ALASKA LEGISLATURE COMMITTEE FILES 1993-1994 8672

8251 SENATE COMMUNITY & REGIONAL AFFAIRS

Senator Randy Phillips
State Capitol
Juneau, Alaska 99801-1182

Certified designs shall conform in all respects to the design which was certified by test. Any design modifications must be authorized by the Laboratories before any such modified models may be offered for sale or lease, or sold or leased, while bearing any marking indicating certification.

The Laboratories' control of certified designs generally ends when the product is released from the factory. The product is then only considered design certified if installed and operated in an application of its intended usage an. in accordance with the authorized manufacturer's installation instructions. The installation and operating instructions are reviewed and documented as part of the Laboratories' Certification Program.

Also enclosed with this letter is a copy of the July 1992 issue of the A.G.A. Directory for your reference. Please note subscription information is provided inside the back cover should you be interested.

I hope this provides sufficient information concerning the safety aspects of unvented gas-fired appliances. However, please feel free to contact me for any additional information I can provide.

Sincerely,

Thomas C. Clark

THOMAS C. CLARK
Manager
Quality Assurance

Encls.

Recognition and Accreditation

A.G.A. Laboratories is widely recognized for its Certification Programs. Products which are design certified by the Laboratories are recognized as safe for their intended installation and usage by consumers and local, state and area jurisdictional code/regulatory authorities. Consumers and regulatory authorities have developed confidence in the experience and reputation of the Laboratories' Certification Program as well as the integrity of the Certification Seal and Symbol. A.G.A. Laboratories are accredited or otherwise accepted for certification testing of appliances and accessories by a number of cities, states, and code authorities as follows:

American National Standards Institute (ANSI)
Occupational Safety and Health Administration (NRTL)
National Evaluation Services, Inc. (NES)
International Conference of Building Officials (ICBO)
Building Officials and Code Administrators International, Inc. (BOCA)
Southern Building Code Congress International, Inc. (SBCCI)
California Energy Commission (CEC)
International Association of Plumbing and Mechanical Officials (IAPMO)
American Society for Testing and Materials (ASTM)
South Coast Air Quality Management District (California)
Recreation Vehicle Industry Association (RVIA)
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Middle Department Inspection Agency, Inc.
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City of Chicago, IL
City of San Francisco, CA
City of Cleveland, OH
City of Burbank, CA
City of Ft. Lauderdale

In its March 5, 1993, Federal Register notice, the FTC proposes to exempt unvented heaters fueled by natural gas, propane and kerosene from its Appliance Labeling Rule. The FTC's reasoning is that "because all models are 100% efficient, and because there is no significant difference in operating cost among similarly sized models, labels disclosing costs would not help consumers make purchasing decisions." (page 12828) The FTC also makes the following statement regarding labeling of vented heaters:

> "The Commission exempted the category of vented heaters (all fuel types) during the original rulemaking proceeding. The Commission finds that the present record does not contain sufficient justification for reversing that decision." (page 12828, footnote 102)

Joseph M. Mattingly
Director of Government Affairs
and General Counsel

JMM:gjr-1
Attachment (delegate's copy only)

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CONTEMPORARY
VENT-FREE GAS-FIRED SPACE HEATERS

I. OBJECTIVE

This paper is intended to provide current, accurate information about contemporary vent-free (unvented) gas space heaters in order to clear up outdated misconceptions about the operation and safety of this type of heating equipment.

II. BACKGROUND

A. The Product

Vent-free gas space heaters differ from central heating in that they do not use heating ducts, do not require a chimney or vent, and are located in the space to be heated.

These space heaters operate on natural gas or propane. They may be permanently installed as free-standing or wall mounted units. They are available in heat outputs from 7,000 to 40,000 Btu/hr. with most models having adjustable heat ranges. Both radiant and convective heating types are available.

B. The History

Vent-free gas-fired space heaters have long been used successfully for residential space heating in the southern part of the United States where the mild climate does not make central heating a necessity.

However, some states and localities within the country have not permitted the use of vent-free gas-fired space heaters for any purpose. These restrictions undoubtedly are based on past experiences with outdated types of heaters which did not have the features, labeling and design safeguards that are now incorporated in contemporary products.

This is particularly unfortunate today since the costs of heating with central equipment have risen so sharply in recent years. When a space heater is used for supplementary or zone heating, home heating costs can be reduced, and gas is less costly than both electricity and kerosene.

Today's vent-free gas-fired space heater bears little resemblance to that used 30, 20 or even 10 years ago. There have been significant technological advances and, equally important, the national safety standard has been continuously updated to insure a safe product.

Therefore, these products, as designed and manufactured today, deserve to be recognized for the safe economical source of heat that they are and accepted in all states and local areas.

III. BENEFITS

A. Efficiency

Since there is no heat lost through a vent, the efficiency of vent-free gas-fired space heaters is nearly 100%. In fact, the U.S. Department of Energy's Test Procedures for Unvented Home Heating Equipment, issued March 28, 1984, assign a 100% fuel efficiency to vent-free gas-fired space heaters.

B. Operating Cost

In its February 29, 1988 Federal Register notice, the Federal Trade Commission provided information on costs for the various fuels as noted below. In its comparison of 1988 national average prices of electricity versus gas in

dollars per million Btu's, natural gas and LP-gas are shown to be clearly superior economically for heating.

TYPE OF ENERGY	IN COMMON TERMS	DOLLARS PER MILLION BTU'S
Electricity	8.0 cents/kWh	$23.56
Natural Gas	56.2 cents/therm or $5.80/MCF	5.62
Propane	70.0 cents/gallon	7.69

According to these figures, the cost to heat a space with a gas space heater would be less than a third of the cost to heat the space with an electric space heater.

C. Installation

The simple permanent installation avoids those potential fire hazards associated with portable heaters. Not only is the expense of a vent or chimney avoided, but also the problems of blockage or leaks.

IV. SAFETY

An analysis of the latest statistics (1986) compiled by the U.S. Consumer Product Safety Commission (CPSC) reveals that of the total 150,000 fires involving space heating equipment of all types (i.e., electric, coal, gas, etc.), gas-fired space heaters accounted for only 3%.

This exemplary record of minimal accident reports related to gas-fired heating equipment is not purely coincidental. The strict adherence of manufacturers to national safety standards for gas heating equipment is the major contributor to this excellent safety record.

A. Safety Standard

For many years, the American National Standards Institute has maintained a safety and performance standard for vent-free gas-fired space heaters under the nomenclature of ANS Z21.11.2. This standard is constantly upgraded to provided the highest degree of safety possible, based on the state-of-the-art technology. All listed or certified products sold in the U.S. must be tested to this standard.

The following are some of the revisions that have been incorporated into the American National Standard since 1975:

1. Reduction of surface temperatures to minimize the potential for contact burns. This provision eliminated from the marketplace all the extremely low priced heaters, commonly referred to as bathroom heaters, which were the major cause of incidents.

2. Automatic ignition and safety shutoff devices for safer starting and operation.

3. Pressure regulator which prevents over-firing in case of increased gas pressure.

4. Surface guarding to minimize accidental contact with parts of the heater which could accidentally ignite fabric.

5. A warning label on the front of the heater which is clearly visible from 5 feet away stating: "CAUTION: Hot while in operation. Do not touch. Keep children, clothing and furniture away."

6. Wall and floor temperature limits during heater operation were established as well as maximum output temperature at the discharge air opening.

7. Oxygen depletion safety shutoff system (ODS) is required for all vent-free gas space heaters.

There are a total of 19 major performance test requirements including carbon monoxide in the current standard.

B. U.S. Consumer Product Safety Commission

The CPSC has been actively monitoring the improvements in the standards for unvented gas-fired space heaters. In 1974, CPSC began an extensive study of this product since it had received a petition to develop a mandatory safety standard for all types of space heaters, electric, oil, gas, etc. CPSC decided not to proceed with the development of a mandatory standard for unvented gas-fired space heaters because it found that there was an extremely high degree of compliance with voluntary standards, and that the standards had been revised as outlined above to address more adequately the majority of identified risks. Another risk, that of carbon monoxide, led to the CPSC proposal in 1978 to ban unvented gas-fired space heaters. The proposed ban was then withdrawn in favor of mandatory use of an oxygen depletion sensing (ODS) system. In 1980, a CPSC issued a mandatory regulation which required that all unvented gas-fired space heaters be equipped with the ODS capable of shutting off the gas supply to the heater when the oxygen in the surrounding atmosphere is reduced to a level below 18%. The normal level of oxygen in the atmosphere is approximately 20.9%. Concurrently, the requirement for the ODS was made part of the American

National Standard for unvented gas-fired space heaters. In its issuance of the ODS requirement, CPSC provided substantial technical data supporting the 18% oxygen level cutoff point. The following is an excerpt from the September 17, 1980 Federal Register notice issued by CPSC on the ODS:

> "These data lead the Commission to the conclusion that an ODS which shuts off gas to the heater when surrounding oxygen is depleted to less than 18% would be adequate to address the acute hazard and thereby reduce the number of deaths from CO poisoning associated with unvented gas-fired space heaters. Further, since the ODS can be expected to effect a reduction in CO emissions by shutting off the gas supply, such a reduction can also help reduce levels of available CO that may present a chronic hazard.
>
> "Based on the available data the Commission has adopted, with nonmaterial modifications, the ODS provision of the ANSI standard which provides for shutoff at no less than 18% oxygen, when using the gas specified in the standard."

On November 23, 1984 CPSC revoked its ODS requirement, recognizing that the voluntary requirements in the American National Standard noted above require an ODS and that there is a high degree of compliance with this standard by the industry.

In an October 18, 1984 letter, Nancy Harvey Steorts, then Chairman of the CPSC, made the following statement regarding the ANS safety standard for unvented gas-fired space heaters:

"I would like to express my total agreement with you regarding the significant progress that has been made to improve the safety of unvented gas space heaters. Besides the work that has been done to reduce carbon monoxide poisonings, safety improvements to address the risk of contact burns, fires and explosions have been significant. I personally feel that the cooperative working relationship between the Commission staff and the ANSI subcommittees for gas-fired appliances is one of the best examples of industry and government working together for the safety of the consumer. I am certain that this positive relationship will continue."

C. The Oxygen Depletion Sensing (ODS) System

The following is a brief explanation of the operation of an ODS:

The ODS system consists basically of three components: a precisely designed pilot burner that provides regulation of flame characteristics, a thermocouple positioned in the mantle of the pilot flame and a safety shutoff valve. The pilot is designed to be stable within a very narrow operating range. The thermocouple responds to changes in the pilot flame characteristics and, when heated, generates a millivoltage across the solenoid which keeps the gas supply valve in the open position. If low levels of oxygen are present in the proximity of the ODS system,

the flame extinguishes. The loss of flame causes the thermocouple to cool which, in turn, reduces the millivoltage across the solenoid causing the gas valve to return to its normally closed position.

The Oxygen Depletion Sensing (ODS) System has been used extensively on vent-free gas-fired space heaters in Europe since 1961 and has an excellent record for both safety and reliability.

V. CODES AND STANDARDS

In the United States there are a variety of state and local building codes. Many of these codes are based on model codes adopted by five different model building code-making bodies:

- o National Fire Protection Association (NFPA)
- o Council of American Building Officials (CABO)
- o Southern Building Code Congress International (SBCCI)
- o Building Officials and Code Administrators International (BOCA)
- o International Conference of Building Officials (ICBO)

The following is a summary of the coverage concerning vent-free gas-fired space heaters:

NFPA 54 National Fuel Gas Code	The Code's only restrictions for vent-free gas space heaters are that they shall not be installed in sleeping quarters, bathrooms or institutions.

This code has been adopted by the American National Standards Institute as the National Fuel Gas Code, ANSI Z223.1.

CABO — The code allows vent-free fuel-fired space heaters equipped with ODS systems in one and two family dwellings.

SBCCI — Vent-free space heaters are permitted if they are listed, installed in accordance with their listing and the manufacturers' instructions, equipped with an ODS system, not installed in sleeping quarters and have less than 40,000 Btu/hr. input rating.

BOCA — Vent-free space heaters must be listed (or certified) by a recognized testing agency. There are no restrictions on use.

ICBO — Listed vent-free overhead space heaters are permitted for other than residential or institutional use.

VI. SUMMARY

Throughout this country, American consumers should have the opportunity to benefit from one of the most economical and safest sources of supplementary heat -- the vent-free gas-fired space heater.

FOR FURTHER INFORMATION, PLEASE CONTACT:

Jack P. Langmead, Vice President and Director of Technical Services

or

Joseph M. Mattingly, Director of Government Affairs

at

Gas Appliance Manufacturers Association
703-525-9565

ADDENDUM "A"

INCIDENT STATISTICS
1986, Latest Year Reported By The
Consumer Product Safety Commission

A. FIRE INCIDENTS

- Gas space heaters account for less than 3% of all heating equipment fires.

NATIONAL FIRE INCIDENT PROJECTIONS, 1986

Heater Types	Fires	Civilian Deaths	Civilian Injuries	Property Loss (Millions)
All*	150,000	640	2,380	$574.5
Wood/Coal Heaters	87,000	110	420	$188.9
Electric, Fixed and Portable (not including central heating)	5,700	150	240	$48.4
Gas, Fixed and Portable (not including central heating)	4,800	70	260	$44.8
Kerosene/Oil, Fixed and Portable (not including central heating)	3,400	100	310	$30.4

*The "All" category includes fixed and portable space heaters, central furnaces, water heaters, fireplaces, chimneys and other heating equipment using solid or liquid fuel, gas, electricity or other energy sources.

B. CONTACT BURNS

- Only 0.02% of all gas heaters in use resulted in contact burns in 1982 per CPSC estimates.
- The gas heater incident rate is 1/3 that of portable kerosene heaters, and 2/3 that of wood/coal stoves.

ADDENDUM "B"

VENT-FREE HEATER COMPARISON
GAS VS. PORTABLE KEROSENE

	GAS	KEROSENE
Comprehensive Safety Standard	Yes (ANSI-Z21.11.2-1983)	Yes (UL647)
Certified or Listed by Independent Nationally Recognized Laboratory	Yes	Yes
Surface Temperature Limit	Yes	Yes
Wall & Floor Temperature Limits	Yes	Yes
Clothing Ignition Safeguards	Yes	Yes
Permanent Installation	Yes	No
ODS Equipped	Yes	No
Safety Shutoffs	Yes	Yes

Note 1: The safety standard for vent-free gas space heaters is identical to the standard for vented gas space heaters pertaining to surface temperatures and fire safety.

Note 2: The following eight states have passed legislation since 1981 permitting the sale and use of listed portable kerosene heaters: Delaware, Maryland, New Hampshire, New York, Ohio, Rhode Island, South Dakota, and Washington.

AMERICAN NATIONAL STANDARD

GAS-FIRED ROOM HEATERS

Volume II, Unvented Room Heaters

Secretariat
AGA
American Gas Association
1515 Wilson Boulevard
Arlington, VA 22209

PREFACE

This publication represents a standard for safe operation, substantial and durable construction, and acceptable performance of gas-fired unvented room heaters. It is the result of years of experience in the manufacture, testing, installation, maintenance, inspection and research on appliances designed for the utilization of gas. There are risks of injury to persons inherent in some appliances that, if completely eliminated, would defeat the utility of the appliance. The provisions in this Standard are intended to reduce such risks while retaining the normal appliance.

Nothing in this standard is to be considered in any way as indicating a measure of quality beyond compliance with the provisions it contains. It is designed to allow compliance of unvented room heaters, the construction and performance of which may exceed the various provisions specified herein. In its preparation, full recognition has been given to possibilities of improvement through ingenuity of design. As progress takes place, revisions may become necessary. When they are believed desirable, recommendations should be forwarded to the Chairman of Accredited Standards Committee Z21, 8501 East Pleasant Valley Road, Cleveland, Ohio 44131.

Safe and satisfactory operation of a gas-fired unvented room heater depends to a great extent upon its proper installation, and it should be installed in accordance with the National Fuel Gas Code, ANSI Z223.1; manufacturers' installation instructions and local municipal codes.

Users of this American National Standard are advised that the devices/products/activities within its scope may be subject to regulation at the Federal, state or local level. Users are strongly urged to investigate this possibility through appropriate channels. In the event of a conflict with this standard, the Federal, state or local regulations should be followed.

CAUTION NOTICE: This American National Standard may be revised or withdrawn at any time. The procedures of the American National Standards Institute, Inc., require that action be taken to reaffirm, revise or withdraw this standard no later than five (5) years from the date of approval. Purchasers of American National Standards may receive current information on all standards by calling or writing the American National Standards Institute, Inc., 11 West 42nd Street, New York, N.Y. 10036, (212) 354-3300.

EFFECTIVE DATE: An organization using this standard for product evaluation as a part of its certification program will normally establish the date by which all products certified by that organization should comply with this standard.

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(Appointment Pending)

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(Appointment Pending)

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conducted. However, tests at normal inlet test pressure shall be conducted whenever tests at the increased inlet test pressure are specified.

2.3.2 The inlet test pressures specified in 2.3.1 shall be the pressures immediately ahead of all controls. The manifold pressure shall approximate that recommended by the manufacturer (see 1.14.4).

2.3.3 Unless otherwise specified herein, tests at increased input rate shall be conducted with the gas appliance pressure regulator adjusted to provide an increase in the input rate specified by the manufacturer of 12 percent for a room heater for use with natural, manufactured and mixed gases or LP gas-air mixtures, and 9 percent for an appliance for use with liquefied petroleum gases. When the regulator outlet pressure cannot be readily adjusted to obtain this increase in input rate, the regulator may be removed or blocked in the open position, or the inlet test pressure may be increased as necessary. (Also see 2.3.4.)

2.3.4 Burners shall be adjusted to their Btu ratings at normal inlet test pressure, unless otherwise specified herein. After the room heater has been operated for 15 minutes, starting with all parts at room temperature, the burner adjustments shall be within ± 5 percent of the manufacturer's specified hourly Btu input rating. When primary air control is provided, it shall be set to give a good flame at this adjustment and neither burner ratings nor primary air adjustments shall be changed during a series of tests on any one test gas. Any adjustment resulting in the deposit of carbon during any of the tests specified herein shall not be acceptable.

2.3.5 The minimum input rating for test purposes, on a room heater provided with a control which will reduce the input rating by automatic means, shall be 87 percent of the minimum input rating specified by the manufacturer. The manufacturer's specified minimum input rating shall not be less than 20 percent of the manufacturer's specified normal input rating.

2.4 COMBUSTION

2.4.1 A room heater shall not produce a concentration of carbon monoxide in excess of 0.02 percent in an air-free sample of the flue gases when the appliance is tested in a room with approximately a normal oxygen supply.

Method of Test

The burner and primary air adjustments shall be made in accordance with 2.3.4.

Means shall be employed to concentrate the flue gases by venting them through a single opening. Such means shall not affect secondary aeration. After the gas has been burning for at least 15 minutes at normal inlet test pressure, the appropriate test shall be conducted, as follows:

a. For an appliance equipped with an adjustable (limited adjustment) pressure regulator or an adjustable manual gas burner valve, or both, the manifold pressure of the appliance for use with natural, manufactured or mixed gases or LP gas-air mixtures shall be adjusted to a manifold pressure 50 percent below that obtained during burner adjustment; the manifold pressure of the appliance for use with liquefied petroleum gases shall be adjusted to 15 percent below that obtained during burner adjustment.

b. For an appliance equipped with a fixed setting pressure regulator and a nonadjustable manual gas valve incapable of adjustment to other than the full on or full off position, the test shall be conducted at reduced inlet test pressure for all test gases in accordance with 2.3.1.

Following a brief purge period (at least 2 minutes), samples of the flue gases shall be secured.

The manifold pressure shall then be adjusted to provide an input rate of 123 percent of the manufacturer's specified input rate for an appliance for use with natural, manufactured or mixed gases or LP gas-air mixtures and 109 percent of the manufacturer's specified input rate for an appliance for use with liquefied petroleum gases. Following a brief purge period (at least 2 minutes), another sample of the flue gases shall be secured. When the regulator outlet pressure cannot be adjusted readily, this increase in input rate may be obtained with the gas appliance pressure regulator removed or locked in its full open position.

On an appliance equipped with a power burner, an additional sample of the flue gases shall be secured with the appliance operating at normal inlet test pressure and the supply voltage reduced to 85 percent of the appliance rating plate voltage.

The samples secured shall be analyzed for carbon monoxide and carbon dioxide.

2.4.2 A room heater shall not produce carbon monoxide in excess of 0.025 percent in a room with no air changes occurring during combustion of the amount of gas necessary to reduce the oxygen content of the room to a quantity equal to 15.1 percent by volume, corrected to 60 F (15.5 °C) and 30.0 inches mercury column (101.3 kPa) pressure.

Method of Test

The burner and primary air adjustments shall be made in accordance with 2.3.4.

The oxygen depletion safety shutoff system shall be bypassed so it will not control gas flow.

The appliance shall be installed in a room constructed so as to prevent infiltration of air. The volume of the room shall be not less than 500 cubic feet (14.1 m^3) for a room heater having a normal input rate of 30,000 Btu per hour (8 792 W) or less and 1000 cubic feet (28.3 m^3) for a room heater having a normal input rate in excess of 30,000 Btu per hour (8 792 W). Air circulation within the room shall be provided so the atmosphere of the room is evenly mixed and shall not interfere with the operation of the appliance under test. Provision for measuring the average temperature of the room and for withdrawing samples of the atmosphere of the room shall also be provided.

The appliance shall be operated for 15 minutes with the door of the room open and the room completely ventilated. The door shall then be sealed and the ventilation stopped. The appliance shall be operated at the increased input rate specified in 2.4.1.

During the course of the test, oxygen, room temperature and carbon monoxide shall be monitored.

When percent oxygen by volume indicates that the total oxygen contained in the closed room is within + 0.5 percent of that amount contained in the room at a concentration of 15.1 percent by volume at 60 F (15.5 °C) and 30.0 inches mercury column (101.3 kPa) pressure, the test shall be terminated.

A sample withdrawn at the end of the test shall be analyzed for carbon monoxide and the increase in carbon monoxide concentration computed.

This test shall be repeated with the room heater operating at a manifold pressure 50 percent below that obtained during burner adjustment for appliances for use with natural, manufactured or mixed or LP gas-air mixtures; and 15 percent below that obtained during burner adjustment for appliances for use with liquefied petroleum gases.

2.4.3 A room heater for use with natural gas shall comply with 2.4.1 and 2.4.2 when readjusted, and reorificed if necessary, to obtain the manufacturer's specified input rating and operated with test Gas A at 4.0 inches water column (995 Pa) inlet test pressure.

When the manifold pressure at the 4.0 inches water column (995 Pa) inlet test pressure adjustment is not less than the manufacturer's specified manifold pressure, this test need not be conducted.

2.4.4 A room heater for use with manufactured gas shall comply with 2.4.1 and 2.4.2 when readjusted, reorificed if necessary, to obtain the manufacturer's specified input rating and operated with test Gas B at 2.0 inches water column (498 Pa) inlet test pressure.

This test need be conducted only when the manufacturer's specified manifold pressure is in excess of 2.0 inches water column (498 Pa). (See 1.20.2-d.)

2.5 BURNER OPERATING CHARACTERISTICS

2.5.1 Burner flames shall not flash back:

a. When turned on and off at the burner adjustment and inlet test pressures specified in 2.3.1;

b. When turned on and off at the 4.0 inches water column (995 Pa) inlet test pressure with test Gas A as specified in 2.4.3 when use with natural gas is desired (when the manifold pressure at the 4.0 inches water column (995 Pa) inlet test pressure is not less than the manufacturer's specified manifold pressure, this test need not be conducted);

c. When turned on and off at the 2.0 inches water column (498 Pa) inlet test pressure with test Gas B specified under 2.4.4 when use with manufactured gas is desired (when the manifold pressure at the 2.0 inches water column (498 Pa) inlet test pressure is not less than the manufacturer's specified manifold pressure, this test need not be conducted);

d. When the gas valve is adjusted to deliver 15 percent of the normal input rating;

e. When turned on and off at 87 percent of the lowest input rating if the room heater is equipped with an automatic modulating control which provides for ignition and operation at a reduced input rating; and

f. When adjusted to 87 percent of the lowest input rating if the room heater is equipped with an automatic modulating control which acts to reduce the input rating after ignition of the main burner gas, if this results in an input rating of less than 15 percent of the normal input rating.

These tests shall be conducted with the burner(s) both hot and cold.

2.5.2 Burner flames shall carry to all ports and burn on all ports.

Method of Test

After burner adjustment, the gas shall be shut off and the appliance allowed to cool to approximately room temperature.

The gas shall then be ignited at one point under the test conditions specified in 2.5.1-a, -b, -c and -e, and the flame travel and burning of gas at all burner ports noted.

An additional test shall be conducted under the test conditions specified in 2.4.1 and 2.4.2 and the burning of gas at all burner ports noted.

2.5.3 The arrangement of burners and ignition devices shall be such that the gas from any burner or combination of burners shall be effectively ignited without delayed ignition, flashback or danger to the room heater under the test conditions specified in 2.5.1-a, -b, -c and -e.

These tests shall be conducted with the burner(s) both hot and cold.

2.5.4 When ignition is made in a normal manner under the adjustment conditions specified in 2.5.1-a, -b, -c and -e, flames shall not flash outside the combustion space.

2.5.5 There shall be no back pressure at the burner mixer face under the test conditions specified in 2.5.1.

Method of Test

A flame shall be played on the mixer face in such a manner that any gas escaping from the mixer head would be ignited.

2.5.6 Burners and pilots shall ignite, operate and extinguish without undue noise under the adjustment conditions specified in 2.5.1.

2.5.7 Burner flames shall not flash back or become permanently extinguished when the front and sides of the room heater are subjected to a draft equivalent to a wind velocity of 3 miles per hour (1.34 m/s).

Method of Test

This test shall be conducted at normal inlet test pressure.

The wind shall be produced by a blower which delivers air through a 12-inch (305 mm) length of 5-inch (127 mm) diameter sheet-metal pipe having a sheet-metal orifice plate with a 3-inch (76.2 mm) diameter orifice fastened to its outlet end.

The point on the axis of the air stream 6 feet (1.83 m) from the orifice of the blower duct shall coincide with the midpoint of the plane of the burner surface containing the ports. When two or more burners are employed, the midpoint of the one nearest the front or side of the appliance shall be used. The appliance shall then be removed and the blower adjusted to produce a wind velocity of 3 miles per hour (1.34 m/s) as measured by the average of the readings taken with an anemometer at the midpoint of four 6-inch (152 mm) squares forming a plane area 1 square foot (0.09 m^2) at 90 degrees (1.57 rad) to the axis of the air stream and 6 feet (1.83 m) from the orifice. The appliance shall then be replaced in the identical position it initially occupied and a wind velocity of 3 miles per hour (1.34 m/s) directed alternately against the front and sides, or vice versa, of the appliance.

The same procedure shall be repeated for such locations of the blower around the appliance as may be necessary to determine satisfactory compliance with this provision.

Determinations shall be made at each position. Tests shall be of 2 minutes duration.

2.5.8 A room heater provided with a power burner or induced draft shall also comply with the

following tests when operated with the supply voltage adjusted to 85 percent and 110 percent of the appliance rating plate voltage. Unless otherwise specified, normal and reduced inlet test pressures at the burner adjustment specified in 2.3.4 shall be used.

a. Burners shall effectively ignite without delayed ignition or flashback.

b. Burners shall extinguish without flashback.

c. There shall be no back pressure at the burner mixer face.

d. There shall be no back pressure at the mixer face when an automatic control device for reduction of gas flow to a low rate operates in a normal manner at normal inlet test pressure.

2.6 PILOT OPERATING CHARACTERISTICS

2.6.1 The pilot(s) shall ignite the gas at the main burner(s) without delay.

2.6.2 A continuous pilot shall not be extinguished when the gas to the main burner(s) is turned on or off in a normal manner, either manually or by means of automatic devices.

2.6.3 The pilot(s) shall not deposit carbon during any test specified in this standard when adjusted according to the manufacturer's printed instructions.

2.6.4 A Bunsen-type pilot burner shall be constructed so ignition of the main burner gas occurs in a normal manner, even though the pilot is burning at the orifice. A pilot that cannot be made to flash back under any test conditions shall be considered as complying with this provision.

2.6.5 The pilot(s) shall be adequately protected against drafts.

Method of Test

The pilot(s) shall be ignited and operated at normal inlet test pressure for a period of 15 minutes.

A 3-mile-per-hour (1.34 m/s) wind shall be directed horizontally against the front and sides of the appliance, both on a plane with, and below, the pilot(s) by means of a fan or blower.

The pilot(s) shall not lift, flash back nor become extinguished during a period of 1 minute.

2.6.6 Remotely controlled pilot ignition systems employing electric pilot igniters shall be designed to prevent turning on the gas in the event the pilot(s) fails to ignite. Such systems shall comply with the applicable provisions specified herein for pilot burners and safety shutoff devices (see 2.7).

2.7 PILOT BURNERS AND SAFETY SHUTOFF DEVICES

2.7.1 Pilot burner and safety shutoff device assemblies shall comply with the applicable performance provisions of the Standard for Automatic Gas Ignition Systems and Components, ANSI Z21.20.

2.7.2 If a piezo-electric spark device is used for pilot burner ignition it shall comply with the applicable performance provisions of the Standard for Manually-Operated Piezo-Electric Spark Gas Ignition Systems and Components, ANSI Z21.77.

2.7.3 Oxygen depletion safety shutoff systems not used for main burner ignition shall comply with the applicable provisions of 2.9.

2.7.4 The pilot shall effect ignition of the gas at the main burner(s) under the following conditions. For purposes of this test, the control manufacturer's specified maximum flame failure response time for the automatic gas ignition system shall be used.

A pilot which becomes extinguished after having completed main burner ignition is considered as complying with this provision.

The following tests shall be conducted at normal inlet test pressure:

a. Single-Flame Pilot Burners (Pilot burners which produce a single flame with substantially uniform contour under turndown conditions.)

The pilot shall effect ignition of the gas within 4 seconds from the time that gas

is admitted to the main burner(s) when the pilot gas supply is reduced to an amount just sufficient to keep the valve of the safety shutoff device open or just above the point of flame extinction, whichever represents the higher pilot gas rate.

A flame can be considered as being equivalent to a substantially uniform contour flame if its deviation from uniform contour is occasioned by a flame baffle(s) or channel(s).

b. Multiflame Pilot Burners (Pilot burners which produce a flame(s) with substantial variation in contour under turndown conditions.)

The pilot shall effect ignition of the gas within 4 seconds from the time that gas is admitted to the main burner(s) when all the pilot burner ports, except those for heating the thermal element, are blocked and the pilot gas supply is reduced to an amount just sufficient to keep the valve of the safety shutoff device open, or just above the point of flame extinction, whichever represents the higher pilot gas rate.

The above test shall also be conducted under sufficient conditions of increased pilot burner input rating to determine that main burner ignition will take place within 4 seconds from the time that gas is admitted to the main burner(s) with the pilot burner input at any level from the turndown condition described above, up to and including that providing normal flow through the unblocked port(s) based on the manufacturer's specified normal input rating for the pilot.

c. Pilot Burner and Thermal Element Assemblies Which Supply Electrical Energy for an Automatic Control System.

When the thermal element is the only source of electric power for operation of the automatic valve, the tests under "a" and "b" above shall be conducted with the pilot adjusted to the minimum size (pull-in millivoltage) required to open the automatic valve. This test condition shall be based on the performance of the system when only the thermal element and automatic valve are present. Under these conditions, the pilot shall effect ignition of the gas within 4 seconds from the time the gas is admitted to the main burner(s).

Room thermostats and any other system components which may be changed or added shall be excluded during this test. When a multiflame pilot is provided, the tests outlined under "b" at increased pilot input ratings shall also be conducted.

d. Recycling Pilot Burners (Gas Ignited.)

In the case of pilot burners which operate every time the main burner is turned on or off, either manually or by automatic controls, the ignition flame(s) shall provide ignition of the gas within 4 seconds from the time gas is admitted to the main burner(s) when the gas supply to the ignition flame is just sufficient to light the gas at the thermal heating parts.

2.7.5 A room heater equipped with a control permitting ignition at less than full rate shall comply with 2.7.4 with the main burner gas input at full rate and at minimum turn-on rate.

2.7.6 The pilot burner of a safety shutoff device shall meet the provisions specified herein for pilots.

2.7.7 The time from initiation of pilot gas flow to proof of the ignition source shall not exceed 5 minutes, except that for a system which operates every time the main gas burner(s) with which it is used is turned on or off, the time shall not exceed $1\frac{1}{2}$ minutes.

In the case of a system requiring a manual operation to assume the "on" position, the time required for application of the manual operation shall not exceed $1\frac{1}{2}$ minutes, and this time plus the time from initiation of pilot gas flow to proof of the ignition source shall not exceed 5 minutes.

For purposes of this test, the control manufacturer's specified maximum flame-establishing period for the automatic gas ignition system shall be used.

Method of Test

This test shall be conducted at normal inlet test pressure. With the appliance at room temperature, the pilot gas shall be ignited and the time required for the ignition system to turn on the main gas supply noted.

2.7.8 When an interrupted ignition source is provided, the time required for the main burner flame to be proved from the initiation of main gas flow shall not exceed 90 seconds when the room heater is operated at normal inlet test pressure.

2.7.9 The time required for the automatic gas ignition system to shut off the gas supply following loss of the supervised flame shall not exceed 3 minutes.

For purposes of this test, the control manufacturer's specified maximum flame failure response time for the automatic gas ignition system shall be used.

Method of Test

The appliance shall be operated for 15 minutes at normal inlet test pressure. All gas shall then be turned off and the gas flow to a continuous or intermittent pilot immediately reestablished but not ignited. The combined flame failure response time and valve closing time shall not exceed 3 minutes. An interrupted pilot having a separate sensing device from that for the main burner flame shall also be tested by turning off all gas after the pilot has been proved but before the main burner gas is ignited. The gas flow to the interrupted pilot shall be immediately reestablished but not ignited. The combined flame failure response time and valve closing time shall not exceed 3 minutes.

2.7.10 If the time of operation for safety shutoff devices can be varied by means of an adjustment, this adjustment shall be the same throughout tests for compliance with 2.7.7, 2.7.8 and 2.7.9.

2.7.11 When the pilot acts both as the actuating medium of the safety shutoff device and as the means for igniting the gas at the main burner(s), the construction shall be such that in the event the pilot flashes back and burns at the orifice, the device shall operate either to shut off the main gas supply in accordance with the test specified in 2.7.9, or provide effective ignition of the gas at the main burner(s). A pilot that cannot be made to flash back under any test condition shall be considered as complying with this provision.

2.7.12 A standing pilot equipped with an automatic relight pilot system shall not cause excessive flame flashout or damage to the room heater.

For purposes of this test, the control manufacturer's specified maximum flame failure response time or minimum recycle time for the automatic gas ignition system shall be used.

Method of Test

The pilot igniter shall be rendered inoperative.

The appliance shall be instrumented with a sampling tube(s) to measure the gas-air ratio at various points in the appliance. This sampling tube(s) shall be connected to a gas-air analyzer coupled to a chart-type single-point recording potentiometer in order to produce a constant trace of the gas-air ratio at the sample point for sufficient time to allow a complete evaluation of the system. The gas-air ratio trace shall be developed with the appliance both hot and cold and with all test gases for which the appliance is tested. Supplemental natural gas tests with test Gas G need not be conducted.

Unburned gas shall be allowed to flow into the appliance for a time equivalent to the control manufacturer's specified maximum flame failure response time. Immediately following shutoff of the gas supply, an ignition cycle shall be initiated and the time at which the pilot igniter would normally be energized noted.

If the gas-air ratio at the time at which the pilot igniter would normally be energized does not exceed the lower explosive limit, the appliance shall be considered as complying with this provision. If this ratio is above the lower explosive limit, sufficient ignition tests shall be conducted between the time of energization of the ignition means and when the atmosphere of the appliance returns to below the lower explosive limit to determine that the automatic relight pilot system does not cause excessive flame flashout or damage to the appliance.

An appliance with a control system providing a purge period of 5 minutes or longer shall be considered as complying with this provision.

2.7.13 Temperatures of automatic gas ignition and safety shutoff devices shall not exceed those temperatures for which the devices are designed.

Method of Test

Thermocouples shall be peened into or brazed to the following points which are applicable to the component provided:

a. Pilot burner tip;

b. Pilot burner orifice fitting;

c. Electric igniter;

d. Flame sensor;

e. Surfaces of the hot and cold junction of thermoelectric types;

f. Valve body;

g. Electric switch;

h. Contact mechanism; and

i. Magnetic assembly.

The pilot(s) and main burner(s) shall be operated at normal inlet test pressure until equilibrium pilot burner temperatures have been attained, at which time the temperatures at the points listed above shall be recorded.

2.8 DIRECT IGNITION SYSTEMS

2.8.1 A direct ignition system shall provide a lockout timing of not more than 60 seconds and shall comply with the applicable performance provisions of the Standard for Automatic Gas Ignition Systems and Components, ANSI Z21.20. For test purposes the control manufacturer's specified maximum lockout time for the ignition system shall be used.

2.8.2 For systems which incorporate an ignition activation period (see Part IV, Definitions) the period of time between deactivation of the ignition means and the maximum lockout time shall not exceed 4 seconds.

2.8.3 The ignition system shall effect ignition of the gas at the main burner(s) immediately after gas reaches the main burner port(s) when operated at appliance rating plate voltage (see 1.20.14).

Method of Test

While maintaining appliance rating plate voltage to the appliance, the ignition system shall be placed in operation and ignition observed.

The procedure described above shall be repeated 25 times, and in each instance ignition shall occur immediately after gas reaches the main burner port(s).

2.8.4 The ignition system shall effectively ignite the main burner gas within 4 seconds after gas reaches the main burner port(s) when the ignition circuit is operated at 85 percent of appliance rating plate voltage.

Method of Test

While maintaining 85 percent of the appliance rating plate voltage to the appliance and all other electrical components, the appliance shall be placed in operation and ignition observed.

The procedure described above shall be repeated 25 times, and in each instance ignition shall occur within 4 seconds after gas reaches the main burner port(s).

2.8.5 With the room heater at equilibrium temperatures while operating at normal inlet test pressure, the time required for the main burner gas supply to be shut off in the event of flame outage during an operating cycle shall not exceed 90 seconds.

If the ignition means is reactivated, it shall be reenergized in not more than 0.8 second following flame outage, and the ignition means shall reignite the main burner gas without flame flashout or damage to the appliance. On an appliance where all air for combustion is supplied by mechanical means, the ignition means may be reactivated after a purge period (recycle time) sufficient to provide a minimum of four air changes of the combustion chamber and flue gas passageways. For purposes of this test, the control manufacturer's specified maximum flame failure response time shall be used.

If the ignition means is reactivated, the control manufacturer's specified maximum flame failure reignition time or minimum recycle time for the automatic gas ignition system shall be used.

2.8.6 The construction of the room heater and the arrangement of the ignition system shall be such that in the event of a delay in ignition of the main burner gas, such as might be caused by foreign debris or electrical shorting of the ignition means, the appliance will vent itself without excessive flame flashout or damage.

For purposes of this test, the control manufacturer's specified maximum lockout time for the automatic gas ignition system shall be used. For systems which deactivate the ignition means prior to the end of the lockout time, the

test shall be conducted using the control manufacturer's specified maximum ignition activation period timing.

Method of Test

This test shall be conducted at normal inlet test pressure with the appliance at room temperature. The appliance shall be placed in operation with the ignition means temporarily circumvented for varying intervals of time up to the control manufacturer's specified maximum lockout time or specified maximum ignition activation period, whichever is shorter. The resulting ignition in each trial shall be observed for excessive flame flashout or damage to the appliance.

2.8.7 Temperatures of automatic gas ignition and safety shutoff devices shall not exceed those temperatures for which the devices are designed when tested as specified in 2.7.13.

2.9 OXYGEN DEPLETION SAFETY SHUTOFF SYSTEMS

An oxygen depletion safety shutoff system shall act to shut off the gas to the main and pilot burners when the oxygen level in the surrounding atmosphere is reduced to not less than 18.0 percent.

Method of Test

This test shall be conducted at barometric pressures between 28.5 and 30.5 inches mercury column (96.2 to 103.0 kPa).

The burner and primary air adjustments shall be made in accordance with 2.3.4.

The appliance shall be installed in a 1000 cubic foot (28.3 m^3) room constructed so as to prevent infiltration of air. Provisions shall be made for the determination of room air temperature, carbon monoxide (CO) and carbon dioxide (CO_2) and/or oxygen (O_2) concentrations. Room air temperature shall be measured with at least 5 thermocouples at different levels and plan locations. The thermocouples shall be shielded from direct radiation from the appliance under test. Room atmosphere shall be sampled at the same locations. The average of 5 separate room atmosphere measurements, or a single measurement through the use of a manifold which mixes the samples, may be used.

Air circulation within the room shall be provided to evenly mix the atmosphere and not interfere with the operation of the appliance under test. The air will be considered evenly mixed when the temperature readings, as indicated by the 5 thermocouples in the room, do not differ by more than 5 F (3 °C) during the test.

The appliance shall be operated for 15 minutes with the door of the room open and the room completely ventilated. The door shall then be sealed and the ventilation stopped. The appliance shall be operated at normal inlet test pressure. During the conduct of this test, the room air temperature shall be maintained at 80 ± 5 F (26.5 ± 3 °C).

A sample of the room atmosphere shall be withdrawn at the start of the test and analyzed for CO_2 and O_2. The percent oxygen* in the room atmosphere shall be continuously monitored during the entire test. When the oxygen depletion shutoff system acts to shut off the gas supply to the appliance, the oxygen content of the room atmosphere, expressed in percent volume, shall not be less than 18.0 percent.

This test shall be repeated with the appliance rating at both the reduced and increased inlet test pressures specified in 2.3.1 with no change in adjustments.

The above tests shall be conducted with the type(s) of gas selected by the manufacturer.

2.10 MANUAL GAS VALVES

2.10.1 Manual gas valves shall comply with the applicable performance provisions of the Standard for Manually Operated Gas Valves for Appliances, Appliance Connector Valves and Hose End Valves, ANSI Z21.15.

2.10.2 Temperatures of manual gas valve bodies shall not exceed those for which the valves are designed.

Method of Test

This test shall be conducted as specified in 2.16.2 concurrently with the test specified in 2.15.

2.11 GAS APPLIANCE PRESSURE REGULATORS

2.11.1 Gas appliance pressure regulators shall comply with the applicable performance provisions of the Standard for Gas Appliance Pressure Regulators, ANSI Z21.18, and shall have a maximum regulation capacity (see Part IV, Definitions) as determined under that standard, at least equal to the manufacturer's total hourly Btu input rating for the room heater.

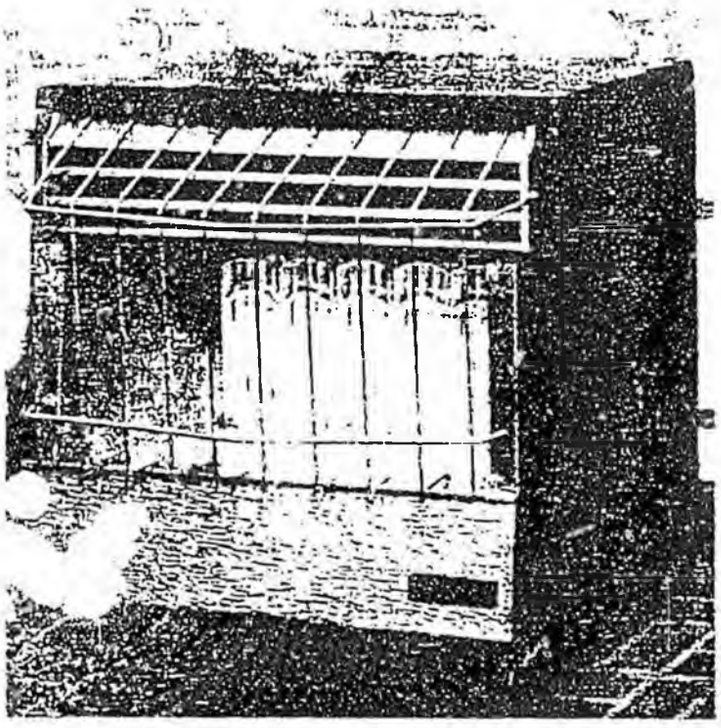
* As an alternate to monitoring oxygen concentration, carbon dioxide concentration may be monitored and converted to percentage oxygen by use of the graph or formulae shown in Appendix E.

UTILITIES THAT MERCHANDISE VENT-FREE APPLIANCES

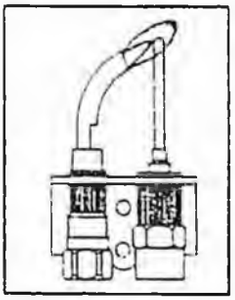
Atlanta Gas Light
Mississippi Valley
K N Energy
Piedmont
AlaGasCo
Roanoke Gas
Philadelphia Gas Works
South Jersey Gas
Virginia Natural
Entex
United Cities Gas
Peoples Gas-Florida
PS of N. Carolina
Mobile Gas Co
NC Natural
UGI
Peoples Gas-Iowa

Utility Companies marketing Unvented Heaters

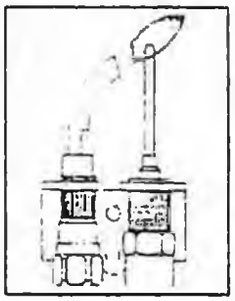
Industries introduces Unvented Gas Heaters with Oxygen Depletion Sensing Systems.



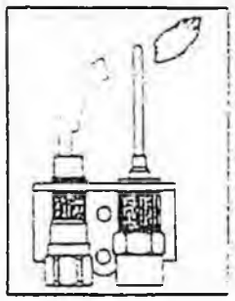
In the unlikely event of oxygen depletion, here's how the system works!



Oxygen in room normal at 20.9% level. Pilot flame stable. Speed of gas flow equals pilot flame speed.



Oxygen depletion begins—pilot flame speed slows and flame begins to move away from gas source. Thermocouple begins to cool.



As the oxygen level approaches 18%, flame becomes unstable, moves off of the thermocouple and pilot extinguishes un...

Safe, efficient zone heating without expensive venting.

new Unvented Gas Heaters are designed and built not only to deliver efficient, economical zone heating, but to be completely safe as well! Built into each unit is an innovative, highly reliable Oxygen Depletion Sensing System programmed to shut down the heater should room oxygen ever fall below completely safe levels.

Safer, more economical than kerosene heaters.

The safety of Unvented Gas Heaters is matched only by their economy. Because they burn natural or L.P. gas, there are no dangerous liquids to store. And you needn't be concerned about their tipping over or being placed too close to furniture or draperies. They emit neither smoke nor odor, require no continuous refueling. And they *save you money!*

FUEL TYPE	BTUs	COST	COST PER 100,000 BTUs PRODUCED*
Natural Gas	1050/cu. ft.	$5.01/1,000 cu. ft.	$ .48
Propane	91,500/gal.	$.70/gal.	$ .76
Kerosene	130,000/gal.	$1.50/gal.	$1.15

*Based on local fuel costs.

ODSS

Feb 10

TEMTEX PRODUCTS OF CALIFORNIA, INC.
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FACSIMILE Page 1 of 3

April 18, 1994

TO: Mel Krogseng FROM: Keith Kettler (303) 772-2430

Enclosed is a ruling from the Idaho Public Utilities Commission involving unvented heaters. The case involved two utility companies (Intermountain Gas and Washington Water Power) that tried to block these appliances in Idaho.

Although not specifically stated in the ruling, the basis of the PUC ruling was that a utility company's responsibility is to sell gas; their role is not to make judgements regarding what appliances are authorized to burn their gas. In most states, utility companies are supposed to report code violations to the appropriate authority. States and local communities are responsible for adopting and amending building codes to suit their needs and desires.

Regards,

KEITH KETTLER

Encls.

NOV 10 1992

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BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE PETITION OF HUNMAC SALES, INC., FOR AN ORDER EXEMPTING INTERMOUNTAIN GAS COMPANY FROM COMPLYING WITH SECTION 807(a) OF THE UNIFORM MECHANICAL CODE, ADOPTED BY REFERENCE IN IDAPA 31.I.2.3	CASE NO. INT-G-92-4
IN THE MATTER OF WHETHER THE IDAHO PUBLIC UTILITIES COMMISSION'S ADOPTION BY REFERENCE OF SECTION 807(c) OF THE UNIFORM MECHANICAL CODE IDAPA 31.I.2.3 SHOULD BE RESCINDED, AMENDED OR REVISED.	CASE NO. 31.I-R-92-1 GENERAL ORDER NO. 185B

This Commission has adopted by reference the 1988 version of the National Fuel Gas Code (NFGC), see IDAPA 31.I.2.2, and the 1988 version of the Uniform Mechanical Code (UMC), see IDAPA 31.I.2.3. Section 807(c) of the UMC prohibits the use of unvented fuel-burning room heaters in institutional or residential buildings. By contrast, sections 6.23 and 7.2.2 of the NFGC allow certain unvented room heaters in some rooms of residences. This difference in the two codes has raised questions regarding compliance with the codes. By this General Order, we qualify our adoption of UMC § 807(c) to allow the installation of unvented room heaters under the NFGC.

BACKGROUND

In General Order No. 185, issued July 22, 1991, we revised our adoption by reference of several national safety codes for electric and gas utilities effective September 1, 1991. In particular, General Order No. 185 adopted at IDAPA 31.I.2.2 the 1988 version of the National Fuel Gas Code, which is jointly published by the American Gas Association and the National Fire Protection Association. Earlier versions of that code had previously been adopted. It also adopted at IDAPA 31.I.2.3 the 1988 version of the Uniform Mechanical Code, which is jointly published by the International Conference of Building Officials and the International Association of Plumbing and Mechanical Officials. This was the first time we had adopted any version of the UMC.

THE COMMISSION'S DECISION

We modify our adoption of the Uniform Mechanical Code to add the following phrase qualifying our adoption of the code: "provided, however, effective January 1, 1993, that unvented room heaters not meeting the requirements of Section 807(c) of the Uniform Mechanical Code may be connected for service if they comply with Sections 6.23 and 7.2 of the National Fuel Gas Code." We do so for several reasons.

First, this relaxation of one of the requirements of UMC does not eliminate all requirements for the connection of unvented heaters. Unvented heaters must nevertheless comply with the NFGC, which is an ANSI standard. Second, Mountain Fuel Supply, the gas utility with the most experience with unvented gas heaters, supports their use. Mountain Fuel's reply comments explaining why it changed its stance from neutral to supportive of the use of unvented gas heaters are well taken. Third, given over thirty years of use of unvented gas heaters without any reports that those equipped with ODS shutoffs are not safe, we believe that unvented gas heaters may be safely installed and that, given this history of safe operation, considerations of consumer choice and consumer esthetics should predominate.

Our amendment to our adoption by reference of the Uniform Mechanical Code is shown in "legislative" format in Appendix A to this General Order and in "clean" format in Appendix B. We provide an effective date for this amendment of January 1, 1993.

Because we do not make the rule immediately effective, we grandfather the provision of gas service to customers with existing unvented gas heaters if those heaters meet the standards of the National Fuel Gas Code, which is an ANSI standard. This grandfathering will continue until January 1, 1993, when it will no longer be necessary because the change in the rules will bring the unvented gas heaters complying with the NFGC within the scope of the rule's approval.

Next, although we urge gas utilities as a precautionary matter to explain to customers connecting unvented gas heaters that those heaters may produce excess humidity and that those heaters should be regularly inspected and serviced, we do not place such a legal obligation on the gas utilities. The legal obligation for assuring the safety of the operation of the heater properly rests with vendors and/or manufacturers, not the serving utility.

KETTLER ENTEI

HOME OF THE VENT-FREE FI

HOME OF THE
VENT-FREE FIREPLACE

KETTLER ENTERPRISES
KEITH KETTLER

TEMCO Vent-Free Gas Logs and Fireplaces
2333 Judson Street - Longmont, CO 80501-1040
Phone or FAX (303) 772-2430

December 3, 1

Mr. Ed Oxborugh
ENSTAR
401 E. Intl. Airport Rd.
PO Box 1900288
Anchorage, AK 99519-0288

Dear Mr. Oxborugh:

Steve Nolan, from TEMCO fireplaces, asked me to send you some information about vent-free gas logs and fireplaces. As you know, TEMCO manufactures AGA listed vent-free gas logs and fireplaces that are distributed by Majestic Sales in Anchorage and approved by the Anchorage building department. There are now six manufacturers that have gained AGA listings for vent-free gas fireplace logs; in a year there will probably be at least ten.

The municipality of Anchorage has approved these products under the alternate materials clause of the UMC. The basis for this decision is that the long, safe track record of these appliances proves their equivalent safety to conventional vented appliances. Additionally, they are allowed by every national building code used in the US except ICBO. These include CABO, BOCA, SBCCI, and the National Fuel Gas Code.

The AGA has fully certified these vent-free gas logs and fireplaces for compliance with the ANSI Z21.11.2 standards. This standard requires meeting or exceeding 19 separate safety standards, one of which is a carbon monoxide standard that is one fourth that of a gas cook stove. It also requires an oxygen depletion sensor valve (ODS) which shuts off the gas supply if the oxygen level falls from its normal level of 20.9% to 18% (well above safe limits).

The ODS was introduced in the U.S. in 1980 and has revolutionized the safety of vent-free appliances. Since then, over 2,250,000 ODS-equipped appliances have been installed in American homes. CPSC data reveals they have not led to a single CO death. Perhaps this is why the CPSC has said for 10 years that the risk of CO poisoning is 6 times higher from a vented heater than from a vent-free heater (even without an ODS valve)!

I hope the enclosed information will help you, as a gas supplier, become more familiar with the products. Feel free to call me or Steve Nolan if you have any questions.

Sincerely,

KEITH KETTLER

Encls.
cc: Steve Nolan (TEMCO Fireplaces)
Jim Bergman (Majestic Sales)

Note: Chuck Buerlein has a set of vent-free gas logs in his home.

KETTLER ENTERPRISES

KEITH L. KETTLER

2333 Judson St.
Longmont, CO 80501-1040
(303) 772-2430

HOME OF THE VENT-FREE FIREPLACE

PURPOSE

- TO PRESENT FACTS ABOUT VENT-FREE GAS LOGS AND FIREPLACES

- TO ANSWER QUESTIONS ABOUT VENT-FREE GAS LOGS AND FIREPLACES

RECOMMENDATION

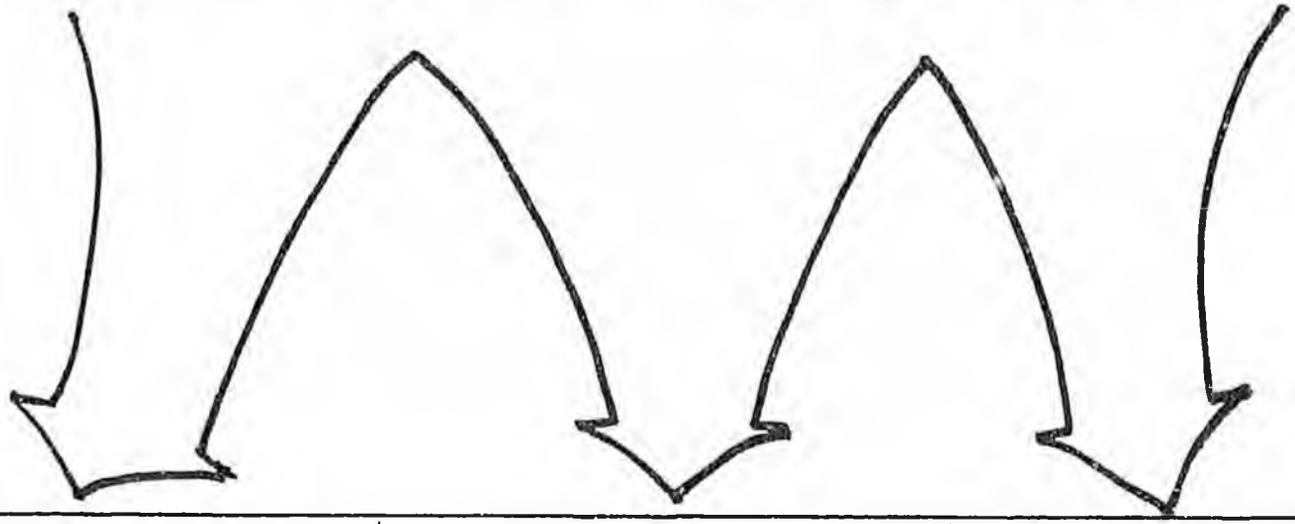
THAT YOU APPROVE THIS REQUEST TO INSTALL VENT-FREE GAS LOGS AND FIREPLACES IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

THIS IS NOT A SINGLE-MANUFACTURER ISSUE

- Appalachian Stove & Fabrication
- Fireplace Manufacturers Inc.
- DESA International
- Haugh's Products
- Buck Stove
- Rasmussen
- Uniflame
- Timberline
- Martin Industries Inc.
- Stamping Ground Tool & Die
- TEMTEX Products
- Majestic
- Portland Willamette
- Ready Built
- Superior
- Perfection

C.A.B.O.

Council of Am. Bldg. Officials



BOCA (20 STATES)	SBCCI (9 STATES)	ICBO (19 STATES)
Bldg. Officials & Code Administrators Intl.	Southern Bldg. Code Congress Intl.	Intl. Conf. of Bldg. Officials

WHAT DO CODE AGENCIES SAY?

- CABO (1992) SEC. M-1601
  DOES NOT REQUIRE VENT-FREE APPLIANCES TO BE VENTED TO THE OUTSIDE.
- BOCA (1993) SEC. M-1203.2
  A CHIMNEY OR VENT SHALL NOT BE REQUIRED FOR VENT-FREE APPLIANCES.
- SBCCI (1991) SEC. 505.1
  ALLOWS VENT-FREE ROOM HEATERS IF THEY ARE LISTED, INSTALLED I.A.W. THE MANUFACTURER'S INSTRUCTIONS, AND NOT INSTALLED IN SLEEPING QUARTERS.
- NATL. FUEL GAS CODES (1992) SEC 7.2.2
  ROOM HEATERS LISTED FOR UNVENTED USE ARE NOT REQUIRED TO BE VENTED.
- ICBO
  HASN'T APPROVED VENT-FREE HEATERS ... YET.

VENT-FREE
GAS LOGS/FIREPLACES

- CERTIFIED BY THE AGA FOR VENT-FREE USE.

- BURNS AT AN AMAZING 99.9% EFFICIENCY LEVEL.

- ABSOLUTELY SAFE. EQUIPPED WITH THE PATENTED ODS SHUTOFF SYSTEM.

FACTS ABOUT AMERICAN GAS ASSOCIATION (AGA) CERTIFICATION

- CERTIFIES THE DESIGN OF APPLIANCES FOR COMPLIANCE WITH THE REQUIREMENTS OF NATIONAL SAFETY TEST STANDARDS (ANSI Z21.11.2)
- DESIGN CERTIFICATION REQUIRES PASSING 19 SEPARATE SAFETY TESTS
- RECOGNIZED TESTING LABORATORY BY CABO, BOCA, SBCCI, AND ICBO
- ALL VENT-FREE GAS LOGS AND FIREPLACES ARE FULLY CERTIFIED BY AGA AS VENT-FREE APPLIANCES

SAFETY-RELATED FACTS

- CPSC SAYS THE CO RISK IS 6 TIMES HIGHER FROM A VENTED GAS HEATER THAN FROM A VENT-FREE GAS HEATER.

- CPSC, EPA, GAMA, AND THE GAS RESEARCH INSTITUTE HAVE STUDIED INDOOR AIR QUALITY AND RELATED HEALTH EFFECTS OF VENT-FREE GAS HEATERS FOR 10 YEARS AND HAVE ARRIVED AT NO NEGATIVE CONCLUSIONS.

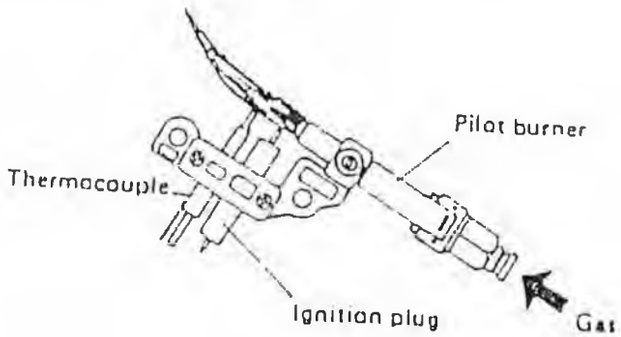
FACTS ABOUT OXYGEN DEPLETION SAFETY SHUTOFF SYSTEM (ODS)

- RECOGNIZED BY THE CPSC AS AN EFFECTIVE WAY TO ADDRESS THE RISK OF CARBON MONOXIDE POISONING
- DEVELOPED IN EUROPE IN 1961; INTRODUCED IN THE U.S. IN 1980 [30 MILLION SOLD IN EUROPE]
- OVER 2,600,000 ODS-EQUIPPED VENT-FREE GAS APPLIANCES SOLD IN THE U.S. SINCE 1981
- CPSC DATA REVEALS NO DEATHS DUE TO CARBON MONOXIDE POISONING FROM ODS-EQUIPPED APPLIANCES
- ALL VENT-FREE GAS LOGS AND FIREPLACES ARE EQUIPPED WITH THE ODS SHUTOFF SYSTEM

HOW DOES AN ODS WORK?

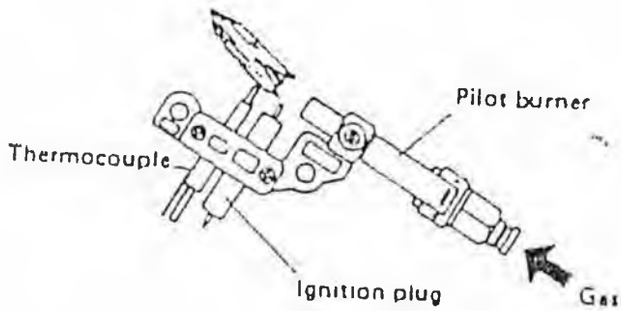
Normal Operation - 20.9% Oxygen

Pilot flame touches tip of thermocouple, generating the thermo-electricity needed to hold the safety valve open.



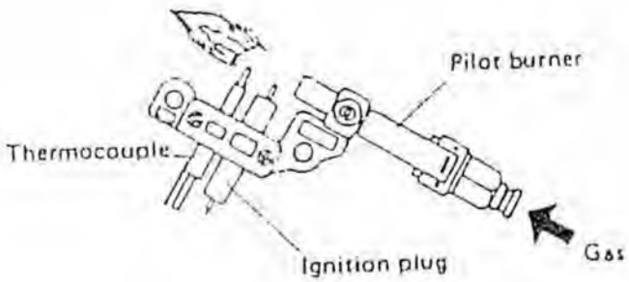
Oxygen Level Dropping - 19% Oxygen

The flame begins to lift-off the precision pilot burner. The termocouple begins to cool.



Safety Shutdown - 18% Oxygen

The unstable pilot flame moves away from the thermocouple causing the thermocouple to stop generating the electricity needed to hold the spring loaded safety valve open. The heater shuts down.



WHAT DOES A.G.A. SAY ABOUT ALTITUDE?

- ALTITUDE IS ACCOUNTED FOR IN THE ANSI STANDARD
- ALTITUDE HAS NO AFFECT ON SAFETY
- THE ODS WILL ENSURE SHUTDOWN IF OXYGEN LEVEL FALLS TO 18%

ENVIRONMENTAL CONSIDERATIONS

- PRODUCES VIRTUALLY NO CARBON MONOXIDE
- INDOOR AIR QUALITY IS EXCELLENT
- CONVERTS 99.9% OF EXPENDED FUEL TO HEAT

WHAT ABOUT OTHER GAS LOGS?

- CRUDE BURNING APPLIANCES
- PRODUCE LARGE AMOUNTS OF PARTICULATE MATTER AND CARBON MONOXIDE
- SOLD AS DECORATIVE LOGS
- REQUIRE LEAVING THE DAMPER WIDE OPEN
  - THE HEAT GOES UP THE CHIMNEY
  - THE COLD COMES DOWN THE CHIMNEY

REVIEW

- SAFETY AND RELIABILITY
  - AGA CERTIFIED
  - THE ODS IS RELIABLE
  - PROVEN SAFETY RECORD OVER MANY YEARS
  - APPROVED BY ALL MODEL CODES EXCEPT ICBO
- EFFICIENCY
  - BURNS AT AN AMAZING EFFICIENCY LEVEL OF 99.9%
  - HEATS THE HOME INSTEAD OF THE OUT-OF-DOORS

RECOMMENDATION

THAT YOU APPROVE THIS REQUEST TO INSTALL VENT-FREE GAS LOGS AND FIREPLACES IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

MEMORANDUM

DATE: FEBRUARY 1, 1994

TO: Senate Local Government and Taxation Committee

FROM: Phil Childers

The following information is to help clarify my proposed amendment to Section 39-4109, Idaho Code relating to vent-free gas logs and fireplaces in residences.

During the past 20 years, the decorative gas fireplace industry has perfected highly efficient, vent-free gas logs which are safe and effective. Because of the atmosphere these logs create, they can, and do, replace wasteful vented gas logs and inefficient wood fireplaces which create increasing environmental problems.

Yet despite these new technological advances and the obvious advantages of vent-free gas logs, these products are banned by the Uniform Mechanical Code (UMC) in residences. Unfortunately, this ban continues because of misunderstandings and, in some cases, unsupported prejudices, which in large part, are the result of old vent-free heating devices which were often dangerous. These old products are not even manufactured any more and bear little resemblance to the modern generation of vent-free gas logs.

Here are answers to frequently asked questions about vent-free gas logs.

QUESTION: Are vent-free Decorative Gas Logs safe?

ANSWER: YES! To produce and sell vent-free decorative gas logs in the United States, these products must conform to very strict standards set forth in ANSI Z21.11.2. These standards require that all products be equipped with an oxygen depletion sensor (ODS). These ODS valves will shut off the primary gas supply to the entire appliance long before dangerous levels of carbon monoxide can accumulate. Over the past thirty years, literally millions of these devices have been installed in the U.S. and Europe. At this point, there is not a single reported incident of serious poisoning or death as a result of these products. This safety record is unmatched by any other fuel burning device.

QUESTION: How does the ODS valve work and how can you be sure it will not fail?

ANSWER: The ODS valve is a non-adjustable, precise pilot flame which must be burning before gas is available to the appliance. The ODS system is virtually fail-safe because of two primary design features. First, the pre-set and precise tolerances of the valve will not allow the flame to burn when the oxygen level is below 18%, well above the critical point. Second, the normal position of the spring-loaded, main gas supply valve is off. Gas can only flow through the system when the ODS pilot is burning and providing the necessary electrical current to hold the main gas valve open. If anything goes wrong with the system, regardless of its source and the pilot is interrupted, the entire gas supply will be shut off

(over)

Common Questions & Answers

QUESTION: How do we ensure all vent-free decorative gas logs are equipped with ODS valves and meet the ANSI standards?

ANSWER: The ODS valve is a requirement of the ANSI standard the American Gas Association uses to certify the appliances. Building officials can rely on the AGA certification to assure these products are safe and properly manufactured, as they routinely do for other products.

QUESTION: How do we know these products have been properly tested?

ANSWER: These products have been extensively reviewed and tested by the Consumer Product Safety Commission and the National Bureau of Standards, both U.S. Government agencies, the American National Standards Institute, and the American Gas Association. All of these bodies have concluded that ODS-equipped vent-free gas logs are safe and pose no substantial risk to the consuming public.

QUESTION: Are these devices allowed by other code-writing agencies in the U.S. and abroad?

ANSWER: Yes. In fact, the UMC is the only widely-used code in the U.S. which does not allow these devices. These devices are approved by SBCCI, BOCA, CABO, and the National Fuel Gas Code. Additionally, ODS-equipped heating devices have been used in Europe for about 30 years. Use of these devices in other jurisdictions has created no reportable problems.

QUESTION: If these devices are so safe, why hasn't ICBO changed the UMC to allow them?

ANSWER: ICBO has given two reasons for not allowing vent-free gas logs:

1. The equivalent safety of an oxygen-depletion sensor to a conventional venting system which carries the products of combustion to the outside has not been established.
2. The condensation of water vapor (1.6 quarts per hour) at maximum burn (39,000 Btu/h) creates corrosion and potential structural damage problems.

The Gas Appliance Manufacturer's Association (GAMA) says they know of NO BASIS (scientific or historical) for either of the above stated reasons. The FACTS are:

1. In addition to the 30 million ODS-equipped appliances sold in Europe since 1961, there have now been over 2,250,000 sold in the US since 1981 without a single CO-related fatality.
2. In all of our work throughout the U.S. and Europe, we are not aware of any case where a vent-free appliance has caused corrosion or structural damage. The amount of water vapor created at the maximum burn rate is less than half that produced by a good home humidifier!

I hope the above questions and answers will help you evaluate the facts regarding vent-free gas logs. I also hope the debate over this issue can be based on the facts and specific evidence involved and not on misunderstandings and confusion connected with other outmoded products which bear no resemblance to these modern devices. It is simply wrong and unfair to continue a ban on these devices which is not supported by any evidence.

HEATWORKS INC.
P.O. BOX 771922
EAGLE RIVER, ALASKA 99577
907-694-4928
FAX-907 694-4928

TO: Senate Committee

ATTN. Pandy Phillips

FOLLOWING ARE BEING FAXED

Letter regarding House Bill No. 543 (STA).

TOTAL PAGES 1

FROM: Kit Dahlstrom
DATE: 4/18/94
TIME: 1:25

155 SOUTH SEWARD STREET
JUNEAU, ALASKA 99801

May 2, 1994

File No. 3700

Senator Randy Phillips, Chairman
Community and Regional Affairs Committee
Alaska State Senate

Dear Senator Phillips:

I would like to inform you of the City and Borough of Juneau's opposition to CS HB 543 (STA) concerning unvented gas heaters. As our Chief Building Inspector has explained in more detail in his letter to you, this bill would allow a potentially dangerous and damaging appliance which has purposely not been allowed in any of the model building codes in the United States to be used in Alaska.

Alaska is among the worst of locations to allow unvented gas heaters with our cold climate and resulting tight buildings where the opening of windows to allow escape of excess moisture and carbon monoxide is simply not feasible. Hopefully the Legislature will not override the concerns of municipalities in Alaska which oppose the use of this type of heating appliance. And, hopefully, the Legislature will not condone its use in the areas of the state without building and fire codes.

Thank you for your attention to our concerns.

Sincerely,

Mark R. Palesh
City Manager

Please call if Bill comes out of Committee

155 SOUTH SEWARD STREET
JUNEAU, ALASKA 99801

April 29, 1994

Senator Randy Phillips
Chairman, Community and Regional Affairs

CS HB 543 (STA) UNVENTED GAS SPACE HEATERS

After reviewing the information supplied by the proponents of this bill (manufacturers of gas appliances), I am compelled to voice my opposition to the use of unvented gas room heaters in Alaska.

As chief of building inspections for the City and Borough of Juneau for the past fifteen years, I have seen first hand the major damage caused to people's homes from the use of unvented water producing appliances such as clothes dryers and illegally installed unvented gas room heaters. These problems typically come to my attention when the homeowner complains of severe mold growth or obtains a permit to replace a floor, wall, or roof system which has failed due to rot of the wooden structure.

When an approved gas heater is vented, the carbon monoxide (CO) and water vapor produced during combustion go outside. With unvented appliances, however, those by-products of combustion go inside the house. The significance for Alaskans is that we have historically constructed very tight houses with little natural air leakage due to our cold climate. The pollutants from gas combustion therefore, reach higher concentrations inside our houses. The water vapor will then condense to a liquid inside the structure and cause damage on colder surfaces such as windows, skylights or poorly insulated areas.

Alaska's Building Energy Efficiency Standard is a model document in that it is a voluntary partnership among lenders, code officials, government, builders and the scientific/educational communities. It mandates low air infiltration construction practices and allows only vented gas appliances. As an instructor for the Alaska Craftsman Home Program (ACHP), I have also had the opportunity to teach building science technology throughout the State and at the University. My students intuitively grasped these physical laws of moisture control and the danger of poisoning the air inside our homes.

The manufacturer's instructions for these devices on the other hand, tell us that they're safe, just open a window during the winter while you use these heaters or you might experience property damage, explosion, injury or death. This caveat makes use of the heaters potentially more expensive to operate and less effective at providing comfort than vented heaters.

Contrary to the information supplied by the manufacturers, these devices are no longer approved by CABO (Council of American Building Officials) for use in one and two family dwellings. Prior code approval was removed in the 1992 edition and now only vented units may be installed.

These products have never been approved in Alaska and for good reason. There is overwhelming evidence to continue to restrict their use in residential installations in order to protect our property and the health and safety of our residents.

Sincerely,

Stephen O. Shows
Chief of Building Inspections

[hb543.044]

cc:
MEMBERS, ALASKA STATE SENATE
Tim Sullivan, Director, Alaska Craftsman Home Program
Rich Seifert, Energy Specialist, UAF/USDA CES
Steve Baden, Alaska Housing Finance Corp. Energy Programs
Ron Watts, Chief of inspections, Municipality of Anchoragge

04/26/94 PUBLIC OPINION MESSAGE SYSTEM POMS100
14:25:42 MEMBER OFFICE PHI Phillips LSNCAGA

From: Chief Dale M. Peters
PO Box 144

Naknek AK 99633 Tel: 246-4443
Bristol Bay Borough Fire Dept
NON CONSTITUENT Registered Voter Y
Bill# HB 543 Title: UNVENTED GAS HEATERS IN RESIDENTIAL BLDGS
Subject

OPPOSES THIS LEGISLATION
Message: DUE TO THE POSSIBILITY OF HIGHER LEVELS OF CARBON MONOXIDE BEING EMITTED FROM THIS APPLIANCE WHICH MAY POSE A VERY SERIOUS HEALTH AND LIFE SAFETY HAZARD WHEN INSTALLED IN RESIDENTIAL BUILDINGS. I FEEL THAT THIS IS A VERY SERIOUS ISSUE AND THAT IS WHY I AM OPPOSED TO THE BILL.

Entered By: LIOCPLW on 4/26/94 PomID 17677 Distribution 60
MSG:
Enter Next Message PF4 Menu PF6 WasteBasket PF7 Previous POM PF10 BigWaste

4BÜ X ë-ë27 LINE 1 COL 1

International Conference of Building Officials
International Association of Plumbing and Mechanical Officials

CERTIFIED
MECHANICAL INSPECTOR

SARA L. BOESSER

The individual named hereon has satisfactorily demonstrated knowledge of the Uniform Mechanical Code and its appropriate application by successfully completing the written examination prescribed and conducted as a joint effort of the International Conference of Building Officials and the International Association of Plumbing and Mechanical Officials.

Witnessed by our hand

this 21st *Day of* June 19 86

Certificate No. 18110

For the International Conference of Building Officials

James E. Gibbs
President

For the International Association of Plumbing & Mechanical Officials

Tom Higham
Executive Director

SARA L BOESSER
MECHANICAL INSPECTOR
1991 EDITION - UNIFORM MECHANICAL CODE
The individual named hereon is CERTIFIED in the category shown, having been so certified pursuant to successful completion of the prescribed written examination.
Expiration date: June 21, 1996
No. 18110
Sara L. Boesser
Not valid unless signed by certificate holder.
ICBO certification attests to competent knowledge of codes and standards.

Public Opinion Message

Title	First Name	Middle Name	Last Name	Suffix
	MICHAEL	ALBERT	HOLZMUELLER	

583 LONGSPUR LOOP, FAIRBANKS, ALASKA — Mailing Address — 99709 Zip

SAME — Home Address — Zip

479-6771 Telephone — ALASKA FIRE CHIEFS ASSOC. Affiliation

House Members					
Barnes		Hoffman#		Olberg#	
Brice		Hudson		Parnell	
Brown		James		Phillips	
Bunde		Kott		Porter	
Carney		Larson		Sanders	
Davidson		Mackie		Silton	
Davis B.		MacLean		Thernault	
Davis G		Menard		Ulmer	
Finkelstein		Moses		Vezey	
Foster		Mulder		Williams	
Green		Navarre		Willis	
Grussendon		Nicholia			
Hanley		Nordlunds			

Senate Members			
Adams	X	Lincoln#+	
Donley		Little	
Duncan		Miller+	
Ellis		Pearce	
Frank+		Phillips	X
Halford		Rieger	
Jacko		Salo	
Kertlula		Taylor	X
Leman	X	Zharoff	X

Caucuses	
Anchorage Caucus	
Fairbanks Caucus	
Mat-Su Caucus	
Bush Caucus	

Committees	
C&RA	S
Finance	
HESS	
Judiciary	
Labor & Comm	
Rules	
State Affairs	
Trans	

HB 543 — Bill#

Support [ ] oppose [X] Amend [ ]

Not Related [ ]

Subject

UNVENTED GAS SPACE HEATERS IN RESIDENTIAL BLDS.

50 Word Maximum Message

OSHA'S MAX LIMIT TO CARBON MONOXIDE (CO) IS 35ppm IN 8 HRS. UNVENTED GAS DEVICES CAN EMIT UP TO 200ppm. A RESIDENTS EXPOSURE WOULD BE GREATER THAN 8 HRS. CO IS CUMMULATIVE IN THE BODY. CO DD'S DO NOT SENSE LEVELS OF CO. ALASKAN HOMES ARE TIGHTLY SEALED AND DO NOT ALLOW FRESH AIR VENTILATION THAT IS REQUIRED BY THE DEVICE.

Date: April 25, 1994

Fax To: Senator Phillips
Chair, Community & Regional Affairs
Fax # 465-4979

From: Sara Boesser
Certified Mechanical Inspector
Box 34202
Juneau, AK 99803
Phone: 586-5230 (w)
Home fax: 789-7450

Total pages: 2

Regarding: **HB 543(STA) -- Do Not Pass this Potentially Deadly Bill**

Senator Phillips:

I am writing you to urge you in the strongest terms possible to NOT pass HB 543(STA). It would endanger many people's lives, by allowing unvented gas-fired appliances to be installed in residential (less than 4-unit) homes. If this is allowed, more people will get sick -- even die -- than if you leave state and local building codes untouched.

You will be lobbied to allow these heaters if the manufacturer's specs or ANSI allows them in residential buildings, despite the fact that the Uniform Mechanical Code, other applicable State Codes, and local Building Code adoptions specifically do not allow these units to be legally installed.

Those supporting these heaters will point out that when homeowners follow the manufacturer's labels and ANSI listing, that those warnings should be sufficient to provide safe use of these heaters.

But this is untrue. I am a certified mechanical inspector (International certification attached). I regularly inspect homes where these heaters have been installed illegally -- and I have never seen them used safely. Why? Because to prevent carbon monoxide poisoning, the manufacturer' label allows them in houses IF A WINDOW IS OPEN. The reality is, this type of heater is only auxiliary heat, used when it is so cold that regular heat sources cannot keep a home comfortable. Home owners just do not open a window when sub-freezing temperatures are driving their heat costs up.

The result? Up north several years ago, an entire family in a trailer suffered carbon monoxide poisoning due to an unvented gas appliance, and had to receive lengthy hospital treatment to recover. They were lucky to survive. A few of these appliances have a "safety" shut off that is supposed to kill the flame at specific low-oxygen points, but in the meantime abundant carbon monoxide fumes go directly into those houses too and are breathed by all present. With unvented residential gas appliances of any type, illness is frequent -- brain damage and even death can be the result in worst cases.

The manufacturer's small label is not sufficient protection from potentially deadly appliances. That is specifically why the national codes enforced in Alaska currently do not allow unvented home heaters.

Please, do not put peoples' lives in danger with passage of HB 543(STA).

Please soundly defeat HB543(STA).

Thank you,

Sara Boesser

ALASKA STATE MEDICAL ASSOCIATION

4107 Laurel Street • Anchorage, Alaska 99508-5334 • (907) 562-2662

April 22, 1994

Senator Randy Phillips
Alaska State Legislature
P. O. Box V (MS 3100)
Juneau, AK 99811

Dear Senator Phillips:

House Bill 543 is apparently now in your Community and Regional Affairs Committee. This bill would change the building code to allow unvented gas space heaters in residential buildings. One of our members, Dr. Mary Ellen Gordian, the medical officer for the Municipality of Anchorage, has grave concerns regarding the safety of unvented gas space heaters, especially with regards to emission of carbon monoxide and nitrogen dioxide. I would encourage you not to act on this bill until these safety questions have been answered.

If you have any questions regarding this bill, do not hesitate to contact me.

Sincerely yours,

Donald R. Lehmann, M.D., A.B.F.P.
President, Alaska Medical Association

DRL:bj

CITY OF PALMER

231 W. EVERGREEN AVE.
PALMER, ALASKA 99645

Phone (907) 745-3271

A HOME RULE CITY

April 20, 1994

The Honorable Randy Phillips, Chairman
Senate Community and Regional Affairs Committee
Alaska State Legislature
State Capitol (MS3100)
Juneau, AK 99801-1182

RE: HB543 (STA), An Act relating to unvented gas space heaters

Dear Senator Phillips:

The effect of House Bill 543 is to modify an internationally recognized standard (the Uniform Mechanical Code) for heating equipment, bypassing the experience and judgment of code enforcement personnel. In the past, other national organizations have written standards allowing for the use of equipment or materials that had not been adequately tested. You may remember the problems and subsequent recall of portable unvented kerosene heaters a few years ago.

I am concerned about the safe functioning of any unvented heating equipment used in Alaska's severe climate. With so many houses built or modified to be air-tight, obtaining fresh air for the occupants to breathe and heaters to burn requires permanent exterior openings. My 22 years of Alaskan experience in the design, construction and inspection of housing has been that, even knowing the necessity for the openings, the occupants will close those openings when conditions are cold or windy. The proven safety of approved heaters is certainly worth the minor cost increase.

The use of some types of unvented heaters is being considered by the Uniform Mechanical Code members. I think that Alaskans would be better served by allowing life safety decisions to be made by those organizations with the expertise and research capabilities upon which to base those decisions.

Sincerely,

Larry E. Teague

Larry E. Teague
Building Inspector

LET/jep

Work Phone: 745-3271
Home Phone: 694-2959

P.O. Box 770443
Eagle River, AK 99577

Senator Randy Phillips, Chairman
Senate Standing Committee, Community and Regional Affairs
Alaska State Legislature
State Capitol (MS 3100)
Juneau, AK 99801-1182

RE: House Bill 543

Randy:

It has come to my attention that the Senate Community and Regional Affairs Committee will be considering action on House Bill 543, in the near future. House Bill 543 amends the Uniform Mechanical Code adopted by the Department of Public Safety under A.S. 18.70.080 to allow the installation of unvented gas space heaters in residential buildings. I believe that such a code change may put the public at significant risk.

You are well aware that I am and have been employed by Enstar Natural Gas Company for over twenty years. During that time I have seen and heard of numerous carbon monoxide poisonings and a few untimely deaths as a result of equipment malfunctions, usually caused by do-it-yourselfers, from heating equipment which is inherently safer than the gas fired unvented space heater. I am, however, writing you not as a gas company employee, but rather as a personal friend and former constituent. My experiences give reason for personal concern for the safety and health of the people in our communities.

Normal oxygen content in the atmosphere is 20.9% or 209,000 parts per million (PPM). Carbon monoxide (CO), at levels of 100 PPM, which is .04% or .0004 can cause severe health problems to the human body. (As you can see, only a very small amount of CO in the atmosphere can be potentially life threatening.)

Unvented gas space heaters rely on the air in the room to provide oxygen for combustion. As the space heaters burn the gas and air, carbon dioxide and water are produced as by-products of combustion. In the tightly constructed homes in Alaska, air is not replaced quickly. As oxygen levels drop, and the heater continues to burn (less effectively), the by-products can become water and carbon monoxide (a result of this incomplete combustion).

The unvented gas space heaters, which I am familiar with, do have oxygen depletion sensors. There is no guarantee, however, that these oxygen sensors will not fail to operate as designed. If an oxygen sensor fails the end result could be tragic. Heres another thought. Its a cold winters night in Alaska, the unvented space heater shuts down as its designed to due to a lack of oxygen. The worried homeowner, in an attempt to keep his house from freezing up, bypasses the oxygen sensor, relites the space heater and goes to bed. The unvented gas space heater now continues to burn up more oxygen and produce more CO.

Randy, the only thing that should die, is this bill in committee.

Sincerely,

Bruce V. Zmuda

Bruce V. Zmuda

State of Alaska

House State Affairs Committee

Session
Rm. 102
State Capitol
Juneau, AK 99801
(907) 465-3719

Interim
119 N. Cushman St.
Suite 211
Fairbanks, AK 99701
(907) 456-5081

April 18, 1994

From: Joseph Easaw Jr.
Office of Al Vezey, Representative

To: Shirley Armstrong, Committee Aide
Senate Community and Regional Affairs

Subject: Teleconference on CSHB 543

Here are the following individuals who will be calling in to testify on CSHB 543 in the Senate CRA Committee meeting on April 21, at 9:00 AM.

Sue Walker
Chairperson Committee on Vent Free Heater Task Group
Ron Smith, Engineer
(502)745-7858
Bowling Green, KY.

Burgain Maeler
(615) 479-2842
Mr. Maeler will address tampering possibility of the ODS.

Joseph Mattingly
(703) 525-9565
Arlington, Va.

Keith Kettler
(303) 772-2430
Colorado

18720 Talarik Drive
Eagle River, AK 99577

April 18, 1994

Senator Randy Phillips, Chairman
Senate Standing Committee, Community and Regional Affairs
Alaska State Legislature
State Capitol (MS 3100)
Juneau, AK 99801-1182

RE: House Bill 543

Randy:

It is my understanding that the Senate Community and Regional Affairs Committee will be considering action on House Bill 543, in the very near future. House Bill 543 amends the Uniform Mechanical Code adopted by the Department of Public Safety under AS 18.70.080 to allow the installation of unvented gas space heaters in residential buildings. It is my opinion that passage of this legislation may put the public at significant risk.

As you know, I am employed by ENSTAR Natural Gas Company. However, I am writing you not as a gas company employee, but rather as a constituent. I have a personal concern for the safety and the welfare of our community as well as for the public in general.

Unvented gas space heaters rely on the air in the living space to provide oxygen for combustion. As the space heaters burn the gas, water vapor and carbon dioxide (CO_2) are produced as by products of combustion. In the tightly constructed Alaskan homes, air is replaced very slowly. This allows the CO_2 and the water vapor to accumulate and the oxygen to be depleted. As the oxygen level drops, and the heater continues to burn, the byproducts of combustion are no longer water vapor and CO_2 but water vapor and *carbon monoxide* (*CO*). Carbon Monoxide, as we all know, is life threatening in confined spaces.

The unvented gas space heaters, with which I am familiar, do have an oxygen depletion sensor. Still, there is no way to assure that the sensors are fail safe. If an oxygen depletion sensor fails, the results may be tragic. Additionally, the oxygen depletion sensor is easily bypassed. I can foresee a cold Alaskan night where the space heater, running all evening, shuts down because the oxygen in the room has been depleted. The unsuspecting home owner, concerned with the lack of heat, bypasses the sensor and goes to bed. The unvented gas space heater continues to operate, producing CO..... I don't know what more I can say.

Randy, please don't let this legislation become law.

Respectfully,

Bob

Robert R. Jensen

ALASKA HEALTH PROJECT

Information and Advocacy on Occupational and Environmental Health

19 April 1994

Senator Randy Phillips, Chairman
Senate Standing Committee - Community and Regional Affairs
Alaska State Legislature
State Capital (MS 3100)
Juneau, AK 99801-1182

RE: Opposition to HB 543, Unvented Gas Heaters

The Alaska Health Project (AHP) would like to express strong and consistent opposition to HB 543, a bill that would alter the Uniform Building Code to allow unvented gas space heaters in residential buildings in the state of Alaska.

The Alaska Health Project is dedicated to providing information on health, safety and is a strong advocate and resource for indoor air quality issues in the Alaska. AHP is convinced that HB 543 will not only decrease indoor air quality in those homes these units are installed but also lead to increases in health associated symptoms and possibly fatalities if these units are not properly installed, monitored and maintained.

The Alaska Health Project emphatically encourages that HB 543 <u>not</u> be passed and the following are some distinct reasons.

Unvented space heaters produce Carbon monoxide. Low concentrations of CO causes people to become ill. High concentrations can result in asphyxiation and death. This was almost the result during the Iditarod Sled Dog Race this year, (produced by an unvented space heater.) Alaska already has the highest CO death rates in the Union, passage of this bill would almost assure that honor or disgrace each and every year.

In addition to Co, the combustion process also produces nitric oxides. NOx cause damage, irritation to lung tissue and contribute to pulmonary edema.

These unvented space heaters produce a pound of water vapor as a by-product of combustion for every pound of fuel consumed. This addition of moisture only increases the condensation problems which may already be present or create one that didn't exist.

Alaska has wisely adopted the Uniform Building Code which prohibits such devices, and these standards should not changed in cold climate regions. State such as Minnesota, New Hampshire, and New York also prohibit these appliances.

1818 West Northern Lights Blvd., Suite 103, Anchorage, Alaska 99517
(907) 276-2864 Outside Anchorage (800) 478-2864 Fax (907) 279-3089

These unvented heaters have a device which will shut off the unit when the supply of oxygen drops to 18%. The Occupational Safety and Health Administration (OSHA) has a minimum requirement of 19.5% oxygen for workers. However, these oxygen depletion sensing devices are not CO detectors. The Burning of fuel with insufficient oxygen is one source of CO and a space heater could still be supplied with adequate oxygen and still produce CO because it was improperly installed or maintained.

If these appliances are properly installed and maintained, they do not pose a health risk. However, these heaters must be installed in a well ventilated area that has access to a source of combustion/makeup air. Due to the severe weather in Alaska, this is not always the case. Is it reasonable to believe that someone will open a window or provide a 5"x 6" hole in the dead of winter to allow for the recommended ventilation. This would allow for a draft, the unwelcome invitation of cold outside air into the home and thereby defeating the purpose of this heater.

The directions specify that for safe operation (which is possible) the appliance must be maintained and cleaned annually. These appliances can malfunction if they are not properly maintained, the burner unit gets dirty, or if the automatic shut off switch is bypassed, as could most likely happen in the rural areas of the state.

These devices are approved only as secondary heat sources - a point which is not clear in the instructions. Due to the high cost of electricity, it is very reasonable to assume that they will be used as the primary source of heating.

These appliances should not be installed in sleeping areas or bathrooms. It is expected that many of these units will be improperly installed in remote cabins and spaces to small for safe operation.

The Alaska Health Project understands the consumer appeal of these appliances, however, we also feel that these appliances can have an adverse effect on the safety and health of Alaskans.

In closing, while these unvented space heater appliances may have a place, the Uniform Building Code should <u>NOT</u> be amended to allow their use in Alaska.

AHP strongly encourages you <u>NOT</u> to pass HB 543.

Sincerely,

Thomas N. Brudnicki, REHS
Industrial Hygienist
Alaska Health Project

cc: Senators Loren Leman, Rick Halford

MUNICIPALITY OF ANCHORAGE
Municipal Manager's Office
Post Office Box 196650
Anchorage, Alaska 99519-6650
(907) 343-4433

TELECOPIER COVER LETTER
TELECOPIER NUMBER: (907) 343-4110

DATE: 4/20/94

FAX NUMBER: 465-4979

TOTAL NUMBER OF PAGES: 3 (including cover letter)

TO: Shirley Armstrong for Senate Comm. & Regional Affairs Committee

FROM: DAN MOORE, M.O.A.

PHONE NUMBER: 343-4282

COMMENTS:

Please distribute MOA's comments to all committee members prior to tomorrow morning's C&RA committee meeting.

Thanks for your help.

—Dm

FAX\COVERLTR

Municipality of Anchorage

P.O. BOX 196650
ANCHORAGE, ALASKA 99519-6650
TELEPHONE: (907) 343-4431
FAX: (907) 343-4991

Tom Fink, Mayor

OFFICE OF THE MAYOR

April 20, 1994

The Honorable Randy Phillips, Chairman
Senate Community and Regional Affairs Committee
Alaska State Capitol
Juneau, AK 99801

Dear Senator Phillips:

I have been informed that CSHB 543(STA) is scheduled for a teleconference tomorrow morning. The Municipality opposes this bill because of the serious potential health risks associated with allowing unvented gas space heaters in residential buildings. To clarify our opposition to the bill, I am providing the Committee with attached written comments prepared by Dr. Mary Ellen Gordian of the Municipality's Department of Health and Human Services. These comments cite a number of specific health risks that could occur if this bill were passed (see attachment).

I regret that due to a scheduling conflict, Dr. Gordian will be unable to participate in tomorrow's teleconference. Nonetheless, I request that the Municipality's comments be distributed to all Committee members prior to tomorrow's meeting, so that our concerns over the health implications of CSHB 543 (STA) are known.

Should the Committee require any additional information, please contact Dr. Gordian directly [illegible]3-6718.

Sincerely,

Tom Fink

Tom Fink
Mayor

legis\ltf20

Municipality of Anchorage

Tom Fink, Mayor

Department of Health and Human Services
825 "L" Street
P.O Box 196650 Anchorage, Alaska 99519-6650

April 18, 1994

House Bill 543 seeks to change the building code to allow unvented gas space heaters in residential buildings. Unvented gas heaters should not be allowed for the following reasons:

1) Carbon monoxide builds up with any combustion process. It has a high affinity for the hemoglobin in blood cells. One can be overcome by carbon monoxide before there is any measurable reduction in oxygen levels in air.

2) Combustion heaters also give off nitrogen dioxide, a respiratory irritant, and volatile organic chemicals. Without venting these air pollutants become concentrated in the indoor air. Studies show that most people spend 90% of their time indoors. It is the most susceptible groups-the young, the elderly, and the infirm-who spend the greatest amount of time indoors.

4) Non-combustion electric space heaters that do not require ventilation are available. All combustion heaters NEED ventilation including those specified in HB543 as stated in their package insert.

3) The package insert says that these heaters require 1 square inch of ventilation for every 1000 BTU. Alaska homes are generally well-insulated. Ventilation would have to come from open windows, not likely in Alaska in the winter.

5) People will not open their windows in the winter to achieve that ventilation, because they cannot see or smell carbon monoxide.

Prepared by

Mary Ellen Gordian

Mary Ellen Gordian, MD, MPH
Medical Officer

ATTACHMENT

HEATWORKS, INC.
PO BOX 771922
Eagle River, Alaska 99577
(907) 694-4928

April 18, 1994

Randy Phillips
Alaska State Legislature
State Capitol (MS 3100)
Juneau, Alaska 99801-1182

Dear Mr. Phillips,

I am writing this letter in regards to House Bill No. 543(STA). I have been in the heating trade for approximately 15 years, and I can assure you that if this bill passes there will be some major life, safety and health problems that will arise as a result of these types of unvented gas space heaters. Even if the unvented gas heaters are installed in accordance with the manufactures installation instructions, the occupants of the dwelling will not use the heater as recommended by the manufacture. Common sense will tell you that if it is 20 degrees below zero an occupant will not open a window to admit fresh outside air into the dwelling as recommended operating procedure by any manufacture of unvented gas space heaters. Carbon Monoxide is a silent killer and can even kill from appliances that are vented properly but do not have adequate fresh air for combustion. An unvented gas space heater is a preventable accident waiting to happen. Please vote no to House Bill No. 543(STA).

Sincerely,

Kit Dahlstrom

13135 Old Glenn Hwy
Eagle River, Alaska 99577
(907) 694-2190

2000 E. Dowling Rd., #6
Anchorage, Alaska 99507
(907) 561-2772

CURTIS PLUMBING & HEATING

4/15/94

Senator Rick Halford
Alaska State Legislature Rm. 111-C
State Capitol (MS3100)
Juneau, Alaska 99801-1182

RE: Amendment to, AS18.56.300(e)

Dear Rick,

It has come to my attention that the Senate is considering amendments to the above mentioned Statute concerning the approval of unvented gas heaters for installation in residences. If adopted the Statute would allow under Sec. 18.60.900, the installation of unvented gas space heaters in any residence, if installed in accordance with Manufactures installation instructions.

The Uniform Mechanical Code disallows this type of installation for reasons of extreme danger in the operation of this type of equipment. Alaska now leads the nation in deaths resulting from carbon monoxide poisoning. If allowed to pass this Statute, I am convinced, would add tragically to that statistic.

In my business I do not always agree with the Codes that are adopted, but in this case I am fully behind the Uniform Mechanical Code. In Alaska we are building tighter houses for good reason, to save on the fuel costs of operating the home. This trend as set forth in the State Energy Standard is accomplishing the desire for low fuel costs but the other side of the story is a potential danger if the ventilation needs are not met. I frequently find ventilation openings closed and homes configured in a dangerous manor. This is due to a lack of home owner understanding of the need for combustion air and the balance needed for clean burning equipment. The unvented gas heaters are a step backward in this problem. Until a fail safe method is devised for the operation of this type of equipment I am convinced that it should not be allowed to be installed.

In all the literature I have been exposed to, the factory requirement for installation is to disallow the unit in "sleeping quarters". There is no definition in the UMC for sleeping quarters. In Webster's it states that quarters are "Lodgings: place of abode". In my interpretation a Sleeping Quarters then is a residence which would preclude the installation in any residence.

Please consider very carefully your decisions concerning this amendment. If I thought it would be in any way beneficial I would not have such a firm resolve.

Sincerely,

Chuck Renfro, owner

cc: **Ramona Barnes**
Randy Phillips

Central Plumbing & Heating, Inc.

April 14, 1994

Senator Randy Phillips
Juneau, AK

Re: HB 543

Dear Senator Phillips,

The owners and tradesmen from Central Plumbing & Heating, Inc strongly oppose HB 543 which is currently before your committee. The allowance of unvented fuel fired heaters in any type of structure would put the occupants of that structure in danger of carbon monoxide poisoning. The recent experience of the [illegible] at Skewetna this year is a perfect example of the risks involved in operating unvented heaters. We urge your opposition.

Sincerely,

JoAnne Roller

JoAnne Roller
Office Manager
Central Plumbing, Inc.

212 E. International Airport Road • Anchorage, Alaska 99518-1594
(907) 562-2511 • FAX (907) 562-2519

Barrow Utilities and Electric Cooperative, Inc.

P.O. Box 449
Barrow, Alaska 99723
907-852-6166

April 14, 1994

Rick Halford, Senate President
Alaska State Legislature
State Capital (MS 3100)
Juneau, Alaska 99801-1182

RE: House Bill No. 543(STA)

Dear Senator,

It has come to our attention that there is a proposal before the Senate to amend Section 807(c) of the Uniform Mechanical Code to allow an unvented gas space heater to be installed or connected in a dwelling or dwelling unit.

It is Barrow Utilities & Electric Co-op, Inc.'s policy not to install or provide natural gas service to a dwelling or dwelling unit where there is an unvented room heater. It is also our policy to disconnect a natural gas service to any improperly installed heater or unvented heater if it is discovered by one or our employees or gas servicemen.

An unvented natural gas heater can produce carbon monoxide and become deadly. In our region of Alaska it is not always possible to open a window to vent such gases out therefor, proper venting of all heating appliances becomes very important.

Sincerely,

Barrow Utilities & Electric Co-op, Inc.

Shayne Coiley
Operations Manager

cc: Wayne Parkin, BUECI General Manager
Kenneth Young, ENSTAR Natural Gas Company

Scott's
Heating & Air Conditioning Services

3040 Arctic Circle
Anchorage, AK 99503
907-243-5818

TRANE™

Authorized
Dealer

4/15/94

Alaska State Legislature
State Capitol
Juneau, Alaska 99801-1182

ATT.: Randy Phillips, Chairman
Community and Regional Affairs

RE: H.B. 543 (STA)
An act relating to unvented gas space heaters in residential buildings.

As a licensed Mechanical Contractor in the state of Alaska since 1984, and working as a furnace installer since 1974, here and through out the state, I can not believe this bill has even been introduced. Each year there are many cases of carbon monoxide poisoning in homes, cabins, and yes, even tents, remembering the 6 people in the "Iditerod 1994" race that made the front page of the Daily News. I believe these units, unvented wall heaters, have their place. Maybe California or moderate climates to knock off the chill in the morning and that's it. There is no place in Alaska that these heaters are safe. Even though these heaters may have an oxygen depletion sensor, which can fail, or evan very easily be bypassed by any one, even a 10 year old with a paper clip!

These heaters are very inexpensive, therefor very easy to sell to unsuspecting consumers who are not educated in the sciences of tight construction, ventilation, and carbon monoxide poisoning.

Please do not support House Bill 543 (STA).

Sincerely,

Scott K. Moore

SCOTT K. MOORE

RSA
Engineering, Inc.

MECHANICAL AND ELECTRICAL
CONSULTING ENGINEERS

2522 Arctic Boulevard, Suite 200
Anchorage, Alaska 99503-2516
tel: (907) 276-0521
fax: (907) 276-1751

FACSIMILE TRANSMITTAL

attention: Sen. Randy P. Phillips

organization: AK State Legislature

from: Dick Armstrong

date: 4/14/94

project: House Bill 543

comments:

2 pages sent (including this sheet)

kindly call us at **(907) 276-0521** *if all pages were not received*

RSA

MECHANICAL AND ELECTRICAL
CONSULTING ENGINEERS

April 14, 1994

Senator Randy Phillips, Chairman
Senate Standing Committee - Community and
Regional Affairs
Alaska State Legislature
State Capitol (MS 3100)
Juneau, AK 99801-1182

Dear Senator Phillips:

REFERENCE: **House Bill No. 543**

It has come to our attention that the above referenced House Bill includes language that allows unvented gas heaters in residential buildings. We are adamantly opposed to this section of the bill for several reasons, as follows:

- Alaskan homes are generally constructed using air-tight vapor barriers that makes them "exceptic .ally tight" to air infiltration. Because of this, combustion air will quickly be used up, which cause the unvented heaters to put carbon monoxide into homes and expose people unnecessarily to a deadly gas.

- The Uniform Mechanical Code does not allow unvented gas heaters in residential dwellings, Section 807 (c).

- Such installations will pose a life/safety concern for Alaskans, especially in rural areas.

- The manufacturers require stringent conditions for operation, such as; windows must be open, cannot be installed in sleeping areas, etc. These conditions will be impossible to enforce.

We urge you to vote no when this bill is presented to your committee.

Very truly yours,

Richard S. Armstrong, P.E.
President

mma
94-419
cc: Senator Loren Leman

2522 Arctic Blvd. Suite 200 — Anchorage, AK 99503-2516 — Phone (907) 276-0521 — Fax 276-2761

Suburban Propane

Quantum 1200 E. Whitney Road • Anchorage, AK 99501
907-272-7581

April 14, 1994

Senator Randy Phillips
Juneau, Alaska
FAX 465-4928

Dear Senator Phillips,

It has been brought to my attention this morning that the Senate is about to consider a bill recently passed by the House, known as House Bill 543(STA). This Bill would alter the Uniform Building Code to allow unvented gas heaters in residential buildings in the State of Alaska.

I have been in the L.P. Gas business for over twenty seven years, most of that in a management capacity, and from that experience, would like to offer some of my concerns of the dangers of this Bill passing and becoming law.

1. These heaters ALL require 1 square inch of ventilation for each 1000 btu's of input. In a small 20,000 btu heater, this would require leaving a window cracked about one inch. A larger heater would require more. I think that it is reasonable to expect that this provision would be ignored in our cold climates. This coupled with the fact that our homes and cabins are deliberately built as air tight as possible, leaves me to expect that we will now have heaters installed that will be competing with people for the available oxygen. The Oxygen Depletion Sensors installed on these units will turn the units off when the oxygen level falls below 18.3 %, but the remaining oxygen in a small tight room may not be enough to sustain life for the night while a person is sleeping. In addition, if a O.D.S. were to keep turning off a heater (as its supposed to) there would be a great temptation for some to defeat the safety unit...a process that will take about two minutes.

2. My second concern is the enormous amount of water vapor that will be discharged into any building in which one of these units is installed. In the case of a propane fueled unit, nearly one gallon of water is discharged for every gallon of propane consumed. This water vapor will ice up first at the location where outside air is infiltrating, further reducing the available oxygen. Also, over a period of time, ice builds up in walls, ceilings, and floors where upon melting can cause significant damage.

Mr. Phillips, we have in the propane industry, heaters of the same size and approximate shape as these unvented heaters, that are VERY safe. They are called 'Direct Vent" heaters, and they both take their needed oxygen from the outside as well as vent the harmful by products of combustion to the outside. These units are approved and safe in sleeping rooms.

Please consider these facts before allowing this bill to progress. The potential danger to life and property, as a result of our unique climate and lifestyles is not worth the savings in heater cost and efficiency of unvented heaters. We know that many if not most of these heaters ,if allowed, will find themselves in small bush cabins, small cold bedrooms and are mostly do-it-yourself applications where the ventilation requirements and sleeping room limitations will be ignored. I would not put one in my own home or cabin.

Best Regards,

Bill Halterman
District Manager
Suburban Propane
Anchorage, Alaska

MOORE HEATING
AIR CONDITIONING
REFRIGERATION INC.

Senator Randy Phillips
Juneau, Ak.

April 14, 1994

Re: HB 543

Dear Senator Phillips,

We understand the passing of HB 543 would allow unvented heaters to be installed in any residential building in Alaska. The proposed bill also states that the unvented unit must be installed to manufacturer specifications.

The owners and associates of Moore Heating find this to be quite alarming. Even though the State of Alaska is taking the manufactures specifications into consideration, our concern is did the manufacturer take our climate into consideration when creating their specs.

The priority on our list of concerns would be the homeowners or occupants safety. Without proper air infiltration into the living space carbon monoxide poisoning could occur. We feel it is realistic to assume opening a window during some of our extreme winter temperatures to provide the required outside air is unlikely.

It has been our experience that consumers not only rely on the manufacturer for their safety, but also on the Distributor, Service Company and Fuel provider alike. Who is going to take responsibility for this new bill? If the above mentioned case were to occur, is the State of Alaska going to assume the liability for overriding the codes and regulations set forth by trained experts in this specific field? Codes were placed into effect to protect the general public who are uneducated in these areas. A large percentage of codes came about after unfortunate accidents occurred.

The negligent or naive consumer will look for someone to point the finger at and in to many cases an innocent party will pay the price, further affecting insurance rates that are already exorbitant.

We at Moore Heating strongly appose this bill and urge you to join us in opposition. Thank you for your consideration.

Sincerely,

Vanessa K. Jones
Vanessa K. Jones
President

Steven J. Parker
Steven J. Parker
Vice President

Wayne H. Jones
Wayne H. Jones
Sec/Tres.

510 E. Int'l Airport Road
Anchorage, Alaska 99518
(907) 561-1500
FAX (907) 562-0167

LENNOX

HEAT LOSS ANALYSIS inc

Scientific Building Inspection Services

Senator Randy Phillips, Chair
Committee on Community
and Regional Affairs

17 April 1994

4979
By facsimile: 465-~~3472~~
7 PAGES

Dear Senator Phillips:

I am writing to oppose the passage of House Bill 543, an act relating to unvented gas space heaters in residential buildings. I have two reasons why I feel this should not pass.

First of all, these devices can be dangerous. If not properly installed *and operated*, they can produce high levels of carbon monoxide and possibly cause death. While the act does require that they be installed according to manufacturer's instructions, these heaters are often purchased and installed by users who have no professional experience. Of greater concern is their operation. Instructions for these heaters require that fresh air be introduced to the room. The recommended measure is to open a window about two inches. How many users will follow this direction when it is 20 below outside? How many babysitters or children left alone will be responsible enough or trained well enough to follow this direction?

Secondly, this bill represents a subversion of the Uniform Mechanical Code. This code, which is based on years of research, testing, and experience does not allow the installation of unvented space heaters in residences. The method by which this bill was introduced appears to have no such foundation. It is my understanding that the act was brought forward because Enstar refused to connect gas to one of these heaters. The owner complained to Representative Barnes and the rest is legislative history. The Department of Public Safety, which should generate requests for code changes, does not seem to have been involved. It is very disturbing, and perhaps dangerous, to think that a building safety code could be altered or subverted at the whim of a legislator or an angry constituent.

Please vote against House Bill 543.

Thank you,

Geoff Feller

4128 Wright Street • Anchorage, Alaska 99508 • (907) 563-0773 • Fax (907) 563-8061