

of 2-13-91
ORDINANCE No.

114549

Law Department

COUNCIL BILL No.

107340

The City of

AN ORDINANCE relating to energy-efficiency in building construction; amending Sections 101.3.1, 201.1, 303.1, 402.3, 502.2.1, 502.3.1, 502.4, Table No. 5-1 and Table No. 5-2 of the Energy Code to incorporate 1988 amendments to the Washington State Energy Code.

Honorable President:

Your Committee on _____

to which was referred the within Council Bill report that we have considered the same and

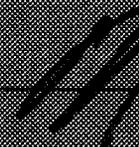
DO PASS

vote 6-0

COMPTROLLER FILE No. _____

Introduced: MAY 12 1989	By: Rice
Referred: MAY 12 1989	To: Energy
Referred:	To:
Referred:	To:
Reported: JUN 12 1989	Second Reading: JUN 12 1989
Third Reading: JUN 12 1989	Signed: JUN 12 1989
Presented to Mayor: JUN 13 1989	Approved: JUN 13 1989
Returned to City Clerk: JUN 13 1989	Published:
Vetoed by Mayor:	Veto Published:
Passed over Veto:	Veto Sustained: 

time



Department

2/1/02

The City of Seattle--Legislative Department

Date Reported
and Adopted

REPORT OF COMMITTEE

to President:

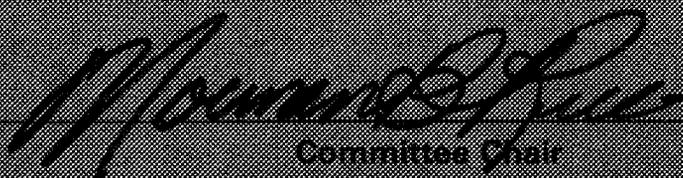
Committee on

was referred the within Council Bill No.

that we have considered the same and respectfully recommend that the same:

DO PASS

6-0


Committee Chair

#4

C.B. 107340

ORDINANCE 114549

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AN ORDINANCE relating to energy-efficiency in building construction; amending Sections 101.3.1, 201.1, 303.1, 402.3, 502.2.1, 502.3.1, 502.4, Table No. 5-1 and Table No. 5-2 of the Energy Code to incorporate 1988 amendments to the Washington State Energy Code.

BE IT ORDAINED BY THE CITY OF SEATTLE AS FOLLOWS:

Section 1. As of July 1, 1989, Section 101.3.1 of the Seattle Energy Code as adopted by Ordinances 113058 and 113059 is amended to read as follows:

101.3.1 Exempt Buildings.

Buildings and structures or portions thereof meeting any of the following criteria shall be exempt from the requirement of Section 502, but shall be included in any analysis performed pursuant to Chapter 4 and shall comply with all other requirements for building mechanical systems, service water heating and lighting systems.

* * *

101.3.1.3 Greenhouses that are isolated from any conditioned space and not intended for occupancy.

Section 2. As of July 1, 1989, Section 201.1 of the Seattle Energy Code as adopted by Ordinances 113058 and 113059 relating to definitions is amended as to "fireplace" "solid fuel burning appliance" and "wood stove" to read as follows:

* * *

FIREPLACE. ((See the Seattle Mechanical Code)) (1) Any permanently installed masonry fireplace or; (2) Any factory-built metal solid fuel burning device designed to be used with an open combustion chamber and without features to control the air to fuel ratio.

* * *

1 exempt and common fan/duct oversizing for smoke control is permitted. See
2 the Seattle Mechanical Code for other requirements.

3 In all parking garages, other than open parking garages as defined in
4 UBC 709(b), used for storing or handling of automobiles operating under
5 their own power and on all loading platforms in bus terminals, ventilation
6 shall be provided at 1.5 cfm per square foot of gross floor area. The
7 building official may approve an alternate ventilation system designed to
8 exhaust a minimum of 14,000 cfm for each operating vehicle. Such system
9 shall be based on the anticipated instantaneous movement rate of vehicles
10 but not less than 2.5 percent (or one vehicle) of the garage capacity.
11 Automatic CO sensing systems may be submitted for approval.

12 In all buildings used for the repair of automobiles, each repair stall
13 shall be equipped with an exhaust extension duct, extending to the outside
14 of the building, which if over ten feet in length, shall mechanically
15 exhaust 300 cfm. Connecting offices and waiting rooms shall be supplied
16 with conditioned air under positive pressure.

17 Combustion air requirements shall conform to the requirements of Chapter
18 6 of the UMC.

19 Mechanical refrigerating equipment and rooms storing refrigerates shall
20 conform to the requirements of Chapter 15 of the UMC.

21 EXCEPTIONS: 1. If outdoor air quantities other than those specified
22 in Table No. 3-1 are used or required for smoke control, because of special
23 occupancy or process requirements, source control of air contamination,
24 health and safety or other standards, the required outdoor air quantities
25 shall be used as the basis for calculating the heating and cooling design
26 loads.

27 2. In toilets and janitorial closets where supply air must be exhausted,
28 the outside air requirements may be met by exhaust or recirculated air from
other interior spaces or may be totally outside air.

3. For recirculating HVAC systems, a reduction to 33 percent of the spe-
cified values is permitted provided that in no case shall the outdoor air
quantities be less than 5 cfm per person.

1 Section 4. As of July 1, 1989, Section 402.3 of the Seattle Energy
2 Code as adopted by Ordinances 113058 and 113059 is amended to read as follows:

3 402.3 Analysis Procedure. The analysis of the annual energy usage of
4 the standard and the proposed alternative building and system design shall
5 meet the following criteria:

6 ° The building heating/cooling load calculation procedure used for annual
7 energy consumption analysis shall be detailed to permit the evaluation of
8 effect of factors specified in Section 402.4.

9 EXEMPTION: Low-rise residential not installing cooling equipment,
10 shall not be required to model cooling loads.

11 ° The calculation procedure used to simulate the operation of the
12 building and its service systems through a full-year operating period shall
13 be detailed to permit the evaluation of the effect of system design, clima-
14 tic factors, operational characteristics, and mechanical equipment on
15 annual energy usage. Manufacturer's data or comparable field test data
16 shall be used when available in the simulation of systems and equipment.
17 The calculation procedure shall be based upon 8760 hours of operation of
18 the building and its service systems and shall utilize the design methods
19 specified in Standards RS-1, -11, -12 and -13.

20 Section 5. As of July 1, 1989, subsection 502.2.1.2 of Section 502.2
21 of the Seattle Energy Code as adopted by Ordinances 113058 and 113059 is
22 amended to read as follows:

23 502.2 Insulation, Ventilation and Moisture Control Requirements.

24 * * *

25 502.2.1.2 Insulation Materials. All insulation materials including
26 facings such as vapor barriers or breather papers installed within
27 floor/ceiling assemblies, roof/ceiling assemblies, walls, crawl spaces, or
28 attics shall have a flame-spread rating not to exceed 25 and a smoke
density not to exceed 450 when tested in accordance with UBC Standard No.
42-1.

1 EXCEPTIONS: 1. Foam plastic insulation shall comply with
2 Section ((1717)) 1712 of the Seattle Building Code.

3 2. When such materials are installed in concealed spaces of
4 Types III, IV and V construction, the flame-spread and smoke-developed
5 limitations do not apply to facing, provided that the facing is installed
6 in substantial contact with the unexposed surface of the ceiling, floor or
7 wall finish.

8 3. Cellulose insulation shall conform to Section 1713 of the
9 Seattle Building Code.

10 Section 6. As of July 1, 1989, subsection 502.3.1.1 of Section 502.3
11 of the Seattle Energy Code as adopted by Ordinances 113058 and 113059 is
12 amended to read as follows:

13 502.3. Building Envelope Criteria.

14 502.3.1 Prescriptive Approach.

15 502.3.1.1 Opaque Envelope Criteria. Roof/ceilings, walls, floors
16 over unconditioned space and slab on grade floors shall have a thermal
17 resistance R value no less than the value specified in the prescriptive
18 approach of No. 5-1 or 5-2, as appropriate. For Group R Occupancy, walls
19 include exterior wall sections, walls in finished basements and interior
20 walls exposed to unheated spaces, and floors include floors over unheated
21 spaces, including unheated basements, unheated garages and ventilated crawl
22 spaces. For other than Group R Occupancy, walls are subdivided into
23 exterior walls and below grade walls.

24 For all components except for walls in Group R Occupancy, the R values
25 specified are for installed insulation material only. R values for
26 construction are defined as any combination of rigid-sheathing, loose fill,
27 or batt insulation that achieves the prescribed R value. For Group R occu-
28 pancy, where insulation is installed in a continuous manner and is not
interrupted by occasional framing members, its R value may be increased by
20% in determining compliance with the requirements of this table. This
allowance does not apply to insulation of slab on grade or walls.

1 For Group R Occupancy, total wall assembly R values include values for
2 insulation, sheathing, gypsum-board, air-films, concrete, etc. The
3 following walls shall be considered to meet the R-19 total assembly cri-
4 teria without additional documentation:

- 5 ° 2" x 6" with installed R-19 batt.
- 6 ° 2" x 4" with an installed R-13 batt and R-3.7 ((5)) insulating
7 sheathing.
- 8 ° 2" x 4" with an installed R-11 batt and R-5.0 ((5.4)) insulating
9 sheathing.

EXCEPTION: For Group R Occupancy:

10 1. Single rafter or joist vaulted ceilings insulated to a nominal R
11 value of not less than R-30 shall be deemed to comply with this code.

12 2. Roof deck/ceilings insulated to a nominal R value of not less
13 than R-30 shall be deemed to comply with the requirements of this code
14 in passive solar buildings which have at least 10 percent of the floor
15 area in glazing that meets the specifications of Section 503.3.2.3
16 Exception 2.

17 3. Insulation may be omitted from floor areas over heated base-
18 ments, heated garages, or under floor areas used as HVAC plenums or
19 where operable foundation vents are used and when foundation walls are
20 insulated. When foundation walls are insulated in accordance with
21 Section 502.3.1.1 the insulation shall be attached in a permanent
22 manner.

23 4. Concrete or masonry foundation walls of unfinished basements
24 that have one foot or less of the wall above grade need not be insu-
25 lated until finished, provided that:

- 26 ° Any frame walls comply with the requirements of Table No. 5-1;
- 27 ° The rim-joists are properly insulated; and
- 28 ° All walls that are more than an average of one foot above grade are
insulated to meet the requirements of Table No. 5-1.

* * *

1 Section 7. As of July 1, 1989, Section 502.4 of the Seattle Energy
2 Code as adopted by Ordinances 113058 and 113059 is amended by adding a new
3 subsection 502.4.7 and re-numbering existing subsection 502.4.7 as 502.4.8
4 to read as follows:

5 502.4 Air Leakage for All Buildings

6 * * *

7 502.4.7 Solid fuel burning appliances shall be provided with com-
8 bustion air ducted directly to the appliance. Combustion air shall be pro-
9 vided as per manufacturers specifications.

10 EXCEPTIONS: Combustion air may be supplied to the room in which the
11 solid fuel burning appliance is located in lieu of direct ducting, in
12 an existing building, provided that:

13 1. The solid fuel burning appliance is not designed for directly con-
14 nected outside combustion air or;

15 2. The existing construction prohibits the introduction of outside
16 combustion air directly to the solid fuel burning appliance.

17 3. The combustion air source shall be located as close to the solid
18 fuel burning appliance as possible, shall be provided with a backdraft
19 damper, and shall be no less than six inches in diameter.

20 4. The solid fuel burning appliance is part of a central heating
21 system and is installed in a room designed to house it.

22 ((502.4.7)) 502.4.8 For all buildings more than three stories, all
23 entrances which are the principal means of access for the public shall be
24 protected with a revolving door or an enclosed vestibule with all doors
25 opening into or out of the vestibule equipped with self-closing devices.
26 Vestibules shall be designed so that in passing through the vestibule it is
27 not necessary for the interior and exterior doors to be open at the same
28 time. Elevator lobbies do not qualify as vestibules.

EXCEPTION: Minor entrances and service entrances need not comply
with this requirement.

1 Section 8. As of July 1, 1989, Table No. 5-1 and Table No. 5-2 of the
 2 Seattle Energy Code as adopted by Ordinances 113058 and 113059 are amended
 to read as follows:

3 TABLE NO. 5-1

4 COMPONENT REQUIREMENTS FOR ALL
 5 GROUP R OCCUPANCY RESIDENTIAL BUILDINGS

COMPONENT	REQUIREMENT		
SPACE HEATING SYSTEM			
System type	Electric resistance	Heat pump, natural gas, oil, steam and other	
		Path A	Path B
Minimum efficiency ^{1,2}	NA		
AFUE		.65	.74 ³
HSPF		5.60	6.35 ³
BUILDING ENVELOPE - PRESCRIPTIVE APPROACH ⁴			
Roof/ceiling insulation	R-38 ⁵ , 6 min.	R-30 min.	R-30 min.
Wall insulation	R-19 min.	R-19 min.	R-19 min.
Floor insulation	R-19 min.	R-19 min.	R-19 min.
Slab on grade insulation	R-((8)) 7 min.	R-((8)) 7 min.	R-((8)) 7 min.
Glazing U value (AAMA tested)	U-.60 max.	U-.75 max.	U-.90 max.
Glazing area (percent of floor)	21% max.	21% max.	21% max.
BUILDING ENVELOPE - COMPONENT PERFORMANCE APPROACH ⁴			
Roof/ceiling U ₀ value	U ₀ -.026 ⁵ max.	Not	U ₀ -.035 max.
(includes glazing)		Allowed	
Wall U ₀ value (includes glazing)	U ₀ -.144 max.		U ₀ -.203 max.
Floor U ₀ value	U ₀ -.055 max.		U ₀ -.055 max.
Slab on grade insulation	R-8 min.		R-8 min.

- 18 ¹ AFUE applies only to central combustion heating equipment. However,
 19 where an AFUE of .74 is listed, all other types of heating equipment
 20 fueled by gas, oil, or propane shall be equipped with an intermittent
 21 ignition device. HSPF applies only to heat pumps. Where an HSPF of
 22 5.60 is listed, the minimum required COP shall be 2.5 at 47°F. and 1.5
 at 17°F. for air source heat pumps, 2.5 at 70°F. for water source heat
 pumps and 3.0 for ground source heat pumps. Where an HSPF of 6.35 is
 listed, the minimum required COP shall be 2.7 at 47°F. and 1.8 at 17°F.
 for air source heat pumps, 3.0 at 70°F. for water source heat pumps and
 3.0 for ground source heat pumps.
- 23 ² Where using the building envelope prescriptive path only, if the maxi-
 24 mum glazing U value does not exceed .75, then other heating systems
 need not be equipped with an intermittent ignition device.
- 25 ³ Where using the building envelope prescriptive path only, for passive
 26 solar buildings which have at least 10 percent of the floor area in
 27 glazing that meets the specifications of Sec. 502.3.2.2 Exception 2,
 then the minimum required HSPF may be reduced to 5.60 and the minimum
 required AFUE may be reduced to 65 percent.
- 28 ⁴ R values, except for walls, are for installed insulation material only.

- 5 R-30 minimum or U_0 - .035 maximum in single rafter, joist vaulted ceilings.
- 6 R-30 minimum in passive solar buildings which have at least 10 percent of the floor area in glazing that meets the specifications of Sec. 502.3.2.2 Exception 2.

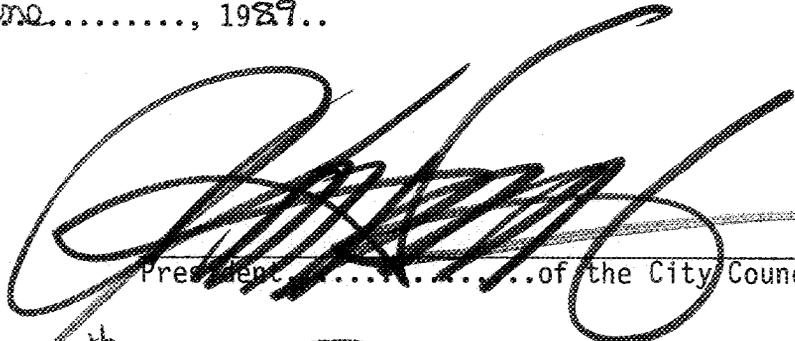
TABLE NO. 5-2

COMPONENT REQUIREMENTS FOR ALL BUILDINGS
OTHER THAN GROUP R OCCUPANCY RESIDENTIAL BUILDINGS

COMPONENT	REQUIREMENT	
BUILDING TYPE	Three conditioned stories or less except major projects	More than three conditioned stories and major projects
SPACE CONDITIONING SYSTEM TYPE	Any	Any
BUILDING ENVELOPE - PRESCRIPTIVE APPROACH		
Roof/ceiling insulation	R-30 minimum	R-11 minimum
Exterior wall insulation	R-11 minimum	R-11 minimum
Floor insulation	R-19 minimum	R-11 minimum
Below grade wall insulation	R-4 minimum	R-4 minimum
Slab on grade floor insulation	R-((8)) <u>7</u> minimum	R-((8)) <u>7</u> minimum
Glazing type	Double	Double
Glazing airspace	1/2" minimum	1/2" minimum
Glazing area (percent of wall)	32% maximum	40% maximum
BUILDING ENVELOPE - COMPONENT PERFORMANCE APPROACH		
Roof/ceiling U_0 value (includes glazing)	U_0 -.035 maximum	U_0 -.08 maximum
Wall U_0 value (includes glazing)	U_0 -.25 maximum	U_0 -.30 maximum
Floor U_0 value	U_0 -.05 maximum	U_0 -.08 maximum
Slab on grade insulation	R-8 minimum	R-8 minimum

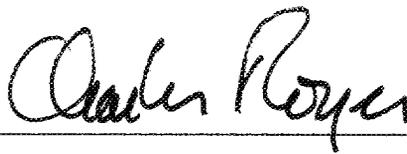
1 Section 9. This ordinance shall take effect and be in force thirty
2 days from and after its passage and approval by the Mayor; otherwise it
3 shall take effect at the time it shall become a law under the provisions of
4 the City Charter.

5 Passed by the City Council the 12th day of June....., 1989,
6 and signed by me in open session in authentication of its passage this
7 12th day of June....., 1989..

8
9
10 

11 President.....of the City Council

12 Approved by me this 15th day of June....., 1989..

13
14 

15 Mayor

16 Filed by me this 15th day of June....., 1989..

17
18
19 Attest: 
20 City Comptroller and City Clerk

21
22 (SEAL)

23
24 Published _____

By 

25 Deputy Clerk

City of Seattle

Executive Department-Office of Management and Budget

James P. Ritch, Director
Charles Royer, Mayor



April 27, 1989

The Honorable Douglas Jewett
City Attorney
City of Seattle

RECEIVED
MAY 01 1989
SEATTLE CITY ATTORNEY

Fanny Crandall

Dear Mr. Jewett:

The Mayor is proposing to the City Council that the enclosed legislation be adopted.

REQUESTING
DEPARTMENT: Department of Construction and Land Use

SUBJECT: An Ordinance relating to energy-efficiency in building construction; amending Sections 101.3.1, 201.1, 303.1, 402.3, 502.2.1, 502.3.1, 502.4, Table No. 5-1 and Table No. 5-2 of the Energy Code of the City of Seattle as adopted by Ordinance 113058 by incorporating 1988 amendments to the Washington State Energy Code.

Pursuant to the City Council's S.O.P. 100-014, the Executive Department is forwarding this request for legislation to your office for review and drafting.

After reviewing this request and any necessary redrafting of the enclosed legislation, return the legislation to OMB. Any specific questions regarding the legislation can be directed to Kwan Wong.

Sincerely,

Charles Royer
Mayor

by

KENNETH R. BOUNDS
Acting Budget Director

KB/kw/nc

Enclosure

cc: Director, Department of Construction and Land Use

Seattle
Department of Construction and Land Use

Dennis J. McLerran, Director
Charles Royer, Mayor

APR 21 1988



M E M O R A N D U M

011214

TO: Sam Smith, President, Seattle City Council
via Jim Ritch, Director, Office of Management and Budget

FROM: Dennis J. McLerran, Director ^{ZG for}

DATE: April 18, 1989

SUBJECT: Ordinance to Adopt 1988 Washington State Energy Code
Amendments into the Seattle Energy Code

The attached ordinance is submitted for your consideration. The ordinance would amend the Seattle Energy Code to incorporate 1988 amendments to the Washington State Energy Code. By law, the City of Seattle is required to enforce these amendments effective July 1, 1989.

A summary of the amendments is contained in the attached Directors' report. The revisions were reviewed by our Building Code Advisory Board on February 16, 1989 and recommended for adoption. The scope of the revisions is relatively minor and should have no effect on the City's budget.

A full scale review of the Seattle Energy Code is expected to commence early this summer following action by the Washington State Legislature and the Northwest Power Planning Council. This will likely result in proposals for substantive changes to the Seattle Energy Code which would be submitted for Council review in early 1990. The planned effective date would be July 1, 1990.

DJM:jhf

cc: Randall Hardy, Superintendent, Seattle City Light

April 14, 1989

DIRECTOR'S REPORT

The Department of Construction and Land Use (DCLU) is recommending amendment of the Seattle Energy Code to adopt 1988 revisions to the Washington State Energy Code. By law, the City of Seattle is required to enforce these amendments on July 1, 1989. The Washington State Building Code Council adopted these revisions in 1988 following a public review. The Seattle DCLU Building Code Advisory Board reviewed these revisions at their meeting on February 16, 1989 and recommended that they be adopted. The amendments are summarized below in the order they appear in the proposed ordinance.

Section 101.3.1. Clarifies that greenhouses which are not intended for occupancy are exempt from the building envelope requirements.

Section 201.1 Adds definitions for fireplace, solid fuel burning appliance and woodstove to be used in conjunction with revisions to Section 502.4 (see below).

Section 303.1 Incorporates certain requirements for ventilation and combustion air from the Uniform Building Code and the Uniform Mechanical Code.

Section 402.3 Clarifies that cooling loads need not be considered if no cooling equipment is to be installed.

Section 502.2.1 Corrects a reference error.

Section 502.3.1 Corrects R-value requirement to that at 75°F rating temperature as required by Federal Trade Commission, rather than the 40°F value previously used and to reflect the actual R-value of an R-19 batt in a 2" x 6" cavity wall.

Section 502.4 Requires that solid fuel burning appliances be provided with combustion air ducted directly to the appliance. Certain exceptions are allowed for new installations in existing buildings. The purpose is to maintain indoor air quality by preventing back drafting and to guarantee an adequate supply of combustion air even in tightly built houses.

Table No. 5-1 and Table No. 5-2. Corrects R-value requirement to that at 75°F rating temperature as required by the Federal Trade Commission.

STATE OF WASHINGTON - KING COUNTY

16756
City of Seattle, City Clerk

-ss.

No.

Affidavit of Publication

The undersigned, on oath states that he is an authorized representative of The Daily Journal of Commerce, a daily newspaper, which newspaper is a legal newspaper of general circulation and it is now and has been for more than six months prior to the date of publication hereinafter referred to, published in the English language continuously as a daily newspaper in Seattle, King County, Washington, and it is now and during all of said time was printed in an office maintained at the aforesaid place of publication of this newspaper. The Daily Journal of Commerce was on the 12th day of June, 1941, approved as a legal newspaper by the Superior Court of King County.

The notice in the exact form annexed, was published in regular issues of The Daily Journal of Commerce, which was regularly distributed to its subscribers during the below stated period. The annexed notice, a

ORD/114549

was published on

06/27/39

The amount of the fee charged for the foregoing publication is the sum of \$ _____, which amount has been paid in full.

M. Spivey

Subscribed and sworn to before me on

Ken Ray JUN 27 1939

Notary Public for the State of Washington,
residing in Seattle

TIME AND DATE STAMP

SPONSORSHIP

THE ATTACHED DOCUMENT IS SPONSORED FOR FILING WITH THE CITY COUNCIL BY
THE MEMBER(S) OF THE CITY COUNCIL WHOSE SIGNATURE(S) ARE SHOWN BELOW:

Thomas B. Rice

_____	_____
_____	_____
_____	_____
_____	_____

FOR CITY COUNCIL PRESIDENT USE ONLY

COMMITTEE(S) REFERRED TO:

PRESIDENT'S SIGNATURE



GUIDESHEET TARGET

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City of Seattle

ORDINANCE 114549

AN ORDINANCE relating to energy-efficiency in building construction; amending Sections 101.3.1, 201.1, 303.1, 402.3, 502.2.1, 502.3.1, 502.4, Table No. 5-1 and Table No. 5-2 of the Energy Code to incorporate 1988 amendments to the Washington State Energy Code.

BE IT ORDAINED BY THE CITY OF SEATTLE AS FOLLOWS:

Section 1. As of July 1, 1989, Section 101.3.1 of the Seattle Energy Code as adopted by Ordinances 113058 and 113059 is amended to read as follows:

101.3.1 Exempt Buildings.

Buildings and structures or portions thereof meeting any of the following criteria shall be exempt from the requirement of Section 502, but shall be included in any analysis performed pursuant to Chapter 4 and shall comply with all other requirements for building mechanical systems, service water heating and lighting systems.

101.3.1.3 Greenhouses that are isolated from any conditioned space and not intended for occupancy.

Section 2. As of July 1, 1989, Section 201.1 of the Seattle Energy Code as adopted by Ordinances 113058 and 113059 relating to definitions is amended as to "fireplace" "solid fuel burning appliance" and "wood stove" to read as follows:

FIREPLACE. ((See the Seattle Mechanical Code)) (1) Any permanently installed masonry fireplace or; (2) Any factory-built metal solid fuel burning device designed to be used with an open combustion chamber and without features to control the air to fuel ratio.

SOLID FUEL BURNING APPLIANCE. Any device for burning wood, coal, or any other nongaseous and nonliquid fuel, including woodstove and fireplace.

WOODSTOVE. A solid fuel burning device other than a fireplace, including any fireplace insert, wood stove, wood burning heater, wood stick boiler, coal-fired furnace, coal stove, or similar device burning any solid fuel used for aesthetic or space-heating purposes in a private residence or commercial establishment, which has a heat output less than one million British thermal units per hour. The term "woodstove" does not apply to cook stove.

Section 3. As of July 1, 1989, Section 303.1 of the Seattle Energy Code as adopted by Ordinances 113058 and 113059 is amended to read as follows:

303.1 Ventilation

The minimum requirements for openable area to provide natural ventilation are specified in the Seattle Building Code.

Where a mechanical ventilation system is installed, the mechanical ventilation system shall be capable of supplying to each zone ventilation air with the minimum outdoor air quantities specified in Table No. 3-1 based upon the greater of the occupant densities in that table or the design

0059-262

Doc 27 1989
A Clerk

* The calculation procedure used to simulate the operation of the building and its service systems through a full-year operating period shall be detailed to permit the evaluation of the effect of system design, climatic factors, operational characteristics, and mechanical equipment on annual energy usage. Manufacturer's data or comparable field test data shall be used when available in the simulation of systems and equipment. The calculation procedure shall be based upon 8760 hours of operation of the building and its service systems and shall utilize the design methods specified in Standards RS-1, -11, -12 and -13.

Section 5. As of July 1, 1989, subsection 502.2.1.2 of Section 502.2 of the Seattle Energy Code as adopted by Ordinances 113058 and 113059 is amended to read as follows:

502.2 Insulation, Ventilation and Moisture Control Requirements.

502.2.1.2 Insulation Materials. All insulation materials including facings such as vapor barriers or breather papers installed within floor/ceiling assemblies, roof/ceiling assemblies, walls, crawl spaces, or attics shall have a flame-spread rating not to exceed 25 and a smoke density not to exceed 450 when tested in accordance with UBC Standard No. 42-1.

EXCEPTIONS: 1. Foam plastic insulation shall comply with Section ~~((477))~~ 1712 of the Seattle Building Code.

2. When such materials are installed in concealed spaces of Types III, IV and V construction, the flame-spread and smoke-developed limitations do not apply to facing, provided that the facing is installed in substantial contact with the unexposed surface of the ceiling, floor or wall finish.

3. Cellulose insulation shall conform to Section 1713 of the Seattle Building Code.

Section 6. As of July 1, 1989, subsection 502.3.1.1 of Section 502.3 of the Seattle Energy Code as adopted by Ordinances 113058 and 113059 is amended to read as follows:

502.3 Building Envelope Criteria.

502.3.1 Prescriptive Approach.

502.3.1.1 Opaque Envelope Criteria. Roof/ceilings, walls, floors over unconditioned space and slab on grade floors shall have a thermal resistance R value no less than the value specified in the prescriptive approach of No. 5-1 or 5-2, as appropriate. For Group R Occupancy, walls include exterior wall sections, walls in finished basements and interior walls exposed to unheated spaces, and floors include floors over unheated spaces, including unheated basements, unheated garages and ventilated crawl spaces. For other than Group R Occupancy, walls are subdivided into exterior walls and below grade walls.

For all components except for walls in Group R Occupancy, the R values specified are for installed insulation material only. R values for construction are defined as any combination of rigid-sheathing, loose fill, or batt insulation that achieves the prescribed R value. For Group R occupancy, where insulation is installed in a continuous manner and is not interrupted by occasional framing members, its R value may be increased by 20% in determining compliance with the requirements of this table. This