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The State of Utah

# **Elevator/Escalator Compliance Manual**



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Reviewed by the Elevator Advisory Board

Issued by

**Utah Labor Commission  
Division of Boiler, Elevator and Coal Mine Safety**



# **Elevator/Escalator Compliance Manual**



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## INTRODUCTION

### History

Elevators/Escalators have been inspected by State inspectors since the 1940's. Until the 1999 legislative session elevator/escalator inspections were performed under the general authority of the Labor (formerly Industrial) Commission. During the 1999 legislative session Chapter 7 of the Labor Commission Act was amended to include specific provisions for elevator and escalator safety provisions.

### Relationship of Utah Code, Labor Commission Rules and Elevator/Escalator Compliance Manual

The Utah Code consists of all statutes enacted by the Legislature, including the Utah Elevator and Escalator Safety Act. The Act, found in Title 34A Chapter 7, Part 2, establishes the minimum standards for installation and operation of elevators/escalators in Utah. The Act also authorizes the Labor Commission to adopt rules to enforce the Act. The Elevator/Escalator Rules R616-3, clarify elevator/escalator requirements. Like the Act itself, these rules also have the force of law. The Utah Elevator/Escalator Compliance Manual provides details as to how the Division of Boiler, Elevator and Coal Mine Safety has implemented the Act and rules.

This manual was developed to provide architects, engineers, building officials, elevator/escalator installation contractors and elevator/escalator owners and users with an easy-to-use guide to compliance with Utah's elevator laws.

### National Standards Adopted

By Rule, Utah has adopted the following Codes and Standards to regulate elevators/escalators in Utah:

- A. ASME A17.1 Safety Code for Elevators and Escalators
- B. ASME A17.3 Safety Code for Existing Elevators and Escalators. (This code is adopted for regulatory guidance only for elevators classified as remodeled elevators by the Division of Safety)
- C. ASME A90.1 Safety Standard for Belt Manlifts
- D. ANSI A10.4 Safety Requirements for Personnel Hoists and Employee Elevators for Construction and Demolition Operations
- E. ICC/ANSI A117.1 Accessible and Usable Buildings and Facilities
- F. Safety Standard for Platform Lifts and Stairway Chairlifts, A18.1

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### Public Participation

The Division of Boiler, Elevator and Coal Mine Safety of the Labor Commission uses an Elevator Advisory Review Board for consultation on safety, technical and economic issues associated with the regulation of elevators in Utah. Members of this board represent elevator designers, installers, owners and users. Due to the significant role elevators play in providing accessibility for disabled persons this perspective is also represented on the Board. Additional personnel will be added to the Board if it is determined that a specific interest should be represented. Current members of this board include:

<b>Name</b>	<b>Company/Organization</b>	<b>Representing</b>
Tom Wahlin	Otis Elevator Company	Elevator Companies
Coy D Porter	State Fire Marshal Office	Fire Marshals
Todd Kodele	Carson Elevator Company	Elevator Companies
Steve Hermansen	Davis County Schools	School Districts
Barry Smith	Hart Fisher Smith & Associates	Architects
Tony Hall	Schindler Elevator Corporation	Elevator Companies
Mike Forbush	ThyssenKrupp Elevator Company	Elevator Companies

In addition to consultation provided by the Board, the Division of Boiler, Elevator and Coal Mine Safety welcomes comments and suggestions from others in the elevator industry or interested members of the public.

## PART I - DEFINITIONS OF TERMS

*Note - A comprehensive list of technical elevator definitions can be found in Section 3 of the Safety Code for Elevators and Escalators, ASME A17.1. In the following definitions the term "elevator" is used in a general sense, unless the context requires a more limited meaning application, and includes all devices which fall under the jurisdiction of the Utah Labor Commission Division of Boiler, Elevator and Coal Mine Safety.*

1. **ACT** - the Elevator and Escalator Safety Act which was enacted as Title 34A Chapter 7 Part 2 Utah Code Annotated.
2. **ALTERATION** - any change to equipment other than maintenance, repair or replacement.
3. **APPLICABLE CODE** - the Code that was in effect at the time installation or modernization of an elevator commenced.
4. **APPROVED** - approved by the Labor Commission.
5. **ASME** - the American Society of Mechanical Engineers (ASME), Three Park Avenue, New York, NY 10016.
6. **AUTHORITY HAVING JURISDICTION** - the organization, office or individual responsible for enforcement of Safety Codes for Elevators (R616-3-3).
7. **BUFFER** - a device installed in the pit designed to stop a descending car or counterweight beyond its normal limit of travel by absorbing and dissipating the kinetic energy of the car or counterweight
8. **BUILDING CODE** - Building Code adopted by the Utah Department of Commerce.
9. **BUILDING OFFICIAL** - the officer or other designated authority charged with the administration and enforcement of the Building Code.
10. **CAR** - the load-carrying unit including its platform, car frame, enclosure and car door or gate.
11. **CERTIFIED INSPECTOR** - an inspector who is certified by an ASME accredited agency to perform elevator inspections.
12. **CERTIFICATE OF COMPETENCY** - a certificate issued to a person who has passed the examination prescribed by the Commission.
13. **CERTIFICATE OF INSPECTION** - a certificate issued by the Labor Commission for the operation of an elevator as required by the Act.

14. **CERTIFICATE INSPECTION** - an inspection, the report of which is used by the Labor Commission as justification for issuing, withholding or revoking the certificate of inspection.
  - A. **ACCEPTANCE INSPECTION** - the initial inspection and tests of new or altered equipment to check for compliance with applicable Code requirements.
  - B. **PERIODIC INSPECTION** - routine inspection and tests plus additional detailed examination and operation of equipment at specified intervals witnessed by an inspector to check for compliance with the applicable Code requirements.
  - C. **ROUTINE INSPECTION** - the examination and operation of equipment at specified intervals by an inspector to check for compliance with the applicable Code requirements.
  - D. **SPECIAL INSPECTION** - inspection, performed upon request, under conditions outside of the normal inspection process used to issue a Certificate of Inspection and Permit to Operate.
15. **CODE** - a general term used to describe the requirements of any of the adopted national standards.
16. **COMMISSION** - the Labor Commission of the State of Utah.
17. **COMMISSIONER** - the Commissioner of the Labor Commission.
18. **CONDEMNED ELEVATOR** - an elevator deemed unsafe to operate under any condition by a state elevator inspector. A condemned elevator shall be rendered mechanically and electrically incapable of operation.
19. **DIVISION** - the Division of Boiler, Elevator and Coal Mine Safety of the Labor Commission.
20. **EARTHQUAKE PROTECTIVE DEVICES** - a device or group of devices which serve to regulate the operation of an elevator or group of elevators in a predetermined manner during or after an earthquake.
21. **ELEVATOR** - a hoisting and lowering mechanism:
  - (i) equipped with a car or platform;
  - (ii) and that moves in guides in a substantially vertical direction
22. **ESCALATOR** - a stairway, moving walkway or runway that is:
  - (i) power-driven;
  - (ii) continuous; and
  - (iii) used to transport one or more individuals.

23. **FIRE FIGHTER'S SERVICE**

**Phase I (Recall)** - the operation of an elevator wherein it is automatically or manually recalled to a specific landing and removed from normal service. Typically the car returns to the main floor and is parked with the doors open. Phase I may be activated by a key switch or a smoke detector.

**Phase II (In-Car Fire Service)** - a key switch in the car that allows the elevator to be operated by emergency personnel.

24. **HOISTWAY** - an opening through a building or structure for the travel of elevators extending from the pit to the roof or an intermediate floor.

25. **INSPECTOR** - a Qualified Elevator Inspector authorized by the Commission to perform elevator safety inspections in Utah.

26. **INSTALLATION** - a complete elevator, as defined in the Act, including its hoistway, hoistway enclosures and related construction, and all machinery and equipment necessary for its operation.

A. **EXISTING INSTALLATION** - an installation that has been completed or is under construction prior to the date of adoption of the current Code.

B. **NEW INSTALLATION** - an installation not classified as an existing installation by definition or an existing elevator moved to a new location.

27. **JURISDICTION** - having legal authority per Utah Code

28. **MACHINE ROOM** - a room dedicated exclusively to housing the driving and control parts (driving machine, controller, selector, motor generator, etc.) of an elevator.

29. **MAINTENANCE** - a process of routine examination, lubrication, cleaning, adjustment and replacement of parts for the purpose of ensuring performance in accordance with the applicable Code requirements.

30. **MODIFICATION** - the process of changing an item that requires revision of the existing design requirements.

31. **NATIONAL ASSOCIATION OF ELEVATOR SAFETY AUTHORITIES (NAESA)** - an independent certifying agency for the qualification of state elevator inspectors to the ASME Standard for the Qualification of Elevator Inspectors.

32. **ORIGINAL CODE OF CONSTRUCTION** - the Code in effect at the time the elevator contract was signed. This Code will continue to apply to that elevator until the elevator is remodeled or moved to a new location.

33. **OWNER OR USER** - any person, corporation or other entity responsible for the installation, operation and maintenance of any elevator within Utah.

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34. **PENETRATE A FLOOR** - to pass through or pierce a floor in such a way that the opening has a continuous perimeter and is provided only to allow the equipment to pass through the floor.
35. **PIT** - that portion of a hoistway extending from the sill level of the lowest landing to the floor at the bottom of the hoistway.
36. **QUALIFIED ELEVATOR INSPECTOR (QEI)** - an inspector who has met the standard for the qualification of elevator inspectors published by the American Society of Mechanical Engineers.
37. **REGULATORY AUTHORITY** - the person or organization responsible for administration or enforcement of the Division of Boiler, Elevator and Coal Mine Safety rules governing design, construction, testing, maintenance, or alteration or equipment covered by Utah Code 34A-7-202 for elevators and escalators.
38. **REMODELED ELEVATOR** - an elevator which has undergone an alteration which could affect the operating characteristics of the elevator.
39. **REPAIR** - the process of rehabilitation or replacement of parts that are basically the same as the original for the purpose of ensuring performance in accordance with applicable Code requirements.
40. **REPLACEMENT**- the substitution of a device or component in its entirety with a new unit that is basically the same as the original for the purpose of ensuring performance in accordance with applicable safety code requirements.
41. **SAFETY DEVICE** - a mechanical device designed to perform an essential safety function without the necessity of electrical power or operating air (pneumatics). Safety devices include:
  - A. **SAFETY** - a mechanical device attached to the car frame or to an auxiliary frame, or to the counterweight frame, to stop and hold the car or counterweight under one or more of the following conditions: predetermined over speed, free fall or if suspension ropes slacken.
  - B. **PRESSURE RELIEF VALVE** - a mechanical valve actuated by inlet static pressure and characterized by rapid opening or pop action.
  - C. **RUPTURE VALVE** - a mechanical valve designed to shut upon sensing a rapid loss of pressure in the hydraulic supply line.
42. **SEISMIC** - of, subject to, or caused by an earthquake.
43. **VARIANCE** - a departure from adopted safety codes approved by the Division in writing.
44. **WORKING PRESSURE** - the pressure measured at the hydraulic machine when lifting car and its rated load at rated speed.

## PART II - ADMINISTRATION

*Note: Unless otherwise noted, the term elevator is used in a generic sense in this manual and includes escalators and all other devices which fall under the jurisdiction of the Division.*

### A-1 Minimum Safety Standards

All new elevators shall be designed, constructed, inspected, stamped and as listed in R616.3.3, Safety Code for Elevators.

All ASME code interpretations will be reviewed on an individual basis. Any clarification or acceptance requests must be submitted in writing to the Division of Boiler, Elevator and Coal Mine Safety

State Special - If, due to a valid impediment to compliance with the original code of construction, an elevator or escalator cannot bear the required construction code, details of the proposed construction, material specifications and calculations shall be submitted to the Chief Elevator Inspector by the owner or user. This information should be approved by a registered professional engineer experienced in elevator or escalator design prior to submission to the Chief Elevator Inspector. Approval as a “State Special” must be obtained from the Division before construction is started.

### A-2 Exemptions

The following elevators shall be exempt from the Act.

- A. Elevators under federal control or regulation.
- B. All devices listed in ASME A17.1, 1.1.2 , Safety Code for Elevators and Escalators .
- C. Elevators located in single family private residences if the elevator is installed in such a manner as to limit use to a single family.
- D. Dumbwaiters & Material Lifts - Although these devices are included in the ASME A17.1, Safety Code for Elevators and Escalators, they are not designed to transport people. They are, therefore, exempt from the Act.

In any circumstance, the owner or user may confer with the Division of Boiler, Elevator and Coal Mine Safety regarding exemption or non exemption.

### A-3 Elevator Inspector Certification

All elevator/escalator inspectors in the State are certified as a Qualified Elevator Inspector in accordance with the Standard for the Qualification of Elevator Inspectors ASME QEI-1. Utah uses the National Association of Elevator Safety Authorities International (NAESAI) as an independent certifying agency. QEI certification examinations are given at published locations by NAESAI personnel.

**A-4 Conflict of Interest**

An inspector or Division official shall not engage in the sale of any services, article or device relating to elevators.

**A-5 Inspections**

Utah elevators must pass an acceptance inspection at the completion of installation and prior to being placed in service. An elevator must also undergo a periodic (routine) inspection every two years thereafter. The Division, however, may inspect any elevator under its jurisdiction on a more frequent basis if deemed necessary. An elevator is deemed "overdue for inspection" at 30 days past the expiration date on the inspection certificate.

When an elevator with a valid Certificate of Inspection/Permit to Operate undergoes an alteration or is remodeled, the Certificate of Inspection/Permit to Operate becomes invalid. To release the altered or remodeled elevator for use by the general public, the elevator must pass an acceptance inspection conducted by the Division.

It is the elevator owner's responsibility to assure that elevators have a current safety inspection. The Division, however, tracks the status of overdue elevators and conducts inspections on overdue elevators on a priority basis. Elevators overdue for the longest period of time receive the highest priority for inspection.

It should be noted that Utah law has taken a significant departure from A17.1 inspection frequency requirements. Utah law requires a Certificate of Inspection/Permit to Operate for each elevator under the Division's jurisdiction every two years.

**A-6 Routine Inspection Scheduling**

Routine elevator inspections may be scheduled by calling the Division of Boiler, Elevator and Coal Mine Safety at (801) 530-6850.

**A-7 New and Remodel Acceptance Inspections**

A written request (letter, e-mail, facsimile, etc.) for new installation and remodel acceptance inspections must be received by 3:00 pm Thursday prior to the week the inspection is desired. The request should include elevator location (building name and address), type of elevator (traction, hydraulic, etc.), and date of desired inspection. The inspections will be scheduled on a first come first served basis consistent with the availability of the inspector assigned to a particular geographical area.

**A-8 Periodic Test Frequency**

Periodic test frequency for elevators covered under A17.1 shall be outlined in the following table:

A17.1 Reference Section	Equipment Type	Category One		Category Five	
		Requirement	Interval	Requirement	Interval
		<b>Periodic Tests</b>	Months		Months
8.11.2	Electric Elevators	8.11.2.2	12	8.11.2.3	60
2.19.3	Emergency Brake	2.19.3	12	N/A	N/A
8.11.3	Hydraulic Elevators	8.11.3.2	12	8.11.3.4	60
8.11.4	Escalators and Moving Walks	8.11.4.2	12	N/A	N/A
8.11.5.1	Sidewalk Elevators	8.11.2.2 & 8.11.3.2	12	8.11.2.3 & 8.11.3.4	60
8.11.5.3	Hand Elevators	8.11.2.2	12	8.11.2.3 & 8.11.3.4	60
8.11.5.6	Special purpose personnel elevators	8.11.2.2 & 8.11.3.2		8.11.2.3 & 8.11.3.4	60
8.11.5.7	Inclined Elevators	8.11.2.2 & 8.11.3.2		8.11.2.3 & 8.11.3.4	60
8.11.5.9	Screw-column Elevators	8.11.2.2 & 8.11.3.2		8.11.2.3 & 8.11.3.4	60
8.11.5.12	Limited-Use / Limited Application Elevators	8.11.2.2 & 8.11.3.2		8.11.2.3 & 8.11.3.4	60
8.11.5.13	Construction Use Elevators	8.11.2.2 & 8.11.3.2		8.11.2.3 & 8.11.3.4	60

	<b>Seismic Tests</b>				
8.4.10	Electric Elevators	8.4.10.1	12	N/A	N/A
8.4.11	Hydraulic Elevators	N/A	N/A	8.4.11.2	60
8.5.4	Escalators	8.5.4	12	N/A	N/A

**A-9 Certificate of Inspection (Permit to Operate)**

When an inspection is performed and the inspector finds that the elevator is code compliant or has a Division-approved variance for all non-compliances, a Certificate of Inspection/Permit to Operate will be issued to the elevator owner or designated representative. In accordance with Rule 616-3-15(B), elevator companies receive the Certificate of Inspection/Permit to Operate for new installations. The elevator company, in turn, is responsible for providing the certificate to the elevator owner. The certificate will remain valid for a period of two years from the date on the Certificate of Inspection/Permit to Operate unless revoked by the Division.

**A-10 “Construction Use Only” Inspections**

“Construction Use Only” inspections will be performed upon request from the company installing the elevator. As a minimum, the elevator must meet the conditions specified in ASME A17.1, Safety Code for Elevators and Escalators and the permit is valid for no longer than 90 days.

Under no circumstance should an elevator approved by the Division for “Construction Use Only” be accessible to the general public. If an elevator approved for “Construction Use Only” is accessible by the general public, approval for the use of the elevator will be revoked by the Division until it is brought into full compliance with applicable sections of the ASME A17.1 Safety Code for Elevators and Escalators.

The invoice for the inspection will be issued to the company installing the elevator. All “Construction Use Only” inspection fees must be paid in full before the Division will perform a final acceptance inspection for that elevator.

**A-11 Acceptance Inspection Reporting**

The elevator installation company is responsible for arranging services and paying all fees associated with these inspections. During the inspection the inspector performs or observes the acceptance tests in accordance with the Safety Code for Elevators and Escalators, A17.1 or other adopted codes as applicable. Since the inspector is accompanied by the elevator installation contractor, a written list of non-compliance items is provided only at the request of the elevator installation contractor. Typically, non-compliance items are marked on a new installation inspection report and also communicated verbally to the elevator installer. When the elevator successfully passes the acceptance inspection, the elevator installation company is then responsible for assuring that the elevator owner receives a copy of the Certificate of Inspection/Permit to Operate.

**A-12 Routine Inspection Reporting**

1. When a routine inspection is performed and the inspector finds that the elevator does not comply with the adopted safety code, the inspector will explain what the violations are and also document them on a inspection report and/or check off list (this is provided to the owner), the inspector along with the owner will agree on a re-inspection date of not more than 30 days of initial inspection date (a violation letter may be sent). If the violations have not been corrected on the re-inspection date the owner will be charged a minimum of \$60.00 per hour travel time, each additional hour and fraction of an hour will be billed in half hour increments, no exceptions.
2. The permit fee should cover the cost while the inspection is taking place, however, if the owner causes a delay forcing the inspection to go longer than the usual amount of time or in some way prevents the inspection from taking place; for example violations not being corrected before a scheduled return visit. A charge of \$60.00 per hour (one hour minimum) will be charged for the additional

time taken. Please remember each hour and fraction of an hour will be billed in half hour increments, no exceptions.

3. Out of pocket expenses, such as meals, lodging, etc., should be charged back (receipts and prior written approval required).

For each follow up inspection the owner will be invoiced for an additional special inspection. If any violation(s) remain still uncorrected, a letter signed by the Chief Elevator Inspector, is then sent to the owner. This letter will alert the owner of the possibility of legal actions by the Division should the violations not be corrected by the date specified by the owner and inspector.

### **A-13 Special Inspections**

Special inspections are inspections which are outside of the normal routine of the Division. Examples of special inspections include, but are not limited to, the following:

- Scheduled inspections where the elevator is not completely ready for inspection upon the inspector's arrival.
- Inspections to approve an elevator for Construction Use Only
- Routine inspections when violations are not corrected by the specified date.
- Inspection to approve and elevator temporarily used for construction or demolition to provide transportation for construction personnel, tools and materials only.

Special inspections are invoiced at an hourly labor rate and may include inspector travel expenses. Special inspections will be approved in advance by the requesting entity. Exceptions to this are when an inspector makes more than two visits on re-inspections or when an inspector finds an elevator is not ready for scheduled acceptance inspection and is asked to remain on site while it is made ready

### **A-14 Inspection of Exempt Elevators/Escalators**

The Division may perform safety inspections of elevators that are otherwise exempt upon receiving a written request from the owner to the Division Director. These inspections will be performed and invoiced as Special Inspections (see section A-13). Upon completion of the inspection, the inspector will notify the owner of any safety code violations. Correction of the code violations in exempt elevators is solely at the discretion of the owner.

If the owner desires a Certificate of Inspection/Permit to Operate, violations must be corrected to the satisfaction of the inspector. The owner will also be invoiced for the appropriate certificate fee (Section A-17).

Upon completion of the installation of an elevator or at the time of the initial certificate inspection of an existing installation, each elevator shall be identified by a unique number. In the event the elevator is ever scrapped, the identification number will not be reused.

The identification number is assigned by the inspector at the initial inspection for a new installation. The initial inspection can be a special inspection for construction use only operation or the acceptance inspection to allow the elevator to be used for the general public. The identification number is attached to the crosshead of the elevator, the controller of an escalator or the data plate of a disabled person lift.

**A-15 Operation of Unsafe Elevators/Escalators**

If an elevator is found to be in such condition that it is unsafe to operate, the inspector shall notify the owner/user and the Chief Elevator Inspector and specify the conditions which will allow continued safe operation. If, in the judgment of the inspector, an immediate danger to life and health situation exists, the inspector may order the elevator removed from service.

To assure that the elevator is not used while in an unsafe condition, the inspector will render the elevator mechanically and electrically incapable of operation. The inspector will apply his personal lock to the main electrical power supply of the elevator and assure that the owner has rendered the elevator mechanically inoperable. He will also install a tag stating the following:

**DANGER  
DO NOT USE  
BY ORDER OF  
UTAH LABOR COMMISSION**

Removal of the lock or operation of a condemned elevator is a violation of Utah Code.

**A-16 Notification of unsafe equipment failure**

When an unsafe equipment failure involving an elevator occurs, the owner or user shall promptly notify the Chief Elevator Inspector. In the event of an actual or suspected elevator malfunction, the elevator owner shall remove the elevator from service until an inspector from the Division can perform a safety inspection for compliance.

**A-17 Fees**

The Utah legislature requires that fees be charged for certain services. Such fees are approved by the Utah legislature. For new and remodel installations these fees shall be paid by the installation contractor. Subsequent fees are paid by the owner or user unless other contractual arrangements exist. Failure to pay the fees may lead to collection action as well as other legal action to prevent the operation of the elevator. The fee schedule for elevator certifications and inspections follows:

<b>Certification/Inspection</b>	<b>Fee</b>
All Existing Elevator Certifications	\$ 85.00
New Electric Elevator Certification	\$ 700.00
New/Remodeled Hydraulic Elevator Certification	\$ 300.00
New Roped Hydraulic Elevator Certification	\$ 500.00

New Handicapped Elevator Certification	\$ 200.00
New Escalator/Moving Walk Certification	\$700.00
New Other Elevator Certification	\$ 200.00
Remodeled Electric Elevator Certification	\$500.00
Special Inspection	\$60.00/hour + expenses

**A-18 New Installations**

The installation of new elevators is addressed directly in Utah law. The elevator company is responsible for arranging inspections, making code violation corrections and paying the invoice for the Certificate of Inspection/Permit to Operate. Because of this legal requirement, the Division will deal exclusively with the elevator company until the Certificate of Inspection/Permit to Operate is issued.

**A-19 Remodeled Elevators/Escalators**

Remodeled elevators represent special cases in assuring elevator safety. When an elevator is remodeled, the remodeled portions must comply with the safety code in effect at the time the remodeling contract is signed. The portions of the elevator which are not remodeled must continue to meet the requirements of the current adopted edition of the Safety Code for Existing Elevators and Escalators, ASME A17.3 (See R616-3-3). Since each case is unique, owners or elevator companies involved in an elevator remodeling project should contact the Division to receive written documentation concerning the safety requirements the remodeled elevator will have to meet.

**A-20 Reinstallation of Elevators/Escalators**

An elevator moved and reinstalled within Utah will be considered a new installation elevator. Persons relocating or reinstalling an elevator should notify the Division. The Division will provide the owner with written documentation of the safety standards that elevator must meet to be returned to operation.

**A-21 Application of Identification Numbers**

Upon completion of the installation of an elevator or at the time of the initial certificate inspection of an existing installation, each elevator shall be identified by a unique number. In the event the elevator is ever scrapped, the identification number will not be reused.

**A-22 Variances**

Any owner or user who believes that under his or her particular circumstances the rules and regulations promulgated by the Labor Commission are unnecessary or impose an undue burden may request a variance from the applicable rule or regulation. The variance request shall be in writing and shall specify how safety equivalent to that provided by the Rules is to be attained. The Division may grant the variance, provided that the safety of employees or general public is not adversely affected.

Any variance request on a new elevator installation must be submitted by the elevator contractor performing the installation. At the Division's discretion, the elevator owner may be requested to state, in writing, his concurrence with the requested variance.

When there is a reason to believe, or upon receipt of a complaint, that a variance does not provide safety equivalent to the Commission Rules, the Division, after notice to the owner or user and complainant, may continue, suspend, revoke, or modify the conditions specified in any variance.

No statement, act, or omission of the Labor Commission, the Chief Elevator Inspector, or state inspectors other than a written variance described above, shall exempt any owner or user from full compliance with the terms of any law of the State of Utah or Rule of the Labor Commission.

**A-23 Americans With Disabilities Act Compliance**

Compliance with the Americans with Disabilities (ADA) Act is the responsibility of the local building official. Questions regarding ADA requirements should be directed to the Office of Technical and Information Services of the Architectural and Transportation Barriers Compliance Board.

**A-24 Penalties**

Any person, firm or corporation violating any of the provisions of Utah's elevator laws may be subject to the provisions of Utah Code 34A-7-204.

## **PART III - GENERAL REQUIREMENTS**

### **G-1 Inspection of Elevators/Escalators**

All elevators not exempted by Utah Code or by rules promulgated by the Labor Commission and which are subject to regular inspection shall be prepared for such inspections as required in G-2. As a general practice, an inspector may contact an owner to schedule a mutually agreeable time to perform a routine elevator safety inspection. It is also normal practice for the inspector to request a representative of the owner to participate in the inspection.

### **G-2 Preparation for Inspection**

The owner or user shall prepare each elevator for inspection. For new/remodeled installations this preparation is completed by the elevator installation company. Proper preparation for inspection includes verification that all control and safety devices of the elevators are connected and functioning.

If necessary, the inspector may require the owner or elevator company to isolate hazardous energy. The inspector will add his personal lock to the hazardous energy isolation to assure his personal safety.

### **G-3 Improper Preparations for Inspection**

The elevator should be completely ready for inspection at the scheduled time for the inspection. If the inspector finds that the elevator is not ready for inspection, he will present the following options to the elevator company or owner:

1. Reschedule the inspection through the Division.
2. Conduct a special inspection of the elevator components which can be inspected. This inspection will be invoiced at an hourly rate (see Section A-17) and the full certificate fee will be assessed when the inspection is eventually completed.
3. Have the inspector stand-by on site until the elevator is ready for inspection. The inspector's waiting time will be invoiced at the special inspection hourly rate.

### **G-4 Hazardous Atmosphere**

Since the elevator pit and hoistway may meet the OSHA definition of a "confined space", elevator inspectors may require atmosphere readings to assure their personal safety for entry.

### **G-5 Seismic Requirements**

The seismic requirements listed in The Safety Code for Elevators and Escalators, ASME A17.1 are required for all elevators installed in seismic risk zone 2 or greater after 1993. Seismic requirements are found in the International Building Code.

Elevators installed before the seismic requirements came into effect which are then remodeled or altered may be required to incorporate certain seismic requirements.

Personnel involved in remodeling or altering an existing elevator shall contact the Division for which seismic requirements are to be met.

**G-6 Repairs and Alterations**

The Safety Code for Elevators and Escalators, A17.1 should be used for elevator repairs and alterations. The Safety Code for Existing Elevators and Escalators, A17.3 will be used in the Division's determination of applicable code requirements. Each alteration will be assessed on a case by case basis by the Division and the code requirements that the altered/repaired elevator will have to meet will be documented in writing by the Division and communicated to the elevator owner and elevator company if applicable.

**G-7 Unauthorized Items in Elevator Machine Rooms**

As stated in A17.1, using an elevator machine room for storage and installing non-elevator related equipment in the machine room are two of the most common code violations cited by state inspectors. The purpose for both of these code requirements is to limit exposure to the safety risks of the elevator equipment only to those personnel who have been properly trained to recognize and deal with such risks.

**G-8 Hoistway Vents**

All aspects of the hoistway ventilation will fall under the authority of the local building official and/or Fire Marshall. The State Elevator Inspector may ask the building official if the vent meets code.

**G-9 Refuge Space**

The refuge space required on top of an elevator car provides a clear, unobstructed space for elevator repair and inspection personnel. The area required by the safety code is wide enough to accommodate full-shoulder width and high enough to accommodate a large individual in a crouched position. The existence of the minimum area required by code may be the only chance a person has to survive if certain accidents occur when a person is on top of the car. In view of this, it is highly unlikely that any variance request involving a reduction in the refuge area will be approved by the Division.

**G-10 Use of Freight Elevators for Passengers**

Freight elevators are not designed to routinely transport passengers. The Division will consider approving a freight elevator for temporary transport of passengers if all the requirements The Safety Code for Elevators and Escalators, A17.1 are demonstrated to the satisfaction of a state inspector. Inspections performed to verify compliance will be invoiced at the special inspection rate shown in A-18.

**G-11 Conditions Not Covered by These Regulations**

For any conditions not covered by this manual, the applicable provisions of the adopted safety codes will apply. If the adopted safety codes do not adequately address the condition, the Division will make rulings on a case-by-case basis. [State Special see A-1]

**G-12 Welding on Pressure Systems**

All welding must be performed in accordance with ASME A17.1.

## PART IV - ELECTRIC ELEVATORS

### E-1 Applicable Safety Code

The applicable safety code for an electric elevator is the Safety Code for Elevators and Escalators, A17.1. The specific year of the code which is applicable to a specific elevator is the code which was in effect as documented in Utah Administrative Code at the time the elevator contract was signed.

### E-2 Applicable Safety Code Sections

Electric elevator requirements are found in the following documents

1. Part II of the Safety Code for Elevators and Escalators, A17.1.
2. National Electrical Code, NFPA 70 Article 620
3. National Fire Alarm Code, NFPA 72

*Note: The code sections listed above are not meant to be an all-inclusive list of applicable code requirements. Depending on the nature of the activity other safety code requirements may apply. If any question exists as to the applicable safety codes, the Division should be contacted.*

### E-3 Rope Replacement

Rope replacement is a critical operation in achieving safety in a traction elevator. See ASME A17.1.

1. Splicing Suspension ropes shall not be lengthened or repaired by splicing.
2. Replacement of a Single Rope

If one rope requires replacement due to damage or wear, the entire set of ropes must be replaced. The exception to this is if a single rope is damaged during installation or acceptance testing. If possible, the replacement of a single rope should come from the same master reel as the other ropes. If this is not possible, the replacement rope must come from the same manufacturer and have the same construction and material.

3. Rope Set Replacement

When a set of ropes is replaced, the replacement ropes shall be the same as those specified by the original elevator manufacturer or shall have equivalent strength, weight and design.

## **PART V - HYDRAULIC ELEVATORS**

### **H-1 Applicable Safety Code**

The applicable safety code for a hydraulic elevator is the Safety Code for Elevators and Escalators, A17.1. The specific year of the code which is applicable to a specific elevator is the code which was in effect at the time of the installation or remodel.

### **H-2 Applicable Safety Code Sections**

Hydraulic elevator requirements are found in the following documents

1. Part 3 of the Safety Code for Elevators and Escalators, A17.1.  
*Note: Part 3 will reference appropriate sections of Part 2.*
2. National Electrical Code, NFPA 70
3. National Fire Alarm Code, NFPA 72

*Note: The code sections listed above are not meant to be an all-inclusive list of applicable code requirements. Depending on the nature of the activity other safety code requirements may apply. If any question exists as to the applicable safety codes, the Division should be contacted.*

### **H-3 Bronze Valves in Hydraulic Systems**

Due to the susceptibility of bronze to being over-torqued and losing pressure-retaining capability the following restrictions apply to bronze bodied valves in hydraulic systems:

1. For new installations - no bronze-bodied valves are to be used in the hydraulic system.
2. For existing installations - the bronze-bodied valves may remain in the system as long as they are not leaking. Any bronze-bodied valve which develops a leak shall be replaced with a steel-bodied valve or its equivalent.

### **H-4 Grooved Pipe Fittings**

Grooved pipe fittings are allowed by the Safety Code for Elevators and Escalators, A17.1 for use in hydraulic systems. However, no leakage is allowed. Leaking fittings must be repaired/replaced.

### **H-5 Pressure Relief Valves**

The size of the relief valve shall be sufficient to pass the maximum rated capacity of the pump without raising the system pressure more than 50% above the working pressure.

Elevator owners or elevator companies, as appropriate, shall provide the inspector the working pressure certified upon acceptance testing. The elevator owner or elevator

company must be able to prove the component working pressure of pipes, valves, mufflers and fittings used on the pressure side of the hydraulic system.

The set point of the pressure relief valve must be at least 10 psig less than the most limiting component in the hydraulic system.

If two or more pressure relief valves are used and one becomes inoperable the elevator must be shut down and rendered electrically inoperable until the pressure relief valve is repaired or replaced.

Once the pressure relief valve set point is determined and verified, the valve is required to be sealed. If a pressure relief valve seal is found to be broken during an inspection, the proper relieving capacity of the hydraulic system must be verified to the satisfaction of a state inspector.

## **H-6 Safety Valves**

A17.1 When required a safety valve that will stop and hold the car when hydraulic pressure drops below the minimum operating pressure. This requirement may be met using either of the following methods:

1. Installation of a safety valve as close as possible to the cylinder(s). As close as possible in this instance means no more than twelve (12) inches from the cylinder inlet/outlet and no more than two (2) fittings between the cylinder and the safety valve.
2. Installation of a single safety valve as close as possible to the "Y" or tee in the hydraulic piping for two cylinder hydraulic systems.

## **H-7 Unprotected Piping**

When an elevator installation has hydraulic piping unprotected by a safety valve, the Division will require pipe design calculations for the unprotected piping. These calculations shall be in accordance with A17.1 and certified by a Utah-licensed professional engineer with an appropriate specialty.

During inspections, Division inspectors will take random thickness readings of unprotected piping and may require that grooved pipe fittings be disassembled as per A17.1 to inspect and measure the groove depth and thickness of piping remaining in the groove.

## **H-8 Line Rupture Valves**

A17.1 requires that when flexible hose is used in a hydraulic elevator a line rupture valve must be installed at the cylinder to avoid a sudden drop in pressure should a flexible hose fail. Multiple line rupture valves may need to be installed if one valve cannot provide protection against failure of any of the flexible hoses installed in the system.

**H-9 Shunt Trips**

A17.1 of the Safety Code for Elevators and Escalators, requires a means to automatically disconnect the main line power supply to an elevator prior to or upon application of water from sprinklers in the machine room or hoistway. Hydraulic elevators and roped hydraulic elevators with a rise of 50 feet or less are exempted from this requirement in Utah.

## **PART VI - ESCALATORS AND MOVING WALKS**

### **EM-1 Applicable Safety Code**

The applicable safety code for an escalator or moving walk is the Safety Code for Elevators and Escalators, A17.1. The specific year of the code which is applicable to a specific elevator is the code which was in effect at the time of installation or remodel.

### **EM-2 Applicable Safety Code Sections**

Escalator or moving walk requirements are found in the following documents:

1. Section 6.1 (Escalators) of the Safety Code for Elevators and Escalators, A17.1.
2. Section 6.2 (Moving Walks) of the Safety Code for Elevators and Escalators, A17.1.

*Note: Parts VIII and IX will reference appropriate sections of Parts I and II.*

3. National Electrical Code, NFPA 70

*Note: The code sections listed above are not meant to be an all-inclusive list of applicable code requirements. Depending on the nature of the activity other safety code requirements may apply. If any question exists as to the applicable safety codes, the Division should be contacted.*

### **EM-3 Signs**

A caution sign shall be located at the top and bottom landings of each escalator or moving walk. This sign shall be readily visible to boarding passengers and shall conform to the requirements of A17.1

### **EM-4 Combplates**

Combplates are essential to escalator and moving walk safety. Owners should immediately replace combplates with missing teeth. Owners should also frequently verify that the vertical adjustment of the combplate does not create a tripping hazard for passengers.

### **EM-5 Step/Skirt Performance Index Test**

The purpose of the test is to determine when conditions exist that could result in a passenger getting caught between escalator skirt and a moving step. When the index exceeds the criteria in established in A17.1, the Division will require corrective action(s) be taken.

### **EM-6 Safety Devices**

No person shall at any time make inoperative or ineffective any device on which the safety of users is dependent, including any electrical protective device, except where necessary for maintenance, repair or testing. Such devices shall be restored to their normal operating condition prior to returning the equipment to service.

## **PART VII - DISABLED PERSON LIFTS**

### **DL-1 Applicable Safety Code**

The applicable safety code for a disabled person lift (inclined stairway lift, inclined wheelchair lift or vertical wheelchair lift) is the Safety Standard for Platform Lifts and Stairway Chairlifts, A18.1 or Safety Code for Elevators and Escalators, A17.1 for lifts installed prior to the adoption date of A18.1. The specific year of the code which is applicable to a specific elevator is the code which was in effect at the time of installation or remodel.

### **DL-2 Applicable Safety Code Sections:**

Disabled person lift requirements are found in the following documents

1. Safety Standard for Platform Lifts and Stairway Chairlifts, A18.1 or
  - a. Part XX of the Safety Code for Elevators and Escalators, A17.1 (for lifts installed prior to A18.1 adoption date).
2. National Electrical Code, NFPA 70
3. ICC/ANSI A117.1-1998 Accessible and Usable Buildings and Facilities

*Note: The code sections listed above are not meant to be an all-inclusive list of applicable code requirements. Depending on the nature of the activity other safety code requirements may apply. If any question exists as to the applicable safety codes, the Division should be contacted.*

### **DL-3 Disabled Person Lift Application**

International Building Code: Outlines when a platform lift may be used in new construction.

International Building Code: Platform (wheelchair) lifts shall not serve as part of accessible means of egress, except where allowed as part of a required accessible route in Section 1109.7

International Building Code: Platform (wheelchair) lifts complying with ICC/A117.1 and installed in accordance with ASME A18.1 shall be permitted as a component of an accessible route in existing buildings.

*(The State of Utah, Labor Commission has adopted A18.1 to replace the requirements of A17.1 for Platform Lifts.)*

## PART VIII - OTHER ELEVATORS

### O-1 Limited-Use, Limited-Application (LULA) Elevators

The local building official has the responsibility for determining whether a limited-use, limited application elevator (LULA) is appropriate for a proposed application. The Division will assure that the elevator meets the safety code requirements of ASME A17.1.

### O-2 Belted Man-Lifts

The safety code for the belted man-lifts is the Safety Standard for Manlifts, ASME A90.1.

Man-lifts are designed to be used only by authorized personnel who are trained in their proper use. If an inspector finds a man-lift being used by the general public, the man-lift will be ordered out of service until the owner satisfactorily demonstrates proper usage of the man-lift.

A man-lift belt that has become torn shall not be repaired in any manner and put back into service. It must be replaced.

### O-3 Rack and Pinion Elevators

#### Car Safeties

A17.1 of the Safety Code for Elevators and Escalators, A17.1 allows a rack and pinion elevator car to be provided with a safety identified by A17.1 or a rack and pinion safety. If a rack and pinion safety is selected, the following guidance applies:

1. Exchange the rack and pinion safety device at the frequency of 5 years or as established by the manufacturer whichever is less.
2. A full-load safety test is required when the rack and pinion safety device is replaced.

#### Rack Tower

The structural stability and soundness of the rack tower is paramount for a rack and pinion elevator. To assure that this soundness, state inspectors will perform the following:

1. Spot check of rack tower fasteners.
2. Spot check of tower anchoring devices
3. Thorough review of maintenance logs for the fasteners and anchoring devices



**VARIANCE REQUEST**

This form must be filled out entirely; all available information must be provided. Incomplete requests will not be processed.

Requesting Organization:		Date:		
Owner Name:		Address:		
Owner Contact Name and Title:				
Owner Contact Phone:				
Type of Variance: <input type="checkbox"/> Boiler/Pressure Vessel <input type="checkbox"/> Elevator <input type="checkbox"/> Miner Certification				
Code Requirements:				
_____ _____ _____ _____ _____				
<input type="checkbox"/> Continuation Sheet Attached				
Description of Variance Requested:				
_____ _____ _____ _____ _____				
<input type="checkbox"/> Supporting Documentation or Continuation Sheet Attached				
<input type="checkbox"/> Owner	By signing this document, I agree that all of the information contained herein is true and complete, to the best of my knowledge; and that I understand the process by which this variance may or may not be approved.		Signature	Date
Reviewer	Recommendation	Signature	Date	
<input type="checkbox"/> Boiler Inspector	<input type="checkbox"/> Approve <input type="checkbox"/> Approve w/ modifications* <input type="checkbox"/> Disapprove			
<input type="checkbox"/> Chief Boiler Inspector	<input type="checkbox"/> Approve <input type="checkbox"/> Approve w/ modifications* <input type="checkbox"/> Disapprove			
<input type="checkbox"/> Elevator Inspector	<input type="checkbox"/> Approve <input type="checkbox"/> Approve w/ modifications* <input type="checkbox"/> Disapprove			
<input type="checkbox"/> Chief Elevator Inspector	<input type="checkbox"/> Approve <input type="checkbox"/> Approve w/ modifications* <input type="checkbox"/> Disapprove			
<input type="checkbox"/> Admin Secretary – Miner Certification	<input type="checkbox"/> Approve <input type="checkbox"/> Approve w/ modifications* <input type="checkbox"/> Disapprove			
* Attach Continuation Sheet to describe modifications				
Final Disposition	<input type="checkbox"/> Approve <input type="checkbox"/> Approve w/ modifications <input type="checkbox"/> Disapprove			

Division Director Signature

Date

