03/23/02

Kidde Fenwal

Nuclear Regulatory Commission
Mail Stop T-8F-5
Washington D.C. 20555-0001

Attention Anthony Kirkwood

RE: Device Registration NR-0668-D-101-E

This memo is a request for an amendment to our device registration document. The information on this document must be revised to coincide with our recent Materials License renewal (20-15285-03E).

The models CPD702X and CPD 704X are in fact obsolete. Kidde-Fenwal no longer manufactures or distributes these models of detectors.

The current registration inaccurately describes Nohmi Bosai of Japan as the sole manufacturer of the model 705X detector. Kidde-Fenwal in Ashland also manufactures a model 7052 detector. The model 7052 contains one Americium 241 source 0.7 microcuries, (as does the model 7051 that is assembled in Japan) and the source is purchased already assembled in its holder from NRD of Grand Island N.Y. (model A001). Kidde-Fenwal would like to reserve the right to purchase these sources as described above from Amersham as an alternative supplier. Please note that this does not change the end product. The design and construction of both models of these detectors is the same. Please note that Amersham and NRD are listed suppliers in Kidde-Fenwal's material licenses.

After searching through some of our documentation it seems that we have applied for an amendment to this registration as described above, in the past. Enclosed you will find a copy of that letter (and a memo from Robert Harris who was the RSO at that time) dated October 6, 1996 and addressed to a Ms. Greene. It seems that NRC notified us via telephone at that time that an amendment was not required. Please inform us if a fee is required for this amendment request.

If you have any other questions or concerns, please feel free to call or write.

Sincerely,
William E. Sawyer

Radiation Safety Officer
Kidde-Fenwal Inc.

Enclosures: Kidde-Fenwal's Quality Manual
Letter dated October6, 1996
Memo from Robert Harris dated January 24, 1997

Kidde Fenwal
400 Main Street
Ashland, MA 01721

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www.kidde-fenwal.com

03/23/02

Kidde Fenwal

Nuclear Regulatory Commission
Mail Stop T-8F-5
Washington D.C. 20555-0001

Attention Anthony Kirkwood

RE: License Renewal 20-15285-03E

This memo is in response to your questions from your e-mail dated Feb. 28, 2002. After reviewing several documents and blue prints on these smoke detectors I found that I have made some mistakes on the application dated 8-22-01.

The models CPD702X and CPD 704X are in fact obsolete. Kidde-Fenwal no longer manufactures or distributes these models of detectors.

The model CPD 7051 is a dual chamber type detector the contains only 1 source per detector. These models are manufactured in Japan, and are distributed by Kidde-Fenwal. They are manufactured with sources that are purchased from Amersham models AM-1001 and are 0.7 microcuries each.

The model CPD 7052 are also dual chamber smoke detectors that contain only 1 source each, but are assembled here in Ashland. The sources for these are purchased from NRD model A-001 and are also 0.7 microcuries each. This may require us to revise our registration cert.# NR-0668-D-101-E. Please advise on this if you would.

There are no devices either purchased, distributed or otherwise sold by Kidde-Fenwal that contain sources that are 0.6 microcuries. There are not any devices purchased, distributed, or otherwise sold or distributed by Kidde-Fenwal that have more than 1 source per smoke detector.

Kidde-Fenwal is an ISO 9001 certified facility. After reviewing NRC guidelines, NUREG 1556 vol. 3 and Regulatory Guide 6.9 on the subject of quality conformance as it pertains to the use of radioactive materials, I can find no discrepancies, or even any need for an amendment to our existing policies or procedures.
Qualitative testing procedures and leak test procedures have been and will continue to be carried out on both models (CPD 7051 & CPD 7052) of detectors, and results of these tests will be documented. Certificates of Conformance for both the ion sources purchased from NRD, and the completed detectors manufactured in Japan are accompanying every shipment, and copies of these Certificates are maintained in the office of the Radiation Safety Officer.

If you have any other questions or concerns, please feel free to call or write.

Sincerely,
William E. Sawyer

Radiation Safety Officer
Kidde-Fenwal Inc.

Enclosures: Kidde-Fenwal's Quality Manual

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October 6, 1996

Division of Industrial and Medical Nuclear Safety
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dear Ms. Greene:

Pursuant to 10 CFR part 170.31 Category 9A, Kidde-Fenwal asks that license N.R. 668-D-101-E be amended and enclosed is the $1200 amendment fee.

Kidde-Fenwal Inc. would like to amend the N.R.668-D-101-E registration as it applies to the series CPD 705X smoke detectors.

Nohmi Bosai Ltd., Japan is inaccurately listed as the sole manufacturer of CPD 705X smoke detectors. Kidde-Fenwal Inc. also manufactures some lines of the CPD 705X series at its 400 Main Street, Ashland, MA plant as authorized by its N.R.C. license #20-15285-01. Additionally, Kidde-Fenwal currently purchases the ion source assemblies from Nohmi Bosai Ltd., but also,intends to purchase the ion source assemblies directly from either Amersham or N.R.D. Inc.

The requested amendment is believed to be strictly a language change addition due to the following:

1. Amersham and NRD Inc. are the source assembly suppliers listed on Kidde-Fenwal Inc. licenses.
2. All supporting documentation submitted in the past indicate Amersham and NRD Inc. as the Americum 241 source suppliers for the CPD 705X Smoke Detectors and this will not change.
3. The Americum 241 radioactive material sources listed on current Kidde-Fenwal, Inc. licenses and their supporting documentation remains the same as previously authorized by N.R.C.
5. The design and construction of the housing does not change.
6. The end product remains the same.

SUMMARY:

Amersham or N.R.D. Inc. are the Americum 241 foil source manufacturers of record. They are the NRC approved suppliers of sealed sources listed on Kidde-Fenwal Inc.'s N.R.C. licenses.

All supporting documentation submitted in the past remains the same. Kidde-Fenwal Inc. wants to expand the license language to include Kidde-Fenwal Inc. as one of the CPD 705X series manufacturing facilities with the authority to purchase the ion source assemblies directly from either Amersham, N.R.D. Inc.or Nohmi and as such will use the identical radioactive sources currently authorized for the assembly of the CPD 705X products. Again it is emphasized that there will be no changes made to the source assembly or to the end product as it relates to ion source assemblies and Americum 241.

Kidde-Fenwal Inc. continues to maintain and conduct all its NRC approved/mandated Radiation Safety Programs and Procedures in support of its smoke detector manufacturing processes. Robert Harris is the current Radiation Safety Officer. N.R.C. was notified of R.S.O. change July 3, 1996 and Kidde-Fenwal Inc. awaits the amendment change naming Mr. Harris as the R.S.O.

If you have any questions, please contact Robert MacNutt, Q.A. Manager at Kidde-Fenwal, Inc. (508) 881-2000, extension 2733.

Sincerely,

KIDDE-FENWAL, INC.

Robert MacNutt

RH/es

Attachment: Memo 5-1-95, Page 1
N.R.C - change of R.S.O. Amendment
N.C.R. Safety Inspection
Amendment Fee

KIDDE-FENWAL, INC.
400 Main Street
Ashland, MA 01721
Tel: (508) 881-2000
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# INTEROFFICE MEMORANDUM

**DATE** **January 24, 1997**

**FROM:** **Bob Harris**

**TO:** **Bob Macnutt**

**SUBJECT:** **N.R.C. Tel/ Conv. Re: License Amendment Update**

Bob Macnutt received a call from N.R.C. which stated that our Amendment fee check was being returned. Their review indicated that an Amendment to our N. R. 668-D- 101 registration was not necessary. It is their opinion that Kidde-Fenwal's manufacturing practices are in compliance. No written directives from them will be issued. Our files should maintain the October 6, 1996 letter to Ms. Green and a copy of this memo.

Bob Harris
Radiation Safety Officer

cc. Bob Macnutt
Steve MacLeod
Bob Harris- R.S.O. Files

400 Main Street
Ashland, MA 01721
Phone: (508) 881-2000
Fax: (508) 881-1255

# Quality Manual
# ISO9001

Rev. EG

Kidde Fenwal

| DEPARTMENT | Quality |
|---|---|
| SUBJECT | Quality System Manual |

| Procedure No. Q100 | Sheet 1 of 35 |
|---|---|
| Revision EG | Date: 03-18-02 |

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# INTRODUCTION

The purpose of the Quality Management System at Kidde-Fenwal, Inc. (indicated as KF) is to improve the efficiency and effectiveness with which resources are utilized in providing quality products and services to our customers.

This manual governs activities at Kidde-Fenwal located at 400 Main Street, Ashland MA., and the Combustion Research Center located at 90 Brook Street, Holliston, MA. The scope of our business, as governed by this Quality Manual, is the design, production and distribution of fire detection systems, gas ignition systems, process control equipment, controlling devices, industrial explosion protection and fire prevention equipment including the design and manufacture of gaseous fixed fire fighting components.

The latest KF organizational chart is available upon request from Human Resources.

## 1.0 QUALITY POLICY

Kidde-Fenwal incorporates a total quality management (TQM) philosophy. The goal of this policy is to provide products and services at quality levels consistent with the requirements of our customer. We will do so in a cost effective manner, always recognizing that our quality program must add value to our products and services as perceived by our customers.

Our approach to quality is one of continuous improvement and requires the dedicated involvement of all employees of Kidde-Fenwal. Our Quality Policy states:

**KIDDE-FENWAL, INC.**

**QUALITY POLICY**

***The primary goal of every Kidde-Fenwal employee is to foster exceptional customer satisfaction by delivering products of outstanding quality and by providing superior customer service. These goals will be achieved through the dedication and commitment of our employees to continuous improvement of processes in all facets of our business. We recognize that our focus on continuous improvement is the path to exceeding our customer's expectations.***

## 2.0 REFERENCES

| | |
| --- | --- |
| MIL-I-45208A | Inspection System Requirements |
| ISO-9000 | Quality Management and Quality Assurance Standards |
| ISO-9001-1994 | Quality Systems - Model for Quality Assurance in Design Development, Production, Installation and Servicing |
| ANSI/ASQC Q9001-1994 | American Equivalent of the ISO Standard |
| ISO-8402 | Definitions for ISO 9000 International Standard |

## 3.0 SCOPE AND AUTHORIZATION

### 3.1 APPLICATION

This document serves as a summary of the responsibilities and activities that will allow Kidde-Fenwal to meet the requirements of the ISO 9000 Standard.

### 3.2 PURPOSE

This document and associated procedures in the departmental procedures manual have been prepared to provide procedural information appropriate for the activity necessary for instruction and control over all operations affecting quality. It is the intent of this document, and the procedures that support it, to provide guidance for each function within Kidde-Fenwal to ensure the appropriate systems are developed, procedures written and compliance assessed to ensure our customers satisfaction is maintained.

### 3.3 RELATION TO CUSTOMER

The quality system established by this document and the related procedures maybe subject to review and evaluation at K-F by government/customer personnel. K-F reserves the right to institute negotiated changes in a timely and orderly manner.

### 3.4 QUALITY MANUAL REVISIONS

The Quality Engineering Manager is responsible for the revising, upgrading, maintenance and control of this manual and for the distribution of all revisions.

As a minimum, the Quality Engineering Manager is responsible to review the quality manual every two years to determine the need for revision. All revisions are updated electronically.

The quality department maintains a complete file of revisions to this manual and associated procedures referenced herein. It maintains the master distribution list for this manual.

## 3.5 QUALITY MANUAL AND DEPARTMENTAL PROCEDURES MANUAL ASSIGNMENT

The Quality Manual and the Departmental Procedures Manuals are issued by the quality department.

### 3.5.1 CONTROLLED MANUALS

The official controlled manuals are maintained in an electronic format. This format is maintained to the current revision level. It is the responsibility of the individual who utilizes a paper copy of the electronic format manuals to ensure it is the latest available revision.

### 3.5.2 UNCONTROLLED MANUALS

Uncontrolled manuals are not maintained current. They may be released on an individual basis to outside companies organizations. These may be in electronic or hardcopy format.

## 3.6 REFERENCE PROCEDURES

Kidde-Fenwal, Inc. establishes and maintains policies and procedures for our quality program to meet MIL-I-45208A inspection system requirements and ISO 9001-1994 requirements. These policies and procedures detail the objectives and performance of the various activities having an impact on quality, e.g. design, development, procurement, production and sales.

All procedures are listed in the quality manual in Appendix A "Index of Procedures". The current list of procedures is maintained in the departmental procedures manual under SOP 39-01, including the revision levels.

# 4.0 QUALITY SYSTEM REQUIREMENTS

## 4.1 MANAGEMENT RESPONSIBILITY

### 4.1.1 SCOPE

It is the intent of this section to properly identify responsibility for ensuring that both ISO 9000 and our Quality Policy requirements are maintained

#### 4.1.1.1 QUALITY POLICY

Our quality policy specified is defined in Section 1 of this manual.

### 4.1.2. RESPONSIBILITY AND AUTHORITY

The Quality Assurance Program within KF has been endorsed by direction of the president and the senior staff. The responsibility for the development and integration of the Quality Plan resides within the Quality Assurance organization.

The Quality Engineering Manager is responsible for the Kidde-Fenwal quality program including the responsibilities for ensuring that the requirements of the ISO 9001-1994 International Standard are implemented and maintained.

K-F personnel performing quality functions have sufficient, well-defined responsibilities, authority and the organizational freedom to identify and evaluate quality problems and to initiate and assist in providing solutions.

All Kidde-Fenwal personnel have the organizational freedom and authority to:

a. initiate action to prevent the occurrence of nonconformity's relating to the product, process, and quality system;

b. identify and record problems relating to the product, process, and quality system;

c. initiate, recommend, or provide solutions through designated channels;

d. verify the implementation of solutions;

e. control further processing, delivery, or installation of non-conforming product until the deficiency or unsatisfactory condition has been corrected.

### 4.1.3 RESOURCES

All KF organizations shall identify resource requirements and provide adequate resources, including capital expenditure reviews and the assignment of trained personnel (see 4.18), for management, performance of work, and verification activities, including internal quality audits. This activity is performed annually as part of the personnel review for the budget cycle.

Personnel performing quality inspections shall be authorized by Quality Assurance.

Design reviews will be initiated and performed by appropriately designated personnel. Well-defined procedures exist to govern this activity.

Internal quality audits of processes and products used to verify conformance shall be performed by independent personnel appointed and trained by the Quality Assurance organization.

### 4.1.4 MANAGEMENT REPRESENTATIVE

The Quality Engineering Manager serves as Kidde-Fenwal's management representative. The Quality Engineering Manager shall have authority for:

- ensuring that a quality system is established, implemented and maintained in accordance with this International Standard ISO 9001-1994;

- reporting on the performance of the quality system to Kidde-Fenwal's management for review and as a basis for improvement of the quality system.

The Quality Engineering Manager will also act as the primary communications contact with reference to any outside sources affecting the quality system.

#### 4.1.5 MANAGEMENT REVIEW

The Quality Engineering Manager will facilitate the regular review of the quality system's methodology and application to the ISO 9000 Standard. Changes to the Quality Manual and supporting procedures will be implemented as required.

The Quality Engineering Manager will host regular reviews of quality issues. These issues will be presented to the Quality Steering Committee as defined in the governing "Management Review" procedure. Reviews and actions will be reflected in a presentation or meeting minutes format.

### 4.2 QUALITY SYSTEM

#### 4.2.1 GENERAL

This section provides an outline of Kidde-Fenwal's quality system. This system is utilized as a means of ensuring that our products conform to specified customer requirements and Kidde-Fenwal's requirements for the ISO 9000 Standard.

#### 4.2.2 QUALITY SYSTEM

The Kidde-Fenwal quality system is a formally documented program of planned activities established to comply to applicable standards and our quality policy. All of these activities are governed by documented procedures and written instructions.

##### 4.2.2.1 QUALITY MANUAL

Our quality manual is a description of Kidde-Fenwal's method of establishing, implementing, and maintaining a quality program which meets the requirements of this International Standard. The quality manual includes or makes reference to implementation of the documentation used in the quality system procedures and instructions.

##### 4.2.2.2 DEPARTMENTAL PROCEDURES MANUAL

Our documented procedures are consistent with the requirements of this International Standard (ISO 9001-1994) and Kidde-Fenwal's stated quality policy. These procedures are utilized to effectively implement the quality system.

#### 4.2.2.3 WORK INSTRUCTIONS

Our work instructions provide details of such activities like, how to perform special operations, how to inspect an assembly, how to calibrate specific instruments and detailed assembly instructions. These instructions may include operation sheets, manufacturing engineering specifications, or specific documented procedures.

### 4.2.3 QUALITY PLANNING

This quality manual and all the supporting departmental procedures may be referred to as the KF quality plan. The maintenance of this plan is the responsibility of the Quality Assurance organization in conjunction with the organizations affected by the ISO 9000 Standard. The intent of the plan is overseen by the Kidde-Fenwal Quality Steering Committee. Specific quality planning to support the development, assessment and implementation of new product designs and the applicable processes to produce them shall be described in the New Product Development Procedures. Additional information is governed in paragraph 4.4 of this document.

## 4.3 CONTRACT REVIEW

### 4.3.1 GENERAL

This section describes how Kidde-Fenwal has established and maintains a documented procedure for contract review and for the coordination of these activities.

### 4.3.2 REVIEW

The Sales and Marketing organization maintains a documented system to ensure the appropriate review of the customer orders. Contracts are reviewed by the customer service department before acceptance for:

- requirements being clearly defined and documented;
- verbal orders are verified prior to acceptance by Kidde-Fenwal;
- resolution of any requirements differing from those in the tender;
- that Kidde-Fenwal, Inc. has the capability to meet contractual requirements;
- lead time required on parts or materials;
- specific quality and reliability test requirements;
- customer specified agency codes and standards requirements;
- special packaging and shipping requirements;
- assurance that Kidde-Fenwal has the capability to meet the contract or order requirements.

### 4.3.3 AMENDMENT TO A CONTRACT

Kidde-Fenwal shall identify how an amendment to a contract is made and correctly transferred to the functions concerned within Kidde-Fenwal's organization.

### 4.3.4 RECORDS

Records of contract reviews shall be maintained. Where required, the quality department will assist in the above review. The quality department will review special quality requirements on the initial customer's inquiry. The results of contract reviews are documented and filed in the customer service department. Individual records are organized by sales order number.

## 4.4 DESIGN CONTROL

### 4.4.1 GENERAL

Kidde-Fenwal has established and maintains documented procedures to control and verify the design of the product in order to ensure that the specified requirements are met. The responsibility for the maintenance of these procedures resides with the applicable engineering organizations.

### 4.4.2 DESIGN AND DEVELOPMENT PLANNING

Design and documentation control on each new program is in accordance with Kidde-Fenwal's "New Product Development Process" procedure 67-39, and "Engineering Document Control" procedure 67-09 and all other procedures specified therein. These procedures apply to their applicable deliverable hardware and software products.

The design and verification activities are planned and assigned to the applicable project engineer.

There are four project phases as the design evolves....

| | |
| --- | --- |
| Phase I | Product Definition and Feasibility: |
| Phase II | Product Function Specification: |
| Phase III | Design and Product Development; |
| Phase IV | Pilot and Pre-Production. |
| Phase V | Market Release and Introduction |
| Phase VI | Project Financial Performance Auditing |

All projects are administered and controlled utilizing project teams. A project team consists of a minimum of a product manager, project engineer, manufacturing engineer and a quality department representative. Each of the phases are signed off by the design team.

### 4.4.3 ORGANIZATIONAL AND TECHNICAL INTERFACES

Kidde-Fenwal's "New Product Development Process" procedure 67-39, and "Engineering Document Control" procedure 67-09 define the organizational and technical interfaces between different groups.

The quality department participates in quality related design reviews. Quality is responsible for ensuring that "as-designed" reflects the "as-delivered" product.

The referenced procedures identify the applicable departments responsible for evaluating change proposals and determining their effect on the test requirements, process documentation and functional compliance with all baseline activity.
The engineering department is responsible, when specified in the product specification, for reliability and maintainability (R&M), including logistic support analysis, provisions and support equipment recommendations, life cycle analysis, reliability predications and maintenance cost analysis.

Design Engineering's responsibility also includes data management, procurement, and technical documentation, as required.

### 4.4.4 DESIGN INPUT

Design input requirements relating to the product, including applicable statutory and regulatory requirements, shall be identified, documented and their selection reviewed by Kidde-Fenwal for adequacy. Incomplete, ambiguous or conflicting requirements shall be resolved with those responsible for imposing these requirements.

Design input shall take into consideration the results of any contract review activities.

### 4.4.5 DESIGN OUTPUT

Design output is documented and expressed in terms that can be verified and validated against design input requirements.
Design output must:

a) meet the design input requirements;
b) contain or make reference to acceptance criteria;
c) identify those characteristics of the design that are crucial to the safe and proper functioning of the product (e.g. operating, storage, handling, maintenance and disposal requirements).

Design output documents are reviewed before release and signed off by the project team.

### 4.4.6 DESIGN REVIEW

At appropriate stages of design, formal documented reviews of the design results shall be planned and conducted. Participants at each design review shall include representatives of all functions concerned with the design stage being reviewed, as well as other specialist personnel, as required. Records of such reviews shall be maintained.

### 4.4.7 DESIGN VERIFICATION

At appropriate stages of design, design verification shall be performed to ensure that the design stage output meets the design state input requirements. The design verification measures shall be recorded .
**Note:** In addition to conducting design reviews, design verification may include activities such as:

- performing alternative calculations,
- comparing the new design with a similar proven design, if available,
- undertaking tests and demonstrations, and
- reviewing the design stage documents before release.

### 4.4.8 DESIGN VALIDATION

Design validation shall be performed to ensure that product conforms to defined user needs and/or requirements. Examples:

- design validation follows successful design verification;
- validation is normally performed under defined operating conditions;
- validation is normally performed on the final product, but may also be necessary in earlier stages prior to product completion;
- multiple validations may be performed if there are different intended uses.

### 4.4.9 DESIGN CHANGES

All design changes and modifications shall be identified, documented, reviewed and approved by authorized personnel before their implementation.

## 4.5 DOCUMENT AND DATA CONTROL

### 4.5.1 GENERAL

It is the responsibility of each organization to establish and maintain the control of all documents, instructions, and data in their operations to meet the intent of the ISO 9000 Standard.

### 4.5.2 DOCUMENT APPROVAL AND ISSUE

The quality, production control and manufacturing engineering departments review and approve detailed drawings specifications/procedures prepared by engineering prior to release for fabrication. The review assures that, where required, the need for supplemental specifications, process instructions, manufacturing engineering instructions, methods engineering and work instructions are recognized and are provided.

During design the engineering managers are responsible for maintaining a current drawing file accessible for individual users of the documents to verify that they are using the latest document issued. This control shall ensure that:

- the pertinent issues of appropriate documents are available at all locations where operations essential to the effective functioning of the quality system are performed;
- invalid and/or obsolete documents are promptly removed from all points of issue or use, or otherwise assured against unintended use;
- any obsolete documents retained for legal and or knowledge-preservation purposes are suitably identified.

Where practical, the nature of the change will be identified in the document or the appropriate attachments.

A master list, named "Index of Procedures", SOP 39-01, is maintained in the departmental procedures manual to identify the current revision of documents.

### 4.5.3 DOCUMENT AND DATA CHANGES

Changes to documents are controlled in writing by the following methods.

**ENGINEERING CHANGE ORDER (ECO)**
In accordance with SOP 67-09, "Engineering Document Control", an ECO is used to control revisions to existing drawings and specifications. ECO's are reviewed and approved by the same functions organizations that performed the original review and approval unless designated otherwise. Description of change(s) and reason(s) are identified on the ECO.

## QUALITY CHANGE ORDERS (QCO)

A QCO is used to control each revision to the quality manual, and the departmental procedures manual. QCO's are reviewed and approved by the same functions/organizations that performed the original review and approval unless designated otherwise. Descriptions of change(s) and reason(s) are identified on the QCO.

## 4.6 PURCHASING

### 4.6.1 GENERAL

K-F shall establish and maintain documented procedures to ensure that purchased product conforms to specified requirements.

### 4.6.2 EVALUATION OF SUB-CONTRACTORS

Kidde-Fenwal shall maintain documentation to ensure that subcontractors are evaluated to the following ISO 9000 criteria:

a) evaluate and select subcontractors on the ability to meet subcontract requirements, including the quality system and any specific quality assurance requirements;

b) define the type and extent of control exercised by Kidde-Fenwal over subcontractors. This is dependent upon the type of product, the impact of the sub-contracted product, on the quality of final product and, where applicable, on the quality audit reports and or quality records of the previously demonstrated capability and performance of subcontractors;

c) establish and maintain quality records of acceptable sub-contractors.

### 4.6.3 PURCHASING DATA

Purchasing documents will contain data clearly describing the product ordered, including where applicable:

a) description of product ordered: the type, class, style, grade or other precise identification;

b) applicable requirements for manufacturing, inspection, testing and packaging including applicable issue of specifications, drawings, etc.;

c) any requirements for government/customer or K-F inspections, qualifications or approvals.

The purchasing department shall document methods to review and approve purchase orders for adequacy of specified requirements prior to release.

### 4.6.4 VERIFICATION OF PURCHASED PRODUCT

#### 4.6.4.1 Kidde-Fenwal Verification at Subcontractor's Premises

When K-F proposes to verify purchased product at the subcontractor's premises, K-F will specify verification arrangements and the method of product release in the purchase documents (purchase order).

#### 4.6.4.2 Customer Verification of Subcontracted Product

When specified in the contract, K-F's customer or the customer's representative shall be afforded the right to verify at the subcontractor's premises and K-F's premises that subcontracted product conforms to specified requirements. Such verification shall not be used by K-F as evidence of effective control of quality by the subcontractor. Verification by the customer shall not absolve K-F of the responsibility to provide acceptable product, nor shall it preclude subsequent rejection by the customer.

## 4.7 CONTROL OF CUSTOMER SUPPLIED PRODUCT

Kidde-Fenwal shall establish and maintain documented procedures for the control of verifications, storage, and maintenance of customer-supplied product providing for incorporation into the supplies or for related activities.

When material is furnished by the customer it is handled the same as Kidde-Fenwal product providing for the following:

a) examination upon receipt;
b) inspection for completeness and proper type;
c) periodic inspection and precautions to assure adequate storage conditions and to guard against damage from handling and deterioration during storage;
d) functional testing, as required by contract, to determine satisfactory operation;
e) identification and protection from improper use or disposition;
f) verification of quantity;

g) K-F will report to the customer, furnished material found damaged, malfunctioning, or otherwise unsuitable for use. K-F determines and records probable cause and necessity for withholding material from use,
h) verification by Kidde-Fenwal does not absolve the customer of the responsibility to provide acceptable product.

## 4.8 PRODUCT IDENTIFICATION AND TRACEABILITY

### 4.8.1 IDENTIFICATION

Where appropriate, Kidde-Fenwal shall establish and maintain documented procedures for identifying the product by suitable means for receipt and during all stages of production and delivery.

### 4.8.2 TRACEABILITY

Traceability and serialization of product is required by engineering drawings and/or by documented procedures.
Serial number records are kept in the respective product manufacturing areas and/or on computer files.

### 4.8.3 SHELF LIFE AND AGE CONTROL

Procedures for controlling shelf life and age control are documented to identify the product through all the various stages of storage, production and delivery.

### 4.8.4 NON ACCEPTABLE PRODUCTS

Non-conforming products are identified, segregated and controlled by documented procedures.

## 4.9 PROCESS CONTROL

### 4.9.1 GENERAL

The K-F quality program assures that all production operations, together with all processing and fabricating, are accomplished under controlled conditions. Controlled conditions include documented work instructions such as operation sheets shop routers, manufacturing engineering specifications (MES's), adequate production equipment, and an appropriately controlled working environment. These instructions and workmanship procedures are the criteria for acceptable or unacceptable "workmanship".

Compliance with applicable standards/codes, quality plans and/or documented procedures are ensured through SOP 67-06 "Product/Project Management" and/or applicable manufacturing engineering documentation.

Manufacturing monitors the issuing and compliance of these work instructions. Physical examination, measurement of tests of the material or products as necessary for each work operation will be conducted under controlled conditions. If physical inspection of processed material is disadvantageous, indirect control by monitoring processing methods, equipment and personnel is provided. Both physical inspection and process monitoring are provided when control is inadequate without both, or when contract specification require both.

Sufficient preventive maintenance activities are performed regularly for all critical pieces of production equipment as required, to maintain controlled conditions throughout the facility and ensure ongoing maintenance of process control.

In-process and final inspection are performed by qualified "quality stamp" (QCA QA) personnel.

Criteria for approval and rejection are provided for all inspection of product and/or monitoring of methods, equipment and personnel. Means for identifying approved and rejected products are provided.

Where the results of processes cannot be fully verified by subsequent inspection and testing of the product and where, for example, processing deficiencies may become apparent only after the product is in use, the process shall be carried out by qualified operators and or shall require continuous monitoring and control of process parameters to ensure that the specified requirements are met.

The requirements for any qualification of process operations, including associated equipment and personnel, shall be specified.

Records are maintained for qualified processes, equipment, and personnel as appropriate.

## 4.10 INSPECTION AND TESTING

### 4.10.1 GENERAL

Kidde-Fenwal maintains documented procedures for inspection and testing activities in order to verify that the specified requirements for the product are met. The required inspection and testing and the records to be established are detailed in the quality plan or documented procedures.

### 4.10.2 RECEIVING INSPECTION AND TESTING

Supplier furnished materials and products are subjected to inspection upon receipt to the extent necessary to assure conformance to purchase order requirements. Verification is by inspection record card pertinent to the part number received. Sampling procedures and tables for inspection by attributes, are used to determine amount of inspection unless otherwise noted on inspection record card or specified by the customer.

Incoming product may be released for urgent production under proper control. This control assures that the parts are positively identified and recorded in order to permit immediate recall and replacement in the event of nonconformance to specified requirements.

Product awaiting testing is separately identified or segregated from already tested and approved product.

Receiving inspection may be adjusted upon the basis of the K-F supplier rating program. Satisfactory evidence of the supplier's control of quality is used in adjusting the amount and kind of receiving inspection.

### 4.10.3 IN-PROCESS INSPECTION AND TESTING

In-process inspection and monitoring of products are accomplished by the use of operation route sheets, quality inspection sheets and documented instructions or procedures.

Statistical analysis may be used in monitoring processes and is specified, when required, by documented work instructions and controlled in accordance with quality procedures.

Inspection and test operations are specified by documented operation route sheets. Each operation must be accepted and dated as completed. Products

awaiting inspection and test are separately identified or segregated from already tested and approved product.

In the event of nonconformance to specified requirements, the product shall be rejected and handled as described in paragraph 4.13 of this Quality Manual.

### 4.10.4 FINAL INSPECTION AND TESTING

Final inspection includes verification that all in-process inspections and tests were performed on operation sheets and on the D-185 "Manufacturing Department Quality Inspection Sheet" for completed product.

The specific requirements for final acceptance are defined in the controlling engineering drawing, operation sheets and or documented procedures.

Quality inspection stamps at final, use QCA QA stamps to assure that all activities required have been satisfactorily completed and the results of inspection are documented and approved on the D-185 quality inspection sheet.

Mandatory government inspection and customer source inspection are recognized at K-F and are identified on the sales order.

### 4.10.5 INSPECTION AND TEST RECORDS

The D-185 quality inspection sheets become a record of the in-process and final inspection activity and are kept on file by quality.

The receiving inspection and testing records are established and maintained per documented procedures. Final inspection records include verifications that all in-process and final inspection and tests were performed on operation sheets and on the "D-185 Quality Inspection Sheet" for completed product. The above records, receiving inspection, in process and final inspection records, show clearly whether the product has passed or failed the inspections and or tests according to defined acceptance criteria. Where the product fails to pass any inspection and or test, procedures for control of non-conforming product will apply. The procedure for control of all non-conforming product is 39-63 "Control of Non-Conforming Material".

## 4.11 INSPECTION, MEASURING AND TEST EQUIPMENT

Kidde-Fenwal maintains documented procedures to control, calibrate and maintain inspection, measuring and test equipment, whether owned by Kidde-Fenwal, on loan, or provided by the purchaser, to demonstrate product conformance to the specified requirements. These devices are calibrated against certified measurement standards which have known valid relationships to National Institute of Standards and Technology (NIST) at established periods to assure continued accuracy. This assures that inspection and test equipment is adjusted, replaced or repaired before it becomes inaccurate. The calibration of measuring and testing equipment is accomplished in accordance with military standard ANSI-NCSL Z540-1994-1 Calibration Systems Requirements. Our calibration laboratory documented procedures in this area ensure that all requirements of the ISO 9000 Standard are complied with.

It is the responsibility of each person using the measuring and test equipment to verify that the calibration is within the calibration validity period.

Production fixtures, tooling masters, templates, patterns and other such devices are not used as media of inspection except when such use is required. These devices are proved for accuracy prior to release for use and placed on the calibration system with a M&TE number. Such devices are proved again for accuracy at intervals established in a manner to cause their timely adjustment, replacement or repair prior to becoming inaccurate. K-F reports to the customer or the government representative any need for precision measurement capability exceeding the known state of the art.

K-F makes M&TE available for use by the customer or government when required to determine conformance with contract requirements. If conditions warrant, K-F personnel are also made available for operation of such devices and for verification of their accuracy and condition.

## 4.12 INSPECTION AND TEST STATUS

### 4.12.1 GENERAL

Kidde-Fenwal maintains a positive system for identifying the inspection and test status of products by suitable means, which indicates the conformance or non-conformance of product with regard to inspection and tests performed.

The physical identification of inspection and test status shall be maintained, as defined in the quality plan and or documented procedures throughout production of the product to ensure that only product that has passed the required inspection and tests (or released by authorized material board) is dispatched, used, or installed.

Records for control and use of inspection stamps are maintained by the Quality Assurance Department.

## 4.13 CONTROL OF NON-CONFORMING PRODUCT

### 4.13.1 GENERAL

K-F maintains documented procedures to ensure that product that does not conform to specified requirements is prevented from unintended use or installation. This control provides for identification, documentation, evaluation, segregation (when practical), disposition of non-conforming product and for notification to the functions and or sources concerned.

### 4.13.2 REVIEW AND DISPOSITION OF NONCONFORMING PRODUCT

K-F maintains documented procedures for identification, segregation, disposition and corrective action of non-conforming material including the establishment of a preliminary material review board. Dispositions are limited to:

a) rework to meet specified requirements;
b) return to supplier;
c) scrap;
d) accepted with or without repair by concession;
e) sort screen as necessary to maintain metered flow

Product requiring rework or repair (MRB disposition) are re-inspected after performed operations.

Dispositions for "accept as is" and "repair" on product which does not conform to specified requirements requires MRB authorization, including customer or government, when applicable.

### 4.13.3 SEGREGATION AREAS FOR NON-CONFORMING PRODUCT

MRB and bonded segregated areas for non-conforming product are identified and properly marked.

When segregation is impractical or impossible due to physical conditions such as size or weight, other precautions are employed (red hold tags, moving the [illegible] out of normal flow, etc.).

## 4.14 CORRECTIVE AND PREVENTIVE ACTION

### 4.14.1 GENERAL

K-F maintains documented procedures for implementing corrective and preventive action. Any corrective or preventive action taken to eliminate the causes of actual or potential nonconformity's will be to a degree appropriate to the magnitude of problems and commensurate to the risks encountered.

Kidde-Fenwal will implement and record any changes to the documented procedures resulting from corrective and preventive action.

### 4.14.2 CORRECTIVE ACTION BOARDS

The procedure for corrective action shall include:

a) the effective handling of customer complaints and reports of product nonconformance:

b) investigating the cause of nonconformity's relating to product, process and quality system and recording the results of the investigation:

c) determination of the corrective action needed to eliminate the cause of nonconformity's:

d) application of controls to ensure that corrective action taken is effective.

### 4.14.3 PREVENTIVE ACTION

The procedures for preventive action include:

a) the use of appropriate sources of information such as processes and work operations which affect product quality, concessions, audit results, quality trends, service reports and customer complaints to detect, analyze, and eliminate potential causes of non-conformance:

b) determination of the steps (action plan) needed to deal with any problems requiring preventive action:

c) initiation of preventative action and application of controls to ensure that it is effective:

d) confirmation that relevant information on actions taken is submitted for management review:

## 4.15 HANDLING, STORAGE, PACKAGING, PRESERVATION AND DELIVERY

### 4.15.1 GENERAL

K-F shall establish and maintain documented procedures for handling, storage, packaging, preservation and delivery of product.

### 4.15.2 MATERIAL HANDLING

Manufacturing engineering is responsible for designating proper in-process material handling and storage methods and procedures. This will include specifying the proper material handling and storage equipment (tote box, tray, wire basket, shelving, cabinets, conveyors, etc.).

### 4.15.3 STORAGE- WAREHOUSE, STOCKROOM & SHIPPING

The supervisors of the storage-warehouse, stockroom and shipping departments are responsible for assuring that product received into their area has received a final quality acceptance and a D-185 form, signed and released (QCA QA stamp). K-F provides a stock room to prevent damage or deterioration of product, pending use or delivery. Appropriate methods for authorizing receipt and withdrawals and a system for identifying and handling shelf life and age control articles are provided.

In order to detect deterioration, the condition of product in stock is assessed, as a minimum, yearly.

Inventory materials are stored in accordance with FIFO (first in - first out) method of stock rotation.

### 4.15.4 PACKAGING

Kidde-Fenwal controls packing, packaging and marking processes to the extent necessary to ensure conformance to specified requirements.

### 4.15.5 PRESERVATION

K-F applies appropriate methods for preservation of product.

### 4.15.6 DELIVERY

The shipping supervisor/manager is responsible for the following prior to shipment of product:

a) the product has received final quality acceptance (QCA/QA stamp), and source inspection (government or customer) when required;

b) the proper documents accompany the shipment and that they contain the correct part number, nomenclature, and quantity;

c) entries on shipping documents are complete and accurate per requirements of information as required by the purchase order;

d) packing and packaging is performed in accordance with approved methods as applicable and/or contractual requirements;

e) current regulations on the shipment of hazardous materials are applied;

f) where contractually specified, the protection of the quality of the product will be extended to include delivery to destination.

## 4.16 CONTROL OF QUALITY RECORDS

K-F maintains documented procedures for the methods for identification, collection, indexing, access, filing, storage, maintenance and disposition of quality records. Quality records include inspection (D-185 forms), manufacturing and engineering documentation that furnish evidence of activities affecting quality. Pertinent supplier quality records are an element of this data.

All quality records are legible and identifiable to the product involved. Quality records are stored and maintained so that they are readily retrievable and stored in a suitable environment to minimize deterioration or damage and to prevent loss.

Retention period for those records that insure evidence of activities affecting quality are in accordance with a documented procedure.

Where agreed contractually, quality records are made available for evaluation by the purchaser or his representative.

## 4.17 INTERNAL QUALITY AUDITS

The quality department will establish and maintain documented procedures for planning and implementing internal quality audits to verify the effectiveness of the quality system.

Audits are accomplished by K-F personnel familiar with procedures applicable to the area to be audited. Audits must be performed by auditor personnel that are independent of the area. The examination of K-F quality systems are scheduled on the basis of the status and importance of the activity to be audited. All clauses of the standard must be audited at least annually. The results of the audits are recorded on documented check lists and audit summaries including any corrective actions issued.

Cognizant area supervision is responsible for assisting in the performance of audits and for providing timely corrective action in the event unsatisfactory conditions are observed.

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

## 4.18 TRAINING

K-F maintains documented procedures for identifying training needs and provides for the training of personnel performing activities affecting quality. Personnel performing specific assigned tasks are qualified on the basis of appropriate education, training, and/or experience, as required.

Records of training are maintained in the department where the job discipline is located and or in the records of the Human Resources Department.

## 4.19 SERVICING

K-F has no requirements for servicing.

## 4.20 STATISTICAL TECHNIQUES

Where appropriate and specified on operation route sheets, K-F uses statistical process control (SPC) techniques to ensure the required quality of the product.

Procedures identify statistical techniques required for verifying the acceptability of process capability and product characteristics.

In addition to SPC methods required by contract, statistical planning, analysis, test and quality control procedures are utilized whenever such procedures are suitable to maintain the required control of quality. Sampling plans are used when tests are destructive or

when non critical application of the product indicate that a reduction in inspection or testing can be achieved without jeopardizing quality.

Kidde-Fenwal will establish and maintain documented procedures to implement and control the application of the statistical techniques used.

| REV | CHANGE | DATE | ORIG. | AP. BY | QCO |
| --- | --- | --- | --- | --- | --- |
| EG | Revised intro and appendix A to include IEP | 3-18-02 | CAS | BL | 1794 |
| EF | Added procedure 77-15 & 77-16 to TOC | 1-18-02 | CAS | BL | 1785 |
| EE | Corrected standard number in section 4.11 | 11-19-01 | CAS | BL | 1756 |
| ED | Revised table of content to reflect current updates | 04-26-01 | CAS | MDJ | 1749 |
| EC | Revised sections 4.1.3, 4.11 and table of contents | 03-20-01 | CAS | MDJ | 1745 |
| EB | Updated attached 39-01 Table of Contents | 01-22-01 | CAS | MDJ | 1725 |
| EA | Content review and appendix A update. Title page, minor changes to 3.4, 3.5.2, 4.1.3, 4.2.3, 4.4.2, 4.4.3. | 01-11-01 | CAS | MDJ | 1712 |
| DA | Content Update and appendix A update | 6-18-99 | DH | MDJ | 1613 |
| CF | Update pg.1 and appendix A | 9-9-98 | DH | MDJ | 1479 |
| CE | Minor Organizational Changes & Quality Policy | 11-27-96 | RAM | RAM | 1380 |
| CD | Minor Organizational Changes | 12-06-95 | RAM | RAM | 1345 |
| CC | Title Pg. Org cht, add 4.2.1,4.2.2, matrix & table of contents | 06-06-95 | RAM | RAM | 1327 |
| CB | AGA letter 1-6-95 | 01-12-95 | RAM | RAM | 1301 |
| CA | Updated to conform to ISO 9001-1994 | 12-08-94 | RAM | RAM | 1288 |
| BA | Updated to conform to ISO 9001 | 01-05-94 | RAM | RAM | 1211 |

## APPENDIX A

**SOP 39-01**
INDEX OF PROCEDURES

| PROCEDURE NO. | | NAME OF PROCEDURE |
| --- | --- | --- |
| 31-01 | | Supplier Management Program |
| 31-03 | | Supplier Business and Quality System Surveys |
| 31-04 | | Supplier selection or transition |
| 31-05 | | Processing of T-430 Reason Codes |
| 31-10 | | Contract Manufacturer Selection and Qualification Process |
| 39-01 | | Table of contents |
| 39-02 | | Quality Change Order (QCO) |
| 39-03 | | Quality Plans |
| 39-04 | | Coordinating Quality Manual Changes with the QAR |
| 39-05 | | Requesting Customer Government Source Inspection |
| 39-11 | | Control of Customer-Supplied Product |
| 39-15 | | First Article Receiving Inspection |
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| 39-19 | | Receiving Inspection |
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| 39-25 | | Calibration |
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| 39-28 | | Selecting Calibration Standards |
| 39-29 | | Calibration Environmental Controls |
| 39-30 | | Guidelines for Indicating Calibration Status |
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| 39-53 | | Quality Record Retention Guidelines |
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| 39-55 | | Qualification of Internal Audit Personnel |
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| 39-63 | | Control of Non-Conforming Material Policy Procedure |
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| 39-70 | | New Product Development Process (Electronic Controls Only) |
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## 32 – INDUSTRIAL EXPLOSION PROTECTION (IEP)

| PROCEDURE NO. | | NAME OF PROCEDURE |
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| 50-02 | | Product Pricing |
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| 50-04 | | Product Marking |
| 50-05 | | Date Coding and Serialization |
| 50-06 | | Serial Numbering, Control and Documentation |
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| 50-11 | | Sales Order Entry Policy – Controls Division |
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| 67-13 | | Record Retention |
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| 67-16 | | Control of Kidde Fire Protection Detection & Alarm Documentation for a Kidde Fenwal Product |
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| 71-09 | | Record Retention |
| 71-10 | | Purchasing Data |
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| 71-13 | | Verification of Purchased Product |
| 71-14 | | Correct Revision on Purchase Orders |
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| 71-16 | | Sourcing Selected Operations |
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| 72-14 | | Release of Rework Work Order |
| 72-15 | | Kanban Replenishment System |
| 72-16 | | Scheduling of Customer Orders |
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## 73 - MANUFACTURING ENGINEERING

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| --- | --- | --- |
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| 73-03 | | Preventative Maintenance |
| 73-04 | | MES Procedure, Specification, Format & Required Sign-off |
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| 75-01 | | Equal Employment Opportunity |
| 75-02 | | Job Descriptions |
| 75-03 | | Training |
| 75-04 | | Individual Training Record |
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| 77-02 | | Shipping – Isolation of Nonconforming Material |
| 77-03 | | Shipping Quality Check |
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| 77-09 | | Segregation of Rejected Restricted Use Material |
| 77-10 | | Access to Stores Shipping Areas |
| 77-11 | | Quality of Work Order Kits Material Picks |
| 77-13 | | Shipping and Invoicing |
| 77-14 | | Customer Supplied Material |
| 77-15 | | Outbound Damage Claim Procedure |
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## 85 –MIS

| PROCEDURE NO. | | NAME OF PROCEDURE |
| --- | --- | --- |
| 85-02 | | Computer Policy |

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| PROCEDURE NO. | | NAME OF PROCEDURE |
| --- | --- | --- |
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| SD-22 | | Grain Elevator Demonstration |
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| SD-29 | | Gas Explosion Tests - Kg |
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| SD-35 | | Handling Explosive Actuators |
| SD-38 | | Bulk Density Determination |
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