

MAINE STATE LEGISLATURE

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Legislative Document

No. 1621

S.P. 565

March 21, 2007

An Act To Ensure the Reliability of Communications Equipment in Certain Buildings

Reference to the Committee on Utilities and Energy suggested and ordered printed.

A handwritten signature in cursive script that reads "Joy J. O'Brien".

JOY J. O'BRIEN
Secretary of the Senate

Presented by Senator SAVAGE of Knox.
Cosponsored by Representative MARLEY of Portland and Senators: DAMON of Hancock,
NASS of York, Representative: RECTOR of Thomaston.

1 **Be it enacted by the People of the State of Maine as follows:**

2 **Sec. 1. 35-A MRSA c. 94** is enacted to read:

3 **CHAPTER 94**

4 **RADIO AND CELLULAR TELEPHONE AMPLIFICATION SYSTEMS**

5 **§9301. Definitions**

6 As used in this chapter, unless the context otherwise indicates, the following terms
7 have the following meanings.

8 **1. County communications center.** "County communications center" means the
9 communications center established pursuant to Title 30-A, section 453.

10 **§9302. Scope**

11 This chapter applies to:

12 **1. New buildings.** The construction of a new building that is greater than 50,000
13 square feet;

14 **2. Existing buildings.** The modification, alteration or repair of an existing building
15 that is greater than 50,000 square feet if:

16 **A.** The cost of the modification, alteration or repair exceeds 50% of the value of the
17 building without modification, alteration or repair and is made within a 12-month
18 period; or

19 **B.** The usable floor area is expanded or enlarged by more than 50%;

20 **3. Occupant load.** The basement of a building in which the occupant load is greater
21 than 50 persons, regardless of the actual occupancy; and

22 **4. Sublevel parking structures.** A sublevel parking structure that is greater than
23 10,000 square feet.

24 **§9303. Radio coverage**

25 **1. Prohibition.** Except as otherwise provided in this chapter, a person may not erect,
26 construct or modify a building or structure or any part thereof that is subject to this
27 chapter under section 9302 if that building or structure fails to support adequate radio
28 coverage for firefighters, police officers or emergency medical services personnel.

29 **2. Frequency range.** The director or chief dispatcher of each county
30 communications center, in consultation with the appropriate police, fire and emergency
31 medical services personnel, shall determine the frequency range or ranges that must be
32 supported under this section for that county.

1 **3. Adequate radio coverage.** For purposes of this section, "adequate radio
2 coverage" means a successful communications test has been completed between the
3 communications equipment in the building and the county communications center.

4 **§9304. Cellular telephone service coverage**

5 **1. Prohibition.** Except as otherwise provided in this chapter, a person may not erect,
6 construct or modify a building or structure that is subject to this chapter under section
7 9302 or any part thereof if that building or structure fails to support adequate cellular
8 telephone service coverage within the building or structure for the occupants or
9 emergency medical services personnel.

10 **2. Adequate cellular telephone service coverage.** For purposes of this section,
11 "adequate cellular telephone service coverage" means a communications test call has
12 been successfully completed in a minimum of 85% of the area of each floor of the
13 building or structure in communities in which normal cellular telephone service is
14 provided.

15 **§9305. Required radio field strength; inbound to the building or structure**

16 **1. Required minimum average radio field strength.** Except as provided in
17 subsection 2, for inbound communications, a minimum average radio field strength of
18 one microvolt for analog systems and 5 microvolts for digital systems is required
19 throughout 85% of the area of each floor of the building when transmitted from the
20 county communications center that provides fire and emergency dispatch services to the
21 building or structure.

22 **2. Exception.** If the radio field strength outside the building or structure where the
23 receiving antenna system is located is less than one microvolt for analog systems and 5
24 microvolts for digital systems, the minimum average radio field strength for inbound
25 communications must be equal to the radio field strength that is delivered to the receiving
26 antenna of the building or structure.

27 **§9306. Required radio signal strength; outbound from building or structure**

28 **1. Required minimum average radio signal strength.** For outbound
29 communications transmitted to the county communications center that provides fire and
30 emergency dispatch services to the building or structure, a minimum average radio signal
31 strength of one microvolt for analog systems and 5 microvolts for digital systems is
32 required.

33 **§9307. Amplification; authorization required**

34 **1. Authorization required.** If amplification is used in the communications system
35 of a building or structure, all necessary authorizations from the Federal Communications
36 Commission must be obtained prior to the use of the system. Copies of such
37 authorizations must be provided to the county communications center that provides fire
38 and emergency dispatch services to the building or structure.

1 **§9308. Enhanced amplification systems**

2 **1. Enhancements.** If, in order to achieve adequate radio signal strength under this
3 chapter, a building or structure must enhance its communications systems, the building or
4 structure may use any of the following:

- 5 A. A radiating cable system or systems;
6 B. An internal multiple antenna system or systems;
7 C. A voting receiver system or systems; or
8 D. Any other system approved by the appropriate municipality.

9 **2. Battery.** If any part of the enhanced amplification system installed to achieve
10 adequate radio signal strength under this chapter contains an electrically powered
11 component, the system must be capable of operating an independent battery or generator
12 system for a period of at least 8 hours without external power input or maintenance. Any
13 independent battery system used pursuant to this subsection must automatically charge in
14 the presence of external power.

15 **3. Environmental controls.** Amplification equipment installed pursuant to this
16 section must have adequate environmental controls to meet applicable heating,
17 ventilation, cooling and humidity requirements.

18 **4. Physical location of equipment.** Amplification equipment must be physically
19 located in an area that:

- 20 A. Is free of hazardous materials, including but not limited to fuel and asbestos; and
21 B. Has access, 24 hours a day every day, for the telecommunications personnel of
22 the county communications center that provides fire and emergency dispatch services
23 to the building or structure.

24 **5. Provision of information to telecommunications representative.** The builder of
25 a building or a structure subject to this chapter shall provide to the telecommunications
26 personnel of the county communications center that will provide fire and emergency
27 dispatch services to the building or structure the following:

- 28 A. A blueprint indicating the location of the amplification equipment and associated
29 antenna systems, including a view showing building access to the equipment; and
30 B. Schematic drawings of the electrical equipment, backup power equipment,
31 antenna system and any other equipment associated with the amplification
32 equipment.

33 **§9309. Ground system**

34 **1. Single point; internal tie.** The communications system, including any
35 amplification systems, cable and antenna systems, of a building or structure subject to
36 this chapter must be grounded with a single-point ground system of 5 ohms or less. The
37 ground system must include an internal tie point within 3 feet of any amplification
38 equipment.

1 **2. Protection.** System transient suppression and grounding protection are required
2 for the telephone circuits, alternating current circuits and radio frequency cabling in
3 communications systems of buildings and structures subject to this chapter.

4 **§9310. Testing**

5 **1. Testing procedures.** Tests of the communications systems pursuant to this
6 chapter must be coordinated with the county communications center that provides or will
7 provide fire and emergency dispatch services to the building or structure. Such testing
8 must be conducted on actual emergency services frequencies authorized by the Federal
9 Communications Commission.

10 **2. Measurement guidelines.** Measurements for testing communications equipment
11 pursuant to this chapter must be in accordance with the following guidelines.

12 A. Measurements must be made with a service monitor using a unity gain antenna on
13 a small ground plane.

14 B. Measurements must be made with the antenna held in a vertical position at 3 to 4
15 feet above the floor.

16 C. A calibrated service monitor may be used to conduct testing.

17 D. The telecommunications personnel of the county communications center that
18 provides or will provide fire and emergency dispatch services to the building or
19 structure may make simultaneous measurements for purposes of verifying the
20 accuracy of the measurements. A variance of 3 decibels between instruments is
21 permissible.

22 E. If varying measurements in one location are obtained, the measurement for that
23 location is the average of those varying measurements.

24 F. Signal strength must be measured on each floor, including those floors above and
25 below ground, and must be measured in stairwells and parking areas. The building or
26 structure must be divided into 50-foot grids, and measurements must be taken at the
27 center of each grid.

28 **3. Initial test.** The initial test of the communications system of a building or
29 structure subject to this chapter must be conducted, at no expense to the county
30 communications center, in the presence of the telecommunications personnel of the
31 county communications center that provides or will provide fire and emergency dispatch
32 services to the building or structure.

33 **4. Annual tests.** The county communications center that provides fire and
34 emergency dispatch services to the building or structure shall conduct annual tests of the
35 communications system of the building or structure.

36 If the communications system of a building or structure fails to demonstrate adequate
37 system performance, the owner of the building or structure shall remedy the problem and
38 restore the functioning of the communications system consistent with the requirements of
39 this chapter.

1 The county communications center shall retest the communications system at no expense
2 to the county.

3 **§9311. Violation**

4 A person who violates the provisions of this chapter commits a civil violation for
5 which a fine not exceeding \$500 may be adjudged. Each day the violation continues
6 constitutes a separate offense.

7 **SUMMARY**

8 The purpose of this bill is to ensure the ability of emergency dispatch
9 communications services to communicate with people who are inside buildings and
10 structures. This bill establishes minimum requirements for radio and cellular telephone
11 communications capabilities that apply to the construction and renovation of certain
12 buildings and structures.