

7 JUL 95

MEMORANDUM

From: Engineer-In-Charge of Controls and Utilities/Industrial Facilities Criteria, NAVFAC
Criteria Office (Code 15C)

To: Distribution

Subj: COORDINATION OF INTERIM TECHNICAL GUIDANCE - ASHRAE STANDARD
15 (DRAFT)

Encl: (1) ASHRAE Standard 15, Interim Technical Guidance (ITG) (Draft)
(2) NAVFAC Form 11012/9 (5-90), "Engineering and Design Criteria Review"
comment sheet

1. Enclosure (1) is forwarded for your review and comment or concurrence. Please provide comments using enclosure (2). Local reproduction of additional copies of enclosure (2) is authorized if required. An electronic copy of enclosure (2) is available from this office.
2. An essential comment covers requirements or provisions which need to be adopted or reconciled if the document is to be usable by the commenting activity. Please provide specific comments and accompany them with reasons to assist in their understanding and resolution. Editorial and format comments will be considered as suggested comments.
3. To facilitate completion of the document on schedule, response should be received not later than 30 August 1995. Please fax or eMail your response to:

Tom Harris
NAVFAC Criteria Office
Fax: 804-444-9892 (804-322-4416 after 28 July 1995)
Phone: 804-444-9843/DSN 564-9843 (804-322-4206/DSN 262-4206 after 28 July 1995)
Internet address: harris@efdlant.navfac.navy.mil

4. Your assistance is appreciated. Questions concerning this document should be addressed to me at DSN 564-9843/804-444-9843 (DSN 262 4206/804-322-4206 after 28 July 1995).

T. J. HARRIS, P.E.

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From: Commander, Naval Facilities Engineering Command, NAVFAC Criteria Office (Code 15C)
To: Distribution

Subj: ASHRAE STANDARD 15, INTERIM TECHNICAL GUIDANCE (ITG)

Ref: (a) Design Manual 3.03, Heating, Ventilation, Air Conditioning, and Dehumidifying Systems, Jan 87
(b) Design Manual 3.4, Refrigeration Systems for Cold Storage, Oct 81
(c) NFGS-11400, Food Service Equipment, Mar 95
(d) NFGS-15530, Refrigerant Piping, Mar 95
(e) NFGS-15652, Central Refrigeration Equipment for Air Conditioning, Mar 95
(f) NFGS-15654, Refrigeration Equipment for Cold Storage, Mar 95
(g) NFGS-15780, Packaged Air Conditioning Units, Mar 95

Encl: (1) Design Guidance for Compliance with ASHRAE Standard 15-1995, Safety Code for Mechanical Refrigeration

1. Purpose. To provide interim technical guidance for modifications to existing facilities and design of new facilities containing mechanical refrigeration equipment. The guidance may be retained for record purposes until it is incorporated into the criteria as noted in paragraph 4.

2. Background. The American Society of Heating, Refrigeration, and Air Conditioning Engineers has revised their Standard 15, Safety Code for Mechanical Refrigeration, dated 1994. The Navy refers to this code in the documents listed as references (a) through (g) above. The Standard establishes safeguards for life, limb, health, and property, and prescribes safety standards.

3. Technical Guidance. Enclosure (1) is the new Design Guidance for Compliance with ASHRAE Standard 15 - 1994, Safety Code for Mechanical Refrigeration, which is applicable to all sites containing mechanical refrigeration equipment subject to Standard 15.

4. Action.

a. Construction. Modify Navy projects currently under construction and amend advertised construction projects to conform to the enclosed guidance where funds and schedule permit.

b. Design. Design all projects using this guidance. Revise all projects under design, but not yet completed, to comply with the guidance, where funds and schedule permit.

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c. Criteria. The NAVFAC Criteria Office: Revise the appropriate sections of references (a) and (b), MIL-HDBK-1003/8A and DM 3-04 documents, as required, in time for the first quarter 1996 issue of the Construction Criteria Base (CCB) CD-ROM.

d. Guidespecs. The NAVFAC Guidespec Office: Revise the appropriate sections of references (c) through (e) documents, as required, in time for first quarter 1996 issue of the Construction Criteria Base (CCB) CD-ROM.

5. Points of Contact. For additional information concerning ASHRAE Standard 15, the following points of contact are provided: NAVFAC Criteria Office - Mr. Thomas J. Harris, P.E. at DSN 564-9843, commercial 804-444-9843, FAX at 9892, (DSN 262-4206, commercial 804-322-4206, FAX 4416 after 28 July 1995) or via Internet at harris@efdlant.navy.mil; and Guide Specifications Division - Mr. F. Deleon at DSN 551-5743, commercial 805-982-5743.

P. N. BOLTON
By direction

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**DESIGN GUIDANCE FOR COMPLIANCE WITH
ASHRAE STANDARD 15 - 1994
SAFETY CODE FOR MECHANICAL REFRIGERATION**

1. NEW FACILITIES: Fully comply with all provisions of ASHRAE STD 15-94, except as noted below for self-contained breathing apparatus.

2. ALL EXISTING FACILITIES: Modify as soon as possible to provide the following:

a. For all installed refrigerant pressure-relief valves, rupture members (refrigerant blow-out disks), and fusible plugs that discharge to the atmosphere, pipe the outlet directly to the exterior of the building. Do not exceed the maximum length of discharge piping allowed. The point of discharge shall be not less than 15 feet above the adjoining ground level and not within 20 feet from any window, ventilation opening, or exit in any building.

Protect personnel from the direct spray of discharged refrigerant. Protect the discharge end of the piping from entry of foreign material, debris, or precipitation. Protect the inlet end of the discharge piping from plugging by the operation of the rupture device or fusible plug components.

Do not discharge any refrigerant into the mechanical room or any other enclosed space; except systems containing less than 6.6 pounds of Group A2, B1, or B2 refrigerants, and systems containing less than 110 pounds of Group A1 refrigerants may discharge into the refrigeration machinery room.

Pipe all purge unit discharge outlets in a similar manner.

b. Provide the required refrigerant monitor and alarm system. Locate the refrigerant detector in an area where refrigerant from a leak will concentrate. Note that all commonly used refrigerants, except ammonia (R-717), are heavier than air. A refrigerant monitor is not required for ammonia (R-717) systems, since ammonia has a self-alarming odor, but may be provided.

The alarm shall actuate at a value not greater than the TLV-TWA for the refrigerant, as determined by the American Conference of Governmental and Industrial Hygienists, and shall energize the existing mechanical ventilation system, at its highest capacity, to exhaust the accumulation of refrigerant

c. Provide a schematic drawing of each refrigeration system containing more than 55 pounds of refrigerant. Provide emergency shutdown procedures, points of contact for service, and points of contact for notification of reportable incidents. Post a copy of these in a conspicuous location near each compressor, and post a copy immediately outside the door of the refrigeration machinery room.

3. EXISTING FACILITIES UNDER RENOVATION, OR MODIFICATION: Comply with requirements in paragraph 2 for existing facilities. Fully comply with all provisions of ASHRAE STD 15-94, except as noted below for self-contained breathing apparatus, when making the following modifications:

a. Replacing the existing refrigerant with a different number designation refrigerant, per ASHRAE Standard 34.

b. Replacing an existing refrigeration machine with one of larger capacity.

c. Modifying the refrigeration machinery room size ; or modifying or replacing the refrigeration machinery room ventilation system.

4. Test all refrigerant detectors, alarms, and mechanical ventilation systems for proper operation in accordance with the manufacturers' instructions. Perform the tests as required by competent authority, but not less than at quarterly (three months) intervals.

5. SELF-CONTAINED BREATHING APPARATUS (SCBA): **DO NOT** provide SCBA for mechanical refrigeration rooms, unless there will be a full time standing watch in the room. Provide, and maintain current, SCBA training for watchstanders, where there is a full time standing watch.

a. The fire department or hazardous material spill response team answering an alarm call will have SCBA available. If they need assistance in securing any equipment, they will be able to outfit the refrigeration mechanic with SCBA and provide trained escorts to accompany the refrigeration mechanic into the hazardous atmosphere.

b. It is deemed too dangerous to allow untrained personnel to don SCBA equipment and venture into a known hazardous atmosphere. For that reason, the Navy has elected to not provide the SCBA, since there would be no control over who might don the SCBA and attempt to enter the room.