Engineering Standard

SAES-B-058 29 June, 2005

Emergency Shutdown,
Isolation, and Depressuring

Saudi Aramco DeskTop Standards

Table of Contents

1 Scope

This Standard provides the minimum mandatory requirements for the design, of emergency shutdown, isolation, and depressuring systems, including spacing requirements for emergency isolation valves and safe-location actuating buttons, for all facilities handling hydrocarbons, toxic materials, and their derivatives. For other pertinent instrumentation and alarm requirements, see SAES-J-601.

Where this Standard is supplemented by or is in conflict with specialized requirements for offshore platforms covered in SAES-B-009; for piers, wharves, sea islands, in SAES-B-060; for wells, in SAES-B-062; for transportation pipelines, in SAES-B-064; and for bulk plants/air fueling operations, in SAES-B-070; those Standards shall govern.

2 Conflicts and Deviations

2.1 Any conflicts between this Standard and other applicable Saudi Aramco Engineering Standards (SAESs), Saudi Aramco Materials System Specifications (SAMSSs), Saudi Aramco Standard Drawings (SASDs), or industry standards, codes, and forms shall be resolved in writing by the Company or Buyer Representative through the Manager, Loss Prevention Department of Saudi Aramco, Dhahran.

2.2 Direct all requests to deviate from the Standard in writing to the Company or Buyer Representative, who shall follow internal company procedure SAEP-302 and forward such requests to the Manager, Loss Prevention Department of Saudi Aramco, Dhahran.

3 References

All referenced Specifications, Standards, Codes, Forms, Drawings, and similar material shall be considered part of this Standard to the extent specified herein and shall be the latest issue (including all revisions, addenda, and supplements) unless stated otherwise.

3.1 Saudi Aramco References

Saudi Aramco Engineering Procedure

SAEP-302	*Instruction for Obtaining a Waiver of a Mandatory Saudi Aramco Engineering Requirement*

Saudi Aramco Engineering Standards

SAES-B-006	*Fireproofing In-Onshore Facilities*

SAES-B-009	*Fire Protection and Safety Requirements for Offshore Production Facilities*
SAES-B-054	*Access, Egress, and Materials Handling for Plant Facilities*
SAES-B-057	*Safety Requirements: Refrigerated and Pressure Storage Vessels*
SAES-B-060	*Fire Protection for Piers, Wharves, and Sea Islands*
SAES-B-062	*Onshore Wellsite Safety*
SAES-B-064	*Onshore & Nearshore Pipeline Safety*
SAES-B-067	*Safety Identification and Color-Coding*
SAES-B-070	*Bulk Plant*
SAES-F-007	*System Design Criteria of Flares*
SAES-J-004	*Instrumentation Symbols and Identification*
SAES-J-005	*Instrumentation Drawings and Forms*
SAES-J-601	*Emergency Shutdown and Isolation Systems*
SAES-J-602	*Burner Management, Combustion and Waterside Control Systems for Watertube Boilers*
SAES-J-603	*Process Heaters Safety Systems*
SAES-J-605	*Surge Relief Protection Systems*
SAES-L-108	*Selection of Valves*

Saudi Aramco Engineering Report

SAER-5437	*Guidelines for Conducting HAZOP Studies*

Saudi Aramco Material System Specification

34-SAMSS-634	*Local ZV Shutdown Cabinets and Smart ZV Systems*

Saudi Aramco Chemical Hazards Bulletins

3.2 Industry Codes and Standards

American Petroleum Institute

API RP 521	*Pressure-Relieving and Depressuring Systems*
API STD 2510	*Design and Construction of LPG Installations*

4 Definitions

Burner Management System (BMS): The control system dedicated to assist starting and stopping the fuel system and burners of a boiler. For boilers, emergency shutdown (ESD) is accomplished by the burner management system (BMS) per SAES-J-602.

Combustible Fluid: Any combustible liquid or combustible gas as defined in SAES-B-006.

Emergency Depressuring System: A system of valves, piping, actuating devices, and logic used during an emergency to rapidly and safely reduce pressure in process equipment by controlled venting to a remote location via a disposal system such as a flare, burnpit or storage.

Emergency Isolation Valve (EIV): A valve that, in event of fire, rupture, or loss of containment, goes to fail-safe position to stop the release of flammable or combustible liquids, combustible gas, or potentially toxic material. An EIV can be either hand-operated or power-operated (see Section 8). A "power-operated EIV" is commonly called a ZV and the two terms can be used interchangeably for the purpose of this Standard. Refer to SAES-J-004 for symbols and identification. Power-operated EIVs can be actuated either by an ESD system or by an actuating button, depending on the design of the facility.

Emergency Shutdown (ESD) System: A system of valves, piping, sensors, actuating devices, and logic solvers that takes the process, or specific equipment in the process, to a safe state, i.e., to shutdown, to isolate, de-energize, and depressure plant, train, or process unit. Fire-Hazardous Equipment and Fire-Hazardous Zone: See SAES-B-006.

Local Actuating Button: A button mounted on or adjacent to the valve or equipment that, when pushed or pulled, initiates the closing of that valve or stopping of that equipment. A local ESD actuating button is a button mounted adjacent to a plant, equipment train, or process unit that, when pushed or pulled, initiates the ESD system. See Section 9 for guard and labeling requirements.

Remote Actuating Button: An actuating button that is located a considerable distance from the valve or equipment being activated, usually located in a control room. A remote ESD actuating button initiates the ESD system associated with a plant, equipment train, or process unit.

Safe-Location Actuating Button: An actuating button located at grade and at least 15 m horizontally from any fire-hazardous equipment to shutdown and/or isolate process equipment from a relatively safe location. Safe-location actuating buttons shall be provided as specified in Section 6.

Commentary Notes:

Previous revisions of SAES-B-058 used the term "local-remote actuating button. "This term, which caused confusion, has been replaced by the term "safe-location actuating button."

The local power-operated EIV shutdown cabinet associated with an EIV is not intended to serve as the safe-location actuating button. The actuation button within a shutdown cabinet can be remotely mounted in a safe location, allowing the cabinet to be mounted in an accessible location, close to the EIV (see 6.2.6.4).

Local ZV Shutdown Cabinet: An enclosure containing the control devices necessary to operate and test pneumatic ZVs (see 34-SAMSS-634).

Plot-limit EIVs: Emergency isolation valves used to isolate piping containing combustible or toxic fluids that cross plant plot-limits. The plot-limit is a boundary, within the plant area, which surrounds a single plant or function. The plot limit may be physical such as a fence (not necessarily a security fence), a wall, the edge of a road or pipe-way, chains and posts or a boundary indicated on an approved plot plan. For plot-limit valve requirements, see Section 6.2.6 of this Standard.

Potentially Toxic Material: In the context of this Standard is a liquid, gas, or solid with a total concentration of 5% or greater of materials with a Health Category rating of "3" or greater per the Saudi Aramco Chemical Hazards Bulletins at any operating condition.

Power-operated EIV: A valve that has an actuator using any power source such as electricity, air, or hydraulic oil. A "power-operated EIV" is commonly called a ZV.

Process Heater: For the purposes of this Standard, any type of direct heater including furnaces, but specifically excluding boilers. Refer to SAES-J-603.

Safety-Critical Control Systems: Instrumented safety systems or devices that are fail-safe and designed to act independently of the regulatory control system to prevent catastrophic release of flammable or combustible liquids, combustible gas, or potentially toxic material from piping, vessels, and associated process equipment.

Shall: Indicates a mandatory requirement.

ZV: Drawing legend designation for power-operated EIV, normally associated with an emergency shutdown (ESD) system.

5 Emergency Shutdown (ESD) Systems

5.1 ESD systems shall be provided as required below for facilities that process, transport, or otherwise handle combustible, flammable, or potentially toxic materials. Facility types include, but are not limited to:

- GOSPs

- Gas processing and treating facilities
- Oil fractionating facilities
- LPG refrigeration facilities
- Bulk loading facilities

5.2 In the development of the project proposal, a preliminary ESD Safety Requirements Specification (SRS) shall be developed for each ESD System. The SRS shall include a list of all ESD loops, the corresponding safety integrity level for each loop, a description of the associated safety function, the trip point and the fail-safe position of end devices. The SRS shall include all documentation as per SAES-J-601.

5.3 The preliminary ESD SRS shall be reviewed and concurred to by the Proponent Operating Department, the Chief Fire Prevention Engineer, and the General Supervisor, Process Control Systems Division.

5.4 Emergency shutdown devices, interlocks, functional requirements, and safety-critical controls systems shall be reviewed in conjunction with all other aspects of facility detail design reviews and during the Process Hazard Analysis and again during the formal Hazard and Operability (HAZOP) study. Any deficiencies, conflicts, or errors in ESD design shall be documented and corrective action shall be taken. The analysis shall follow the guidelines in HAZOP engineering report SAER-5437.

5.5 ESD systems shall be provided for the following equipment:

a) Pumps categorized as fire-hazardous equipment in SAES-B-006.

b) Pumps which handle potentially toxic material, have drivers larger than 7.5 kW (10 HP), and take suction from a system with a liquid inventory of more than 8 m^3 (50 bbl).

c) Compressors categorized as fire-hazardous equipment in SAES-B-006.

d) A combustion gas turbine (CGT) consisting of the manufacturer's shutdown devices, in addition to the fuel gas emergency isolation valve required by 6.2.5.

e) Loading arms at any berth handling flammable or combustible liquids or potentially toxic material. See SAES-B-060 for additional requirements.

f) Loading/unloading bays and associated equipment per SAES-B-070.

g) Turbo-expanders and associated equipment categorized as fire-hazardous equipment in SAES-B-006.

h) Special or licensed processes, special equipment employing new technologies, and vendor-supplied package units unless a process HAZOP study determines that an ESD system is not required.

5.6 ESD for Process Heaters

An ESD system shall be provided for each process heater per SAES-J-603. See 6.2.3 below.

5.7 ESD for Boilers

A burner management system (BMS - which is considered a special type of ESD system) shall be provided for each boiler per SAES-J-602. Also see 6.2.4 below.

5.8 Local ESD Actuation

Local hard-wired ESD actuating buttons for emergency shutdown shall be located at the plant equipment, equipment train, process unit, or battery limit as required by the Proponent Operating Department. Location of actuating buttons shall be approved by the Proponent Operating Department.

5.9 Remote ESD Actuation

Remote (control room) ESD actuating buttons shall be readily accessible to operations personnel within an operator's console or in a strategic location inside the control room as approved by the Proponent Operating Department. Requirements of SAES-J-601 shall be met.

5.10 Fireproofing

Fireproofing of ESD actuator system components shall meet SAES-B-006.

6 Emergency Isolation Valves (EIVs)

6.1 Emergency isolation valves (EIVs) shall be installed as specified below and where needed as identified in Section 5.

6.2 EIVs are required for equipment as follows:

6.2.1 Pumps categorized as fire-hazardous equipment in SAES-B-006 or pumps having drivers larger than 7.5 kW (10 HP) and handling

potentially toxic material shall be provided with an EIV in the pump suction piping.

6.2.1.1 In addition to the suction EIV, a pump discharge EIV is required if pressure in discharge piping can remain above the gauge pressure of 275 kPa (40 psig) after pump shutdown, whether due to liquid vapor pressure, hydrostatic head, or other pressure sources such as other pumps on a common header or reverse flow situations.

6.2.1.2 For cases in which two or more pumps are connected to a common header, the Proponent Operating Department shall decide whether process and economic considerations justify installing an individual EIV for each pump or installing a common EIV for the header.

6.2.2 Compressors and turbo expanders categorized as fire-hazardous equipment in SAES-B-006 shall be provided with an EIV in the compressor/turbo expander suction and discharge piping. Where power-operated EIVs are used to isolate suction or discharge piping, side streams, or series compressor/expander cases, the EIVs shall be installed outside recycle loops if possible or otherwise in accordance with recommendations from a study conducted on the installation.

Exception:

If the EIVs cannot be installed outside the recycle loop, the EIVs shall be designed to fail steady, i.e., holding its last position. If the valves fail, an alarm shall be indicated in the control room. The closure shall be interlocked with the compressor shutdown system such that the EIV will close only after the compressor has stopped to avoid compressor damage.

6.2.2.1 For compressors/expanders with multiple suction and discharge lines, an EIV shall be provided in each suction and discharge line.

6.2.2.2 EIVs shall be installed in the suction/discharge line between stages if one stage is rated at more than 150 kW (200 HP).

6.2.3 EIV use on process heaters shall be as follows:

6.2.3.1 Each process heater shall be provided with a power-operated EIV in each main fuel line and pilot fuel gas header in accordance with SAES-J-603. These EIVs may also serve the dual purpose of maintenance isolation per 6.5.

6.2.3.2 An EIV shall be provided in the process inlet feed line for each process heater heating a combustible fluid or flammable liquid.

Exception:

Hydrocracker and catalytic reforming unit charge heaters and interheaters do not require EIVs to avoid loss of circulation.

6.2.3.3 EIVs shall be provided in the process outlet piping of process heaters heating combustible fluid or flammable liquid if the coil outlet pressure exceeds the gauge pressure of 6900 kPa (1000 psig) and if vapor depressuring or liquid pulldowns systems are absent.

6.2.3.4 Where process heater outlet isolation is provided, overpressure protection (safety relief valves or PZVs) shall be provided.

6.2.4 For boilers, safety shutdown is accomplished by the burner management system (BMS) controlled safety shutdown and vent valves per SAES-J-602. For boilers, no other EIVs are required.

6.2.5 Combustion Gas Turbines (CGTs) shall be equipped with a fuel line EIV outside the turbine enclosure. The EIV requires a power-operator if located within 15 m of the CGT per Table 1. This valve shall be independent of, and in addition to, the burner flame shutdown valve.

6.2.6 Plot-limit EIVs shall be provided for all piping containing combustible or toxic fluids crossing the plant plot-limit except as allowed below. The need for isolation valves for maintenance of plot-limit EIVs shall be considered on a case by case basis and installed where deemed operationally necessary by the Proponent Operating Department.

Exceptions:

Flare, depressuring, flare purge gas, fuel gas, or hydrocarbon sewer (pressure sewer) lines do not require plot-limit EIVs. Plot-limit maintenance valves (manual) are required on flare, depressuring, or hydrocarbon sewer lines that serve more than one process or fire-risk area. Manual plot-limit valves on these systems shall be car-sealed-open or chain-locked-open.

EIVs are not required for nonhydrocarbon utility lines or other utility lines that are normally closed, such as lube oil and DGA make-up piping. However, manual valves for maintenance work shall be provided for all aboveground utility lines at plot limits.

For plot-limit isolation of offshore production facilities, SAES-B-009 shall govern.

6.2.6.1 Plot-limit EIVs and their associated maintenance valves shall be grouped together at one plot-limit piping manifold.

6.2.6.2 Plot-limit EIVs shall be located at least 7.5 m beyond the edge of any fire-hazardous zone. Installation of plot-limits EIVs within a fire-hazardous zone is not permitted.

6.2.6.3 Plot-limit EIVs shall be at grade or accessible from a platform with stair access. Such stair access shall be at least 7.5 m beyond the edge of any fire-hazardous zone.

6.2.6.4 Each power-operated plot-limit EIV shall have a dedicated safe-location actuating button. The safe-location actuating buttons for each group of power-operated plot-limit EIVs shall be grouped together and installed at grade and located more than 15 m from any fire-hazardous equipment or process vessel. Safe-location buttons shall also be at least 7.5 m beyond the edge of any fire-hazardous zone (also see 6.2.9.3). The safe-location actuating button for any ZV shutdown cabinet may be remotely mounted to allow the ZV cabinet to be located as close as possible to its associated ZV (preferably within line-of-sight).

6.2.6.5 Plot-limit EIVs shall be connected to a plant ESD system and shall otherwise meet SAES-J-601.

6.2.7 Truck loading and unloading racks handling flammable or combustible liquids or potentially toxic material shall be protected by an EIV in the loading and unloading line. In case of a manual valve (see Section 8), the EIV shall be located 15 m (minimum) to 30 m (maximum) from the nearest loading rack containment berm and shall be located at grade or at a platform with stair access. If a pipeline serves multiple racks, each rack shall be provided with an EIV in addition to the EIV in the common line. If the individual rack EIVs are power-operated, their actuating buttons shall be grouped with the button for the common loading/unloading EIV. Refer to SAES-B-070 for more details.

6.2.8 Marine Piers and Sea Islands handling flammable or combustible liquids or potentially toxic material shall be protected by EIVs at all manifolds on the shore ends of all transfer lines and in the lines to each loading arm or hose. Refer to Section 8, SAES-B-060.

6.2.9 Tanks within the scope of SAES-B-057 and in the following services shall be provided with EIVs on tank nozzles below the maximum liquid level: refrigerated tankage; spheres and spheroids containing flammable

liquids having a true vapor pressure equal to or greater than the absolute pressure of 200 kPa (29 psia) at 54°C (130°F). Refer to SAES-B-057 and API STD 2510 for other requirements.

6.2.9.1 EIVs are not required for instrument connections. Isolation valves for instrument connections shall be per SAES-J-005.

6.2.9.2 EIVs shall be installed on the tank nozzle flange (no intermediate spool pieces allowed). If no flange has been provided in the case of small-diameter connections, EIVs shall be installed on the tank nozzle boss.

Exception:

In circumstances where an intermediate spool piece is needed, the spool may be allowed between the EIV and the vessel nozzle flange with the concurrence of the Chief Fire Prevention Engineer.

6.2.9.3 For tanks designated in 6.2.9, actuators on power-operated EIVs inside the diked area shall be fireproofed in the manner specified in SAES-B-006. An actuating button shall be located outside the dike (at least 7.5 m from the inner edge of the dike) and at least 15 m from any other process vessels outside the dike.

6.3 Atmospheric storage tank nozzle isolation valves normally do not require EIVs.

Commentary Note:

Storage tank nozzle valves and actuators do not require fireproofing if they are not part of an emergency isolation system. Refer to SAES-B-005 for other atmospheric storage tank requirements.

6.4 Locations of all EIVs, local ZV shutdown cabinets, and actuating buttons shall be reviewed and concurred with by the Proponent Operating Department, the Chief Fire Prevention Engineer, and the General Supervisor, Process Control Systems Division during project design.

6.5 An EIV may be used as a block valve for maintenance activities. A control valve shall not be used as an EIV.

6.6 Emergency Isolation Valve fire-safety and leakage performance shall meet SAES-L-108.

6.7 Valve type, reliability, and means of operation of power-operated EIVs shall be in accordance with SAES-J-601.

6.8 For installation of bypass valves around power-operated EIVs, see SAES-J-601.

7 Emergency Depressuring Systems

7.1 Emergency depressuring systems shall comply with API RP 521, SAES-J-601, SAES-J-605, and SAES-F-007. Where the specifications below are in conflict with API RP 521, this Standard shall govern.

7.2 Emergency depressuring systems are required for hydrocrackers and catalytic reforming units to prevent reactor temperature runaways.

7.3 Emergency depressuring systems are required for the process side of process heaters.

7.4 Process vessels shall be designed with systems to depressure to 50% of the vessel's design gauge pressure within 15 minutes if:

a) The vessel contains flammable or potentially toxic liquids with true vapor pressure equal to or greater than an absolute pressure of 200 kPa (29 psia) at 54°C (130°F), and

b) The vessel is designed for pressures equal to or greater than a gauge pressure of 1725 kPa (250 psig).

c) Fireproofing of a process vessel exterior may be taken into account in the depressuring system design for large process vessels, such as surge bullets, fractionation columns and associated reflux drums according to API RP 521. See API RP 521 for more information.

7.5 Liquid-pulldown systems, if used, shall be reviewed and approved on a case-by-case basis by the Proponent Operating Department and the General Supervisor, Process Control Systems Division with the concurrence of the Chief Fire Prevention Engineer.

Commentary Note:

Normal operating product-withdrawal systems are considered more effective than dedicated emergency liquid-pulldown systems. Consideration may be given for removal of liquids during a fire, but note that liquid holdup can be effective in keeping the vessel wall cool.

7.6 Actuators and associated cabling or tubing of pressure control valves used in emergency vapor depressuring systems shall be fireproofed.

7.7 Activation of emergency depressuring systems shall be the same as ESD systems (see 5.10).

7.8 The emergency depressuring system shall discharge to a flare system or other properly designed disposal system.

8 Valve Operators

8.1 EIV valve pressure classes that are listed in Table 1 shall be provided with power operators. Power-operated valves shall also be manually operable per SAES-J-601.

Exception:

This does not apply to BMS valves. Refer to Section 7.

Table 1 - Power-Operated EIV

Valve Class	Power-Operated
Class 150	254 mm (10-inch) valves and larger
Class 300	152 mm (6-inch) valves and larger
Class 600	102 mm (4-inch) valves and larger
Class 900 and above	25 mm (1-inch) valves and larger
In All Classes	Any EIV located at a platform whose level is more than 4.5 m above grade.
In All Classes	Any EIV used for pump or compressor or expander isolation that is within 7.5 m of the associated protected equipment.
In All Classes	Any EIV used for process heater main fuel line or pilot fuel gas header.
In All Classes	Any EIV used for process heater inlet or outlet process piping that is within 7.5 m of the associated protected equipment.
In All Classes	Any EIV used for CGT fuel isolation that is within 15 m of the associated protected equipment.
In All Classes	Any EIV used for plot-limit isolation. See 8.2.
In All Classes	Any EIV used as part of an ESD system.

Commentary Note:

Valves not listed in Table 1 may be hand valves. For incoming crude lines connected to a GOSP crude header, the Proponent Operating Department may elect to have a power-operated EIV on the header, with a manual EIV on each incoming line. For isolation at onshore wellsites, SAES-B-062 shall govern.

8.2 Power-operated EIVs are strongly recommended to be spring-return to a fail-safe position whenever possible. Refer to SAES-J-601 for details.

8.3 Power-operated EIVs shall have open and close position indication n the valve actuator which is clearly visible to an operator located near the valve.

8.4 Power-operated EIVs shall have a hard-wired safe-location actuating button that will close the valve.

a) Safe-location actuation buttons shall be located at grade, i.e., between 1.2 m and 1.5 m above the ground, and at least 7.5 m outside any fire-hazardous zone (at least 15m from fire-hazardous equipment).

b) For pumps and compressors, it is acceptable for one safe-location button to close both the suction and discharge EIVs (if provided) and shutdown the pump or compressor driver (essentially the same function as ESD local actuating button (see 5.10) with the important distinction that it is positioned at least 15 m horizontally away from any fire-hazardous equipment).

Commentary Note:

Local pneumatic ZV shutdown cabinets shall be located as close as possible to their respective ZV. The ZV actuating button may be located separately at a safe-location, thereby complying with 8.4.

8.5 If a power-operated EIV is located within or above a fire-hazardous zone and is not designed with a spring-return to return the valve to a fail-safe position due to loss of power or loss of signal, the valve actuator and associated wiring/tubing shall be fireproof per SAES-B-006.

8.6 Per Table 1, a power operator is required if the EIV access platform is more than 4.5 m above grade. Access and platforms shall be provided per SAES-B-054. For plot-limit EIVs, see 6.2.6 of this Standard.

8.7 EIV handwheels shall be operable from the ground or from a platform that meets SAES-B-054. Chainwheels are not permitted. Extended stems shall not project into walking areas.

8.8 Power-operated EIVs and associated components shall be designed so that the valves can be partially or fully stroked without interrupting operations for testing purposes per SAES-J-601.

Exception:

For facilities that can be shut down, i.e., spared equipment, and for EIVs that have full-flow bypasses, partial stroke capability is not required.

9 Labeling and Protective Shields

9.1 EIVs, including those having fireproofed actuators, and actuating buttons shall be clearly labeled. In-plant pipelines which are isolated with EIVs shall be clearly labeled at the valve to show contents and other information following the requirements of SAES-B-067.

9.2 All EIVs, including those having fireproofed actuators, shall be designed and installed in a manner such that an operator at the valve can quickly tell under poor viewing conditions (such as at night using a flashlight) by looking at the valve assembly whether the valve is open, shut, or somewhere in between. The indicator shall be mechanically linked to the valve stem, or shall be the valve stem itself.

10 Closure Times for Power-Operated EIVs

Closure times for EIVs are given below. The intent is to have EIVs close as quickly as practicable. Refer to SAES-J-601 for other requirements.

10.1 EIVs in oil loading supply at terminals, including ship isolation valves, and for piers and sea islands: 30 seconds minimum, 4 minutes maximum.

10.2 EIVs in trunklines and flowlines: within 30 seconds.

10.3 EIVs in fuel gas lines and other piping for operating equipment in plants: one second for each 5 mm (0.2 inches) of nominal valve diameter.

Commentary Note:

This provision would allow a 305 mm (12-inch) valve to close in approximately 60 seconds and a 610 mm (24-inch) valve to close in approximately 120 seconds.

10.4 For other pipelines, see SAES-B-064.

Revision Summary

29 June, 2005 Revised the "Next Planned Update". Reaffirmed the contents of the document and reissued with minor changes.