

2/14/95

MEETING LOG  
DIRECTORATE FOR ENGINEERING SCIENCES

SUBJECT: Industry Activities to Address Water Heater Ignition of Flammable Vapors

PLACE: Chicago Marriott Hotel, Chicago, IL

MEETING DATE: March 30-31, 1995

LOG ENTRY SOURCE: Donald W. Switzer *DWS*

ENTRY DATE: April 3, 1995

COMMISSION ATTENDEES:

Donald W. Switzer ES

NON-COMMISSION ATTENDEES:

See attached attendance sheet

MEETING SUMMARY

The Technical Advisory Group (TAG) on Flammable Vapor Ignition was formed by the Gas Research Institute (GRI) to provide technical oversight of the development of a test protocol to screen water heater resistance to igniting flammable vapors. The protocol will be provided to the ANSI Z21 water heater subcommittee to be used as the basis for a standard test method in the ANSI Z21 residential water heater standard. The TAG consists of experts from the gas-fired water heater manufacturing industry, from natural gas utilities, and from CPSC. The protocol is being developed by Arthur D. Little, Inc., (ADL) under contract to GRI.

The purpose of this meeting was to provide ADL with a technical review of the approach being suggested for the test protocol. ADL has completed first phase testing to characterize the vapor cloud formed when gasoline is spilled under conditions likely to be encountered in the field. ADL developed a test matrix that provided an envelope of "severe case" conditions. Because of the large number of variables, a statistically designed test was conducted that identifies critical variables. The information from phase one will be used to establish the vapor volume and rate of introduction into the chamber during the second phase of testing when the water heater will be operating in the chamber.

ADL has developed a preliminary design for a test setup. The current concept consists of enclosing the water heater in an instrumented container and injecting a flammable gas into the

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chamber to mimic the vapor produced when gasoline is spilled in the vicinity of the appliance. The amount and height of the gas injection has not as yet been agreed upon. Although the test data indicates that vapors rise to a considerable height after a spill, some TAG members are concerned that if the test method calls for vapor depth greater than 18 inches, there could be significant impact on test methods and installation practices for other appliances. The TAG agreed to the approach being taken. Construction of the test facility will begin shortly, and ADL will present the results of preliminary testing at the next TAG meeting, tentatively scheduled for June, 1995.

Meeting:

Flammable Vapor TAG  
Downtown Chicago Marriott  
540 N Michigan Avenue  
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3/30/1995 to 03/31/1995

alpha by last name

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