

HOUSE BILL 1698

By Jernigan

AN ACT to amend Tennessee Code Annotated, Title 68,  
relative to blasting.

BE IT ENACTED BY THE GENERAL ASSEMBLY OF THE STATE OF TENNESSEE:

SECTION 1. Tennessee Code Annotated, Section 68-105-101, is amended by deleting the section and substituting:

This chapter is known and may be cited as the "Tennessee Blasting Standards Act."

SECTION 2. Tennessee Code Annotated, Section 68-105-102, is amended by deleting subdivisions (1), (4), (5), (9), and (17) and substituting:

(1) "Airblast" means the airborne shock wave generated by a blast and traveling through the atmosphere;

(4) "Blast" means the act of detonating explosive materials joined by a shared initiation system and a single firing device;

(5) "Blast hole" or "borehole" means a hole drilled in rock or other material for the placement of explosives;

(9) "Commissioner" means the commissioner of commerce and insurance or the commissioner's designee;

(17) "Limited blaster" means a person qualified by reason of training, knowledge, experience and registration to:

(A) Fire or detonate not more than five (5) pounds of explosives per blast in surface blasting operations; or

(B) Use explosives as a blaster in underground mining operations;

SECTION 3. Tennessee Code Annotated, Section 68-105-103, is amended by deleting the section and substituting:

(a) The use of explosives for the purpose of blasting in the neighborhood of a public highway, dwelling house, public building, school, church, commercial or institutional building, or pipeline or other public utility facility, including, but not limited to, electrical and communications cables or wires, must be done in accordance with this chapter and the rules promulgated by the department.

(b)

(1) Except as provided in subdivision (b)(9), in all instances other than as provided in subdivision (c)(1), the person who will be conducting blasting operations shall give notice to the department of the exact location a blast or blasts will occur. The notice must be made, in such manner as required by the commissioner, at least seventy-two (72) hours before the blasting operations commence.

(2) The notice must include a beginning and ending date for the blasting.

(3) Additional notification is not required for blasts that are to occur during the period of time included in the notice.

(4) If a public utility provider requires blasting to restore services in unusual circumstances, then the public utility provider, or the provider's designated contractor, may begin blasting operations prior to notifying the department as long as the notice is provided as soon as possible.

(5) If the blasting operation is in a permanent location such as, but not limited to, a commercial quarry, mine, or cemetery that has recurring blasting operations, the requirements of this subsection (b) are met if the person who will

be conducting the blasting operations files a one-time notice of the location with the department.

(6) The department:

(A) May assess a fine of one hundred dollars (\$100) for a first violation of failing to file a required notice; and

(B) Shall assess a fine of five hundred dollars (\$500) for a second or subsequent violation of failing to file a required notice; provided, for good cause shown, the commissioner may waive the payment of the fine.

(7) The department shall retain the fines imposed and collected pursuant to this subsection (b) to defray the cost of administering and enforcing this chapter. The fines collected pursuant to this subsection (b) do not revert to the general fund.

(8) By March 1 of each year, the commissioner shall file an annual report with the chair of the commerce committee of the house of representatives and the chair of the commerce and labor committee of the senate providing information in sufficient detail for the committees to determine whether the fines established pursuant to subdivision (b)(6) are sufficient to ensure the notifications are being timely filed with the commissioner.

(9) A person conducting blasting operations is not required to file notice pursuant to this subsection (b) if the person utilizes five (5) pounds or less of explosives per blast.

(c)

(1) If blasting operations are to be conducted within one hundred feet (100') of a pipeline distributing liquefied or liquid petroleum or manufactured, mixed, or natural gas, then the person who will conduct the blasting operations

shall notify the department and the utility company having control of the pipeline at least three (3) full working days, except Sundays and holidays, prior to blasting. If blasting operations are to be conducted on a single project for a period of more than one (1) day, then a single notification of intention constitutes compliance with the requirements of this subdivision (c)(1).

(2) If blasting operations are to be conducted at the immediate location of a dwelling house, public building, school, church, commercial or institutional building that would result in ground vibrations having a particle velocity exceeding the limits provided by this chapter, then the blasting operations may proceed after receiving written consent from the property owner or owners affected.

(3) If the standard table of distance is exceeded, that is, a scaled distance that is less than fifty (50), then the blaster must provide notice to all structures in that area.

(d) A blaster shall give ample warning when a blast is about to be fired to allow all persons to retreat to a safe place, and shall take care to ascertain that all persons are in the clear. Each blaster shall follow a definite plan of warning signals that can be clearly seen or heard by anyone in the blasting area. The blaster shall inform all persons in the proximity of the established procedure, and shall take additional precautions when entry into the area is not easily denied.

(e) Blasting operations must not be conducted within close proximity of a public highway, unless reasonable precautionary measures are taken to safeguard the public.

(f) If blasting is to be done in congested areas or in proximity to a structure, railway, or highway, or another installation that may be damaged, then the blaster must take special precautions in the loading, delaying, initiation, and confinement of each

blast with mats or other methods so as to control the throw of fragments, and thus prevent bodily injury or property damage.

(g)

(1) A person conducting blasting operations in the vicinity of a pipeline as described in subdivision (c)(1) shall use:

(A) A blast hole drilling pattern and blast initiation procedure that will provide the greatest relief possible in the direction away from the pipeline; and

(B) A type of explosive designed to limit propagation between blast holes.

(2) Blasting operations in the vicinity of a pipeline as described in subdivision (c)(1) must be conducted as follows:

(A) The blast depth in the initial excavation must be limited to the elevation of the top of the pipeline, plus one half ( $\frac{1}{2}$ ) of the distance from the nearest blast hole to the pipeline;

(B) Subsequent excavations when approaching the pipelines must be limited to one half ( $\frac{1}{2}$ ) the horizontal distance from the nearest blast hole to the pipeline;

(C) Under the conditions described in subdivision (g)(1), the diameter of the blast hole must not exceed three inches (3"), and only one (1) blast hole may be fired per delay;

(D) If a free face has been established to the finished depth of the trench, then subdivisions (g)(1) and (2) do not apply;

(E) Monitored blasting must not exceed two inches (2") per second peak particle velocity as measured by a seismograph at a liquid

petroleum pipeline or four inches (4") per second peak particle velocity as measured by a seismograph at all other pipelines as described in subdivision (c)(1); and

(F) A pipeline owner or operator seeking more restrictive vibration limits shall apply to the department under § 68-105-109(f), and indicate on the application the desired limit, in inches per second.

(3) If blasting is to be done in the vicinity of other utility lines, then:

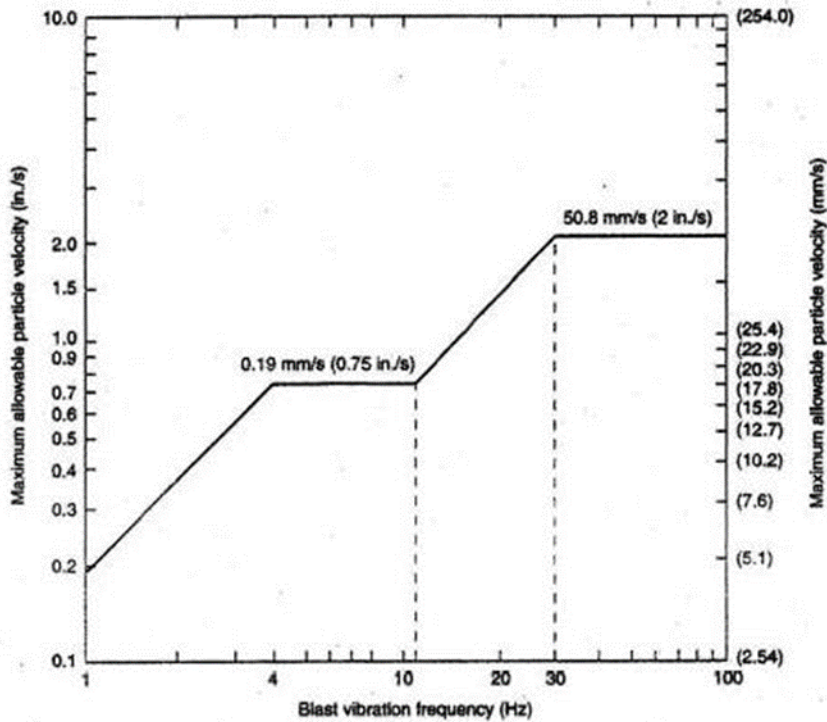
(A) The blaster shall take reasonable precautionary measures to protect the line; and

(B) In the case of underground utilities, the blaster shall give notice to the department and the utility company at least seventy-two (72) hours in advance of the blasting operation.

SECTION 4. Tennessee Code Annotated, Section 68-105-104, is amended by deleting the section and substituting:

(a) In all blasting operations, except as otherwise provided in this chapter, the maximum ground vibration at a dwelling, public building, school, church, or commercial or institutional building normally occupied adjacent to the blasting site must not exceed the limitations specified in the following graph shown in Figure A to limit peak particle velocity based upon the frequency of the blast vibration:

**Figure A**



**Maximum allowable particle velocity vs. blast vibration frequency graph.**

(b) Unless a blaster uses a seismograph to monitor a blast to ensure compliance with Figure A, the operation shall comply with the scaled distance equations shown in the following Table 1.

**TABLE 1**

**SCALED DISTANCE EQUATIONS**

**Distance from Blasting Site**

**Scaled Distance Equation**

0 to 300 ft (91.4 m)

Standard Table of Distance (see below, Table 2)

301 to 5000 ft (92 m to 1524 m)

$W$  (lbs) =  $(d$  (ft)/55)<sup>2</sup> or  $W$  (kg) =  $(d$  (m)/24.9)<sup>2</sup>

5001 ft (1524 m) and beyond

$W$  (lbs) =  $(d$  (ft)/65)<sup>2</sup> or  $W$  (kg) =  $(d$  (m)/29.4)<sup>2</sup>

**Key:**

W = The maximum weight of explosives in pounds (or kilograms) that can be detonated per delay interval of 8 milliseconds or greater.

d = The distance in feet (or meters) from the blast site to the nearest dwelling, public building, school, church, commercial, or institutional building normally occupied not owned, leased, or contracted by the blasting operation, or on property where the owner has not given a written waiver to the blasting operation.

Note: To convert English units of scaled distances (ft/lb<sup>1/2</sup>) to metric units (m/kg<sup>1/2</sup>) divide by a factor of 2.21.

**Table 2: STANDARD TABLE OF DISTANCE (0 to 300 feet (91.4 m))**

<u>Distance in Feet</u>	<u>Weight in Pounds</u>
0-10	1/8
11-15	1/4
16-20	1/2
21-25	3/4
26-30	1.00
40	2.25
50	3.50
60	4.75
70	6.00
80	7.25
90	8.50
100	9.75
110	11.00
130	13.50
150	16.00
170	18.50
190	21.00
210	23.50
230	26.00
250	28.50
270	31.00
290	33.50
300	34.75



(c) Airblast resulting from blasting activities must not exceed one hundred forty decibels (140 dB) at the location of a dwelling, public building, school, church, or commercial or institutional building that is not owned or leased by the person engaged in the blasting operation, or on property for which the owner has not provided a written waiver to the person engaged in the blasting operation.

(d) In estimating the peak particle velocity at a particular position, the following equation must be used:

In the equation,  $V_o$  is the maximum ground particle velocity at the seismograph,  $D_o$  is the distance of the seismograph from the blasting, and  $D$  is the distance from the blast to the position in question and in the same general direction. The distance  $D_o$  may not be greater than  $D$ , and  $D$  cannot be more than five (5) times  $D_o$ .

(e) Blasting operations at permanent sites are considered as being within the limits set forth in this section if at specified locations, on at least five (5) blasts, instrumentation has shown the peak particle velocity and frequency to be within the limits of Figure A. Periodic seismic monitoring must be employed to ensure compliance with applicable law.

SECTION 5. Tennessee Code Annotated, Section 68-105-105, is amended by deleting the section and substituting:

(a) At a dwelling house, public building, school, church, commercial or institutional building normally occupied within three hundred feet (300') of a blast hole, the responsible blasting firm shall offer the owner or occupant a pre-blast survey at no charge. This requirement applies only in cases where the standard table of distance is exceeded. The blasting firm shall make the offer in writing at least seventy-two (72) hours prior to commencement of the blasting operation. All surveys requested during

the offer period must be completed prior to the commencement of the blasting operation. Each owner or occupant may request, in writing, complete documentation of surveys, including all photographs, from the blasting firm, and the blasting firm shall provide documentation in a timely manner. Each survey shall document all structural and cosmetic flaws noted at that time. This subsection (a) does not apply to permanent blasting operations.

(b) Instruments for determining particle velocity as set forth in this chapter are limited to such specific types of devices, including their deployment and field practice guidelines, as have been expressly approved by the department. The commissioner may enter upon a premise for the purpose of conducting or supervising necessary instrumentations provided by this chapter.

SECTION 6. Tennessee Code Annotated, Section 68-105-106, is amended by deleting subsection (f) and substituting:

(f) A person holding a limited blaster's registration shall not conduct a blasting operation in which more than five pounds (5 lbs.) total of explosives are used in a blast in surface blasting operations, or use explosives as a blaster in underground mining operations.

SECTION 7. Tennessee Code Annotated, Section 68-105-119, is amended by deleting subsection (b) and substituting:

(b) The department is responsible for the administrative functions of the council. The members shall elect a chair of the advisory council for the three-year term.

SECTION 8. The department of commerce and insurance is authorized to promulgate rules to effectuate the purposes of this Act. The rules must be promulgated in accordance with the Uniform Administrative Procedures Act, compiled in Tennessee Code Annotated, Title 4, Chapter 5.

SECTION 9. For rule promulgation purposes, this act takes effect upon becoming a law, the public welfare requiring it. For all other purposes, this act takes effect July 1, 2022, the public welfare requiring it.