MEETING LOG
DIRECTORATE FOR ENGINEERING SCIENCES

SUBJECT: Development of Sizing Guidelines for Unvented Gas Appliances

PLACE: CPSC, Rm 714

MEETING DATE: 08/07/96

LOG ENTRY SOURCE: Ronald A. Jordan RAJ

ENTRY DATE: 08/08/96

COMMISSION ATTENDEES:

Ronald A. Jordan	ESEE
Don Switzer	ESEE
Tim Johnson	ESEE
Laureen Burton	EH
Bob Franklin	EC

NON-COMMISSION ATTENDEES:

Wayne Teepstra	Heatilator Fireplaces
Eric Hawkinson	Heatilator Fireplaces
Dave Haatayla	Underwriters Laboratories
Ron Rinholm	Gas Research Institute
Malia Kishure	McCutchen, Doyle, & Brown
Mike Caldarera	Gas Appliance Manufacturer's Association
Maureen Cislo	Product Safety Letter
Bob Borgeson	American Gas Association Research Division
Doug DeWerth	American Gas Association Research Division
Jack Langmead	Consultant
John Whalen	BNA

MEETING SUMMARY:
Staff met with members of the Unvented Gas Appliance Industry to discuss the development of sizing guidelines for unvented gas appliances. Doug DeWerth gave a presentation on the overview and status of sizing guideline development efforts. Staff felt that the progress on this effort was good and agrees in concept with the approach taken. Staff has concerns about some of the assumptions used to develop the sizing tables.

Staff raised the concern that the computer model assumptions used as part of the basis for the guidelines did not simulate typical house structures with air changes per hour (ACH) below 0.35. Mr. DeWerth responded by indicating that 0.35 ACH was the minimum requirement for residences by ASHRAE 62. He also indicated that homes with air change rates below 0.35 ACH are generally considered "sick homes" and would be uncomfortable to inhabitants. In such a home, according to DeWerth, oxygen would become

depleted, thus causing burner flames to go out.

Staff also raised the concern that a CPSC proposed emission rate for NO^2 was misquoted in the American Gas Association Research and Development (AGARD) report under the Indoor Air Quality Impact Parameters. The CPSC proposed emission rate for NO^2 (i.e. 0.3 ppm) did not include a time rate of change. The AGARD report did (i.e. 0.3 ppm/hour).

The AGARD report discussed a July 1995 study titled "Fireplace Usage Study." This study indicated that unvented hearth products are typically operated for four hours at a time. Staff asked if this study indicated whether unvented hearth product are used by consumer when they go to bed and/or overnight. Mr. DeWerth did not know. Staff requested a copy of the report "Fireplace Usage Study, July 1995.

When the input rate (of vent free products)was discussed, Jack Langmead indicated that a recommendation will be made that consumers buy a product based on the size of the room the product is intended to be used in.

Bob Borgeson gave a presentation on design guidelines for yellow flame burners. Yellow burner flames provides a more aesthetic and realistic looking flame for unvented hearth product burners. However, they have traditionally been considered by the gas industry an indication of incomplete combustion or burner malfunction. Both condition can cause CO production. Mr. Borgeson discussed burner design guidelines that would allow an unvented hearth product's burner flame to burn yellow and still remain in compliance with ANSI Z21.11's CO emissions requirements.

One of the attendees raised the concern units with BTU input ratings of 30,000 to 40,000 BTUs per hour would fail the UL 127 temperature test in fireplaces with zero to two inch clearances. It was mentioned that one manufacturer's units failed the UL 127 temperature test by as much as 40°F.

cc: Colin Church
Chronological File