U.S. Consumer Product Safety Commission
LOG OF MEETING

SUBJECT: Public meeting to answer clarifying questions on NIST TN 2048

DATE OF MEETING: August 8, 2019

LOG ENTRY SOURCE: Janet Buyer, Engineering Sciences

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LOCATION: CPSC, National Product Testing and Evaluation Center (NPTEC), 5 Research Place, Rockville, MD 20850 and remote participation via conference call

CPSC Attendees: Joel Recht, Barbara Little, Matthew Brookman, Matthew Hnatov, Janet Buyer, Mark Kumagai, Caroleene Paul

NON-CPSC Attendee(s) attending in person:

Name	Affiliation
John Lee	Bracewell
Joe Harding	PGMA
Brandon Schmidt	Generac
Tom Daley	UL
Albert Donnay	Donnay Toxicology

NON-CPSC Attendee(s) attending via conference call:

Name	Affiliation
Victoria Barker	DLA Piper
Carol Braun	Missouri Dept of Health
Mark Carpenter	GenTent Safety Canopies
Daniel Carter	Firman Power Equipment
Kevin Cole	Generac
Jay Crutcher	Harbor Freight
Michael Gardner	Techtronic Industries
Tom Kim	American Honda
Sean Oberle	Product Safety Letter
Diana Pappas Jordan	UL
Mukesh Patel	Multiquip
Daniel Schlepp	Wacker Neuson
Kazuaki Watanabe	Figaro USA
Mark Willer	Briggs & Stratton
Eric Williamson	Harbor Freight
Greg Wischstadt	Generac

Casper Wypych	Harbor Freight
Brandon Nigh	Briggs & Stratton

SUMMARY OF MEETING:

1. Janet Buyer opened the meeting with the following remarks:
    a. The comment period for NIST Technical Note 2048, which contains the simulation and analysis plan for evaluating the effectiveness of the CO mitigation requirements in two voluntary standards, is open until September 9. Comments can be submitted into the docket electronically by using www.regulations.gov and typing the docket number, which is CPSC-2006-0057, into the search line. Written comments can also be submitted. Instructions are detailed in the Federal Register for the Notice of Availability of NIST TN 2048 (84 FR 32729).
    b. The purpose of this meeting is to respond to clarifying questions about information in TN 2048 that potential commenters may need to know before they can provide comments in response to the Notice of Availability.
    c. Any comments or opinions on the approach taken in the Technical Note should be submitted as a comment to the rulemaking docket.
    d. The format for this meeting is a question and answer format, no presentation will be given.
2. A roll call was conducted to announce everyone who was on the phone or in attendance in the room.
3. The following is a summary of the discussion of clarifying information resulting from the participants' questions:
    a. The version of CONTAM that will be used in the simulations is the same version used in NIST TN 1925, which has heat transfer capability.
    b. The house models that will be used in the simulations are the same as those used in NIST TN 1925 without any further modification. In NIST TN 1925, all windows and exterior doors were closed for all the simulations; however, in this study, windows and doors will be opened or closed as specified in the scenario tables 2.a. through 8.b.ii.
    c. Basement window openings will be the same size as main floor windows.
    d. Table A.3.3.2 identifies the specific house models that are grouped together in each of the five house groups that are listed in Table 1.
    e. For all scenarios, there will be either one restart or no restarts. For the effectiveness analysis, the simulation results from the no-restart and restart scenarios will be weighted according to the weights shown in each of the tables 2.a. through 8.b.ii.
    f. For each of Tables 2a and 3a, scenarios C1 and C2 (where the generator is in a first floor room with an interior door that isolates it) are scenarios in which the interior door is partially open. Tables 4, 6, 8 also involve scenarios with an interior door (to either the basement or workshop room) that is partially

open. The room selected for the "other first floor room that has a door" will be dependent on the house model, but could be a room such as the bedroom farthest from the main living area of the house or a den.

g. In Table 3.c., box labeled "Initial location" should state "Crawlspace" and "Initial Condition" does not need "Generator is in crawlspace." because it is redundant. Table 5.c.ii, in the box labeled "Initial location", it should state "Garage".
h. In Table 2.c., the Scenario Weight column entry should say "Allocated Deaths for specific house model" and it is allocated only for the specific houses in which a fatal incident occurred with the generator outside the house. The right-hand column in both Tables A.3.1.1. and A.3.1.2 show the allocation for each of the houses. (A zero in that column indicated that house design did not have any such incidents associated with it.)
i. In Tables 5.a. and 6.a., when the exhaust is facing toward/away from the door, the reference is to the door connecting the garage to the interior of the house. This door is considered an exterior door.
j. For all of the scenarios where the generator is started or restarted outside and CO enters the home, the fraction of CO rate that will be simulated as entering the home is still under evaluation, but the methodology to arrive at the fraction will be the same as the validation case #51 in NIST TN 2049.
k. In Table 5.c.ii. when the generator is in the garage and the exhaust is pointed toward the door connecting to the house interior, the fraction of CO that will be simulated as entering the home is still under evaluation, but the methodology to arrive at the fraction will be the same as the validation case #32 in NIST TN 2049.
l. For Tables 2.b.ii., 3.b.ii, and 5.b.ii., the CO source will be modeled in the adjacent room in to which the exhaust is blowing and the shutoff sensor will be modeled in the room in which the generator is located.
m. Any possible reduction of the number of simulations, as discussed in TN 2048, will depend on the timeline and availability of resources (staff, funding, prioritization, etc.) when modeling is started and while underway.
n. The CO emission rates in Table 11 will be increased by a factor of 3 after 2 hours in scenarios that have closed doors and windows.
o. The electrochemical sensors used in NIST TN 2049 were calibrated in a chamber with ambient air that was then injected with 100% CO.
p. "On page 56 of TN 2048, the word "formally" should instead be "formerly." "Formerly fatal exposures" indicate exposures that, but for the modifications (e.g., shut-off or shut-off with reduced CO emission rate), the person would have died; now, the result would be an injury to the person rather than a death."
q. The effectiveness analysis will yield counts of fatalities and three different levels of injury severity for generators that shutoff at the requirements of both voluntary standards and those that shutoff at half the requirements of both standards.

r. The probability of death, hospitalization, treatment, or no treatment will result in a binary output for each level of possible outcome. The binary value would result in a (1) if any of the COHb criteria provided on page 56 were met for that particular level of outcome at any point during the 24 hour simulation. Only the most severe injury reached is assigned a (1) so probability at any given point totals to one. (i.e., the individual either died, required hospitalization, required ER treatment, or did not require treatment). The summation of these binary results, representing the different levels of injury, over the simulation days (28) will then be divided by 28 to determine a probability of each of the levels of injury for a given scenario.

4. There were a number of other items raised by participants that staff recommended be entered in the docket as comments.
5. The meeting adjourned when participants no longer had any questions to ask.