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UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
BETHESDA, MD 20814

VOTE SHEET

Date: DEC 29 2006

TO : The Commission
Todd Stevenson, Secretary

FROM : Page C. Faulk, General Counsel *PCF*
Barbara E. Parisi, Attorney *SEP*

SUBJECT : Final Rule: Labeling Requirements for Portable Generators

Ballot vote Due: January 4, 2007

The attached staff briefing package recommends that the Commission issue a final rule for portable generators. (The draft regulatory text and the **draft** preamble for the portable generator **rule** are attached to the restricted legal memorandum concerning the same.) It is the opinion of the **Office** of General Counsel that the staff's recommendation is adequately supported by the information in the briefing package.

Please indicate your vote on the following options.

- I. Approve the draft regulatory text and preamble for the portable generator rule for publication in the *Federal Register* as drafted.

Signature Date

- 11 Approve the draft regulatory text and preamble for the portable generator rule for publication in the *Federal Register* with the following changes (please specify):

Signature Date

CPSC ACTION RECORD - PUBLIC
NOLED NUMBER 12/29/06
PRODUCTION UNIT
SEARCHED INDEXED
SERIALIZED FILED

CPSC Hotline: 1-800-638-CPSC(2772) CPSC's Web Site: <http://www.cpsc.gov>
This document has not been reviewed or accepted by the Commission
Initial *[Signature]* Date 12/29/06

III. Do not approve the **draft** regulatory text and preamble for the portable generator rule for publication in the Federal Register.

Signature

Date

IV. Take other action (please **specify**):

Signature

Date

Attachment: Briefing memorandum from Timothy P. Smith, Project Manager, Directorate for Engineering Sciences, to the Commission, "Final Rule: Labeling Requirements for Portable Generators," December 2006.

BRIEFING PACKAGE

FINAL RULE: LABELING REQUIREMENTS FOR PORTABLE GENERATORS



December 2006

For additional information contact:

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EX-107 12/29/06
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EXECUTIVE SUMMARY

On October 12, 2005, then-Chairman Hal Stratton sent a memorandum to the Executive Director directing the staff of the U.S. Consumer Product Safety Commission (CPSC) to undertake a thorough review of the status of portable generator safety. As part of this review, Chairman Stratton requested that the staff assess the sufficiency of warning labels to address the carbon monoxide (CO) poisoning hazard posed by portable generators that are used within or near residences. In response to this request, the CPSC staff prepared a draft notice of proposed rulemaking (NPR), in which the staff proposed that manufacturers be required to label portable generators with a CO-poisoning warning label. On August 15, 2006, the Commission voted unanimously (2-0) to approve the publication of a *Federal Register* notice issuing an NPR for portable-generator labeling requirements. This notice was published August 24, 2006.

In response to the *Federal Register* notice proposing labeling requirements for portable generators, the Commission received 19 comments. These comments are largely positive and support the proposed labeling, but two comments explicitly request that the Commission withdraw the NPR. Many of the comments, even those that support the general intent and approach of the rule, raise specific issues or concerns. The CPSC staff has considered these comments and has revised the proposed labeling accordingly. The staff recommends that the Commission approve issuance of a mandatory portable generator labeling standard, as set forth in the staff's draft final rule. The staff recommends that the rule require compliance for generators manufactured or imported on or after the date 120 days after the final rule is published in the *Federal Register* and for generators offered to the first purchaser for purposes other than resale (for example, retail purchases) on or after the date 180 days after publication.



UNITED STATES
 CONSUMER PRODUCT SAFETY COMMISSION
 BETHESDA, MD 20814

MEMORANDUM

DATE: DEC 29 2006

TO: The Commission
 Todd A. Stevenson, Secretary

THROUGH: Page C. Faulk, General Counsel *PCF*
 Patricia M. Semple, Executive Director *PS*

FROM: Jacqueline Elder, ^{1st} Assistant Executive Director, Office of Hazard Identification and Reduction
 Timothy P. Smith, Project Manager, Division of Human Factors, Directorate for Engineering Sciences *TJS*

SUBJECT: Final Rule: Labeling Requirements for Portable Generators

I. BACKGROUND

On October 12, 2005, then-Chairman Hal Stratton sent a memorandum to the Executive Director directing the staff of the U.S. Consumer Product Safety Commission (CPSC) to undertake a thorough review of the status of portable generator safety. As part of this review, Chairman Stratton requested that the staff assess the sufficiency of warning labels to address the carbon monoxide (CO) poisoning hazard posed by portable generators that are used inside or near residences. In response to this request, the CPSC staff prepared a draft notice of proposed rulemaking (NPR), in which the staff proposed that manufacturers be required to label portable generators with a CO-poisoning warning label. On August 15, 2006, the Commission voted unanimously (2-0) to approve the publication of a *Federal Register* notice issuing an NPR for portable-generator labeling requirements. This notice was published August 24, 2006, and the 75-day public comment period for the NPR closed November 7, 2006. This briefing package responds to major public comments on the NPR, summarizes the economic issues associated with the staff's draft final rule, and includes the staff's proposed product and packaging labels to appear in the draft final rule.

II. PUBLIC COMMENTS

In response to the *Federal Register* notice proposing labeling requirements for portable generators, the Commission received 19 comments. A full listing of these comments can be found in Tab A. They are largely positive and support the proposed labeling, but two comments explicitly request that the Commission withdraw the NPR. Many of the comments, even those that support the general intent and approach of the rule, raise specific issues or concerns. Summaries of the significant issues, and the staff's responses to these issues, are discussed below.

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 Initial *JS* Date *12/29/06*

1. Procedural Issues and Choice of Statutes

Two comments state that the Federal Hazardous Substances Act (FHSA), not the Consumer Product Safety Act (CPSA), is the appropriate statute under which to address, through labeling, the risk of injury associated with CO generation from portable generators. If, as the commenters claim, the risk of injury was one which could be eliminated or reduced by action under the FHSA, then the Commission, pursuant to section 30(d) of the CPSA, would have been required to find by rule that it was in the public interest to regulate the risk of injury under the CPSA ("section 30(d) finding").¹ The commenters also claim that the label proposed in the NPR appears to be the type of warning that Section 7 of the CPSA contemplates, since the NPR characterizes the risk of CO poisoning associated with generator emission as an "unreasonable risk of injury."²

The FHSA defines "hazardous substance" as including any "substance or mixture of substances which (i) is toxic...if [it] may cause substantial personal injury or substantial illness during or as a proximate result of any customary or reasonably foreseeable handling or use... ." Hazardous substances are misbranded if they do not bear the labeling required by section 2(p)(1) of the FHSA, 15 U.S.C. § 1261(p)(1). To label a product under the authority of the FHSA, the product must constitute or contain a hazardous substance.

The commenters analogize the labeling of portable generators to the labeling of charcoal packaging under the FHSA in that charcoal, when burned, generates carbon monoxide. A significant difference between charcoal and portable generators, however, is that charcoal, as a substance which is toxic, constitutes a hazardous substance and its packaging is therefore required to be labeled under the FHSA. In contrast, portable generators are empty when sold. Thus portable generators as sold do not contain any hazardous substance, nor any substance such as gasoline that would produce a hazardous substance. Instead, portable generators might be considered analogous to gasoline containers that, when sold empty, are subject to the authority of the CPSA. Because the risk of injury associated with CO poisoning from portable-generator engine exhaust cannot be adequately reduced or eliminated by action under the FHSA, no finding under section 30(d) of the CPSA is required.

The commenters also suggest that the label proposed in the NPR appears to be the type of warning that Section 7 of the CPSA contemplates since the NPR characterizes the risk of CO poisoning associated with generator emission as an "unreasonable risk of injury." Section 27(e) of the CPSA authorizes the Commission to issue rules requiring a consumer product manufacturer to provide the Commission and consumers with "performance and technical data

¹ Section 30(d) of the CPSA provides that a risk of injury which is associated with a consumer product and which could be eliminated or reduced to a sufficient extent by action under the Federal Hazardous Substances Act, the Poison Prevention Packaging Act of 1970, or the Flammable Fabrics Act, may be regulated under the CPSA only if the Commission by rule finds that it is in the public interest to regulate such risk of injury under the CPSA.

² Section 7(a) of the CPSA provides that the Commission may promulgate a consumer product safety standard requiring that a consumer product be marked with or accompanied by clear and adequate warnings or instructions. Any requirement of such a standard is to be "reasonably necessary to prevent or reduce an unreasonable risk of injury associated with such product." *Id.*

related to performance and safety as may be required to carry out the purposes of this Act." One of the general purposes of the CPSA, as provided in section 2(b)(1) of the CPSA, is "to protect the public against unreasonable risks of injury associated with consumer products." The risk of CO poisoning posed by portable generators was fully addressed in the NPR, 71 FR 50003, and the use of §27(e) to protect the public against that risk is completely appropriate. This is not to say that a label rule under Section 7 would be inappropriate; the staff intends to consider the labeling issue further in the section 7 generator rulemaking commenced on December 12, 2006, 71 FR 74472.

2. *Scope and Definition Issues*

Two comments address scope and definition issues related to the proposed rule. One comment seeks clarification on whether fuel-cell portable generators are included within the scope of the rule. Another comment proposes that the definition of a "portable generator" reflect the definition within Underwriters Laboratories' Outline of Investigation for Portable Engine-Generator Assemblies, UL 2201.

The CPSC rule is intended to generally cover the same range of portable generators as UL 2201. The staff, therefore, recommends that Section 1407.2(b) of the proposed rule be revised to read, "A portable generator is an internal combustion engine-driven electric generator rated no higher than 15 kilowatts and 250 volts that is intended to be moved for temporary use at a location where utility-supplied electric power is not available. It has receptacle outlets for alternating-current (AC) output circuits, and may have alternating- or direct-current (DC) sections for supplying energy to battery charging circuits." As specified in this definition, portable generators that are covered under this proposed rule must have an internal combustion engine and receptacle outlets for AC output circuits. The generators may have other outlets such as those for low voltage accessories. Fuel-cell portable generators would not be covered by the draft final rule. The final rule also would not cover portable generators that constitute "motor vehicle equipment" or otherwise fall outside the CPSC's jurisdiction under the Consumer Product Safety Act.

3. *Effective Date of Rule*

Three comments state that they will need at least six months, rather than the 90 days proposed in the NPR, from issuance of the final regulation in the Federal Register to comply with the new requirements.

As noted by the staff of the CPSC Directorate for Economic Analysis (EC) (Tab B), the time and resources required by manufacturers to redesign their portable generator labels are likely to be low since the content and format of the labeling will be specified in the final rule. The EC staff, therefore, believes that most manufacturers should be able to comply with the requirements within 90 days of publication of the final rule. Nevertheless, some manufacturers may have to reschedule other work and shift resources such as labor from other projects. There would be some costs associated with these adjustments and these costs could be alleviated somewhat by delaying the effective date of the rule. To ensure that the improved labels are placed on portable generators in a timely manner while still providing some relief to manufacturers that might have trouble incorporating the label change within 90 days, the staff recommends that the effective

date of the rule be changed so that the label would be required on any portable generator manufactured or imported 120 days after the publication of the final rule in the *Federal Register*. In addition, the staff recommends that the label be required on any generator offered to the first purchaser of the generator for purposes other than resale (for example, a retail purchaser) 180 days after the publication of the final rule in the *Federal Register*. This will simplify and strengthen enforcement of the rule, particularly when a generator's date of manufacture is not readily ascertainable.

4. *Labeling Text Issues*

a) *Multiple Languages*

Five comments address the issue of whether the message text of the proposed labeling should also be required in a language other than English. Two comments support the addition of other languages, and one of these suggests that Spanish be the second language to include. Two comments oppose requiring additional languages. The remaining comment does not take a position on the matter, but suggests that Spanish is the appropriate language to include if another language is added.

The staffs previous analyses of generator-related incident data have revealed no pattern of incidents involving people who could not read English. To confirm this, the staff of the CPSC Directorate for Epidemiology (EP) selected and thoroughly examined a random sample of 25 out of 150 in-depth investigations into generator-related CO-poisoning deaths that occurred in the 2002 to 2005 timeframe. None of the examined investigation reports described the victims' literacy in English, Spanish, or any other language. Consequently, the available information provides no basis for the staff taking a position on this issue.

According to the 2000 U.S. census, most people who speak a language other than English at home speak Spanish, with Chinese ranking a very distant second (Shin & Bruno, 2003).³ Additionally, the National Center for Education Statistics (NCES) has found that about 35 percent of American adults who have below basic literacy in English prose⁴ spoke Spanish before starting school; only 9 percent could not speak either English or Spanish (NCES, 2005). Adding Spanish to an English-language warning label, therefore, would be expected to improve its readability among the U.S. population more than adding any other language. Nevertheless, the overall impact of adding Spanish to a label may be small. In the case of portable generators, Synovate DuraTrend™ consumer survey data obtained by the EC staff show that only 5.6 percent of generator purchasers in 2005 were Hispanic. Furthermore, many of these people are likely to be literate in English; for example, less than half of all adult Hispanics in the U.S. have below basic literacy in English prose (NCES, 2005). Thus, Hispanics with below basic literacy in

³ Among the 262.4 million people in the U.S. aged 5 years or older, 47.0 million (18 percent) speak a language other than English at home. About 60 percent of these (28.1 million) speak Spanish and about 0.4 percent (2.0 million) speak Chinese.

⁴ Those with below basic literacy in English prose lack the skills necessary to perform simple everyday literacy activities such as reading and understanding information in short commonplace continuous texts.

English prose—the sub-population most likely to include individuals who cannot read English yet can read Spanish, and who would potentially benefit the most from the addition of Spanish to the proposed warning label—almost certainly represent less than five percent of all generator purchasers in the U.S., and may comprise substantially less than this. Some of these people may also lack basic literacy in Spanish and, therefore, would be unable to read a label even if it included written Spanish.

Despite these findings, the CPSC staff does not dismiss the potential usefulness of providing the information in the proposed labeling in Spanish, especially in regions of the country with large Hispanic populations. Thus, the proposed rule does not prohibit manufacturers from providing a Spanish-language version of the proposed labeling in addition to the required English-language label. If the product label is provided by the manufacturer in additional languages, however, the staff believes that additional-language versions of the label should appear adjacent to or below the English-language version of the product label. Additionally, because they would be attached to the English-language version of the label, which already includes pictograms denoting inappropriate and appropriate use of the generator, versions of the label that are in a language other than English may appear without these pictograms. This proposed formatting is consistent with ANSI 2535.4 – 2002, the most recent published version of the *American National Standard for Product Safety Signs and Labels*. The staff further recommends that any additional-language versions of the label be no larger than the English-language version of the label.

b) Signal Word Choice

Four comments assert that the signal word WARNING is more appropriate than DANGER for the proposed labeling. Arguments made by the commenters include that the use of DANGER is inconsistent with the hierarchy specified in the ANSI Z535 series of standards and that its use might reduce the perceived risk associated with the WARNING hazards of fire during refueling, electrocution from use in wet conditions, and electrocution from connection to a commercial power source.

According to the ANSI 2535 series of standards, the selection of a signal word for a hazard label should be made based on the seriousness of the hazard situation or scenario. For example, ANSI 2535.4 – 2002, the most recent published version of the *American National Standard for Product Safety Signs and Labels*, defines DANGER as an "imminently hazardous situation which, if not avoided, will result in death or serious injury" (Section 4.13.1). The latest revision of ANSI 2535.4 clarifies that use of the term "will" in this definition indicates an event that is nearly, but not absolutely, certain (Annex E, due for publication 2006). While the mere presence of carbon monoxide in portable generator exhaust could lead to death or serious injury, the use of generators indoors—the hazard scenario specifically highlighted in the label—would almost certainly result in death or serious injury due to a generator's high rate of CO production (for example, see Inkster, 2004). The CPSC staff continues to believe, therefore, that DANGER is the appropriate signal word for the proposed labeling.

The staff cannot confirm the assertion that using DANGER for the CO poisoning hazard would necessarily reduce the perceived hazard associated with the WARNING hazards mentioned. One could argue instead that the use of DANGER simply increases the perceived hazard associated with CO poisoning without having any effect on consumer perceptions related to the other

hazards being warned about on the product. Additionally, the selection of a signal word for a given hazard is supposed to be based on the standard signal-word definitions (for example, those used in ANSI Z535.4), which denote the seriousness of the hazard situation or scenario, not on how the signal word might impact the perceptions of hazard labels that use other signal words. To the extent that a hazard situation or scenario is serious enough to demand the use of DANGER, one would expect and hope that people exposed to the hazard label would correctly interpret this as meaning that the hazard situation is more serious than a hazard label that relies on a less serious signal word such as WARNING or CAUTION.

c) *Message Text Issues*

Five comments are associated with the specific message text of the proposed labeling. Two comments express concerns that the message text has not been independently tested—for example, through the use of focus groups--and suggest various alternatives to the wording of this text. Both also argue that the phrase, "...WILL KILL YOU IN MINUTES" is not accurate. One comment includes the results of focus group testing, performed on low-literacy individuals by a contractor for the U.S. Environmental Protection Agency (EPA), which found that some people had difficulty understanding the phrase 'partly enclosed area' and misinterpreted the word "gas" as gasoline. The contractor recommended that 'partly enclosed area' be deleted from the label. One comment states that the label does not alert consumers to the symptoms of CO poisoning or refer users to the manual for additional instructions. Another comment states that the phrase, "Please read the manual before use," is already attached to the generator in another label and that, therefore, the packaging label should be identical to the product label if one is used. One comment recommends the addition of the phrase, "FOR OUTDOOR USE ONLY," after the initial sentence of the proposed labeling.

As referenced in the comment summary, above, an independent contractor performed focus-group testing on the proposed product label with low-literacy individuals as part of the EPA's efforts to develop a flood-cleanup brochure. This testing identified two specific comprehension problems with the message text of the proposed labeling. First, testing revealed that some low-literacy individuals had difficulty understanding the phrase "partly enclosed area." The available CPSC data on CO-poisoning deaths associated with portable generators show that most incidents in which the generator was reportedly used in an enclosed or partially enclosed area occurred either within the home or in a garage or enclosed carport (Marcy & Ascone, 2005). Thus, the staff believes it would be acceptable to remove "partly enclosed area" from the proposed labeling, as recommended by the EPA's contractor. The staff is concerned, however, about simply deleting this phrase since its absence could mislead some into believing that generators are only hazardous if used in fully enclosed areas. Thus, the staff recommends adding the phrase, "EVEN IF doors and windows are open," to the end of the revised portion of the warning. The entire relevant statement, therefore, would be changed from, "NEVER use in the home or in partly enclosed areas such as garages," to, "NEVER use inside a home or garage, EVEN IF doors and windows are open."

The testing also revealed that "gas" may be misinterpreted as "gasoline" by some low-literacy individuals. The staff, therefore, recommends revising the language of the proposed labeling to avoid the use of the word "gas." Specifically, the staff would replace the statement, "Exhaust contains carbon monoxide, a poison gas you cannot see or smell," with, "Generator exhaust

contains carbon monoxide. This is a poison you cannot see or smell." Because they address the specific comprehension problems identified with the message text during testing, the revisions recommended above should make the proposed labeling more understandable to all generator users. The CPSC staff believes that an explanation of the intended **function** of a portable generator, which the EPA's testing contractor also recommended adding, is unnecessary within a product label since people who do not know this information are unlikely to purchase, rent, borrow, or otherwise use a portable generator.

The staff agrees that the sentence, "Using a generator indoors **WILL KILL YOU IN MINUTES**," is questionable because death may occur in a longer **timeframe** than what most people would deem "in minutes" and because generator use indoors may result in severe CO poisoning rather than death. The staff is also concerned that people who have previously used a generator indoors and survived could question the credibility of a label that states death is essentially inevitable. If the label is not believed to be credible, people may choose to ignore the safety message. The CPSC staff, therefore, recommends revising this sentence to read, "Using a generator indoors **CAN KILL YOU IN MINUTES**." This proposed revision has no effect on the appropriateness of using **DANGER** as the signal word for this label, as discussed earlier, since the use of generators indoors would **still** almost certainly result in death or serious injury due to a portable generator's high rate of CO production. The revised phrase simply emphasizes the possibility that death can occur within minutes.

In its 2003 memorandum that proposed **warning** labels to accompany portable generators, the CPSC staff specifically recommended against including a description of CO-poisoning symptoms within the product label because this information would add a substantial amount of text to the label and was believed to be of limited value for a label to be affixed to the product itself (Smith, 2003). The staff continues to support this position. Regarding the statement, "See product manual for more **details**," which originally appeared at the bottom of the on-product label in the staff's 2003 memorandum (Smith, 2003), the staff does not believe this statement should be required on portable generators because the information that is provided in the proposed labeling addresses the key safety information of which people must be aware when using a generator and generator manufacturers may include a statement that refers users to the product manual elsewhere on the generator. As pointed out in one public comment, some manufacturers already include the phrase, "Please read the manual before use," in other generator labels. For the proposed packaging label, however, the staff believes that the statements, "Avoid other generator hazards. **READ MANUAL BEFORE USE**," are needed since this label may very well be the only label on the packaging that will alert the purchaser to possible hazards associated with generator use.

The CPSC staff believes it would be inappropriate to add the phrase, "**FOR OUTDOOR USE ONLY**," after the initial sentence of the message text in the proposed labeling. Placing this phrase after the initial sentence interrupts the logical flow of the warning **from** the explanation of the hazard situation to the descriptions of the appropriate hazard avoidance behaviors. A more appropriate location for this phrase, if it were used, would be at the beginning of the message text as the first sentence of the warning. However, the staff is concerned that using this phrase as the first sentence would tend to de-emphasize the description of the hazard situation and its consequences (that is, "Using a generator indoors **CAN KILL YOU IN MINUTES**."), could lead people to stop reading **further** because it is a highly familiar phrase that people are likely to

believe they already understand, and is redundant with the already-present and more-detailed admonition to use the generator outside and far away from windows, doors, and vents. Thus, although this statement would not add a substantial amount of text to the label, the staff does not believe it should be added to the proposed labeling. However, manufacturers are not prohibited from including a statement of this kind elsewhere on the product, packaging, or product manual.

5. Labeling Pictogram and Symbol Issues

a) Prohibition Symbol Choice

Four comments propose the use of a circle-slash symbol rather than an “X” symbol to indicate prohibited actions in the pictograms that appear in the proposed labeling. Arguments made within these comments in favor of the circle-slash symbol include the fact that it is consistent with the ANSI Z535 series of standards, is internationally recognized, and obscures less of the underlying pictogram than an “X.” One comment states that a transparent circle-slash symbol may be superior since it does not obscure the underlying pictorials.

The CPSC staff acknowledges that the ANSI Z535 series of standards recommends the use of a circle-slash symbol to indicate prohibited actions in pictograms. When developing the proposed labeling, the CPSC staff chose to use “X” symbols rather than circle-slash symbols because both the circle-slash and “X” symbols are commonly recognized as conveying the prohibition concept (Dreyfuss, 1972; Wogalter & Leonard, 1999), there was no evidence that English-reading consumers would have difficulty understanding the meaning of an “X” symbol, and the only known evidence of comprehension problems with either prohibition symbol were those encountered with the circle-slash symbol by some Latin American individuals during charcoal-pictogram testing previously performed for the CPSC (Requirements for Labeling of Retail Containers of Charcoal, 1996). The staff also found that circle-slash symbols tended to obscure more of the underlying pictograms than did “X” symbols of the same size. For example, the circle portion of the circle-slash symbols tended to obscure the outlines of the home and garage pictograms, making these portions of the pictograms difficult to discern.

Since publication of the *Federal Register* notice regarding the NPR, the staff has become aware of an internal Douglas Aircraft research report that identified possible comprehension problems with the use of an “X” to indicate prohibition. For example, the researchers found that a graphic using an “X” to indicate that a part should not be touched was misinterpreted by some as meaning the opposite, indicating where the person *should* touch (Johnson, 1974, as cited in Johnson, 2006). In light of this research, the staff agrees that the use of “X” symbols rather than circle-slash symbols to indicate prohibition in the proposed labeling may not be preferable. The staff, therefore, recommends changing the relevant symbols in the proposed labeling so they now include opaque circle-slash symbols rather than “X” symbols. Additionally, to avoid problems with the circle-slash obscuring the outlines of the home and garage, the staff has chosen to use smaller circle-slash symbols, centered over the generator pictograms. Although a transparent circle-slash symbol would not obscure the underlying symbol, its use is inconsistent with the prohibition symbol recommended in the ANSI Z535 series of standards.

b) Use of Hazard-Avoidance Pictograms

Three comments are associated with the staff's decision to use pictograms depicting hazard avoidance behavior in the proposed labeling. Two comments state that these pictograms have not been independently tested, and question whether the pictograms of the generator will be readily recognized. One of these comments suggests that the standard hazardous gas/vapors pictogram, which shows a person inhaling gas, might be a better choice since it had undergone successful consumer testing. One comment, which includes the results of EPA-sponsored focus group testing on the proposed product label, reports that some low-literacy individuals had difficulty recognizing the generator pictogram. The contractor recommended enlarging this pictogram to improve the likelihood that it will be correctly identified.

The CPSC staff had originally considered the use of the hazardous gas/vapors pictogram referred to in the comments, but expressed reservations about its use since the gas in the pictogram is visible even though carbon monoxide is not (Smith, 2003,2006). The staff continues to be concerned about this potential for confusion. In addition, although testing has revealed that most people can recognize the referenced pictogram as indicating hazardous gas or vapors (Mayer & Laux, 1989), this pictogram provides no information regarding appropriate hazard-avoidance behaviors. In fact, since this pictogram could indicate hazardous gases with varying degrees of lethality, the appropriate hazard-avoidance behavior may vary substantially among different hazardous gases. For example, some products that release hazardous gases might be safely used within an open garage, but this is not true for an operating portable generator. The staff believes that using pictograms depicting appropriate and inappropriate behaviors specific to portable generators avoids this ambiguity.

As discussed earlier, an independent contractor performed focus-group testing on the proposed product label with low-literacy individuals as part of the EPA's efforts to develop a flood-cleanup brochure. The only identified problem with the pictograms that appear in the proposed labeling was that some people had difficulty recognizing the graphic of the generator. These test results, however, almost certainly underestimate the extent to which the generator graphic would be recognized in a real-life scenario. For example, testing was not performed with the label affixed to a generator. When presented in the appropriate context, generator graphics are more likely to be recognized (Wogalter, Silver, Leonard, & Zaikina, 2006). Additionally, the EPA testing found that some of the participants in the testing did not even know what a generator was. People who do not know the intended function of a portable generator are unlikely to purchase, rent, borrow, or otherwise use a portable generator, and would not be expected to correctly identify a graphic of this product. Nevertheless, to improve the likelihood that people will correctly identify the generator graphic as a portable generator and to increase the overall legibility of the pictograms, the CPSC staff has slightly increased the size of the pictograms, as recommended by the EPA's testing contractor. The staff also notes that Section 1407.3(a)(1) of the draft final rule specifies that "[a] different representation of the generator [within the proposed labeling] may be substituted for accuracy if consumers are more likely to recognize the substituted representation as the generator to which this label is affixed." Manufacturers, therefore, may substitute a graphic of the specific generator to which the label will be affixed if they so choose.

c) *Other Hazard-Avoidance Pictogram Issues*

Five comments are associated with specific features of the hazard-avoidance pictograms that appear within the proposed labeling. Two comments suggest deleting the symbol depicting the use of a generator within a garage. This pictogram, according to three comments, could be interpreted as meaning that one should not store the generator in a garage. Two comments claim that the two-headed arrow graphic that appears in the pictogram depicting appropriate behavior could be misinterpreted. One of these states that the two-headed arrow graphic could be interpreted as meaning that use both in and away from the home is acceptable; the commenter suggests that this arrow be replaced with a single-headed arrow that points away from the home. The other comment claims that this graphic could be interpreted as meaning that the person should connect the generator by electrical wire to a commercial power supply as a back-up, and recommended deleting the pictogram entirely.

The CPSC staff believes that both pictograms that depict inappropriate behaviors—one showing generator use within a home or enclosed space and one showing generator use within a garage—are necessary to convey the key safety message. Relying solely on the pictogram of the generator within a home or enclosed space to indicate inappropriate behavior, as recommended by the commenters, could lead people to believe that generators are only hazardous if used within a completely enclosed space. Many CO-poisoning deaths associated with portable generators occurred when the generator was being used in a garage with the door at least partially open. The pictogram depicting generator use in the garage as being inappropriate directly addresses incidents of this type. Although the CPSC staff acknowledges that one could infer from these pictograms that generators should not be stored in the home or garage, alternative pictograms such as the poisonous gas/vapors pictogram are also open to various interpretations regarding appropriate and inappropriate behaviors specific to portable generators, as discussed in the response to the previous topic. As demonstrated by the earlier discussion of comprehension problems encountered with common prohibition symbols, virtually no hazard pictogram or symbol will be understood by all people. For this reason, explanatory text is very often recommended or required,⁵ especially for complex hazards (Wogalter, Silver, Leonard, & Zaikina, 2006). The CPSC staff believes that the explanatory message text that appears in the proposed label should limit the extent to which misinterpretations of the pictograms would prevent people from understanding the overall message of the labeling.

Regarding the use of a double-headed arrow in the pictogram depicting the appropriate use of a portable generator, the *American National Standard Criteria for Safety Symbols*, ANSI 2535.3, recommends the consistent use of arrow graphics to represent different types of movement or spatial relationships. Single-headed arrows are used to represent the motion of objects or components or to represent the exertion of pressure or force; in contrast, double-headed arrows are used to represent the idea of keeping a safe distance away from a hazard (ANSI Z535.3–2002, Figure A1). Thus, the use of a double-headed arrow is appropriate, and the direct

⁵ ANSI 2535.3 – 2002 requires explanatory text for any symbol without demonstrated understandability; for example, one that is not understood by at least 85 percent of the target audience using the methodology specified in Annex B of the standard. Research suggests that few safety symbols can meet this requirement, so accompanying text is almost always required.

replacement of the double-headed arrow with a single-headed one, as recommended by one commenter, would suggest the movement of the home toward the generator, which is opposite the intended meaning and could create critical confusion among the intended audience. Despite this, the staff recommends replacing the original appropriate-use pictogram with an alternative pictogram that avoids the possible misinterpretations identified by the commenters yet remains consistent with ANSI 2535.3. This pictogram employs a single-headed arrow but places the arrow on the opposite side of the generator pictogram to suggest the movement of the generator away from the home. The length of the arrow has also been shortened so the generator pictogram is not located immediately adjacent to the graphic of the home.

6. *Explicit Safe Distance*

Six comments point out that the proposed labeling does not include an explicit distance (for example, measured in feet) that should be maintained between the generator and the home or other partially enclosed area. Some suggest that this distance could be inserted within the message text or within the pictogram depicting the generator being kept away from the home. One comment suggests a minimum distance of 10 feet; another comment suggests at least 15 feet.

The CPSC staff agrees that explicitly identifying a safe operating distance between the generator and the home or other partially enclosed area would be more useful than relying on terms such as "far," but has been unable to develop a consensus as to what distance is adequate given the widely varying conditions under which a portable generator may be used. As discussed in the staff's 2006 briefing package on portable generator safety, some portable generator manufacturers currently provide minimum clearance requirements for placement of the generator; however, these distances appear to represent the clearances needed to allow for adequate combustion and cooling airflow, not to avoid CO poisoning (Buyer, 2006). Variables such as the speed and direction of wind relative to openings to indoor spaces and the relative proximity of other structures to the generator complicate attempts to define a reasonably safe distance.

In a study of nonfatal CO-poisoning incidents following two major hurricanes in 2005, the Centers for Disease Control and Prevention (CDC) found that half of those interviewed who had been involved in generator-related incidents had placed the generator outside in the open, but that all of these individuals had placed the generator within seven feet of the home (CDC, 2006). Thus, a "reasonably safe" distance likely would be greater than seven feet. However, available data do not allow the staff to reach consensus on how much farther than seven feet would constitute a reasonably safe distance. The use of the phrase "far away," while not as explicit as a specified distance, still emphasizes the need to keep the generator a well away from, rather than immediately outside, the home or other partially enclosed areas.

7. *Labeling Placement*

Three comments address the proposed location or placement of the label on the product. Two comments state that it is not technically feasible to meet a requirement that the label be placed on a part of the generator that, if removed, would impair the operation of the generator. The commenters propose an alternative requirement that the label be placed on a part of the portable generator that cannot be removed without the use of tools. One comment suggests that the label

be located close to the "on/off" switch, the starter, or the power outlets, and suggests that the label be more "active". by requiring the user to take an action that draws attention to the label each time the generator is used.

The CPSC staff is not opposed to the commenters' proposed alternative requirement that the label be placed on a part that cannot be removed without the use of tools. The staff, therefore, recommends revising Section 1407.3(a)(1)(iii)(A) of the proposed rule to state, "On a part of the portable generator that cannot be removed without the use of tools." Regarding the comment about making the label more "active" by requiring the user to take an action that draws attention to the label each time the generator is used, the staff believes that such a requirement is unnecessary at this time since the label is already required to be placed in a location that is prominent and conspicuous to an operator while performing at least two of the following tasks: filling the fuel tank, accessing the receptacle panel, and starting the engine (Section 1407.3(a)(1)(iii)(B) of the proposed rule).

8. *Need for Packaging Label*

Two comments propose that the requirement for a packaging label be dropped from the proposed rule. Both believe this label is unnecessary since the packaging will be discarded.

The intent of the packaging label is to directly provide potential purchasers of portable generators with information at the point of purchase emphasizing the danger of CO poisoning and to reinforce this message when the generator is removed from its packaging at home, not to assist consumers while they are operating the generator after the packaging is discarded. The proposed packaging label provides the CO poisoning information irrespective of sales staff interaction or other messaging at the point of sale. Without the information presented by the packaging label, purchasers may not discover until they are home that they do not have an appropriate place to operate the generator.

9. *Missing Manual Warning*

One comment notes that a previous CPSC staff memo included a recommendation for a product-manual warning, which included information about CO-poisoning symptoms, and that the NPR does not include a recommendation for such a warning.

The proposed rule does not include specific recommendations for CO-poisoning warnings to appear within the manuals that accompany portable generators because prior analyses of the CO-poisoning information provided on the product and within the product manuals found that the product labeling was often far more deficient (Smith, 2002). Since the on-product labeling is available to consumers even after the product manual is lost, discarded, or otherwise not available, improved product labels are of paramount importance. The staff does agree, however, that providing more detailed information about CO poisoning within the product manual, including information about the symptoms of CO poisoning, would be advantageous, and the staff may consider additional requirements of this type as part of the staffs ongoing activities associated with improving portable generator safety.

10. Extension Cord Warning

One comment notes that increasing the distance between the generator and any partially enclosed spaces necessarily increases the distance between the generator and the load, which could result in some consumers using extension cords with insufficient capacity. The commenter suggests that a warning label that states, "ONLY USE PROPERLY SIZED EXTENSION CORDS IN GOOD CONDITION," be affixed to the generator's electrical panel.

The staff agrees that the capacity and condition of extension cords to be used with portable generators must be adequate to support the intended load and allow the generator to be kept far away from homes and other partially enclosed areas. However, this issue does is outside the scope of this rulemaking.

11. Alternatives to Labeling

Three comments suggest that labeling alone is not sufficient to address the CO-poisoning hazard and recommend technical solutions such as reduced CO emissions or integrated CO monitors that will automatically shut off the generator if necessary.

Specific technical approaches to addressing the CO poisoning hazard associated with portable generators are outside the scope of this rulemaking and are currently being addressed in another rulemaking recently commenced with issuance of an advance notice of proposed rulemaking, 71 FR 74472 (December 12, 2006).

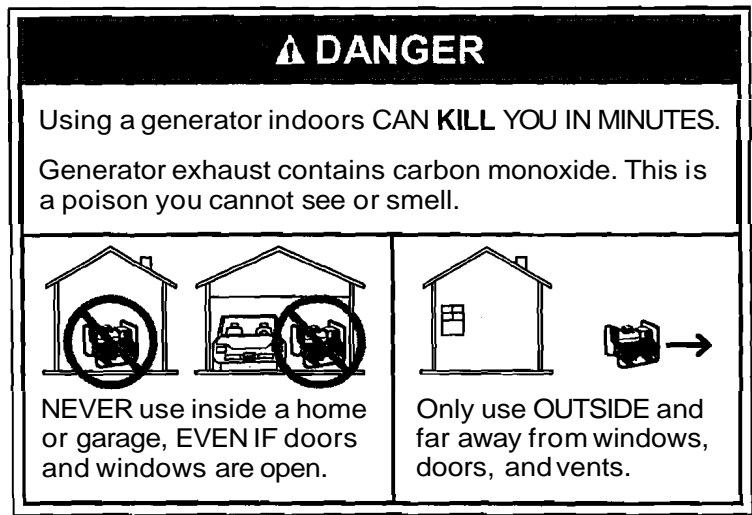
III. ECONOMIC ISSUES

As noted by the staff of the CPSC Directorate for Economic Analysis (EC), a warning label would have the benefit of informing consumers of the CO-poisoning hazard associated with portable generators and how to avoid that hazard while using the generator. If placed in a prominent position on a portable generator, a warning could reinforce this information each time the generator is used.

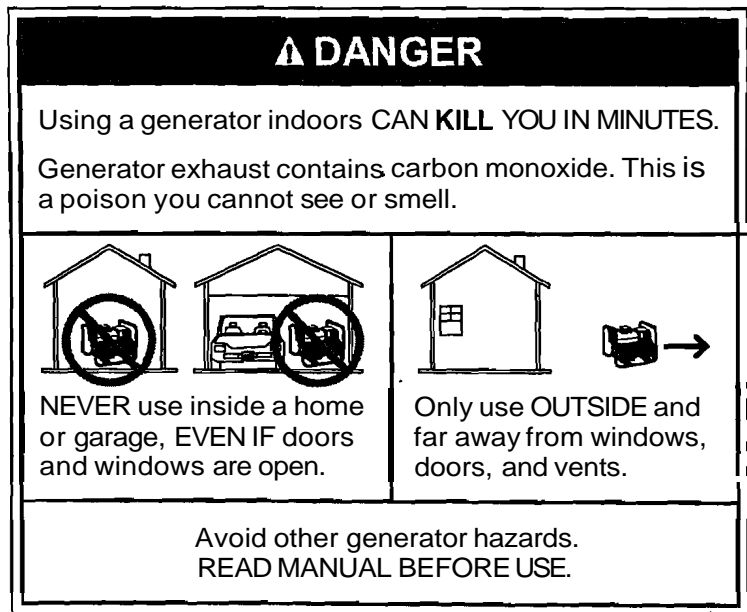
The EC staff estimates that the costs of a warning label, including the one-time cost of designing the label and the continuing costs of printing and applying the label, would be less than one dollar per portable generator. Because of this low cost, the labeling requirements specified in the draft final rule are not expected to pose a significant burden to small business. Distributors and retailers, some of whom will be small businesses, might have some additional costs associated with relabeling any generators that were manufactured without the improved warning label and that have not been sold 180 days after the publication of the final rule. However, these costs are expected to be limited and most distributors and retailers should be able to significantly reduce their inventories of portable generators that lack the improved labeling by the effective date of the rule. The EC staff also believes that the labeling requirements are unlikely to have an adverse impact on the environment. These issues are discussed in greater detail within Tab C.

IV. DRAFT FINAL RULE

In response to the public comments received on the NPR, the CPSC staff has included the following on-product label in the draft final rule:



Similarly, the staff has included the following packaging label in the draft final rule:



V. COMMISSION OPTIONS

If the Commission concludes that mandatory labeling is necessary to carry out the purposes of the Consumer Product Safety Act, the Commission may issue a final portable generator labeling standard. If, instead, the Commission concludes that mandatory labeling is not needed, the Commission may terminate the proceeding for development of a portable generator labeling standard or direct further work by the staff

VI. RECOMMENDATION

The staff recommends that the Commission approve issuance of a mandatory portable generator labeling standard. The staff recommends that the rule require compliance for generators manufactured or imported on or after the date 120 days after the final rule is published in the *Federal Register* and for generators offered to the first purchaser for purposes other than resale (for example, retail purchases) on or after the date 180 days after publication.

VII. REFERENCES

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TAB A

Public Comments on the NPR



United States
CONSUMER PRODUCT SAFETY COMMISSION
Bethesda, Maryland 20814 ..

MEMORANDUM

DATE: November 14, 2006

TO : ES

Through: Todd A. Stevenson, Secretary, OS

FROM : Martha A. Kosh, OS

SUBJECT: Portable Generators; Notice of Proposed Rulemaking;
Proposed Labeling Requirements

ATTACHED ARE COMMENTS ON THE CC 07-2

<u>COMMENT</u>	<u>DATE</u>	<u>SIGNED BY</u>	<u>AFFILIATION</u>
CC 07-2-1	8/21/06	John Walsh	Johnww1422@aol.com
CC 07-2-2	8/22/06	Larry Dick Tech. Supervisor	<u>Larry.Dick@enbridge.com</u>
CC 07-2-3	8/22/06	Marie Tweetie	<u>tweetiemariel954@yahoo.com</u>
CC 07-2-4	8/22/06	W. Lentz Battalion Chief	<u>William.Lentz@greensboro-nc.gov</u>
CC 07-2-5	8/22/06	L Golembiewski RN	Block Institute 376 Bay 44th St Brooklyn, NY 11214
CC 07-2-6	8/22/06	Marida Hout	<u>MaridaLH@aol.com</u>
CC 07-2-7	8/24/06	Denise Victor	<u>dvictor6@juno.com</u>
CC 07-2-8	8/31/06	G. Greenberg	<u>gngreenberg@gmail.com</u>
CC 07-2-9	9/01/06	Curtis Falany	3107 Sammonds Rd. Plant City, FL 33563

Portable Generators; Notice of Proposed Rulemaking; Proposed Labeling Requirements

CC 07-2-10	9/01/06	Damon Scott	scd3@scd3@cdc.gov
CC 07-2-11	9/12/06	Victor Serby	New York State Licensed Professional Engineer 255 Hewlett Neck Rd Woodmere, NY 11598
CC 07-2-12	9/19/06	Graham Sills	<u>graham@jinhsinhc.com.tw</u>
CC 07-2-13	10/04/06	Brian Lee	991 NE Kirsten Place Corvallis, OR 97330
CC 07-2-14	10/06/06	H. Frumkin Director	Department of Health and Human Services Centers for Disease Control and Prevention Atlanta, GA 30341
CC 07-2-15	11/02/06	T. Uchino Supervisor	Yamaha Motor Co., LTD 2500 Shingai, Iwata, Shizuoka 438-8501 JAPAN
CC 07-2-16	11/07/06	Michael Brown Atty	Brown & Gidding, PC 3201 New Mexico Ave, NW Suite 242 Washington, DC 20016
CC 07-2-17	11/07/06	David Murray	Willkie Farr & Gallagher 1875 K St, NW Washington, DC 20006
CC 07-2-18	11/07/06	Donald Mays Sr. Director P. Sawchuk Program Leader Janell Duncan Sr. Counsel	Consumers Union 1101 17 th St, NW, #500 Washington, DC 20036
CC 07-2-19	11/08/06	Kunio Hori	Daishin Industries ltd 1520-1, Funatsuke Yoro-Cho Yoro-Gun, Gifu 503-1382 JAPAN

port Gen - 1

Stevenson, Todd A.

From: Johnww1422@aol.com

Sent: Monday, August 21, 2006 9:26 PM

To: Stevenson, Todd A.

Subject: Re: Release #06-239 New Warning Label for Portable Generators

Dear Sirs:

In response to your invitation to comment on proposed new carbon monoxide warning labels on

portable generator equipments. The addition of another label, possibly in multiple languages is a nice gesture but lacks positive certainty to achieve your intent.

Have you considered a carbon monoxide monitor as an integral part of the unit, being powered by the unit when it is in operation. A simple search of the web provided the following site that

addresses CO monitors and grades them <http://www.consumersearch.com/>.

Have a wonderful tomorrow!

John **Walsh**

8/22/2006

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Port Gen. 2

Stevenson, Todd A.

From: Larry Dick [Larry.Dick@enbridge.com]
Sent: Tuesday, August 22, 2006 7:20 AM
To: Stevenson, Todd A.
Subject: New Warning Label for Portable Generators

Good Day

I believe you are on the right track with **the** new proposed labels.

However, was there any consideration as to the distance a Generator should be placed from a home, windows or any other fresh air intake.

Since you are showing a generator away from a house with the arrow, could you not include a distance of at least 10 feet. I think this would be beneficial to anyone using it.

The shown distance may put the real danger in perspective

Larry Dick
Technical Supervisor
Engineering Operations
Engineering Standards & Technical Services

8/22/2006

Page 1 of 2
Post Gen 3

Stevenson, Todd A.

From: Tweetie [tweetiemarie1954@yahoo.com]
Sent: Tuesday, August 22, 2006 12:23 AM
To: Stevenson, Todd A.
Subject: **comment** on gas powered generators

I subscribe to the CPSC recall list & appreciate the service you provide to consumers. Thank You!

It is strange that **your email** regarding new warning labels for gas **powered** generators would come to me today.

It including a link to our local daily newspaper (Council Bluffs, Iowa):
THE DAILY NONPAREIL
http://www.nonpareilonline.com/site/news.cfm?newsid=17091047&BRD=2703&PAG=461&dept_id=555106&rft=6

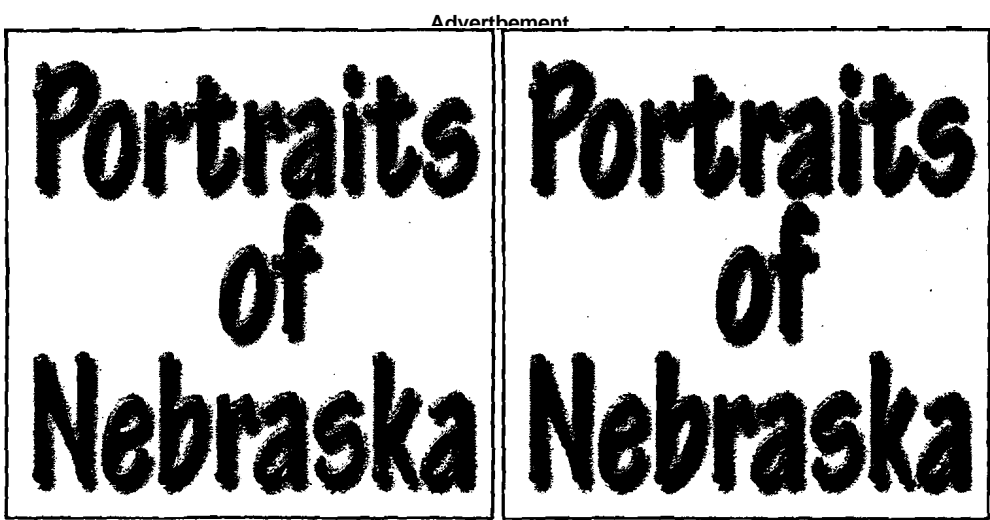
Perhaps if the warning labels had made it onto the generator sooner, one more life could have been saved. This man may have thought he **was** safe since he was working a distance away **from** the generator and in an enclosed office!

Man dies from carbon monoxide poisoning
08/21/2006

[Email to a friend](#) [Post a Comment](#) [printer-friendly](#)

A Council Bluffs man died after apparently being overcome by carbon monoxide gas Sunday evening.

Council **Bluffs** Fire and Rescue and Council Bluffs Police officers were dispatched to American Pumping Semce at **2626** Ninth Ave., at **6:30** p.m. on Sunday after receiving a report of an unconscious man. Upon arriving on scene, firefighters entered the building and discovered Richard W. Crowder, **62**, unconscious.



Sgt. Pat Toscano said that a preliminary investigation indicated that a gasoline-powered generator was running and filled the building with carbon monoxide gas. Crowder was working in the office area of the building, away from the generator.

Rescue crews transported Crowder to Jennie Edmundson Hospital where he was pronounced dead.

Toscano said that at this time, no foul play or other suspicious activity is suspected.

-Chad Nation

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Stay in the know. Pulse on the new Yahoo.com. Check it out.

8/22/2006

4

Stevenson, Todd A.

From: **Lentz, William** [William.Lentz@greensboro-nc.gov]

Sent: Tuesday, August 22, 2006 8:52 AM

To: Stevenson, Todd A.

Attachments: 06169.jpg

The two way **arrow** in the bottom right picture to me gives an impression that the generator can be used outside as well as inside the house. I think the arrow should be one way only pointing to the direction of outside.
Take care

Battalion Chief William (Bill) Lentz
Assistant Fire Marshal/Investigations/Pub.Ed.
Greensboro Fire Department/Fire Prevention
Office: (336) 373-2108
Mobile: (336) 430-6038
Fax: (336) 412-6207
william.lentz@greensboro-nc.gov

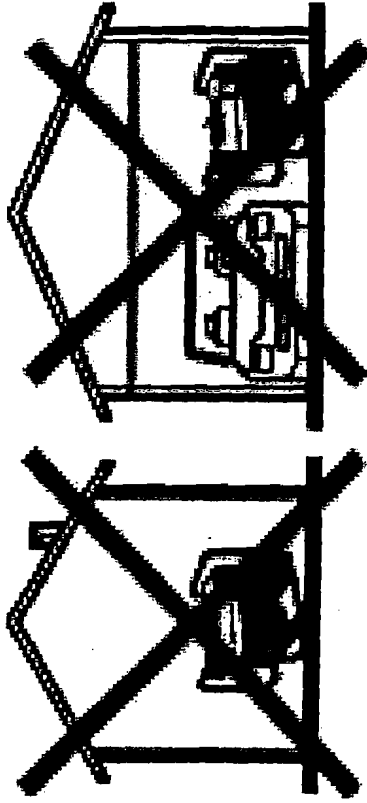
Please note that email sent to and from this address is subject to the North Carolina Public Records Law and may be disclosed to third parties.

8/22/2006

A DANGER

Using a generator indoors WILL KILL YOU IN MINUTES.

Exhaust contains carbon monoxide, a poison gas you cannot see or smell.



NEVER use in the home or in partly enclosed areas such as garages.



ONLY use outdoors and far from open windows, doors, and vents.

Stevenson, Todd A.

Port
Gnd 5

From: Lucille Golembiewski [lgolembiewski@blockinstitute.org]
Sent: Tuesday, August 22, 2006 8:46 AM
To: Stevenson, Todd A.

Excellent precaution to add the warning label on portable generators.

Not enough people realize it also needs to be away from a window.

Can footage distance be added? Just a thought.

Lucille Golembiewski
Registered Nurse
Block Institute
376 Bay 44th Street
Brooklyn New York 11214
lgolembiewski@blockinstitute.org
(V) 718.906.5452
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8/22/2006

*Power
Generators*

Stevenson, Todd A.

From: Information Center
Sent: Tuesday, August 22, 2006 11:09 AM
To: 'MaridaLH@aol.com'
Subject: RE: gasoline powered generator

Hello,

We have forwarded your comments to our Office of the Secretary (OS) within the agency and we thank you for taking the time to provide us with your point of view.

mij

From: MandaLH@aol.com [mailto:MaridaLH@aol.com]
Sent: Monday, August 21, 2006 9:23 PM
To: Information Center
Subject: gasoline powered generator

I see that a new regulation will be coming out for generators. I have a comment. Approx. 2 years ago, we experienced an ice storm in Mansfield, Ohio. My family was without electricity for over 4 days. We were fortunate to be able to purchase a generator when we were w/o electricity for over 12 hrs. Anyway, the purpose of my comment is. As I recall, the instructions for the generator said not to use an extension cord that was longer than 15'. We had to use a longer cord because of plugging it in the basement. So we tried to use the shortest possible length we could use although it was longer than the 15'. This meant putting the generator in our double garage. We opened our double garage door 1/2 way & also opened the door to the back of the garage all the way. We did have an extension cord running into our home which meant that our kitchen door was cracked open approx. 1/2". My husband is a stickler for following directions so he had to get up at 3AM to check the oil in the generator. When he got up, he noticed our garage was filled with a foggy type of smoke. Waking the family up, to ask if we were okay, he found out that two of us had headaches & the other one was okay. He moved the generator to the back yard & our headaches went away. We also had to use a 30' extension cord to do this.

I guess my point is, the generator manufacturers need to realize that a long extension cord will have to be used in most cases. The fact that the instructions told us to use the short length was the reason for us putting the generator in our garage. We thought we were safe because of leaving the double garage door up 1/2 way and leaving the back door to the garage all the way open. We were surprised to learn that having our kitchen door open a minimum of 1/2" was putting our lives in jeopardy. Of course, when we moved the generator to our back porch, which was immediately adjacent to the back door of our garage, our headaches went away.

*Thank you for your time,
Marida Hout
Mansfield, Ohio*

8/22/2006

Stevenson, Todd A.

Post Comments 7

From: dvictor6@juno.com
Sent: Thursday, August 24, 2006 3:44 PM
To: Stevenson, Todd A
Subject: RE: NPR Proposing New Warning Label for Portable Generators

RE: NPR Proposing New Warning Label for Portable Generators

I think this is a great idea - anything to help educate people that Generators emit CO and warn them of its deadly effects.

Denise
Aurora, IL

8/24/2006

Read Messages

[create](#)**Amazing & Preventible environ. disease outbreak in my town:**

2002-12-13 06:49:00 <Gary

After years of monitoring carefully performed Environmental Justice research regarding risk assessment of geographic health effects associated with poverty and residence, I was struck by the recent outbreak of Carbon Monoxide poisoning in my own comity.

What do you think about an ethnicity-associated odds-ratio of 28.4 !?

The underlying facts:

On Wed Dec 4, much of the eastern US experienced a major winter storm. In North Carolina, this was manifest with freezing rain, which froze onto all outdoor surfaces, including every tree branch. The resulting falling timber knocked out electric power to 1.7 Million homes in the state.

Restoration efforts are still not complete. The main power supplier, Duke Power, stated that only 902 of homes had power restored after a full week. My own home was without power for 6 days.
<http://www.heraldsun.com/durharn/4-298187.html>

During the period of blackout, the temperature remained quite 'cold, but shelters opened and run by the Red Cross were available but often unused. Apparently, residents of the area turned to a variety of non-electric heat, and many were unaware of the dangers of fuel combustion in range of their home's breathing air.

More than 300 individuals were hospitalized to treat CO-poisoning. Duke Medical Center has a hyperbaric chamber.

Of those hospitalized, 70%(!) were categorized as Hispanic.
<http://www.heraldsun.com/evergreen/93-270453.html>

Among the population of Durham County, the 2000 US Census found only 7.62 of our county were categorized as "Persons of Hispanic or Latino origin." Statewide, this proportion is even lower: 4.72
<http://quickfacts.census.gov/qfd/states/37/37063.html>

We can assume that many of these new immigrants are missed by the census (especially those here without papers), and that the proportion is higher in 2002 than in 2000 (the number of Hispanic residents rose 8-fold from 1990 to 2000). Nonetheless, this is a breathtaking predominance of risk in one population segment.

Just a flash calculation of an odds ratio for hospitalization among Durham County residents from CO-poisoning, yields a relative risk of from Hispanic ethnicity of more than 28!

If we use the data for the state (the likely at-risk population), the crude odds ratio is 47.3.

Even if we arbitrarily DOUBLE the assumed proportion of residents in our area who are Hispanic, the Durham county data show still more than thirteen times the rate among non-Hispanics.

Poverty may also be considered an explanation (as in other Environmental Justice associations). As explained in the local paper, of the Hispanic proportion detected by the 2000 US Census, 262 were below federal poverty guidelines., It's surely higher than that if we recognize the census' undercount.
<http://www.heraldsun.com/evergreen/93-270453.html>

Nonetheless, this is a HIGHLY preventible disease. Unlike other effects of poverty, it doesn't require intense remedies of

infrastructure, massive development of physical resources, major abatement of toxic deposits or resisted modification of personal lifestyles. It simply requires directed warnings to the expected victims.

Educational efforts are essential to bring recognition of safe and unsafe non-electric heating options to Spanish language formats, including radio, newspapers, churches, and community agencies. Sadly, even though the risk is concentrated in time to events like this last week, the outreach needs to occur BEFORE the crisis, because the means of distribution are gone when the community is without power.

We knew that this storm was coming. Apparently the utility companies were ready for massive outages, including arrangements for borrowed equipment and labor for power restoration.

I didn't hear a single warning about CO risks on English-language radio or TV... and expect there was no alarm sent through Spanish media either.

Past CO outbreaks have noted the predominance of new immigrants. In a winter storm in 1993, 50% of CO-poisoned patients in Washington state were non-English speakers.
<http://www.cdc.gov/mmwr/preview/mmwrhtml/00019587.htm>

Hopefully, this danger will be recognized and the lessons applied nation-wide. I'd be interested to hear if other communities have taken the necessary steps to prevent this horrifying epidemic.

Thanks,
- Gary Greenberg. MD MPH

--
Gary N. Greenberg, MD MPH Sysop / Moderator Occ-Env-Med-t MailList
gary.greenberg@duke.edu Duke Occupat, Environ, Int & Pam Medicine
OEM-L Maillist Website: <http://occhealthnewr.net>

Please remove this footer before replying.
Visit <http://archive.occhealthnews.net> or <http://recent.occhealthnewa.net> for list archivea.
= - - - - -
<http://www.gsk.com/>
GlaxoSmithKline is pleased to co-sponsor the ACOEM Corporate Health Achievement Award, providing national :

Port
Generators
9

FOR IMMEDIATE RELEASE

Portable Generators and Surge Protectors can make a Fiery Combination

Curtis E. Falany, P.E.
3107 **Sammonds** Road
Plant City, FL 33563

1 September 2006

For more information, contact Mr. Falany at 813-752-9243 or 813-716-2582 (cell.)

This is the time of year when small, portable generators often become the mainstay of hurricane victims. This is a caution to the users of those portable generators regarding their use with **'surge'** strips.

During the last two **hurricane** seasons, I have had the opportunity to observe the heat related failure of several surge strips. The strips failed when they were used with small portable electric generator sets. The failure mode was most often melting but some strips also failed with the discharge of smoke and sparks.

You are probably familiar with these **surge** strips. They consist of a short power cord, an **'On-Off'** switch and several 120 volt receptacles. Sometime the strips include a power light or a status light. The strips I observed fail were all sold under major brand names.

The generator sets involved were consistently inexpensive sets with what is described as an electronic generator or electronic alternator. All of the sets involved generated at 120/240 volts, 60 Hertz, single phase, with capacities of less than 9 KW. Their country of origin was consistently China.

After I observed a few failures, I became curious and conducted my own brief informal investigation of the phenomenon. Several generator sets were obtained from stores or associates. Surge strips were obtained from my office spare parts. A test configuration was developed which included a generator, surge strip, and load. An adaptor was also built to provide a neutral to ground bond.

Each surge strip and load combination was first tested with the normal domestic electric supply. No failures or significant heating was detected.

Generators, adaptors, strips, and loads were tested in different combinations. The load in no case exceeded the rated capacity of the strip. The generators involved ranged in output from 1350 watts to 8550 watts.

In all, we destroyed four power strips using unrecognized brands of inexpensive generators

originating in Chinese. No strips were destroyed using generators **bearing** easily recognized US or Japanese brands regardless of their country of origin.

Where possible, the output voltage of each generator was measured under three conditions; without load, while in test, and with a resistive load. All tested generators measured in the range of 120 to 130 volts using a standard RMS voltmeter.

An attempt was made to observe the output voltage waveform under the test load. Some of the generators destroyed the surge strip before the waveform could be checked. Those generators subsequently had their waveform **checked with** no load and with a resistive load of approximately one-half their rated output. The output voltage waveform of the offending generators **was found** to be very badly formed.


My conclusion, based on this informal study, is that the surge strips were not at fault and the generator sets were the cause of the failure. The output waveform of the offending generators contained voltage spikes that frequently or continuously exceeded the threshold or clamp level of the surge suppressors in the strip. Further, there were enough of these spikes, or they **were** of sufficient duration, that they contained enough energy to overheat the strips causing elevated temperatures, **melting**, and heat related failures.

Curtis E. Falany is a Professional Engineer and Master Electrician with over thirty years of experience. Mr. Falany lives and works in Plant City, FL

image URL = [HTTP://www.falany.com/cef/images/curtis1-5x7.jpeg](http://www.falany.com/cef/images/curtis1-5x7.jpeg)

Attachments can contain viruses that may harm your computer. Attachments may not display correctly.

Stevenson, Todd A.

From: Information Center **Sent:** Fri 9/15/2006 4:59 PM
To: 'cefalany@cmax2.com'
Cc:
Subject: FW: Portable Generators and Surge Protectors
Attachments:  Portable Generators and Surge Protectors.pdf(31KB)

Hello,

We have **forwarded** your **concerns/comments** to another department within the agency for review. If additional information is needed, we will contact you **directly**.

mlj

-----Original Message-----

From: c. e. falany [mailto:cefalany@cmax2.com]
Sent: Friday, September 15, 2006 2:14 PM
To: Information Center
Subject: Portable Generators and Surge Protectors

Attached is a brief article about problems found with Portable Generators that may be of interest to you.

Curtis E. Falany, PE
Forensic Engineer
cell: 813-716-2582
fax: 813-752-3121

Please Note: The information contained in this electronic mail (e-mail)

message may be legally privileged and confidential information intended only for the individual or entity named above. If the reader of this message is not the intended recipient, you are hereby notified that any dissemination, distribution, or copy of this e-mail is **strictly** prohibited. If you have received this message in error, please immediately notify us by telephone, destroy all copies, and **completely** delete it from your computer system.

Stevenson, Todd A.

From: Buyer, Janet L
Sent: Friday, September 01, 2006 5:30 PM
To: Stevenson, Todd A.
Subject: FW: EPA Response to CPSC's Generator Label
Attachments: low literacy test of CDC drawing and text 6.doc

I think the e-mail I sent you didn't have this attachment to it for you to include with the EPA's comments on the NPR.

From: Wolfson, Scott J.
Sent: Thursday, August 31, 2006 11:22 AM
To: Elder, Jacqueline; Howell, Robert J.; Edwards, Erlinda M.; McLaurin, Hugh M; Buyer, Janet L; Smith, Timothy P.; Mullan, John G.; Schoem, Marc J.; Semple, Patricia M; Martin, Lowell F; Heh, Scott R.; Vallese, Julie M.
Subject: FW: EPA Response to CPSC's Generator Label

As requested....

From: Damon, Scott (CDC/CCEHIP/NCEH) [mailto:scd3@cdc.gov]
Sent: Wednesday, August 30, 2006 2:02 M
To: Wolfson, Scott J.; Vallese, Julie M.
Subject: RE: Generator Label

Here's the EPA focus group report.

This was EPA's reply to some questions I immediately had about the study:

Scott -
yes, the label was explained to the participants

the following is the language that tested well for our low literacy flood booklet & is in the current draft, this is designed for several pages with drawings. I'd be happy to share the final portable generator drawing once I get it, if you're interested, you could use it for the label also - I'll give you call with more detail - Laura

draft language
Sometimes the power goes out after a flood. So, some people use machines called portable generators for electricity during flood cleanup.

The exhaust or fumes from a portable generator could kill you in minutes if you breath it in!

Use portable generators OUTSIDE and far away from the building.

Do not use portable generators inside your house or garage.

Do not put portable generators on balconies or near doors, vents, or windows.

Do not use portable generators near where you or your children are sleeping.

I asked: Was it made clear that this was a label that would actually be on a generator? When we use it for flyers we can be a little more effusive, without the bounds of health literacy, but UL is pretty committed to this minimal text for the label, given that this is one of half a dozen ways a generator can kill you that they need to cover. Were there any alternatives to "partially enclosed area" offered? It's shorthand(to fit in the area of a label) for

9/5/2006

"porch, verandah, carport. . ."

I still feel they didn't **properly contextualize**, in terms of perhaps putting the label on a generator rather than on a piece of paper in front of people or recognizing that people **owning/operating** a generator are likely to know what a generator is, and that they didn't appreciate the limited real estate allotted for a warning label, but you can read it for yourself.

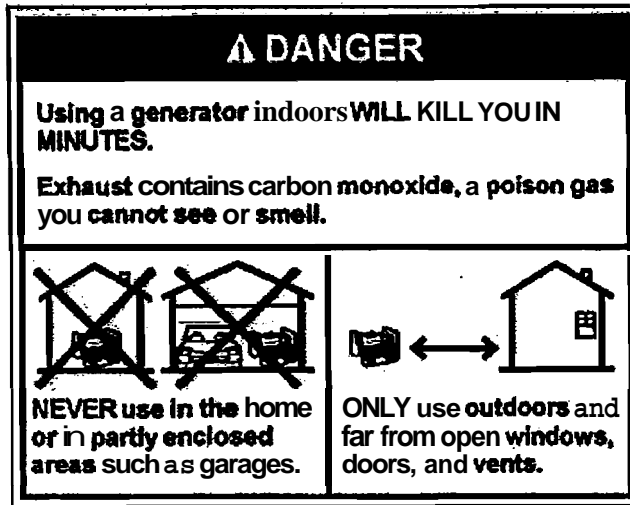
BTW, *sorry* they keep referring to it as "CDC" warning sticker—that's just because they received it from US.

Scott A. Damon
CDC Air Pollution & Respiratory Health Branch

Unless otherwise stated, any views or opinions expressed in this e-mail (and any attachments) are solely those of the author and do not necessarily represent those of the U.S. Consumer Product Safety Commission.

Copies of product recall and product safety information can be sent to you automatically via Internet.e-mail, as they are released by CPSC. To subscribe or unsubscribe to this service go to the following web page: <http://www.cpsc.gov/cpsclist.asp>

9/5/2006



overall comments summary

drawing

- can't tell what the generator is (**in** the drawing)

text **english**

4 of 9 correct • know this is about a portable generator (& understand in general what a portable generator is)

3 of 9 correct • know what a 'partly enclosed area' is

7 of 9 correct -Participant knows why the word NEVER is used (**e.g.**, because the poison gas can **kill** you)

text **spanish**

0 or 7 correct • clearly understands **/knows** this is about a portable generator

0 of 7 correct • clearly knows what a 'partly enclosed area' is

3 of 7 correct- Participant knows why the word NEVER is used (**e.g.**, because the poison gas can kill you)

- some participants did not know what a generator is
- some thought that gas referred to gasoline
- 'partly enclosed areas' was confusing

recommendations from low literacy contractor, based on the results of field testing:

1. text for CDC **warning** sticker
 - Recommend redesigning sticker.
 - Enlarge picture of generator so it's clearly identifiable.
 - **Simplify** text
 1. delete "partly enclosed areas"
 2. explain what a generator is

Page 1 of 1
Port. Generator
NPR 11

Stevenson, Todd A.

From: Victor M. Serby [serbyv@verizon.net]
Sent: Tuesday, September 12, 2006 8:40 AM
To: Stevenson, Todd A.
Subject: Commenting on NPR— Proposing New Warning Label for Portable Generators

Dear Mr. Moore:

I am commenting on NPR Proposing New Warning Label for Portable Generators.

The warning: "ONLY use **outdoors** and far from open windows, doors, and vents." is insufficient since it does not **quantify** "far". "Far means different things to different people.

The CPSC should determine what minimum distance is required and reword the warning and **pictorial** accordingly.

Let's **assume** "far" is more than 20 feet. (It may really be more or less)

Above the double-headed arrow should have the words: "**MORE THAN 20 FEET**"

The wording of the **warning** should be changed to read:
"ONLY use outdoors and **MORE THAN 20 FEET** from open windows, doors, and vents;"

It is also important not to create another problem by adding additional distance between the generator and the load. Increased distance will invariably result in some consumers using extension cords of insufficient capacity to make up the distance. It is therefore incumbent upon the manufacturer to size and list, on a label affixed to the generator's electrical panel, the minimum gauge of UL Listed outdoor extension cord that can safely be used with the outlets on the generator with the **warning:** "**ONLY USE PROPERLY SIZED EXTENSION CORDS IN GOOD CONDITION**"

I hope that the Commission considers these comments.

Respectfully submitted,

Victor M. Serby, P.E.
New York State Licensed Professional Engineer
255 Hewlett Neck Road
Woodmere, NY **11598-1452**
Tel: 516-374-2455
Fax: 267-841-0009
e-mail: serbyv@bellatlantic.net

9/12/2006

Stevenson, Todd A.

1 230 1 02
Post Gen
Label
12-

From: Graham Sills [graham@jinhsinho.com.tw]
Sent: Tuesday, September 19, 2006 1:29 AM
To: Stevenson, Todd A.
Cc: Kyle Kuo; Eva Lee
Subject: CO Warning Label

U.S. Consumer Product Safety Commission
Office of **Information** and Public Affairs
Washington, DC
USA 20207

Dear T. Stevenson,

We are a manufacturer of portable generators in Taiwan and China. We have just started to prepare the warning stickers according to the **CPSC's** regulations. I would like to be clear on two things:

1. From my reading, a second language is only up for consideration, but currently there is no specific provision. I assume Spanish would be the natural choice for a second language. Please **confirm**.
2. To avoid ambiguity, the CPSC advises manufacturers to use the warning label provided in Release #06-239 August 21st (<http://www.cpsc.gov/CPSCPUB/PREREL/prhtml06/06239.html>). We plan to **affix** this exact label to our machines. Please advise if this is correct or otherwise.

Best Regards,

Graham Sills
International Sales Manager
IC Star Manufacturing Group, Ltd
Fenqyuan, Taiwan
+886.928.416.706 (mobile)
+886.4.2523.8107 (fax)
graham@jinhsinho.com.tw
www.icstargroup.com

9/19/2006

Stevenson, Todd A.

Port Comment
13

From: Brian C. Lee, PhD DABT [bcllee@goodafternoontox.us]
Sent: Wednesday, October 04, 2006 6:40 PM
To: Stevenson, Todd A.
Subject: comment: NPR portable generators

Dear Consumer Product Safety Commission:

The 2004 staff report containing cases of CO poisoning from portable electricity generators demonstrates that "adequate ventilation" cannot be achieved merely with an open door or window. I support the proposed rule for stronger warning labeling of these products as a minimum measure to reduce CO poisonings.

I encourage active CPSC participation in the development of a CO emission performance standard which would serve to drive technological solutions to this problem. The staff report has mentioned solutions such as catalytic converters and CO sensing lockouts, which I see as feasible with a history of success on other combustion engine devices.

Please also determine whether 'fuel cell portable generators are included by the rule.

Sincerely,

Brian C. Lee, PhD DABT . bcllee@goodafternoontox.us

Good Afternoon Toxicology Consulting, LLC
991 NE Kirsten Place
Corvallis OR 97330'-6822

Port
Gov.

14

Centers for Disease Control
and Prevention (CDC)
Atlanta (GA) 30341-3724
October 6, 2006

U.S. Consumer Products Safety Commission (CPSC)
Office of the Secretary
c/o Todd Stevenson at tstevenson@cpsc.gov

Dear Mr. Stevenson:

Julie Vallese, Director, CPSC Office of Public Affairs, requested that staff from CDC's National Center for Environmental Health/Air Pollution and Respiratory Health Branch (APRHB) review and comment on a CPSC notice of proposed rulemaking for portable generators.

The proposed standard would require manufacturers to place a new warning label on portable generators. The label includes pictograms and statements warning consumers that a generator's exhaust contains poisonous carbon monoxide and that a generator should never be used inside the home or in partially enclosed areas such as garages (www.cpsc.gov/cpscpub/prerel/prhtml06/06239.html and www.cpsc.gov/LIBRARY/FOIA/ballot/ballot06/portgen.pdf).

APRHB staff members have reviewed the rule and concur with CPSC's recommendation that the new label proposed as an Outline of Investigation under Underwriters Laboratories (UL) 2201 be required as the basis for unit and packaging labeling on portable generators. APRHB staff has served as representatives on the UL Standards Technical Panel that developed this label since 2003 and has contributed significantly to the development of the illustrations and language in the current UL proposed markings. APRHB also concurs with the suggestion that this label be developed in languages in addition to English.

It's been a privilege for CDC staff to work with CPSC and UL to protect public health from unnecessary illness and deaths due to portable generator-associated carbon monoxide poisoning.

Sincerely,

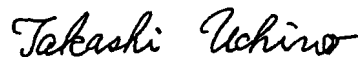
Howard Frumkin, M.D., Dr.M.P.H.
Director, National Center for Environmental Health/
Agency for Toxic Substances and Disease Registry

Date: Nov. 2, 2006

Attn: Consumer Product Safety CommissionSubject: "PORTABLE GENERATOR NPR"
(Comment for Proposed Rules about 16 CFR Part 1407 "Portable Generator")Dear Mr. **Todd** A. Stevenson
Secretary, Consumer Product Safety CommissionThis is **YAMAHA** MOTOR Co. , Ltd.
I got the message about captioned matter.
Our company requests following items.

Comments for Hazard Label

1. We propose the signal word shall be used **WARNING**, not **DANGER**.
Reason:We supposed, If risk of carbon monoxide (CO) is prohibited **DANGER**, it will become down the level of importance of **risks** (Fire, Electricshock, Connection to commercial power source).
2. We propose the pictogram shall be Used **(\)**(Please refer attached sheet), not **(X)**.
Reason:We supposed, **(\)** is recognized marking in the world and used generally, and it is easy to understand effectively to all people. .
3. We propose the hazard label for package shall be no use.
Reason:Package is destined to throw out. and when we operate generator without package.
4. We propose the exhibit language shall be concentrated English.
Reason:If another language is required, increase in number boundless expanse.
5. We need **six-month to** design to comply with the new requirements from issuance of final regulation in the Federal Register.

Please consider our status of **development**.
Yours truly,Supervisor **TAKASHI** UCHINO
Development Group
Power Products Division
RV Company



November 7, 2006

Office of the Secretary
U.S. Consumer Product Safety Commission
4330 East West Highway
Bethesda, Maryland 20814

CPSC/OFC OF THE SECRETARY
FREEDOM OF INFORMATION
2006 NOV -8 A 10:23

Portable Generator NPR

Dear Mr. Secretary:

American Honda Motor Company ("Honda") offers the following comments on the August 24, 2006 Notice of Proposed Rulemaking (NPR) proposing labeling requirements for portable generators. The NPR prescribes specific CPSC staff-devised warning labels to address the risk of carbon monoxide (CO) poisoning associated with the use of portable generators. Honda generators already bear what it believes are effective warnings relating to CO poisoning as well as to other risks associated with generator usage. These labels also comply with ANSI 2535. Thus, even in the absence of mandatory labeling requirements, Honda believes that its labels already substantially accomplish the objective of the NPR to alert consumers to the hazards of CO poisoning associated with generator usage. Turning to the NPR, while Honda shares the Commission staffs concerns about CO poisoning and appreciates the sentiment behind its well-intentioned effort to promulgate labeling requirements, the label proposed in the NPR raises substantive and procedural issues that Honda believes the Commission should have addressed prior to publishing the NPR.

1. Choice of Statutes:

The NPR proposes to require precautionary labeling for generators under section 27(e) of the Consumer Product Safety Act (CPSA or Act). Section 30(d) of the Act, however, requires that a risk of injury associated with a consumer product that could be eliminated or reduced to a significant extent by action under the Federal Hazardous Substances Act (FHSA) may be regulated under the CPSA only if the Commission by rule finds it is in the public interest to do so.

More than three decades ago, the Food and Drug Administration recognized that the FHSA provides an appropriate statutory vehicle for regulating carbon monoxide emissions when it promulgated labeling requirements for

charcoal briquettes. See 21 C.F.R. 191.5(a)(1) and (b)(6). The Commission reaffirmed that recognition in 1996, when it revised the required charcoal label. 16 C.F.R. 1500.14(b)(6). In terms of risk of injury, no difference exists between carbon monoxide generated by burning charcoal and that generated when a portable generator burns gasoline or diesel fuel. The injury scenarios for both products are largely the same - the generation of CO in enclosed and/or unventilated areas. Clearly then, the FHSA is the appropriate statute with which to address through labeling the risk of injury associated with CO generation from portable generators, especially since a primary purpose of that statute is to require precautionary labeling for hazardous substances.

When it published the NPR, the Commission failed to publish a proposed rule indicating its determination that regulating the risk of injury associated with portable generators under the CPSA rather than the FHSA would be in the public interest. In fact, the NPR does not even refer to either the FHSA or to section 30(d) of the CPSA. This procedural flaw alone leaves the Commission vulnerable to challenge, notwithstanding other substantive concerns discussed below. Nor is the procedural distinction an idle one.

The ostensible goal of the Commission in publishing the NPR is to establish uniform labeling requirements for generators. Taking action under section 3(b) of the FHSA to promulgate such requirements would further this objective by granting pre-emptive effect under section 18(b) of the FHSA to the resulting labeling. Regulating the labeling of generators under section 27(e), on the other hand, would not have a similar effect, since the pre-emption provisions of section 26 of the CPSA only apply to consumer product safety standards. By definition in the CPSA, section 27(e) rules are not consumer product safety standards.

2. The Failure to Promulgate the Portable Generator Rule as a Consumer Product Safety Standard:

Section 7 of the CPSA provides the Commission with authority to promulgate consumer product safety standards that, *inter alia*, consist of requirements that a consumer product be marked with or accompanied by clear and adequate warnings or instructions or requirements respecting the form of warnings or instructions. Such requirements must be reasonably necessary to prevent or reduce an unreasonable risk of injury associated with the product to be regulated. On its face, the label that the NPR proposed appears to be exactly the type of warning that section 7 contemplates, to the point that the NPR specifically characterizes the risk of CO poisoning associated with generator

emission as an unreasonable risk of injury -- precisely the type of risk that section 7 addresses. Moreover, **although** section 27(e) requires a **manufacturer** to provide safety information both to the Commission and to purchasers, the NPR fails to specify what information generator manufacturers must provide to the **Commission**, again suggesting that the section 27(e) rule proposed in the NPR is in **reality** a section 7 standard without the requisite statutory findings.

The NPR contains no discussion of why the Commission chose not to engage in a section 7 rulemaking proceeding. If the concern is a possible inability to make the findings that section 7 requires, then as a **matter** of good public policy, the Commission should not try to circumvent that deficiency by proceeding under section 27(e). If, on the other hand, the Commission is confident in the staff analyses that support the NPR, initiating a section 7 proceeding should not engender an unnecessary burden on the agency, nor should it cause undue delay, especially in view of the fact noted in the NPR that the Commission has been focused on the problem of CO emission from portable generators since before 2000.

3. The Need for the Rule:

As is noted earlier, Honda generators all bear warnings relating to CO poisoning. To Honda's knowledge, those manufactured by its competitors also bear comparable **warnings**. Apparently, the staff has conducted only a cursory review of existing labels and has subjectively concluded that existing labels and instructions do not adequately communicate the risk of injury because they are subject to interpretation. The staff made no apparent effort to conduct surveys with consumers to evaluate perception of the existing labels. Hence, conclusions about the adequacy of those labels lack foundation.

While staff-generated memoranda from 2002, 2003, 2004 and 2006 cite a limited number of examples of incidents in which consumers attempted to provide ventilation while operating generators (presumably to **support** the proposition that existing labeling is inadequate), the in-depth investigation reports cited apparently contain little information about the labeling on the products involved or consumer awareness of the labeling. Moreover, the NPR suggests that portable generator sales could exceed 1 million annually. Given the longevity of these products, this suggests that several million generators are available for use during each year. Without denigrating the severity of the risk associated with CO generation or the tragic occurrence of death each year, the sheer number of generators in use when compared to the number of incidents each year suggests that almost all individuals who use

portable generators are aware of the hazard and use the products properly and safely. This in turn suggests that existing labeling is adequate. Finally, the Commission's experience with the 1996 revisions to labeling for charcoal briquettes discussed below strongly suggests that changing the current labels on portable generators will have little impact on reducing the incidence of CO poisoning.

4. The Failure of the NPR to Recognize Additional Hazards Associated with the Operation of Portable Generators:

As is noted above, Honda generators already bear precautionary labeling, including a pictogram, warning users of the risk of CO generation associated with generator use. They also bear additional warnings related to a number of other hazards that present a risk of death or serious injury if generator users do not take appropriate steps to protect themselves. These include electrocution resulting from use in wet conditions -- conditions that, as the Commission staff recognizes, often necessitate use of a generator in the first place -- electrocution from improperly connecting a running generator directly to the power supply of a building, and fire associated with fueling a running generator. Honda has considerable concern that highlighting the carbon monoxide risk at the expense of the other warnings may lead consumers into believing that those risks are less significant than that of CO generation, thus causing them to pay less attention to those other warnings. Neither the NPR nor the Commission's Human Factors staff May 26, 2006 memorandum contains any discussion of these competing concerns.

An earlier August 22, 2003 Human Factors memorandum proposing a warning label addressing the CO hazard associated with portable generators recognized an inherent contradiction in warning people to use generators outdoors, away from semi-enclosed areas and air intakes while, at the same time, instructing them to keep generators dry and out of damp conditions. Rather than attempting to resolve this conflict, the Human Factors staff side-stepped it by developing the proposed label "under the assumption that the conflict can and will be resolved by eliminating the electrocution warning . . . by designing generators to permit their use outdoors in poor weather conditions. . . ." The latter, of course, has not occurred, thus leaving the conflict and the issue of the impact of CO warnings on other hazard warnings unresolved. The label that the NPR proposes continues to avoid the issue.

**5. The Potential Effectiveness of the Labels that the NPR Prescribes
H. Not Been Validated:**

The Commission staff chose to develop the label proposed in the NPR on its own initiative without soliciting input from the generator industry. Moreover, judging from the February 13, 2006 comment that the Commission staff submitted to Underwriters' Laboratories (UL) on the draft UL Outline of Investigation, 2201, Portable Engine Generator Assemblies, UL also had little involvement in drafting that label. Honda believes that the exclusion of the industry from the process was an unfortunate choice, given that, as the Commission has acknowledged in many, many voluntary standards proceedings, industry representatives have the experience and perspective to make substantive comments that refine and improve the final work product.

The NPR does not refer to any independent effort on the part of the Commission to evaluate the understandability and potential effectiveness of the new recommended labels, nor does it or any of the staff memoranda supporting the NPR discuss the failure of the Commission to do so. An April 14 letter from the Director of the Office of Compliance attempting to obtain industry agreement to adopt the labels voluntarily without the need for rulemaking posits that the recommended labels "reflect the staff's general expertise in the area of warnings and lessons we learned in testing in connection with the CPSC-required charcoal label," implicitly acknowledging that the Commission has not taken steps to evaluate the proposed label objectively with human subjects. If anything, the record in the charcoal matter suggests that the Commission should conduct testing on the new proposed generator label to assure that the message meets the minimum criteria in ANSI Z 535.3, *i.e.*, at least 85% correct responses with less than 5% critical confusion.

As the Commission may recall, the pictogram in the charcoal label was revised after initial focus group tests on the pictogram and label developed by the Commission staff showed only a 56% correct response with 4% critical confusion, thus confirming the value of conducting such analysis. The Commission's experience with the charcoal label strongly indicates that some type of focus group testing on the label proposed in the NPR is appropriate, if only to confirm the validity of the staff's assumption that the new recommended labels achieve the minimum levels of comprehension that ANSI Z535.3 contemplates. Furthermore, while the risk associated with CO generation from charcoal and generator usage is nominally the same, significant differences exist between the two products in the type and circumstances of use, collateral hazards and user population. These differences alone suggest the Commission

should not rely on **its** experience with the charcoal label to conclude the generator label proposed in the NPR will have the desired effect with respect to exposure to CO, leaving aside the issue of whether those labels might have the unintended effect of exacerbating unnecessarily the risk of fire and electrocution associated with generator usage.

Absent objective confirmation of the effectiveness of the labels proposed in the NPR, the Commission is in essence requiring the generator industry and the public to accept as a matter of faith that the new recommended labels adequately communicate the risk of injury associated with CO generation without having a negative effect on the other warnings that appear on generators. Honda believes that the failure to conduct any consumer evaluation of the label proposed in the NPR, along with existing labels on generators and any alternatives, for example the label proposed in the staffs 2003 memorandum and UL's original proposed label, does the public a disservice. Simply put, absent testing, the Commission has no way of knowing which of these labels might have the greatest potential to effectively address CO poisoning.

6. The Proposed Label Is Inconsistent with Prior CPSC Staff Recommendations and Fails to Take into Account Alternative Language:

In 2003, after its experience garnered from the development of the charcoal label, the Commission staff designed warnings for portable generators that differ substantially from the label it now proposes the Commission adopt in the NPR. The significant differences and accompanying commentary appear below.

a. The 2003 warnings were to appear on the generator itself, on the generator package, and in the instruction manual. The NPR warning only applies to the generator itself and its package. Neither the NPR nor the 2006 staff memorandum in support of the NPR provides any rationale for this difference.¹

¹ Note also that the 2003 staff-developed warnings included a reference in the instruction manual alerting **consumers** to be aware of the symptomatology associated with CO poisoning and the measures for consumers to take if they experienced such symptoms. The 2003 memo notes that the warning included this information because knowledge and awareness of symptoms could prevent the death of people who have taken unsuccessful measures to avoid CO poisoning. The NPR label contains no similar reference, and does not address the substantive issue of what contribution this type of warning might provide to the **reduction** of injury.

b. The 2003 warning and the poster warning of CO hazards associated with generator operation that the Commission distributed in 2005 both used the signal word "Warning" rather than the word "Danger" in the NPR label as a signal word. The 2003 memo explained in detail the reason for using "Warning." Honda believes that that rationale continues to be valid, especially since it is consistent with long-standing Commission practice in labeling for CO hazards. The NPR itself contains no explanation for the change to "Danger" in the proposed label. However, the use of that signal word departs from the hierarchy of hazards that ANSI Z 535 establishes, and conflicts with the Commission's own codified warning for charcoal and, as is noted above, with the warning in the poster on generator hazards that the Commission provided to the industry in September 2005, 11 months before publication of the NPR.

The 2006 staff memo supporting the NPR explains that the decision to use the signal word "Danger" was in essence the result of a change in the perspective of the staff from that which it had in 2003 because the "hazardous situation" associated with generator usage requires the use of "Danger." The memo does not, however, explain why the staff did not consider this distinction in 2003. Moreover, the rationale that using a generator will almost certainly result in death or serious injury if precautions are not followed is equally applicable to the use of charcoal indoors. Nevertheless, the staff continues to accept "Warning" as adequate to address the risk of CO poisoning from charcoal. The inconsistency is self-evident.

Even if one could accept that the signal word "Danger" in principle might be appropriate for a stand-alone label addressing CO emission, Honda notes again that elevating carbon monoxide poisoning to that status may have the unanticipated and undesirable effect of weakening other warnings that address equally dangerous risks, especially in view of the imminent hazard presented by the other three risks mentioned above.

c. The 2003 warnings that the staff developed contained an optional pictogram depicting the inhalation of gas which the staff memo noted had undergone successful consumer testing as part of Westinghouse Electric Corporation's 1985 Product Safety Label Handbook.² The NPR label contains

² Unlike the staff's current recommendation in support of the NPR label, the 2003 memo noted that consumer testing of labels using the inhalation pictogram would be valuable to determine whether the depiction of gas or vapor might lead consumers to believe that CO is visible.

pictograms showing improper and proper generator usage. These pictograms apparently have never been tested. Contrary to accepted practice, the NPR label also uses "X" to identify prohibited actions rather than the symbol "⊘."

The May 26 memorandum in support of the NPR explains the staff preference for use of the "X" symbol by referring to the charcoal label, but that label was, of course, subjected to focus panel evaluation -- again a process which one can infer from the staff memo has not taken place with respect to generators. On the other hand, the Commission's September 2005 poster on generator hazards -- which post-dated the promulgation of the charcoal label by more than 9 years and presumably was developed with input from the same staff members who wrote the 2003 and 2006 memoranda -- used the "⊘" symbol, thus raising the question why the staff less than a year later has concluded that its prior position on the appropriate symbol to use was incorrect or would be ineffective in addressing CO poisoning.

To the extent that the Commission is relying on its activities to promulgate a warning label for charcoal to validate the pictogram in the label proposed in the NPR, that reliance would appear to be misplaced. The results of Commission testing on the label for charcoal that it ultimately adopted showed that the label would be effective in part because the pictogram on the label (after it was redesigned) experienced a high degree of consumer comprehension. That pictogram, however, provides a clear and readily understandable depiction of a charcoal grill -- a product with a unique silhouette. It is by no means clear that the depiction of the generator in the new recommended labels is sufficiently clear to provide comprehension comparable to that which the charcoal pictogram affords. Indeed, the addition of the "X" to the pictures of a house and a garage in the recommended label tends to obscure the depiction of the generator in those locations, suggesting that using "⊘," the internationally recognized symbol, might be more effective in allowing people to understand those pictograms.

Honda also notes that one of the reasons that the Commission chose to use an "X" in the charcoal label was because the "⊘" symbol did not go through all of the pictograms of prohibited uses of charcoal, thus suggesting to some members of the focus panel that uses through which the slash did not run were not hazardous. The same would not be true for the label proposed in the NPR. Finally, in the preamble to the final rule for charcoal labeling, the Commission staff recognized that use of the "X" was a significant departure from accepted labeling practice and expressly noted its intention to present this alternative to ANSI for consideration of supporting alternate symbol designs for

ethnic or other special populations. Apparently, that either did not occur or ANSI did not accept the alternative. Nevertheless, the 2006 staff memo in support of the NPR states that the staff now prefers the use of "X" symbols to convey prohibition except when a circle/slash symbol would render the prohibited act more understandable, for example, because it does not cover or obscure critical details of the underlying pictogram as much as an "X" symbol. Leaving aside the issue that the "X" in the NPR pictograms tends to obscure the pictures of the generator, the unilateral departure of the staff from internationally recognized labeling practice may not be in the Commission's or in the public's interest.

Of equal concern to the foregoing, there is nothing comparable in the charcoal label that would support the conclusion that either of the pictograms in the bottom left half of the label proposed in the NPR will have the desired effect. Even if most consumers are able to determine that the pictograms show a generator, the pictogram of the generator in a garage or building could lead to confusion, especially for consumers who have little reading ability. For example, initial Honda review concluded that the pictogram showing the generator in a garage could reasonably be construed as a warning that generators cannot be stored in a garage. Even assuming that consumers understand that the pictogram in the bottom right half of the label proposed in the NPR is designed to warn people to use generators away from homes, that pictogram introduces the same type of subjectivity -- *e.g.*, how far away should the generator be from the house -- which the staff found objectionable in existing labels on generators.

d. The text and format of the 2003 warnings differ significantly from that of the NPR label. For example, the 2003 warnings instruct consumers not to use generators in homes, garages, or sheds "even if you run a fan or open doors or windows," explicitly rejecting the use of the phrase "other semi-enclosed spaces" because it was more open to interpretation than identifying specific locations. The NPR label, on the other hand, tells consumers not to use generators "in the home or in partly enclosed areas such as garages." Similarly, the 2003 warning states "Poisonous Gas" in the heading immediately below the signal word "Warning," while the NPR recommended label uses the term "poison gas" in the text of the warnings.

Neither the NPR nor the 2006 staff memo in support of the NPR explains in any detail the need to change the former 2003 staff recommendations. While the 2006 memo attempts to explain the differences by characterizing the 2003 warnings as being intentionally written so they could be

used with engine-driven tools other than generators, the title of the 2003 memo "Proposed Warning Language to Accompany Generators" speaks for itself.

With respect to the text of the NPR proposed generator warning, in the absence of testing, reasonable people can differ as to what warnings can or will be most effective. The differences between the Commission staffs 2003 recommended warnings and the NPR proposed label clearly demonstrate this proposition. As further examples, the statement in the heading of the NPR proposed label -- presumably the lead statement designed to attract the reader's attention -- "Using a generator indoors will kill you in minutes" does not address the issue of use outdoors near homes, a hazardous condition in its own right. Moreover, this statement could be misconstrued to mean that if someone is not injured "within minutes" the user is safe, especially in those instances in which people use a generator, for example, in a doorway under the mistaken belief that such use is not inside the building. Perhaps a better statement might be that CO "could kill you in minutes or hours." Similarly, the NPR label states "exhaust contains carbon monoxide. . . ." The charcoal label and 2003 generator labels, on the other hand, use the simpler construction "It gives off carbon monoxide . . ." which might be more comprehensible to some people who may not understand the reference to exhaust. "Never use in the home or in partly enclosed areas such as garages" might be better communicated by saying "Never use inside a home, garage, shed, carport, or in a partly enclosed area." -- a hybrid of the 2003 and 2004 warnings that focuses on areas in which incidents of CO poisoning have actually occurred. The warning relating to outdoor use in the proposed label instructs people to use generators outdoors "far from open windows, doors, and vents." However, this statement introduces the type of subjectivity into the warning which the staff found objectionable in reviewing existing labels, and also suggests that generators can be used safely when doors and windows are open -- a proposition that may be incorrect if users do not appreciate how far the generator must be from those openings. This warning might be more effectively stated "Only use outdoors far away from the home or other buildings. Close all windows and doors and block all vents."

These comments on the contents of the NPR label are offered, not to suggest that the comments and variations noted above will necessarily produce a "better" label, but to point out that opening up the process for public participation and comment has the potential in the long run to yield a more effective warning for consumers. The fact that the same members of the Commission staff who authored the 2003 warnings have now in 2006 proposed a substantially different label based on virtually the same data upon which they relied to produce the 2003 recommended warnings demonstrates the subjectivity

of the current process and the danger of relying on untested staff opinion to develop such warnings. The better practice would be to develop a number of labels and test them with human subjects to assure that the label ultimately chosen can produce the desired result.³

7. The Potential Effectiveness of a Revised Label:

Even if the Commission continues to go forward with the labeling initiative, history suggests that addition of the labels proposed in the NPR will, at best, have marginal impact in reducing CO incidents and deaths. A review of NEISS system information on the Commission's web site shows that the requirement for the revised charcoal label that went into effect in late 1997 appears not to have demonstrably reduced the incidents of CO poisoning or anoxia associated with charcoal use. There is little reason to believe that revising the existing generator labels would have any different impact.

8. Location of the Label Proposed in the NPR:

If the Commission goes forward with the label proposed in the NPR, the requirement that the on-product hazard label be located on a part of the portable generator that, if removed, would impair the operation of the generator assembly, is not technically feasible. This is because of the limited amount of space available on the generator, especially if the label must also be conspicuous to an operator while filling the fuel tank, accessing the receptacle panel, and starting the engine. We would recommend that the requirement read that the label "be placed on a part of the portable generator that cannot be removed without the use of tools".

9. Effective Date:

If the Commission goes forward with the label proposed in the NPR, the requirement that the label be placed on all products imported or introduced into commerce 90 days after the effective date of the rule provides insufficient time for imported products to comply. It takes approximately three months to produce change drawings and introduce a design change to mass production. It would take about one and a half months to make products to order, and another month to ship the products to the United States. Therefore the necessary lead time for products imported into the United States to comply

³ Such an effort could also include an element designed to test the effectiveness of the label placement specified in the label proposed in the NPR.

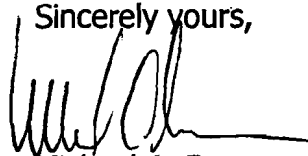
with the new labeling requirements will be about a minimum of 6 months after the issuance of the final rule.

10. The Commission Should Withdraw the NPR:

Should the Commission continue to believe it necessary to go forward with this labeling initiative -- a course of action that Honda believes is unnecessary given the fact that virtually all generators already have adequate labeling -- Honda believes that the better approach would be for the Commission to withdraw the NPR or place the rulemaking proceeding in abeyance while it works with industry and interested parties to address the labeling issue. Doing so would have the benefit of transparency and public participation, while affording the staff the opportunity to do the research and groundwork necessary to determine whether a revised label is necessary and, if so, to develop an effective and objectively supported label.

Please contact me if you have any questions or want to discuss the contents of this letter.

Sincerely yours,



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Bethesda, MD 20814

Re: PORTABLE GENERATOR NPR

Dear Mr. Secretary:

These comments are submitted on behalf of **Yamaha** Motor Corporation, U.S.A. ("Yamaha"), in response to the Consumer Product Safety Commission's ("CPSC") August 24, 2006 Notice of Proposed **Rulemaking** ("NPR"). See Portable Generators; Notice of Proposed Rulemaking; Proposed Labeling Requirements; Request for Comments and Information, 71 Fed. Reg. **50,003** (Aug. 24, 2006). **The** NPR proposes a mandatory safety label concerning the risks of carbon monoxide ("CO") poisoning associated with improper use of portable **generators**.

Yamaha distributes portable **generators** for sale to consumers and industrial users in the United States. **Yamaha** advises consumers about the risks of CO poisoning through on-product labels and warnings and instructions in the owner's manuals that accompany Yamaha-brand generators. These warnings and instructions have proven effective. Since 1994, **Yamaha** has distributed approximately 150,000 portable generators for sale in this country. During this same time period, **Yamaha** is not aware of any reported incident of CO poisoning involving its generators.

Yamaha shares CPSC's goal of ensuring that **users** of **all** brands of portable generators are adequately informed of the risks of improper usage. While uniform mandatory labeling requirements might further that goal, it is important that the proposed CO label be adequately tested for consumer comprehension and effectiveness. Such testing should be conducted in conjunction with other product warnings and instructions. Any such mandatory requirements should also be based on proper statutory authority and promulgated pursuant to the proper procedures.

Lack Of Demonstrable Need For A Mandatory Label

The NPR is based on an assumption that the proposed mandatory CO label would be more effective than existing on-product labels. Yet, it does not appear that CPSC **performed** any evaluation of consumer perception of existing labels or the effectiveness of such labels. Prior memoranda by CPSC staff only discuss a limited number of incidents where CO **poisoning resulted from** misuse of portable generators. No apparent attempt was made to relate these incidents of misuse to the labeling of the generator involved or consumer awareness of such labeling.

As noted, **Yamaha** has distributed approximately **150,000** portable generators for sale in the U.S. since 1994. **Yamaha** is not aware of any reported incident of CO poisoning involving these generators. This indicates that **Yamaha's current** on-product labels, coupled with the warnings and instructions in its owner's manuals, have been effective in promoting safe and proper use of these products by **consumers**.

Moreover, **CPSC** data show that the incidence of **CO** poisoning associated **with** the misuse of other brand portable generators is extremely low. **CPSC** estimates that about 9.2 to 10.6 million portable generators are in use in U.S. households, with recent annual sales of new **units** averaging around 1.2 to 1.6 million.¹ An estimated 51 incidents of fatal **CO** poisoning associated **with** portable generator misuse have occurred annually over the past four **years**.² While any **CO** poisoning is tragic, such incidents are relatively rare and involve only a tiny fraction of products in use. These data indicate that the vast majority of **consumers** are aware of the danger of **CO** poisoning and use generators safely and properly.

Other relevant data **further** suggest that the proposed **CO** label may have only a marginal effect on **consumer** misuse of portable generators. In particular, **CPSC** mandated use of a new label for charcoal effective November 1997. Burning charcoal emits **CO** and involves similar risks of **CO** poisoning. The charcoal label **initially** developed by **CPSC** staff was modified in response to studies indicating problems with consumer comprehension of the proposed label. However, even **after** consumer-testing, the new mandatory label has not demonstrably reduced the incidence of **CO** poisoning associated with charcoal **use**.³

Need For Proper Testing And Validation Of The Proposed Mandatory Label

The proposed **CO** label also lacks adequate testing and validation. This presents several potentially significant problems.

The **NPR's** focus on **CO** poisoning creates a **risk** of minimizing competing safety concerns. There are other potential safety hazards presented by the use of portable generators. These include, among other things, risks of (1) **electrocution** from use in wet conditions or with an improper connection; (2) fire when fueling a generator; and (3) burning or combustion **from** engine and muffler heat. Although **CO** poisoning incidents exceed the number of electrocution or combustion incidents associated with

¹ **CPSC MEMORANDUM: Portable Electric Generator Sets for Consumer Use: Additional Data on Annual Sales, Number in Use, Societal Costs**, August 24, 2006, available at <http://www.cpsc.gov/library/eta.html>.

² The CPSC reports that fatalities attributed to CO poisoning from the use of a portable generator ranged from 44 to 64 deaths annually between 2002-2005. See **CPSC MEMORANDUM: Non-fire Carbon Monoxide Fatalities Associated with Engine-Driven Generators and Other Engine-Driven Tools in 2002 through 2005**, August 16, 2006, available at <http://www.cpsc.gov/library/eta.html>.

³ See <http://www.cpsc.gov/library/neiss.html> (reporting charcoal-related CO incidents pre- and post-1997).

improper generator use, all such incidents are relatively rare and present the **risk** of serious injury or death.⁴

Highlighting the risk of CO poisoning in a separate, mandatory label may create a **misperception** on the part of consumers that other risks associated with portable generator use are less significant. Specifically, the **NPR's** use of the term "Danger," instead of the term "Warning," in the heading, and comparatively large font and bold color requirements, would differentiate the CO warning as **being** more significant than the warnings addressing other safety hazards. Moreover, these other warnings could only be addressed in a separate label -- requiring additional on-product space and presenting potential "cluttering" issues.

It appears that CPSC staff developed the proposed CO label without the benefit of prior comment or review by **portable** engine manufacturers or distributors. **Yamaha's** current safety label includes warnings related to all of the relevant hazards associated with use of its portable generators and refers **users** to the owner's manual, which contains additional comprehensive **warnings** and instructions addressing these hazards. This approach may be superior to highlighting one hazard at the expense of others. CPSC should conduct proper consumer testing and evaluation of its proposed CO label, in conjunction with **warnings** and instructions relating to other potential hazards, to ensure that the new approach that would be mandated in the NPR does not mislead or confuse consumers with respect to other risks associated with portable generator use.

There is likewise no indication that CPSC conducted consumer focus group or other consumer evaluation of the proposed CO label for comprehension or effectiveness. Instead, CPSC apparently relied on consumer testing related to its mandated label for charcoal to support the use of certain pictograms and other aspects of the proposed CO label for portable generators. Consumer testing resulted in revisions to the charcoal label to ensure that minimum levels of comprehension **were** achieved. CPSC should conduct similar consumer focus groups to insure that the proposed CO label for portable generators achieves **minimum** levels of **comprehension**.⁵

Consumer testing and validation is particularly important because the proposed CO label in the **NPR** is inconsistent with prior CPSC staff **recommendations**.⁶ The **NPR** label departs in several respects from **the** recommendations and warning label proposed by CPSC in 2003, generally without explanation. For example, the CO label proposed in the NPR fails to alert consumers to the symptomatology of CO poisoning or to refer users to the product manual for additional **instructions**. CPSC further elected to

⁴ **CPSC MEMORANDUM : Generator-related Deaths, Injuries, and Complaints of Potential Injury Due to Shock, Electrocutation, Fires, and B u m reported to CPSC Since 1990, December 14, 2005, available at** <http://www.qsc.gov/library/data.html>.

⁵ The American National Standards Institute recommends that **minimum** consumer comprehension of a safety label consists of 85% correct responses to a label and less than 5% responses of critical confusion. See ANSI 2535.3.

⁶ **CPSC MEMORANDUM : Proposed Warning Language to Accompany Generators, August 22, 2003, available at** <http://www.cpsc.gov/library/data.html>.

identify the label with the signal term "Danger," instead of the signal term "Warning" used in the heading of its 2003 proposed label. Memoranda **accompanying** the NPR suggest that this change reflects a new assessment by **CPSC** staff that the degree of hazard posed by the use of portable generators warrants use of the term "**Danger.**"⁷ This staff assessment is not supported by any material change in the level of **CO** poisoning risk since 2003. It is also inconsistent with long-standing general **CPSC** practices in labeling **CO** hazards, the **hierarchy** of hazards **established** by ANSI Z535, and the **CPSC's** label regarding the **CO hazard** posed by charcoal.

In addition, the **CO** label proposed in the NPR includes potentially confusing pictograms. The proposed label invokes an "X" symbol, instead of "⊘," to indicate actions consumers should not take in operating a generator. "⊘" is the standard international symbol for "no" and is thus more likely to be understood by a wide range of **consumers**. See ISO 3864-1. The "X" on the proposed label also tends to obscure the depiction of the underlying images it attempts to convey. In contrast, the pictograms presented in **Yamaha's** owner's manual utilize a transparent "⊘," which is consistent with international standards, does not obscure the underlying images, and has proven effective. **CPSC** staff attempts to support its choice of an opaque "X" by making invalid comparisons with the **pictograms** used in its charcoal label. Pictures of the charcoal grill in that respective label are distinctive, whereas the renderings of a generator in the proposed **CO** label may be less clear to consumers. Further, unlike the charcoal **pictograms**, the renderings in the proposed NPR label have apparently never been tested with consumers.

The **pictograms** in the proposed NPR label also seem open to subjective interpretation. The generator itself may be difficult to distinguish. The depiction of a generator in a garage with "X" may lead to a **misperception** by consumers that generators cannot be *stored* in garages. In addition, the **pictogram** indicating separation of a generator **from** a house does not indicate what a safe distance would be or account for potential air **intake** sources into the house.

Some of the text of the proposed **CO** label is likewise potentially **confusing** and misleading. For example, the statement "[u]sing a generator indoors **WILL KILL YOU IN MINUTES**" is not accurate in all circumstances. Fatal **CO** poisoning can also occur over several hours of exposure, depending on the relative locations of **the** generator and the exposed victim, the degree of ventilation, and other factors. According to **CPSC** modeling studies, excessive **CO** exposure in a home can be lethal between 40 to 60 minutes if in a basement, and between 201 and 326 minutes if in upper level **bedrooms**.⁸ Based on the language in the proposed NPR label, consumers who have not experienced any symptoms of **CO** poisoning within "minutes" of exposure may mistakenly believe themselves to be **free** of danger **from** improper use of a portable generator in circumstances where longer periods of exposure can also prove fatal.

⁷ **CPSC MEMORANDUM : Product Labels for generators to address carbon monoxide poisonings**, May 26, 2006, available at <http://www.cpsc.gov/library/data.html>.

⁸ **CPSC MEMORANDUM : Health hazard assessment of CO poisoning associated with emissions from a portable, 5.5 kilowatt, gasoline-powered generator**, September 21, 2004, available at <http://www.cpsc.gov/library/&ta.html>.

Procedural Issues **Relating To Promulgation Of The NPR**

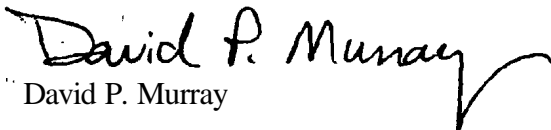
The NPR proposes to require labeling of generators pursuant to § 27(e) of the Consumer Product Safety Act ("CPSA"). However, under § 30(d) of the CPSA, risks that could be regulated pursuant to the Federal Hazardous Substance Act ("FHSA") may only be regulated under the CPSA if the CPSC finds that it is in the public interest to do so. CPSC failed to publish any notice of proposed **rulemaking** indicating a **determination** that regulating CO **poisoning** risk under the CPSA, rather than the FHSA, would be in the public interest. The FHSA provides the proper statutory authority for the proposed CO labeling requirements. The primary purpose of the FHSA is to require precautionary labeling of hazardous substances. CO label requirements for charcoal were appropriately **promulgated** under the FHSA. In addition, promulgation of mandatory labeling requirements for portable generators under the FHSA would promote the goal of **uniform** labeling by preemption of **alternative** labeling forms. **See FHSA §§ 3(b), 18(b).**

If the proposed CO label is to be promulgated under the CPSA, it should be done pursuant to § 7. The **NPR's** stated enabling statute, § 27(e), establishes a lesser standard of statutory findings. In contrast, mandatory rules promulgated under § 7 must be reasonably necessary to prevent or reduce **unreasonable risk** of injury associated with the product at issue. Although the **NPR** asserts that the proposed mandatory CO labeling requirements are reasonably necessary to prevent or reduce the unreasonable risk of injury associated with portable generators, the CPSC failed to engage in the necessary **rulemaking** proceedings required by § 7.

CPSC Should Withdraw the NPR

For all of these reasons, CPSC should withdraw the NPR. The proposed CO label is untested and based on unsupported assumptions about consumer perceptions of the risks associated with improper portable generator **use**. If it is determined that a uniform CO label is desirable or necessary, such a label should be based on adequate consumer testing and validation, including the label's effectiveness (or not) in conjunction with other warnings and instructions pertinent to portable generator use. Manufacturers and distributors of portable generators should also be consulted as part of this process, both to provide the benefit of their experiences and rationales for current label and **warning** approaches and to help coordinate proper and comprehensive testing and validation of any proposed new label. Without the benefit of consumer testing and industry participation, any proposal to mandate labels for portable generators lacks adequate foundation and, despite the worthy stated objectives, may do more **harm** than good. Finally, any mandatory labeling requirements should be promulgated pursuant to the proper statutory authority and procedures.

Respectfully submitted,


David P. Murray

cc: Emroy L. Watson, **Esq.**

Consumers Union

Nonprofit Publisher
of Consumer Reports

November 7, 2006

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Facsimile (301) 504-0127.

**Comments of Consumers Union of the U.S. Inc.
to the
Consumer Product Safety Commission
on
16 CFR Part 1407
"Portable Generators; Notice of Proposed Rulemaking; Proposed Labeling
Requirements; Request for Comments and Information"
Notice of Proposed Rulemaking**

Introduction

Consumers Union (CU), publisher of *Consumer Reports* Magazine, submits the following comments in response to the Consumer Product Safety Commission's ("CPSC" or "Commission") request for comments and information in the above Notice of Proposed Rulemaking ("NPR").¹ CU commends the Commission for its attention to this important consumer safety issue. CU believes that the labeling provisions proposed in this NPR are a good first step in attempting to reduce the number of carbon monoxide ("CO") poisoning deaths caused by consumers operating portable generators in garages or other enclosed areas. However, we believe that the steady increase in generator-related carbon monoxide poisoning clearly demonstrates that education and warnings alone are not enough to protect consumers.

¹ 71 Fed. Reg. 50003 (August 24, 2006).

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CU's Recommendations

CU believes that the most effective way to reduce injury and deaths from CO poisoning would be for all manufacturers to equip generators with a **CO detector** that will automatically shut down the unit if it detects dangerous levels of CO. Many generators on the market today have a similar automatic shut off system designed to cut off the equipment when it senses that the machine is low on oil. In addition, quality CO sensing devices are readily available and have already proven effective in preventing CO poisoning. Furthermore, the CPSC has itself demonstrated proof-of-concept of CO detection **safety** systems on portable generators in its own lab. We applaud the Commission for its work in this area and urge the CPSC to proceed quickly to require CO detection and automatic shut-off safety features on all portable generators.

The effectiveness of a label, no matter how well designed, depends on the **consumer's** ability to read, comprehend, and follow its directions. In most situations in which a portable generator is used, consumers are operating them in the dark, possibly during a storm, while under pressure to act quickly to make the unit work. Such conditions are not conducive to reading a label or understanding its guidance.

We have some additional recommendations designed to improve the proposed labeling requirement, including:

- The main purpose of this label is to warn users that generators should only be used outdoors. That wording should be bold and included as the second line - "**FOR OUTDOOR USE ONLY.**" The first sentence should remain - "Using a generator indoors **WILL KILL YOU IN MINUTES.**"
- Under the two-way arrow in the pictogram on the right, the label should clearly state that the generator should be placed a minimum distance away from the enclosed space in order to prevent injury or death. Failing to recommend a specific minimum distance that a generator should be placed away from an enclosed area will leave it to the consumer's discretion as to the appropriate safe distance. The CDC has reported CO poisoning when generators were placed as far away as seven feet from a dwelling—a distance that many people would expect to be safe. If a consumer misjudges the appropriate distance, they could pay with their, or a member of their family's, life. We therefore recommend that "15 feet minimum" appear at the top of the arrow on the label to directly communicate safe placement.
- The pictorials are complicated, and unless they have been tested to verify that users can understand them, they should be simplified. For example, we suggest showing only one image of the generator being used in an enclosed space, with the line through it.

² ICPHSO tour of CPSC labs on, or about, May 10, 2006.

- It is important to position this label in a location on the generator where it is most likely to be seen and read, and away from other labels that would distract the user's attention. We believe that, in order to be noticed, the **best** location would be in close proximity to the "on/off" switch, the starter, or power outlets. It could be mounted on a flap that would need to be opened in order to run **the generator** -- this would require the operator to physically touch the warning label.
- The label could be 'made active" (*i.e.*, **made part** of the process), by requiring the user to take an action that calls attention to the label, such as pushing a button near the safety device each time the generator is started. This feature could be modeled after similar ones that have been used on other dangerous products, such as lawn tractors. To prevent back-over accidents, many lawn tractors now have a momentary switch on the back of the unit that requires the user to face the rear of the mower and engage the switch before it will cut in reverse. For generators, a momentary switch could be incorporated into the label and require the user to press the switch (and read the label) each time the unit is started.

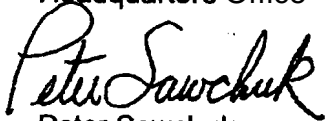
Conclusion

We appreciate the opportunity to share our views on this important proposed rule to increase the safe use of **portable** generators. We strongly **urge** the Commission to move quickly to implement effective requirements, including a mandatory CO sensor.

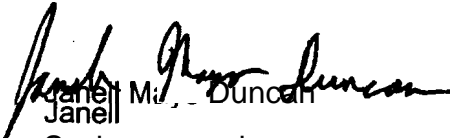
Respectfully submitted,



Donald E. Mays
Senior Director
Product Safety and Consumer Sciences
Headquarters Office



Peter Sawchuk
Program Leader
Outdoor Power Equipment
Headquarters Office



Janel M. Duncan
Senior counsel
Washington Office

Kosh, Martha A.

From: Stevenson, Todd A.
Sent: Wednesday, November 08, 2006 3:56 PM
To: Kosh, Martha A.; [REDACTED]
Subject: FW: PORTABLE GENERATOR NPR
Attachments: Comments on PORTABLE GENERATOR NPR.doc

From: Kunio Hori (DAISHIN Japan) [mailto:k.hori@daishin-japan.co.jp]
Sent: Tue 11/7/2006 8:44 AM
To: Stevenson, Todd A
Cc: '株式会社 開発課'; 'Hori, Eiichi'
Subject: PORTABLE GENERATOR NPR

Dear Sir,

We, **Daishin** Industries Ltd., is a portable generator manufacturer in Japan, and would like to comment on the "Notice of Proposed **Rulemaking**" issued on August 24, 2006.

Attached is our comments on the notice.

We hope this will be a help for you.

Please let us know if you have any **questions/concerns**.

Thank you.

Best regards,
Kunio Hori

DAISHIN INDUSTRIES LTD.
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Comments on PORTABLE GENERATOR NPR

1. Definition of 'Portable Generator'

We hereby request definition of portable generator should be conformed to the UL regulations.

Reasons: First, this suggested definition is very unclear; we can regard this definition covers either back-up type commercial power supply only or all the portable generators. Second, the **confirmation** of this proposed standard to UL enables us to hold the uniformed applicable scope both in law and regulation. This will be a strong benefit for us to response effective

UL2201 ;

1 Scope

1.1 These requirements address the electric shock, carbon monoxide (CO), fire, and casualty aspects associated with the mechanical performance and the electrical features of portable enginedriven generator assemblies.

1.2 These requirements cover internal combustion enginedriven generators rated **15** kilowatts or less, **250** volts or less, which are provided only with receptacle outlets for the AC output circuits. The generators may incorporate alternating or direct current generator sections for supplying energy to battery charging circuits.

2. Label Design

a. label on the products

Signal words should be WARNING", not "DANGER".

Reasons;

We question the content of the recommended label itself.

The use of the signal words "DANGER" brings inconsistency to the poster regarding the danger with generator, distributed to the generator industry by hierarchy of **risk** factor defined in **ANSI Z 535** and the committee in Sep. 2005.

Your letter doesn't mention this contradiction

This hierarchy of promoted warning words is the result of great effort and expert knowledge including the one of the committee members, which have been studied over 20 years. We should not change the well prevailed practice **casually**. Should we accept the utilization of word "DANGER" for carbon monoxide

poisoning as the proper suggestion, this change into DANGER level will cause the possibility that warning to urgent danger caused by the equivalent factor. especially 3 risks (fire, electric shock, reverse connection to the commercial power supply), might **undermine** and cause undesirable and unexpected influence.

Pictograph; the content should be "DO NOT USE IN A CLOSED PLACE" only

Reasons:

Garages and houses don't have to be separated. Only the picture showing "DO NOT USE IN A CLOSED PLACE" is required. Picture used in the garage might cause misunderstanding that generator must not be stored in the garage, and the picture of putting the generator separately from house with arrow might make customers misunderstand they should connect the generator by electric wire as the back-up of the commercial power supply. Thus, we think any other picture are not needed.

Nix sign: ⊗ sign, recognized internationally should be used instead of X.

Reasons:

Customers will understand the meaning of the picture better by ⊗.

The poster regarding the danger with generator, distributed to the generator industry by the committee in Sep. 2005 showed ⊗ sign.

We wonder why **staffs** changed the sign ⊗ to X

b. Label on the package

Necessity of indication: We regard it as unnecessary. We object the proposal.

Reasons:

We consider that the package indication will cause little effect since users discard the package immediately after their purchase. The CPSC hasn't offered the reasons why the package indication is needed. Thus, we cannot understand the intention

c. Difference of the **Product/Package** Label

Package label: We regard it unnecessary. At the same instant, we regard the same label both for package and machinery be acceptable.

Reason:

Caution sentence "Please read the manual before use" is already attached to the generator with another label.

3. Label location

a. Product

We propose the deletion of the regulation 'on the spare part that is indispensable for the generator function. Instead, we propose to add the phrase 'on the spare part which needs tools to be removed'

Reason:

The definition for the spare parts which lead the generator to **malfunction** without them ~~is~~ unclear. The label attached point is also obscure; Some generators (e.g. full-covered type) doesn't have the conformed point to the proposed regulation.

b. Package

We do not agree to place a label on the package.

Reason:

We regard the effect of the warning on the package is less effective, because the **package/carton** is disposed once it is open.

In addition, the reason of the necessity of the label on the package is not clearly pointed out by CPSC.

4. Multi-Language

We **consider** it is not necessary.

Reason:

Once one language is utilized , other languages are also required one after another.

5. Lead Time

We request six month lead time after issuance of regulation.

Reason:

We need approximately 6 month in total for updating drawings, preparation and response for commercial production, and transportation.

E.O.R.

TAB B

EC Staff Memorandum on Effective Date



UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
WASHINGTON, DC 20207

Memorandum

Date: December 27, 2006

TO : Timothy P. Smith
Project Manager
Portable Generator Labeling

THROUGH: Gregory B. Rodgers, Ph.D., Associate Executive Director, Directorate for
Economic Analysis *GBR*

Deborah V. Aiken, Ph.D., Senior Staff Coordinator, Directorate for Economic
Analysis *DVA*

FROM : Robert Franklin *RF*
Economist
Directorate for Economic Analysis

SUBJECT : Effective Date of CO Warning Label for Generators – Response to Comments

On 24 August 2006, the Consumer Product Safety Commission (CPSC) issued a notice of proposed rulemaking (NPR) to require a label warning of carbon monoxide (CO) hazards on portable generators. CO poisoning associated with generators kills more than 50 people annually, based on the data for the years 2002 through 2005.¹ The proposed label unambiguously warns consumers that using portable generators indoors can quickly lead to a potentially fatal buildup of carbon monoxide and that generators should only be used outside and away **from** windows and vents. The proposed label provides clearer warning than the CO warnings currently on many portable generators.

Comment: Six Months Required to Comply with Labeling Requirements

The Commission received comments on the NPR **from** three portable generator manufacturers requesting that the effective date of the rule be six months after its publication in the **Federal Register**, rather than 90 days as proposed in the NPR. One manufacturer asserted that "it requires about 3 months to produce change drawings and introduce a design change to mass production, another one and a half months is required to produce the products to order, and it takes about another month to ship the products to the United States. (Comments CC 07-2-15, 16, 19).

¹ Matthew V. Hnatov, "Non-fire Carbon Monoxide Fatalities Associated with Engine-Driven Generators and Other Engine-Driven Tools in 2002 through 2005," CPSC Memorandum to Janet Buyer, Directorate for Engineering Sciences, U.S. Consumer Product Safety Commission, Washington, DC (16 August 2006).

Response

The content and format of the label will be specified in the final rule. Therefore, the time and resources required by manufacturers to redesign their portable generator labels are likely to be low. Most firms should be able to comply within 90 days of the final rule being published. It is possible that some manufacturers may have to reschedule some other work and shift resources, such as labor, **from** other projects. There would be some costs associated with these adjustments and these costs could be alleviated somewhat by delaying the effective date of the rule.

However, in order to provide some relief to any manufacturer that might have trouble incorporating the label change within 90 days and still ensure that the improved labels are placed on portable generators in a timely manner, the staff is **recommending** that the effective date of the rule be changed so that the label would be required on any portable generator manufactured or imported 120 days after the publication of the final rule in the Federal Register and on any generator offered to the first purchaser of the generator for purposes other than resale (**e.g.**, a retail purchaser) 180 days **after** publication of the **final** rule in the Federal Register.

TAB C

EC Staff Memorandum on Economic Issues



UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
WASHINGTON, DC 20207

Memorandum

Date: December 27, 2006

TO : Timothy P. Smith
.Project Manager
Portable Generator Labeling

THROUGH: Gregory B. Rodgers, Ph.D., Associate Executive Director, Directorate for
Economic Analysis *GBR*

Deborah V. Aiken, Ph.D., Senior Staff Coordinator, Directorate for Economic
Analysis *DVA*

FROM : Robert Franklin *RF*
Economist
Directorate for Economic Analysis

SUBJECT : Economic Issues Related to a CO Warning Label on Portable Generators

This memorandum provides an overview of the economic issues related to requiring portable generators to bear a label warning consumers of the risks of carbon monoxide (CO) poisoning. These issues include the potential benefits and costs of the warning label, the potential impact on small businesses, and the impact on the environment.

Benefits

Portable generators are powered by gasoline, diesel, or propane engines; and they exhaust CO. If the generator is used in enclosed or even partially enclosed spaces, the CO can very quickly build to hazardous levels. Serious injury can also result when the generator is placed outdoors, but near an open window or vent and the exhaust is pulled into a house. In the 6-year period from 2000 through 2005, CPSC staff is aware of at least 222 deaths related to CO poisoning associated with **generators**.¹ Non-fatal CO injuries can have serious consequences since permanent brain or neurological damage can result.

A well-designed warning label could inform the consumer of the CO hazard associated with generators and how to avoid the hazard while using the generator. A label placed in a

¹ Natalie E. **Marcy** and Debra S. **Ascone**, "Incidents, Deaths, and In-Depth Investigations Associated with Carbon Monoxide **from** Engine-Driven Generators and Other Engine-Driven Tools, 1990-2004," CPSC Memorandum to Janet Buyer, Directorate for Engineering Sciences, U.S. Consumer Product Safety Commission, Washington, DC (1 December 2005) and Robin L. Ingle, "Won-fire Carbon Monoxide Fatalities Associated with Engine-Driven **Generators** and Other Engine Driven Tools in **2004** and 2005," CPSC Memorandum to Janet Buyer, Directorate for Engineering Sciences, U.S. Consumer Product Safety Commission, Washington, DC (13 January 2006).

prominent position on the generator could reinforce this information each time the consumer used it. For example, the label recommended by the Consumer Product Safety Commission (CPSC) Human Factors **staff** reminds the consumer that generator exhaust contains CO, which cannot be seen or smelled, and can quickly kill. The label also clarifies that a generator should only be used outside and away from windows and vents and should not be used inside a home or garage, even if doors and windows are open. This information is important since some consumers have apparently been aware that a CO hazard was associated with generators, but believed that they would avoid the hazard by running the generator in a garage with the door open or outside the house, but did not understand that it was necessary to place it away **from** open windows and **vents**.²

Costs

The costs of a warning label include the one-time cost of designing the label and the continuing costs of printing and applying the labels to the generators. These costs are expected to be low – less than one dollar per generator. Moreover, many generators already have warning labels regarding the CO hazard. Therefore, for some generators there would be few, if any, added costs since the required label would simply replace an existing label.

The rule would apply to any portable generator manufactured or imported **120** days after the rule is published in the Federal Register and to any generator that is "offered to the first purchaser for purposes other than resale" (e.g., a retail purchaser) 180 days after the rule is published in the Federal Register. Therefore, any portable generator that is manufactured without the improved **warning** label and will be sold to the consumer **180** days after the publication of the rule, will have to be relabeled. There will be some additional cost involved in relabeling unsold generators. This cost includes the acquisition of a complying label and the labor required to affix it to the generator, which could involve removing the original label and opening and resealing the shipping box. However, these costs are expected to be limited. The effective date, which is **180** days after the publication of the rule (and 60 days after any portable generator without the improved label can be manufactured or imported), should provide distributors and retailers time to significantly reduce their inventories of portable generators that do not have the improved warning labels.

Impact on Small Businesses

CPSC staff has identified more than 40 suppliers of generators to the U.S. consumer market. Although a few large firms dominate the market, a number of these suppliers are likely to be small businesses. The small businesses include firms that **import** generators **from** foreign manufacturers as well as equipment assemblers, which assemble generator sets from purchased components.

² Timothy P. Smith, "Human Factors Assessment for the Small Engine-Driven Tools Project," CPSC Memorandum to Janet L. Buyer, U.S. Consumer Product Safety Commission, Washington, DC (18 June 2002).

The small manufacturers will be responsible for ensuring that their generators are properly labeled. However, the labeling requirement is not expected to pose a significant burden to small businesses because the cost of adding the labels per generator is expected to be less than a dollar per generator set.

Distributors and retailers will have to ensure that all portable generators sold 180 days after the publication of the rule in the Federal Register bear the improved warning labels. The number of portable generator distributors and retailers has not been determined, but it is likely that many are small businesses. These **firms** will incur some costs if they must apply the new warning labels to portable generators that do not have the improved warning labels and that had not been sold by the effective date of the rule. However, since this requirement is effective 180 days **after** the publication of the rule in the Federal Register (and 60 days after any portable generator without the improved warning label may be manufactured or imported), most distributors and retailers should be able to significantly reduce their inventories of portable generators that do not have the improved warning label by the effective date of the rule.

Environmental Impact

Labeling requirements are not expected to have an adverse impact on the environment and are considered to be "categorical exclusions" for the purposes of the National Environmental Policy Act according to the CPSC regulations that cover its "**environmental** review" procedures (16 CFR § 1021.5(c)(2)).