Title: Spansion Quality Manual

INTRODUCTION

Spansion, LLC, a joint venture formed by the integration of AMD's and Fujitsu's Flash memory businesses, markets the Spansion ™ global product brand name. Spansion is the largest NOR Flash memory company in the world based on dedicated resources that include gross assets having a net book value of approximately US $3 billion and approximately 7,000 employees. Spansion Flash memory solutions are available worldwide from AMD (NYSE: AMD) and Fujitsu (TSE: 6702).

Spansion Flash memory products encompass a broad spectrum of densities and features to support a wide range of markets. Spansion Flash memory customers represent leaders in the wireless, cellular, automotive, networking, telecommunications and consumer electronics markets. There are a variety of Spansion Flash memory products, such as devices based on the innovative MirrorBit ™ technology; the award-winning simultaneous read-write (SRW) product family; super low-voltage 1.8 Volt Flash memory devices; and burst-and page-mode devices. Information about Spansion Flash memory solutions is available at www.spansion.com/overview.

The company is co-headquartered in Sunnyvale, USA, and Tokyo, Japan. Management at Spansion follows the quality management principles defined in ISO 9004 to lead the organization toward improved performance. These principles are

Principle 1 Customer Focus
Organizations depend on their customers and therefore should understand current and future customer needs, should meet customer requirements and strive to exceed customer expectations.

Principle 2 Leadership
Leaders establish unity of purpose and direction of the organization. They should create and maintain the internal environment in which people can become fully involved in achieving the organization's objectives.

Principle 3 Involvement of People
People at all levels are the essence of an organization and their full involvement enables their abilities to be used for the organization's benefit.

Principle 4 Process Approach
A desired result is achieved more efficiently when activities and related resources are managed as a process.

Principle 5 System Approach to Management
Identifying, understanding and managing interrelated processes as a system contributes to the organization's effectiveness and efficiency in achieving its objectives.

Principle 6 Continual Improvement
Continual improvement of the organization's overall performance should be a permanent objective of the organization.

Principle 7 Factual Approach to Decision Making
Effective decisions are based on the analysis of data and information.

Principle 8 Mutually Beneficial Supplier Relationship
An organization and its suppliers are interdependent and a mutually beneficial relationship enhances the ability of both to create value.

These principles serve as the foundation for planning, implementing, and continually improving both product realization and support processes. Through the institution of the "Balanced Scorecard," top management synthesizes and deploys its strategic plan. To facilitate fruition of these objectives, key processes for developing, manufacturing, and supplying products are monitored, measured, and analyzed. Pertinent data and information is periodically reviewed by top management, thereby ensuring the effective and efficient operation of the overall system.

Spansion employees, working within this customer-centric and process-based system, further contribute their unique and inspired corporate culture to create the leading Flash brand in the world that is designed to reward the needs of its customers, suppliers, employees, and shareholders.

QUALITY MANUAL INDEX

1.0 PURPOSE, SCOPE, and APPLICATION

1.1 Purpose

This manual describes the core processes and responsibilities for Spansion's quality management system that is designed to satisfy: customer requirements, quality goals/objectives, and industry standards such as ISO 9001 and ISO/TS 16949. Although methodologies may differ, Spansion's processes meet the intent of AMD's and Fujitsu's quality management systems.

1.2 Scope

This quality manual applies to all Spansion employees worldwide. The Spansion quality management system described within this document is a result of blending or integrating the AMD and Fujitsu quality management systems. Where an AMD and a Fujitsu specification are both referenced, former AMD locations follow the AMD specification and former Fujitsu employees may follow the Fujitsu specification. Spansion Japan Limited, in Aizu, follows the Aizu Plant Quality Manual <FAS-G00-000-000>.

Service Level Agreements have been executed between Spansion and AMD and Spansion and Fujitsu for specified support processes. Employees of AMD and Fujitsu manage these agreed upon services, as appropriate, in accordance with the AMD Quality Manual <00-001> and the Fujitsu Quality Manual <HN013-101>, respectively. Services may include the specified business process and/or the supporting IT system including the associated records. Neither AMD, nor Fujitsu, are considered to be subcontractors of Spansion.

As specified in section 1.3, ISO/TS 16949:2002 is the quality management system model used to manage the processes within Spansion. The leading paragraphs for each section of this manual cover the requirements of ISO 9001:2000. The additional requirements of ISO/TS 16949, including Customer Specific Requirements (ISO/TS-16949) Semiconductor Commodity, apply to all sites and organizations specified in section 1.3 and are parenthetically denoted throughout this document. Customer Specific Requirements (ISO/TS-16949) Semiconductor Commodity is identified with the addition of an "S" to the paragraph number.

The scope of registration is documented on the corporate certificate that is available via www.spansion.com .

Each location is responsible for executing its delegated business functions. Compliance with the requirements herein is commensurate with each site's business functions and responsibilities.

1.3 Application

ISO/TS 16949:2002

Spansion LLC (non-manufacturing), located in California and Texas, complies with ISO/TS 16949. AMD support organizations/functions that support Spansion include Quality Management and Information Systems (QMIS), Global Supply Management (GSM), Management of Distribution Services, Facilities, Records Management, Transportation/Traffic, and Learning and Development (L&D).

Spansion Japan Limited (non-manufacturing), located in Shinjuku, Tokyo, Japan and Kozoji, Japan, complies with ISO/TS 16949:2002.

The ESC (European Service Center) located in Frimley, UK, supports the sites by performing device analysis. The ESC complies with ISO/TS 16949:2002 in support of Spansion for device analysis.

Spansion Japan Limited, Aizu Plant, located in Aizuwakamatsu, Japan, complies with ISO/TS 16949:2002. This facility supports 7.3 (Design and Development) by providing data and information, but is not responsible for managing the processes or retaining the data. Reference Spansion Japan Ltd., Aizu Plant Quality Manual <FAS-G00-000-000> for specific quality management system operations.

Spansion LLC, Fab 25, located in Austin, Texas, complies with ISO/TS 16949:2002. This facility supports 7.3 (Design and Development) by providing data and information, but is not responsible for managing the processes or retaining the data.

Spansion (Thailand) Limited, located in Thailand, complies with ISO/TS 16949:2002. This facility supports 7.3 (Design and Development) by providing data and information, but is not responsible for managing the processes or retaining the data.

Spansion (China) Limited, located in Suzhou, China, complies with ISO/TS 16949:2002. This facility supports 7.3 (Design and Development) by providing data and information, but is not responsible for managing the processes or retaining the data.

Spansion (Penang) Sdn. Bhd., located in Penang, Malaysia, complies with ISO/TS 16949:2002. This facility complies with 7.3 for product design and development. For manufacturing process design and development, this facility supports the process by providing data and information, but is not responsible for managing the process or retaining the data.

Spansion (Kuala Lumpur) Sdn. Bhd., located in Kuala Lumpur, Malaysia, complies with ISO/TS 16949:2002. This facility supports 7.3 (Design and Development) by providing data and information, but is not responsible for managing the processes or retaining the data.

Spansion LLC, Submicron Development Center (SDC), a non-production R& D facility, located in Sunnyvale, California, is excluded from the registration process for ISO/TS 16949:2002.

2.0 REFERENCES

2.1 Appendices

Appendix A – Referenced Specifications/Documents by Quality Manual Sections
Appendix B – Quality Management System Definitions
Appendix C – Spansion's Quality Management System Core Process Map

2.2 Other References

00-001	AMD Quality Manual
AEC – Q100	Stress Test Qualification for Integrated Circuits
FAS–G00–000–000	Spansion Japan Limited, Aizu Plant, Quality Manual
HN013-101	Fujitsu Quality Manual
ISO 9000	Quality Management Systems – Fundamentals and Vocabulary
ISO 9001	Quality Management Systems – Requirements
ISO 9004	Quality Management Systems – Guidelines for Performance Improvements
ISO/TS 16949	Quality Management Systems – Particular Requirements for the Application of ISO 9001:2000 for Automotive Production and Relevant Service Part Organizations
ISO/TS 16949	Customer Specific Requirements (ISO/TS-16949) Semiconductor Commodity
ISO 14001	Environmental Management System
OHSAS 18001	Occupational Health and Safety Management System

3.0 DEFINITIONS

Appendix B contains the definitions for words, acronyms, and phrases that may be used to describe the quality management system in this manual.

4.0 QUALITY MANAGEMENT SYSTEM

4.1 General Requirements

a) This manual identifies the processes needed for the quality management system.
b) The sequence and interaction of these processes is demonstrated by Spansion's Quality Management System Core Process Map (Appendix C).
c) The supporting documents that are listed in the individual sections define the criteria and methods needed to control and measure the effectiveness of the various processes.
d) Resource availability is determined and provided by the annual and rolling six quarter planning process where project and functional needs are addressed to ensure customer requirements are met.
e) The data collected from the various processes that measure customer satisfaction, product performance, and quality management system capability are monitored, measured, and analyzed by the responsible organizations.
f) Information is presented to management for action for continual improvement and where necessary, corrective action.

Where Spansion chooses outsourcing as an alternative to internal operations, the controls established by GSM and/or local procurement procedures govern this process. The controlling organization is responsible for ensuring control over such processes and for identifying the controls within the quality management system. This is implemented at the supplier by either contract or purchase order, e.g., Foundry and Joint Venture Quality Policy <00-046> and Quality Control for Vendors <SK-HN007-006>.

4.1.1 General Requirements – Supplemental (ISO/TS 16949)

Where Spansion elects to outsource processes related to a product or service, the controlling organization is responsible for ensuring conformity to all customer requirements, e.g., Spansion Product Development and Design Procedures <F01-003.1>, Quality Requirements for Spansion Final Manufacturing Subcontractors <F03-070>, and Quality Control for Vendors <SK-HN007-006>.

4.2 Documentation Requirements

4.2.1 General

The quality management system documentation includes the following

a) Spansion's quality policy as stated in section 5.3 and quality objectives as documented in annual business plans and located either on a Web site or in hard copy signed and dated by the top manager for the responsible function
b) Spansion Quality Manual <F00-001>
c) Documented procedures required by ISO 9001

Document Management Policy <00-098>
Records Management <00-014>
Corporate Audit and Assessment Policy <00-007>, Internal Quality Audit Rule <FAS-A17-000-000>
Decision Record System <F01-018>
Corrective Action System <01-020>, Corrective Action Procedure <908-020>
Preventive Action System <01-028>, Preventive Action Procedure <908-028>

d) Documents needed by Spansion for effective planning, operations and control (addressed in each section and sub-section of this manual). Where a procedure is not required, but information and controls are needed, this manual defines the requirements for specific sections.
e) Required records are controlled in accordance with Records Management <00-014>

4.2.2 Quality Manual

Spansion maintains a quality manual that includes

a) the scope of the quality management system, including details of and justifications for any exclusions (reference sections 1.2 and 1.3)
b) documented procedures which are referenced within each section, as applicable
c) a description of the interaction between the processes of the quality management system. Reference Spansion's Quality Management System Core Process Map (Appendix C) and QMS Alignment Responsibility Matrix available at http://amdonline/iso&qs9000. The latter identifies responsibilities by departmental function.

4.2.3 Control of Documents

Document Management Policy <00-098> defines a minimum set of business processes required to ensure the appropriate management of Spansion generated documents.

a) Documents are approved for adequacy prior to use in accordance with Documentation System <01-008>. Changes to specifications are consistently reviewed and approved by the organizations affected by the change.
b) Documents are reviewed and updated and re-approved in accordance with Specification Change Notice <01-008.1>.
c) Changes are identified in accordance with Documentation System <01-008> and Electronic Specification e-Spec System <01-008.17>. Spec Index identifies the current revision status of all specifications as referenced in Specification Distribution <01-008.3>.
d) Current versions of applicable documents are available at points of use as required by Documentation System <01-008> and Electronic Specification e-Spec System <01-008.17>.
e) Documentation System <01-008> and Electronic Specification e-Spec System <01-008.17> ensure that documents remain legible and readily identifiable.
f) Documents of external origin, such as standards and customer drawings, are controlled in accordance with External Spec/Standard Control <01-401>, and Process Specification System <01-006>.
g) Obsolete specifications are promptly removed from all distribution points in accordance with Documentation System <01-008> and Electronic Specification e-Spec System <01-008.17>.

4.2.3.1 Engineering Specifications (ISO/TS 16949)

Customer engineering standards/specifications are reviewed in a timely manner in accordance with Process Specification System <01-006>. Changes to specifications released to manufacturing are addressed in Electronic Specification e-Spec System <01-008.17>.

4.2.4 Control of Records

Each department manager is responsible for ensuring that records are maintained to provide evidence of conformity to requirements and of the effective operation of the quality management system. Records are controlled in accordance with Records Management <00-014>.

4.2.4.1 Records Retention (ISO/TS 16949)

Record retention requirements, which satisfy regulatory and customer requirements, are identified in Records Management System <01-036>.

4.2.4.1S Control of Records (ISO/TS 16949)

Records pertaining to characterization of products and design of experiments used to demonstrate conformance for automotive products are maintained in accordance with Records Management System <01-036> for the production and service life.

5.0 MANAGEMENT RESPONSIBILITY

5.1. Management Commitment

Top management provides evidence of its commitment to the development and implementation of the quality management system and the continual improvement of its effectiveness by

a) communicating the importance of meeting customer, statutory and regulatory requirements by means of Web site presentations, email and communication meetings
b) establishing the quality policy referenced in section 5.3
c) ensuring that annual quality objectives are established to meet the business needs for the corporation and that each business group's objectives are established to support corporate objectives
d) conducting management reviews on a scheduled basis at various operational levels with required input data addressed and rolled up to top management
e) ensuring the availability of resources via annual forecasts, business plans and specific project requirements

5.1.1 Process Efficiency (ISO/TS 16949)

Top management for Spansion reviews the product realization processes and the supporting processes to assure their effectiveness and efficiency at planned intervals as specified in Spansion Operations Functions and Key Processes <F01-001.1>, FMO Management Review Procedure <F08-023>, and Fab 25 Management Review <307-0002>.

5.2 Customer Focus

Understanding current and future customer needs, providing planning processes to meet these needs and a system that evaluates customer satisfaction is critical to the business success of Spansion.

The processes for determining the needs of the customer involve several methods. Strategic Marketing with the support of the sales organization provides the path of information to satisfy new product development. Where a Spansion employee has a proposal for a new product and management approves that proposal, a marketing survey is conducted to obtain customer input.

Requirements for established products are managed by tactical marketing.

Customer Satisfaction is measured internally using performance indicators. These address product quality measurements, delivery measurements and field failures. A customer satisfaction survey is conducted at scheduled intervals by an independent firm as described in Customer Satisfaction < 01-224> and Customer Satisfaction Measurement <908-224>.

5.3 Quality Policy

Spansion's quality policy is

"Spansion has zero tolerance for customer – perceived problems in our drive toward total customer satisfaction."

The company believes that customers should not experience any problems when designing in, manufacturing with, and supporting systems that include Spansion product. While organizations may set quantitative, non−zero goals for quality and reliability in any given annual plan, the company strives ultimately to achieve zero defects. Furthermore, if a customer believes there is a quality or reliability issue with Spansion product, then the Spansion memory team works with the customer to resolve the issue regardless of origin or nature.

To support the quality policy Spansion

a) proactively identifies, understands, and rapidly resolves quality and reliability issues reported by customers or determined from internal sources of data, and
b) develops and implements a systematic approach to building in quality and reliability by driving continual improvement in all processes related to development, manufacturing, and support of products.

The quality policy is communicated and understood within the organization and reviewed periodically for continuing suitability.

5.4 Planning

5.4.1 Quality Objectives

The requirement for establishing quality objectives at relevant functions and levels within Spansion is defined in Business Planning Overview <Overview 2A>. Quality objectives for Spansion Japan may be referred to as "internal targets."

5.4.1.1 Quality Objectives – Supplemental (ISO/TS 16949)

Quality objectives are part of the business plan as defined in Business Planning Overview <Overview 2A>.

5.4.1.1S Quality Objectives – Supplemental (ISO/TS 16949)

The technology portion of the business plan includes:

- technology roadmaps
- wafer fabrication processes
- assembly/packaging
- obsolescence
- quality roadmaps
- product development roadmaps

These requirements are detailed in Business Planning Overview <Overview 2A>.

5.4.2 Quality Management System Planning

Top management ensures that

a) the planning of the quality management system to meet quality objectives is carried out via planning meetings and documented in organizational and site business plans. All aspects of the quality management system are considered such as human resources, training, equipment/tooling, and facilities.
b) as new systems and changes are implemented, the integrity of the quality management system is maintained.

5.5 Responsibilities, Authority and Communication

5.5.1 Responsibility and Authority

Specific responsibilities and authorities for Spansion's core and support processes are defined in organization charts, documented procedures, and the performance management process. Reference QMS Alignment Responsibility Matrix located at http://amdonline/iso&qs9000.

Divisional management is responsible for defining and documenting the organizational structure of personnel required to meet customer and quality management system requirements. Employees, with the exception of Directors and above, are required to have Job Descriptions, which identify and describe positions within the organization. All departments

and personnel have clear responsibilities for continual improvement, emphasizing defect prevention and reduction of variation and waste in the supply chain.

5.5.1.1 Responsibility for Quality (ISO/TS 16949)

Management with responsibility and authority for corrective action is promptly informed of products or processes which become noncompliant with specified requirements via escalation procedures associated with processes such as Decision Record System <F01-018>, Customer Corrective Action Request (CCAR) System <01-022>, Complaint Handling Procedure <908-022>, Electrical Reject Notice <07-038>, and Disposition for Abnormalities in Test Procedure <SK-HBv5251007C>.

Control plans have established reaction requirements to define the responsibility and authority for personnel that control product quality. The reaction plan requires that production be stopped, if necessary. Each manufacturing location allocates personnel for all shifts that have been delegated responsibility for ensuring product quality.

5.5.2 Management Representative

Spansion top management appoints a management representative. Where required in other organizations and sites, the responsible vice president or plant manager appoints a management representative. Management representatives, irrespective of other duties, are responsible for

a) ensuring that the quality management system is implemented and maintained in compliance with referenced standards and contractual requirements, as applicable,
b) reporting on the performance of the quality management system to top management for review and as a basis for continual improvement and,
c) ensuring the promotion of awareness of customer requirements throughout the organization.

5.5.2.1 Customer Representative (ISO/TS 16949)

The Customer Quality Engineering Director is the customer representative designated by top management. The customer representative is responsible for ensuring customer requirements are met. This includes selection of special characteristics, setting quality objectives and related training, corrective and preventive actions, and product design and development.

5.5.3 Internal Communication

Spansion management has established several lines of communication to inform employees regarding the effectiveness of the business and quality management system. The primary method is personal computers where employees receive email messages from top management. There are Web pages that have departmental and company information.

Each organization has communication meetings to keep employees informed. Training classes are also used to communicate information and knowledge. Management Review meetings are used to retrieve information about the organization and to provide a forum for communicating to members of the staff.

5.6 Management Review

5.6.1 General

The responsible vice president and/or plant managers, assisted by area management, perform, as a minimum, a yearly review of the quality management system for their respective sites. The purpose of the review is to ensure the continuing suitability and effectiveness of the quality management system in meeting the organization's goals and quality objectives, satisfying the requirements of ISO 9001, and assessing opportunities for improvement.

Spansion locations follow management review procedures such as Fab 25 Management Review <307-0002>, FMO Management Review Procedure <F08-023>, and Spansion Operations Functions and Key Processes <F01-001.1>.

Changes resulting from the management review process and any other necessary changes affecting the content of this manual are communicated to Customer Quality Engineering (CQE). A review of this quality manual is performed by CQE on a yearly basis using a cross-functional approach.

Records of management reviews and quality manual updates are maintained in accordance with Records Management <00-014>.

5.6.1.1 Quality Management System Performance (ISO/TS 16949)

All clauses and subclauses of the entire quality management system are reviewed at management review sessions or other such forums using a cross-functional approach. During these reviews, the cost of poor quality is addressed through various metrics such as scrap, rework, returns, and yield. Spansion locations follow management review procedures such as Fab 25 Management Review <307-0002>, FMO Management Review Procedure <F08-023>, and Spansion Operations Functions and Key Processes <F01-001.1>.

Records of management reviews are maintained in accordance with Records Management <00-014>.

5.6.2 Review Input

The input to management review includes information on

a) results of internal, customer and registration audits,
b) customer feedback data from surveys, field quality issues, and where available, marketing's customer communications pertaining to continual improvements,
c) data pertaining to process capability and product conformity,
d) status of projects related to preventive action and the status of corrective actions pertaining to customers, internal audits, and processes/products,
e) actions from previous meetings,
f) review of changes to the quality management system, and
g) recommendations for improvement.

5.6.2.1 Review Input – Supplemental (ISO/TS 16949)

Inputs to management review include data pertaining to actual and potential field failures. The information presented addresses the impact on quality, safety and environmental issues.

5.6.3 Review Output

The output from management review includes decisions and actions related to

a) improvement of the effectiveness of the quality management system and its processes,
b) improvement of product or processes related to customer requirements, and
c) the appropriation of resources needed for achieving the necessary improvements.

6.0 RESOURCE MANAGEMENT

6.1 Provision of Resources

The business planning process described in sections 5.4.1 and 5.4.2 and project management methods used at Spansion provide the basis to appropriate the funding needed to provide resources to

a) implement and maintain the quality management system and to continually improve its effectiveness, and
b) enhance customer satisfaction by meeting customer requirements.

6.2 Human Resources

6.2.1 General

Spansion's HR organization has established processes that provide the support to operations and administrative organizations to ensure personnel performing work affecting product quality are competent based on the appropriate education, training, skills and experience. These procedures are maintained at the HR Web site.

The Global Performance Management System (GPMS) is a goal planning and feedback process that provides employees and management with a flexible means for establishing goals and providing specific feedback about performance on a periodic basis throughout each year.

6.2.2 Competence, Awareness and Training

Competence, Awareness, and Training Policy <00-011> and Competence, Awareness and Training Provision <908-00.011> establish the worldwide requirements to

a) determine the necessary competence for personnel performing work affecting product quality,
b) provide training or other methods to satisfy these needs,
c) evaluate the effectiveness of the actions taken,
d) ensure that Spansion personnel are aware of the relevance and importance of their activities and how they contribute to the achievement of the quality objectives, and
e) maintain appropriate records of education, training, skills and experience as defined in Records Management <00-014>.

6.2.2.1 Product Design Skills (ISO/TS 16949)

Spansion Product Development and Design Procedures <F01-003.1>, Spansion MCP Product Development Procedures <F01-003.2>, Design Review <SK-HN011-002>, and FME (Final Manufacturing Engineering) provide for and utilize, where appropriate, the necessary hardware, software, and human resources to accomplish DFM, DFA, Simulation, CAD/CAE, and any other skill sets or tools needed to assure successful circuit design. Skill Maps are utilized at specified locations to determine and track design skills. Product development and FME perform design FMEAs and reliability planning for all new Spansion memory products.

6.2.2.2 Training (ISO/TS 16949)

Competence, Awareness, and Training Policy <00-011> and Competence, Awareness and Training Provision <908-00.011> establish the processes for identifying training needs and achieving competence of all personnel performing activities affecting product quality. Those employees performing specific assigned tasks are qualified with specific attention to the satisfaction of customer requirements.

6.2.2.2S Training (ISO/TS 16949)

Training and certification requirements for production personnel with product quality responsibilities and support personnel are specified in Corp. Manufacturing Training System <01-210> and Competence, Awareness and Training Provision <908-00.011>.

6.2.2.3 Training on the Job (ISO/TS 16949)

On-the-job training (OJT) is a major method for training Spansion employees and contract or agency personnel as specified in Competence, Awareness, and Training Policy <00-011> and Competence, Awareness and Training Provision <908-00.011>. Records for OJT may be in formal training records for production personnel and technicians or for administrative and technical staff, the information may reside in the human resource performance record.

6.2.2.4 Employee Motivation and Empowerment (ISO/TS 16949)

Competence, Awareness, and Training Policy <00-011> and Competence, Awareness and Training Provision <908-00.011> specify the methods used to motivate and empower employees as well as measure the extent to which personnel are aware of the relevance and importance of their activities and how they contribute to the achievement of the quality objectives.

6.3 Infrastructure

The business planning process outlined in Business Planning Overview <Overview 2A> provides the basis for

a) buildings, workspace and associated utilities,
b) process equipment (both hardware and software) and,
c) supporting services (such as transport or communication).

6.3.1 Plant, Facility and Equipment Planning (ISO/TS 16949)

Project management methodology is used to establish the necessary infrastructure for new products, new production and design needs. Plant layouts are determined by industrial engineering for optimization and cost to ensure value−added use of floor space. Methods are developed and implemented to evaluate and monitor the effectiveness of existing operations, e.g., competitive data from subcontractors, simulation models. Reference AMD/Spansion Penang Relayout <108-012>, Layout Planning and Execution <708-106>, AMD Suzhou Layout Planning and Execution Procedure <S08-127>, and Plant Layout Procedure <407-312>.

6.3.2 Contingency Plans (ISO/TS 16949)

A team approach is utilized as specified in MGM/MSD – Contingency Planning for Business Recovery – Policy and Procedures <08-121> and Fab 25 Contingency Plan for Business Recovery <307-8466> to provide continual service to the customer during events of emergency such as utility interruptions, labor shortages, key equipment failure and field returns.

6.4 Work Environment

The facilities department for each factory and support area controls the work environment. The defined requirements are documented in minimum area requirements specifications such as Sort/Wet Area Requirements <F01-123>, Wafer Fabrication Area Requirements <F01-124>, Test Area Requirements<F01-125>, Burn-In Area Requirements <01-126>, Assembly Area Requirements <F01-127>, and Mark and Pack Requirements <F01-128>.

The Environmental, Health and Safety (EHS) program is committed to protecting the environment and the health and safety of employees and the surrounding communities. This commitment has led to the certification of all manufacturing sites to ISO 14001, which requires systems to be established to identify, communicate, and manage the environmental impact of the company's operations. Reference www.amd.com/quality .

6.4.1 Personnel Safety to Achieve Product Quality (ISO/TS 16949)

Spansion has also established Occupational Health and Safety (OHS) management systems as integral parts of EHS management systems at all manufacturing facilities to minimize potential risks to employees especially in the design and development process and in manufacturing process activities. Several manufacturing facilities are certified to OHSAS 18001. Reference www.amd.com/quality .

Product safety is considered in design control and process control practices as specified in Product Development, Qualification, and Change Management Process <F01-002.4> and Control Rule for PS Rule <SK-HN011-041>. Employees are apprised of safety considerations relative to the product.

6.4.2 Cleanliness of Premises (ISO/TS 16949)

Facilities are maintained in an appropriate level of cleanliness, order and repair consistent with the product and manufacturing process requirements.

6.4.2S Cleanliness of Premises (ISO/TS 16949)

The following environmental and housekeeping items are controlled, as appropriate:

a) Handling Procedure for Prevention of ESD Damages <00-016>
b) Airborne particle requirements as defined in Atmosphere Quality Levels <16-022>
c) Chemical particles as specified by <04- XXX> material and Gas Line Filtration <16-019> for particles for gas supply
d) Machine particle count as specified in Atmosphere Quality Levels <16-022>
e) Humidity and temperature as specified in Atmosphere Quality Levels <16-022>
f) Water resistivity as specified in DI Water/UPW Limits <16-023>
g) Robing requirements, discipline and general workstation cleanliness as specified in work instructions <07-XXX> and process specifications <05-XXX>

7.0 PRODUCT REALIZATION

7.1 Planning of Product Realization

Product realization planning is a three-part process.

- The first part pertains to product design and process development for future products (typically greater than two years).
- The second is the planning for new product design and development (typically less than or equal to two years).
- The third pertains to existing products with various customer requirements.

This section covers the first two planning methods since there is some similarity. The third planning methodology is covered in section 7.2.

During the business planning process described in section 5.4, future development for fabrication processes and assembly processes are considered. This becomes the basis for establishing future

semiconductor integrated circuits. The appropriation of funds to support future product design and development starts with customer needs that are established by market analysis and close customer relationships. These inputs drive the long-term roadmaps for technology, packaging and products. This planning is performed during the annual budgeting process. Reference Business Planning Overview <Overview 2A>.

New product planning for a specific product may start with a proposal from a member of the staff where a marketing survey would be performed or it may be a special design for a specific customer. This process is defined in Strategic Marketing/Product Planning Process <00-003>, LSI Development Master Plan <SK-HN011-009>, Spansion Product Development and Design Procedures <F01-003.1>, Spansion MCP Product Development Procedures <F01-003.2>, and Design Review <SK-HN011-002>.

Once management approves the project for development of a new product, the following requirements are determined in accordance with Product Management Policy <00-002>, Design <SK-HN011-001> and the associated family of specifications.

a) quality objectives and requirements for the product,
b) establishment of the processes, documents, and resources specific to the product,
c) the required verification, validation, monitoring, inspection and test activities specific to the product and the criteria for product acceptance, and
d) records needed to provide evidence that the realization processes and the resulting product meet requirements.

Note: Product Management Policy <00-002> and Design <SK-HN011-001> conform to Advanced Product Quality Planning (APQP) methodology.

7.1S Planning of Product Realization – Supplemental (ISO/TS 16949)

The product realization planning for Spansion memory products is defined by Fab Process Technology Development, Qualification, and Change Management Process <F01-002.2>, Spansion Package and Assembly Process Development and Qualification Process <F01-002.3>, Spansion Product Development and Design Procedures <F01-003.1>, Spansion MCP Product Development Procedures <F01-003.2>, LSI Development Master Plan <SK-HN011-009>, Design Review <SK-HN011-002>, and TMP Process Flow and Control Plan <02-028>. FMO – Manufacturing Planning Process and System <F01-040> and Production Planning <908-HN007-025> address the movement of material between locations within the product realization process. When required, FMEA methodology (DFMEA, PFMEA) is used to ensure preventive planning measures.

7.1.1 Planning of Product Realization – Supplemental (ISO/TS 16949)

Customer requirements and references to its technical specifications are included in the project plan for that product as specified in Spansion Product Development and Design Procedures <F01-003.1>, Spansion MCP Product Development Procedures <F01-003.2>, LSI Development Master Plan <SK-HN011-009>, and Design Review <SK-HN011-002>.

7.1.2 Acceptance Criteria (ISO/TS 16949)

Spansion Product Development and Design Procedures <F01-003.1>, Spansion MCP Product Development Procedures <F01-003.2>, LSI Development Master Plan <SK-HN011-009>, and Design Review <SK-HN011-002> address the requirements for planning the product acceptance criteria and, where required, obtaining customer approval. Acceptance data sampling plans, as specified in Product Quality Levels <F00-005> and Initial Control of Ramp-Up Period <SK-HBv5272600C> require an acceptance number of zero.

7.1.3 Confidentiality (ISO/TS 16949)

The confidentiality of customer−contracted products and projects under development, and related product information is ensured via Spansion Product Development and Design Procedures <F01-003.1> and Spansion MCP Product Development Procedures <F01-003.2>.

7.1.4 Change Control (ISO/TS 16949)

Changes to materials, processes and /or product that occur during the realization process are controlled and reaction plans established prior to implementation as specified in Supplier Quality Policy <00-037>, Quality Control for Vendors <SK-HN007-006>, Spansion Operations Functions and Key Processes <F01-001.1>, LSI Design Control Rule <SK-HN011-003>, and Spansion Package and Assembly Process Development and Qualification Process <F01-002.3>.

Unexpected changes occurring during product processing are addressed by the Decision Record System <F01-018>. Any product realization changes affecting customer requirements require notification to and agreement from the customer in accordance with Spansion Operations Functions and Key Processes <F01-001.1>.

7.1.4S Change Control (ISO/TS 16949)

Effects of process changes are verified by before and after characterization of the appropriate device parameters for both proprietary and nonproprietary designs in accordance with Product Management Policy <00-002> and Design <SK-HN011-001>.

7.2 Customer-Related Processes

7.2.1 Determination of Requirements Related to the Product

Spansion determines

a) requirements specified by the customer for delivery and post delivery via field sales and product line marketing groups in accordance with Process Specification System <01-006>, Contract Review Process and Support Responsibility for Field Sales <01-045>, Confirmation of Contract <SK-HN017-022>, FASL LLC Change Notification Policy < F00-023>, Fab Planning/Scheduling System <01-179>, Production Planning <908-HN007-025>, and FMO – Manufacturing Planning Process and System <F01-040>.
b) requirements not stated by the customer but necessary for specified or intended use, where known, to ensure form, fit, function, and reliability via the design and development teams.
c) statutory and regulatory requirements via Legal, Environmental Health and Safety, Human Resources, and the customer. Reference Materials Restricted from Product Design-Internal <16-203>. It is the responsibility of the design, engineering, and management teams to implement these requirements in accordance with Product Management Policy <00-002>.
d) any additional requirements pertaining to the product during the design and development realization processes for inclusion in the data sheet and processing specification.

7.2.1.1 Customer – Designated Special Characteristics (ISO/TS 16949)

Customer requirements, including special characteristics, are reviewed and incorporated into Spansion's internal requirements in accordance with Process Specification System <01-006> and Special Characteristics <SK-HN003-043>.

7.2.1.1S Customer – Designated Special Characteristics (ISO/TS 16949)

Where the customer has not identified special characteristics, but the need exists to control the product for proper operation, process parameters or product characteristics are identified on the control plan. Reference Assembly Process Flow Charts and Control Plan <02-001>, Special Characteristics <SK-HN003-043>, TMP Process Flow and Control Plan <02-028>, and Spansion Operations Functions and Key Processes <F01-001.1>.

7.2.2 Review of Requirements Related to the Product

AMD and Fujitsu sales representatives conduct initial customer contact and negotiations. Prior to submission or acceptance of the customer's written or verbal contractual requirements, a review is conducted by either Sales Operations and/or Legal or appropriate product line personnel to ensure that

a) the customer's requirements are adequately defined, documented and agreed to before acceptance,
b) the process considers the resolution of any issues differing from those tendered,
c) Spansion has the capability to meet the customer's requirements, and
d) all customer requirements are met in accordance with Contract Review Process and Support Responsibility for Field Sales <01-045>, QS-9000 Contract and Drawing Review Process for Field Sales <01-045.1>, and Confirmation of Contract <SK-HN017-022>.

Spansion establishes and maintains documented procedures for contract review and for the coordination of these activities. To ensure that written or verbal customer requirements are adequately documented, the requirements are entered into corporate business systems in accordance with Standard Processing Specifications <00-004> and Process Specification System <01-006>. Customers are notified of product and product related changes that are to be implemented by Spansion in accordance with FASL LLC Change Notification Policy <F00-023>.

Spansion maintains procedures for internal contract review involving product groups, wafer fabs, and manufacturing services as defined in Fab Planning/Scheduling System <01-179>, Production Planning <908-HN007-025>, and FMO - Manufacturing Planning Process and System <F01-040>.

Records for these reviews are maintained in accordance with Records Management <00-014>.

7.2.2.1 Review of Requirements Related to the Product – Supplemental (ISO/TS 16949)

Waiving the requirements specified in section 7.2.2 requires written authorization from the customer.

7.2.2.2 Organization Manufacturing Feasibility (ISO/TS 16949)

Product Management Policy <00-002>, and its associated supporting documents, and APQP Operation Rule <SK-HN011-061> provide for feasibility reviews in the form of development stage signoff / approvals for each new product as it proceeds through the 002 process. Spansion assures that it has adequately investigated and confirmed the

manufacturing feasibility of proposed products prior to contracting with customers to produce those products.

7.2.2.2S Organization Manufacturing Feasibility (ISO/TS 16949)

The feasibility study, when deemed necessary by engineering management, includes a compatibility review of the current design rules, critical process capability and design / process FMEA with manufacturing personnel.

Conformance to engineering requirements is demonstrated with characterization data as determined by engineering based on individual conditions. Statistical data is available to demonstrate process and product special characteristics.

7.2.3 Customer Communication

Sales, marketing, engineering, and logistics establish effective arrangements for communicating with customers. The following methods are used

a) product information pertaining to specification requirements or logistics is communicated by telephone, mail, email or other computer methods depending on the need,
b) where the customer has established electronic data interface requirements with Spansion, inquiries, contracts or order handling (including amendments), are handled via the computerized system. For those customers who have not, manual methods are utilized.
c) customer feedback, including complaints, are handled in accordance with Customer Corrective Action Request (CCAR) System <01-022>, Complaint Handling Procedure <908-022> or other communication methods as appropriate.

7.2.3.1 Customer Communications – Supplemental (ISO/TS 16949)

Spansion has established communication methods as defined in Spansion Operations Functions and Key Processes <F01-001.1>.

7.3 Design and Development

The requirements of this section include product and manufacturing process design and development, and focus on error prevention methodologies.

7.3.1 Design and Development Planning

The design and development for products and processes looks at three key building blocks for semiconductor integrated circuits. These building blocks are the development of the fabrication processes, the development of the package that houses the chip, and the design and development of the product. Each of these blocks may be planned and developed separately or concurrently. Product Management Policy <00-002> and LSI Development Master Plan <SK-HN011-009> address

a) all phases of design from product planning to obsolescence,
b) requirements that are appropriate for the review, verification and validation as appropriate for each design and development stage, and
c) the responsibilities and authorities for design and development.

The project leader and the team manage interfaces between functional departments involved in the design and development. The team methodology ensures effective communications and the project management methodology ensures clear assignable tasks. Output planning is updated as appropriate using the project management processes.

7.3.1S Design and Development Planning (ISO/TS 16949)

Custom or application specific product designs obtain customer concurrence at appropriate stages of design and development as defined in Spansion Product Development and Design Procedures <F01-003.1> and Spansion MCP Product Development Procedures <F01-003.2>.

7.3.1.1 Multidisciplinary Approach (ISO/TS 16949)

A multidisciplinary approach is used for

a) development/finalization and monitoring of special characteristics,
b) development and review of FMEAs, including action to reduce potential risks, and
c) development and review of control plans.

7.3.2 Design and Development Inputs

Design and development inputs include

a) functional performance requirements,
b) applicable statutory and regulatory requirements,
c) applicable information derived from previous designs, and
d) other requirements essential for design and development.

The project team leader and the appropriate members of the team review these inputs for adequacy and completeness prior to the start of the design process.

7.3.2(d)S Design and Development Input (ISO/TS 16949)

Device and process simulation models are reviewed periodically for robustness in accordance with Spansion Product Development and Design Procedures <F01-003.1>, Spansion MCP Product Development Procedures <F01-003.2>, and Control of PT, FT, Failure Rate in Yield Category <SK-HBv5272500C>.

The customer product life cycle is considered for new products. When a technology or process is identified as obsolete, the customer is notified to develop a plan for obsolescence.

7.3.2.1 Product Design Input (ISO/TS 16949)

Spansion Product Development and Design Procedures <F01-003.1>, Spansion MCP Product Development Procedures <F01-003.2>, and APQP Operation Rule <SK-HN011-061> establish the requirements for identification, documentation and review of design input requirements, including the following:

a) customer requirements such as special characteristics;
b) information pertaining to previous designs, competitor analysis, supplier feedback, etc.;
c) targets for product quality, life, reliability, durability, maintainability, timing and cost.

7.3.2.2 Manufacturing Process Design Input (ISO/TS 16949)

Spansion memory and Spansion memory FME document and review the development input requirements in accordance with Fab Process Technology Development, Qualification, and Change Management Process <F01-002.2>, APQP Operation Rule <SK-HN011-061>, and Spansion Package and Assembly Process Development and Qualification Process <F01-002.3>. These inputs include

a) product design output data,
b) targets for productivity, process capability and cost,
c) customer requirements, if any, and
d) experience from previous developments.

7.3.2.3 Special Characteristics (ISO/TS 16949)

Spansion identifies special characteristics for processes and product and

a) includes all special characteristics in the control plan,
b) complies with customer−specified definitions and symbols, and
c) identifies process control documents including drawings, FMEAs, control plans, and operator instructions with the customer's special characteristic symbol or an equivalent symbol or notation.

7.3.3 Design and Development Outputs

The output of design and development is in suitable form to enable verification against the design and development input and approval prior to release. Design and development outputs

a) meet the input requirements,
b) provide appropriate information for purchasing and production,
c) establish product acceptance criteria, and
d) specify the characteristics of the product essential for its safe and proper use.

7.3.3S Design Output (ISO/TS 16949)

Data demonstrates that device packaging and transportation packing meet customer requirements.

7.3.3.1 Product Design Outputs – Supplemental (ISO/TS 16949)

Spansion memory product design output is expressed in terms that can be verified and validated against the input requirements in accordance with Spansion Product Development and Design Procedures <F01-003.1>, Spansion MCP Product Development Procedures <F01-003.2>, and APQP Operation Rule <SK-HN011-061>. Product design output includes

a) design FMEA, reliability results,
b) product special characteristics and specifications,
c) product error – proofing where appropriate,
d) product definition including drawings or mathematically based data,
e) product design reviews results, and
f) diagnostic guidelines, where applicable.

7.3.3.2 Manufacturing Process Design Output (ISO/TS 16949)

The design of processes used to manufacture Spansion memory products is expressed in terms that can be verified against the design inputs and validated in accordance with Fab Process Technology Development, Qualification, and Change Management Process <F01-002.2>, APQP Operation Rule <SK-HN011-061>, Spansion Package and Assembly Process Development and Qualification Process <F01-002.3>, and Spansion TMP Package/Process Development & Qualification System <F01-002.12>. The manufacturing design output includes

a) specifications and drawings,
b) process flow chart/layout,
c) manufacturing process FMEAs,
d) control plan,
e) work instructions (process specifications and operator instructions),
f) process approval acceptance criteria,
g) data for quality, reliability, maintainability and measurability,
h) results of error-proofing activities as appropriate, and
i) methods of rapid detection of product/process nonconformities.

7.3.3.2S PFMEA (ISO/TS 16949)

PFMEAs for Spansion memory products pertain to all processes from receipt of material from supplier to the shipment of product to customers. Reference Fab Process Technology Development, Qualification, and Change Management Process <F01-002.2>, and Spansion Package and Assembly Process Development and Qualification Process <F01-002.3>.

The tools needed to ensure error–proofing are in place to prevent mixed material, wrong labeling, and other issues common to logistics and storage and shipping of products. Spansion uses family FMEAs for products using the same processes and packaging.

7.3.4 Design and Development Review

The design and development project team leader arranges reviews based on the project schedule. The team members and /or management are selected for the review based on the functional concerns of the design and development stage. The purpose of these reviews is

a) to evaluate the ability of the results of the design and development to meet requirements, and
b) to identify any issues requiring action and propose the action needed to correct the issue.

Spansion memory design engineering and Spansion memory FME hold formal reviews as defined in Fab Process Technology Development, Qualification, and Change Management Process <F01-002.2>, Design Review <SK-HN011-002>, Spansion Package and Assembly Process Development and Qualification Process <F01-002.3>, Spansion Product Development and Design Procedures <F01-003.1>, Spansion MCP Product Development Procedures <F01-003.2>, LSI Development Master Plan <SK-HN011-009>, and Design Review <SK-HN011-002>.

Records of design reviews are maintained in accordance with Records Management <00-014>.

7.3.4.1 Monitoring (ISO/TS 16949)

Measurements at specific stages of design and development are defined, analyzed, and reported with summary results as inputs to management review in accordance with Spansion Operations Functions and Key Processes <F01-001.1> and FMO Management Review Procedure <F08-023>.

7.3.5 Design and Development Verification

Design and development verification is conducted in accordance with Spansion Product Development and Design Procedures <F01-003.1>, Spansion MCP Product Development Procedures <F01-003.2>, LSI Development Master Plan <SK-HN011-009>, and Design Review <SK-HN011-002>. These verifications ensure that the output of the design stage conforms to the required inputs for the product. Records of the results of the verification and any necessary actions are maintained in accordance with Records Management <00-014>.

7.3.5S Design and Development Verification (ISO/TS 16949)

The wafer processes used to manufacture Spansion memory product are characterized for the corners of the process or in accordance with customer requirements. Spansion, when required by contract for a new design verification,

a) obtains customer approval for design and process characterization,
b) obtains customer approval for certified test applications, and
c) supplies engineering samples for evaluation in the application.

Reference Spansion Product Development and Design Procedures <F01-003.1>, Spansion MCP Product Development Procedures <F01-003.2>, LSI Development Master Plan <SK-HN011-009>, Design Review <SK-HN011-002>, Spansion Package and Assembly Process Development and Qualification Process <F01-002.3>, Fab Process Technology

Development, Qualification, and Change Management Process <F01-002.2>, and Product Development, Qualification and Change Management Process <F01-002.4>.

Records for these verifications are maintained in accordance with Records Management <00-014>.

7.3.6 Design and Development Validation

Product Management Policy <00-002> and LSI Design Control Rule <SK-HN011-003> address the requirements for design and development validation (qualification) to ensure the resulting product or process is capable of meeting requirements for the specified application. Wherever practical, the qualification is performed prior to delivery.

Records of the validation tests are maintained in accordance with Records Management <00-014>.

7.3.6.1 Design and Development Validation – Supplemental (ISO/TS 16949)

Spansion memory design engineering performs validation (qualification) testing to customer requirements, as required by contract or agreement, as defined in Spansion Product Development and Design Procedures <F01-003.1>, Spansion MCP Product Development Procedures <F01-003.2>, and LSI Design Control Rule <SK-HN011-003>.

7.3.6.1S Design and Development Validation (ISO/TS 16949)

Spansion memory design engineering and Spansion memory FME perform validation (qualification) testing in accordance with Spansion Product Development and Design Procedures <F01-003.1>, Spansion MCP Product Development Procedures <F01-003.2>, LSI Design Control Rule <SK-HN011-003>, and Spansion Package and Assembly Process Development and Qualification Process <F01-002.3>, respectively. For initial products on new technologies, and where necessary on other products, MG and NVT ensure that process / product corner lots have been characterized in accordance with Fab Process Technology Development, Qualification, and Change Management Process <F01-002.2>, Design Review <SK-HN011-002> and Product Development, Qualification, and Change Management Process <F01-002.4>. Spansion memory FME conducts manufacturability studies and process characterization on new packages and materials as described in Spansion Package and Assembly Process Development and Qualification Process <F01-002.3>.

7.3.6.2 Prototype Programme

Spansion provides engineering samples in lieu of prototypes in accordance with Product Development, Qualification and Change Management Process <F01-002.4>, Product Management Policy <00-002>, and LSI Design Control Rule <SK-HN011-003>. Spansion memory FME uses engineering samples as a means of characterizing packages and processes as described in Spansion Package and Assembly Process Development and Qualification Process <F01-002.3>.

7.3.6.3 Product Approval Process (ISO/TS 16949)

Spansion utilizes a disciplined Production Part Approval Process (PPAP) for customers requiring this type of communication process as described in Spansion Operations Functions and Key Processes <F01-001.1>. This PPAP procedure ensures that customers have the opportunity to approve the product qualification plans, as well as concur with problem analysis and resulting corrective and preventive actions, all of which are included in the PPAP submission to the customer. Spansion follows Product Management Policy <00-002> and Design <SK-HN011-001> for validation including reliability.

This product and manufacturing process approval procedure is also applied to suppliers in accordance with Supplier Quality Policy <00-037>.

Records of validation results are maintained in accordance with Records Management <00-014>.

7.3.7 Control of Design and Development Changes

All design changes and modifications are identified, documented, reviewed and approved before implementation in accordance with Product Management Policy <00-002> and Design Change Procedure <SK-HN011-004>. Records of the results of the review of changes and any necessary actions are maintained in accordance with Records Management <00-014>.

7.3.7S Control of Design and Development Changes (ISO/TS 16949)

Spansion memory design engineering and Spansion memory FME notify customers of all major design or process changes in accordance with FASL LLC Change Notification Policy <F00-023> and submit revised PPAPs to ISO/TS 16949 sensitive customers as required in Spansion Operations Functions and Key Processes <F01-001.1>. When making design changes, Spansion considers the expected impact on form, fit, function, and system performance in which the product is used. When product obsolescence is planned, customers are notified as defined in Product Obsolescence Policy <00-097> and Product Termination <SK-HN007-037>.

7.4 Purchasing

7.4.1 Purchasing Process

Spansion has contracted with the GSM organization within AMD, as the organization to commit corporate funds for the purchase of equipment, material and services for former AMD locations (Spansion Japan Limited in Shinjuku, Japan, follows local purchasing procedures). Authorization to commit corporate funds is defined in Corporate Purchasing Policy – Purchasing Authority <00-1000>.

GSM is authorized to purchase controlled materials and services from approved suppliers to ensure that purchased product conforms to specified requirements. Selection of suppliers is based on Supplier Quality Policy <00-037>, Quality Control for Vendors <SK-HN007-006> and Procedure for Auditing Service Subs. <01-009> and documented on approved supplier lists. Records of the evaluation and selection process for suppliers are maintained in accordance with Records Management <00-014>.

7.4.1S Purchasing Process (ISO/TS 16949)

When qualification testing or failure analysis is outsourced, any customer specific requirements are passed on to the supplier.

7.4.1.1 Regulatory Conformity (ISO/TS 16949)

Purchased material satisfy all governmental, environmental, and safety constraints, as required, in accordance with ‘Terms and Conditions” specified in purchase orders.

7.4.1.2 Supplier Quality Management System Development (ISO/TS 16949)

GSM works with all direct material suppliers for Spansion memory product to deploy the requirements of ISO/TS 16949 with the goal of supplier compliance to said standard. Where the supplier is not in full compliance, GSM and engineering work with the supplier with the intent of conformity to ISO/TS 16949 in accordance with Supplier Quality Policy <00-037> and Quality Control for Vendors <SK-HN007-006>. Third party registration to ISO 9001:2000 is the first step in achieving this goal.

7.4.1.2S Supplier Quality Management System Development (ISO/TS 16949)

For fabrication, assembly, and/or test, suppliers of single power supply flash memory product, compliance to ISO/TS 16949 is required. This may be verified by:

- Third party registration to ISO/TS 16949:2002
- Certification by the Semiconductor Assembly Council (SAC)
- Customer conducted or approved audits

7.4.1.3 Customer – Approved Sources (ISO/TS 16949)

If contractually agreed upon, GSM purchases materials from customer-approved suppliers in accordance with Procurement System <01-092> and Quality Control for Vendors <SK-HN007-006>. Suppliers are approved internally and added to Approved Suppliers – Materials <03-001> and <03-001.X>, as applicable, with a notation for "limited usage."

7.4.2 Purchasing Information

The initiation of purchasing information, approval and completion of purchasing activities is defined in Procurement System <01-092> and Conditions of Purchase Orders <SK-HN007-016>.

Purchasing information describes the product to be purchased, including where appropriate

a) requirements for the approval of product, procedures, processes, and equipment,
b) requirements for qualification of personnel, and
c) quality management system requirements.

7.4.3 Verification of Purchased Product

Methodologies to ensure purchased product meets specified requirements are defined in Supplier Quality Policy <00-037> and Quality Control for Vendors <SK-HN007-006>.

If a customer intends to perform verification at a supplier's premises, this is handled in accordance with Supplier Quality Policy <00-037> and Quality Control for Vendors <SK-HN007-006>.

7.4.3.1 Incoming Product Quality (ISO/TS 16949)

Various methods are established to assure the quality of purchased product as defined in Supplier Quality Policy <00-037> and Quality Control for Vendors <SK-HN007-006>.

7.4.3.1S Incoming Product Quality (ISO/TS 16949)

"04"specifications define the material characteristics that are significant to product and processes. Supplier data that is used as a control method meets the requirements of Supplier Quality Policy <00-037> and Quality Control for Vendors <SK-HN007-006>.

7.4.3.2 Supplier Monitoring (ISO/TS 16949)

Supplier performance is monitored in accordance with Supplier Quality Policy <00-037> and Quality Control for Vendors <SK-HN007-006>.

7.5 Production and Service Provision

7.5.1 Control of Production and Service Provision

Production processes that affect quality are conducted under controlled conditions including: documented work instructions/process specifications, process monitoring, special working environments, adequate production equipment, and workmanship standards. Management is responsible for ensuring that the following process control provisions are implemented.

a) Where needed in the process, information that describes the characteristics of the product is available. These characteristics are covered in the process specification.

b) Process specifications and work instructions are documented in accordance with the Documentation System <01-008> and contain clear and complete instructions appropriate to the circumstances. These work instructions also provide the criteria for acceptable quality performance or criteria.

c) Processes and equipment are reviewed for adequacy and appropriateness, approved by relevant personnel prior to usage, and subject to re-evaluation for continued acceptability. Environmental conditions in which processes are performed and equipment is used are controlled in accordance with Atmosphere Quality Levels <16-022> and DI Water/UPW Limits <16-023>.

d) The use of monitoring and measuring devices is controlled in all processes by "05", "06" or "07" specifications as defined in Documentation System <01-008>.

e) Each process area monitors and controls critical in-process parameters and product characteristics with specified requirements to determine the acceptability of work and products, and the resultant corrective actions taken in connection with any nonconformance.

f) Final In-line Quality Inspection <06-027> and Physical Distribution Quality Inspection Requirements <06-001 ensure that final inspection and test activities are completed and acceptable prior to product release for shipment and any associated data and records complete and approved. Actions required for field issues pertaining to product nonconformity are controlled by Customer Corrective Action Request (CCAR) System <01-022> and Complaint Handling Procedure <908-022>.

7.5.1.1 Control Plan (ISO/TS 16949)

Control Plans are used for all Spansion memory manufacturing. Control Plans are maintained in accordance with Fab Process Technology Development, Qualification, and Change Management Process <F01-002.2>, Spansion Package and Assembly Process Development and Qualification Process <F01-002.3> and TMP Process Flow and Control Plan <02-028>. The control plan

a) lists the process controls used in manufacturing,
b) includes monitoring methods of control exercised over special characteristics,
c) includes contractual customer requirements, and
d) defines the reaction plan needed for process unstableness.

Control plans are reviewed when changes may occur to the product, manufacturing process, logistics, supply sources or FMEA.

7.5.1.1S Control Plan (ISO/TS 16949)

Control plans for Spansion memory product include the methods for controlling all processes from receipt of material to shipping.

7.5.1.2 Work Instructions (ISO/TS 16949)

Work instructions are prepared and controlled by the Documentation System <01-008>. The documents are developed during the design and development process for the manufacturing process.

7.5.1.2S Work Instructions (ISO/TS 16949)

Work instructions include requirements for test equipment and the supporting software and hardware, data entry requirements, and golden units and usage frequency.

7.5.1.3 Verification of Job Set-Ups (ISO/TS 16949)

Job setups are verified in accordance with local area procedures to ensure product meets all requirements.

7.5.1.4 Preventive and Predictive Maintenance (ISO/TS 16949)

Areas are required to have preventive maintenance procedures as specified in minimum area requirements specifications <01-12X>. MGM/MSD Preventive & Predictive Maintenance System <01-226> and Predictive Action Rule <SK-FV303/006> provide the methodology for developing a planned preventive maintenance system including methods for predictive maintenance.

7.5.1.5 Management of Production Tooling (ISO/TS 16949)

Spansion has established and implemented a system for tooling management as specified in Assembly & TMP Tooling Management System <01-122> and minimum area requirements specifications <01-12X>.

7.5.1.5S Management of Production Tooling (ISO/TS 16949)

Tooling Management as described in the documents listed in sections 7.5.1.4 and 7.5.1.5 cover the following equipment: probe cards, tester contactors, device handling, test fixtures, software, testers, photo mask/mask sets, wire bond capillaries, trim and form and singulation tools, and molds.

The above methodology addresses the effectiveness for: operation efficiency, maintenance schedule, maintenance adjustment consistent with equipment utilization, and tool change program for perishable tools.

7.5.1.6 Production Scheduling (ISO/TS 16949)

Production scheduling is performed in accordance with corporate systems, Spansion Operations Functions and Key Processes <F01-001.1>, and Production Planning <908-HN007-025>.

7.5.1.7 Feedback of Information from Service (ISO/TS 16949)

Spansion memory product does not require servicing. Therefore, this clause is not applicable.

7.5.1.8 Service Agreement with Customer (ISO/TS 16949)

Spansion memory product does not require servicing. Therefore, this clause is not applicable

7.5.2 Validation of Processes for Production and Service Provision

Processes whose results cannot be fully verified by subsequent product inspection and testing, and where processing deficiencies may not become apparent until the product is in use, are continuously monitored to ensure compliance with specified requirements.

To ensure product quality and reliability of such processes, two levels of process monitoring are performed.

In-line process monitoring and testing (such as electrical, functional testing and wafer level reliability tests) are performed at defined points in the process flow. Operations managers ensure that required monitoring is performed, and that monitoring results and associated corrective action are recorded and maintained, as documented in local manufacturing specifications. The selection of equipment for these processes is determined during the process planning stage to ensure compliance with process requirements. Personnel performing these processes are trained in accordance with Corp. Manufacturing Training System <01-210> and Competence, Awareness and Training Provision <908-00.011>. These processes are controlled as defined in the control plan and/or manufacturing process specifications <05-XXX>. Any change that may affect form, fit, function or reliability is revalidated in accordance with Product Management Policy <00-002> and Design <SK-HN011-001>.

Process qualification testing is conducted on new products, packages, wafer fabrication and assembly processes in accordance with Product Management Policy <00-002> and Design <SK-HN011-001>. Reliability management at each facility is responsible for ensuring that the monitors and tests are performed, as specified, and test results recorded and maintained in accordance with Records Management <00-014>.

7.5.2.1 Validation of Processes for Production and Service Provision – Supplement (ISO/TS 16949)

All manufacturing processes used for Spansion memory product are validated in accordance with Product Management Policy <00-002> and Design <SK-HN011-001>.

7.5.3 Product Identification and Traceability

Spansion provides lot numbering and part numbering systems, which meet the requirements for product identification and traceability as documented in AMD Product Traceability Policy <00-038>.

AIMS (Advanced Inventory Management System) is the lot data collection system. Workstream is the site Work In Process (WIP) system. AIMS, Workstream, and any other equivalent tracking system identify and track all production lots from wafer fab through customer shipment. The lot number control system, as defined in AMD Lot Numbering System <01-080> and Lot Number of Wafer Fabrication <SK-HN005-001>, provides complete lot history for any given lot.

Additional trace information is provided via the AMD Date Code System <16-006> and the Distribution Management System (DMS).

Area specifications require product to be uniquely identified and traceability data to be recorded as part of area processing records. Records are maintained in accordance with Records Management <00-014>.

7.5.3S Identification and Traceability (ISO/TS 16949)

The system defined in section 7.5.3 is capable of doing a trace forward and backward within 24 hours. It covers product lots, processes and materials to satisfy customer needs for risk abatement and containment.

7.5.3.1 Identification and Traceability – Supplemental (ISO/TS 16949)

The above system for identification and traceability address the requirements for all product and processes at Spansion.

7.5.4 Customer Property

Customer property considers two areas. The first pertains to intellectual property pertaining to product design and development. The business unit controls this property. This information is transferred into specifications for production and testing. The second area of customer property pertains to materials. Normally Spansion does not accept customer−owned material. However, where it is necessary to comply with contractual requirements, Spansion has established the process for controls in Procurement System <01-092> and Customer Property Control Rule <SK-HN005-019>. If any customer property is lost, damaged or otherwise found to be unsuitable for use, this is reported to the customer and records maintained in accordance with Records Management <00-014>.

7.5.4S Customer Property (ISO/TS 16949)

Spansion customer property, which includes material, product or software, is controlled in accordance with Spansion Operations Functions and Key Processes <F01-001.1> and Customer Property Control Rule <SK-HN005-019>. Customer – supplied product traveling between locations is handled in accordance with para. 7.5.5.

7.5.4.1 Customer – Owned Production Tooling (ISO/TS 16949)

Spansion does not utilize customer–owned tools and equipment.

7.5.5 Preservation of Product

Spansion subscribes to documented procedures for handling, storage, packaging, preservation and delivery of products to ensure product quality and to prevent damage and deterioration. These procedures are documented in the appropriate material, processing, and operating specifications.

a) Handling: Area management documents handling requirements in area specifications to prevent damage or deterioration of product. This is accomplished by adhering to the procedures in specifications such as Product Wafer Handling Outside Fab <00-033> and Incoming Material Control <03-005>.

   Work-in-process product is packed appropriately in accordance with Packaging and Orientation Standard <16-017> and product is shipped in compliance with Shipping, Labeling Requirement <16-050>. Handling Procedure for Prevention of ESD Damages <00-016> describes the policy for safe handling of materials susceptible to electrostatic discharge (ESD) damage. This ESD policy is implemented from wafer sort on.

b) Storage: After received material has been verified against the purchase order and inspected, it is stored in designated secured storage areas to prevent damage or deterioration. The condition of product in storage is assessed at appropriate intervals in accordance with Inventory Storage Requirements <01-142>.

   Documented storage procedures define storage requirements to prevent damage or deterioration of product pending use or delivery. Storage requirements are defined in minimum area requirements specifications <01-12X>.

c) Packaging, Protection, Preservation and Identification: Spansion ensures controls are in place for the packing of product to the extent necessary to ensure conformance to specified internal and external requirements.

Packaging and Orientation Standard <16-017> defines the packing method for all finished product, which includes materials to be used, quantity per container, and unit orientation. Wafers are packed in accordance with Wafer Pack and Ship Standard <16-201>.

Shipping and labeling requirements are specified in Shipping, Labeling Requirement <16-050> and the Container Label Requirements <16-054>. Matl Ship & Intercompany Rec. <07-119> covers wafer shipments worldwide. Packing procedures ensure that product is packed in accordance with Handling Procedure for Prevention of ESD Damages <00-016> and meets any special packing required by the customer.

The proper environment for preservation of product is maintained from product start to the customer. Environmental constraints are defined in minimum area requirements specifications <01-12X>.

d) Delivery: Product verification and inspection processes specified in TMP Process Flow and Control Plan <02-028>, Physical Distribution Quality Inspection Requirements <06-001>, and Final In-line Quality Inspection <06-027> ensure that product complies with processing, test and inspection requirements and is acceptable for shipment.

The arrangement for the protection of the quality of product after final inspection and test is described in each distribution center's procedures, e.g., Boxstock Sales Order Preparation <07-064>. Requirements for warehousing, processing and inspecting product are defined. Where contractually specified, this protection may extend to include delivery to destination.

7.5.5.1 Storage and Inventory (ISO/TS 16949)

The inventory management system optimizes inventory turnover time by using a FIFO methodology. This system assures stock rotation and minimizes inventory levels in accordance with Spansion Operations Functions and Key Processes <F01-001.1>.

The responsible manager for each inventory area is responsible for assessing the condition of the stored material in accordance with Inventory Storage Requirements <01-142>. This will include detection for deterioration of the product or identification/labeling.

Obsolete product is managed in accordance with Product Obsolescence Policy <00-097> and Product Termination <SK-HN007-037>.

7.5.5.1S Storage and Inventory (ISO/TS 16949)

Product inventory for work in process (WIP) is managed using actual vs. theoretical cycle time. This is built into the planning system for all stages of manufacturing.

7.6 Control of Monitoring and Measuring Devices

The design and development teams for product and process determine the needed controls to ensure product quality. The selection of devices for monitoring and measuring product and process quality are a function of the design and development teams specified in Product Management Policy <00-002> and Calibration System <SK-HN005-003>. Where necessary to ensure valid results, measuring equipment is

a) calibrated,
b) adjusted or readjusted as necessary,
c) identified to enable the calibration status to be identified,
d) safeguarded from adjustment that would invalidate the measurement, and
e) protected from damage and deterioration during handling, maintenance and storage in accordance with Calibration Policy <00-015> and Calibration System <HN005-003>.

Requirements for out of tolerance condition and the need to take appropriate action for product that was evaluated during this period of out of tolerance are specified in Calibration Policy <00-015> and Calibration System <SK-HN005-003>. Records are maintained in accordance with Records Management <00-014>.

7.6S Control of Monitoring and Measuring Devices (ISO/TS 16949)

Where golden units are used, the requirements of Calibration Policy <00-015> and Calibration System <SK-HN005-003> are adhered to.

7.6.1 Measurement System Analysis (ISO/TS 16949)

The requirements for measurement system analysis are specified in minimum area requirements specifications <01-12X> and performed in accordance with Measurement Systems Analysis (MSA) <01-025.6>.

7.6.1S Measurement System Analysis (ISO/TS 16949)

The selection of measuring and monitoring devices for Spansion memory product considers the resolution of the equipment used to monitor special characteristics. Where technically possible, the equipment will be one-tenth of the total process six sigma standard deviation.

7.6.2 Calibration / Verification Records (ISO/TS 16949)

Records for calibration/verification activity are specified in Calibration Policy <00-015> and Calibration System <SK-HN005-003> and also addressed in detailed equipment calibration procedures for local recall groups "X13-010." These procedures address

a) equipment identification, including the reference standards used for calibration,
b) revisions following engineering changes
c) any out of specification readings as received,
d) an assessment of the impact of out of tolerance condition,
e) statement of conformity to specification after calibration, and
f) notification to the customer if suspect product or material has bee shipped.

7.6.3 Laboratory Requirements (ISO/TS 16949)

7.6.3S Laboratory Requirements (ISO/TS 16949)

Internal and external laboratories used to verify, validate, or test Spansion memory product are capable, where required, of performing the tests required in AEC – Q100.

7.6.3.1 Internal Laboratory (ISO/TS 16949)

In-house laboratory facilities have a documented scope, which includes the specific tests, evaluations, and calibrations it has the ability and competency to perform and a list of the equipment, methods, and standards utilized in the laboratory. These facilities control the laboratory as follows:

a) laboratory personnel are qualified to perform their specific job duties based on their background and experience,
b) laboratories have documented procedures for the receipt, identification, handling, protection and retention or disposal of test samples and/or calibration equipment items,
c) laboratories monitor, control, and record environmental conditions, as specified in area procedures, and
d) records are maintained in accordance with Records Policy <00-014>.

In-house laboratories use test and/or calibration methods, which meet the needs of the customer and are appropriate for the test and/or calibrations it performs, including current international, regional, or national standards. Appropriate statistical techniques are applied to in-house laboratory verification activities whose deliverables are data.

7.6.3.1S Internal Laboratory (ISO/TS 16949)

The laboratory when using production equipment and/or processes clearly identifies these in their procedure/scope.

7.6.3.2 External Laboratory (ISO/TS 16949)

External laboratories are accredited by a nationally recognized accreditation body as specified in Procedure for Auditing Service Subs. <01-009>.

8.0 MEASUREMENT, ANALYSIS AND IMPROVEMENT

8.1 General

Spansion plans and implements the monitoring, measurement, analysis and improvement processes during the design and development phase of product and process realization to demonstrate conformity of the product. Quality objectives are defined by top management and supported by the individual functional departments to ensure conformity of the quality management system. Top management and the supporting functional departments review data from the results of the monitors and measurements for the quality objectives to continually improve the effectiveness of the quality management system.

Statistical Process Control (SPC) is a key component of Spansion's efforts to continually improve product quality and reliability.

SPC at Spansion relies on prevention rather than inspection to achieve conformance with requirements, reduce variation around a target, and reduce the costs of production. SPC programs are decentralized, delegated and customized, as appropriate. Continual improvement through the use of SPC is a responsibility and expectation placed on each division. Customer focus, defect and cost reduction, yield enhancements, and capability improvement are represented within interrelated divisional programs.

SPC charts monitor critical process parameters. The natural limits and capability of the process are established by statistical analysis of manufacturing data. These natural limits form the basis for control charts. The relationship of the inherent process variation to the product specification limits determines the process capability.

The SPC system provides verification that the process is in control, thereby assuring stable processes and avoiding unnecessary adjustments. Prompt action is taken when control chart patterns signal warnings, and causes of atypical behavior are identified and removed.

SPC requirements are specified in Statistical Process Management <00-066> and Manual of Statistical Techniques <SK-HN011-005>. Documented procedures permit the effective control of the processes and the discovery of the root causes of excessive variation.

8.1.1 Identification of Statistical Tools (ISO/TS 16949)

Statistical tools for each process are determined during advanced product quality planning and are included in the control plan.

8.1.2 Knowledge of Basic Statistical Concepts (ISO/TS 16949)

Training in the application of statistical tools and statistically designed experiments is considered important in the overall program to increase productivity. Spansion believes the development of statistical thinking among employees promotes continual process improvements and drives increased productivity, quality, and reliability.

8.2 Monitoring and Measurement

8.2.1 Customer Satisfaction

As one of the measurements of performance of the quality management system, Spansion has established a system to monitor information relating to customer perception as it relates to meeting customer requirements. Trends in customer satisfaction are determined in accordance with Customer Satisfaction <01-224> and Customer Satisfaction Measurement <908-224>. These trends are compared to those of competitors, or appropriate benchmarks, and reviewed by upper management.

Functional departments are responsible for determining the need to monitor feedback from internal business partners as part of their overall continual improvement program.

8.2.1.1 Customer Satisfaction – Supplemental (ISO/TS 16949)

The process defined in Customer Satisfaction <01-224> and Customer Satisfaction Measurement <908-224> provides a methodology for the continual evaluation of customer perception. Spansion's internal processes address the evaluation of the realization process performance. The performance indicators are based on the planned requirements defined in the control plans and the requirements for Qualification Maintenance Program <F01-002.5> and Periodic Reliability Test <SK-HBv5270105R>. Performance indicators are established for

a) delivered part quality performance,

b) customer disruptions including field returns,
c) delivery schedule performance (including incidents of premium freight), and
d) customer notifications related to quality or delivery issues.

Customer Corrective Action Request (CCAR) System <01-022>, Complaint Handling Procedure <908-022>, Corporate Returns Policy <00-010>, and Parts Return <SK-HN007-035> evaluate field issues and determine Spansion's performance and effectiveness for product delivered to the customer.

The delivery schedules for customer shipments and receipt of material are critical to the company's success. These issues are monitored in accordance with Corporate Transportation Supplier Evaluation Process <03-072> and Spansion Operations Functions and Key Processes <F01-001.1>. All customer requirements, including lead-time, transportation mode, routings and containers are adhered to. Records of Spansion responsible premium freight are maintained in accordance with Corporate Transportation Supplier Evaluation Process <03-072>.

Customer notification for the on-line transmittal of advance shipment notifications is defined in Contract Review Process and Support Responsibility for Field Sales < 01-045>. Where the customer elects to use a computerized system, the Electronic Data Interchange (EDI) system is available. However, where EDI is not used, an alternate method is available.

8.2.2 Internal Audit

The Corporate Audit and Assessment Policy <00-007> and Internal Quality Audit Rule <FAS-A17-000-000> identify the various types of audit and assessment processes utilized at Spansion. The internal audit process ensures the implementation and effectiveness of the quality management system. Elements of the quality management system are addressed during regularly scheduled area/process audits in accordance with Worldwide Quality Systems Audit <01-019> and Internal Quality Audit Rule <FAS-A17-000-000>.

Audits are scheduled on the basis of the status and importance of the activity and are performed by auditors who are selected, trained, and certified according to documented criteria. Auditors do not audit their own work.

Audit results are documented and communicated. Feedback on strengths, weaknesses, and opportunities for improvement are presented to area personnel having the authority to effect positive change. Serious deficiencies result in a corrective action request in accordance with the Corrective Action System <01-020> and Corrective Action Procedure <908-020>. Follow

up activities verify and record the implementation and effectiveness of any corrective actions taken.

Internal auditing covers all shifts and is conducted according to an audit plan/schedule updated annually. When internal/external nonconformances or customer complaints occur, the planned audit frequency is increased in accordance with Worldwide Quality Systems Audit <01-019> and Internal Quality Audit Rule <FAS-A17-000-000>.

Audit records are maintained in accordance with Records Management <00-014>.

8.2.2S Internal Audit (ISO/TS 16949)

The audit program includes

a) clean room controls,
b) ESD controls,
c) proper handling of masks, wafers, gases, and product
d) corrective actions and effective implementation required from problem analysis reports, and
e) timely completion of analysis reports including containment, verification, and root cause and corrective action identification.

8.2.2.1 Quality Management System Audit (ISO/TS 16949)

Audit and assessment is responsible for conducting internal audits in accordance with Worldwide Quality Systems Audit <01-019> and Internal Quality Audit Rule <FAS-A17-000-000> to ensure quality management system requirements are being followed.

8.2.2.2 Manufacturing Process Audit (ISO/TS 16949)

These types of audits are performed in manufacturing in accordance with Worldwide Quality Systems Audit <01-019>.

8.2.2.3 Product Audit (ISO/TS 16949)

Product audits are conducted in accordance with Corporate Audit and Assessment Policy <00-007>. In addition, Spansion has established monitors in the control plans to audit the products at various steps of the process. These product audit processes are audited by WQSA (Worldwide Quality Systems Audit) to ensure the requirements are followed and that the data reported is accurate.

8.2.2.4 Internal Audit Plans (ISO/TS 16949)

Internal audit covers all quality management related processes, activities and shifts, and are scheduled according to an annual plan in accordance with Worldwide Quality Systems Audit <01-019> and Internal Quality Audit Rule <FAS-A17-000-000>.

8.2.2.5 Internal Auditor Qualification (ISO/TS 16949)

Auditors who perform audits to the requirements of ISO/TS 16949 are qualified in accordance with Spansion WQSA Training <F01-019.4> and Internal Quality Audit Rule <FAS-A17-000-000>.

8.2.3 Monitoring and Measurement of Processes

During the design and develop stages, the project team measures the progress of the project and reports status to management. This team also establishes the requirements for pre-production and manufacturing stages, including special characteristics for the processes and monitors for manufacturing which are included on control plans. This data is reported at Management Review meetings.

All other core processes that comprise the quality management system, including support processes, are monitored and measured by process owners to ensure quality objectives are met. The data from the quality management system processes are analyzed against planned results and where planned results are not achieved, correction and corrective action, as appropriate, is taken by management to resolve the issue.

8.2.3.1 Monitoring and Measurement of Manufacturing Processes (ISO/TS 16949)

Process capability or performance levels approved via PPAP are maintained and improved upon by implementing control plans and monitoring SPC levels. Significant process events are appropriately noted and recorded. Control plans are maintained in accordance with Fab Process Technology Development, Qualification and Change Management Process <F01-002.2>, Assembly Process Flow Charts and Control Plan <02-001>, and TMP Process Flow and Control Plan <02-028>.

Statistical process control procedures for specific areas require significant events to be recorded. Reaction plans are included in the control plan for the family of product/package or individual product.

Documentation System <01-008> and Electronic Specification e-Spec System <01-008.17> maintain the records for process changes.

8.2.4 Monitoring and Measurement of Product

Monitors and measurements for the product and the material used in the manufacturing and shipping of the product are established to ensure the product meets requirements. These monitors and measurements start at the beginning of the product realization process (design and development) through the manufacturing and shipping processes.

The criteria for these requirements reside in the following documents:

Process specification	05-XXX
Operator instructions	07-XXX
Inspection instructions	06-XXX
Control Plans and Flow Charts	02-XXX
Project Plans for new products	

Records indicate the person authorizing the release of product and are maintained in accordance with Records Management <00-014>.

Product is not released until satisfactory completion of the planned arrangements. Any deviation from this requirement requires a Decision Record in accordance with Decision Record System <F01-018>.

8.2.4S Monitoring and Measurement of Product (ISO/TS 16949)

Where Spansion memory products require inspection, management and engineering have established processes that provide for the

- appropriate lighting for the evaluation,
- appropriate visual aids,
- adequate inspection aids and evaluation equipment, and
- competent personnel for performing the verification.

Stress testing methods used to improve product reliability have been proven to not cause any degradation of the product. This data resides with the Spansion memory engineering department.

Where guardbanding methods are used to test Spansion memory products and this is used to omit test compliance, Spansion memory engineering maintains documented statistical data to justify these guardbanding methodologies. Where guardband limits are used to eliminate customer specified electrical test parameters, statistical data is maintained that provides as

good or better risk for the customer as a Cpk of 1.67 would provide. This data is maintained by the Spansion memory engineering department.

8.2.4.1 Layout Inspection and Functional Testing (ISO/TS 16949)

Layout inspections and functional verifications are performed if specifically required by the customer in accordance with Spansion Operations Functions and Key Processes <F01-001.1>.

8.2.4.2 Appearance Items (ISO/TS 16949)

This clause is not applicable to Spansion memory product.

8.3 Control of Nonconforming Product

The Decision Record System <F01-018> describes the process for the review and control of nonconforming product. These specifications ensure that product that does not meet specified criteria is clearly identified and segregated to prevent the inadvertent mixing and shipment. These procedures consider the method for dealing with nonconforming material by taking action to eliminate the detected nonconformance, by authorizing its use, release or acceptance under concession by a relevant authority and where applicable, by the customer, and by taking action to preclude its original intended use or application.

Records of the nature of nonconformities and any subsequent actions taken, including concessions obtained, are maintained in accordance with Records Management <00-014>. Where a nonconformity is noted after delivery of the product to the customer, Spansion takes action appropriate to the effect, or potential effects, of the nonconformity.

8.3.1 Control of Nonconforming Product – Supplemental (ISO/TS 16949)

Spansion’s processes do not allow unidentified or suspect material to continue processing unless it has been dispositioned in accordance with Decision Record System <F01-018>.

8.3.1S Control of Nonconforming Product – Supplemental (ISO/TS 16949)

Nonconforming product is identified and immediately placed in a status that prevents reintroduction into the production flow.

8.3.2 Control of Reworked Product (ISO/TS 16949)

Rework to meet specified requirements is determined by the Returns Reprocessing Policy <00-069>, Standard Processing Specifications <00-004> and area process specifications. Allowable rework is documented and remains with the production lot traveler. Repaired and reworked product is reinspected in accordance with documented procedures.

Rework instructions are accessible and utilized by the appropriate personnel in their designated work areas. Visible rework on the exterior of the product is not permitted.

8.3.2S Control of Reworked Product (ISO/TS 16949)

Where a process is developed for reworking product, the requirements that were established for qualification of the initial process are performed to ensure compliance of the rework method.

8.3.3 Customer Information (ISO/TS 16949)

The Spansion Customer Representative is responsible for establishing a process for customer notification in the event that nonconforming product is shipped. Reference Customer Advisory <01-156> and Concession Rule <SK-HN003-026>.

8.3.4 Customer Waiver (ISO/TS 16949)

Whenever the product or process is different from that which is currently approved, prior customer authorization is obtained in accordance with Spansion Operations Functions and Key Processes <F01-001.1>.

8.4 Analysis of Data

Management when establishing quality objectives selects the evaluation and analysis methods needed to determine the suitability and effectiveness of the quality management system and supporting processes. The evaluation and analysis of data provides information relating to

a) customer satisfaction,
b) conformity to product requirements,
c) characteristics and trends of processes and product including opportunities for preventive action, and
d) suppliers.

The data used to make decisions pertaining to continual improvement may be from internal or external sources.

8.4.1 Analysis and Use of Data (ISO/TS 16949)

Spansion data analysis addresses trends in quality and operational performance to compare the progress of actual results to the objectives. The analysis leads to action to support the following

a) development of priorities for prompt solutions to customer - related issues;
b) determination of key customer−related trends and correlation for status review, decision-making and longer term planning; and
c) an information system for the timely reporting of product information arising from usage.

8.5 Improvement

8.5.1 Continual Improvement

Spansion continually improves the effectiveness of the quality management system through the use of the quality policy, quality objectives, audit results, analysis of data, corrective and preventive actions and management review. The data that is collected from the various core processes is used by management to improve the effectiveness of the quality management system. This is achieved in management review meetings and other planning meetings held by top management. Statistical Process Management <00-066> and Manual of Statistical Techniques <SK-HN011-005> provide the tools needed to meet this requirement.

8.5.1.1 Continual Improvement of the Organization (ISO/TS 16949)

The Spansion memory organization establishes the needed processes for continual improvement. These processes include breakthrough projects and small-step ongoing improvement activities. Changes for continual improvement are managed through various processes such as Statistical Process Management <00-066>, Manual of Statistical Techniques <SK-HN011-005>, PPCD (proposed process change documents) teams, and process/product development teams. The data for the programs is maintained in accordance with Records Management <00-014>.

8.5.1.2 Manufacturing Process Improvement (ISO/TS 16949)

Statistical Process Management <00-066> addresses the requirements to continually focus upon control and reduction of variation in product characteristics and manufacturing process parameters.

8.5.2 Corrective Action

Spansion has documented procedures for implementing corrective action. These procedures are designed to eliminate the causes of nonconforming product. Changes to documented procedures resulting from corrective action are implemented and recorded.

Management allocates resources to identify and disposition nonconforming product, and to initiate analysis and corrective action to prevent recurrences. The Corrective Action System <01-020> and Corrective Action Procedure <908-020> define the system that documents actions taken to describe and resolve conditions adverse to product quality or service. Personnel performing these functions have defined responsibility, authority and organizational independence to identify and evaluate nonconformances and to initiate, recommend, and provide solutions. Supplier corrective action is handled in accordance with Material Review Board – Incoming Material <01-131> and Waiver of Purchased Products <SK-HN007-010>.

Records of corrective action are maintained in accordance with Records Management <00-014>.

Spansion provides customers several mechanisms to make inquiries, register concerns, and request failure analysis and corrective action. Personnel with customer responsibility are available to take and answer inquiries or forward them to appropriate personnel for resolution. Customer Requests for F/A and CAR <00-043>, Complaint Handling Procedure <908-022>, and Customer Corrective Action Request (CCAR) System <01-022> document the system for handling customer concerns. Controls are put in place to ensure corrective action has been taken and that it is effective.

8.5.2S Corrective Action (ISO/TS 16949)

Parts returned from a customer are analyzed in accordance with Customer Corrective Action Request (CCAR) System <01-022>, Complaint Handling Procedure <908-022>, and QS-9000 and ISO/TS 16949 Non-Standard CCAR TAT <01-022.2>. These procedures establish the requirements for

- containment in 24 hrs.
- problem verification within 48 hrs., and
- root cause identification and corrective action implementation within 10 calendar days.

8.5.2.1 Problem Solving (ISO/TS 16949)

The Eight Disciplines (8Ds) approach is used to resolve problems resulting from the Corrective Action System <01-020>, Corrective Action Procedure <908-020>, Customer Corrective Action Request (CCAR) System <01-022>, and Complaint Handling Procedure <908-022>.

8.5.2.2 Error-Proofing (ISO/TS 16949)

Error-proofing methodologies are utilized in corrective and preventive processes to the degree appropriate as specified in Assembly & End of Line Quality Methodology <01-025>.

8.5.2.3 Corrective Action Impact (ISO/TS 16949)

Corrective actions are implemented to eliminate the cause of nonconformities. Information obtained is incorporated into design rule documentation, design and process FMEAs, and process control plans. Corrective actions are applied to other similar processes and products to eliminate the cause of a nonconformity in accordance with Spansion Operations Functions and Key Processes <F01-001.1>.

8.5.2.4 Rejected Product Test/Analysis (ISO/TS 16949)

Product rejected by the customer is analyzed in accordance with Customer Corrective Action Request (CCAR) System <01-022> and Complaint Handling Procedure <908-022>.

8.5.3 Preventive Action

Spansion has established multiple processes within the product realization process for the prevention of potential nonconformities. Preventive Action System <01-028> and Preventive Action Procedure <908-028> describe the responsibilities and the various methods used to eliminate future product and processes issues. Department management and employees address potential nonconformities and take the necessary actions to prevent occurrences. It is the department manager’s responsibility to establish methods to encourage employees to use preventive measures and to track the actions taken. The managers have methods for measuring the effectiveness of these actions. A review of the actions is an item on the agenda for management review meetings. Records of the results of actions taken are maintained in accordance with Records Management <00-014>.

APPENDIX A - Referenced Specifications/Documents

Referenced Specifications/Documents by Quality Manual Sections

4.0 Quality Management System

F00-001	Spansion Quality Manual
00-007	Corporate Audit and Assessment Policy
00-014	Records Management
00-046	Foundry and Joint Venture Quality Policy
00-098	Document Management Policy
F01-003.1	Spansion Product Development and Design Procedures
01-006	Process Specification System
01-008	Documentation System
01-008.1	Specification Change Notice
01-008.3	Specification Distribution
01-008.17	Electronic Specification E-Spec System
F01-018	Decision Record System
01-020	Corrective Action System
01-028	Preventive Action System
01-036	Records Management System
01-401	External Spec/Standard Control
F03-070	Quality Requirements for Spansion Final Manufacturing Subcontractors
908-020	Corrective Action Procedure
908-028	Preventive Action Procedure
FAS-A17-000-000	Internal Quality Audit Rule
SK-HN007-006	Quality Control for Vendors

5.0 Management Responsibility

00-014	Records Management
F01-001.1	Spansion Operations Functions and Key Processes
F01-018	Decision Record System
01-022	Customer Corrective Action Request (CCAR) System
01-224	Customer Satisfaction
307-0002	Fab 25 Management Review
07-038	Electrical Reject Notice
908-022	Complaint Handling Procedure
F08-023	FMO Management Review Procedure
908-224	Customer Satisfaction Measurement

SK-HBv5251007C	Disposition of Abnormalities in Test Procedure
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6.0 Resource Management

00-011	Competence, Awareness, and Training Policy
00-014	Records Management
00-016	Handling Procedure for Prevention of ESD Damages
F01-002.4	Product Development, Qualification, and Change Management Process
F01-003.1	Spansion Product Development and Design Procedures
F01-003.2	Spansion MCP Product Development Procedures
F01-123	Sort/Wet Area Requirements
F01-124	Wafer Fabrication Area Requirements
F01-125	Test Area Requirements
01-126	Burn-In Area Requirements
F01-127	Assembly Area Requirements
F01-128	Mark and Pack Requirements
01-210	Corp. Manufacturing Training System
04-XXX	Material Specifications
05-XXX	Process Specifications
407-312	Plant Layout Procedure
307-8466	Fab 25 Contingency Plan for Business Recovery
07-XXX	Work Instructions
908-00.011	Competence, Awareness and Training Provision
108-012	AMD/Spansion Penang Relayout
708-106	Layout Planning and Execution
08-121	MGM/MSD – Contingency Planning for Business Recovery – Policy and Procedures
S08-127	AMD Suzhou Layout Planning and Execution Procedure
16-019	Gas Line Filtration
16-022	Atmosphere Quality Levels
16-023	DI Water/UPW Limits
SK-HN011-002	Design Review
SK-HN011-041	Control Rule for PS Rule
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7.0 Product Realization

00-002	Product Management Policy
00-003	Strategic Marketing/Product Planning Process
00-004	Standard Processing Specifications
F00-005	Product Quality Levels
00-014	Records Management
00-015	Calibration Policy
00-016	Handling Procedure for Prevention of ESD Damages
F00-023	FASL LLC Change Notification Policy
00-033	Product Wafer Handling Outside Fab
00-037	Supplier Quality Policy
00-038	AMD Product Traceability Policy
00-097	Product Obsolescence Policy
00-1000	Corporate Purchasing Policy – Purchasing Authority
F01-001.1	Spansion Operations Functions and Key Processes
F01-002.2	Fab Process Technology Development, Qualification, and Change Management Process
F01-002.3	Spansion Package and Assembly Process Development and Qualification Process
F01-002.4	Product Development, Qualification, and Change Management Process
F01-002.12	Spansion TMP Package/Process Development & Qualification System
F01-003.1	Spansion Product Development and Design Procedures
F01-003.2	Spansion MCP Product Development Procedures
01-006	Process Specification System
01-008	Documentation System
01-009	Procedure for Auditing Service Subs.
F01-018	Decision Record System
01-022	Customer Corrective Action Request (CCAR) System
01-025.6	Measurement Systems Analysis (MSA)
F01-040	FMO – Manufacturing Planning Process and System
01-045	Contract Review Process and Support Responsibility for Field Sales
01-045.1	QS-9000 Contract and Drawing Review Process for Field Sales
01-080	AMD Lot Numbering System
01-092	Procurement System
01-122	Assembly & TMP Tooling Management System
01-12X	Minimum Area Requirements Specifications
01-142	Inventory Storage Requirements
01-179	Fab Planning/Scheduling System
01-210	Corp. Manufacturing Training System
01-226	MGM/MSD Preventive & Predictive Maintenance System
02-001	Assembly Process Flow Charts and Control Plan
02-028	TMP Process Flow and Control Plan

03-001	Approved Suppliers – Materials
03-001.X	Approved Supplier Lists
03-005	Incoming Material Control
05-XXX	Process Specifications
06-001	Physical Distribution Quality Inspection Requirements
06-027	Final In-line Quality Inspection
06-XXX	Inspection Instructions
07-064	Boxstock Sales Order Preparation
07-119	Matl Ship & Intercompany Rec.
07-XXX	Work Instructions
908-00.011	Competence, Awareness and Training Provision
908-022	Complaint Handling Procedure
F08-023	FMO Management Review Procedure
908-HN007-025	Production Planning
X13-010	Local Calibration Recall Specifications
16-006	AMD Date Code System
16-017	Packaging and Orientation Standard
16-022	Atmosphere Quality Levels
16-023	DI Water/UPW Limits
16-050	Shipping, Labeling Requirement
16-054	Container Label Requirements
16-201	Wafer Pack and Ship Standard
16-203	Materials Restricted from Product Design-Internal
SK-FV303/006	Predictive Action Rule
SK-HBv5272500C	Control of PT, FT, Failure Rate in Yield Category
SK-HBv5272600C	Initial Control of Ramp Up Period
SK-HN003-043	Special Characteristics
SK-HN005-001	Lot Number of Wafer Fabrication
SK-HN005-003	Calibration System
SK-HN005-019	Customer Property Control Rule
SK-HN007-006	Quality Control for Vendors
SK-HN007-016	Conditions of Purchase Orders
SK-HN007-037	Product Termination
SK-HN011-001	Design
SK-HN011-002	Design Review
SK-HN011-003	LSI Design Control Rule
SK-HN011-004	Design Change Procedure
SK-HN011-009	LSI Development Master Plan
SK-HN011-061	APQP Operation Rule
SK-HN017-022	Confirmation of Contract
Overview 2A	Business Planning Overview

8.0 Measurement, Analysis and Improvement

00-004	Standard Processing Specifications
00-007	Corporate Audit and Assessment Policy
00-010	Corporate Returns Policy
00-014	Records Management
00-043	Customer Requests for F/A and CAR
00-066	Statistical Process Management
00-069	Returns Reprocessing Policy
F01-001.1	Spansion Operations Functions and Key Processes
F01-002.2	Fab Process Technology Development, Qualification, and Change Management Process
F01-002.3	Spansion Package and Assembly Process Development and Qualification Process
F01-002.5	Qualification Maintenance Program
01-008	Documentation System
01-008.17	Electronic Specification e-Spec System
F01-018	Decision Record System
01-019	Worldwide Quality Systems Audit
F01-019.4	Spansion WQSA Training
01-020	Corrective Action System
01-022	Customer Corrective Action Request (CCAR) System
01-022.2	QS-9000 and ISO/TS 16949 Non-Standard CCAR TAT
01-025	Assembly & End of Line Quality Methodology
01-028	Preventive Action System
01-045	Contract Review Process and Support Responsibility for Field Sales
01-131	Material Review Board – Incoming Material
01-156	Customer Advisory System
01-224	Customer Satisfaction
02-001	Assembly Process Flow Charts and Control Plan
02-028	TMP Process Flow and Control Plan
02-XXX	Process Flow Charts
03-072	Corporate Transportation Supplier Evaluation Process
05-XXX	Process Specifications
06-XXX	Inspection Instructions
07-XXX	Work Instructions
908-020	Corrective Action Procedure
908-022	Complaint Handling Procedure
908-028	Preventive Action Procedure
908-224	Customer Satisfaction Measurement

FAS-A17-000-000	Internal Quality Audit Rule
SK-HBv5270105R	Periodic Reliability Test
SK-HN003-026	Concession Rule
SK-HN007-010	Waiver of Purchased Products
SK-HN007-035	Parts Return
SK-HN011-005	Manual of Statistical Techniques

APPENDIX B - Definitions

Quality Management System Definitions

If additional information is needed, refer to ISO 9000:2000.

AIMS:	Advanced Inventory Management System
APQP:	Advanced Product Quality Planning
ASPEN:	AMD Standard Processing and Extended Processing Nomenclature
Audit:	Systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which the audit criteria are fulfilled
Audit Client:	Organization or person requesting an audit
Audit Conclusion:	Outcome of an audit provided by the audit team after consideration of the audit objectives and all audit findings
Audit Criteria:	Set of policies, procedures or requirements
Audit Evidence:	Records, statements of fact or other information, which are relevant to the audit criteria and verifiable
Audit Findings:	Results of the evaluation of the collected audit evidence against audit criteria
Audit Programme:	Set of one or more audits planned for a specific time frame and directed towards a specific purpose
Audit Team:	One or more auditors conducting an audit, supported if needed by technical experts
Auditee:	Organization being audited
Auditor:	Person with the competence to conduct an audit

CAD:	Computer Aided Design
CAE:	Computer Aided Engineering
Capability:	Ability of an organization, system or process to realize a product that will fulfill the requirements for that product
CAR:	Corrective Action Request
CCAR:	Customer Corrective Action Request
Characteristic:	Distinguishing feature (Example: Physical, Sensory, Behavioral, Temporal, Ergonomic and Functional)
Competence:	Demonstrated ability to apply knowledge and skills
Concession:	Permission to use or release a product that does not conform to specified requirements
Conformity:	Fulfillment of a requirement
Continual Improvement:	Recurring activity to increase the ability to fulfill requirements
Contract:	Agreed requirements between a supplier and customer transmitted by any means
Control Plan:	Documented description of the systems and processes required for controlling product
Correction:	Action to eliminate a detected nonconformity
Corrective Action:	Action taken to eliminate the cause of a detected nonconformity or other undesirable situation in order to prevent recurrence
Customer:	Recipient of a product provided by the supplier
Customer Satisfaction:	Customer's perception of the degree to which the customer's requirements have been fulfilled

Data:	A record (or recorded information) resulting from a document
Defect:	Non-fulfillment of a requirement related to an intended or specified use
Dependability:	Collective term used to describe the availability performance and its influencing factors; reliability performance, maintainability performance and maintenance support performance
Design and Development:	Set of processes that transforms requirements into specified characteristics or into the specification of a product, process or system
Design Responsible Organization:	Organization with the authority to establish a new, or change an existing, product specification
Design Review:	Documented, comprehensive, and systematic examination of a design to evaluate its capability to fulfill the requirements for quality, identify problems, if any, and propose the development of solutions
Deviation Permit:	Permission to depart from the originally specified requirements of a product prior to realization
DFA:	Design for Assembly
DFM:	Design for Manufacturing
DFMEA:	Design Failure Mode and Effects Analysis
DFT:	Design for Testability
DMS:	Distribution Management System
Document:	Information and its supporting medium, e.g., policies, internal/external specifications and standards, procedures, instructions, records
EDI:	Electronic Data Interchange

Effectiveness:	Extent to which planned activities are realized and planned results achieved
Efficiency:	Relationship between the result achieved and the resources used
Error-Proofing:	Product and manufacturing process design and development to prevent manufacture of nonconforming products
ESD:	Electro Static Discharge
EVA:	Economic Value Added
FME:	Final Manufacturing Engineering; FME includes Final Manufacturing Operations (FMO) Engineering (US based) and Packaging R&D (Japan based)
FMEA:	Failure Mode and Effects Analysis
FMO	Final Manufacturing Operations
Grade:	Category or rank given to different quality requirements for products, processes or systems having the same functional use
GSM:	Global Supply Management
Information:	Meaningful data
Infrastructure:	System of facilities, equipment and services needed for the operation of an organization
Inspection:	Conformity evaluation by observation and judgment accompanied as appropriate by measurement, testing or gauging
Interested Party:	Person or group having an interest in the performance or success of an organization
Laboratory:	Facility for inspection, test or calibration that may include, but is not limited to chemical, metallurgical, dimensional, physical, electrical or reliability testing

Note: Definition from "Customer Specific Requirements (ISO/TS-16949) Semiconductor Commodity"

For laboratory scope, laboratories are those facilities that perform reliability, qualification or durability testing to the requirements of a customer documented specification

Laboratory Scope: Controlled document containing

- specific tests, evaluations and calibrations that a laboratory is qualified to perform,
- list of the equipment which it uses to perform the above, and
- list of methods and standards to which it performs the above

Layout Inspection: The complete measurement of all part dimensions shown on the design record

Management: Coordinated activities to direct and control an organization

Management Review: Formal evaluation by top management of the status and adequacy of the quality management system in relation to the quality policy and objectives

Management System: System to establish policy and objectives and to achieve those objectives

Manufacturing: Process of making or fabricating

- production materials,
- production or service parts,
- assemblies, or
- heat treating, welding, painting, plating or other finishing services

Measurement Control System: Set of interrelated or interacting elements necessary to achieve metrological confirmation and continual control of measurement processes

Measurement Process:	Set of operations to determine the value of a quantity
Measuring Equipment:	Measuring instrument, software, measurement standard, reference material or auxiliary apparatus or combination thereof necessary to realize a measurement process
Metrological Characteristic:	Distinguishing feature which can influence the results of the measurement
Metrological Confirmation:	Set of operations required to ensure that measuring equipment conforms to the requirements for its intended use
Metrological Function:	Function with organizational responsibility for defining and implementing the measurement control system
MSA:	Measurement Systems Analysis
MSDL:	Manufacturing Services Division Logistics
Nonconformity:	The nonfulfillment of a specified requirement
NVT:	Non-Volatile Technology
Objective Evidence:	Data supporting the existence or verity of something
OHSAS:	Occupational Health and Safety Assessment Series
Organization:	Group of people and facilities with an arrangement of responsibilities, authorities and relationships, e.g., company, corporation, firm, enterprise
Organizational Structure:	Responsibilities, authorities and relationships, arranged in a pattern, through which an organization performs its functions
Performance Indicators:	Metrics that provide decision-making information on the effectiveness, the condition, or the direction of a process
PFMEA:	Process Failure Mode Effects Analysis

PPAP:	Production Part Approval Process
PPCD Team:	Proposed Process Change Document Team
Predictive Maintenance:	Activities based on process data aimed at the avoidance of maintenance problems by prediction of likely failure modes
Premium Freight:	Extra costs or charges incurred additional to contracted delivery
Preventive Action:	Action to eliminate the cause of a potential nonconformity or other undesirable potential situation in order to prevent occurrence
Preventive Maintenance:	Planned action to eliminate causes of equipment failure and unscheduled interruptions to production, as an output of the manufacturing process design
Procedure:	Specified way to carry out an activity or a process
Process:	Set of interrelated or interacting activities which transforms inputs into outputs
Product:	Result of a process
Project:	Unique process consisting of a set of coordinated and controlled activities with start and finish dates, undertaken to achieve an objective conforming to specific requirements including the constraints of time, cost and resources
QMS:	Quality Management System
Qualification Process:	Process to demonstrate the ability to fulfill requirements
Quality:	Degree to which a set of inherent characteristics fulfills requirements
Quality Assurance:	Part of quality management focused on providing confidence that quality requirements will be fulfilled
Quality Characteristic:	Inherent characteristic of a product, process or system related to a requirement

Quality Control:	Part of quality management focused on fulfilling quality requirements
Quality Improvement:	Part of quality management focused on increasing the ability to fulfill quality requirements
Quality Management System:	Coordinated activities to direct and control an organization with regard to quality
Quality Objective:	Something sought or aimed for, related to quality
Quality Plan:	Document specifying which procedures and associated resources shall be applied by whom and when to a specific project, product, process or contract
Quality Planning:	Part of quality management focused on setting quality objectives and specifying necessary operational processes and related resources to fulfill the quality objectives
Quality Policy:	Overall intentions and direction of an organization related to quality as formally expressed by top management
Quality System:	The organizational structure, procedures, processes and resources needed to implement quality management
Record:	Document stating results achieved or providing evidence of activities performed
Regrade:	Alteration of the grade of a nonconforming product in order to make it conform to requirements
Release:	Permission to proceed to the next stage of the process
Reliability:	The condition of maintaining product quality over a specified time
Remote Site:	Location that supports sites at which non-production processes occur

Repair:	Action on a nonconforming product to make it acceptable for the intended use
Requirement:	Need or expectation that is stated, generally implied or obligatory
Review:	Activity undertaken to determine the suitability, adequacy, and effectiveness of the subject matter to achieve established objectives
Rework:	Action on a nonconforming product to make it conform to the requirement
SAC:	Semiconductor Assembly Council
Scrap:	Action on a nonconforming product to preclude its originally intended use
Site:	Location at which value-added manufacturing processes occur
Spansion ™	Global master product brand name for all products produced by Spansion
SPC:	Statistical Process Control
Special Characteristics:	Product characteristic or manufacturing process parameter which can affect safety or compliance with regulations, fit, function, performance or subsequent processing of product Critical parameters defined by AMD and documented in the control plan or characteristics defined by the customer and documented in ASPEN via a DS specification number
Specification:	Document stating requirements
Subcontractor:	Organization that provides a product to the supplier
Supplier:	Organization or person that provides a product
System:	Set of interrelated or interacting elements
Technical Expert:	Person who provides specific knowledge of or expertise on the subject to be audited

Test: Determination of one or more characteristics according to a procedure

TMP: Test, Mark and Pack

Top Management: Person or group of people who directs and controls an organization at the highest level

Traceability: Ability to trace the history, application or location of that which is under consideration

When considering product, traceability can relate to

- origin of material
- process history
- distribution and location of product after delivery

Validation: Confirmation, through the provision of objective evidence, that the requirements for a specific intended use or application have been fulfilled

Verification: Confirmation, through the provision of objective evidence, that specified requirements have been fulfilled

Work Environment: Set of conditions under which work is performed

WQSA: Worldwide Quality Systems Audit

APPENDIX C – Spansion's Quality Management System Core Process Map