



LE-MAKING ORDER
(RCW 34.05.360)

CR-103 (4/25/96)

Agency: State Building Code Council

- Permanent Rule
- Emergency Rule
- Expedited Repeal

(1) Date of adoption: December 4, 1996

(2) Purpose: Emergency adoption of amendments to the 1994 Editions of the Uniform Mechanical Code, Sections 1118 and 1119, and the Uniform Fire Code, Sections 6308 and 6309, relating to the discharge of ammonia refrigerant.

(3) Citation of existing rules affected by this order:

Repealed:

Amended: WAC 51-32 and 51-34

Suspended:

(4) Statutory authority for adoption: RCW 19.27.074

Other authority:

PERMANENT RULE ONLY

Adopted under notice filed as WSR _____ on _____ (date).

Describe any changes other than editing from proposed to adopted version:

EMERGENCY RULE ONLY

Under RCW 34.05.350 the agency for good cause finds:

- (a) That immediate adoption, amendment, or repeal of a rule is necessary for the preservation of the public health, safety, or general welfare, and that observing the time requirements of notice and opportunity to comment upon adoption of a permanent rule would be contrary to the public interest.
- (b) That state or federal law or federal rule or a federal deadline for state receipt of federal funds requires immediate adoption of a rule.

Reasons for this finding: Please see attached

EXPEDITED REPEAL ONLY

Under Preproposal Statement of Inquiry filed as WSR _____ on _____ (date).

(5.3) Any other findings required by other provisions of law as precondition to adoption or effectiveness of rule?

- Yes
 - No
- If Yes, explain:

(6) Effective date of rule:

Permanent Rules
or Expedited Repeal

- 31 days after filing
- Other (specify) _____ *

Emergency Rules

- Immediately
- Later (specify) _____

*(If less than 31 days after filing, specific finding in 5.3 under RCW 34.05.380(3) is required)

CODE REVISER USE ONLY

CODE REVISER'S OFFICE
STATE OF WASHINGTON
FILED

DEC 11 1996

TIME: 11:08
WSR: 97-01-042

NAME (TYPE OR PRINT)

James R. Beaver

SIGNATURE

TITLE

Chair

DATE

Dec. 4, 1996

**Note: If any category is left blank, it will be calculated as zero.
No descriptive text.**

Count by whole WAC sections only, from the WAC number through the history note.
A section may be counted in more than one category.

The number of sections adopted in order to comply with:

Federal statute:	New ____	Amended ____	Repealed ____
Federal rules or standards:	New ____	Amended ____	Repealed ____
Recently enacted state statutes:	New ____	Amended ____	Repealed ____

The number of sections adopted at the request of a nongovernmental entity:

New ____ Amended ____ Repealed ____

The number of sections adopted on the agency's own initiative:

New ____ Amended ____ Repealed ____

The number of sections adopted in order to clarify, streamline, or reform agency procedures:

New ____ Amended ____ Repealed ____

The number of sections adopted using:

Negotiated rule making:	New ____	Amended ____	Repealed ____
Pilot rule making:	New ____	Amended ____	Repealed ____
Other alternative rule making:	New <u>4</u>	Amended ____	Repealed ____

DECLARATION OF EMERGENCY AND FINDINGS TO SUPPORT EMERGENCY RULEMAKING

The State Building Code Council (Council), based on the following good cause, finds that an emergency affecting the general welfare of the state of Washington exists. The Council further finds that immediate amendment of certain Council rules is necessary for the public welfare and that observing the time requirements of notice and opportunity to comment would be contrary to the public interest.

The declaration of emergency affecting the general welfare of the state of Washington is based on the following findings:

The Washington State amendments to the Uniform Mechanical Code (UMC) and Uniform Fire Code (UFC) contained herein as adopted by the Council under emergency rulemaking pursuant to RCW 34.05.350, will provide economic relief to the agricultural industry by allowing alternative methods of ammonia discharge treatment in cold storage facilities. Immediate adoption of this amendment is necessary so as to not delay the construction of cold storage facilities, and so as not to adversely affect the position of the state's agricultural industry in the marketplace.

Under rules contained in the 1994 UMC and 1994 UFC, mechanical system requirements for ammonia discharge treatment would result in undue expense. The Council finds this to be an economic burden on the agricultural industry, which will result in an increase in cost of fruits, vegetables and other products which are dependent upon cold storage. This increased cost would inhibit the ability of the state's agricultural industry to compete in the national and international markets, and would create higher food costs for this state's consumers, and would put this season's crop at risk.

The Council appointed a Technical Advisory Group (TAG) comprised of building officials, fire officials, members of the agricultural industry, mechanical systems engineers, cold storage facility owners and operators, and chaired by the Council's Fire Chief representative. The TAG developed the language in the amendment contained herein. This amendment takes into consideration the health and safety of the public. In order to provide immediate relief, the Council finds it necessary to adopt the amendment as an emergency rule. The Council also has taken the necessary steps to adopt a permanent rule. The permanent rule will not be effective until the end of the 1997 legislative session as per RCW 19.27.074.

The Council process for amendment of this rule was initiated by the action of the 1996 legislature and Governor Mike Lowry. The 1996 legislature passed by unanimous vote Substitute House Bill 2936. The language of the bill is as follows:

“AN ACT Relating to fruit and vegetable storage; adding a new section to chapter 19.27 RCW.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF WASHINGTON:

NEW SECTION. **Sec. 1.** A new section is added to chapter 19.27 RCW to read as follows:

(1) Cold storage warehouses and controlled atmosphere storage warehouses used to store fruit or vegetables are not required to comply with any requirements of sections 1118 and 1119 of the uniform mechanical code, as adopted by the state building code council, or sections 6308 and 6309 of the uniform fire code, as adopted by the state building code council, or with any requirements of local amendments adopted to these sections of the uniform mechanical code and uniform fire code.

(2) The state building code council shall adopt rules consistent with this section.”

Governor Mike Lowry, on March 30, 1996, vetoed the bill, with the provision that the Council “take appropriate action immediately” to resolve this issue. The veto message reads as follows:

“I am returning herewith, without my approval, Substitute House Bill No. 2936 entitled:

‘AN ACT Relating to fruit and vegetable storage;’

Substitute House Bill No. 2936 attempts to resolve a highly complex and technical issue regarding regulation of ammonia refrigerants. It would exempt refrigeration systems using ammonia in cold storage and controlled atmosphere warehouses used to store fruit and vegetables from certain portions of the Uniform Mechanical Code and the Uniform Fire Code, as adopted by the Building Code Council.

In general, I believe the interests of the public and of the legislature are best served if these issues are handled through the Building Code

Council. The council has a grasp of the technical issues associated with code policies that neither the legislature nor the governor possess. The Building Code Council was, in fact, created to minimize the need to address highly technical building code issues in the legislative arena. The existing process should be used.

Process notwithstanding, I am not convinced that the health and safety of the public will be adequately protected if Substitute House Bill No. 2936 become law. If these types of refrigeration systems are exempt from code requirements, densely populated areas could be exposed to an unacceptable risk of ammonia gas releases in case of fire or other mishap.

However, I do not believe the specific mitigation that has been required in some instances under the 1994 Building Code is necessary to protect the health and safety of the public. In rural, sparsely populated areas of the state, sparsely populated by definition, a release of ammonia into the atmosphere would not seem to pose a hazard in many instances.

I believe that an opportunity exists to address the concerns which resulted in this bill and to ensure that public safety issues receive adequate attention in the state building code. Therefore, I am directing the Building Code Council to examine the issues raised in this legislation and to take appropriate action immediately to include drafting amendments to the current state mechanical and fire codes.

I am impressed by the fruit and vegetable storage industry's 95 year record of safe use of ammonia as a refrigerant. This record should be considered as the Building Code Council and other interested parties proceed to examine this issue.

For these reasons, I have vetoed Substitute House Bill No. 2936 in its entirety."

The Washington State amendments adopted by this emergency rule will allow for other viable alternatives to be submitted to the building and fire officials for consideration when new cold storage systems are being constructed.

The Council therefore adopts emergency rules under RCW 34.05.350 Emergency Rules and Amendments, which are proposed in Attachment 2.

Uniform Mechanical Code, Sections 1118 and 1119

WAC 51-32-1118 – Special Discharge Requirements

1118.1 General. Systems containing other than Group A1 or B1 refrigerants shall discharge to atmosphere only through an approved flaring device. For treatment system requirements, see also the Fire Code.

Exceptions:

1. Ammonia systems complying with Section 1119.
2. Ammonia absorption systems serving a single dwelling unit.
3. When the building official determines upon review of a rational engineering analysis that significant fire, health or environmental hazard would not result from the proposed atmospheric release.
4. Lithium bromide absorption system using water as the refrigerant.

1118.2 Design Requirements. Flaring devices shall be designed to incinerate the entire discharge. The products of refrigerant incineration shall not pose health or environmental hazards. Incineration shall be automatic upon initiation of discharge, shall be designed to prevent blowback and shall not expose structures or materials to threat of fire. Standby fuel, such as LP-gas, and standby power shall have the capacity to operate for one and one half the required time for complete incineration of the charge.

1118.3 Testing. Flaring systems shall be tested to demonstrate their safety and effectiveness. A report from an approved agency shall be submitted detailing the emission products from the system as installed.

WAC 51-32-1119 – Ammonia Discharge

Emergency discharge for ammonia refrigeration systems shall be in accordance with either Section 1119.1 or Section 1119.2.

1119.1 Ammonia systems shall be provided with an emergency discharge into a tank of water provided exclusively for ammonia absorption. Such systems shall meet national standards.

Exception: An emergency discharge is not required for ammonia-water absorption unit systems installed outdoors provided that the discharge is shielded and dispersed.

1119.2 Ammonia discharge to atmosphere without a flaring device is allowed unless the Building Official, upon review of the permit application and submittals, finds that such a discharge method may reasonably result in discharge of concentrations exceeding 500 ppm at grade level and present a significant life hazard to exposed occupancies. The Building Official may require an approved engineering analysis showing that:

Concentrations exceeding 500 ppm at grade level do not present a significant life hazard to exposed occupancies.

The engineering analysis may include the following:

1. Quantity and rate of material expected to be discharged.
2. Weather conditions such as wind speed, wind direction, humidity, and temperature inversion.
3. Emergency response planning.
4. Design benefits limiting discharge.

Uniform Fire Code, Sections 6308 and 6309

WAC 51-34-6308 – Special Discharge Requirements

6308.1 General.

6308.1.1 Applicability. Refrigeration systems which are designed to discharge refrigerant vapor to atmosphere shall be provided with an approved treatment or flaring system when required by Section 6308.1. Also see Section 6314.1.

- Exceptions:**
1. Ammonia systems complying with Section 6309.
 2. Ammonia absorption systems serving a single dwelling unit.
 3. When the building official determines upon review of a rational engineering analysis that significant fire, health or environmental hazard would not result from the proposed atmospheric release.
 4. Lithium bromide absorption system using water as the refrigerant.

6308.1.2 Toxic and highly toxic refrigerants. Systems containing refrigerants which are toxic or highly toxic shall discharge vapor to atmosphere only through an approved treatment system. Treatment systems shall be in accordance with Sections 8003.3.1.3.5.1, 8003.3.1.3.5.2 and 8003.3.1.3.5.3.

6308.1.3 Flammable refrigerants. Systems containing refrigerants which are flammable shall discharge vapor to the atmosphere only through an approved treatment or flaring system. Flaring systems shall be in accordance with Section 6308.2.

6308.2 Flaring System Design Requirements. Flaring systems for incineration of flammable refrigerants shall be designed to incinerate the entire discharge. The products of refrigerant incineration shall not pose health or environmental hazards. Incineration shall be automatic upon initiation of discharge, shall be designed to prevent blowback, and shall not expose structures or materials to threat of fire. Standby fuel, such as LP-gas, and standby power shall have the capacity to operate for one and one half the required time for complete incineration of refrigerant in the system.

WAC 51-34-6309 – Ammonia Discharge

Emergency discharge for ammonia refrigeration systems shall be in accordance with either Section 6309.1 or Section 6309.2.

6309.1 Ammonia refrigeration systems shall be provided with an emergency discharge into a tank of water provided exclusively for ammonia absorption. Such systems shall meet national standards.

Exception: An emergency discharge is not required for ammonia-water absorption unit systems installed outdoors provided that the discharge is shielded and dispersed.

6309.2 Ammonia discharge to atmosphere without a flaring device is allowed unless the Chief, upon review of the permit application and submittals, finds that such a discharge method may reasonably result in discharge of concentrations exceeding 500 ppm at grade level and present a significant life hazard to exposed occupancies. The Chief may require an approved engineering analysis showing that:

Concentrations exceeding 500 ppm at grade level do not present a significant life hazard to exposed occupancies.

The engineering analysis may include the following:

1. Quantity and rate of material expected to be discharged.
2. Weather conditions such as wind speed, wind direction, humidity, and temperature inversion.
3. Emergency response planning.
4. Design benefits limiting discharge.