In this memorandum, staff is providing information on the progress made in the development of protective barrier requirements in the governing voluntary standards for vented gas fireplaces and the anticipated extent of compliance with these voluntary standards. Staff also is recommending that the Commission deny Petition CP 11-1 based on the protective barrier requirements added to the voluntary standards for vented gas fireplace heaters (ANSI Z21.88) and for vented gas fireplaces (ANSI Z21.50) and on the likelihood of substantial compliance with the standards.

II. Status of protective barrier requirements for vented gas fireplaces

As of September 2012, when CPSC staff submitted its status report to the Commission, draft requirements for protective barriers had been approved first by the ANSI Z21 Vented Gas Warm Air Heater TAG, and then by the ANSI Z21/83 Technical Committee (TC), through a letter ballot process. Because there were two disapproving letter ballot votes on the draft protective barrier coverage, CSA rules required that the Z21/83 Technical Committee return the disapproving votes with comments to Z21/83 TC members for the recirculation ballot vote process. According to CSA staff, the purpose of the recirculation ballot process was to allow the approving Z21/83 TC members to hear the disapproving votes and comments and to change their votes, if persuaded by the disapproving votes and comments. The draft protective barrier requirements were upheld during the recirculation ballot process and received final approval by the Z21/83 Technical Committee on July 17, 2012.

The newly approved protective barrier requirements were published in the following editions of ANSI Z21.88 and ANSI Z21.50:

- ANSI Z21.88a-2012/CSA 2.33a-2012, Addenda to the Fifth Edition of ANSI Z21.88-2009 • CSA 2.33-2009, Vented gas fireplace heaters; and
- ANSI Z21.50-2012/CSA 2.22-2012, Vented gas fireplaces.

Both standards were published in December 2012 and have effective dates of January 1, 2015. With the publication of these standards, the requests of the petitioner have been met.

III. Status of protective barrier requirements for unvented gas fireplaces

As noted above, CPSC staff had found that unvented gas fireplaces equipped with glass fronts pose similar burn injury risks as vented gas fireplaces with glass fronts. While working on the requirements for vented gas fireplaces, CPSC staff also developed and sent a proposal to the ANSI Z21.11.2 TAG on May 14, 2012, requesting that protective barrier requirements be adopted into the ANSI Z21.11.2 for unvented decorative gas fireplaces and unvented gas fireplace heaters (TAB A). Staff attended a Z21.11.2 TAG meeting on June 15, 2012, to advocate for the development of a protective barrier requirement. The TAG accepted the proposal as "Information Only" and stated that it would be more prudent for them to take action on the proposal after the protective barrier requirements were adopted for vented fireplaces. No technical issues or concerns were raised by any of the TAG members about any of the provisions in the proposed coverage. A representative of HPBA indicated that:

1. Only approximately 5 percent of unvented fireplaces might have glass temperatures exceeding 172 degrees F. Of those, the majority have already adopted approved barriers[3]; and
2. The Z21.11.2 TAG is likely to adopt protective barrier coverage.

The unvented heater TAG is scheduled to meet in July 2013, and the CSA Group has indicated that protective barrier coverage will be on the agenda for that meeting.[4] Staff will plan to participate in that meeting in order to continue advocating for protective barrier coverage in Z21.11.2.

IV. Adequacy of the Voluntary Standards

In the March 21, 2012, briefing package to the Commission on CP 11-1, CPSC staff found that:

- Given the range of temperatures attainable by the exterior surfaces of their glass fronts, vented and unvented gas fireplaces pose a risk of severe burn injury; and
- An intervention to prevent contact with a glass front would provide the greatest level of protection to consumers from intentional and accidental contact.

Staff also found that to address the hazard, an intervention would need to:

1. Prevent the glass front exterior temperature from reaching those threshold temperatures that cause severe burns; or
2. Provide a barrier that prevents contact with the glass front. The barrier would also need to be designed in a manner that:
   a) Prevents the barrier surface or points of contact from reaching the Threshold A limits[5]; or
   b) Is made of a material that prevents rapid heat transfer to human skin.

The petitioner requested that the Commission initiate rulemaking to require safeguards, including a protective barrier over the glass front, to protect consumers from the contact burn hazard. Staff believes that a glass front or barrier that meets these criteria could effectively eliminate the risk of contact burns from the glass front of a gas fireplace.

The primary features of the newly published protective barrier requirements for ANSI Z21.88 and ANSI Z21.50 are:

1. A requirement that a gas fireplace whose glass front temperatures exceed 172°F, be provided with a protective barrier; and
2. A requirement that a protective barrier: (a) not allow contact with a glass front, and (b) not pose a contact burn hazard.

It is CPSC staff's opinion that all of the features of the new protective barrier requirements satisfy the petitioner's request and are in agreement with staff's findings. Therefore, staff believes that the new standards will be effective in reducing the risk of severe burn associated with the contact with

[3] TAB B. E-mail from T. Stroud, HPBA to R. Jordan, U.S. CPSC, April 3, 2013.
[4] TAB C. E-mail from L. Federspiel, CSA Group to R. Jordan, U.S. CPSC, February 27, 2013.
[5] The threshold temperatures at which irreversible contact burns occur. These temperatures are provided in Figure 1, *ASTM Standard Guide for Heated System Surface Conditions that Produce Contact Burn Injuries, ASTM C1055.*

the glass front of vented gas fireplaces. HPBA has also developed informational materials to educate consumers to the risks associated with contacting hot glass fronts and the importance of having a protective barrier in place. That material is provided at HPBA's website at: www.hpba.org/safety-information/safefireplacetips/fireplace-and-stove-glass-safety/?searchterm=safety. Staff also believes that if adopted into ANSI Z21.11.2, Standard for Unvented Gas Heaters, these requirements should be equally effective in reducing the risk of severe burn associated with a person's contact with the glass front of unvented decorative gas fireplaces and unvented gas fireplace heaters.

V. Compliance with Voluntary Standards

The Hearth, Patio, and Barbeque Association (HPBA) is a trade association that represents the hearth products, patio, and barbeque industries in North America. HPBA's hearth product members manufacture, import, distribute, sell, install, and service factory-built fireplaces, gas log sets, and fireplace inserts. According to HPBA:

> *"Most manufacturers of gas fireplaces are HPBA members . . ." and account for approximately ". . . 90 percent of all hearth appliance shipments." In order to be marketed and sold in the United States, gas appliances, including gas fireplaces, must comply with local, state, regional, or national building codes. In order to comply with the building codes, gas fireplaces must be certified to national performance and safety standards, such as the ANSI Z21 set of gas appliance standards and Underwriters Laboratories standards."*

In their comments on Petition CP 11-1, HPBA asserted:

> *"There will be high levels of compliance. The ANSI standard is applicable to the entire gas fireplace industry and is incorporated in building codes and standards. Retailers and conformity assessment organizations will require compliance. Further, the violation of a voluntary standard may be relevant in product liability litigation. The existing requirements in the standards achieve virtually total, industry-wide compliance, and there is no reason to believe that anything will be different with safety guards and related requirements."*

Staff agrees with HPBA on this matter and continues to believe that, given these conditions for market entry and participation, a framework exists that will help to ensure conformance of these products to the voluntary standards. Since protective barrier provisions have been adopted into ANSI Z21.88 and ANSI Z21.50, staff believes that manufacturers who certify to these two standards will conform to any new protective barrier requirements. If the protective barrier requirements are adopted into ANSI Z21.11.2, staff believes that manufacturers who certify to that standard will also conform to any new protective barrier requirements.

VI. Options.

1. Grant petition CP 11-1 and begin rulemaking; or
2. Deny petition CP 11-1; or
3. Defer decision on petition CP 11-1 for 6-months to allow the voluntary standards process to take place for unvented gas fireplaces; specifically, for the TAG to develop a schedule establishing a standard.

VII. Recommendations

Staff recommends that the Commission deny Petition CP 11-1, for the following reasons:

1. Voluntary standards that include protective barrier requirements have been approved and published for vented gas fireplace heaters (ANSI Z21.88) and for vented gas fireplaces (ANSI Z21.50).
2. The protective barrier requirements are comprehensive and should be effective in reducing the risk and occurrence of burns from contacting the hot surface of vented gas fireplace glass fronts.
3. The likelihood of substantial compliance in the United States is high because local and regional building codes require that gas appliances be certified to a nationally recognized performance and safety standard in order for a permit to be issued.
4. Protective barrier requirements are scheduled to be considered by the voluntary standards group that develops standards for unvented decorative gas fireplaces and unvented gas fireplace heaters (ANSI Z21.11.2).
5. Substantial compliance is also likely to be high for unvented gas fireplaces because:
    a. Only approximately 5% of unvented fireplaces might have glass temperatures exceeding 172 degrees F. Of those, the majority have already adopted approved barriers.; and
    b. The Z21.11.2 TAG is likely to adopt protective barrier coverage.