

CPSA 6 (b)(1) Cleared  
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No. 1111  
Products Identified  
Exempted from  
CPSC/OFC OF THE FEDERAL TRADE COMMISSION  
CONFIDENTIAL


**LOG OF MEETING**

**SUBJECT:** Meeting of Working Group on Rangetop Cooking Fires

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**DATE:** June 30, 1998      **PLACE:** CPSC Engineering Laboratory  
10901 Darnestown Road  
Gaithersburg, MD

**DATE OF LOG ENTRY:** July 6, 1998

**SOURCE OF LOG ENTRY:** Andrew Trotta, ESEE 

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**NON-CPSC PARTICIPANTS:**

- Tim Brooks, Whirlpool
- Norman Chiu, General Electric
- Sam Cristy, Product Safety Letter
- Linda Greiner, Frigidaire Home Products
- Wayne Morris, Association of Home Appliance Manufacturers
- Issac Sargunam, Maytag
- Rick Seib, Whirlpool
- Jack Thomas, Amana

**SUMMARY:**

United States Consumer Product Safety Commission (CPSC) staff met with representatives from the Association of Home Appliance Manufacturers (AHAM) and its range manufacturer members as a working group to discuss issues related to the CPSC Range Fire project. AHAM and industry members suggested broadening of the working group to include sensor manufacturers and consumer groups at future meetings. CPSC staff presented the status of Phase IV of the project (see attachment for outline of Phase IV test agenda) and demonstrated the operation of an experimental thermocouple-based pre-ignition detection range control system, which was developed at the CPSC Laboratory. Industry representatives continued to express concern with the reliability, robustness and cost effectiveness of this approach. CPSC staff emphasized that the Phase IV effort is a demonstration of one possible concept for detecting pre-ignition conditions of food to prevent cooking fires and encouraged independent development of alternative concepts. Although both Amana and Maytag have conducted some limited testing, the range manufacturers are not planning to engage in pre-ignition control system development efforts. Based on their collective experience, the manufacturers also provided insight that CPSC staff could use to optimize the control system prototype design to maximize consumer expectations for normal cooking while minimizing risk of food ignition. The group will meet at mutually-agreed time in the future, potentially in fall 1998.



PHASE IV TEST PLAN, Revised 6/25/98

PHASE IV PRELIMINARY TESTS COMPLETED TO DATE			
Pan Material	Heat Setting	Oil Volume and Type	Ignition (I) or Thermal Inertia (T)
Ceramic	High to content temperature=330°C	100 ml soybean	T
Stainless Steel	High to content temperature=330°C	300 ml soybean	T
Stainless Steel	High to content temperature=330°C	75 ml virgin olive	T
Stainless Steel	High to content temperature=330°C	75 ml soybean	T
Stainless Steel	High to content temperature=330°C	50 ml soybean	T
Stainless Steel	High to Ignition	500 ml virgin olive	I
Stainless Steel	High to Ignition	500 ml soybean	I
Ceramic	High to Ignition	500 ml soybean	I
Stainless Steel	Medium High to Steady State	500 ml soybean	I
Stainless Steel	High to Ignition	500 ml full bodied olive	I
all tests were performed on the front right large open coil electric range burner using 10 in (254 mm) diameter pans.			

For control system troubleshooting, various tests using different pulse times will be conducted with various volumes of soybean oil in a stainless pan to determine optimum power cycling.

PROPOSED TESTS USING THE CONTROL SYSTEM REPEATS OF BASELINE SCENARIO 500 ml SOYBEAN OIL IN VARIOUS MATERIAL PANS (6 Tests)		
Cooking Scenarios • Number of Tests	Pan Type • Pan Contents	Test Procedure
1. 500 ml of oil heated on high • 2 tests	Stainless Steel • 500 ml of soybean oil	Place 500 ml of soybean oil in a stainless steel pan, heat on high.
2. 500 ml of oil heated on high • 2 tests	Aluminum • 500 ml of soybean oil	Place 500 ml of soybean oil in an aluminum pan, heat on high.
3. 500 ml of oil heated on high • 2 tests	Ceramic • 500 ml of soybean oil	Place 500 ml of soybean oil in a ceramic pan, heat on high.

PROPOSED TESTS USING THE CONTROL SYSTEM BOIL DRY AND EMPTY PAN SCENARIOS (4 Tests)		
Cooking Scenarios • Number of Tests	Pan Type • Pan Contents	Test Procedure
1. 50 ml of water heated on high • 2 tests	Stainless Steel • 500 ml of water	Place 50 ml of water in a stainless steel pan, heat on high.. Allow all of the water to boil off until the pan is empty. Determine if control system can recognize a boil dry condition.
2. Empty Pan heated on high • 2 Tests	Stainless Steel • Empty	Place an empty pan on the test range heat on high. Determine if control system can recognize an empty pan condition.

PROPOSED TESTS USING THE CONTROL SYSTEM PHASE III REPEAT FOOD SCENARIOS (4 Tests)		
Cooking Scenarios • Number of Tests	Pan Type • Pan Contents	Test Procedure
1. 227 grams of bacon heated on high • 2 tests	Stainless Steel • 227 grams of bacon	Place 227 grams of bacon in a stainless steel pan, heat on high..
2. 750 grams of chicken in 500 ml of soybean oil • 2 Tests	Stainless Steel • 500 ml soybean oil and 750 grams of chicken	Heat oil to 190°C (374°F) on high. Introduce chicken to oil. Reduce heat to medium high and turn chicken every 4 minutes for 20 minutes. Increase the heat to high.

PROPOSED TESTS USING THE CONTROL SYSTEM VARIABLE HEAT SETTING AND OIL VOLUME SCENARIOS (12 Tests)		
Cooking Scenarios • Number of Tests	Pan Type • Pan Contents	Test Procedure
1. 500 ml soybean oil on medium-high • 2 tests	Stainless Steel • 500 ml of soybean oil	Place 500 ml of soybean oil in a stainless steel pan and set the burner on medium high
2. 500 ml soybean oil on medium-high • 2 tests	Aluminum • 500 ml of soybean oil	Place 500 ml of soybean oil in an aluminum pan and set the burner on medium high
3. 500 ml soybean oil on medium-high • 2 tests	Ceramic • 500 ml of soybean oil	Place 500 ml of soybean oil in a ceramic pan and set the burner on medium high
4. 100 ml soybean oil on medium-high • 2 tests	Stainless Steel • 100 ml of soybean oil	Place 100 ml of soybean oil in a stainless steel pan and set the burner on medium high
5. 100 ml soybean oil on medium-high • 2 tests	Aluminum • 100 ml of soybean oil	Place 100 ml of soybean oil in an aluminum pan and set the burner on medium high
6. 100 ml soybean oil on medium-high • 2 tests	Ceramic • 100 ml of soybean oil	Place 100 ml of soybean oil in ceramic pan and set the burner on medium high

PROPOSED TESTS USING THE CONTROL SYSTEM VARIABLE DIAMETER PAN SCENARIOS (4 Tests)		
Cooking Scenarios • Number of Tests	Pan Type • Pan Contents	Test Procedure
1. 100 ml soybean oil on high • 2 tests	Stainless Steel saucepan approx. 6" dia. • 100 ml of soybean oil	Place 100 ml of soybean oil in a Stainless Steel saucepan approx. 6" diameter and set the burner on high.
1. 100 ml soybean oil on high • 2 tests	Aluminum saucepan approx. 6" dia. • 100 ml of soybean oil	Place 100 ml of soybean oil in an aluminum saucepan approx. 6" diameter and set the burner on high.

Total number of proposed tests: 30

All tests conducted on the instrumented electric range, front right large burner using 10" diameter pans unless specified.

More scenarios to be added upon suggestion.