



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE CIVIL ENGINEER SUPPORT AGENCY

FROM: HQ AFCESA/EN
139 Barnes Drive
Tyndall AFB FL 32403-5319

SUBJECT: **Engineering Technical Letter (ETL) 94-6: Fire Protection Engineering Criteria - Removal of Halogenated Agent Fire Suppression Systems**

1. Purpose. This ETL provides criteria for removal of halogenated agent fire suppression systems in electronic equipment installations.

2. Application. Requirements of this ETL are mandatory for all Air Force facilities using these systems.

NOTE: Use of "shall" indicates a mandatory requirement. "May" or "should" indicates a nonmandatory action or condition.

2.1. Authority. This ETL complies with the Secretary of the Air Force memorandum of 7 Jan 1993, "Air Force Ban on Purchases of Ozone Depleting Chemicals."

2.2. Effective Date: Immediately. Expires five years from date of issue.

3. Referenced Publications.

3.1. ETL 93-5, *Fire Protection Engineering Criteria - Electronic Equipment Installations.*

4. Specific Requirements. Disable, remove, or place halogenated agents on manual activation according to the following criteria.

NOTE: Electronic equipment installations are not *mission critical* halon applications per the 7 Jan 93 SAF memorandum.

4.1. Existing Systems. For systems protecting:

4.1.1. Mission Essential Equipment.

4.1.1.1. Definition: Electronic equipment which has direct impact on combat mission capability, including equipment integral to combat mission assets or used in direct control of these assets.

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Examples:

- command, control, and communications systems which order launch and recovery of tactical or strategic assets and intelligence systems essential to the defense of the United States and its allies - the bulk of mission essential assets.
- other command, control, communication, and intelligence equipment needed to implement wartime operational plans (OPLANS).
- direct flight/mission control systems.

NOTE: Mission essential equipment usually is located in an automatic data processing area, communications center, or other designated electronic equipment space. Most has duplicate, online, electronic backup capability.

4.1.1.2. Requirement:

- Place system on manual activation.
- Ensure smoke or fire detectors or other automatic mechanisms cannot discharge halogenated agent.

The MAJCOM fire protection engineering office may direct disabling the system and disposing of the agent.

4.1.2. Mission Support Equipment.

4.1.2.1. Definition: Electronic equipment important to an individual unit or to base operations, but without direct and immediate impact on combat mission capability.

Examples:

- most base computers and training devices.
- most special/unique assets such as supercomputers.

NOTE: Mission support equipment usually is kept in a computer room or other designated electronic equipment space. Most has backup computing/operational capability available within 24 to 48 hours.

4.1.2.2. Requirement.

- Disable the system.
- Dispose of the agent IAW the latest Air Staff/MAJCOM guidance.

On a case-by-case basis, the MAJCOM fire protection engineering office may authorize retaining the system and placing it on manual activation.

4.1.3. Incidental Equipment.

4.1.3.1. Definition: Other electronic equipment including (but not limited to):

- word processing stations, printers, and systems.
- typewriters.
- microcomputers.
- office automation systems.
- individual data output stations (such as printers).
- individual computer work stations.
- telephones.
- video conferencing centers.
- administrative telephone switching systems.
- reproduction equipment.

NOTE: Electronic equipment outside a computer room or other designated electronic equipment space usually is incidental equipment.

4.1.3.2. Requirement.

- Disable the system.
- Dispose of the agent IAW the latest Air Staff/MAJCOM guidance.

Hardware may be removed at the discretion of the MAJCOM.

4.2. Systems Remaining on Manual Activation. Program these systems for removal and upgrade facilities to comply with ETL 93-5. Renovate or modify facilities IAW the following:

Priority #1: Facilities with mission essential equipment.

Priority #2: Facilities with mission support equipment of \$2 million or more in value.

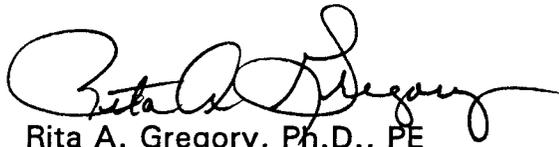
Priority #3: Facilities with other mission support equipment.

4.3. New/Replacement Gaseous Systems (Using Either Halogenated or Nonhalogenated Agents). Use of these systems is prohibited. Do not specify or purchase. They include:

- total flooding systems;
- local application systems;
- specialized systems such as self-contained fire detection/suppression systems for equipment enclosures.

NOTE: No proposed substitute chemical yet has met Air Force requirements. HQ AFCES/DFE monitors development of gaseous, nonhalogenated fire suppression agents for possible future use.

5. Point of Contact: Mr. Fred K. Walker, HQ AFCESA/ENM,
DSN 523-6315, commercial (904) 283-6315, or FAX 523-6499.

A handwritten signature in black ink, appearing to read "Rita A. Gregory". The signature is fluid and cursive, with the first name "Rita" being the most prominent.

Rita A. Gregory, Ph.D., PE
Director of Systems Engineering

- 2 Atch
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- 2. ETL Index

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ENGINEERING TECHNICAL LETTERS (ETL)

SECTION A - CURRENT ETLs

ETL Number	Title	Date Issued
83-1	Design of Control Systems for HVAC Change No. 1 to ETL 83-1, U.S. Air Force Standardized Heating, Ventilating & Air Conditioning (HVAC) Control Systems	16 Feb 83 22 Jul 87
83-3	Interior Wiring Systems, AFM 88-15, Para 7-3	2 Mar 83
83-4	EMCS Data Transmission Media (DTM) Consolidations	3 Apr 83
83-7	Plumbing, AFM 88-8, Chapter 4	30 Aug 83
83-8	Use of Air-to-Air Unitary Heat Pumps	15 Sep 83
83-9	Insulation	14 Nov 83
84-7	MCP Energy Conservation Investment Program (ECIP)	13 Jun 84
84-10	Air Force Building Construction and the Use of Termiticides	1 Aug 84
86-2	Energy Management and Control Systems (EMCS)	5 Feb 86
86-4	Paints and Protective Coatings	12 May 86
86-5	Fuels Use Criteria for Air Force Construction	22 May 86
86-8	Aqueous Film Forming Foam Waste Discharge Retention and Disposal	4 Jun 86
86-9	Lodging Facility Design Guide	4 Jun 86
86-10	Antiterrorism Planning and Design Guidance	13 Jun 86
86-14	Solar Applications	15 Oct 86
86-16	Direct Digital Control Heating, Ventilation, and Air Conditioning Systems	9 Dec 86
87-1	Lead Ban Requirements of Drinking Water	15 Jan 87
87-2	Volatile Organic Compounds	4 Mar 87
87-9	Prewiring	21 Oct 87
88-2	Photovoltaic Applications	21 Jan 88
88-3	Design Standards for Critical Facilities	15 Jun 88
88-4	Reliability & Maintainability (R&M) Design Checklist	24 Jun 88
88-6	Heat Distribution Systems Outside of Buildings	1 Aug 88
88-9	Radon Reduction in New Facility Construction	7 Oct 88
89-2	Standard Guidelines for Submission of Facility Operating and Maintenance Manuals	23 May 89
89-6	Power Conditioning and Continuation Interfacing Equipment (PCCIE) in the Military Construction Program (MCP)	7 Sep 89

ENGINEERING TECHNICAL LETTERS (ETL)

SECTION A - CURRENT ETLs

ETL Number	Title	Date Issued
89-7	Design of Air Force Courtrooms	29 Sep 89
90-1	Built-Up Roof (BUR) Repair/Replacement Guide Specification	23 Jan 90
90-2	General Policy for Prewired Workstations and Systems Furniture	26 Jan 90
90-3	TEMPEST Protection for Facilities Change 1 Ref: HQ USAF/LEEDE Ltr dated 20 April 90, Same Subject	23 Mar 90
90-5	Fuel and Lube Oil Bulk Storage Capacity for Emergency Generators	26 Jul 90
90-6	Electrical System Grounding, Static Grounding and Lightning Protection	3 Oct 90
90-7	Air Force Interior Design Policy	12 Oct 90
90-8	Guide Specifications for Ethylene Propylene Diene Monomer (EPDM) Roofing	17 Oct 90
90-9	Fire Protection Engineering Criteria for Aircraft Maintenance, Servicing, and Storage Facilities	2 Nov 90
90-10	Commissioning of Heating, Ventilating, and Air Conditioning (HVAC) Systems Guide Specification	17 Oct 90
91-1	Fire Protection Engineering Criteria Testing Halon Fire Suppression Systems	2 Jan 91
91-2	High Altitude Electromagnetic Pulse (HEMP) Hardening in Facilities	4 Mar 91
91-4	Site Selection Criteria for Fire Protection Training Areas	14 Jun 91
91-6	Cathodic Protection	3 Jul 91
91-7	Chlorofluorocarbon (CFC) Limitation in \Heating, Ventilating and Air-Conditioning (HVAC) Systems	21 Aug 91
93-1	Construction Signs	11 Mar 93
93-2	Dormitory Criteria for Humid Areas	13 Jul 93
93-3	Inventory, Screening, Prioritization, and Evaluation of Existing Buildings for Seismic Risk	18 Aug 93
93-4	Fire Protection Engineering Criteria - Automatic Sprinkler Systems in Military Family Housing (MFH)	11 Aug 93
93-5	Fire Protection Engineering Criteria - Electronic Equipment Installations	22 Dec 93

ENGINEERING TECHNICAL LETTERS (ETL)

SECTION A - CURRENT ETLs

ETL Number	Title	Date Issued
94-1	Standard Airfield Pavement Marking Schemes	5 Apr 94
94-2	Utility Meters in New and Renovated Facilities	10 Jun 94
94-3	Air Force Carpet Standard	10 Jun 94
94-4	Energy Usage Criteria for Facilities in the Military Construction Program	19 Aug 94
94-5	Fire Protection Engineering Criteria and Technical Guidance - Emergency Lighting and Marking of Exits	8 Nov 94
94-6	Fire Protection Engineering Criteria and Technical Guidance - Removal of Halogenated Agent Fire Suppression Systems	5 Dec 94

ENGINEERING TECHNICAL LETTERS (ETL)

SECTION B - OBSOLETE ETLs

ETL Number	Date	Status
82-1	10 Nov 82	Superseded by ETLs 83-10, 86-1, 87-4
82-2	10 Nov 82	Superseded by AFEPPI 88-10
82-3	10 Nov 82	Superseded by ETLs 83-5, 84-2
82-4	10 Nov 82	Superseded by ETL 84-7
82-5	10 Nov 82	Superseded by ETLs 84-1, 86-13, 86-14
82-6	30 Dec 82	Cancelled
82-7	30 Nov 82	Cancelled
83-2	16 Feb 83	Superseded by ETL 84-3
83-5	5 May 83	Superseded by ETL 84-2
83-6	24 May 83	Cancelled
83-10	28 Nov 83	Superseded by ETL 86-1
84-1	18 Jan 84	Superseded by ETL 86-14
84-2	27 Mar 84	Superseded by ETL 94-4
84-3	21 Mar 84	Cancelled
84-4	10 Apr 84	Superseded by ETLs 86-7, 86-15, 87-5
84-5	7 May 84	Superseded by ETLs 84-8, 86-11, 86-18, 88-6
84-6	Not Issued	Cancelled/Not Used
84-8	19 Jun 84	Superseded by ETL 86-11
84-9	5 Jul 84	Superseded by ETL 88-7
88-5	2 Aug 88	Superseded by ETL 91-6
86-1	3 Feb 86	Superseded by ETL 87-7
86-3	21 Feb 86	Superseded by ETL 86-4
86-6	3 Jun 86	Superseded by ETLs 86-11, 86-18, 88-6
86-7	3 Jun 86	Superseded by ETL 86-15
86-11	3 Jul 86	Superseded by ETL 88-6
86-12	3 Jul 86	Superseded by ETL 90-2
86-13	18 Aug 86	Superseded by ETL 86-14
86-15	13 Nov 86	Superseded by ETL 87-5
86-17	17 Dec 86	Superseded by ETL 89-6
86-18	18 Dec 86	Superseded by ETL 88-6
87-3	12 Mar 87	Superseded by ETLs 87-6, ETL 88-5
87-4	13 Mar 87	Superseded by ETL 94-4
87-5	13 July 87	Superseded by ETL 94-2
87-6	21 Aug 87	Superseded by ETL 88-5
87-7	14 Oct 87	Superseded by ETL 89-1
87-8	19 Oct 87	Superseded by ETL 90-1
88-1	5 Jan 88	Superseded by ETL 89-2
88-5	2 Aug 88	Superseded by ETL 91-6

ENGINEERING TECHNICAL LETTERS (ETL)

SECTION B - OBSOLETE ETLs

ETL Number	Date	Status
88-7	24 Aug 88	Superseded by ETLs 90-3, 91-2
88-8	4 Oct 88	Superseded by ETL 91-7
88-10	29 Dec 88	Cancelled
89-1	6 Feb 89	Superseded by ETL 90-4
89-3	9 Jun 89	Superseded by ETL 93-5
89-4	6 Jul 89	Cancelled
89-5		Issued as ETL 90-7
90-4	24 May 90	Cancelled
91-3	14 Jun 91	Superseded by MIL HDBK 1008B, Jan 94
91-5	18 Jun 91	Superseded by ETL 94-5
91-8	24 Sep 91	Cancelled

CONSTRUCTION TECHNICAL LETTERS (CTL)

SECTION C - CURRENT CTLs

CTL Number	Title	Date Issued
88-2	DD Form 1354 Checklist	6 Jan 88
88-7	Constructibility Review Checklist	1 Nov 88
89-1	Thirty-Percent Design Submittal	10 Apr 89
89-2	MAJCOM Construction Management	30 May 89
89-3	Warranty and Guarantee Program	22 Sep 89
90-1	Management of the MILCON Planning and Execution Process	6 Mar 90
90-2	Definitions for Design Milestones	13 Mar 90

SECTION D - OBSOLETE CTLs

CTL Number	Status
87-1	Superseded by CTL 88-3
88-1	Superseded by CTL 90-1
88-3	Superseded by ETL
88-4	Replaced by Electronic Data File and Documentation in PDC/WIMS
88-5	Superseded by CTL 90-2
88-6	Issuance Cancelled