



STATE OF WASHINGTON

## STATE BUILDING CODE COUNCIL

Department of General Administration

210 11th Avenue SW • P.O. Box 41011 • Olympia, Washington 98504-1011  
(360) 902-7293 • fax (360) 586-0493 • e-mail [sbcc@ga.wa.gov](mailto:sbcc@ga.wa.gov) • [www.ga.wa.gov/sbcc](http://www.ga.wa.gov/sbcc)

### MINUTES CARBON MONOXIDE ALARM TAG MARCH 1, 2011

**Date:** March 1, 2011  
**Location:** DDES Hearing Room  
1000 Oakesdale Ave, SW #140  
Renton, Washington

**TAG members present (\*phoned-in):**

- Dave Kokot, Chair;
- Gary Allsop; Nancy Bernard; Jackie Clower\*; Neil Hampson, M.D.\*; Julie Johnson\*; Tracey Locke; Barbara Moilien; Mark Murray; Mark Ossewarde; Julie Peterson\*; Joe Puckett; Rodney Schauf (voting members).
- Annie Fitzsimmons; (non-voting members)

**Also present:**

- Joe André; Steve Simpson; Tom Sri\* (Kidde)

**Absent:**

- Cal Clausen; Heidi Scarpelli; Michael Otto; Lindell Weaver, M.D.; Jim Williams; Katie Wheeler; Anne Donegan (alternate); Allen Spaulding (alternate)

**Staff present:**

- Peggy Bryden; Joanne McCaughan

TAG Chair Dave Kokot welcomed the group; introductions were made and included those participating by phone. The agenda was approved as written. The minutes were approved with some modifications to the draft; an e-mail from Bob Eugene, a Senior Regulatory Engineer with Underwriters Laboratories (UL) was read into the record as he had some concerns about information reported in the minutes; this was related to CO concentration limits and placement of the alarms. As he had not participated in the prior meeting his concerns were not added to the minutes for that meeting, but were noted for the record and for further discussion.

The group reviewed some of the data received to date, based on discussion from the last meeting. Tom Sri, with Kidde, explained how CO alarms operate. Dave explained that there has been some concern expressed about combination units, e.g., their reliability. Another concern is related to public education and whether such efforts will be supported by industry. Sri noted that several states, in addition to Washington, have requirements for alarms to meet UL 2034; over the years this standard has been revised. They are now very reliable and designed to avoid 'nuisance' alarm issues. These units test for 2 separate standards; Sri explained that as an independent 3<sup>rd</sup> party, UL ensures their safety and reliability. He ensured the group that industry can meet the demand for increased production, they offer reliable products and will help with public education efforts as they have in the past. In the case of Kidde, their products meet the UL 2034 standard.

Joe André of the National Electrical Manufacturers' Association (NEMA) noted he has been in contact with the national organization regarding these issues. He has been working with several states, including California and Oregon to ensure the products are available. He cited a 2005 NEMA study that should be posted on the SBCC website; it shows that there had been reliability problems several years ago resulting in design revisions. Now they are designed to adequately detect dangerous levels of CO and alarm appropriately. Joe André and Tom Sri explained what was done to make them more reliable including engineering studies, the inclusion of medical expertise, the development of technology combining electronic and chemical elements. Tracey Locke wanted to know about the difference between the alarm signals in CO/Smoke combo units. Joe André noted it tells you in a voice using different words depending on the danger. He noted UL 2017 and UL 2034 are two separate standards, and the combo alarms are activated based on the presence of CO or the presence of smoke. There is a requirement within the standard for a specific message. Nancy Bernard asked if there were specific products for people who are hearing impaired and the response was positive, such units are available. Tracey asked about the longevity of the units, and Joe explained they are good up to ten years. Sri added there is an 'end of life' warning required in the standard, and many varieties are available with battery back-up. Dave asked about the guidance from industry regarding placement of the units. Sri noted it depends on the air flow in the house, based on design elements and that CO flows well through multiple layers of air. To clarify, he noted that they recommend placement outside of bedrooms, on the wall, plugged into an outlet, or on the ceiling; this should be based on the manufacturers' recommendations. Additional questions about placement were answered by Sri making deference to UL or to NFPA standards for clarification.

Julie Peterson discussed some of the information in the letter from NEMA that was submitted by Joe André; she took issue with the idea that it does not matter if there is a fuel source present. She noted that in the Washington state licensed boarding home environment, there is no way such cooking equipment or other risky devices could be brought into the dwelling units; the residents can't and don't have them available. She wants it to be noted that boarding homes should not be required to install these units if there is no fuel source present. Rodney Schauf noted the situation is the same for hotels, and Dave indicated there will be time for such discussion when they get to the proposal language. Joe André noted they wanted to establish the basic requirements, and that they recognize there may need to be exceptions allowed. Julie P. noted that the law does allow for such exceptions.

The discussion turned to the statistics available and Joe Puckett indicated there was no specificity to the data regarding the types of occupancies where CO poisonings had occurred; we need this information to make an informed decision about the need for alarms in various categories and where exemptions should be provided. The group wondered if there was a way to get this information; Dave noted where there is a 'supervised' situation we need to ask whether there is the same level of risk as there is with independent living. He agreed the group would need to carefully consider any exemptions, and recognized there is the exemption for single family owner-occupied homes (occupied prior to July 1, 2010). More information would help the TAG make an educated decision. He added that there is agreement that we have a problem, which is why the TAG is meeting.

Annie Fitzsimmons inquired about the placement of the alarms outside of the sleeping units. Mr. Sri, the alarm expert, said the premise is that while sleeping, a resident would not sense any symptoms; an awake, able-bodied person is more likely to notice symptoms like sudden nausea, though others noted the individual may not connect the symptom to a CO event and may go to bed because they feel sick. Annie wanted to know how many alarms were recommended per level of the house, and Ahi noted that one per level is the recommendation if the bedrooms are in close proximity to each other. Dr. Hampson said the alarm is to detect the danger before the symptoms become an issue, and that CO diffuses rapidly once it is in the air. He feels that the alarm could be installed anywhere, even at the floor level. Mr. Sri was asked how much square footage the alarm would cover and he felt that was variable. If there was an alarm on the near the sleeping areas and on other floors if there were any, it would be adequate. Barbara Moilien wondered if placement (high or low) impacted efficacy. Dr. Hampson said no, because they are placed in outlets which are low, as well as at ceiling height. Ahi added these locations have been determined by

science and are supported by research and data, and clarified that they are non-specific as to height. Tracey Locke wondered about a possible scenario of a power outage, when a family or group of residents gather in one room with doors closed and bring in some fuel-burning heat source; she questioned whether they would hear the alarm if it activated down the hall or on the other side of the house where the bedrooms are located. Dr. Hampson noted that most of the CO poisoning cases in the US occur where CO alarms are not present.

Dave noted that the group should next review the 2012 ICC language and background for the alarms, indicating there had been some changes to the model code. The new code from ICC will be published in April 2011, but will not take effect in Washington until July 2013, as that is our adoption cycle. He suggested the TAG accept as much of the national language as possible to make the state code easier to manage and maintain, and recommend a limited number of amendments: the fewer the better. Mark Murray noted that the national model provides a very solid basis for the work the TAG is doing, and addresses a lot of their concerns; it is better to address the issues now rather than wait until 2013. Dave added that the UL and NFPA standards are included and it would be wise to use them in our current process; he noted that we can always go back to ICC to develop additional model code changes from Washington. It is also critical for the group to understand that whatever is adopted may have impact on implementation and enforcement.

Nancy added we should not forget that our problem here is focused on the different types of facilities. She believes the problem is not with the language of the model code, but where CO alarms are needed specifically in Washington. For example, residents may need to protection from actions of their neighbors, as the CO can pass through to connecting units. Some examples might be in dormitories, licensed boarding homes, and units that do not contain fuel-burning appliances. The windstorm and subsequent CO poisoning deaths in 2006 drove the legislation, recognizing that part of the concern is that the CO moves through the air, is colorless and has no detectable odor; their intent is to prevent future CO poisoning deaths.

This discussion was followed by a brief lunch break.

Dave asked the TAG to review the proposals that had been submitted, indicating the TAG could use one of these or modify one to develop the language. There are two primary issues to discuss: which type of residences the alarms go into; and the effective date. The statute provides a deadline of January 1, 2013 on existing facilities; compliance in new construction was required on January 1, 2011.

Dave recommended that the TAG complete their draft proposal(s) by the next meeting on March 15. He said this would give the TAG some time to get something to the SBCC Council, remembering it also must go through the Council's economic committee (EECC).

Dave asked the assembled group to go around the table and indicate what their primary concern was regarding the CO alarm issue, to explain their view of what exceptions are needed (if any), and how they view the F133-9/10 language. Dave started the discussion by noting his proposal was written as an alternative to others that were already offered. This proposal as it makes it easier to go from code to code. Barbara feels that the exceptions now in place perpetuate myths, and believes CO poisoning would still occur even without fuel-burning appliances or attached garages.

Joe Puckett is in favor of the F133 proposal. He would require CO alarms in existing multi-family properties that don't have fuel-burning appliances or attached garages to be installed when the properties are remodeled and a permit is issued. Building inspectors could check for the alarms when the remodel is completed, resolving the enforcement issues.

Mark Murray agreed with Dave on the F133 language as a base; it is appropriate for new construction and the retroactivity of the new rule. Although data is hard to find, it is clear that most incidents involving portable equipment are related to single family residences. This education could partially be done with labeling, as is required

with home generators. Megan Schrader agreed that both public education and regulation are big pieces of the issue. Her company (Kidde) is working with many groups to provide information. The code development is essential for enforcement. She noted there are also many challenges in multi-family housing.

Gary Allsup concurs with the use of F133 and would modify the language for those who have no fuel fired equipment and where no hazard exists.

Tracey Locke supported the use of F133, but works for a public agency where there are more than 9,000 housing units and fiscal impact and dwindling resources are of concern. They are glad to see the implementation of the alarms has been extended to 2013, but a longer term might be preferable. Budget is an issue for most people, so it hoped that alarms will remain reasonably priced.

Rodney agreed that F133 is a good base, but has identified three potential edits he would like to see regarding the dates for the new and existing facilities as noted in the document he submitted from the hotel/motel industry.

Annie Fitzsimmons noted the statute creates an exception for owner-occupied single family homes, occupied prior to July 1, 2010; however, it isn't clear regarding compliance for those which were not owner-occupied. Do the owners have an obligation to get the alarms? Dave noted the requirement is to have the alarms by January 2013.

Mark Ossewaarde is in agreement with using F133; it is a good base document and will prevent deaths. He is in favor of the commonality of the document. There may need to be some changes but this is a good base document; he would prefer to see alarms wherever people move about independently.

Joe André noted NEMA has no specific position and they are at the table to support the work of the TAG; he agrees with all that has been said, and that the basis of F133 is a good idea with a couple of modifications regarding fuel burning appliances. He agrees with what Joe Puckett said. However, people will be exposed to the same hazards whether there is an inspection or not.

Nancy feels there is no problem with using F133 as a base also. We are concerned about the CO deaths and the concern is that they have been seen in all types of residences. We need to be very careful about the exemptions. She feels that where people have independent control of their area there will be concerns.

Joe Andre agrees with all that has been said. The basis of the F133 is a good idea with a couple of modifications to the adjacent fuel burning appliances. He agrees with what Joe Puckett said. However, people will be exposed to the same hazards whether there is an inspection or not.

Julie Peterson is good with the F133 as a base. She liked what Rodney said and the modifications to the language.

Julie Johnson also agrees that F133 is a good basis.

Dr. Hampson disagrees with the idea of exemptions for certain residences. The information he sent out for the website shows this is an issue, and that most of the poisoning cases are from things that are brought into the unit, not from fuel burning appliances.

Jackie Clower feels that F133 is okay. She is in agreement with some of it, but some of it she is not.

Dave said it looks as though using F133 as a base is unanimous. Staff will send this document to the TAG as a word document so each can modify it. The challenge before the next meeting will be to develop proposed changes and submit them to staff by Friday, 3/11/11 at 4 p.m.; he asked that proposed modifications be identified by using the legislative format (underline/strikethrough) The ICC public hearing testimony has been distributed to the members of the TAG for their review. Voting members should plan to come to consensus and/or vote at the next meeting. Dave recognizes there will probably be some disagreement, but reminded the TAG that the code is a compromise

and is always subject to change. If something doesn't happen this time, it can continue to be discussed and revised in subsequent cycles. He thanked all participants for their time and effort and believes we are creating something good here. If you have any questions get them to either Joanne or Dave.

One additional topic was discussed regarding the single family homes issue under IRC, and it was noted that the F133 proposal does not deal with single family.

Annie noted that there are legal issues and the exemption language is not correct. It may create an opportunity to sue the seller of the home, and the real estate industry would be on the hook. Nancy noted that there is a legal provision for disclosure by the seller to the buyer. Gary noted that the enforcement staff cannot go out and tell owners what to do, only when they pull a permit for work on the home. Joe noted Form 17 includes the smoke alarms, and could be modified to include the CO alarms if the realtors take that issue up. Megan Schrader noted that the SBCC was not intending to enforce this section, and she had been so informed by staff. Annie noted that the problem is really a lack of education, and that the form must be modified, otherwise there will be liability.

A question came up about whether the realtors group had approached the legislature to resolve this matter or if legislation would be needed, and Annie noted the exemption is for owner-occupied so if they are rentals they are not exempt. Julie Peterson wanted info on whether the language impacts R1, R2, R3, but Dave explained this section has nothing to do with licensed facilities. Julie Johnson added it applied to houses under construction, existing duplexes and owner-occupied or rental property. Nancy asked about adult family homes, and Julie P. explained there are two different types of entities, with specific definitions and regulations. Julie J. asked about situations where there are more than that number of occupants, e.g., U-district student housing in Seattle; it was noted that this is under the jurisdiction of the Seattle Housing Code; Nancy noted she would not want to see such occupancies exempted.

Julie J. noted that in rental housing, a resident who is not provided an alarm by the landlord can go out and purchase one, the supply is available. She disagrees with the approach of having the landlord provide the device because it protects people from their own mistakes, and she believes that is not the purpose of good legislation. Dr. Hampson replied that in his data set, only one death was attributable to a fuel-burning appliance. The other 95 percent would remain unprotected if the alarm requirements are limited to dwellings with a fuel source. Julie countered that other research shows three-fifths are in locations with attached garages, and that cars left running are a problem. Joe André noted that the intent of the legislation based on the 2006 windstorms and power outages was to protect people in these situations, and he added that not many are due to cars left running in the garage. Joe Puckett asked about whether a fireplace is considered an appliance. Nancy noted that she had a call from a renter who's landlord insisted he stop using an electric heater because it was too expensive and instead bring in a fuel source appliance; this is very dangerous from a public health perspective. Julie J. asked how many codes are written to address the lack of good sense and poor choices made by individuals. Dave responded that the entire Fire Code is written on that premise; the basis of the codes is to protect the public.

Tracey noted that the group may not get to consensus around some issues, and there was a very brief discussion on how to modify the current proposals, and recognition that there are some issues and requirements coming out of the legislation that are not regulated by the SBCC. It was noted that there are some things in the model code (F133-9/10) that may not fit the circumstances in Washington, and Dave reminded the group that the Council is authorized to provide exceptions through rulemaking, and that in the process there is a great deal of discussion to provide clarification. Nancy wondered why it was necessary to have any exceptions at all, and Joe André noted that those who are impacted the most are low income.

Everyone was reminded to submit their drafts/edits back to staff by Friday, March 11, 2011 at 4 p.m. by e-mail to: [joanne.mccaughan@ga.wa.gov](mailto:joanne.mccaughan@ga.wa.gov). The meeting was adjourned at 2:55 p.m.