

## National Consumer League (NCL) comments on CPSC Docket 2006–0057

### 1) Introduction

The National Consumers League (NCL) is America’s pioneering consumer advocacy organization, representing consumers and workers on marketplace and workplace issues since our founding in 1899.

Consumers rely on portable generators to provide electric power when utility-provided power is not available. This includes many settings during times of emergency, including during or after tornados, hurricanes, wildfires, snowstorms, or other severe weather events.

The NCL supports CPSC’s determination that portable generators present an unreasonable risk of injury and death associated with acute carbon monoxide (CO) poisoning. The CPSC identified at least 1,332 CO-related consumer deaths involving portable generators between 2004 and 2021. This average of about 74 lives lost annually appears to be on the increase, with an average of 85 deaths reported for the most recent three-year period of data (2017-2019). CO poisoning can be fatal: children, pregnant women, babies and infants, persons with sickle cell disease, older adults, and persons with chronic illness (e.g., heart or lung disease) are at particularly high risk.<sup>1</sup>

While fatalities are the most severe outcome from CO poisoning, acute CO exposure can also cause other significant health effects. CPSC estimated 77,658 nonfatal injuries treated either in emergency departments, clinics, or doctor’s offices over the period 2004-2021.<sup>2</sup> In addition to immediate-onset effects, short term delayed effects may also occur from several days to approximately 3–4 weeks after exposure, with symptoms including inappropriate euphoria, impaired judgment, poor concentration, memory loss, cognitive and personality changes, and psychosis.<sup>3</sup> Studies show that a significant number of those who survive CO poisoning can also suffer long-term neurological and cardiac damage, and are at risk of increased long-term mortality.<sup>4,5</sup> It is critical that the new rule also sharply reduce these non-fatal health impacts.

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<sup>1</sup> CDC Health Advisory. 2022. Hurricanes Fiona and Ian—Clinical Guidance for Carbon Monoxide (CO) Poisoning CDCHAN-00476

<sup>2</sup> Federal Register / Vol. 88, No. 76 / Thursday, April 20, 2023 / Proposed Rules. P24350.

<sup>3</sup> ATSDR. 2012 Toxicological Profile for Carbon Monoxide. P 14

<sup>4</sup> Hampson NB, Rudd RA, Hauff NM. Increased long-term mortality among survivors of acute carbon monoxide poisoning. Crit Care Med. 2009 Jun;37(6):1941-7.

<sup>5</sup> Rose JJ, Wang L, Xu Q, McTiernan CF, Shiva S, Tejero J, Gladwin MT. Carbon Monoxide Poisoning: Pathogenesis, Management, and Future Directions of Therapy. Amer J Crit Care Med. 2017 Mar; 195(5): 596-606

## **2) Regulation is preferable to voluntary standards.**

We support the effort by the US Consumer Product Safety Commission (CPSC) to regulate acute carbon monoxide poisoning from portable generators. NCL believes that regulations are needed and far superior to voluntary standards for protecting consumers from safety and health hazards of generators.

Each of the two available voluntary standards (*ANSI/PGMA G300–2018 Safety and Performance of Portable Generators*; and *UL 2201, Standard for Safety for Carbon Monoxide (CO) Emission Rate of Portable Generators, Second Edition*) have important deficiencies. The CPSC has taken the proper course in combining and strengthening useful features from each of the two standards. The Portable Generator Manufacturers Association (PGMA) served as the standards developer for the weaker ANSI/PGMA G300 standard, which does not require carbon monoxide emission reductions and which triggers CO alarms and shutoffs at less protective concentrations. NCL believes that there can be inherent constraints and conflicts of interest whenever trade associations representing manufacturers develop consumer safety and health standards and in this context, that is exactly what has happened.

CPSC surveys have shown that substantial compliance with these standards has not occurred. Even if compliance were better, CPSC must proceed with regulation because the voluntary standards are not likely to eliminate or adequately reduce the risk of injury. In addition, this issue takes on extra urgency as extreme weather conditions are becoming more common with climate change. Portable generators usage is likely to grow substantially in the years ahead. The CPSC proposed rule is critical to reducing preventable deaths and non-fatal poisonings related to their intended use.

## **3) The best approach: primary prevention to reduce CO emissions at the source**

Consumer safety standards should adhere to the framework provided by *ISO/IEC Guide 51 Safety aspects – Guidelines for their Inclusion in Standards*. This approach, aimed at drafters of safety standards, involves two fundamentals:

- Rely primarily on “inherently safe design” principles to reduce risks at the source, followed by engineering controls and protective devices.
- Address remaining residual risks via relevant plain language warnings in product markings and product instructions. The NCL strongly endorses the sentiment in Guide 51 that:  
*“The end user has a role to play in the risk reduction procedure by complying with the information provided by the designer/supplier.*

*However, information for use shall not be a substitute for the correct application of inherently safe design measures, guards, or complementary protective measures.”<sup>6</sup> (Emphasis added)*

Additional elaboration is provided below:

#### Inherently safe design

CPSC’s proposed rule incorporates the emission reduction technology language from UL 2201 to reduce CO levels emitted from portable generators at the source. NCL strongly endorses this approach. Fatal incidents and scenario simulations demonstrate that alarms and shutoff systems, while valuable secondary controls, are insufficient to protect consumers from death or serious injury. Emission reduction represents a straightforward primary prevention path to reduce the hazards posed by portable generators. It will reduce preventable deaths and many preventable non-fatal poisonings.

Portable generators that feature lower CO emissions are currently on the market. The rule is not prescriptive, and it is our understanding that there are no intellectual property obstacles to wider adoption of the technologies used to lower emissions. Furthermore, there are alternative solar and battery-operated portable power systems available for lower energy demand uses.

The proposed rule also appropriately strengthens the protections provided by the secondary controls – carbon monoxide sensors linked to alarms and shutoff technology.

#### Residual risk warnings

Emission reduction, combined with improved secondary controls, will greatly reduce the residual risks associated with the intended uses for portable generators. This is important because intended uses include complex settings that occur during or in the aftermath of severe weather events such as hurricanes, tornados, high winds, flooding, and snow and ice storms. As noted by the CPSC, CO emission rates from portable generators can be up to hundreds of times the rates from gasoline powered automobiles. This fact is not intuitively obvious to consumers, and it is easy to underestimate the potential for danger. Furthermore, consumers experience multiple concerns during these types of stressful events. They may have worries about family-member safety or structural damage to their homes or whether they have sufficient food and supplies to last through the emergency. The safer portable generators can be

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<sup>6</sup> ISO/IEC Guide 51. Safety Aspects – Guidelines for their inclusion in standards. Third Edition. 2014-04-01 [ISO/IEC Guide 51:2014 - Safety aspects — Guidelines for their inclusion in standards](#)

made, the less likely that other distractions, unfamiliarity with the device because of rare use, or errors in attention will contribute to sub-optimal operations related to placement, electrical options, or fueling considerations.

Proposed warnings and instructions must be clear, consistent, and relevant to consumers. For CO poisoning, the most critical message is that portable generators must never be operated inside. The second most critical message is where and how to properly place the portable generator outside. On this point, NCL believes that the proposed rule does not sufficiently address this second critical message. The proposed rule calls for incorporating the requirements of ANSI/PGMA G300–2018 Figure A1 for Hazard labels. It states:

*“Only use OUTSIDE and far away from windows, doors, and vents.”*<sup>7</sup>

Similar “far away” phrasing is included in ANSI/PGMA G300–2018 Section 8.6, which governs the minimum information to be included in the operator’s manual and which is also incorporated by reference in the proposed rule.

Our concern is that “far away” does not provide the same clarity as the current warning language used by CPSC itself along with CDC and FEMA – which is to place portable generators at least 20 feet away from the home.<sup>8, 9, 10</sup>

Without such bright line warnings, we are concerned that competing operational factors can influence consumers to place generators closer to their homes. Here are some examples of these factors:

Electrical cord length. While PGMA requirements for operator’s manuals include a requirement to address *“Proper electrical cord selection information as applicable,”*<sup>11</sup> this does not specify selecting cords long enough for proper placement 20 feet or more away from a home. Our review of several portable generator operating manuals found references to 10- and 15-foot length cords in various tables describing power requirements.<sup>12</sup> Manuals also told consumers that longer cords can reduce the power provided to appliances. These inconsistent messages could influence consumers to assume that 10- and 15-foot distances are sufficiently “far away” for generator placement.

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<sup>7</sup> ANSI/PGMA G300–2018, *Safety and Performance of Portable Generators*, Figure A1.

<sup>8</sup> CPSC NSN-04-022022 [Carbon Monoxide - The Invisible Killer | CPSC.gov](#)

<sup>9</sup> CDC Generator Safety Factsheet. WHEN THE POWER GOES OUT, KEEP YOUR GENERATOR OUTSIDE [Carbon Monoxide - Generator Safety Fact Sheet | Natural Disasters and Severe Weather \(cdc.gov\)](#)

<sup>10</sup> FEMA 2020. Keep Your Family, Pets Safe When Using Generators NR-002 [Keep Your Family, Pets Safe When Using Generators | FEMA.gov](#)

<sup>11</sup> ANSI/PGMA G300-2018, *Safety and Performance of Portable Generators*, Section 8.6.

<sup>12</sup> NorthStar M165601AF.1 Owner’s Manual, p 20; and Duromax XP13000HX User Manual p 47 -Choosing the right power cord.

Rain and wind. Portable generators do not routinely include storage covers yet operating manuals stress that units are not supposed to get wet. Aftermarket storage covers are available, but some types are not intended for use when the generator is operating. Rain covers that can be used during generator operation are available and simple canopies can also be used. However canopies may blow over in strong winds, wind-driven rain can occur, and flaps and other features may fail. Thus conflicting concerns about operation during rainy and windy conditions can influence consumers to position or re-position generators to more sheltered positions closer to their homes or in garage door openings. This topic requires improved consideration in operating manuals.

Yard size. Placing a generator “far away” from windows, doors and vents that also does not encroach on a neighbor’s home may be challenging on smaller lots that are common in most cities and some suburbs. CPSC Commissioner Boyle’s statement on the proposed rule mentioned a study where three (out of 66) homes with documented CO exposures from portable generators were linked to a neighbor’s generator.<sup>13</sup> Thus, yard size factors can constrain and influence consumers to position generators closer to their homes than recommended.

Theft concerns. Unfortunately, prolonged power outages can lead to hardship conditions and increases in crimes such as thefts and looting. This includes theft of portable generators. Such concerns may influence consumers to not position portable generators “far away” from the house. This factor was among those that influenced one generator manufacturer to incorporate features to minimize CO emissions. According to a *Consumer Reports* article:

*” Michael Gardner, TTI's vice president of new product development, says the company's rationale is based on a broad view of the risk. "Our review of the data led us to believe that after a hurricane, many people are running a generator for 24 hours a day—and often in close proximity to the house to prevent it from being stolen." he says. "That realization led us to conclude we needed to develop generators that addressed the perils of outdoor use, too. And that automatic CO shutoffs alone weren't enough." (Emphasis added)*<sup>14</sup>

In addition to these examples, NCL notes that research has shown that consumers have mixed and sometimes contradictory views on covered structures such as attached

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<sup>13</sup> Commissioner Mary T. Boyle Statement on Approval of the Portable Generator SNPR, April 5, 2023. Referring to Hurricane Ida study mentioned in Staff Briefing Package Tab D.

<sup>14</sup> Hope P. Safety Feature on Portable Generators Could Save Lives, Consumer Reports' Tests Show.2021 Last updated August 9, 2021 [Portable Generator Safety Feature Could Save Lives - Consumer Reports](#)

garages or porches. Damon et al (2013) conducted focus group research to study knowledge, attitudes, and beliefs that lead consumers to adopt risk and protective behaviors for storm-related CO poisoning and post-storm generator use. While almost all participants had a predetermined location for placing the generator, they varied considerably, and included attached garages or carports, screened porches, covered patios, basements, standalone utility buildings/sheds, detached garages, and outside in yards. Those placed outside were located anywhere from 2 to 50 feet from the house. The researchers found that focus group participants were generally knowledgeable about CO poisoning. Nevertheless, they reported putting themselves and household members at risk by placing their generators in semi-enclosed areas, such as garages and attached porches. When probed, these locations were chosen for reasons such as: proximity to key appliances (e.g., refrigerators, air conditioners, space heaters); a desire to minimize noise; and beliefs that the location was well-ventilated. The researchers reported that participants had mixed and contradictory definitions of a well-ventilated area which could explain the many unsafe placements cited by participants.<sup>15</sup>

In sum, the intended use for portable generators includes extreme weather events. These can present consumers with numerous challenges that can lead to sub-optimal exterior placement conditions. These challenges reinforce the value of incorporating as many safer design features as possible into these important products. While strong messages against using portable generators inside is warranted, emissions reduction and improved alarms and shutoffs will increase the margin of safety for exterior use of portable generators.

#### **4) Specific comments on the proposed requirements**

*1281.3 [a] CO Emission Rate Requirements.* NCL supports the inclusion of emission rate requirements as an essential inherently safe design feature. The specific rate not to exceed 150 g/h using one of the two test methods appears to be sufficient and technically feasible.

*1281.3 [c] CO shutoff levels.* NCL supports the inclusion of the lower cutoff levels proposed (400ppm and 150ppm). The PGMA G300 standard 800 ppm peak shutoff level is especially inappropriate as it is higher than the 400 ppm peak required for home CO detectors.

*1281.3 [g] CO Shutoff Event Notification.* NCL supports the proposed language to improve the visibility and conspicuousness of indicators to alert the consumer that the generator-mounted CO monitor has detected elevated levels and has shut off the

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<sup>15</sup> Damon SA, Poehlman JA, Rupert DJ, and Williams PN. 2013. Storm-Related Carbon Monoxide Poisoning: An Investigation of Target Audience Knowledge and Risk Behaviors. *Soc Mar Q.* 2013; 19(3): 188

generator. However, we are concerned that consumers (both visually impaired and those with normal vision) may not receive this message and recommend that CPSC add requirements for audible indicators as well.

1281.3 (j) *Marketing, labeling and instructional requirements.* NCL supports the proposed changes to strengthen and clarify the instructions. Explaining why the generator shut off and telling consumers to move the generator to a “more open” outdoor area “before restarting” emphasizes that even if consumers believed the generator location was already open, it needs to be moved to a better ventilated area.

However, NCL believes that the rule needs to go further.

- Instructions need to explicitly specify that portable generators be placed at least 20 feet away from homes. Instruction manuals need to include a specific section to address the step of finding the best exterior location for the portable generator.
- Instructions on power cords must not contradict the 20-foot instruction.
- Instructions need to explicitly describe steps consumers should take for safe operation during wet conditions.

## 5) Summary

As noted earlier, extreme weather conditions are becoming more common with climate change. Portable generators usage is likely to grow substantially in the years ahead. The CPSC proposed rule is critical to reducing preventable deaths and non-fatal poisonings related to their intended use. The CPSC estimates that the proposed rule would eliminate 72 deaths per year from the current average of 74, along with 4,213 non-fatal poisoning injuries.<sup>16</sup>

Should bona fide technical feasibility issues arise during CPSC’s consideration of these issues, we urge the Commission to be steadfast in pursuing primary prevention approaches. It is better to allow manufacturers additional time for compliance than to compromise inherently safe design requirements.

In conclusion, the National Consumers League strongly supports the promulgation of the rule with noted suggestions for improving the proposed requirements.

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<sup>16</sup> Federal Register / Vol 88, No 76/ Thursday, April 20, 2023/ Proposed Rules. P24362.

Respectfully submitted,

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