



# **Generator Availability in Nursing Facilities and Assisted Living Facilities**

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**As Required by**

**House Bill 1423,**

**87<sup>th</sup> Legislature, Regular**

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**TEXAS**  
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## Executive Summary

Section 4 of House Bill (H.B.) 1423, 87<sup>th</sup> Legislature, Regular Session, 2021, directed the Texas Health and Human Services Commission (HHSC) to survey licensed assisted living facilities (ALFs) and nursing facilities (NFs) to determine how many are equipped with an operational generator or comparable power source that can provide continuous electrical utility services during severe weather or other emergencies.

Texas has approximately 2,025 ALFs and 1,217 NFs. HHSC conducted the survey from September 2021 to March 2022. Forty-seven percent of the 1,520 ALFs responding to the survey reported having a generator. Ninety-nine percent of the 1,139 NFs responding to the survey reported having a generator.

## 1. Introduction

In 2017, Hurricanes Harvey and Irma brought renewed national attention to the life-threatening impacts of the loss of electrical power on vulnerable populations. During both hurricanes, long-term care facilities experienced extended power outages. Without power for air conditioning systems, facility residents were vulnerable to heat-related illnesses and even death. Likewise, critical equipment, including refrigerators, was unable to function, causing additional hardship. In the wake of these disasters, stakeholders began discussing legislative means of ensuring power to long-term care facilities.

In Texas, Winter Storm Uri in 2021 demonstrated the necessity of stable power during cold-weather situations as well. Many facilities throughout the state were without power for a week or more, and the lack of heat contributed to adverse outcomes for long-term care residents.

In 2021, the Legislature directed HHSC to conduct this survey to ascertain the prevalence of generators in nursing facilities and assisted living facilities.

## 2. Background

Assisted living facilities (ALFs) are not required to have a generator by state law or regulations, while new nursing facilities (NFs) and those existing facilities that relocated to new buildings (also known as replacement NFs) have been required to have a generator since 1996. NFs built before 1996 can have battery-powered systems and battery-powered equipment.

Since 2016, federal law has similarly required generators in new and replacement NFs. Prior to July 2016, NFs that were subject to federal regulations did not need a generator under federal rule unless the NF provided life support. A nursing facility also must consider failure of heating and cooling systems in its emergency plans. If the emergency plans rely on a generator, a facility must supply and maintain it.

According to state regulations, if a NF has a generator, it must power the following:

- Alarm systems (fire alarm and oxygen alarms, if piped oxygen is used)
- Lighting in means of egress, nurses' stations, medication rooms, dining and living rooms, and areas immediately outside exit doors
- Exit signs and means of egress directional signs
- Selected electrical receptacles in corridors, at least; electrical receptacles in each resident bedroom in newer facilities
- Nurse call system
- Resident room night lights in newer facilities
- Elevator cab lighting, control, and communication systems
- Telephone equipment
- Public address systems, if used in an emergency communication plan
- In areas where the 99 percent heating temperature is below 20 degrees F, a generator must support heating of parts of the facility for resident safety

A nursing facility must have enough fuel to run the generator continuously for at least 4 hours and should consider previous outages and plan for fuel delivery problems due to weather, shortages, and other geographic and environmental conditions. A facility also should have sufficient fuel for 48 to 96 hours of generator operation.

## 3. Methodology

HHSC developed a survey using the online Survey Monkey tool (see Appendix A). While conducting the survey was mandatory, NF and ALF providers were not required to respond. Accordingly, HHSC developed a multi-pronged strategy to maximize response rates:

- September 28, 2021: HHSC opened the survey and notified providers via an alert posted to the HHSC website and a gov.delivery notification e-mailed to subscribers.
- October 28, 2021: HHSC extended its survey deadline to November 12 and notified providers via another alert posted to the HHSC website and a gov.delivery notification e-mailed to subscribers.
- January 2022: HHSC sent targeted e-mails to facilities that had not provided a response, encouraging them to do so and again providing the survey link.
- February 2022: HHSC made targeted phone calls to facilities that had not provided a response, with HHSC staff assisting providers in completing the survey while on the call.
- March 29, 2022: HHSC closed the survey.

Throughout this six-month period, HHSC also reminded providers to complete the survey on regularly scheduled webinars. HHSC also collaborated with the Texas Healthcare Association, LeadingAge, the Independent Nursing Home Coalition, the Texas Assisted Living Association, and the Texas Organization of Residential Care Homes to encourage their member facilities to complete the survey.

## 4. Results

In total, HHSC received 3,350 initial responses to the survey. After removing duplicates, blank responses, responses from out-of-state facilities, and responses from entities that were not nursing facilities (NFs) or assisted living facilities (ALFs), there were 2,659 responses. Of the approximately 2,025 licensed Texas ALFs, 1,520 responded (75 percent). Of the approximately 1,217 licensed NFs, 1,139 responded (94 percent). These response rates are well above those typical for online surveys (reported by most researchers as 20 percent to 30 percent), and therefore provide a comprehensive assessment of generator use in these facilities.

Of the 1,520 licensed ALFs responding to the survey, 715 (47 percent) reported having a generator. Size did not appear to be a significant factor in whether an ALF had a generator; 40 percent of ALFs with generators were classified as “small” (licensed to serve 16 or fewer residents).

Of the 1,139 NFs responding, 1,132 (99 percent) reported having a generator.

The following are limitations on the response data:

- HHSC did not receive responses from all facilities;
- Providers that hold multiple licenses might have only responded once, rather than once for each license; and
- Accuracy of the responses was not subject to external verification, as it was reported by the facility.

## **5. Conclusion**

Generators are widely prevalent in Texas long-term care facilities. Nursing facilities almost universally have a generator due to state and federal requirements. Slightly fewer than half of assisted living facilities have a generator.



## List of Acronyms

<b>Acronym</b>	<b>Full Name</b>
ALF	Assisted living facility
H.B.	House bill
HHSC	Health and Human Services Commission
NF	Nursing facility

## **Appendix A. Survey Questions**

The survey asked providers to answer the following questions:

1. Facility license number
2. What type of facility is this? (Choices: NF, ALF – Type A, ALF – Type B, ALF – Type C)
3. Facility name
4. Facility address
5. What LTCR region is this facility in? (Choices: 1, 2, 3, 4, 5, 6, 7)
6. What is the license capacity of the facility? (Choices: 1-16 residents, 17-50 residents, 50-100 residents, more than 100 residents)
7. Does the facility have a working generator or other emergency power source that can provide continual power to the facility during severe weather events or other emergencies? (Choices: Yes, No)
8. If the facility has a generator, what systems and equipment in the facility are powered by the generator? (Choices: emergency lighting and exit signs, fire alarm system, emergency electrical receptacles, air conditioning (a/c) systems and equipment, heating systems and equipment (including for hot water), refrigerators and freezers, other)
9. If the facility has a generator, is it configured to provide heating for at least part of the facility during a power outage? (Choices: yes, no)
10. If the facility has a generator that provides heating of part of the facility, which part of the facility can be heated by the generator?
11. If the facility has a generator, is it configured to providing cooling for at least part of the facility during a power outage? (Choices: yes, no)
12. If the facility has a generator that provides cooling of part of the facility, which part of the facility can be cooled by the generator?
13. If the facility has a generator, what type of fuel does it use? (Choices: diesel, natural gas, propane, gasoline)
14. If the facility has a generator, how many hours of operation are possible based on the fuel supply on-hand?

## Appendix B. Detailed Analysis

### Breakdown by Type of Assisted Living Facility

Type	Number of Facilities Responding	Number of Respondents with a Generator
<b>ALF – Type A</b>	342 (23% of ALFs responding)	126 (37% of Type A ALFs responding)
<b>ALF – Type B</b>	1,169 (77% of ALFs responding)	583 (50% of Type B ALFs responding)
<b>ALF – Type C</b>	9 (0.6% of ALFs responding)	6 (67% of Type C ALFs responding)
<b>TOTAL</b>	1,520 (100%)	715 (47% of ALFs)

### Breakdown by Size of Assisted Living Facility

Size	Number of Facilities Responding	Number of Respondents with a Generator
<b>1-16 Beds</b>	778 (51% of ALFs responding)	293 (38% of 1-16 bed ALFs responding)
<b>17-50 Beds</b>	253 (17% of ALFs responding)	127 (50% of 17-50 bed ALFs responding)
<b>50-100 Beds</b>	342 (23% of ALFs responding)	202 (59% of 50-100 bed ALFs responding)
<b>More than 100 Beds</b>	145 (10% of ALFs responding)	96 (66% of 101+ bed ALFs responding)
<b>TOTAL</b>	1,520 (100%)	715 (47%)

## Breakdown by Size of Nursing Facility

Size	Number of Facilities Responding	Number of Respondents with a Generator
<b>1-16 Beds</b>	1 (0.09% of NFs responding)	1 (100% of 1-16 bed NFs responding)
<b>17-50 Beds</b>	52 (5% of NFs responding)	50 (96% of 17-50 bed NFs responding)
<b>50-100 Beds</b>	357 (31% of NFs responding)	352 (99% of 50-100 bed NFs responding)
<b>More than 100 Beds</b>	728 (64% of NFs responding)	728 (100% of 101+ bed NFs responding)
<b>TOTAL</b>	1,139 (100%)	1,132 (99%)

## Breakdown by Region of Assisted Living Facility

Region	Number of Facilities Responding	Number of Respondents with a Generator
<b>1</b>	99 (7% of ALFs responding)	47 (47% of Region 1 ALFs responding)
<b>2</b>	112 (7% of ALFs responding)	58 (52% of Region 2 ALFs responding)
<b>3</b>	354 (23% of ALFs responding)	129 (36% of Region 3 ALFs responding)
<b>4</b>	139 (9% of ALFs responding)	76 (55% of Region 4 ALFs responding)
<b>5</b>	171 (11% of ALFs responding)	73 (43% of Region 5 ALFs responding)
<b>6</b>	365 (24% of ALFs responding)	214 (59% of Region 6 ALFs responding)
<b>7</b>	280 (18% of ALFs responding)	118 (42% of Region 7 ALFs responding)
<b>TOTAL</b>	1,520 (100%)	715 (47%)

## Breakdown by Region of Nursing Facility

Region	Number of Facilities Responding	Number of Respondents with a Generator
<b>1</b>	86 (8% of NFs responding)	85 (99% of Region 1 NFs responding)
<b>2</b>	128 (11% of NFs responding)	127 (99% of Region 2 NFs responding)
<b>3</b>	200 (18% of NFs responding)	200 (100% of Region 3 NFs responding)
<b>4</b>	189 (17% of NFs responding)	187 (99% of Region 4 NFs responding)
<b>5</b>	147 (13% of NFs responding)	147 (100% of Region 5 NFs responding)
<b>6</b>	162 (14% of NFs responding)	161 (99% of Region 6 NFs responding)
<b>7</b>	227 (20% of NFs responding)	225 (99% of Region 7 NFs responding)
<b>TOTAL</b>	1,139 (100%)	1,132 (99%)

## Systems Powered by Generators

Respondents were asked to indicate which systems were powered by their generator, if they had one. This was an optional question. Systems commonly indicated under the “other” category include laundry areas, common areas, telephone systems, nurse call systems, medication rooms, elevators, computers/information technology systems, and call light systems.

System	Number of Nursing Facilities Selecting	Number of Assisted Living Facilities Selecting
<b>Emergency lighting and exit signs</b>	1,129 (99% of NFs with generators)	651 (91% of ALFs with generators)
<b>Fire alarm system</b>	1,096 (97% of NFs with generators)	574 (80% of ALFs with generators)
<b>Emergency electrical receptacles</b>	1,109 (98% of NFs with generators)	565 (79% of ALFs with generators)
<b>Air conditioning (a/c) systems and equipment</b>	536 (47% of NFs with generators)	402 (56% of ALFs with generators)
<b>Heating systems and equipment (including for hot water)</b>	566 (50% of NFs with generators)	420 (59% of ALFs with generators)
<b>Refrigerators and freezers</b>	682 (60% of NFs with generators)	542 (76% of ALFs with generators)
<b>Other</b>	206 (18% of NFs with generators)	

## Heating and Cooling Capability

	Nursing Facilities Selecting "Yes"	Assisted Living Facilities Selecting "Yes"
<b>If the facility has a generator, is it configured to provide heating for at least part of the facility during a power outage?</b>	632 (56% of NFs with generators)	479 (67% of ALFs with generators)
<b>If the facility has a generator, is it configured to providing cooling for at least part of the facility during a power outage?</b>	577 (51% of NFs with generators)	452 (63% of ALFs with generators)

Locations commonly listed as being heated or cooled by a generator include hallways, lobbies, dining rooms, and common areas.

## Type of Fuel

	Nursing Facilities with Generators	Assisted Living Facilities with Generators
<b>Diesel</b>	837 (74% of NFs with generators)	315 (44% of ALFs with generators)
<b>Gasoline</b>	16 (1% of NFs with generators)	162 (23% of ALFs with generators)
<b>Natural gas</b>	108 (10% of NFs with generators)	160 (22% of ALFs with generators)
<b>Propane</b>	170 (15% of NFs with generators)	71 (10% of ALFs with generators)

## Amount of Power Provided

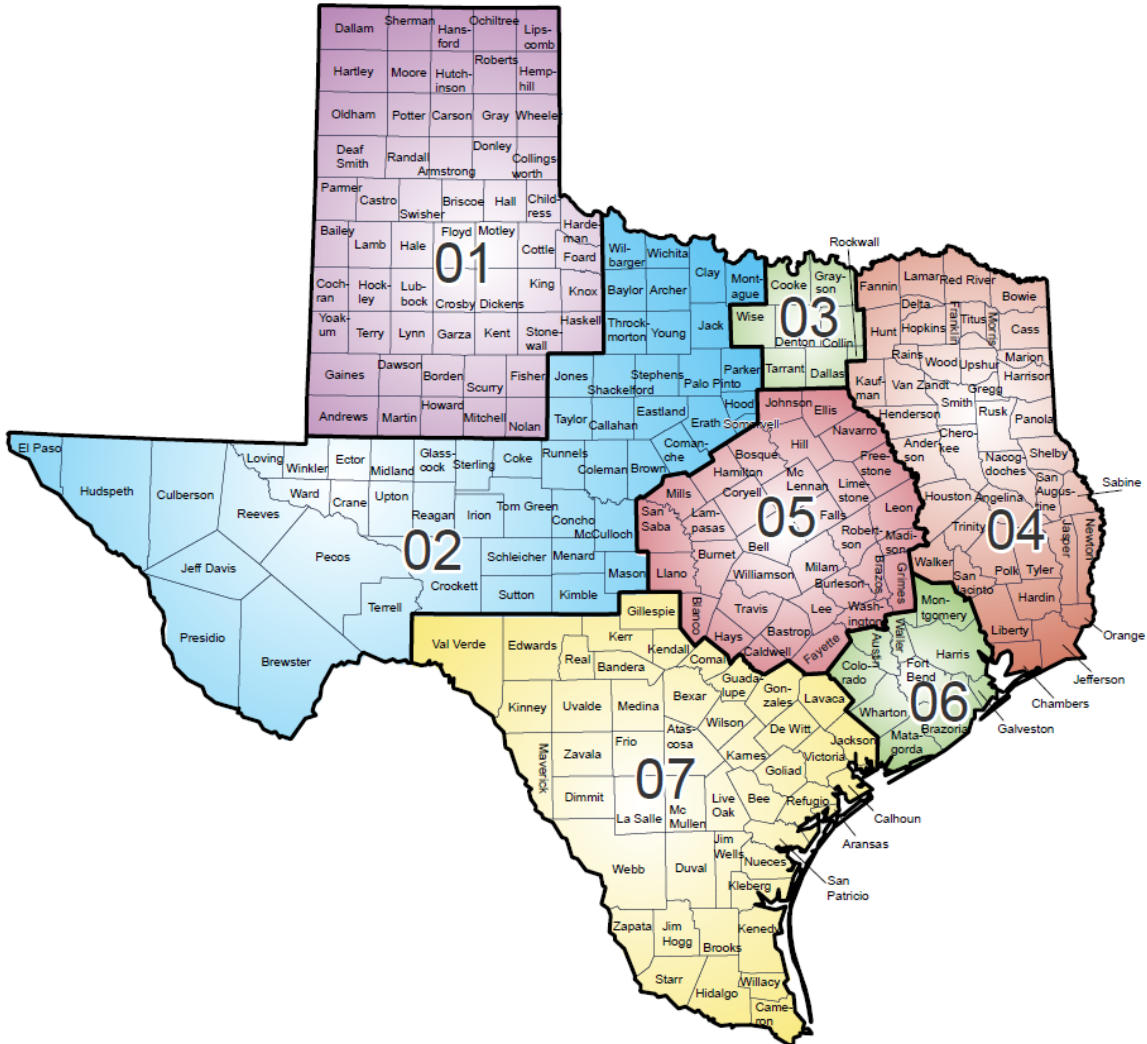
Providers with generators were asked to estimate how many hours of power could be provided by their generator. Answers varied widely. Some providers indicated that they had “infinite” power because they are connected to their city’s natural gas line. Responses have been grouped together in the table below. Totals do not equal the number of facilities with generators because many respondents did not provide a numeric response or answer the question.

	<b>Nursing Facilities with Generators</b>	<b>Assisted Living Facilities with Generators</b>
<b>Less than 1 day/24 hours</b>	157	157
<b>1-3 days (24-72 hours)</b>	652	277
<b>3-5 days (73-120 hours)</b>	175	73
<b>More than 5 days</b>	94	66

Of note, 66 NFs and 111 ALFs report “indefinite” or “continuous” power due to being connected to their city’s natural gas lines as a source of emergency power. If there is an interruption to gas lines, which has happened in various natural disasters, some of these facilities might not have emergency power. Others indicated that, as they share a grid with a hospital, they have never lost power.



## Appendix C. LTRC Regions and the Counties They Serve



### Region 01

Counties: Andrews, Armstrong, Bailey, Borden, Briscoe, Carson, Castro, Childress, Cochran, Collinsworth, Cottle, Crosby, Dallam, Dawson, Deaf Smith, Dickens, Donley, Fisher, Floyd, Foard, Gaines, Garza, Gray, Hale, Hall, Hansford, Hardeman, Hartley, Haskell, Hemphill, Hockley, Howard, Hutchinson, Kent, King, Knox, Lamb, Lipscomb, Lubbock, Lynn, Martin, Mitchell, Moore, Motley, Nolan, Ochiltree, Oldham, Parmer, Potter, Randall, Roberts, Scurry, Sherman, Stonewall, Swisher, Terry, Wheeler, Yoakum

## ***Region 02***

Counties: Archer, Baylor, Brewster, Brown, Callahan, Clay, Coke, Coleman, Comanche, Concho, Crane, Crockett, Culberson, Eastland, Ector, El Paso, Erath, Glasscock, Hood, Hudspeth, Irion, Jack, Jeff Davis, Jones, Kimble, Loving, Mason, McCulloch, Menard, Midland, Montague, Palo Pinto, Parker, Pecos, Presidio, Reagan, Reeves, Runnels, Schleicher, Shackelford, Somervell, Stephens, Sterling, Sutton, Taylor, Terrell, Throckmorton, Tom Green, Upton, Ward, Wichita, Wilbarger, Winkler, Young

## ***Region 03***

Counties: Collin, Cooke, Dallas, Denton, Grayson, Rockwall, Tarrant, Wise

## ***Region 04***

Counties: Anderson, Angelina, Bowie, Camp, Cass, Chambers, Cherokee, Delta, Fannin, Franklin, Gregg, Hardin, Harrison, Henderson, Hopkins, Houston, Hunt, Jasper, Jefferson, Kaufman, Lamar, Liberty, Marion, Morris, Nacogdoches, Newton, Orange, Panola, Polk, Rains, Red River, Rusk, Sabine, San Augustine, San Jacinto, Shelby, Smith, Titus, Trinity, Tyler, Upshur, Van Zandt, Walker, Wood

## ***Region 05***

Counties: Bastrop, Bell, Blanco, Bosque, Brazos, Burleson, Burnet, Caldwell, Coryell, Ellis, Falls, Fayette, Freestone, Grimes, Hamilton, Hays, Hill, Johnson, Lampasas, Lee, Leon, Limestone, Llano, Madison, McLennan, Milam, Mills, Navarro, Robertson, San Saba, Travis, Washington, Williamson

## ***Region 06***

Counties: Austin, Brazoria, Colorado, Fort Bend, Galveston, Harris, Matagorda, Montgomery, Waller, Wharton

## ***Region 07***

Counties: Aransas, Atascosa, Bandera, Bee, Bexar, Brooks, Calhoun, Cameron, Comal, Dewitt, Dimmit, Duval, Edwards, Frio, Gillespie, Goliad, Gonzales, Guadalupe, Hidalgo, Jackson, Jim Hogg, Jim Wells, Karnes, Kendall, Kennedy, Kerr, Kinney, Kleberg, La Salle, Lavaca, Live Oak, Maverick, McMullen, Medina, Nueces, Real, Refugio, San Patricio, Starr, Uvalde, Val Verde, Victoria, Webb, Willacy, Wilson, Zapata, Zavala