

# MODEL RESIDENTIAL FACILITY PLAN FOR CARBON MONOXIDE (CO) ALARMS

**Note:** This model document is provided to assist you in developing a CO alarm plan for your facility as part of your overall emergency plan. It is not a “one size fits all” document and it may not meet the specific needs of your facility. You should review this document with appropriate members of your facility management team and staff, and make whatever changes are needed to adapt it for your facility, before including it in your emergency plan. Alternatively, you may wish to draft a CO alarm response plan that is not based on this document.

## 1. Applicability

This plan applies to \_\_\_\_\_. All employees and volunteers working in the facility are required to follow this plan.

## 2. Definitions

**“CO danger alarm”** means any situation where a carbon monoxide (CO) detector sounds an alarm by means a visible or audible signal that indicates the presence of potentially dangerous levels of CO in the atmosphere.

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## 3. Installation, Testing and Maintenance of CO Detectors

A CO detector shall be installed in each smoke compartment within the facility. The manufacturer’s directions must be followed when installing new CO detectors.

Each CO detector will receive a visual inspection and test (by means of pressing the Test button on the detector) at least once each calendar month. The results of each monthly test will be logged on the appropriate form (see Appendix 2) by the person testing each detector.

If a detector fails the monthly test, the 9-volt backup battery must be replaced as soon as possible (and always within 2 hours) and the detector tested again by pressing the Test button. If the detector passes the re-test, no further action is necessary.

If the detector fails the test again, after a new battery has been installed, the detector is not working properly and must be replaced.

If a CO detector display indicates “Err” the backup 9-volt battery should be changed. If the detector display continues to show “Err” after a new battery is installed, the detector has malfunctioned and must be replaced.

If a CO detector display indicates “End” the detector has reached the end of its 7 year service life. It is no longer operational and must be replaced.

Any staff member who becomes aware that a CO detector needs to be replaced must contact \_\_\_\_\_ as soon as it is practical to do so (and never later than twelve (12) hours after the alarm is found to be non-functional) and advise them of the non-functional alarm. \_\_\_\_\_ will then obtain a replacement alarm and insure that it is installed as soon as it is practical to do so.

The batteries in all CO detectors in the facility will be replaced annually on \_\_\_\_\_. This includes detectors that have already received replacement batteries during the preceding year.

CO detectors should be vacuumed at least monthly to remove accumulated dust.

CO detectors must be temporarily removed from any location where painting or floor stripping are being done, or where large amounts of aerosol sprays or solvents are in use, since these activities produce vapors that may damage the detector. Any detector removed during such activities must be returned to its normal location as soon as the activity has been completed and tested to ensure that it is operating properly.

CO detectors must never be painted or covered by furniture, draperies, or other items.

#### **4. Response to Indicated CO Levels Below 30 PPM**

CO levels less than 30 parts per million (PPM) will never trigger an alarm, but may be indicated by a number (other than zero, and less than 30) on a CO detector’s digital display.

Any staff member who observes a CO reading less than 30 on a detector display should reset the detector by pressing and holding the Test / Reset button for three seconds.

That staff member should re-check the alarm, or ensure that another staff member does so, 30 to 60 minutes later. If the display indicates “0” no further action is required. If a number greater than zero is displayed, the staff member will notify \_\_\_\_\_.

Within 24 hours of being notified of a low level CO exposure, \_\_\_\_\_ will attempt to identify and eliminate the source of the CO being detected. If \_\_\_\_\_ cannot identify and/or eliminate the CO source, and non-zero levels of CO continue to be detected, \_\_\_\_\_ will contact appropriate outside assistance (e.g., the fire department, HVAC contractors, etc.).

## 5. Response to a CO Danger Alarm

If any staff member determines that a CO danger alarm is being indicated by any CO detector, he or she shall:

- ▶ Make a note of the CO level indicated on the detector display.
- ▶ Press the Test / Reset button briefly to reset the CO alarm.
- ▶ Notify \_\_\_\_\_ immediately, advising him/her of the CO danger alarm, its location, and the level of CO indicated on the detector display.
- ▶ Attempt to determine the source of the CO by looking for CO sources such as fuel-burning appliances (such as gas stoves and furnaces, propane-powered floor buffers, etc.), vehicles or generators running outside the facility, and other sources of combustion.
  - If the source of CO is inside the facility, immediately shut down the CO source unless doing so would create a serious life safety hazard and, if practical, open windows to provide fresh air.
  - If the source of CO is outside the facility, close windows and doors and turn off (or turn down) HVAC equipment to minimize the entry of CO into the facility.
- ▶ Call 911 and advise the public safety dispatcher that there is a carbon monoxide alarm sounding at \_\_\_\_\_. Provide the dispatcher with the exact location of the alarm (for example, Wing B hallway) as well as the name and address of the facility.

When \_\_\_\_\_ has been notified of a CO danger alarm, he/she will respond immediately to the location of the alarm. He/she will then:

- ▶ Ensure that the steps indicated above have been followed, or are in progress.
- ▶ Make a determination, based upon the level of CO indicated by the detector display and the medical condition(s) of the resident(s) effected, whether to relocate residents or shelter them in place. The chart in Appendix 1 may be used to help guide this decision, but it is not a substitute for professional judgment.
- ▶ Serve as the facility liaison to the fire department upon their arrival and assist them in efforts to identify and eliminate the source of the CO.
- ▶ Once the incident is resolved, document the CO danger alarm and the steps taken to respond to the alarm. Copies of the report shall be forwarded to \_\_\_\_\_.

Residents and staff may be temporarily relocated to other portions of the facility not impacted by the CO exposure. If the decision is made to shelter in place, residents should be kept in their rooms, with doors closed and towels or other linen blocking the air gap at the base of the room door, until the fire department determines that the facility is safe.

If levels of CO above 30 PPM persist and the source cannot be identified, or is identified but cannot be eliminated, \_\_\_\_\_ will notify the Director. The Director will make arrangements as necessary to relocate or evacuate residents and staff.

## **6. Recurrent CO Danger Alarms**

If a CO danger alarm reoccurs within 24 hours following a previous CO danger alarm at the same location, facility staff shall:

- ▶ Follow the normal procedures for a CO danger alarm (see section 5).
- ▶ Notify the Director as soon as it is practical to do so.

Once notified of a recurrent CO danger alarm, the Director will:

- ▶ Contact the fire department and request their assistance in identifying the CO source.
- ▶ Obtain appropriate professional assistance, such as HVAC repair personnel and/or building contractors, to identify and eliminate the CO source.

## Appendix 1. Resident Relocation vs. Shelter-In-Place Determination Guidance

The following chart can help you determine whether to relocate residents or have them shelter in place. Please note that it is only a guideline; it is not a substitute for professional judgment. To use this guide, pick the one score in each category that best describes the situation.

Factor	Score
<b>CO Level Indicated on Detector Display</b>	
Below 50 PPM +0	
51-100 PPM +1	
100-300 PPM +2	
Above 300 PPM +4	
<b>Resident Health Status</b>	
No resident with significant health problems -2	
One or more residents with minor health problems +0	
One or more residents with significant health problems +2	
One or more residents with compromised breathing, cardiac or pulmonary problems, or low O <sub>2</sub> saturation +3	
<b>Resident Mobility (Ability to Move to Other Parts of Facility)</b>	
All residents are self-mobile without assistance +2	
All residents are self-mobile with some assistance +1	
Some residents require significant assistance -1	
Majority of residents require significant assistance -2	
Some or all residents confined to bed, req. skilled care -4	
<b>Number of Residents In Effected Area</b>	
Minus one (-1) for every ten residents	
<b>Staff Support Available</b>	
Low staff-to-patient ratio -2	
Average staff-to-patient ratio +0	
High staff-to-patient ratio +2	
<b>Expected Fire Department Response Time</b>	
Less than ten minutes -2	
Ten to twenty minutes +1	
More than twenty minutes +3	
<b>Recommended Action</b>	
<b>Total Score &lt; 0 Shelter-In Place</b>	<b>TOTAL SCORE</b>
<b>Total Score 0 – 2 Relocate Only if FD Response Delayed</b>	
<b>Total Score 3+ Relocate Residents Temporarily</b>	

CARBON MONOXIDE DETECTOR MONTHLY TEST RECORD

FACILITY: \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_

MONTH: \_\_\_\_\_

CALENDAR YEAR: \_\_\_\_\_

Detector Location	Working?	If Not Working, Action Taken	Comments	Tested By
	Yes No			
	Yes No			
	Yes No			
	Yes No			
	Yes No			
	Yes No			
	Yes No			
	Yes No			
	Yes No			
	Yes No			
	Yes No			
	Yes No			
	Yes No			
	Yes No			
	Yes No			
	Yes No			

Duplicate as needed.