref. QP-02).
  - b. All procedures to contain a title, procedure number, revision number, date authorized for use, and approval signatures.
  - c. Procedures to be reviewed for adequacy and approved prior to issue, and at least every two years thereafter, by a person or persons having authority to enforce compliance with the procedure. Subsequent revisions shall be approved by the same authority who approved the original or by equal authority having access to all pertinent background information.
  - d. All documents to be issued with a memo to identify the changes and name the recipients.
  - e. Revisions to a procedure to be identified by marking the affected paragraphs with an asterisk in the left hand margin next to the paragraph number.
4. QA shall maintain a master list of all current corporate-wide documents showing the procedure number, revision number, date, and the person responsible for maintenance. Each location manager shall maintain a similar list of documents developed for local use only. A documents master list may consist of the Table of Contents of controlled manuals.
5. Any change to the content of a document or to the described procedure shall require that the document be reissued.
6. Documents of external origin which are required and officially authorized for use shall be identified, provided, and controlled in a manner so as to ensure their proper use.

## VI. QA-04 QUALITY MANAGEMENT SYSTEM

### 4.2.B Control of Documents(continued)

7. Obsolete documents (manuals, etc.) may be retained for reference and informational purposes provided they are marked "OBSOLETE" in a conspicuous manner and maintained in a location separate from documents being used to do the work.
8. Uncontrolled copies of controlled documents shall be stamped "UNCONTROLLED COPY". Uncontrolled copies shall be issued to persons outside SRCC for informational purposes only and never given to people needing them to do the work.

### C. Control of Records

1. It is the policy of SRCC that sufficient records shall be maintained to demonstrate conformity to requirements and to verify effective operation of the quality management system. Maintenance requirements shall also be applicable to supplier records pertinent to the quality system.
2. The Director of QA shall establish, document, and maintain a corporate procedure for handling quality records generated and/or used at each location (ref. QP-09).
3. The procedure shall specify what information is to be included in the location records list. The procedure and/or list as appropriate shall provide for:
  - a. Identification of the record by type and/or name.
  - b. Location where the record is to be filed/stored and how it is to be protected.
  - c. Minimum retention time, which shall be no less than three years for internal audits and management reviews and at least one year for quality performance records (e.g., control charts, spot sample sheets, COA's, inspection reports, etc.).
  - d. Method used to ensure that record can be easily found and retrieved from storage during the applicable retention time.
  - e. Responsibility for collecting and maintaining the record.
  - f. The disposal of obsolete records.
4. Records shall be stored in an environment so as to minimize damage or deterioration and prevent loss. Storage conditions shall be maintained to ensure that each record remains identifiable, legible, and easily retrievable during the required storage period.
5. The manager at each location shall maintain a Quality Records List to document compliance with corporate procedure.

**VI. QA-04 QUALITY MANAGEMENT SYSTEM**

**4.2.C Control of Records(continued)**

6. Extra copies of records kept in locations other than those named as official storage locations shall be regarded as expendable.
7. Where required by an agreement with the customer, specified quality records shall be made available for review by the customer. Unless the agreement says otherwise, the period of availability shall not exceed the minimum retention time.

End of QA-04

**VI. QUALITY SYSTEM REQUIREMENTS**

**QA-05**

**MANAGEMENT RESPONSIBILITY**

Ref: ISO 9001-2008, 5.0

## VI. QA-05 MANAGEMENT RESPONSIBILITY

### 5.1. Management Commitment

1. The President's signature on the cover sheet of this manual signifies management's commitment to quality. Management further demonstrates its commitment by:
  - a. Establishing and disseminating the SRCC Quality Policy and the importance of meeting customer, statutory, and regulatory requirements throughout the company.
  - b. Holding quarterly Facility and Corporate level Management Reviews.
  - c. Holding other interdepartmental meetings to identify and plan for meeting customer requirements (ref. QA08.4).
  - d. Ensuring the availability of needed resources.
  - e. Reviewing the product realization and support processes, against established objectives, to assure their effectiveness and efficiency.

### 5.2. Customer Focus

1. It is the policy of Sid Richardson Carbon Co. to ensure that customer requirements are clearly understood, defined, and documented and that every order is processed in a manner satisfactory to the customer. Individual customer requirements and interests are identified and monitored by regularly scheduled Marketing and Technical contacts. In addition, regularly scheduled R&D Interface meetings are held with all major customers.
2. The status of customer satisfaction shall be reviewed semi-annually by the Corporate Quality Group (defined in QA-08.4). This function shall be a portion of the management review process discussed later in this section. Records of each review shall be maintained in the QA office for a minimum of five years.

### 5.3. Quality Policy

1. The Quality Mission Statement and the Corporate Quality Objectives in the front of this manual represent the SRCC Quality Policy and manifest the SRCC commitment to total customer satisfaction. The President shall ensure that the Quality Policy accurately expresses SRCC organizational goals and is consistent with the expectations and needs of SRCC customers. Top management shall ensure that the Quality Policy is communicated and understood at all levels in the organization.

## **VI. QA-05 MANAGEMENT RESPONSIBILITY**

### **5.4. Planning**

#### **A. Quality Objectives**

1. The Corporate Quality Objectives, based on customer expectations, shall be reviewed annually and along with departmental objectives form the basis for annual facility goals. A determination of their continued suitability shall be made as part of the Management Review. Facility managers shall develop annual local objectives that shall be monitored and measured so that improvement can be planned for and shown.

#### **B. Quality Management System Planning**

1. The existence of documented procedures and control plans are prima facie evidence of the quality planning for products put into commercial production prior to April of 1995. For new products which start commercial production subsequent to April 1995, the Director QA shall provide and maintain procedures to ensure that cross functional planning for the new product's quality performance is documented (see QA-07.1 for details).
2. The SRCC Quality Management System consists of facility level quality groups, various corporate Meetings, and the Management Review Committee. The definitions of and main functions of these various bodies are detailed in QA-08.4.
3. The Director of QA shall use the internal audit process to assure the integrity of the quality management system is maintained when changes are planned and implemented (ref. QP-07).

### **5.5. Responsibility, Authority and Communication**

#### **A. Responsibility and Authority**

1. The responsibility, authority, and interrelation of personnel who manage, perform, and verify work affecting quality shall be defined and documented by an organizational chart and/or job description. Documentation in greater detail than that contained in the QA Manual, if required for further clarification of responsibility and authority, shall be developed and maintained by the appropriate SRCC department heads.

#### **B. Quality Organization**

1. Quality responsibility of management positions shown on the Quality Organization Chart (ref. Appendix a).

## VI. QA-05 MANAGEMENT RESPONSIBILITY

### B. Quality Organization (continued)

#### President

As Chief Executive Officer for quality, makes it evident where SRCC stands on quality by announcing a clear specific Quality Policy for the organization. Organizes, staffs, and directs the manufacturing function in the most effective manner to achieve established objectives. Provides support for quality by putting quality management on equal status with other major corporate functions. Furnishes resources to support quality objectives. Approves the quality system and strategic plans for quality improvement.

#### Vice President Production

Reporting to the President, establishes objectives for manufacturing in support of the corporate Quality Mission. Monitors and evaluates production efforts of the plants and initiates corrective action when appropriate. Provides strategic planning for continuous improvement in both quality and productivity. Works with the Plant Managers, Engineering, and Process Development Group on innovative projects to improve production efficiency. Maintains quality, productivity and cost measures of success. On management review committee.

#### Process Engineering Manager

Reporting to the VP Production, looks for ways to translate research findings into practical process techniques applicable to improving quality and productivity of production. Determines what processing parameters are required to put newly developed products into commercial production and to make improvements to already established production.

#### Plant Manager

Reporting to the VP Production, produces and ships a quality product according to specified requirements. Organizes and plans for continuous improvement to the process for both quality and productivity. Promotes a safe working environment, maintains discipline and morale, and ensures that all plant employees have opportunity to participate in the quality improvement process.

#### Plant Staff

Technical and supervisory personnel reporting to the Plant Manager and with specific job responsibilities assigned by the plant manager. Provides technical and supervisory oversight of manufacturing, shipping, maintenance, & engineering activities required to produce & ship a quality product, and to affect continuous improvement in all plant processes.

## VI. QA-05 MANAGEMENT RESPONSIBILITY

### 5.5.B. Quality Organization(continued)

#### Vice-President Marketing

Reporting to the President, establishes what quality level customers want and are willing to pay for. Listens to the voice of the customer and makes that voice heard throughout SRCC. Introduces SRCC products to the market. Maintains an awareness of market economics and ensures that SRCC prices are competitive for the quality levels of products being shipped. Brings the marketing function into strategic quality planning. On management review committee.

#### Sales Staff

Reporting to the Vice-President Marketing, these positions make initial contact with customers on pricing and purchasing commitments, including receipt of any revisions to routine specifications. Introduces new information to SRCC in a way such that it may be efficiently handled by the established system.

#### Manager Technical Service

Reporting to the Vice-President Marketing, analyzes customer needs and translates those needs into accurate technical specifications for carbon black production. Investigates problems with product performance and advises other departments about needed improvements in quality of both product and service, including new product development. Makes certain that all complaints are resolved in a manner acceptable to the customer. Anticipates the customer's future needs and ensures that they are addressed as part of long term planning.

#### Technical Service Staff

Reporting to the Manager Technical Service, these positions monitor the customers operations and assist the customer to make optimum use of the product. Advises and specifies performance testing of carbon black relative to customer concerns and provides performance feedback from the customer to the rest of SRCC. Works with all other departments to coordinate the investigation of customer complaints.

#### Business Manager - Akron

Reporting to the Vice-President Marketing, receives orders and other communication from the customer concerning shipment scheduling. Works with the Manager of Logistics to ensure that the customers scheduling needs are recognized and addressed in the most efficient way.

## VI. QA-05 MANAGEMENT RESPONSIBILITY

### 5.5.B. Quality Organization(continued)

#### Vice-President Research & Development

Reporting to the President, ensures that R&D activities are in line with the corporate Quality Mission, including orientation of basic research, new product development, and maintenance of QC testing independent of the manufacturing function. Investigates and recommends technology. Ensures that performance of SRCC products is documented and understood by all departments. Provides strategic planning for future opportunities to improve product performance. On management review committee.

#### Manager FWRC

Reporting to the Vice President Research & Development, manages the Fort Worth Research Center (FWRC) providing state of the art product testing services for a wide range of activities, including research, quality control, technical service, complaint investigation, new product development, raw materials, environmental, and safety. Provides for maintenance of all personnel, equipment, policy, and procedure necessary for the research center to fulfill its function.

#### Manager Technical Development

Reporting to Manager FWRC, manages various technical developments before widespread use such as with test development and potential process modifications.

#### Manager Testing Services

Reporting to Manager FWRC, manages personnel and equipment in analytical and rubber laboratory at FWRC.

#### FWRC Technical Staff

Reporting to FWRC managers, these positions perform testing and other quality associated work as required in support of customer service, complaint investigation, new product development, manufacturing, quality control, and basic research.

#### Manager Plant QC Labs

Reporting to the VP R&D, these positions supervise all activities of the plant QC labs, responsible for providing testing for both in-process quality control and customer shipments. Maintains discipline, morale, and safety in the labs, exercises go/no go authority over all shipments, and provides the customer a COA for each shipment.

## VI. QA-05 MANAGEMENT RESPONSIBILITY

### 5.5.B. Quality Organization(continued)

#### Technician QC Lab

Reporting to the Laboratory Manager, performs tests necessary to verify quality of production, shipment, raw materials as appropriate, and to assist with investigation of nonconforming product.

#### Vice-President Finance/Marketing Services

Reporting to the President, handles financial affairs and works with suppliers and SRCC plants on procurement and delivery of carbon black oil. Maintains relations with CBO suppliers, approves suppliers/sources and documents suppliers capability to perform as required. Directs the corporate functions that oversee production scheduling, inventory control & traffic handling. On management review committee.

#### Manager Logistics

Reporting to the Vice-President Finance/Marketing Services, facilitates production and shipment scheduling so that the proper product will be available when needed and shipped on time and works with customers on inventory management. Coordinates communication between sales, production, shipping, order processing, and quality control to make sure that any contingencies are properly dealt with.

#### Director Quality Assurance

Reporting to the President, works with all departments to develop, implement, and maintain a corporate wide quality system appropriate for accomplishing the Quality Mission. Chairs Corporate Quality Group responsible for studying improvement opportunities and advising management on strategic quality planning. Provides quality training in technical and managerial techniques necessary for continuous quality improvement. Serves as corporate management representative for ISO 9000 related matters. Coordinates the review and approval of customer specifications and responds to expressed concerns. Chairs management review committee.

#### Manager SPC and Quality Analysis

Reporting to the Director Quality Assurance, uses appropriate statistical techniques to monitor/analyze quality data, both production and shipping, and provide status reports to management on a timely basis. Provides statistical analysis to customers on products shipped. Works with plants on improvement to SPC and other statistical methods used to define and control the process. Advises

## VI. QA-05 MANAGEMENT RESPONSIBILITY

### 5.5.B. Quality Organization(continued)

and assists other departments with utilization of computers and software for managing data. A permanent member of the Internal Auditor Team.

### 5.5.C. Management Representative

1. The Director QA shall serve as the SRCC Corporate Management Representative and shall have the responsibility and authority to ensure that the quality management system is established, implemented, and maintained company wide in accordance with the ISO 9001 standard. To facilitate the communication of ISO related matters, the highest management level person at each registered location shall designate a Deputy Representative for that particular site.

### D. Internal Communication

1. Management Representatives shall keep management advised of necessary revisions/additions to the system and shall bring to the attention of appropriate management any conflicts between quality management system requirements and actual practice as they become known. The corporate management representative shall also serve as chairperson of the Management Review Committee to ensure that appropriate information on quality system performance is taken into consideration and used as a basis for improvements to the system.
2. Management Representatives shall use all available resources to work through the appropriate management to resolve conflicts within the system. Conflicts which cannot be resolved by working through appropriate management shall be brought to the attention of the President.
3. The Management Representatives shall promote the awareness of customer requirements to their locations and throughout the organization.

### 5.6. Management Review

1. The Corporate Management Representative shall be responsible to establish a quarterly schedule assuring a complete annual review of the entire quality system by executive level management. Each review shall include a preliminary review with management at each SRCC facility and a final review by a corporate level committee whose members report to the President. The purpose of the review shall be to evaluate the continuing adequacy, suitability and effectiveness of the system in satisfying the SRCC Quality Policy/Objectives and the requirements of the ISO 9000 standard.

## VI. QA-05 MANAGEMENT RESPONSIBILITY

### 5.6. Management Review (continued)

2. Records of management reviews shall be maintained at each SRCC facility in accordance with QP-09, and in the corporate QA office file for a period not less than five years.

#### A. Review Input

1. A written procedure for conducting the management review shall be provided by the Management Representative to ensure that required items are taken into account in evaluating quality system performance (ref. QP-10).

#### B. Review Output

1. Output from the annual reviews shall include decisions and actions related to:
  - a. Improvement of the effectiveness of the quality management system.
  - b. Improvement of product related to customer requirements.
  - c. Resource needs.

End of QA-05

**VI. QUALITY SYSTEM REQUIREMENTS**

QA-06

**RESOURCE MANAGEMENT**

Ref: ISO 9001-2008, 6.0

## VI. QA-06 RESOURCE MANAGEMENT

### 6.1. Provision of Resources

1. Management assumes the responsibility to provide trained/qualified personnel and adequate resources, including necessary equipment, to ensure satisfactory performance of all quality system requirements as described in this manual, and to enhance customer satisfaction by meeting customer requirements. In addition to maintaining and improving the system through formal auditing and management reviews, management further intends that SRCC personnel at all levels take individual responsibility to identify, record, and report any problems relating to the product, process, or quality system as they become known. Managers at each level are responsible to create a work environment which will support these activities in a spirit of continuous improvement.

### 6.2. Human Resources-Competence, Training and Awareness

1. It is the policy of SRCC that all employees who affect quality of the product or service shall be trained and qualified to perform the tasks determined to be necessary by management.
2. The Director QA shall provide and maintain procedures to identify corporate level training needs and establish training objectives (ref. QP-08). This procedure may be used for facility level training needs planning.
3. The manager of each facility/department shall be responsible to:
  - a. Document required qualifications, on QF-06 or an equivalent, for each applicable position reporting to him/her and ensure that the person put into each position has been determined to be competent in the skills necessary to do the work.
  - b. Provide for training as needed to qualify individuals to handle assigned jobs and to satisfy department training objectives.
  - c. Evaluate the effectiveness of completed training and ensure that it is taken into consideration to develop future training plans.
  - d. Ensure that SRCC Quality Policy is understood by including the Quality Mission Statement and Corporate Quality Objectives as training requirements at all levels in the organization.
  - e. Ensure their personnel are aware of the relevance and importance of their activities and how they contribute to the achievement of appropriate quality objectives.
  - f. Maintain a training and qualifications history record for each person in the department, recording education, training, skills and experience.

## **VI. QA-06 RESOURCE MANAGEMENT**

### **6.2. Human Resources-Competence, Training and Awareness (continued)**

4. Qualification of personnel to perform specific jobs such as operator, technician, mechanic, engineer, etc. may be based upon education, training, experience, examination, or any combination of the foregoing as deemed appropriate by the department manager.
5. Determination of competency may consider education, past experience, formal courses/seminars, in-house classroom/practical training, and professional certification as well as instruction provided directly in a work situation by supervisors and other personnel.
6. When new or previously undocumented qualification requirements are established for a job, personnel who already have a history of work performance with SRCC may be exempted from re-proving their qualifications by putting an entry into their training record stating that their qualifications are satisfactory based on past performance.

### **6.3. Infrastructure and Work Environment**

1. SRCC policy is that the manufacturing process at each location shall be planned and controlled so as to maintain satisfactory levels of quality in the most efficient manner. Control shall include ensuring the use of suitable production equipment and a suitable working environment, including adequate support services.
2. Executive management at the corporate level shall ensure that there is a system to provide the plant manager with funds and other resources necessary to maintain an efficient and capable process and to comply with applicable government safety and environmental regulations.
3. The Plant Manager shall be responsible to identify restorative/preventive maintenance requirements for process monitoring equipment pertinent to the functions described in the control plan, and shall see to it that suitable preventive maintenance is performed to ensure the continuing capability of the process.

End of QA-06

**VI. QUALITY SYSTEM REQUIREMENTS**

QA-07

**PRODUCT REALIZATION**

Ref: ISO 9001-2008, 7.0

## **VI. QA-07 PRODUCT REALIZATION**

### **7.1. Planning of Product Realization**

1. It is the policy of SRCC that customer satisfaction shall not be compromised due to inadequate quality planning in any aspect of the process. The existence of the Carbon Black Material Flow Diagram (QP-11), raw material and in-process sampling and testing procedures, internal specifications, other documented procedures and control plans are prima facie evidence of the quality planning for products put into commercial production prior to April of 1995.
2. The Director QA shall be responsible to coordinate with the applicable departments to assure SRCC systems for Customer Relations, Product Development, Purchasing, Production, Delivery and Control of Monitoring & Measuring Devices conform to international standards while remaining workable for our employees.
3. The establishment and continual monitoring of annual objectives at the corporate, facility and departmental levels shall be the primary process for assuring the continued adequacy of the SRCE Quality Realization system. The quarterly management review process (both facility and corporate), along with internal audits, will be the main mechanism to monitor the continued acceptability of these systems.
4. For new products or processes which start commercial production subsequent to April 1995, the Director QA shall provide and maintain procedures to ensure that cross functional planning for the new product's quality performance is documented. The SRCC design & development process (ref. RD-02) shall be used for all product and process development programs, including changes to existing products and processes (see QA-07.3).
5. Mandatory applications of specific statistical techniques (e.g., SPC) shall be determined during a new product's quality planning stage, and the applicable procedure shall name the technique and where it is to be applied.

### **7.2. Customer Related Processes**

1. It is the policy of SRCC that customer satisfaction, both external and internal, shall not be compromised due to inadequate interaction with the customer or a failure to fully determine their current or future needs.

## VI. QA-07 PRODUCT REALIZATION

### 7.2.A. Determination and Review of Requirements Related to the Product

1. Contract Review in SRCC is concerned with the procedures, activities, and requirements necessary to accept commercial orders for carbon black products, translate the orders into instructions, communicate the instructions to the persons responsible for servicing the orders and make sure that each customer actually does get what was ordered. Included in contract review is the system for approval/acceptance of routine product specifications supplied by the customer.
2. The Vice President Marketing shall ensure that processes are implemented and maintained for forecasting repeat and new annual business and reviewing/accepting those and non-forecasted commercial orders from customers, and shall provide for the responsibility and technique to make order requirements known to the plant selected to make the shipment (ref. MT-04 & 5).
3. Procedures for handling customer orders shall provide for:
  - a. Customer requirements for each order, including delivery requirements, whether by special request or previously agreed specifications/conditions, to be communicated, understood, and agreed to by all SRCC personnel responsible for handling the order.
  - b. Product requirements are defined, and requirements not stated by the customer but necessary for specified or intended use, where known, will be communicated, understood and agreed to by all SRCC personnel responsible for handling the order.
  - c. Statutory and regulatory requirements related to the product are determined and communicated.
  - d. Contract or order requirements that differ from those previously expressed and established are resolved.
  - e. Verbal orders, requirements, and instructions from the customer to be documented and agreed to prior to acceptance.
  - f. Amendments to an order or other agreed requirements to be processed, reviewed, and communicated to all persons who are affected.
  - g. Conflicts between what the customer wants and what SRCC is capable of delivering to be resolved prior to committing the order to be shipped.
  - h. The customer to be kept informed of any changes to the order status.
4. The Manager of Logistics (ML) shall be responsible to develop and maintain processes to monitor and maintain balance between the forecast and incoming releases and spot business, as well as processes to control vendor managed inventory levels (VMI) agreed upon with affected customers.

## VI. QA-07 PRODUCT REALIZATION

### 7.2.A. Determination and Review of Requirements Related to the Product (cont.)

5. Each Plant Manager shall establish, document, and maintain plant level procedures to ensure that each incoming order from the Akron Sales Office is reviewed for applicability and compatibility with plant capability prior to agreeing to make the shipment.
6. Records pertaining to contract review with the customer shall be maintained by the Akron Sales Office in accordance with requirements of QA-04.2.C. Records confirming plant review/acceptance of incoming orders shall be maintained by the applicable plant, records of VMI control shall be maintained by the Logistics department.
7. Carbon black is used up quickly as one of a number of raw materials incorporated into the customer's end product. As such, there is no need to identify and plan for "post delivery" requirements.

### B. Customer Communication

1. Communication requirements concerning inquiries, contracts, ~~and~~ order handling, including amendments, and VMI reporting details are determined during product realization and can include toll free phone contact, e-mail and web based electronic data transfer (EDI) at the option of the customer.
2. The communication of quality data is arranged for during the product realization process and may include mailed, faxed, or emailed certificates of approval (COAs) or electronic data transfer (EDI).
3. The process to handle customer specifications shall ensure that the following takes place (ref. QF42A).
  - a. All customers shall have opportunity to submit their own specifications to SRCC.
  - b. All specifications shall be reviewed for capability of compliance prior to being accepted by SRCC and acceptance/rejection shall be documented and communicated to all concerned.
  - c. Any conflict between the customer's specification and SRCC capability to comply shall be resolved with the customer prior to making the first shipment.
  - d. All SRCC producing/shipping locations shall be supplied with the latest customer specifications.
  - e. All specifications shall have a timely review, distribution and implementation based on the customer's schedule.

## VI. QA-07 PRODUCT REALIZATION

### 7.2.B. Customer Communication(continued)

4. The SRCC Manager Technical Service shall provide and maintain a process to make samples of existing and developmental products available to existing customers and others as requested by the marketing department (ref. QF-09). The process should include the availability of typical properties and follow-up on the samples sent. Records of samples supplied shall be maintained per the requirements of QA-04.2.C.
5. The Vice President R&D shall provide and maintain a process to receive and perform analysis on samples from existing customers and, via marketing, for potential customers as applicable (ref. RD-11). Records of testing shall be maintained per the requirements of QA-04.2.C.
6. Once product requirements and specifications have been agreed to, SRCC shall make no change to the carbon black process without Technical Service first reviewing the proposed change with all affected customers. Based upon customer input, the Manager Technical Service shall be responsible to allow the process change to proceed as planned or to initiate requalification via procedure agreed to by the customer.
  - a. Excepting specific instructions from the customer, a process change shall be defined as any known alteration of the process which will cause product performance or any carbon black property commonly used to predict product performance to be permanently shifted to a level outside the range agreed to by the customer or established by previous commercial shipments.
  - b. No action taken to restore or maintain production within specifications or to improve capability of the process to reduce variability within specifications shall be considered a process change.
7. The SRCC Manager Technical Service shall provide and maintain processes ensuring that requests for corrective action by customers are responded to in an effective and timely manner, and shall maintain surveillance over customer complaint activities to ensure that (ref. QF07):
  - a. The method used to respond to each customer complaint shall be as prescribed by the customer.
  - b. Activities initiated to investigate and respond to a customer complaint shall not be terminated until Tech Service has determined that the customer's corrective action request has been satisfied, or else it has been determined that the problem is of such a nature that a satisfactory resolution cannot be provided.
  - c. The final action taken by SRCC, where possible, shall be sufficient to prevent recurrence.
  - d. All information required by the customer shall be communicated to the customer prior to closing out each complaint.

## VI. QA-07 PRODUCT REALIZATION

### 7.2.B. Customer Communication(continued)

- e. Management shall review customer complaint records semi-annually to verify continuing effectiveness of the corrective/preventive actions which were taken.

### 7.3. Design and Development

1. It is the policy of SRCC to be engaged in research and development to continuously improve the performance of its products and processes. To that end, Design Control specifies the activities associated with establishing requirements for the development of new carbon black grades whether by customer request or by an SRCC recognized need to offer something new to the market.
2. As a result of corporate design planning, a Design Review Committee has been established. The Composition of the committee shall be controlled by the VP R&D, but should include representatives from R&D, Marketing, Production, Engineering and any other functions concerned with the design stage being reviewed. The Design Review committee shall meet as needed to assist the Manager FWRC in the various review stages; input, output, verification and change management. Minutes of the meetings shall document stage review and approval of each project discussed.
3. As stated in QA-07.1.4, the SRCC Design & Development process shall be used for all product and process development programs, including changes to existing products and processes.

#### A. Design and Development Planning

1. The Vice President R&D shall be responsible for design planning and for establishing/maintaining systems and procedures to control and verify product design (ref. RD-02). Design plans shall:
  - a. Describe or reference each necessary design and development (D&D) activity.
  - b. Ensure that D&D activities are assigned to qualified staff with adequate resources.
  - c. Identify the responsibility for each D&D activity.
  - d. Be reviewed and updated as the design evolves.

#### B. Design and Development Inputs

1. The Manager Technical Service shall be responsible to establish and maintain communications with potential customers for each new carbon black grade, hereunder referred to for simplicity as the new design.

## VI. QA-07 PRODUCT REALIZATION

### 7.3. B. Design and Development Inputs (continued)

2. The customer must be consulted to establish and document the following design inputs as they are determined to be appropriate. Any agreed requirements as a result of contract review activity must be taken into consideration, be reviewed for adequacy and any ambiguous or conflicting requirements must be resolved before proceeding with the new design.
  - a. Performance characteristics in the customers end product which are to be affected or changed.
  - b. The magnitudes of the desired changes and how they will be measured.
  - c. Requirements for performance testing and factory trials necessary at the customer's location to prove validity of the new design, including packaging and quantity of product to be supplied.
  - d. Criteria the customer will use to confirm acceptance/rejection of the new design, including actual carbon black specifications if they are known.
  - e. Statutory/regulatory concerns if applicable.
  - f. Information derived from any previous similar designs.
  - g. Records pertaining to design inputs shall be maintained in accordance with requirements of QA-04.2.C.

### C. Design and Development Outputs

1. The Manager FWRC shall be responsible to coordinate the activities of all departments involved in establishing output for the new design. Output must be documented and expressed in terms that can be verified and validated against design input requirements and shall include identification of:
  - a. Carbon black characteristics deemed critical for end use performance, including limits of acceptability.
  - b. Sampling and testing procedures which will be used for SRCC in-house verification of the new design and what work is to be done by plant labs versus the research center labs.
  - c. Raw materials approved for use if they are to be different from those already used in established production.
  - d. Pilot plant activities if pilot scale runs are determined to be necessary for design verification prior to production on a commercial carbon black unit.
  - e. Safety and regulatory requirements which must be considered during production, storage, handling, and disposal if different from previously established practice. If there are none, documentation shall say so.
2. Design-output documentation shall be reviewed and approved prior to continuing with development.

## VI. QA-07 PRODUCT REALIZATION

### 7.3.D. Design and Development Reviews

1. The Design Review Committee shall conduct reviews at suitable stages of development for the purpose of approval, verification, and validation of the design as appropriate. Reviews should evaluate the ability of the Design to meet the input requirements, identify any problems and propose necessary actions.
2. The Vice President R&D shall ensure the Review Committee is composed of qualified personnel and include representatives of all functions concerned with the design stage being reviewed. Other specialist personnel may be included or consulted as needed. Records of all reviews shall be maintained in accordance with requirements of QA-04.2.C.

### E. Design and Development Verification

1. The Manager FWRC shall have the responsibility for Design Verification to be performed and documented at appropriate stages of development, especially where it becomes necessary to:
  - a. Evaluate and verify results of qualification testing done to prove the new design, including trial runs on a commercial production unit if necessary.
  - b. Confirm that requirements have been met at each applicable stage of development, and that the development is ready to be advanced to the next stage.
  - c. Confirm compliance with safety and regulatory requirements.
  - d. Certify that defined objectives of the design have been realized to the extent that SRCC is capable of evaluating the final product.
  - e. Approve submission of samples for customer trials.
2. Records of the results of the verification and any necessary actions shall be maintained in accordance with the requirements of QA-04.2.C.

### F. Design and Development Validation

1. The final verification of a new carbon black design must be VALIDATION as measured in terms of how well the product performs for the customer. The Manager Technical Service shall use customer input to establish criteria for validation of each new design. Development on the design can be closed out when the customer confirms satisfaction with the product or when it has achieved industry approval by recognition from ASTM as a new carbon black grade. The final output shall constitute a quality plan.
2. Whenever practicable, validation shall be completed prior to the implementation as a new product.

## VI. QA-07 PRODUCT REALIZATION

### 7.3.F. Design and Development Validation (continued)

3. Records of the results of the validation and any necessary actions shall be maintained in accordance with the requirements of QA-04.2.C.

### G. Control of Design and Development Changes

1. Any changes to open designs shall be reviewed and approved by the Design Review Committee and shall require the revision number of the review to be changed.
2. Design Changes to the product made after the new carbon black design has been completely developed and accepted by the customer shall be reviewed by the same review personnel, or their equivalent, who reviewed and approved the original design. When the recommended changes have potential to effect either end use performance or carbon black specifications agreed to by the customer, then the customer may be included in the change review at the discretion of the SRCC Manager Technical Service. Prior to implementation, design changes must have written customer approval or a waiver.
3. Records of the results of the review of changes and any necessary actions shall be maintained in accordance with requirements of QA-04.2.C.

### 7.4. Purchasing

#### A. Purchasing Process

1. It is the policy of SRCC that customer satisfaction shall not be compromised by purchased materials which do not conform to requirements. Purchasing methods shall ensure that:
  - a. Purchasing controls shall be applicable to all purchased items which can affect customer satisfaction (quality impact materials/services).
  - b. Quality impact materials/services shall be purchased only from suppliers which have been evaluated, selected, and retained on the basis of their ability to satisfy SRCC requirements.
  - c. Suppliers of quality impact materials/services shall be provided with purchasing documents (specifications, purchase orders, etc. as appropriate) which shall clearly describe the product to be supplied.

## VI. QA-07 PRODUCT REALIZATION

### A. Purchasing Process (continued)

2. Each manufacturing and lab facility manager shall provide the people responsible for purchasing with a list of quality impact materials & services that must be purchased only from approved suppliers. Items to be put on the list may also be designated by the manager's department head. Categories of items to be named on the quality impact list shall include:
  - a. Process raw materials identified in the control plan.
  - b. Critical packaging materials.
  - c. Maintenance materials that can impact quality.
  - d. Lab testing materials.
  - e. Services.
3. Any person assigned authority for approving purchases shall also have the authority to recommend approval of suppliers of the purchased material/services. Inclusion of a new supplier on the Approved Supplier List shall require the following.
  - a. Completion of the "New Supplier Qualification Record" (ref. QF-04).
  - b. Verification that the supplier has satisfied the basis for approval designated on the record. Documentation (test reports, analysis, etc.) must be attached.
  - c. Signature of the person making the recommendation plus signature/approval of the manager responsible for the department which uses the material/service.
  - d. Retention of the Qualification Record, complete with all documentation, for a minimum period of five years past the time the supplier ceases to have approved status.
4. The manager at each applicable location shall maintain an Approved Supplier List to document approved suppliers of quality impact materials/services to his/her location. The approved supplier list shall contain the following information.
  - a. Name of supplier.
  - b. Physical address of supplier.
  - c. Name of material supplied.
  - d. Where material is used (e.g., feedstock, pelleting, structure control, packaging, testing, etc.).
  - e. How supplier was approved (e.g., plant trial, supplier data, SRCC data, etc.).
5. Satisfactory suppliers in use prior to implementation of the ISO 9000 quality system may be grand-fathered onto the approved supplier list. Such suppliers shall be clearly identified on the list, and documentation must be attached to verify that their past performance was reviewed and approved by appropriate authority. At the option of the facility management, a grandfathered supplier may be changed to fully approved based on a history of acceptable supply. The duration of that history is left to the facility.

## VI. QA-07 PRODUCT REALIZATION

### 7.4.A Purchasing Process(continued)

6. The degree of control over each supplier shall be established according to the quality impact of the supplied material and SRCC's confidence in the supplier, and shall be documented by verification procedures established to support QA-07.4.C. Each applicable SRCC manager shall maintain a performance review file to collect ongoing performance data on each approved supplier of quality impact materials and services. Data put into the file should include records of:
  - a. Quality problems.
  - b. Delivery problems (timeliness, containers, shortages, etc.).
  - c. Paperwork and identification errors.
  - d. Corrective actions necessary as a result of poor supplier performance.
  - e. Meritorious service incidents.
  - f. Audit reports and statistical data on suppliers capability if available.
  - g. Any other information judged appropriate by the manager.
7. Supplier performance records shall be reviewed annually. Based on supplier performance, degree of control shall be modified as necessary to ensure that SRCC quality objectives are met. Supplier performance records shall be maintained in accordance with the requirements of QA-04.2.C.
8. It is the intent of SRCC that the supplier's quality system be the sole responsibility of the supplier. Suppliers shall be neither approved nor retained based upon their quality system, excepting that conditional approval subject to proof of performance may be granted a new supplier who is actually registered to an accepted standard such as ISO-9000.
9. Should a supplier's performance fail to satisfy the SRCC manager/user, at the discretion of the manager/user and/or SRCC Director QA, specific quality system requirements may be imposed and the supplier placed on probation pending improved performance. However, retention of suppliers placed on such probation shall be based solely upon improvement in performance and not upon quality system characteristics whether imposed or not.

### B. Purchasing Information

1. Each production and lab facility manager shall document the procedures to be used for purchase and verification of materials/services on the quality impact materials list. At the discretion of higher management, a standard purchasing procedure may be specified by the manager's department head. Purchasing and verification procedures shall reference the applicable quality impact materials list and provide for the following.
  - a. Completion and approval of purchase orders.
  - b. Control and communication of specifications.

## VI. QA-07 PRODUCT REALIZATION

### 7.4.B. Purchasing Information (continued)

- c. Receiving inspection/verification.
  - d. Handling disputes with suppliers.
2. Purchasing documents pertaining to quality impact materials/services shall be reviewed and approved for adequacy of specified requirements prior to release and, where applicable, shall contain the following information.
  - a. Type, class, style, grade, or other precise identification.
  - b. Title or other positive identification and applicable issue of specifications, drawings, process requirements, inspection instructions, including requirements for approval or qualification of materials, procedures, process equipment, and personnel.
  - c. Title, number, and issue of the quality system standard to be applied.
3. Purchase orders generated from a controlled program or database shall only require approval when originally added to the system and when changes are made.
4. In instances where work is sub-contracted, purchasing contracts shall specify any special qualifications for personnel performing that work, if applicable.
5. Carbon Black Oil (CBO) purchased directly by the Vice President Finance shall be exempt from facility purchasing procedures but shall not be exempt from receiving inspection/verification specified to comply with requirements of QA-07.4.C.2. The Vice President of Finance shall ensure that CBO purchasing meets requirements of QA-07.4.A.1, shall maintain the list of approved CBO suppliers and shall consult with Manufacturing and QC on the quality of CBO purchases (ref. MO-08 & QL-10-10, 11 & 12).

### C. Verification of Purchased Product

1. Purchased materials & services capable of adversely affecting the quality of product & service provided to SRCC customers are named on the quality impact list specified by QA-07.4.A.2. Production and lab facility managers shall ensure that documented procedures are established to inspect, verify, and approve these quality impact materials or services prior to use.
2. The amount and nature of incoming inspection done on each listed material or service shall be allowed to vary based on the level of confidence provided by control exercised at the supplier premises. In all cases, procedures for incoming inspection shall specify:
  - a. What inspection is required and conditions for approval.
  - b. Who is to do the inspection and who has approval authority.

## VI. QA-07 PRODUCT REALIZATION

### 7.4.C. Verification of Purchased Product (continued)

- c. How nonconforming material is to be handled so that it cannot be accidentally used in production.
  - d. How inspection results shall be documented.
3. Depending upon the importance to product quality, SRCC confidence in the supplier, and the cost of accepting non conformance, inspection and verification procedures may include any combination of the following.
  - a. Checking supplier COA against specs.
  - b. Testing by SRCC or outside labs.
  - c. Monitoring of the process stream by either the supplier or SRCC.
  - d. Inspecting against requirements shown on the P.O.
4. If urgently needed to maintain production, incoming materials may be used prior to verification under the following conditions.
  - a. Suspect process, packaging, and maintenance materials shall be approved by the Manager Production.
  - b. Suspect lab materials shall be approved by the Manager QC.
  - c. Should the suspect material be CBO, pelleting additive, or structure control additive, carbon black produced from the material shall be positively identified and approval to ship suspended until the suspect material can be verified or appropriate additional testing done on the carbon black to confirm quality.
  - d. Reasons for having to abort routine inspection procedure shall be investigated/documented and steps taken to prevent recurrence.
5. If SRCC chooses to verify a purchased material at the supplier's premises, the purchasing documents shall specify verification arrangements and how the material is to be released.
6. Selection or inspection of a purchased material by the customer shall not relieve SRCC of the responsibility to satisfy the customer or to comply with relevant requirements of this section.

### 7.5. Production Provision

#### A. Control of Production

1. SRCC policy is that the production process at each location shall be planned and controlled so as to maintain satisfactory levels of quality in the most efficient manner. Control shall include ensuring the use of suitable production equipment

## VI. QA-07 PRODUCT REALIZATION

### A. Control of Production (continued)

and a suitable working environment (ref. QA-06.3).

2. Carbon black shipped to the customer is used up quickly as one of a number of raw materials incorporated into the customer's end product. As such, there is no contractual servicing of supplied carbon black as service is normally defined, nor is there a need to identify and plan for "post delivery" requirements. However, it is the policy of SRCC to maintain a Technical Service department responsible to provide the customer with whatever assistance is required to make the most efficient use of SRCC carbon black products. Should an SRCC customer ever require routine contractual servicing, this section of the manual shall be amended accordingly.
3. The production plan shall be documented by the Carbon Black Material Flow Diagram, which shows the sequence of each major step in the process. The material flow diagram is applicable to all producing locations and shall be maintained by the Director QA (ref. QP11).
4. Each Plant Manager, with input from Corporate QC and the Manager of SPC and Statistical Analysis, shall be responsible to develop and maintain a control plan for each production plant. The control plan shall document pertinent control activities associated with each step shown in the material flow diagram. Control plan documentation shall include, but not necessarily be limited to, the following elements (ref. MO-01, 2 & 3):
  - a. Process operation control points.
  - b. Key parameters of the process/product being checked at each control point.
  - c. Sampling frequency.
  - d. Measurement method.
  - e. Personnel or department responsible for the checking.
  - f. Data provided and how traceable.
  - g. Reaction plan for non-conformance.
5. The plant staffs shall be responsible to identify and provide operating and maintenance procedures, work instructions, and/or training as applicable to ensure that control plan activities are carried out successfully.
6. All process procedures, work instructions, and training shall be approved by the Plant Manager or other Department Head/Supervisor as appropriate and shall include the following where determined to be necessary:
  - a. Safety requirements.
  - b. Raw material handling requirements.
  - c. Operating procedures.

## VI. QA-07 PRODUCT REALIZATION

### 7.5.A. Control of Production(continued)

- d. Personnel responsible.
  - e. Values and/or limit requirements for key process variables, including where and when to take measurements.
  - f. Posting and communicating of testing schedules and specifications for key carbon black characteristics.
  - g. Sampling requirements.
  - h. Actions to be taken to keep key process variables and carbon black characteristics within required limits.
  - i. What to do should a process upset occur.
  - j. Whom to contact concerning exceptions to the operation.
  - k. The use of statistical tools.
  - l. Equipment and preventive maintenance requirements.
  - m. Reference to other documents necessary to properly carry out instructions.
7. The Plant Manager shall be responsible to ensure that appropriate plant personnel are provided with the necessary instructions, schedules, and forms to perform and document inspection of the process. Instructions shall, at a minimum, include the following:
- a. What equipment or process variable/condition to inspect.
  - b. Where to inspect, how often, and what information to record.
  - c. What is acceptable/unacceptable and what to do when a nonconforming condition is found, including when to divert product to the off-spec tank whether in response to process conditions or to product test data from the lab.
8. The use of SPC to control critical parameters of the production process shall be mandatory at all manufacturing plants. Technical procedures providing guidance for implementation and rules for application of SPC shall be provided by the QA department (ref. QP-03).
9. The Plant Manager shall document the scope and responsibility for local management of the SPC program. Documentation shall include the responsibility and frequency for monitoring the process, data review, run summaries, and other activities necessary to analyze and react to both short term upsets and long term trends.
10. SPC control chart limits, once effectively established, should be reviewed periodically for continuing suitability, but shall not be changed without notification and approval of the Manager SPC and Quality Analysis.

## VI. QA-07 PRODUCT REALIZATION

### 7.5.A. Control of Production(continued)

11. The inspection and test status of all production, including applicable raw materials used in the process, shall be identified and communicated so as to prevent the accidental use of unverified raw materials or the shipment of untested or nonconforming carbon black.
12. Test status of in-process carbon black shall be identified and documented by the plant spot sample records, contained in the SPC database, which shall include the following information:
  - a. Identification of each carbon black product by grade, production date and sample times.
  - b. Results of all QC lab testing of the carbon black up to the point where finished product goes into a storage tank.
  - c. Which storage tank the carbon black is going into and the exact times it is switched out of one tank and into another.
  - d. Reasons for going from a good product tank to the reject tank.
13. The QC Lab Manager shall be responsible to confirm spot sample data is entered into the SPC database in a timely manner and distribute copies of shipment test reports daily to all persons needing the contained information.
14. Test status of finished product carbon black shall be identified and documented by a shipment test report, which shall be completed by the QC lab for each hopper car/hopper truck or each lot/sub lot if the product is packaged in bags, sacks, or bins. Each shipment test report shall contain the following information:
  - a. Identification of each sample tested sufficient for the test results to be traced to the individual pallets, sacks, bins, or compartments which made up the sample.
  - b. Test results on the carbon black represented by the report.
  - c. Approval status signed by the QC Lab Manager or other person authorized to release/suspend shipment, including what is wrong with the nonconforming product.
15. Where visual inspection of the equipment or product is specified, procedure and/or training shall include what is acceptable or unacceptable in terms of size, shape, quantity, color, marks, and condition as applicable.
16. Records to document the results of all inspection and testing shall be maintained according to instructions in the records maintenance procedure (ref. QP-09).

## VI. QA-07 PRODUCT REALIZATION

### 7.5.A. Control of Production(continued)

17. Delivery shall be arranged according to terms agreed to between SRCC and the customer and provide for the following:
  - a. SRCC shall establish a system to support a goal of 100% on-time shipments, including a method of monitoring transit times so that corrective action can be taken in cases where 100% on-time shipments are not maintained.
  - b. Regardless of whether SRCC or the customer pays for the carrier, SRCC shall ensure that the containers provided are capable of protecting the quality during delivery. SRCC shall not be responsible for negligent actions by the carrier unless specified so in the contract.
  - c. Delivery arranged by SRCC shall be provided only by carriers approved by the SRCC Traffic Manager, who shall be responsible to verify the carrier's capability. Plants shall not be permitted to use carriers other than those approved by the Traffic Manager or furnished by the customer (ref. Authorized Motor Carriers List).
  - d. The providing of a carrier by the customer shall not relieve SRCC of the responsibility to comply with the requirements of QA-07.5.E.4.d.
  - e. Under no circumstances shall SRCC authorize a carrier to repackage and deliver spilled or damaged carbon black without written authorization from the customer.

### B. Validation of Processes for Production

1. The existence of specifications for the process output, which are fully verifiable by subsequent inspection/testing of the product, precludes classification of carbon black manufacturing operations as a special process requiring prequalification of process capability.

### C. Identification and Traceability

1. It is the policy of SRCC that all product shall be identified in a way so as to ensure traceability at each stage of production, packaging, and delivery.
2. The objective of identification and traceability procedures shall be to accomplish the following:
  - a. Permit carbon black at the customer's location or any preceding stage of production to be traced back to the plant/process conditions which produced it and the specifications/test data which verified it.
  - b. Permit SRCC carbon black lots to be traced to all customers which were supplied with product from the respective lots.

## VI. QA-07 PRODUCT REALIZATION

### 7.5.C. Identification and Traceability (continued)

3. The Director Carbon Operations shall be responsible to develop, implement, and maintain procedures to satisfy the objectives of identification and traceability (ref. MO-04). Plant and QC Lab Managers shall be responsible to ensure that procedures are enforced.
4. Product Identification & Traceability procedures shall, at a minimum, specify methods to do the following:
  - a. Generate and assign lot numbers.
  - b. Trace in-process product to process conditions and test verification.
  - c. Trace finished product lots to the test data/specifications used to verify and approve the lot and to the customers supplied from the lot.
  - d. Establish a unique identification for each discrete unit of packaging to include pallets, sacks, bins, hopper cars, hopper trucks, and overseas bulk containers.
  - e. Maintain records of unique identity in accordance with the requirements of QA-07.5.C.

### D. Customer Property

1. Sid Richardson Carbon Co. does not use, nor does it solicit the use of customer supplied material in any part of its manufacturing process, nor does it anticipate that this might become a practice in the future. Should the customer ever supply SRCC with a material intended for use in the carbon black process, it shall be handled by the same procedures to be applicable if the material were purchased directly by SRCC.

### E. Preservation of Product

1. SRCC policy is that the quality of its carbon black products shall be maintained until delivered to the customer. A shipment is considered "delivered" at that point in the process where the customer has agreed to accept ownership. Packaging, transportation, delivery, and schedule shall be as required by the customer. Where the customer has not specified a requirement, the method shall be consistent with good commercial practice.
2. Each department involved with the handling, storage, packaging, preservation and delivery of carbon black shall provide written procedures appropriate for the activities in his/her own area of responsibility. Procedures shall at a minimum ensure compliance with requirements set forth in the following sections.

## VI. QA-07 PRODUCT REALIZATION

### 7.5.E. Preservation of Product(continued)

3. Handling shall be accomplished by methods which will not cause deterioration of quality or damage to the packaging prior to delivery.
  - a. A lockout procedure or other equally positive means of exclusion shall be used to prevent carbon black being removed from the final product tank from being contaminated by another product stream.
  - b. Nonconforming product in the warehouse shall be tagged or otherwise identified in a manner so as to prevent it from being commingled with good product during loading.
  - c. Equipment used to package and transfer carbon black shall be maintained and inspected per routine schedule, and equipment operators shall be trained in the correct methods to perform these activities.
  - d. Interruptions of bulk loading/filling operations shall be documented for later use in quality evaluation and problem investigation.
  - e. Methods established for product identification and traceability shall be preserved at all stages of handling.
  
4. Packaging shall be suitable for the intended method of delivery and shall provide sufficient protection to ensure that the product will arrive at the customer's location in the same condition as shipped.
  - a. Requirements for bags, sacks and, as necessary, any other materials used for packaging carbon black shall be documented and, where appropriate, put into the form of specifications. Incoming shipments of these items shall be inspected to verify suitability prior to being released for use.
  - b. Hopper cars and hopper trucks shall be inspected and prepared to accept product prior to loading. Preparation shall include any cleaning/repairs necessary to ensure a trouble free delivery.
  - c. A final preshipment inspection of all packaging, including bulk containers, shall be performed to confirm that product identification is correct and that all placards/tags are in place as required to comply with safety and environmental regulations.
  - d. Vans and similar type containers used to deliver carbon black shall be inspected prior to loading and any condition capable of causing contamination or damage to the contents shall be corrected. Prior to each shipment leaving the plant, reinspection shall be required to verify that the product is correctly loaded to prevent damage during transit.
  
5. Storage and Protection facilities and methods of storage shall be maintained in satisfactory condition to protect the quality of both product and packaging.
  - a. Routine inspection procedures shall be established to assess the condition of storage tanks, warehouses, and the stock stored in the warehouses.

## VI. QA-07 PRODUCT REALIZATION

### 7.5.E. Preservation of Product(continued)

- b. Carbon black packaged in paper bags or other material not providing a moisture barrier shall be retested for moisture content prior to shipment if storage time has exceeded recommended limits. The QC Lab Manager is responsible to establish the maximum time each grade of carbon black may be stored before requiring the moisture retest. Time limits are permitted to vary depending upon the carbon black grade and the geographic location of the plant.
  - c. Warehouse space shall be segregated where required into identifiable storage areas which make it easy to maintain adequate separation to avoid commingling of products.
  - d. Switching of production between storage tanks and the movement of product in and out of warehouses shall be controlled and documented so that the precise location of individual production lots and containers is always known.
6. The Plant Manager shall ensure that nonconforming product for whatever reason shall be identified/segregated in a manner so as to prevent it from being accidentally included in a shipment. Where practical, it should be totally separated and moved to an area of the warehouse not used for good product storage.
  7. Nonconforming product stored in the warehouse shall be tagged in a manner that will make it easy to be recognized by a person unfamiliar with warehouse records and procedures.

### 7.6. Control of Monitoring and Measuring Equipment

1. It is the policy of SRCC that product quality shall not be jeopardized by poor performance of inspection, measuring, and test equipment used to control the process or to verify final carbon black quality. All such equipment providing data required to document satisfactory quality levels shall be identified, controlled, calibrated, and ~~or~~ maintained in accordance with policy described hereunder.
2. Control of applicable equipment shall include provisions to ensure that:
  - a. Calibrated equipment in use shall be identified by a sticker, tag, or other visible means of assessing calibration status. Where the plant environment makes it unequivocally impossible to affix the sticker or tag directly to the instrument, a record showing the calibration status shall be maintained in an alternate location readily accessible to any person who needs to know. All calibration stickers, tags, and other records of calibration status must show date last calibrated, next date due, and who performed the calibration.

## VI. QA-07 PRODUCT REALIZATION

### 7.6. Control of Monitoring and Measuring Equipment (continued)

- b. Only calibrated equipment shall be used to verify product conformance to specifications (acceptance testing) and shall be used in such a manner that the test measurement error is known and is consistent with ASTM and/or SRCC precision/accuracy statements. Test equipment not clearly identified as to calibration status (i.e., stickered or tagged) shall not be used for acceptance testing.
  - c. The accuracy and precision of calibration results shall be traceable to nationally recognized standards where such standards exist. In the absence of such standards, the calibration procedure or the equipment log shall specify the basis for ensuring accuracy/precision of the calibration equipment used.
  - d. Acceptance testing equipment shall be protected from unauthorized adjustments, damage or deterioration which would invalidate calibration.
  - e. Test hardware or test software, if used for product acceptance testing, shall be subject to the same requirements as other listed monitoring and testing equipment.
3. The Plant and QC Lab manager at each applicable location shall be responsible to identify and maintain a list or database of equipment requiring calibration and control, and shall ensure that calibration is performed and documented on listed equipment before it is put into service and at regularly scheduled intervals thereafter.
  4. Acceptable calibration methods may be as recommended by any of the following authority:
    - a. Equipment manufacturers.
    - b. Recognized standards organizations such as ASTM.
    - c. SRCC operating experience.
  5. Location managers and/or the respective department heads are responsible to document the procedures used to calibrate listed equipment. Each calibration procedure shall include or reference the following information:
    - a. Identification and function of equipment covered by the procedure.
    - b. Who is authorized to do the calibration.
    - c. Calibration frequency.
    - d. Calibrating equipment/standard to be used.
    - e. Environmental conditions required for the calibration.
    - f. Measurements to be made to assure calibration over the expected range of use.
    - g. Method for taking the measurements.
    - h. Acceptable limits for each measurement taken.
    - i. Action to be taken if calibration results are unsatisfactory.
    - j. How equipment is to be stored/handled to maintain accuracy and fitness for use.

## VI. QA-07 PRODUCT REALIZATION

### 7.6. Control of Monitoring and Measuring Devices(continued)

- k. Documentation requirements.
6. Outside services may be used for calibration as deemed appropriate by the responsible manager. When outside service is used, the manager is responsible to ensure that the service conforms to the requirements of QA-07.6.
  7. A separate log to document calibration and maintenance shall be maintained for each piece of listed equipment. At a minimum, the log shall include the following:
    - a. Identification to permit traceability.
    - b. Current location of equipment.
    - c. Standard used.
    - d. Required accuracy expressed as acceptable limits.
    - e. Date calibrated.
    - f. Date next calibration due.
    - g. "As found" versus "as left" for each calibration.
    - h. Corrective action taken.
    - i. Maintenance history.
    - j. Person who performed the calibration or maintenance.
  8. When equipment used to verify quality of final product is found to be out of calibration, the QC Lab Manager shall be responsible to:
    - a. Assess the validity of test results previously produced by the faulty equipment.
    - b. If necessary, suspend approval on products in inventory which may have been affected by erroneous test results.
    - c. Resample/retest as appropriate to reevaluate quality status of any suspect product.
    - d. Notify Tech Service of suspect products which have already been shipped to customers.
    - e. Document all decisions/actions.
  9. Calibration records shall be made available to SRCC customers who wish to review them.

End of QA-07

**VI. QUALITY SYSTEM REQUIREMENTS**

**QA-08**

**MEASUREMENT, ANALYSIS &  
IMPROVEMENT**

Ref: ISO 9001-2008, 8.0

## VI. QA-08 MEASUREMENT, ANALYSIS AND IMPROVEMENT

### 8.1. General

1. It is the policy of SRCC that the quality of all production and the effectiveness of all processes shall be verified by appropriate monitoring, inspection and testing. Each facility and department manager is responsible for identifying, planning, implementing, monitoring, analyzing and continually improving the processes applicable to their area.
2. The objectives of monitoring, inspection and testing shall be to accomplish the following:
  - a. Demonstrate the stability of the production process in order to confirm the conformity of the product.
  - b. Assure the conformity of and identify opportunities for improvement of the processes that make up the SRCC quality management system.
3. The SRCC approach to effective use of statistical techniques is to provide personnel with training/procedures and then allow discretion and innovation in how they are applied. It is to be understood that the use of any particular statistical method shall remain focused towards achieving a specific objective and that use alone shall not be encouraged as an end unto itself.

### 8.2. Monitoring and Measurement

#### A. Customer Satisfaction

1. Sales/Customer Service and Technical Service shall maintain adequate contact with all customers to monitor the status of customer satisfaction in products and services. Collected data shall be compiled and communicated to the Corporate Quality Group/Management Review committee for their semi-annual review.
2. The status of customer satisfaction shall be reviewed semi-annually by the Corporate Quality Group/Management Review committee. Records of each review shall be maintained in the QA office for a minimum of five years.
3. Sales/Customer Service and Technical Service shall additionally monitor the need for future requirements in services and products and communicate this information to the appropriate personnel and departments within SRCC.

#### B. Internal Audit

1. It is the policy of SRCC to verify by internal quality audits that the quality system is adequate to serve the customer's needs and that it is being applied as intended by management.

## VI. QA-08 MEASUREMENT, ANALYSIS AND IMPROVEMENT

### 8.2.B. Internal Audit (continued)

2. Scheduled Internal audits shall be performed annually at each applicable location by trained auditors who are independent of direct responsibility for work in the area being audited.
3. The SRCC Management Representative (Director Quality Assurance) shall provide a written procedure for (ref. QP-07):
  - a. Qualifying and assigning auditors to ensure objectivity and impartiality.
  - b. Scheduling and planning for audits to ensure that the audit criteria, scope, frequency and methods are defined.
  - c. Conducting audits and reporting results.
4. The Management Representative shall ensure that the audit process considers:
  - a. Does the quality system comply with customer needs and the ISO 9001 standard?
  - b. Are the necessary procedures properly documented and available where needed?
  - c. Is work being done according to procedures?
  - d. Is the working environment satisfactory to achieve quality objectives?
  - e. Are records being maintained as required?
  - f. Is the system effective to produce the expected results?
5. Audit preparation shall include a review of previous audit results, customer satisfaction records, inspection/test records, and other management concerns as applicable. A checklist, if used, shall be specific to the individual audit and shall be prepared by the Management Representative and/or the audit team.
6. Noncompliance discovered by the audit shall be documented and brought to the attention of management responsible for taking corrective action. The responsible manager shall use the SRCC corrective action system to document the implementation and effectiveness of corrective action for each audit finding. Confirmation must be provided to the appropriate department head and to the management representative, who shall ensure that the corrective action is reevaluated at the next scheduled internal audit. Internal audit concerns/opportunities for improvement should be considered for input into the SRCC preventive action system.
7. Results of audits shall be maintained in accordance with instructions in procedure QP-09.

## VI. QA-08 MEASUREMENT, ANALYSIS AND IMPROVEMENT

### 8.2.C. Monitoring and Measurement of Process

1. SRCC policy is to take advantage of appropriate statistical techniques where such methods are shown to be beneficial to improving quality. The SRCC approach to effective use of statistical techniques is to provide personnel with training/procedures and then allow discretion and innovation in how they are applied.
2. Executive management at the corporate level shall provide for methods and resources to continuously monitor and report the ongoing process performance. Carbon black characteristics to be monitored and the required performance shall be as defined by the customer. Where no such requirements have been established, monitoring shall be conducted on those characteristics judged by SRCC management to be critical to customer satisfaction. Priority for improvement will be given to those characteristics with a Cpk of less than 1.33.
3. The QA Department shall be responsible to ensure that SRCC has sufficient statistical resources in-house to address the following major areas where statistical techniques are expected to be useful:
  - a. Statistical Process Control (SPC), to include procedures and techniques for controlling selected carbon black parameters.
  - b. Problem Solving, to include methodology and techniques for problem analysis and resolution.
  - c. Experimental Design, to involve evaluation and comparison of alternate processes and products.
4. All of the processes that make up the SRCC Quality Management System will be monitored and measured to insure that we meet customer requirements and our quality objectives, and insure our processes achieve planned results.
5. Department managers are responsible for identifying and applying suitable methods for monitoring, and measurement of processes applicable to their areas.
6. When planned results are not achieved, correction and corrective action shall be taken, as appropriate.
7. The quality management system shall be monitored via the internal audit and CAR/PAR programs which will feed information to the management review process represented by the quarterly Quality Group Meetings. Output from those meetings shall be a part of the information input to the annual facility and corporate level Management Reviews.

## VI. QA-08 MEASUREMENT, ANALYSIS AND IMPROVEMENT

### 8.2.D. Monitoring and Measurement of Product

1. It is the policy of SRCC that the quality of all production shall be verified by appropriate inspection and testing. The objectives of inspection and testing shall be to accomplish the following:
  - a. Maintain the necessary in-process quality characteristics at each stage of production.
  - b. Ensure that finished products will satisfy the customer's requirements in terms of both specification and performance.
  - c. Eliminate the need for SRCC customers to incur the expense of reception testing on SRCC carbon blacks.
2. In-Process Inspection and Testing shall include those actions taken to verify product conformance to requirements up to the point where the carbon black is put into the product tank. Verification of in-process quality shall be accomplished by inspection of the process and/or testing of the product as required by the Plant Control Plan and associated procedures. Because carbon black in-process testing is performed on samples taken routinely from a continuous process stream, hold and recall procedures are not applicable. Products not meeting requirements of established in-process testing procedures shall be handled per QA-08.3.
3. Corporate QC shall be responsible to provide the plant with the following:
  - a. Schedules to specify minimum in-process product sampling/testing frequency and responsibility (ref. QL-10-1, 2 & 3).
  - b. Specifications and limits for evaluating the product tested (ref. QL-10-9).
  - c. Approved lab test procedures (ref. Laboratory Testing Procedures Manual).
  - d. Methods and forms for communicating and documenting results of in-process product testing (ref. Spot Sample Reports from the SPC Program).
4. Final Inspection and Testing shall be performed on carbon black coming out of the product tank to verify conformance to requirements prior to shipment. Responsibility for final inspection and testing is divided as follows:
  - a. The QC Lab Manager shall ensure that quality of final product is confirmed by approved shipment certification procedures and shall provide the shipping department with written documentation to confirm the approval status of all product waiting to be shipped. If product is rejected, the QC Lab Manager shall document the reason for withholding approval.
  - b. The Plant Manager shall furnish shipping personnel with methods and procedures to ensure that packaging is inspected as specified in the Plant Control Plan and that no product leaves the plant until it has been documented that all shipping and quality requirements have been met.

## VI. QA-08 MEASUREMENT, ANALYSIS AND IMPROVEMENT

### 8.2.D. Monitoring and Measurement of Product(continued)

5. Unless specified otherwise by the customer, the primary system used for shipment certification testing shall be the SRCC Dynamic, Prevention Oriented QA System described in procedure QL-10-5. Corporate QC shall be responsible to maintain QL-10-5 consistent with its objectives of providing each customer with a defect free product.
6. Shipment certification for customers not wishing to participate in the Prevention Oriented QA System shall have testing completed by a static type testing schedule determined by both SRCC and the customer to be the most appropriate for the carbon black grades being supplied.
7. On each shipment, the QC Lab Manager shall provide the customer with a Certificate of Analysis to document quality of the product supplied.
8. Records to document product conformity with acceptance criteria and indication of release authority shall be maintained according to instructions in procedure QP-09.

### 8.3. Control of Nonconforming Product

1. It is the policy of SRCC that each manufacturing facility establish a procedure, consistent with this section, to ensure that the handling/disposition of nonconforming product shall not increase the customer's risk of receiving an unsatisfactory shipment.
2. Carbon black found to be nonconforming while in-process shall be diverted to a reject tank used exclusively for that purpose and held for reprocessing. The Plant Manager shall be responsible to ensure that control of product being removed from the reject tank precludes the possibility of it being accidentally packaged as conforming carbon black.
3. The Plant Manager shall ensure that nonconforming product for whatever reason shall be identified/segregated in a manner so as to prevent it from being accidentally included in a shipment. Where practical, it should be totally separated and moved to an area of the warehouse not used for good product storage.
4. Disposition of nonconforming product is allowed by any of the following:
  - a. Ship to a consenting customer.
  - b. Reprocess or repackage.
  - c. Scrap.

## VI. QA-08 MEASUREMENT, ANALYSIS AND IMPROVEMENT

### 8.3. Control of Nonconforming Product (continued)

5. When nonconforming carbon black is offered to the customer as a conscious concession, prior to accepting the order to ship, the SRCC Tech Service/Customer Service representative who services the customer shall ensure that the customer is informed of what is known to be wrong or suspected to be wrong with the product. Acceptance by the customer shall then be documented on the official order.
6. Carbon black to be reprocessed shall be handled by blending it back into a compatible process stream at a location to ensure that it will be tested for conformance to requirements in the same manner as the original product was tested. The reprocessing rate, up to the allowable maximum, shall be determined in each case by the plant staff and shall be documented on the P&I report. The maximum allowable reprocessing rate for each grade combination shall be established and communicated to the plant by the President.
7. Scrapping of nonconforming carbon black shall be allowed only when it is believed to be the most economical alternative, in which case, it shall be disposed of in compliance with environmental regulations. The decision to scrap shall be made only by an agreement between the Plant Manager and QC Lab Manager or higher authority.
8. When nonconforming product is detected after shipment and/or delivery, Sales/Marketing shall notify the customer to determine the appropriate action required. Action required shall be based on the potential effects of the nonconformity.
9. Records to document the nature of nonconformity and any subsequent actions taken, including concessions obtained, shall be maintained according to instructions in procedure QP-09.

### 8.4. Analysis of Data

1. It is the policy of SRCC that all processes shall be planned and controlled so as to maintain satisfactory levels of quality in the most efficient manner. Control shall include ensuring the collection and analysis of appropriate data to ensure corporate objectives and customer expectations are met.
2. The following functions are formally organized to ensure that appropriate data is collected and analyzed to demonstrate the effectiveness of the processes that make up the SRCC Quality Management System.

## VI. QA-08 MEASUREMENT, ANALYSIS AND IMPROVEMENT

### 8.4. Analysis of Data (continued)

Additionally, they present structured forums to evaluate opportunities for continual improvement and assure that necessary planning takes place in the processes/activities most important to the customer. From time to time, the number and titles of specific meetings may be changed to better fit the strategic needs of the organization. When this occurs, the listed objectives shall be covered in other related meetings.

- a. Corporate Quality Group/Management Review Committee.
  - b. Plant Quality Groups.
  - c. R&D, Technical Service, Sales & Manufacturing interchanges.
3. The Corporate Quality Group/Management Review Committee shall consist of one manager from each major department. Members shall be chosen only from those managers who have sufficient authority to make decisions and ensure the performance of quality related work in their respective departments. At his/her option the SRCC President may also be a regular member of the group. The SRCC Director QA shall schedule meetings at predetermined intervals to:
- a. Plan long term SRCC quality strategy and objectives.
  - b. Identify and evaluate opportunities for improvement and ensure that improvement projects are implemented where appropriate.
  - c. Monitor overall progress of SRCC quality improvement.
  - d. Evaluate and react to changes in status of customer satisfaction.
  - e. Develop and provide for appropriate training to establish a spirit of continuous improvement throughout SRCC.
  - f. Ensure that quality programs, processes, and techniques initiated by SRCC are value added for both SRCC and the customer.
4. The Plant Quality Groups shall be cross-functional teams with members and meeting schedules assigned by the plant manager. The groups shall function as directed by the plant manager to assist in quality improvement related activities such as to:
- a. Establish plant goals in support of SRCC corporate quality objectives.
  - b. Ensure that quality planning results in appropriate actions at the plant level.
  - c. Investigate and implement solutions to quality problems and plan for problem prevention.
  - d. Keep work processes in all departments aligned with customer needs.
  - e. Evaluate training effectiveness and establish training objectives.
  - f. Maintain the enthusiasm for continuous improvement at all levels in the organization.
5. The R&D, Technical Service, Sales & Manufacturing interchange meetings shall provide forums to include discussions on:

## VI. QA-08 MEASUREMENT, ANALYSIS AND IMPROVEMENT

### 8.4. Analysis of Data(continued)

- a. Anticipating long term customer needs and communicating those throughout SRCC.
  - b. Ensuring that departmental resources are directed towards the resolution of those quality problems which can have the most impact on long term customer satisfaction.
  - c. Evaluating application of research findings to process improvement.
  - d. Keeping all processes in all departments aligned with long term customer needs.
6. Meetings of the groups named herein, and other related meetings, shall be documented (agenda, decisions, action plans, etc.) and communicated to those who need to know. A record of each meeting shall be maintained for at least two years.

### 8.5. Improvement

#### A. Continual Improvement Of the Product

1. The Sid Richardson Quality Policy provides for continual improvement to be an integral part of SRCC operating philosophy and strategic planning.
2. Informally, it is expected that each SRCC Manager, by providing training, encouragement, and personal example, shall strive to create and maintain a workplace environment favorable to promoting continual improvement in all work processes.
3. Each Plant Manager shall ensure that routine review of plant SPC, lab, and operating reports is conducted to determine causes & potential causes of nonconforming production and shall initiate corrective/preventive action where appropriate. Root cause charts and SPC codes shall be periodically reviewed and revised as needed to reflect changes in equipment and procedures.
4. The Manager SPC and Quality Analysis shall ensure that each plant is provided with routine analysis of process capability on all products to show where improvement is needed to reduce the possibility of nonconforming carbon black. Reporting schedule shall be determined jointly by manufacturing and QA.

## VI. QA-08 MEASUREMENT, ANALYSIS AND IMPROVEMENT

### 8.5.B. Continual Improvement Of the Process

1. The Corporate Quality Policy is periodically reviewed and approved by top management. Annually, facilities and departments shall use the policy and objectives to develop measurable local objectives. At least semi-annually, each facility shall analyze progress toward their objectives and submit the status of their progress to the Corporate Quality Group/Management Review Committee.
2. Annually, each facility manager shall review progress toward objectives, internal and external audit results and CAR/PAR activity and include that analysis in their Facility Management Review.
3. Executive management shall review the facility results along with action items from the quarterly Quality Group/Management Review Meetings and other appropriate metrics as part of the annual corporate Management Review. One output of that review shall be a review and approval of the Corporate Quality Policy and objectives.

### C. Corrective/Preventive Action

1. It is the policy of SRCC to take corrective and/or preventive action as necessary to investigate, document, and eliminate the causes of nonconformity related to the product, the process, and the quality system. In all cases, action initiated shall be at a level corresponding to the degree of risk involved. Applicable situations for corrective/preventive action may involve any problem or potential problem which can affect customer satisfaction or process efficiency such as:
  - a. Customer complaints over SRCC products or services.
  - b. Nonconforming carbon black or purchased quality impact materials.
  - c. Work or process related problems which affect the ability of SRCC people to do the job right the first time.
  - d. Quality system problems which affect compliance with the ISO 9001 standard.
2. The Director QA shall develop and maintain company-wide procedures for responding to internal requests for corrective/preventive action (ref. QP-13). The procedure shall provide for:
  - a. Applicable problems to be brought to the attention of management.
  - b. The use of appropriate sources of information (e.g., quality records, complaints, audit results, processes, work operations, SRCC objectives, etc.) to detect, analyze, and eliminate potential causes of nonconformance.
  - c. Assignment of responsibility for investigating and taking appropriate action.
  - d. Maintenance of documentation indicating what was found to be wrong, the action taken, and the results of those actions.

**VI. QA-08 MEASUREMENT, ANALYSIS AND IMPROVEMENT**

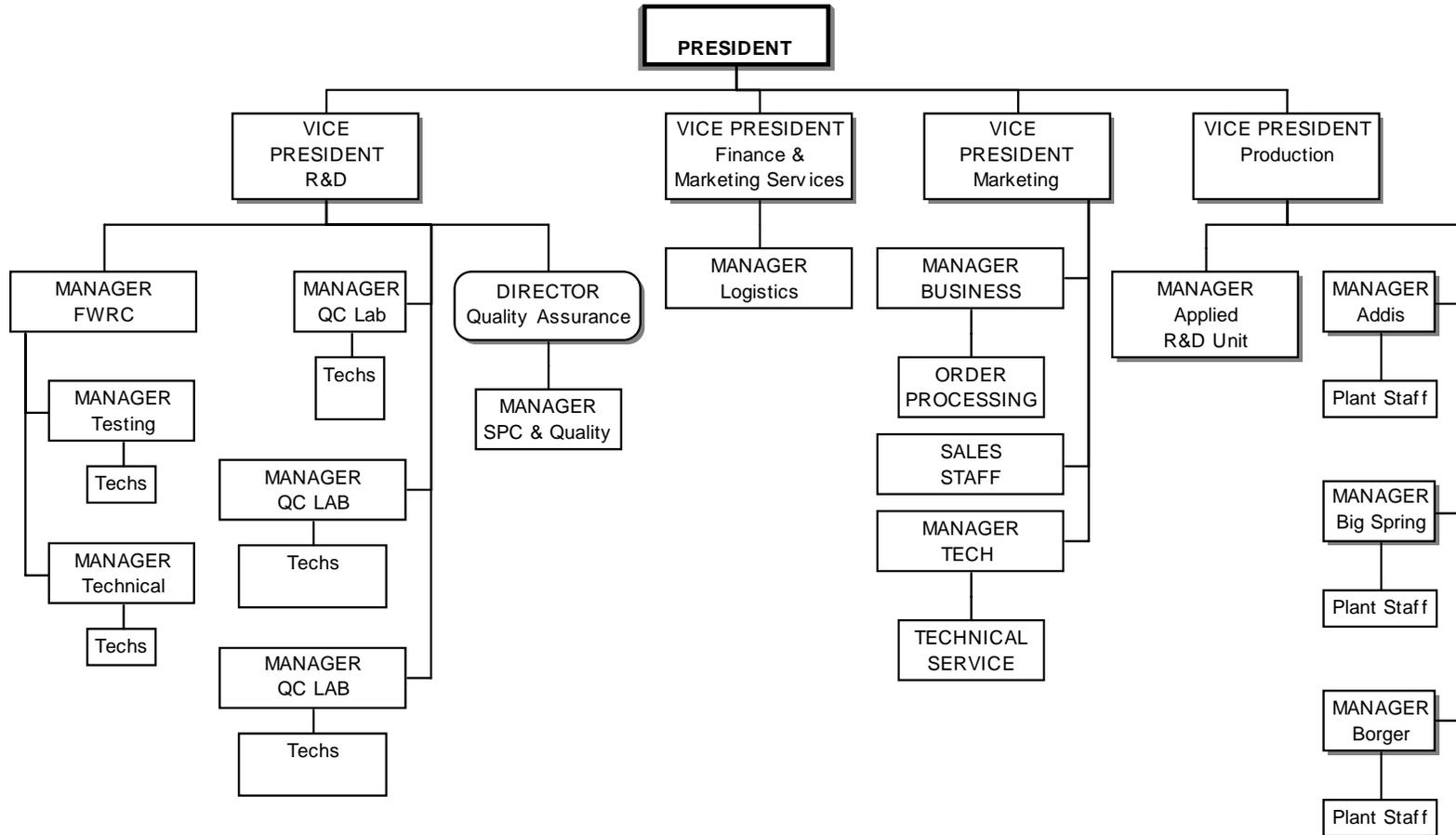
**8.5.C. Corrective/Preventive Action (continued)**

- e. Follow up to verify that the action taken was effective and that any procedural changes and/or training made necessary as a result of the action is completed before closeout.
- f. Records of preventive action which may have wider application to be submitted to appropriate management for further review.

*Note: Procedures prescribed under QA-08.C.2 are not intended to supersede or to interfere with methods in place to handle routine work situations (e.g., maintenance work order system, QF-07 for complaints, rules for SPC and responding to process upsets and nonconforming production, Lab Standards testing, ASTM Proficiency testing, etc.). The facility manager should, however, initiate additional corrective/preventive action when established work procedures fail to achieve objectives.*

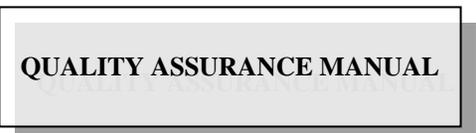
End of QA-08

# SID RICHARDSON CARBON CO. Quality Organization

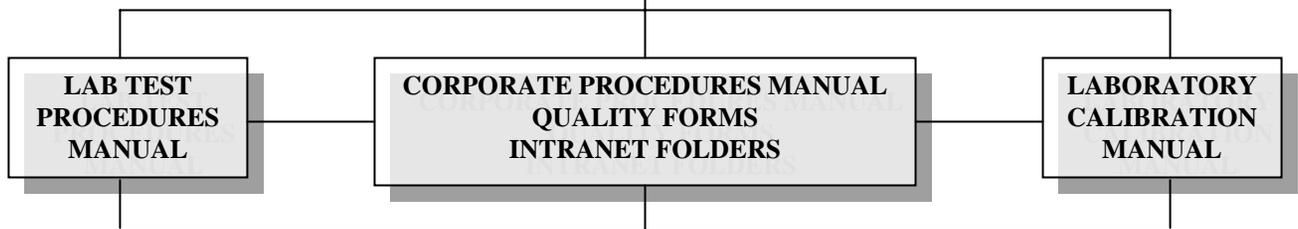


# SRCC QUALITY SYSTEM STRUCTURE & DOCUMENTATION

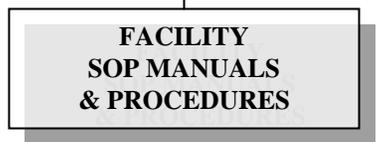
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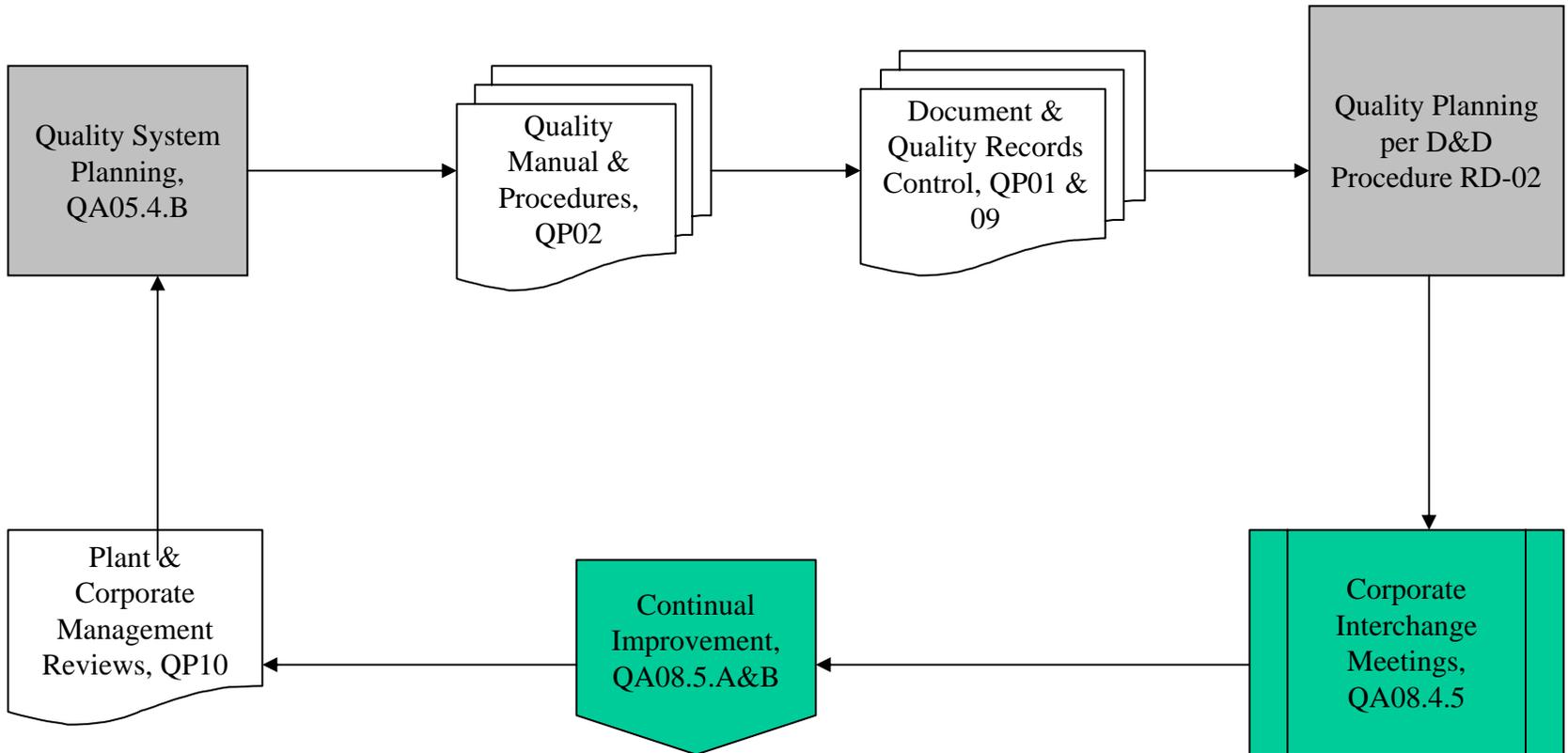
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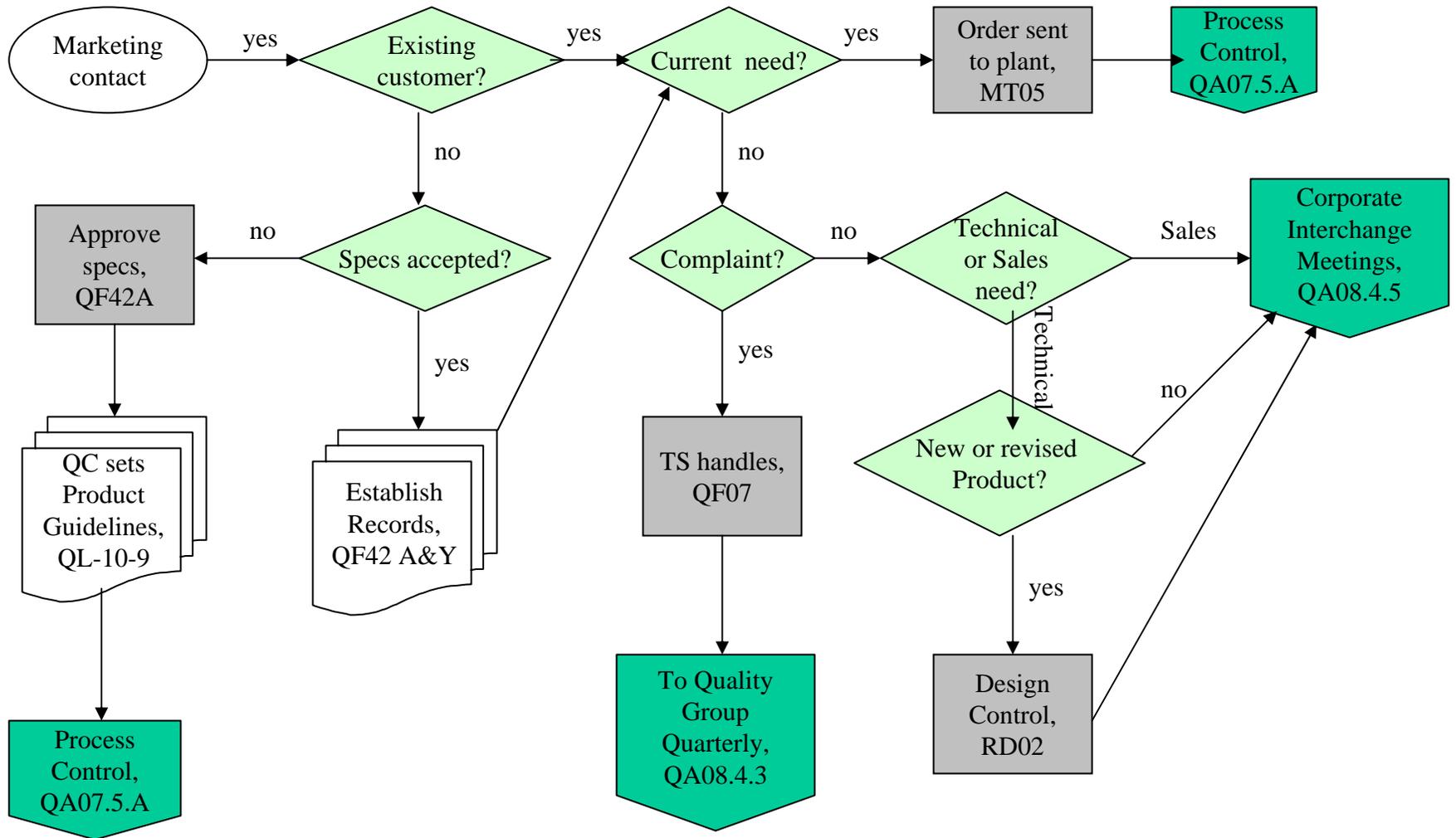
- .....ADDIS MANUFACTURING PLANT
- .....BIG SPRING MANUFACTURING PLANT
- .....BORGER MANUFACTURING PLANT
- .....FORT WORTH RESEARCH CENTER
- .....AKRON SALES & TECHNICAL SERVICE CENTER

LEVEL 2. PROCEDURES LISTED ON CORPORATE DOCUMENTS LIST (QP-00)  
LEVEL 3. PROCEDURES LISTED ON FACILITY DOCUMENTS LIST.

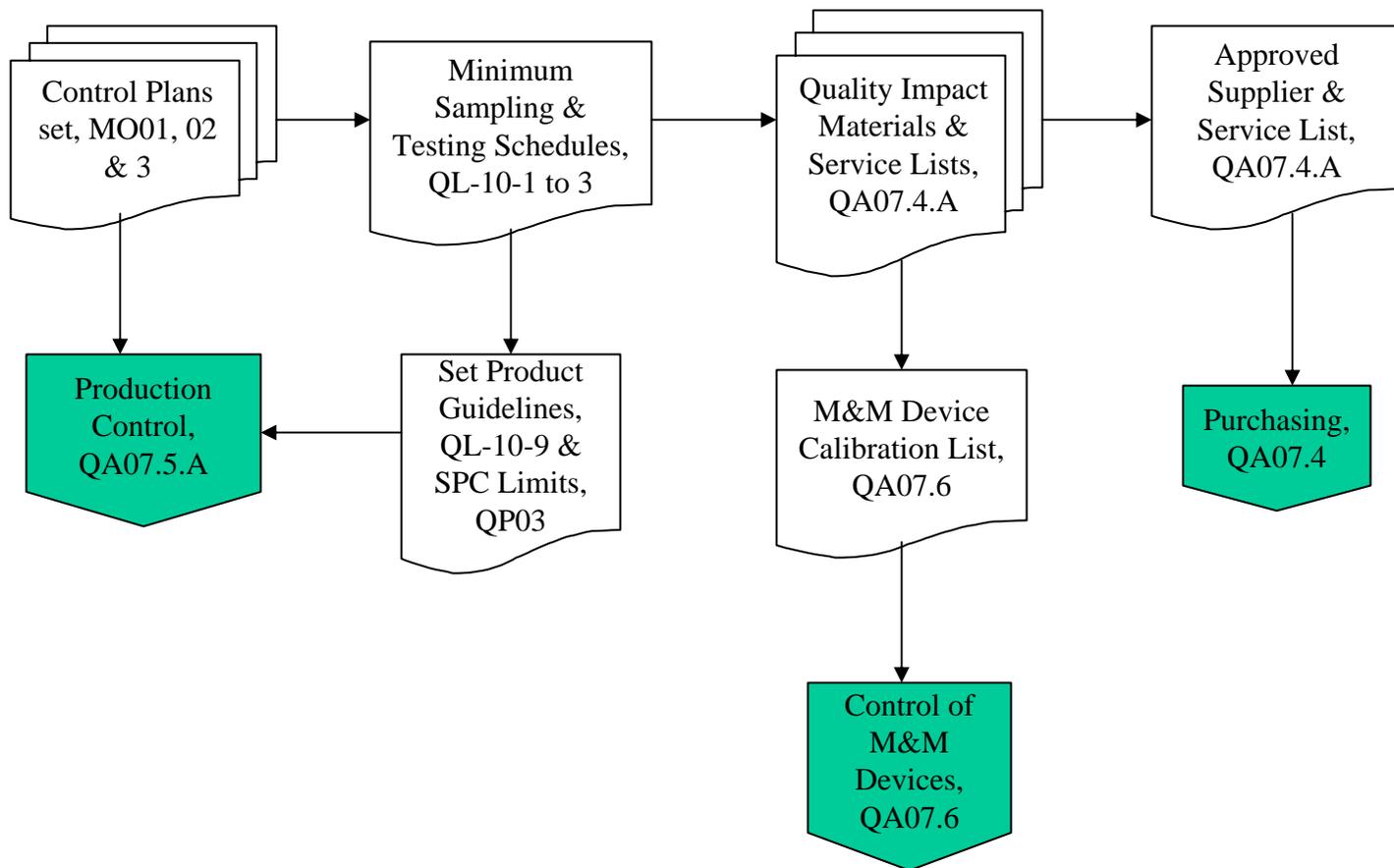
# Business Process



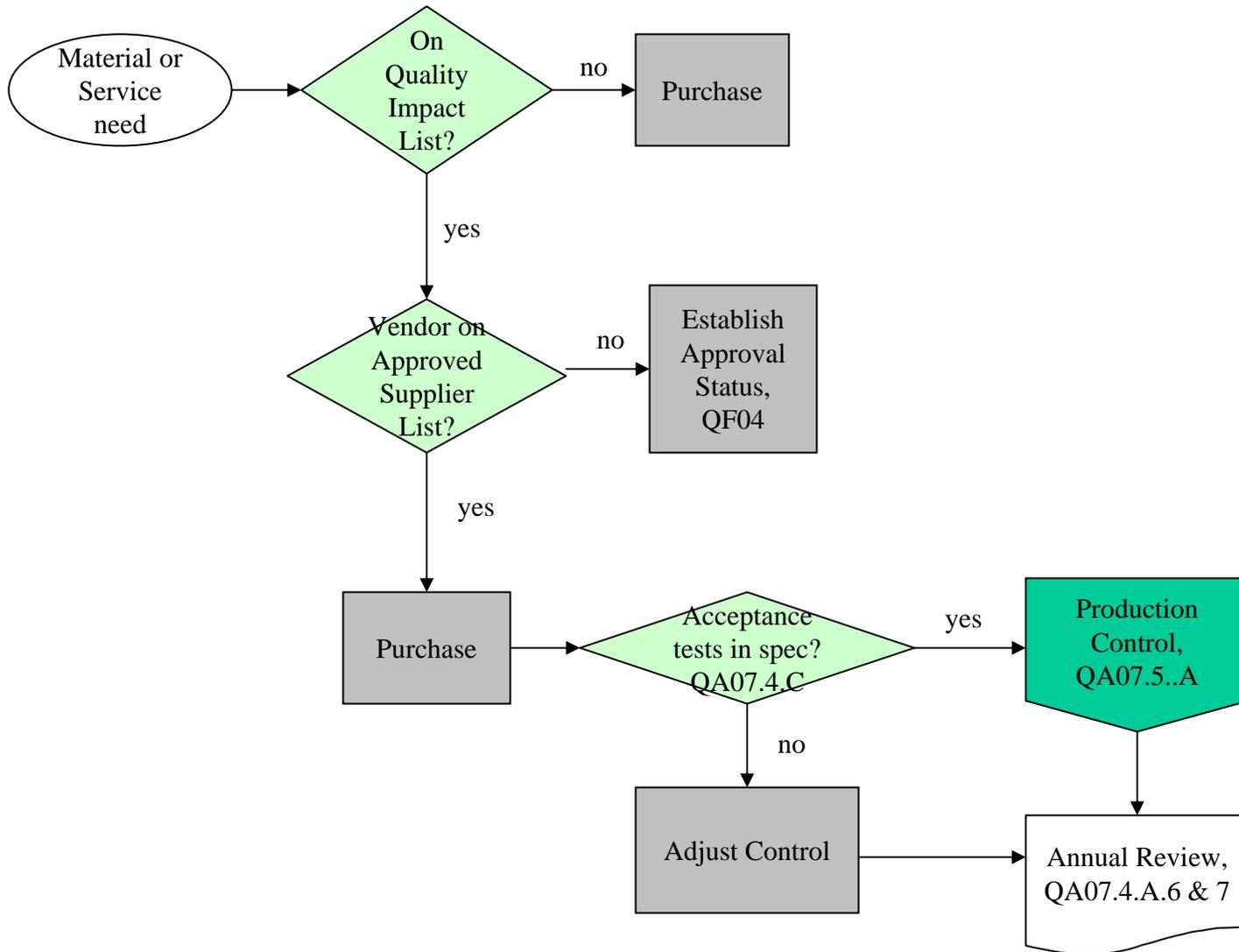
# Product Realization Process



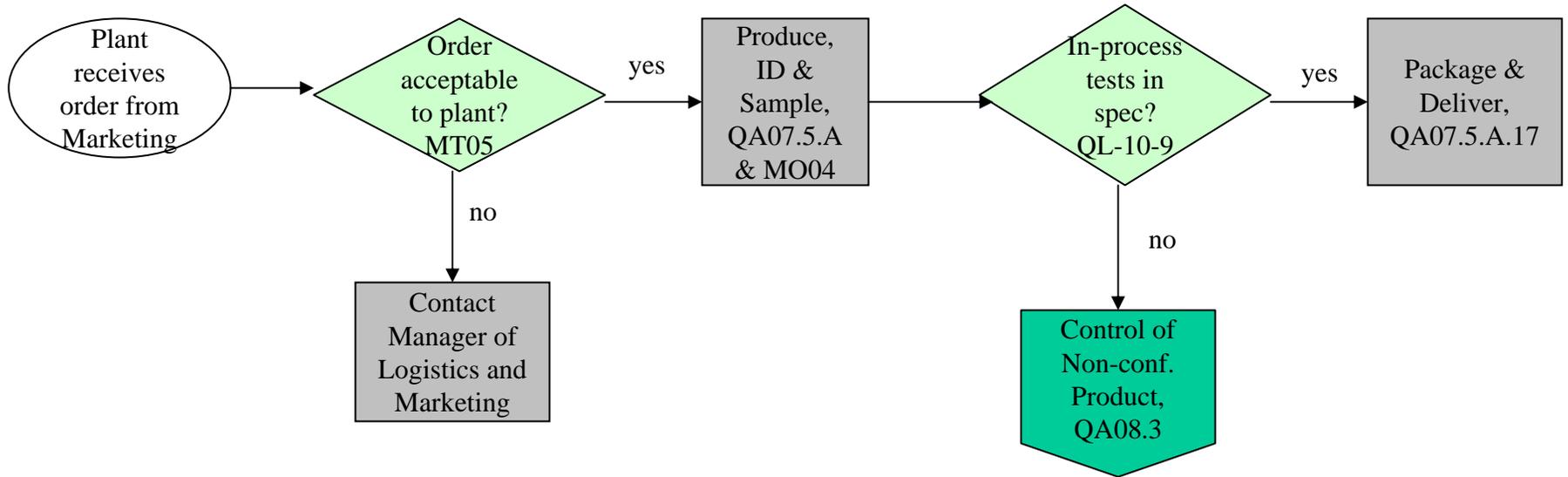
# Quality Planning



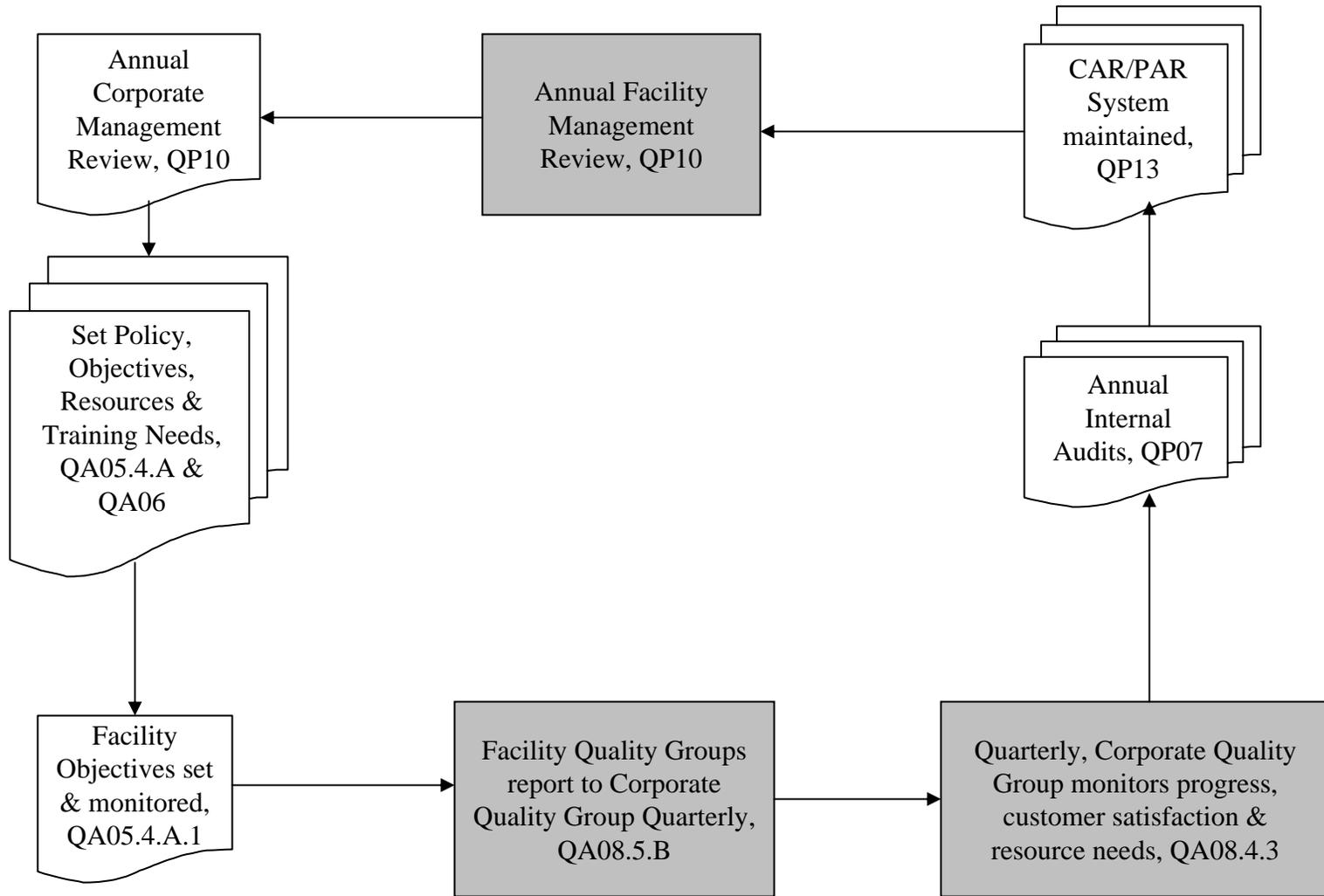
# Purchasing Process, QA07.4



# Control of Production



# Continual Improvement, QA08.5.B



**QA MANUAL REVISION LOG**

<u>Rev. No.</u>	<u>Date</u>	<u>Author</u>	<u>Change</u>
00	1966	(1)	Original
01	1971	(1)	Not recorded
02	Dec, 1974	(1)	Not recorded
03	Apr, 1977	(2)	Not recorded
04	Sept, 1979	(2)	Not recorded
05	Nov, 1981	(2)	Not recorded
06	Mar, 1983	(3)	Not recorded
07	Jan, 1986	(3)	Not recorded
08	Jan, 1988	(3)	Not recorded
09	Jan, 1990	(3)	Not recorded
10	Mar, 1992	(3)	Not recorded
11	Dec 15, 1993	BBK	Completely reformatted and rewritten to address issues of ISO 9001.
12	Mar 15, 1995	BBK	Incorporated 1994 changes to the ISO 9001 standard.
13	April 01, 1998	BBK	Incorporated selected QS-9000 requirements into the SRCC quality system.
14	February 15, 2000	BBK	Revised to reflect changes in organizational responsibility.
15	December 4, 2002	KDN	Incorporated 2000 changes to the ISO 9001 standard.
16	December 1, 2004	KDN	Scope change and Management Review to quarterly schedule.
17	July 18, 2006	KDN	Scope change and Design & Development and other misc. Revisions.
18	July 2, 2009	KDN	General revision to cover preventive maintenance to 06.3, quality system planning to 07.3, and other general revisions.

Notes: (1) Author/Editor unknown.  
(2) Authored by sections. Edited by MCD.  
(3) Authored by sections. Edited by RLP.

**QA MANUAL DISTRIBUTION - Revision 18**

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30	J.K. Rhodes	Big Spring
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