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*** New Jersey Register, Vol. 44, No. 4, February 21, 2012 ***

TITLE 5. COMMUNITY AFFAIRS CHAPTER 14A. CARNIVAL-AMUSEMENT RIDES

N.J.A.C. 5:14A (2012)

§ 5:14A-1.1 Title; scope; intent

- (a) These rules shall be known and may be cited as chapter 14A, Carnival-Amusement Rides of Title 5, N.J.A.C.
- (b) The purpose of this chapter is to provide reasonable standards for the design, construction and operation of amusement rides for the safety of the public.
- (c) No person shall manufacture or sell for use in this State, operate, arrange for or cause to be used any ride that is not in compliance with this chapter.
- 1. No person shall change a ride in any way that makes the ride less conforming with the provisions of this chapter.
 - (d) This chapter shall apply to:
- 1. An amusement ride subject to the Carnival-Amusement Ride Safety Act, N.J.S.A. 5:3-31 et seq.;
 - 2. An amusement ride as defined in N.J.A.C. 5:14A-1.2;
- i. Amusement ride shall include a water slide exceeding 15 feet in height with the height of a water slide calculated as the difference in elevation between the highest point on the sliding surface and the lowest allowable elevation of the water surface into which the slide discharges; and
 - ii. A water amusement ride as defined in N.J.A.C. 5:14A-1.2;
- 3. Any mechanical device which carries, conveys, or directs riders along, around, or over a fixed or restricted route or course for the purpose of giving its riders amusement, pleasure, thrills or excitement; and
- 4. Any rider or gravity propelled ride, including, but not limited to, any water slide or water-based recreation equipment when located in an amusement area or park in which there are other rides covered by the Act.
- i. In the case of any rider or gravity propelled ride, including, without limitation, any water slide under 15 feet or any water-based recreation equipment, located in a youth day camp, the Department shall accept a valid Certificate of Approval from the Department of Health and Senior Services as evidence of compliance with the requirements of this chapter.
 - (e) This chapter shall not apply to:
- 1. A locomotive weighing more than seven tons, operating on a track the length of which is one-half mile or greater, the gage of which is three feet or greater, and the weight of which is at least 60 pounds per yard;
- i. Such locomotives shall be under the jurisdiction of the New Jersey Department of Transportation for the purposes of safety inspection;

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- 2. A manually, mechanically or electrically operated, coin-operated ride, which is customarily placed, singly or in groups, in a public location and which does not normally require the supervision or services of an operator; or
- 3. A rider-or gravity-propelled ride that is not a mechanical device, or is not limited to a fixed or restricted course, and is not located in an amusement area or park.
- (f) Where there is a conflict between these rules and any referenced standard, these rules shall govern.

§ 5:14A-1.2 Definitions

The following words and terms, when used in this chapter, shall have the following meanings, unless the context clearly indicates otherwise or the term is redefined for a specific section or purpose.

"Acceleration" means the change in velocity per unit time. It is usually expressed in units of ft/sec<2> or m/sec<2>. Acceleration is also expressed in its relation to the acceleration due to gravity at sea level. "One" g means acceleration that is the same as the acceleration due to gravity at sea level. (that is, a body subjected to one g would experience the equivalent of its own weight.)

"Accepted engineering practice" means that which conforms to accepted principles, tests, or standards of accredited authorized agencies, and to standards or generic principles and practices of safety engineering.

- "ACI" means American Concrete Institute.
- "Act" means the Carnival-Amusement Ride Safety Act, N.J.S.A. 5:3-31 et seq.
- "Adult ride" see "major ride."
- "AISC" means American Institute of Steel Construction.
- "Alteration" see "modification."
- "Amended type certification" means a certification that is granted to the manufacturer by the Department after review of an application for modification of a type certification.
- "Amusement area or park" means any indoor or outdoor location where at least one amusement ride subject to the Act is available for use by the general public.
- "Amusement park operator" means any person, firm or corporation that owns, leases, manages or operates an amusement park.
 - "Amusement ride" see "carnival-amusement ride."
 - "ANSI" means American National Standards Institute.
 - "ASCE" means American Society of Civil Engineers.

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"ASME" means American Society of Mechanical Engineers.

"ASTM" means American Society for Testing and Materials.

"AWS" means American Welding Society.

"Block system" means a system on an amusement ride with separate vehicles designed to limit the number of vehicles in a certain area of the ride.

"BOCA" means Building Officials and Code Administrators International, Inc.

"Book-on ride" means a ride that is not owned by the primary owner of rides being placed in use at the same amusement area.

"Carabiner" means a shaped metal device of spring loaded design with a gate used to connect sections of bungee cord, jump rigging, equipment, or safety gear.

"Carnival" means a mobile enterprise principally devoted to offering amusement or entertainment to the public in, upon, or by means of portable amusement rides or devices or temporary types of structures in any number or combination, whether or not associated with other structures or forms of public attraction.

"Carnival-amusement ride," "amusement ride," "carnival ride" or "ride" means any mechanical device or devices, including, but not limited to, a water slide exceeding 15 feet in height, which carries or conveys passengers along, around, or over a fixed or restricted route or course for the purpose of giving its passengers amusement, pleasure, thrills, or excitement; and any passenger or gravity propelled ride when located in an amusement area, amusement park or water park in which there are other rides covered by P.L. 1975, c.105 (N.J.S.A. 5:3-31 et seq.), including all water slides in amusement areas or parks; provided, however, that this shall not include locomotives weighing more than seven tons, operating on a track the length of which is one-half mile or greater, the gauge of which is three feet or greater, and the weight of which is at least 60 pounds per yard.

"Carnival ride" see "carnival-amusement ride."

"CFM" means cubic feet per minute.

"Child" means a person 12 years of age or younger.

"Clearance envelope" means the area in and around an amusement ride which, under normal operating and riding conditions, provides a "safe zone" for the riding public.

"Commissioner" means the Commissioner of the Department of Community Affairs.

"Critical structural or mechanical component" means a component whose failure will result in uncontrolled operation or movement of the ride or failure of the restraint system.

"Dead load" means the weight of the ride itself. Dead load does not fluctuate with respect to time.

"Department" means the Department of Community Affairs.

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"DIN" means Deutsches Institut fur Normung (English Language Version).

"Discontinuities" means any and all indications found during the course of non-destructive testing. These indications include, but are not limited to, cracking, loss of thickness, undercutting of welds and lack of penetration.

"Dynamic load" means load that fluctuates with time because of the action of the ride during the ride cycle.

"EN" means Europaische Norm. These standards may be obtained through the European Committee for Standardization, Central Secretariat, rue de Stassart 36, B-150 Brussels, Belgium.

"First aid" means the one-time treatment or subsequent observation of scratches, cuts not requiring stitches, burns, splinters, contusions and minor complaints. For purposes of these rules, "first aid" shall not include first response to a serious injury.

"Fixed amusement ride" or "fixed ride" means an amusement ride that is erected to remain a part of the premises and not intended to be relocated. This definition also means and includes all amusement rides that are not mobile rides.

"Fixed location" or "fixed site" means an amusement area sited for more than 60 days during a 90-day period.

"GFCI" means ground fault circuit interrupter, a device capable of de-energizing a circuit or portion thereof within an established period of time when a current to ground exceeds some predetermined value that is less than that required to operate the over-current protective device of the supply circuit.

"Go-kart" or "go-cart" means a one or two rider self-propelled motor vehicle designed to convey riders along a restricted roadway while being operated and controlled by one rider who will be called the driver.

"Height restriction" means a stature requirement for riders to be permitted on a specific ride which is contained on the list of height restrictions maintained by the Department in accordance with N.J.A.C. 5:14A-2.2.

"High speed" means greater than 37.5 mph, 55 ft/sec or 16.8 m/sec.

"IBC" means International Building Code.

"Imminent danger" means a condition that presents an excessive risk of serious injury to riders.

"Impact" means a force or acceleration that occurs over a time span of less than 0.2 seconds.

"Individual approval" means an approval that is granted to an owner of an individual ride that is not type certified, which is granted by the Department after review of a ride application and is applicable only to that individual ride.

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"Inflatable" means an amusement device that incorporates a structural and mechanical system and employs a high strength fabric or film that achieves its strength, shape, and stability by tensioning from internal air pressure.

"Inspection" means the physical examination of an amusement ride and relevant documentation by an inspector.

"Key component" means a component or system that has been designated by the manufacturer as requiring special fabrication, maintenance, inspection or operation due to its importance to the continued proper and safe operation of the carnival-amusement ride device.

"Kiddie ride" means a ride designed primarily for riders weighing 90 pounds or less.

"Live loads" mean those loads produced by the use and occupancy of the ride, not including dead load or environmental loads. Live loads fluctuate with time, but not necessarily during one ride cycle.

"Maintenance" means the act of keeping an amusement ride in its existing state; preserving from failure or decline. This may include, but is not limited to, cleaning, painting, adjusting, lubricating, inspecting, and testing.

"Maintenance technician (MT)" means a person who has the degree of competence necessary, via documented training and/or experience, to perform assigned maintenance, set-up, or repair of amusement rides.

"Major modification" means any material change to a load-bearing structural member, a mechanical, electrical, hydraulic or pneumatic drive or control feature, or a restraint or other protective feature.

"Major ride" or "adult ride" means a ride not classified as a "kiddie ride" or a "super ride" by the Department.

"Manufacturer" means a person who obtains type certification for a carnival-amusement ride and who has responsibility for the design and manufacture of any carnival-amusement ride to be used or installed in this State, or sold for use in this State, and includes any entity controlled by the manufacturer.

"Mechanical malfunction" means any breakdown that constitutes a structural failure of a load bearing element, mechanical or electrical failure of a drive or control system component or failure of a restraint system which materially compromises ride safety. Mechanical malfunction does not include a foreseeable malfunction that actuates a safety system.

"Minor repair" means a repair, which does not involve a load-bearing structural member, requires minimal disassembly and assembly, and is accomplished using general or required hand tools of the trade. This may include, but is not limited to, replacement of electrical fuses and lamps operating at less than 150 volts to ground, patching of inflatable fabric, and patching of fiberglass.

"Mobile ride" or "portable amusement ride" means an amusement ride that is designed, constructed, and maintained to be readily disassembled and transported from one site to another and

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is intended to be relocated when environmental conditions exceed design criteria. The ride shall also have been designated by the manufacturer as a mobile or portable ride.

"Modify" means to make a modification.

"Nationally recognized testing agency" means a laboratory, such as the Underwriters' Laboratories, Inc., or the Factory Mutual Engineering Corporation or any similar testing organization acceptable to the Department.

"NDT" or "non destructive testing" means to examine and evaluate parts, areas, or items for defects at or below the surface. The testing when required is done by a qualified individual and is done without harm or damage to the tested item.

"NDT statement" means a non-destructive testing plan or a statement from the manufacturer that NDT is not required.

"New Jersey serial number" means a unique identifying number assigned to each individual ride at the time that a permit is first issued for it, which remains with the ride as long as it exists in this State.

"New ride" means a ride of a type that has not previously been assigned a type certification by the Department, that has not obtained individual approval or that does not have a New Jersey serial number.

"NFPA" means the National Fire Prevention Association.

"N.J.A.C." means the New Jersey Administrative Code.

"N.J.S.A." means the New Jersey Statutes Annotated.

"Operating manual" means the document that contains the required procedures and forms for the safe operation of an amusement ride at the stated site.

"Operator" see "ride operator."

"Operator assistant" means a person whose duties include, but are not limited to, loading and unloading riders, collecting tickets, checking seatbelts, lap bars and other restraints and occupying the entrance or exit areas to prevent intrusion while ride is in operation, but who is not the primary operator.

"Operator presence device" means a device which, when activated, requires an operator to remain in contact with the switch during the entire ride cycle.

"Over speed" means a condition present when a ride achieves a speed, whether forward or reverse, that is faster than the approved manufacturer's safe operating speed.

"Owner" means a person who owns, leases, controls, or manages the operations of a carnivalamusement ride, including individuals, partnerships, corporations, both profit and non-profit, and the State or any of its political subdivisions and their Departments and agencies.

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"Passenger tramway" means a device used to transport riders in cars on tracks or suspended in the air, by the use of steel cables, chains, belts, or by ropes and usually supported by trestles or towers with one or more spans.

"Patron" see "rider."

"Permit" means a permit to operate an amusement ride issued annually by the Department.

"Person" includes corporations, companies, associations, societies, firms, partnerships, and joint stock companies as well as individuals, unless restricted by the context to an individual.

"Qualified person" means an individual who performs work not reserved to a maintenance technician or RCMT and who has the degree of competence necessary to perform assigned work on an amusement ride.

"Reassembly" means the installation, erection, or reconstruction of an amusement ride following transportation or storage and prior to operation.

"Recognized certified maintenance technician (RCMT)" means an individual qualified in accordance with the provisions of N.J.A.C. 5:14A-2.18.

"Record" means writings, drawings, graphs, charts, checklists, logs, electronically stored information and any other data or data compilations stored in any medium from which information can be obtained and translated into a reasonably useable form.

"Redundant restraint devices" means independent restraints in the sense that the secondary device, for example, lap bar, containment enclosure, etc., is able to restrain the patron in case of failure of the primary restraint.

"Repair" means to restore or fix an amusement ride or ride component with like components or materials that meet or exceed current design specifications for the ride.

"Ride" see "carnival-amusement ride."

"Ride operator" or "operator" means any person or persons actually engaged in or directly controlling the operations of a carnival-amusement ride.

"Ride perimeter" means the perimeter of the area recommended for safe operation of an amusement ride by the ride manufacturer.

"Rider" or "patron" means a person riding on or utilizing an amusement ride.

"SAE" means Society of Automotive Engineers.

"Safety bulletin" means a supplemental notification delivered by the manufacturer or the holder of a supplemental modification certification to the owner that contains new information or new recommendations for inspections, testing, repair, operation or training. For the purposes of ASTM F 853, this term includes, but is not limited to, Safety Alerts, Service Bulletins, and Notifications.

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"Serious injury" means any injury in which the injured person has lost consciousness, broken a bone, was transported to an emergency medical facility or an injury for which medical treatment by a physician beyond first aid was required.

"Service proven" means an amusement ride, device or modification to an amusement ride or device of which:

- 1. Units have been in service to the public for a minimum of five years; and
- 2. Unit(s) that have been in service have done so without any significant design related failures or significant design related safety issues that have not been mitigated.

"Set-up" means to assemble and erect a portable amusement ride for use by patrons, as described in the set-up manual (N.J.A.C. 5:14A-2.14).

"Super ride" means a ride designed to propel riders at high speed or acceleration in any direction which requires an accelerometer test according to the provisions of N.J.A.C. 5:14A-7.5.

"Supplemental modification certification" means a certification that is granted to a person other than the manufacturer by the Department after review of an application for modification of an individual approval.

"Time tested" means a type of amusement ride which is found by the Department to be simple in operation and impose insignificant forces on riders or which is service proven.

"Type certification" means a certification that is granted to a manufacturer by the Department after review of a new ride application and that is applicable to all rides of essentially the same design and manufacture with regard to structural, mechanical, electrical, hydraulic drive and control features, and restraint and other protective features.

"Use" means that an amusement ride is in operation, whether it is empty or carrying riders.

"Vehicle" means any carrier (for example, car, tub, tube, gondola, chair, capsule, compartment, etc.) on or in which riders are supported or contained and carried when participating in or riding on an amusement ride.

"Water amusement ride" means an amusement ride intended for use by riders in bathing attire where the action of the ride involves purposeful immersion of the rider's body, in whole or in part, in water.

§ 5:14A-1.3 Standards adopted

- (a) The standards listed below are adopted and incorporated as part of this chapter. In the event that any provision in any of the following standards conflicts with a provision of this chapter, this chapter shall govern.
- 1. The following standards are adopted and are available from the American Concrete Institute, P.O. Box 19150, Detroit, Michigan 48219:

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- i. ACI 301--99, "Specifications for Structural Concrete for Buildings";
- ii. ACI 318-02, "Building Code Requirements for Reinforced Concrete"
- 2. The following standards are adopted and are available from the American Institute of Steel Construction, 400 North Michigan Ave., Chicago, Illinois 60611;
 - i. AISC, "Manual of Steel Construction ASD, 9th Edition";
 - ii. AISC 316 (1989) Manual on Steel Construction, Allowable Stress Design (ASD); and
- iii. AISC M015 (1986) Manual on Steel Construction, Load and Resistance Factor Design (LRFD);
- 3. The following standards are adopted and are available from the American National Standards Institute, 11 West 42nd Street, New York, NY 10036:
 - i. ANSI B11.TR3 (2000), "Technical Report on Risk Assessment and Reduction";
- ii. ANSI B77.1--1999, "American National Standard for Passenger Ropeways, Arial Tramways, Arial Lifts, Surface Lifts, Tows and Conveyers--Safety Requirements";
- iii. ANSI/ASME B15.1, "Safety Standards for Mechanical Power Transmission and Conveyors and Related Equipment";
- iv. ANSI B93.114M (1987), "Pneumatic Fluid Power System Standard for Industrial Machinery"; and
 - v. ANSI/IAF-9 (2005), "American National Standard for Aquatic Recreation Facilities."
- 4. The following standards are adopted and are available from the American Society of Civil Engineers, 1801 Alexander Bell Drive, Reston, Virginia 20191-4400:
 - i. ASCE 7 (1998), Minimum Design Loads for Buildings and Other Structures; and
- ii. ASCE 16 (1995) Standard for Load and Resistance Factor Design (LRFD) for Engineered Wood Construction;
- 5. The following standards are adopted and are available from the ASTM International, 100 Barr Harbor Drive, P.O. Box C700, W. Conshohocken, PA 19428-2959:
 - i. ASTM E 84, "Test Method for Surface Burning Characteristics of Building Materials";
- ii. ASTM F 698-94, "Specification for Physical Information to be Provided for Amusement Rides and Devices":
 - iii. ASTM F 747-97, "Terminology Relating to Amusement Rides and Devices";
 - iv. ASTM F 770-93, "Practice for Operation Procedures for Amusement Rides and Devices";
 - v. ASTM F 846-92, "Guide for Testing Performance of Amusement Rides and Devices";
 - vi. ASTM F 853-04, "Practice for Maintenance Procedures for Amusement Rides and Devices";

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- vii. ASTM F 893-04, "Guide for Inspection of Amusement Rides and Devices";
- viii. ASTM F 1159-03a, "Practice for Design and Manufacture of Patron Directed, Artificial Climbing Walls, Dry Slide, Coin Operated and Purposeful Water Immersion Amusement Rides and Devices and Air-Supported Structures";
- ix. ASTM F 1193-04, "Practice for Amusement Ride and Device Manufacturer Quality Assurance Program and Manufacturing Requirements";
- x. ASTM F 1918-98, "Standard Safety Performance Specification for Soft Contained Play Equipment";
 - xi. ASTM F 1957-99, "Test Method for Composite Foam Hardness Durometer Hardness";
- xii. ASTM F 2007-00, "Practice for the Classification, Design, Manufacture, and Operation of Concession Go Karts and Facilities":
- xiii. ASTM F 2137-01, "Practice for Measuring the Dynamic Characteristics of Amusement Rides and Devices";
- xiv. ASTM F 1305-94, "Guide for the Classification of Amusement Ride and Device Related Injuries and Illnesses";
- xv. ASTM F 1950-99, "Specifications for Physical Information to be Transferred with Used Amusement Rides and Devices":
 - xvi. ASTM F 2291-04, "Practice for Design of Amusement Rides and Devices";
- xvii. ASTM F 2374-04, "Practice for Design, Manufacture, Operation, and Maintenance of Inflatable Amusement Devices";
 - xviii. MIL-STD-17 (2000), "The Composite Material Handbook";
 - xix. Mil-STD-882C (1993), "System Safety Program Requirements";
 - xx. STP-1330, "Composite Materials: Fatigue and Fracture, 7th Volume";
- xxi. ASTM F 1292-99, "Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment";
 - xxii. ASTM F 1772-99, "Standard Specification for Climbing Harnesses";
- xxiii. ASTM F 1773-97, "Standard Terminology Relating to Climbing and Mountaineering Equipment";
 - xxiv. ASTM F 1774-99, "Standard Specifications for Climbing and Mountaineering Carabiners";
- xxv. ASTM F 1775-97, "Standard Specifications for Labeling of Climbing and Mountaineering Equipment";
- xxvi. ASTM F1487-01, "Consumer Safety Performance Specification for Playground Equipment for Public Use":
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xxvii. ASTM F 2376-06, "Standard Practice for Classification, Design, Manufacture, Construction, and Operation of Water Slide Systems"; and

xxviii. ASTM F1292-99, "Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment";

- 6. The following standards are adopted and are available from the American Welding Society, 550 N.W. LeJeune Road, Miami, Florida 33126:
 - i. ANSI/AWS D1.1/D1.1M (2002), "Structural Welding Code Steel"; and
 - ii. ANSI/AWS D14.4 (1997), "Specification for Welded Joints in Machinery and Equipment";
- 7. CDC 95th Percentile is adopted and is available from the National Center for Health Statistics at http://www.cdc.gov/growthcharts;
- 8. The following standards are adopted and are available from the MIT Press, 5 Cambridge Center, Cambridge, MA 02142-1493:
 - i. Dreyfuss Human Scale 4/5/6;
 - ii. Dreyfuss Human Scale 7/8/9;
- 9. The following standards are adopted and are available from the European Committee for Standardization, Central Secretariat, rue de Stassart 36, B-1050 Brussels, Belgium:
- i. EN 954-1 (1996), "Safety of Machinery--Safety-related parts of control systems--Part 1: General principles for design";
 - ii. EN 1050 (1996), "Safety of Machinery--Principles for Risk Assessment;
 - iii. EN 61496, "Safety of Machinery--Electro-sensitive protective equipment";
- iv. EN 1993-1-9 (2001), "Eurocode 3 Design of Steel Structures. Part 1.9 Fatigue Strength of Steel Structures";
- v. EN 1993-1-9 (2001), "Eurocode 3 Design of Steel Structures. Part 6.9 Crane Support Structures-Fatigue Strength";
 - vi. EN 60947-1 (1999), "Low Voltage Switchgear and Controlgear";
- vii. EN 280 (2001), "Mobile Elevating Work Platforms -- Design Calculations, Stability Criteria, Construction, Safety, Examination and Test";
- viii. EN 566 (1997), "Mountaineering equipment -- Slings -- Safety requirements and test methods":
- ix. EN 892 (1997), "Mountaineering equipment -- Dynamic mountaineering ropes -- Safety requirements and test methods";
- x. EN 12275 (1998), "Mountaineering equipment -- Connectors -- Safety requirements and test methods";

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- xi. EN 12277 (1998), "Mountaineering equipment -- Harnesses -- Safety requirements and test methods"; and
- xii. EN 12572 (1999), "Artificial climbing structures -- Protection points, stability requirements, and test methods":
- 10. IBC--2000, "International Building Code," is adopted and available from the Building Officials and Code Administrators International, Inc., 4051 West Flossmoor Road, Country Club Hills, Illinois 60478-5795;
- 11. The following standards are adopted and are available from the International Electrotechnical Commission 3, rue de Varembe, P.O. Box 131, CH 1211 Geneva 20, Switzerland;
- i. IEC-61508-1 (1999), "Functional safety of electrical/electronic/programmable electronic safety-related systems";
- ii. IEC-60204-1 (2000), "Safety of Machinery Electrical Equipment of Machines Part 1 General Requirements";
- iii. IEC-61496-1 (1998), "Safety of Machinery Electrosensitive Protective Equipment General Requirements and Tests";
- iv. IEC-61511, "Functional Safety: Safety Instrumented Systems for the Process Industry Sector"; and
- v. IEC-62061, "Safety of Machinery Functional Safety Electrical, Electronic, and Program-mable Electronic Systems";
- 12. ISO 4414 (1998), "Pneumatic Fluid power General rules relating to systems," is adopted and is available from the National Fluid Power Association, 3333 North Mayfair Road, Milwaukee, Wisconsin 53222-3219;
- 13. NDS--91, "National Design Specifications for Wood Construction," is adopted and is available from the American Forest and Paper Association, 1250 Connecticut Avenue/Suite 200, Washington, DC 20036;
- 14. The following standards are adopted and are available from the National Fire Protection Association, 1 Batterymarch Park, Quincy, Massachusetts 02269 -9101:
 - i. NFPA 10 1998, "Portable Fire Extinguishers";
 - ii. NFPA 70 (2005), "National Electrical Code";
 - iii. NFPA 79 1997, "Electrical Standard for Industrial Machinery";
- iv. NFPA 261 1998, "Standard Method of Test for Determining Resistance of Mock Up Upholstered Furniture Material Assemblies to Ignition by Smoldering Cigarettes;"
 - v. NFPA 701 1996, "Methods of Fire Tests for Flame Resistant Textiles and Films";

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- vi. NFPA 705 1997, "Recommended Practice for a Field Flame Test for Textiles and Films"; and
 - vii. NFPA-101 (2000), "Life Safety Code";
- 15. The following standards are adopted and are available from the National Fluid Power Association, 3333 North Mayfair Road, Milwaukee, Wisconsin 53222-3219:
- i. NFPA/T2.24.1R1-2000, "Hydraulic fluid power --Systems Standard for Stationary Industrial Machinery";
- ii. NFPA/JIC T2.25.1M-1986, "Pneumatic fluid power--Systems Standard for Industrial Machinery";
- 16. OIPEEC Standards, Organisation Internatiale Pour L'Etude De L'Endurance Des Cables International, are adopted and are available from The University of Reading, Department of Engineering, P.O. Box 225, Reading RG6 6AY, UK;
- 17. The following standards are adopted and are available from the SAE World Headquarters, 400 Commonwealth Drive, Warrendale, PA 15096-0001:
 - i. SAE J211 (1995), "Instrumentation for Impact Test--Part 1--Electronic Instrumentation";
 - ii. SAE J833 (1989), "Human Physical Dimensions"; and
 - iii. SAE HS 4000 (1999), "Fastener Standards";
- 18. The following standards are adopted and are available from the Underwriters Laboratories, Inc., 333 Pfingsten Road, Northbrook, Illinois 60062-2096.
 - i. UL 508 (2000), "Industrial Control Equipment"; and
 - ii. UL 508A (2000), "Industrial Control Panels";
- 19. The following standards are adopted and are available from the American Society of Metals International, 9639 Kinsman Road, Materials Park, OH 44073-0002.
 - i. ASM Atlas of Fatigue Curves (1986); and
 - ii. ASM Handbook Volume 19: Fatigue and Fracture;
- 20. The following standards are adopted and are available from the American Society of Mechanical Engineers, ASME International Headquarters, Three Park Avenue, NY, NY 10016-5990:
 - i. ASME B15.1-2000, "Safety Standard for Mechanical Power Transmission Apparatus"; and
 - ii. ASME A17.1-2002, "Safety Code for Elevators and Escalators";
- 21. The following standards are adopted and are available from the British Standards Institute, 389 Chiswick Road, London W4 4AL, UK.
- i. BS 5400-10 (1980), "Steel, Concrete and Composite Bridges Code of Practice for Fatigue"; and
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- ii. BS 7608 (1993), "Code for Practice for Fatigue Design and of Steel Structures";
- 22. "DIN 15018-1 Cranes; Steel Structures Verification and Analysis Data" is adopted and is available from the Beuth Verlag GmbH (DIN DIN Deutsches Institut f[u]r Normung e.V.), Burggrafenstra[eszett]e 6, 10787 Berlin, Germany;
- 23. "Hollow Structural Section Connection and Trusses A Design Guide," J.A. Parker and J. E. Henderson, is adopted and is available from Canadian Institute of Steel Construction;
- 24. "USDA-72 (U.S. Department of Agriculture) The Wood Handbook Wood as an Engineering Material, Forest Service, Forest Products Laboratory," is adopted and is available from Federal Documents:
- 25. "NEMA 250 (1997) Enclosures for Electrical Equipment" is adopted and is available from National Electric Manufacturers Association (NEMA), 1300 N. 17th St., Suite 1847, Rosslyn, VA 22209; and
- 26. The following standards are adopted and are available from the Union Internationale des Associations d'Alpinisme, Monbijoustrasse 61 Pastfach, CH-3000 Bern 23, Switzerland:
 - i. UIAA 101 (2004), "Mountaineering and climbing equipment Dynamic Ropes";
 - ii. UIAA 104 (2004), "Mountaineering and climbing equipment Slings";
 - iii. UIAA 105 (2004), "Mountaineering and climbing equipment Harnesses"; and
 - iv. UIAA 121 (2004), "Mountaineering and climbing equipment Connectors."
- 27. The following standards are adopted and are available from the U.S. Government Printing Office (GPO), 732 N. Capital Street N.W., Washington, D.C. 20401:
- i. 16 CFR Part 1303(1/04), "Ban of Lead-Containing Paint and Certain Consumer Products Bearing Lead-Containing Paint."

§ 5:14A-2.1 Title; scope; intent

- (a) This subchapter of the regulations, adopted pursuant to authority of the Carnival-Amusement Rides Safety Act and entitled "General Administrative Provisions," shall be known and may be cited throughout the rules as N.J.A.C. 5:14A-2, and when referred to in this subchapter may be cited as "this subchapter."
- (b) This subchapter establishes general administrative provisions related to classification of rides, fees, and the provisions of the application for an annual permit, type certification, amended type certification, individual approval, and supplemental modification certification applications.
- (c) Before being placed in operation in this State, all rides shall have a valid type certification/amended type certification or individual approval/supplemental modification certification, as applicable, and a current annual permit.

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- 1. An applicant may submit a written request for a temporary type certification/amended type certification or a temporary individual approval/supplemental modification certification as applicable. The Department may grant such temporary certification/approval listed above, provided that it has determined that the documentation received is sufficient to satisfy the intent of the rules. Such temporary approval shall be valid for a reasonable period of time needed to submit the necessary outstanding items to the Department but not more than 21 calendar days. The temporary type certification/amended type certification or a temporary individual approval/supplemental modification certification may be renewed at the discretion of the Department.
- (d) Information supplied in accordance with these rules shall be considered public information, except for information supplied by an applicant in support of a type certification, amended type certification, individual approval or supplemental modification certification application and designated by the applicant as proprietary. Documents that are submitted as proprietary shall be clearly stamped or marked as such. Documents not marked as such shall be considered public records.
- 1. For other than information supplied by the manufacturer for type certification applications, final determinations as to whether information contained in the Department's files shall be considered a public record shall be made by the Department consistent with P.L. 1963, c.73 as amended by P.L. 2001, c.404 and N.J.A.C. 5:3.
- (e) When an amusement ride is rebuilt or is modified to change its original action, the ride shall be subject to all provisions of these rules as if it were a new ride not previously in use.

§ 5:14A-2.2 Classification of and height requirements for rides

- (a) The Department shall classify all amusement rides as "super ride," "major ride," "kiddie ride," or "inflatable ride."
- (b) The Department shall establish height requirements based on manufacturer's recommendations, design criteria, and shall reference height restrictions from nationally recognized publications.
 - 1. The Department shall maintain a list containing approved height restrictions for rides.
- 2. For cases where the manufacturer's manuals do not include height restrictions, and for "major" or "super" rides, the default minimum height shall be 60 inches.

§ 5:14A-2.3 Categories of certification and approval

(a) Each ride put into operation in this State shall be certified or approved in one of four categories, as follows:

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- 1. Type certification: A type certification shall apply to all rides of the same type and design. The application shall be submitted by the manufacturer of the ride as provided in N.J.A.C. 5:14A-2.4.
- 2. Individual approval: An individual approval shall apply only to the specific ride reviewed and approved. The application shall be submitted by the owner of the ride as provided in N.J.A.C. 5:14A-2.5.
- 3. Amended type certification: An amended type certification shall be required when a ride that has a type certification is modified. The application shall be submitted by the manufacturer as provided in N.J.A.C. 5:14A-2.6.
- 4. Supplemental modification certification: A supplemental modification certification shall be required when a ride that has an individual approval is modified. The application shall be submitted by the owner of the ride as provided at N.J.A.C. 5:14A-2.7.

§ 5:14A-2.4 Type certification

- (a) A manufacturer may apply for type certification for any ride.
 - 1. An application for type certification of a new ride shall comply with (b) below.
 - 2. An application for type certification of a time tested ride shall comply with (c) below.
- 3. An application for type certification for an inflatable ride shall comply with N.J.A.C. 5:14A-13.3.
- 4. When a major modification is performed to a ride having a valid type certification, an application for an amended type certification shall be required, pursuant to N.J.A.C. 5:14A-2.6.
- 5. An application for a type certification shall be submitted a minimum of 60 days prior to the date that a ride is scheduled to be set up in this State.
- 6. An application for a type certification may be submitted by the manufacturer for a ride that has a valid individual approval.
- i. Documentation shall be provided that demonstrates that the ride for which the individual approval has been issued is the same ride, without modification, as that for which the type certification is sought. In this case, an engineering review and, pursuant to N.J.A.C. 5:14A-2.8, an engineering review fee shall not be required.
- 7. When a ride with a valid type certification is sited in New Jersey, the fixed site and foundation requirements at N.J.A.C. 5:14A-2.13 shall apply.
 - (b) An application for a type certification for a new ride shall contain the following:
 - 1. Demonstrated compliance with the design requirements of N.J.A.C. 5:14A-7;
 - 2. Ride drawings that comply with N.J.A.C. 5:14A-2.12;

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- 3. One complete set of ride design calculations signed and sealed by a licensed professional engineer. These ride design calculations shall include:
 - i. Calculations for the worst case environmental conditions in New Jersey; or
 - ii. Calculations for the limitations of the worst case environmental conditions the ride can stand.
- (1) Where the ride is not designed to withstand the worst case environmental conditions, the conditions under which the ride can safely operate shall be provided.
- (2) Where the ride is not designed to withstand the worst case environmental conditions, the conditions under which the ride may not operate, but may remain standing, and those under which the ride must be taken down or partially taken down, shall be provided.
- iii. In an application for a type certification for a carnival ride for non-fixed site applications, calculations shall be required only for operational wind loads as environmental conditions.
- iv. When an application for a type certification is submitted for a specific site, calculations for the specific environmental conditions shall be used;
 - 4. A non-destructive testing statement pursuant to N.J.A.C. 5:14A-2.15;
- 5. A statement of compliance of redundancy on emergency brakes, anti-rollback devices, and other safety systems, if applicable;
 - 6. Certification of design of ride;
- 7. A full set of assembly, maintenance and operational manuals as required by N.J.A.C. 5:14A-2.14;
 - 8. A ride analysis as required by N.J.A.C. 5:14A-7; and
 - 9. The name and address for official correspondence, pursuant to N.J.A.C. 5:14A-5.8.
 - (c) An application for a type of certification for a time tested ride shall contain the following:
 - 1. Documentation that the ride meets the definition of time tested;
- 2. A statement of compliance of redundancy on emergency brakes, anti-rollback devices, and other safety systems, if required; and
 - 3. The name and address for official correspondence, pursuant to N.J.A.C. 5:14A-5.8.
- (d) Within 30 calendar days of receipt of a complete, accepted application, the Department shall send the applicant either a type certification, temporary type certification or a denial of the application.
 - 1. The denial shall be in writing and shall outline the reason(s) for such denial.
- 2. Failure to issue a type certification within 30 calendar days of the submittal of a complete application shall be deemed a denial for the purpose of appeal.

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- (e) Provided that the manufacturer supports the ride within the full meaning of these rules, a type certification shall be valid for a period of three years or until a new type certification or an amended type certification has been obtained.
 - 1. An application to renew the amended type certification shall be required.
- 2. The renewal application shall comply with the rules in place at the time of the original application, except that safety bulletins issued since the original application shall govern.
- 3. The renewal of a type certification for a ride type that has not undergone a major modification shall not require an engineering review.

§ 5:14A-2.5 Individual approval

- (a) An owner of a ride may apply for an individual approval for a ride.
 - 1. An application for an individual approval for a new ride shall comply with (b) below.
- 2. An application for an individual approval for a ride with a valid New Jersey serial number, carnival rides, and a fixed ride that has not been moved, or a fixed ride that has been returned to the same foundation shall comply with (c) below.
- 3. An application for a fixed ride with a valid New Jersey serial number, a fixed ride that has been moved, or a fixed ride that has not been returned to the same foundation shall comply with (d) below.
- 4. For a ride that has a valid type certification that the manufacturer is not renewing and where the ride meets all the requirements for that certification, the owner may apply for an individual approval without undergoing an engineering review.
- 5. An application for an individual approval for an inflatable ride shall comply with N.J.A.C. 5:14A-13.4.
- 6. An individual approval shall remain valid as long as the ride complies with the conditions on which the individual approval is based.
- 7. An application for an individual approval shall be submitted a minimum of 60 days prior to the date that a ride is scheduled to be set up in this State.
- 8. If the required documentation has been submitted to the Department for a specific ride, an applicant for an individual approval may submit a certification stating that the equipment is the same equipment described in the documentation already submitted and that no major modification has been performed to the ride.
- 9. When a ride with an individual approval is sited in New Jersey, the fixed site and foundation requirements at N.J.A.C. 5:14A-2.13 shall apply.
 - (b) An application for an individual approval for a new ride shall contain the following:

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- 1. Demonstrated compliance with the design requirements of N.J.A.C. 5:14A-7;
- 2. Ride drawings that comply with N.J.A.C. 5:14A-2.12;
- 3. One complete set of ride design calculations signed and sealed by a licensed professional engineer. These ride design calculations shall include:
 - i. Calculations for the worst case environmental conditions in New Jersey; or
 - ii. Calculations for the limitations of the worst case environmental conditions the ride can stand.
- (1) Where the ride is not designed to withstand the worst case environmental conditions, the conditions under which the ride can safely operate shall be provided.
- (2) Where the ride is not designed to withstand the worst case environmental conditions, the conditions under which the ride may not operate, but may remain standing, and those under which the ride must be taken down or partially taken down, shall be provided.
- iii. In an application for an individual approval for a carnival ride for non-fixed site applications, calculations shall be required only for operational wind loads as environmental conditions.
- iv. Where an application for an individual approval is submitted for a specific site, calculations for the specific environmental conditions shall be used;
 - 4. A non-destructive testing statement pursuant to N.J.A.C. 5:14A-2.15;
- 5. A statement of compliance of redundancy on emergency brakes and anti-rollback devices, if applicable;
 - 6. Certification of design of ride;
- 7. A full set of assembly, maintenance and operational manuals as required by N.J.A.C. 5:14A-2.14;
 - 8. A ride analysis as required by N.J.A.C. 5:14A-7; and
 - 9. The name and address for official correspondence, pursuant to N.J.A.C. 5:14A-4.15.
 - (c) An application for an individual approval for a time tested ride shall contain the following:
 - 1. Documentation that the ride meets the definition of time tested;
- 2. A statement of compliance of redundancy on emergency brakes, anti-rollback devices, and other safety systems, if required; and
 - 3. The name and address for official correspondence, pursuant to N.J.A.C. 5:14A-4.15.
- (d) An application for an individual approval for a ride with a New Jersey serial number, for carnival rides, and for a fixed ride that has not been moved, or that has been returned to the same foundation shall contain the following:
- 1. If not already submitted, a non-destructive testing statement pursuant to N.J.A.C. 5:14A-2.15;

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- 2. If not already submitted, a full set of manuals required at N.J.A.C. 5:14A-2.14.
- i. Exception: Where there is a valid type certification, the manuals required at N.J.A.C. 5:14A-2.14 shall not be required; and
 - 3. The name and address for official correspondence, pursuant to N.J.A.C. 5:14A-4.15.
- (e) An application for an individual approval for a fixed ride that has a New Jersey serial number, for a fixed ride that has been moved or has not been returned to the same foundation shall contain the following:
 - 1. Ride drawings that comply with N.J.A.C. 5:14A-2.12;
 - 2. If not already submitted, a full set of manuals required at N.J.A.C. 5:14A-2.14.
- i. Exception: Where there is a valid type certification, the manuals required at N.J.A.C. 5:14A-2.14 shall not be required;
- 3. If not already submitted, a non-destructive testing statement pursuant to N.J.A.C. 5:14A-2.15;
- 4. One set of ride design calculations signed and sealed by a licensed professional engineer for local environmental conditions; and
 - 5. The name and address for official correspondence, pursuant to N.J.A.C. 5:14A-4.15.
- (f) When a major modification is performed to a ride having a valid type certification and the manufacturer does not apply for an amended type certification, the owner may apply for an individual approval.
- (g) Within 30 calendar days of receipt of a complete application, the Department shall send the applicant either an individual approval, temporary individual approval or a denial of the application.
 - 1. The denial shall be in writing and shall outline the reason(s) for such denial.
- 2. Failure to issue a type certification within 30 calendar days of the submittal of a complete application shall be deemed a denial for the purpose of appeal.
- (h) An individual approval shall remain valid as long as the ride complies with the conditions on which the approval is based.

§ 5:14A-2.6 Amended type certification

- (a) When a major modification is performed to a ride having a valid type certification, the type certification shall no longer be valid. The ride shall be taken out of service or the manufacturer shall apply for an amended type certification.
- 1. For the modified portion(s) of the ride, the application shall be based on the rules in place at the time of the application for the modification.

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- 2. For the unmodified portion(s) of the ride, the application shall be based on the rules in place at the time of the original application, except that safety bulletins issued since the original application shall govern.
- 3. When a ride with a valid a type certification is modified by the owner and the manufacturer does not apply for an amended type certification, the owner shall apply for an individual approval.
 - (b) The application for an amended type certification shall include the following:
 - 1. One copy of the original type certification issued by the Department;
- 2. All supplemental safety bulletins, safety alerts, or notifications issued following the issuance of the original type certification;
- 3. One full set of drawings, designs, specifications, and other construction documents, signed and sealed by a licensed professional engineer, that demonstrate compliance with the design requirements of N.J.A.C. 5:14A-7, that comply with N.J.A.C. 5:14A-2.12, and are necessary for full and complete review of the major modification;
 - 4. The name and address for official correspondence, pursuant to N.J.A.C. 5:14A-5.8; and
- 5. The differences between the information submitted in support of the original type certification and that provided with the application for an amended type certification shall be clearly shown.
- (c) Within 30 calendar days of receipt of a complete application, the Department shall send to the applicant either an amended type certification, temporary amended type certification or a denial of the application.
 - 1. The denial shall be in writing and shall outline the reason(s) for such denial.
- 2. Failure to issue the certification within 30 calendar days of submittal of a complete application shall be deemed a denial for the purpose of appeal.
- (d) Provided that the manufacturer supports the ride within the full meaning of these rules, an amended type certification shall be valid for a period of three years or until a new amended type certification has been obtained.
 - 1. An application to renew the amended type certification shall be required.
- 2. The renewal application shall comply with the rules in place at the time of the original application, except that safety bulletins issued since the original application shall govern.
- 3. The renewal of an amended type certification for a ride type that has not undergone a subsequent major modification shall not require an engineering review.

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§ 5:14A-2.7 Supplemental modification certification

- (a) When a major modification is performed to a ride having a valid individual approval, the individual approval shall no longer be valid and the owner of the ride shall take the ride out of service or apply for a supplemental modification certification.
- 1. For the modified portion of the ride, the application shall be based on the rules in place at the time of the application for the modification.
- 2. For the unmodified portion of the ride, the application shall be based on the rules in place at the time of the original application, except that safety bulletins issued since the original application shall govern.
 - (b) The application for a supplemental modification certification shall include the following:
 - 1. One copy of the valid individual approval issued by the Department;
- 2. All supplemental safety bulletins, safety alerts, or notifications issued following the issuance of the individual approval;
- 3. One full set of drawings, designs, specifications, and other construction documents, signed and sealed by a licensed professional engineer, that demonstrate compliance with the design requirements of N.J.A.C. 5:14A-7, that comply with N.J.A.C. 5:14A-2.12, and are necessary for full and complete review of the major modification;
 - 4. The name and address for official correspondence, pursuant to N.J.A.C. 5:14A-4.15; and
- 5. The differences between the information submitted in support of the individual approval and that provided with the application for a supplemental modification certification shall be clearly shown.
- (c) Within 30 calendar days of receipt of a complete application, the Department shall send to the applicant either an amended type certification, temporary amended type certification or a denial of the application.
 - 1. The denial shall be in writing and shall outline the reason(s) for such denial.
- 2. Failure to issue the certification within 30 calendar days of submittal of a complete application shall be deemed a denial for the purpose of appeal.
- (d) A supplemental modification certification shall remain valid as long as the ride complies with the conditions on which the certification is based.

§ 5:14A-2.8 Fees

- (a) At the time of application for an annual permit, a fee shall be paid as follows:
 - 1. Super Ride \$ 756.00

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2.	Major Ride	\$ 504.00
3.	Kiddie Ride	\$ 252.00
4.	Inflatable Ride	\$ 252.00

- (b) When an application for a type certification or amended type certification or an individual approval or supplemental modification certification is submitted to the Department, the application fee shall be \$ 252.00.
- 1. Exception: For a ride with a New Jersey serial number and an annual permit that was valid in the year of or the year prior to December 16, 2002, no fee for an application for an individual approval shall be required if submitted by December 16, 2003.
- (c) When an application for a type certification or individual approval is submitted to the Department and an engineering review is required, a review fee shall be paid as follows:

Inflatable rides	\$ 252
2. Rides \$ 99,999 or less in value	\$ 1,260
3. Rides from \$ 100,000 to \$ 499,999 in value	\$ 2,520
4. Rides from \$ 500,000 to \$ 999,999 in value	\$ 3,780
5. Rides \$ 1,000,000 and over in value	\$ 5,040

- (d) When an application for an amended type certification or a supplemental modification certification is submitted to the Department that requires an engineering review, a review fee shall be paid. The fee shall be calculated as one percent of the cost of the modification, up to a maximum fee of \$ 3,780. The minimum fee shall be \$ 126.00.
 - (e) There shall be no engineering review fee for:
- 1. An application by a manufacturer for a type certification for a ride with a valid individual approval; or
- 2. A review of the documentation for a foundation for or the siting of a ride at a fixed location pursuant to N.J.A.C. 5:14A-2.13.
- (f) No permit to operate, type certification, individual approval, amended type certification, or supplemental modification certification shall be issued until all applicable fees have been paid.
- § 5:14A-2.9 Insurance, bond or other security
 - (a) No person shall operate a ride without:
- 1. A policy of insurance written on a per occurrence basis in an amount not less than \$ 1,000,000 per occurrence insuring the owner against liability for injury suffered by persons riding the amusement ride; or

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- 2. A bond in like amount; provided, however, that the appropriate liability of the surety under such bond shall not exceed the face amount thereof. The bond shall be in such form and content as to be acceptable to the Department of Banking and Insurance.
- (b) The policy shall be issued by one or more insurers acceptable to the Commissioner of Banking and Insurance, and shall be either
 - 1. Licensed to write insurance in the State of New Jersey; or
- 2. Approved as surplus lines insurers pursuant to section 11 of P.L. 1960, c.32, the "Surplus Lines Law."

§ 5:14A-2.10 Annual permits and issuance of serial number plates

- (a) An annual permit shall be issued for the current calendar year or for a period of one year from the expiration of the last permit. No amusement ride shall be operated without a current, valid annual permit, except when:
- 1. The ride is covered by a valid annual permit from the prior year, the owner of the ride has applied for an annual permit in the current year, there are no outstanding orders against the ride, there is no outstanding documentation or fee, and an inspection is scheduled; or
- 2. An application for an annual permit for the ride has been submitted in the current year, there are no outstanding orders against the ride, all required documentation and fees have been received, reviewed, and accepted, and the ride has passed inspection, but the operator has not received the permit.
- (b) Where a permit is issued pursuant to a temporary type certification/amended type certification or a temporary individual approval/supplemental modification certification, the permit shall only be valid for the period that the temporary type certification/amended type certification or a temporary individual approval/supplemental modification certification remains valid.
- (c) Not less than 30 days before commencing operations and in each year thereafter, on a form supplied by the Department, an owner shall apply for an annual permit to place the ride in use.
 - (d) Each application for an annual permit shall include:
- 1. A certificate of insurance, bond, or other security demonstrating compliance with N.J.A.C. 5:14A-2.9;
- 2. Payment of the appropriate fee, as provided in N.J.A.C. 5:14A-2.8. A check shall be made payable to "Treasurer, State of New Jersey"; and
 - 3. The name and address for official correspondence, pursuant to N.J.A.C. 5:14A-4.15.
- (e) For rides with a New Jersey serial number, an application for an annual permit shall contain the following information and shall be submitted on a form provided by the Department.

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- 1. The required proof of insurance and fee;
- 2. Documentation of required non-destructive testing performed during the past year, if completed. Documentation of required non-destructive testing not yet completed at the time of application shall be provided at the time of inspection;
- 3. For an application to be complete and acceptable, there shall be no outstanding documentation required from previous years; and there shall be no outstanding violations; and
 - 4. The name and address for official correspondence, pursuant to N.J.A.C. 5:14A-4.15.
 - (f) For rides without a New Jersey serial number:
- 1. An application for an annual permit shall include the following information and shall be submitted on a form provided by the Department:
 - i. Required proof of insurance and fee, as stated in (d) above;
- ii. Type certification/amended type certification number or individual approval/supplemental modification certification;
- iii. Certification of the fabrication of the ride. (Certification of weld integrity shall be acceptable for a used ride, when the ride manufacturer does not provide a certification of fabrication.);
- iv. A copy of certification that the manufacture has tested the ride in accordance with ASTM F 846 and determined that the ride is satisfactory. (Certification of testing from the ride owner shall be acceptable for a used ride, when the ride manufacturer does not provide a certificate.);
 - v. Certification of training;
 - vi. The name and address for official correspondence, pursuant to N.J.A.C. 5:14A-4.15; and
- vii. For rides sited on foundation(s) or a separate structure, applicable documentation of N.J.A.C. 5:14A-2.13, Foundations for and siting of rides at fixed locations.
- 2. There shall be no outstanding documentation required from previous years and there shall be no outstanding violations.
- 3. When the Department's review determines that the ride information is complete and accepted, a New Jersey serial number shall be assigned, the annual permit shall be printed, and the annual permit and a New Jersey serial number plate shall be sent via first class mail to the owner at the address of record.
- (g) Within 30 calendar days of receipt a complete and accepted application, the Department shall send to the applicant either a notification of approval or denial of the permit application.
 - 1. The denial shall be in writing and shall outline the reason(s) for such denial.
- 2. Failure to issue a determination within 30 calendar days of submission of a complete application shall be deemed a denial for the purpose of appeal.

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- (h) The annual permit issued by the Department shall be continuously displayed in the vicinity of the entrance to the ride or where the inspector affixed it. The permit shall be encased in such a manner as to be protected from weather conditions.
 - (i) A duplicate plate may be obtained from the Department at a cost of \$ 100.00 for each plate.
- (j) A duplicate permit may be obtained from the Department at a cost of \$ 20.00 for each permit.
- (k) A ride for which no foundation is required may be moved during the season without obtaining a new annual permit. In this case, the owner shall notify the Department of the move. The ride shall be required to be inspected prior to being put back into use. Rides that are to be located on another structure shall comply with the siting requirements of N.J.A.C. 5:14A-2.13.
- (I) When a ride for which a foundation is required is moved, it shall comply with the fixed site requirements of N.J.A.C. 5:14A-2.13 and shall obtain a new annual permit pursuant to this section.

§ 5:14A-2.11 Inspections

- (a) For all inspections, the owner, operator or manufacturer shall ensure that the ride is ready.
- 1. Where required, personnel shall be available to operate the ride at the scheduled inspection time.
 - 2. Where required, power shall be provided to operate the ride.
- 3. If the ride is not ready at the time of the scheduled inspection, it shall be deemed to have failed the inspection. Another inspection shall be required to be scheduled.
- (b) Following any pre-season or pre-operational inspection, the inspector shall provide a deficiencies list to the owner.
- 1. When the ride is presented as ready for opening to the public, any non-conformances from the deficiencies list that have not been corrected shall become violations and shall be included in an "Order to Cease Violations."
- (c) Annual inspection: An annual inspection shall be performed before a ride operates each year. The annual inspection shall include, but not be limited to:
 - 1. A review of the maintenance records, including periodic check lists;
 - 2. A review of operator training records;
- 3. A review of required non-destructive testing records if these records were not submitted with the application;
 - 4. A complete mechanical inspection, which may require the ride to be partially disassembled;

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- 5. An operating inspection, during which all safety systems shall be checked and the ride shall be cycled as it is during normal operation; and
 - 6. A test and inspection of the full emergency brake or anti-rollback system, as applicable.
- (d) Reassembly inspection: The Department may perform a reassembly inspection at any new set-up. The reassembly inspection shall include, but not be limited to:
 - 1. A review of the maintenance records including periodic check lists;
 - 2. A review of operator training records;
- 3. A complete mechanical inspection, or at the discretion of the inspector, a partial inspection addressing only those portions disassembled; and
- 4. An operating inspection, during which all safety systems shall be checked and the ride shall be cycled as during normal operation.
- (e) Acceptance inspection: An acceptance inspection shall be performed before a new ride, or a ride having undergone a major modification, may operate. The acceptance inspection shall verify conformance with the approved design and shall include, but not be limited to, the following:
 - 1. A review of the maintenance records, including periodic check lists, if applicable;
- 2. A review of operator training records, including certification of training in accordance with the manufacturer's procedures or manuals;
 - 3. A review of non-destructive testing records, when required;
- 4. For fixed rides, an erection and assembly certification. This certification shall be retained in the ride file at the Department;
- 5. Those parts of the assembly process that are required to be witnessed of which the owner was notified during the permit process;
 - 6. A complete mechanical inspection, which may require the ride to be partially disassembled;
 - 7. A check of redundant safety systems;
- 8. An operating inspection, during which all safety systems shall be checked and the ride shall be cycled as during normal operation; and
- 9. Any ride designed with g's in excess of 75 percent of the limits, as set forth in N.J.A.C. 5:14A-7, shall be tested in accordance with ASTM F 2137. Any ride that has peaks greater than 75 percent of any value in the pulse width of less than 60 seconds, in figures 5 through 9 of ASTM F 2291, no matter how long its total run time, requires a Department-witnessed accelerometer test. For a portable amusement ride, this test may be performed at the factory by a third party testing agency.
- (f) Operational inspection: An operational inspection shall be performed several times each year. The operational inspection shall include, but not be limited to:

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- 1. Observation of the ride operating when the operator has not been informed of the inspector's presence;
 - 2. A review of operator training records; and
 - 3. Information provided to the owner both verbally and in writing of the results of the inspection.
- (g) Notwithstanding any appeal procedures of these rules, for any ride for which a permit has been suspended, the Department shall re-inspect a ride within 48 hours of receiving written notice from the owner of the ride that the condition or violation for which the permit was suspended has been corrected.

§ 5:14A-2.12 Engineering review

- (a) The Department shall perform engineering reviews in support of type certifications/amended type certifications and individual approvals/supplemental modification certifications. The manufacturer or owner, as appropriate, shall ensure that all documents submitted conform to accepted engineering practice and reflect sound engineering principals.
- (b) Unless waived by the Department, ride drawings shall be required for all applications for type certifications/amended type certifications and individual approvals/supplemental modification certifications. All ride drawings submitted as part of an application shall clearly depict the following in appropriate views and cross-sections:
 - 1. Dimensions and tolerances and other important characteristics;
- 2. General drawings or diagrams in plan, elevation, and section views showing the general arrangement of components and operating clearance envelopes;
- 3. Assembly and sub-assembly drawings that provide additional views of areas not clearly discernable from the general drawings and providing clear identification and specification of all components, including proper adjustment(s), fastener tightening specifications, descriptions of other materials or lubricants used, any other important information:
- 4. Detailed drawings of all components specifically manufactured for use in the amusement ride, device, or modification shall not be required unless a specific drawing is needed for verification. However, such drawings shall be available from the manufacturer as per N.J.A.C. 5:14A-5;
- 5. Illustrations or narrative, as appropriate, to provide a clear understanding of the function and relationship of each important part of the amusement ride, device, or modification;
- 6. Slewing gears, hoisting, and swiveling mechanisms, including their support arrangements, drives, controls, and lifting, and swiveling mechanisms;
- 7. Tubs, carriages, gondolas, or other devices illustrated in all necessary views and cross sections with details of the overall dimensions:

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- 8. Vehicles or carriages with details of traveling, guide, safety, and upstop wheels, bearings, axles, shafts, and their attachments and possible ranges of motion in relation to the vehicle, steering and control, anti-rollback devices, drives, and mechanisms, brakes, and anchoring to the foundation;
 - 9. Electrical, electronic, pneumatic, and hydraulic circuit and wiring diagrams; and
 - 10. Control system documentation, including circuit wiring and logic diagrams.
- (c) The manufacturer or owner shall provide to the Department and to the foundation designer a detailed list of maximum loadings on ground or foundation support locations.
- (d) The manufacturer or owner shall provide the manuals required by N.J.A.C. 5:14A-2.14 as part of the ride design package.
- (e) A special engineering review that focuses on a specific aspect of a ride may be undertaken by the Department to meet a specific need. Such a special engineering review may be undertaken in response to any of the following:
 - 1. Accidents involving this ride or ride type;
 - 2. A pattern of accidents or mechanical failures involving this ride or ride type;
 - 3. Excessive maintenance or inspection(s) that may indicate a design defect;
 - 4. The issuance of service bulletins, as described in these rules;
 - 5. A serious defect found in the field during inspection; or
- 6. A major modification to a ride having a type certification, amended type certification, individual approval, or supplemental modification certification.

§ 5:14A-2.13 Foundations for and siting of rides at fixed locations

- (a) Before any ride is sited for the first time or moved, a copy of the permit application submitted to the local Uniform Construction Code enforcement agency, including all plans and specifications, shall be submitted to the Department for review. The submission shall include the following:
- 1. Foundation drawing(s) and calculations signed and sealed by a licensed professional engineer or a letter signed and sealed by a licensed professional engineer certifying that the existing foundation, pad, or other support structure will support the ride in all design conditions;
 - 2. A soil report for rides that require new foundation work; and
- 3. Site specific environmental information, if this information was not already submitted to the Department.
- i. Site specific environmental information shall not be required for type certified rides when the type certification covers all environmental design conditions found in the State.

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- (b) After the ride is erected, but prior to opening to the public, the following information shall be submitted to the Department:
 - 1. Certification of the erection and assembly of the ride; and
- 2. A copy of the Certificate of Occupancy or Certificate of Approval from the local Uniform Construction Code enforcement office.
- (c) Before a mobile ride is set up for an extended period of time, the following information shall be submitted to the Department for review:
- 1. Documentation of the manufacturer's set-up requirements, including documentation regarding the environmental conditions under which the ride may safely operate and the environmental design conditions. When those conditions are exceeded, the ride shall be taken down; and
 - 2. If the ride is to be sited on another structure, a letter or certification as required by (d) below.
- (d) Before a ride of any type is sited or moved on another structure, a signed and sealed letter or certification from a licensed professional engineer stating that the structure will adequately support the ride in the proposed location in all design loading conditions shall be submitted to the Department for review.

§ 5:14A-2.14 Manuals

- (a) For each ride for which type certification/amended type certification, individual approval/supplemental modification certification, or an annual permit application is submitted, the applicant shall provide maintenance requirements, maintenance schedules, inspection requirements, and inspection schedules, each in a checklist format, as follows:
 - 1. Operation Manual as per ASTM F 770-93 (Reapproved 2000);
 - 2. Maintenance Manual as per ASTM F 853-98;
 - 3. Erection and assembly manual or set-up and tear down manual; and
 - 4. A quality assurance manual as per ASTM F 1193-97.
- (b) Where there is no manufacturer to provide these manuals, the applicant shall submit to the Department manuals prepared by a licensed professional engineer or other qualified professional with training, experience, or certification pertaining to the inspection and evaluation of amusement rides that is acceptable to the Department.
- 1. When the applicant encounters practical difficulty in providing these manuals, the applicant may request that the Department approve a schedule for their submittal.
- (c) Following the initial submission and acceptance of these documents, the annual application shall include only changes to the manufacturer's maintenance recommendations and operating instructions, if any.

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(d) The manufacturer may submit these documents on behalf of all applicants who own or operate a particular ride.

§ 5:14A-2.15 Non-destructive testing requirements and reports

- (a) An application for a type certification/amended type certification or individual approval/supplemental modification certification shall include a copy of the non-destructive testing plan and operating instructions provided by the manufacturer. The non-destructive testing plan shall identify the components to be tested and the frequency for testing. The non-destructive testing requirements and schedules shall be in a checklist format and shall contain, at a minimum, the information required at N.J.A.C. 5:14A-9.24. All documentation submitted shall comply with ASTM F 846-92 (Reapproved 1998).
- 1. Where there is no manufacturer to provide the required documents, the applicant shall submit to the Department a non-destructive testing plan prepared by a licensed professional engineer or other qualified professional with training, experience, and certification pertaining to the inspection and evaluation of amusement rides that is acceptable to the Department.
- 2. When the applicant encounters practical difficulty in providing these documents, the applicant may request that the Department approve a schedule for the submission of the required documents.
- (b) The non-destructive testing plan shall include provisions for the non-destructive testing of critical structural and mechanical components, such as, but not limited to, journals, shafts, spindles, and pins not visible to the naked eye.
- (c) The manufacturer may submit these documents on behalf of all applicants who own or operate a particular ride.

§ 5:14A-2.16 Variations

- (a) An owner or manufacturer may apply for a variation from these rules.
 - (b) An application for a variation shall be in writing on a form prescribed by the Department.
 - (c) The application for a variation shall include, but not be limited to, the following:
 - 1. The requirement from which a variation is sought;
 - 2. A description of the condition that causes the hardship in meeting the requirements;
- 3. The alternative that the owner or manufacturer will provide to meet the intent of the requirement: and
- 4. Documentation that the variation will not create a situation that is less safe than meeting the code requirement from which a variation is sought.

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- (d) An application for a variation shall be approved or denied by the Department in writing within 30 calendar days of submittal.
- 1. Failure to issue a variation or a denial within 30 calendar days of the submittal of a complete variation application shall be deemed to be a denial for the purpose of appeal.

§ 5:14A-2.17 Maintenance staff qualifications

- (a) A ride owner shall have an RCMT on staff or limit the work performed by their maintenance technicians to the following:
 - 1. Maintenance and maintenance checklists, in accordance with N.J.A.C. 5:14A-9.3(b);
 - 2. Minor repairs, in accordance with N.J.A.C. 5:14A-9.11(j); and
- 3. Set-up or tear down of inflatable amusement rides and inspection thereof, in accordance with N.J.A.C. 5:14A-9.7(f).
- (b) A ride owner who does not have an RCMT on staff shall either have any work, other than that listed in (a) above, supervised by an RCMT or must have the work performed by a company staffed by an RCMT, such that the supervision required by this section is provided. The RCMT or firm providing the work may be hired as a consultant or may be hired on a per project basis.
 - (c) An RCMT shall be qualified to perform all work on amusement rides, including all:
 - 1. Maintenance and inspections in accordance with N.J.A.C. 5:14A-9.3(b):
 - 2. Assembly and disassembly, in accordance with N.J.A.C. 5:14A-9.5;
 - 3. Set-up, in accordance with N.J.A.C. 5:14A-9.7; and
 - 4. Repair, in accordance with N.J.A.C. 5:14A-9.11.
- (d) A maintenance technician, under the supervision of an RCMT, shall be qualified to perform all work on amusement rides, including all:
 - 1. Maintenance and inspections, in accordance with N.J.A.C. 5:14A-9.3(b);
 - 2. Assembly and disassembly, in accordance with N.J.A.C. 5:14A-9.5;
 - 3. Set-up, in accordance with N.J.A.C. 5:14A-9.7; and
 - 4. Repair, in accordance with N.J.A.C. 5:14A-9.11.
- (e) A qualified person, under the supervision of an RCMT, shall be qualified to perform only the following work on amusement rides, all:
 - 1. Assembly and disassembly, in accordance with N.J.A.C. 5:14A-9.5;
 - 2. Set-up, in accordance with N.J.A.C. 5:14A-9.7; and

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3. Repair, in accordance with N.J.A.C. 5:14A-9.11.

§ 5:14A-2.18 Qualifications of recognized certified maintenance technicians (RCMTs)

- (a) An RCMT shall be qualified by one of the following means:
- 1. Holding a valid National Association of Amusement Ride Safety Officials (NAARSO) Level I, Level II, or Level III certification, or a valid Amusement Industry Manufacturers and Suppliers International (AIMS) Level I, Level II, or Level III maintenance certification, or certification from another professional organization that meets or exceeds the certification requirements as set forth by NAARSO for Level I Certification or AIMS for Level I Maintenance Certification;
 - 2. Recognized by the Department in accordance with (b) below;
- 3. A licensed electrical contractor pursuant to N.J.A.C. 13:31, or equivalent license from a recognized authority that is acceptable to the Department, when working on electrical systems;
- 4. An employee, agent, subcontractor, or independent contractor designated by, or on behalf of, a ride manufacturer, when working on a ride manufactured by that company;
- 5. Holding a valid recognized certified maintenance technician card issued by the Department. Such certification shall be renewed biennially. An applicant is eligible for certification by the Department if the following conditions are met:
 - i. The applicant must apply for the certification and receive the certification by April 6, 2011;
- ii. The applicant must have five or more years of documented relevant supervisory experience prior to April 6, 2009;
- iii. Prior to applying, the applicant must have completed at least 40 hours of training sponsored by the Amusement Industry Manufacturers and Suppliers, National Association of Amusement Ride Safety Officials, International Association of Amusement Parks and Attractions, Responsible Operators of Amusement Rentals or an equivalent approved by the Department that is relevant to the maintenance of amusement rides and was completed within the five years prior to the date of application. For each two-year renewal period after the original issuance, the applicant must complete 32 hours of training relevant to amusement ride maintenance sponsored by a group as described in this subparagraph; and
 - iv. An application fee of \$50.00 is required at the time of initial application and each renewal; or
- 6. For a maximum of 60 days within a 365-day period, in the event an RCMT employed by an amusement ride owner for more than 60 days leaves employment of said owner, the owner may appoint a maintenance technician, employed by owner, temporarily to the position of RCMT.
- (b) Until April 6, 2011, a maintenance technician with three or more years of documented relevant experience is permitted to perform all functions for which RCMT is needed.

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§ 5:14A-3.1 Title; scope; intent

- (a) This subchapter, adopted pursuant to authority of the Carnival-Amusement Rides Safety Act and entitled "Rider Responsibility," shall be known and may be cited throughout these rules as N.J.A.C. 5:14A-3, and when referred to in this subchapter may be cited as "this subchapter."
 - (b) This subchapter establishes the rider responsibilities as covered by the Act and these rules.

§ 5:14A-3.2 Riders to comply with posted warnings and directions

- (a) Each individual who rides a carnival-amusement ride shall comply with written warnings and directions posted by the operator of the carnival-amusement ride according to these rules. These include:
 - 1. Height, weight, and size restrictions, if any, in accordance with N.J.A.C. 5:14A-9.34;
 - 2. Rider warning signs in accordance with N.J.A.C. 5:14A-9.34;
 - 3. Rider conduct signs in accordance with N.J.A.C. 5:14A-9.33; and
- 4. Any other signs or warning posted by the operator with the express intent to protect the safety and well being of riders, equipment and operators.

§ 5:14A-3.3 Riders under the influence of alcohol or drugs

A rider shall not board or attempt to board any amusement ride if he/she is knowingly under the influence of any alcoholic beverage as defined in N.J.S.A. 33:1-1 or under the influence of any prescription, legend drug or controlled dangerous substance as this term is defined P.L. 1970, c.226 (N.J.S.A. 24:21-1 et al.) or any other substance which affects the rider's ability to use the ride safely and to abide by the posted and stated instructions.

§ 5:14A-4.1 Title; scope; intent

- (a) This subchapter, adopted pursuant to authority of the Carnival-Amusement Rides Safety Act and entitled "Owner Responsibility," shall be known and may be cited throughout the rules as N.J.A.C. 5:14A-4, and when referred to in this subchapter may be cited as "this subchapter."
- (b) This subchapter establishes the responsibilities of the owner of an amusement ride regarding the safe operation and maintenance of amusement rides.

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§ 5:14A-4.2 Ride equipment

- (a) No one shall install, operate or allow to be operated any ride that does not have a current type certification, individual approval, supplemental modification certification or amended type certification issued pursuant to the requirements of this chapter.
- (b) The owner of an amusement ride shall not knowingly permit a major modification of that ride without obtaining a supplemental modification certification or an amended type certification, as applicable, from the Department, pursuant to N.J.A.C. 5:14A-2.7 or 2.6.
 - (c) Existing equipment shall be maintained in accordance with this chapter.
- (d) The owner of an amusement ride shall not offer or advertise that ride for use or rental within the State without a valid annual permit for that ride, pursuant to N.J.A.C. 5:14A-2.10. A ride brought to a site where another amusement ride is operating or advertised, or to a public event, is considered as being offered or advertised for use unless it has clear signage stating it cannot be operated in the State. This subsection shall not preclude promotional advertising for coming attractions as long as it is noted that they are coming attractions and are not yet available for use.

§ 5:14A-4.3 Annual permit application

- (a) Each year, 30 days before commencing operations and in each year thereafter or, for continuously operated rides, 30 days prior to the beginning of a new year, the owner shall apply for a permit on an application form furnished by the Department.
- (b) The application for an annual permit shall include all information required pursuant to N.J.A.C. 5:14A-2.10.

§ 5:14A-4.4 Application for individual approval and grandfathering

- (a) If a carnival-amusement ride was manufactured prior to December 16, 2002, or if type certification is not renewed by the manufacturer or is revoked by the Department, then the ride shall not be operated, installed, or used in the State unless the owner has obtained an individual approval from the Department.
- 1. For rides that have a valid type certification that the manufacturer is not renewing, the owner may apply for an individual approval pursuant to N.J.A.C. 5:14A-2.4 without undergoing engineering review.
- 2. For rides that have a New Jersey serial number and had an annual permit in the year of or the year prior to December 16, 2002, but are not type certified, the owner may apply for an individual approval pursuant to N.J.A.C. 5:14A-2.5 without undergoing an engineering review.

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- (b) For rides not grandfathered under the provisions of (a) above, the owner shall make application for individual approval of the ride as a new ride. The application for an individual approval shall include the information required by N.J.A.C. 5:14A-2.5 and the ride shall undergo engineering review according to the applicable provisions of this chapter. The fees for these reviews will be consistent with type certification review fees.
- 1. Pursuant to N.J.A.C. 5:14A-2.1, information supplied by the owner in support of an individual approval application that has been designated by the manufacturer in an application for a type certification as proprietary shall be considered proprietary.

§ 5:14A-4.5 Compliance with manufacturer's recommendations for modifications

- (a) An owner shall comply with any manufacturer's recommendation or requirement including, but not limited to, the replacement or modification of a component of the ride, a change or addition to the maintenance schedule for a ride or the performance of a test on a ride.
- 1. A copy of all manufacturer's bulletins or recommendations received by the owner shall be forwarded to the Department within 14 days of receipt by the owner unless the ride has a current type certification, in which case the manufacturer shall be responsible for sending such information to the Department.
- 2. The Department may waive the requirement to implement a manufacturer's recommendation, at the owner's request, if failure to implement the recommendation does not jeopardize public safety.

§ 5:14A-4.6 Assembly, disassembly, maintenance, repair, and nondestructive testing

- (a) The owner of an amusement ride shall have assembly, disassembly, maintenance, or repair of that ride performed in accordance with applicable requirements of N.J.A.C. 5:14A-9.
- (b) The owner of an amusement ride shall keep a record of assembly, disassembly, maintenance or repair performed, in accordance with N.J.A.C. 5:14A-9. When this work is performed by a party other than the ride owner, the owner shall obtain a summary of the work from that party as a record. These records shall be retained and available for review by the Department for a period of at least three years, with the most recent 12 months being on site of the ride.
- (c) The owner of an amusement ride shall provide training to employees performing regularly scheduled maintenance of that amusement ride, pertaining to their assigned duties, and provide ready access by such persons to appropriate ride manual(s) (N.J.A.C. 5:14A-2.14) during performance of those duties. A record of such training shall be retained and available for review by the Department for a period of at least three years, with the most recent 12 months being on site of the ride.

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(d) The owner shall have any required nondestructive testing, as specified by the Nondestructive Testing Plan (N.J.A.C. 5:14A-2.15), performed in accordance with N.J.A.C. 5:14A-9.24.

§ 5:14A-4.7 Inspection and testing

- (a) The owner of an amusement ride shall have inspection and testing of that ride performed in accordance with applicable requirements of N.J.A.C. 5:14A-9.
- (b) The owner of an amusement ride shall keep a record of all maintenance and operational inspections and tests in accordance with N.J.A.C. 5:14A-9. These records shall be retained for a period of at least three years, with the most recent 12 months being kept on site of the ride and available to the Department for review.
- (c) The owner of an amusement ride shall provide training to employees performing inspection or testing of an amusement ride, pertaining to their assigned duties, and provide ready access by such persons to appropriate ride manual(s) (N.J.A.C. 5:14A-2.14) during performance of those duties. A record of such training shall be retained and available for review by the Department for a period of at least three years, with the most recent 12 months being on site of the ride.

§ 5:14A-4.8 Training and certification of ride operators

- (a) The owner shall ensure that all operators comply with the requirements of N.J.A.C. 5:14A-9.8 and 9.9.
- (b) The owner shall ensure that, at the time of initial operation in the State, at least one operator trained by the manufacturer and having a certification from the manufacturer, in a format prescribed by the Department, is operating the ride.
- (c) The owner shall ensure that operators are trained to operate the ride based on manufacturer requirements covered by the operational manual and any supplemental safety bulletins, safety alerts or other notices related to operational requirements.
 - (d) The owner shall ensure that ride operators operate no more than one ride at any given time.
 - (e) The owner shall ensure that operators give full attention to any ride they operate.
- (f) The owner shall ensure that anyone who operates a ride shall have demonstrated the ability to operate the ride in compliance with all applicable requirements of this chapter and shall ensure that each operator has signed a ride-specific certification attesting that the operator:
- 1. Has read and understood the manufacturer's recommendations for the operation of the ride and, if applicable, any operations manual provided by the owner;
- 2. Knows the safety-based limitations, including height, weight or other rider requirements, on who may ride the ride;

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- 3. Is well versed on what could be reasonably expected to go wrong, how to recognize it, and how to get the ride and riders into as safe a position as possible to minimize the risk of injury or damage;
 - 4. Has had adequate training to operate the ride;
- 5. Knows how to do the pre-startup operational ride checks as required by the manufacturer or as established by the owner in compliance with this chapter;
- 6. Knows how to verify that the daily maintenance checklist has been done prior to operating the ride; and
- 7. Has knowledge of the use and function of all normal and emergency operating controls and the proper use of the ride.

§ 5:14A-4.9 Insurance, bond or other security

No person shall operate a ride without insurance as required by N.J.A.C. 5:14A-2.9.

§ 5:14A-4.10 Riders under the influence of alcohol or drugs

The owner of an amusement ride may not permit a person who is perceptibly or apparently under the influence of alcohol or drugs to enter or ride an amusement ride.

§ 5:14A-4.11 Rider accident reporting requirement

The owner shall designate an office or location as a site for reporting accidents or injuries. The office shall be open during normal business hours and shall be marked with clear signage. Forms with the minimum required information (see N.J.A.C. 5:14A-4.13(c)) shall be available for riders to fill out at this location. More than one office or location may be required so that the locations are within reasonable walking distance from any ride.

§ 5:14A-4.12 Required notices of rider responsibility

(a) Signs advising of the rider reporting requirement (see N.J.S.A. 5:3-57) in English, and in at least one other language prevalent among riders, shall be posted in areas where rides covered by this chapter are operating, including all entrances, exits, locations for receiving forms and the first aid station(s).

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- (b) Each ride owner shall post warnings and directions for each ride which comply with manufacturer's requirements, N.J.S.A. 5:3-31 et seq. and this chapter. Such warnings shall be clearly legible and shall be in a conspicuous location.
- (c) This sign shall be next to, above, below or may be combined with the required signs regarding accident reporting, rider conduct and warnings described in this section and in N.J.A.C. 5:14A-9.33 and 9.34.

§ 5:14A-4.13 Accident, incident or mechanical breakdown reporting

- (a) Shut down and report: When any incident occurs involving a death or serious injury, ejection from the ride or failure of a critical structural or mechanical component, regardless of cause, the owner shall:
 - 1. Shut down the ride and secure the area;
 - 2. Evacuate riders and provide care for any injured persons;
- 3. Report the incident to the Department immediately by telephone at the telephone number provided for this purpose; and
- 4. Prepare a written incident report and send it to the Department by telefacsimile at the telefacsimile number provided for this purpose within 24 hours of the incident.
 - i. A copy of the report submitted to the Department shall be sent to the manufacturer.
- (b) Report within 24 hours: When any incident occurs involving a ride-related injury requiring first aid, or any mechanical malfunction, or an emergency evacuation of the ride, the owner shall:
- 1. Report the incident to the Department within 24 hours of the incident by telephone or by telefacsimile at the numbers provided for this purpose;
- 2. Prepare a written incident report and send it to the Department by facsimile at a number provided for this purpose within five days of the incident or by mail at PO Box 808, Trenton, NJ 08625 postmarked within five days of the incident. The written incident report shall be on a form designed by the Department and shall include a description of any planned corrective action and a time frame for its completion; and
- 3. Repair the ride according to the manufacturer's instructions, if necessary, and submit a written report to the Department indicating the actions taken.
- 4. An evacuation due to an area-wide power failure or an evacuation at the normal discharge location of the ride shall not be considered an emergency evacuation for purposes of this subsection.
- i. The removal of an individual rider or riders at other than the normal discharge location at the rider's request or due to rider behavior and having nothing to do with the operation or functioning of the ride shall be recorded in accordance with (c) below.

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- (c) Record: When any incident occurs that is not covered by (a) or (b) above involving any type of ride-related injury or complaint that was observed by the owner or operator or reported to the owner or operator by the rider, the owner shall keep a record of such incident, including pertinent information, in a form that is easy to access and read and that is readily available for inspection by the Department.
 - 1. The information shall include at least the following:
 - i. The name and address of the injured party;
 - ii. The age and sex of the injured party;
 - iii. A brief description of the injury;
 - iv. The ride on which injury occurred;
 - v. The time, date and weather conditions when the incident occurred; and
 - vi. A description of the incident.
 - 2. The removal of an individual rider or riders as described in (b)4i above shall be recorded.

§ 5:14A-4.14 Transfer of ownership

The owner of an amusement ride shall notify the Department when ownership is transferred to another owner. In such case, the new owner shall obtain a new annual permit and become responsible for the individual approval, if applicable.

§ 5:14A-4.15 Name and address for official correspondence

- (a) The owner of an amusement ride shall maintain a name and address within the State of New Jersey, or designate the name and address of a representative within the State, for the purpose of accepting official correspondence from the Department.
- 1. Such address shall not be a post office box, but shall specify a physical location where such owner or representative may be found during normal business hours.
- 2. Where the owner or representative is a corporation, partnership, or other business entity, the name and address of an officer, or other responsible person, to whom correspondence is to be addressed, shall be provided.
- 3. It shall be the responsibility of the owner to notify the Department of any change in the identity, address or phone number of the owner or representative. Any change shall be reported to the Department in writing within 30 days of the change.

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§ 5:14A-5.1 Title; scope; intent

- (a) This subchapter, adopted pursuant to authority of the Carnival-Amusement Rides Safety Act and entitled "Manufacturer Responsibility," shall be known and may be cited throughout the rules as N.J.A.C. 5:14A-5, and when referred to in this subchapter may be cited as "this subchapter."
 - (b) This subchapter establishes responsibilities for a ride manufacturer.

§ 5:14A-5.2 General requirements

- (a) The manufacturer shall ensure that all rides are designed and constructed in compliance with the requirements of N.J.A.C. 5:14A-7.
- (b) The manufacturer shall affix a data plate to each ride in compliance with N.J.A.C. 5:14A-7.7.
- (c) The manufacturer of an amusement ride shall not state or imply in any advertising that ride as being approved for use within the State without a valid type certification for that ride.

§ 5:14A-5.3 Ride type certifications

- (a) The manufacturer shall apply for type certification, in accordance with the requirements of N.J.A.C. 5:14A-2.4, for each ride type to be used within this State.
- (b) As provided at N.J.A.C. 5:14A-2.4, type certification shall be valid for a period of three years and may be renewed every three years provided that the manufacturer continues to support the ride within the full meaning of this chapter.

§ 5:14A-5.4 Amended type certification

- (a) The manufacturer of an amusement ride type having a valid type certification shall not knowingly authorize a major modification of that ride type without obtaining an amended type certification from the Department, in accordance with N.J.A.C. 5:14A-2.6.
- (b) Amended type certification shall be valid for a period of three years and may be renewed every three years provided that the manufacturer continues to support the ride within the full meaning of this chapter.
- (c) If, as determined by the Department, an amusement ride is materially rebuilt or so modified as to change its original action, then a new type certification or individual approval shall be required as if it were a new ride.

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§ 5:14A-5.5 Quality assurance manual

For rides being issued a type certified or individual approval, the manufacturer shall provide a quality assurance manual that is in compliance with ASTM F 1193-97.

§ 5:14A-5.6 Retention of documents, drawings and calculations

All required quality assurance documents including, but not limited to, material certifications, test reports, inspection reports, drawings and calculations shall be retained by the manufacturer for at least the design life of the ride or 20 years from the date of last manufacture, whichever is longer, or until all such rides have been destroyed or scrapped. This shall include any ride that uses the documentation in question. The Department shall be notified six months prior to the destruction of such documents.

§ 5:14A-5.7 Notification, bulletins and other information as required by the Department

- (a) When the manufacturer is notified by an owner of an incident, whether in this State or elsewhere, involving a serious injury or a critical structural or mechanical component of a ride, the manufacturer shall promptly evaluate the information in that notification and, if necessary, provide, in the form of a safety bulletin, the results of that evaluation, together with any recommendations to eliminate or prevent the situation that created the incident, to the Department and to all known owners of the ride in the State.
- (b) The manufacturer of a ride shall also provide to the Department and to all known owners of the ride in the State:
 - 1. All bulletins, and notifications on type certified rides;
- 2. Information as necessary for those rides that have individual approval or supplemental modification certification based on the manufacturer's documentation supplied by the owner or responsible person; and
- 3. Other documents requested by the Department as a result of an incident involving a ride supported by the manufacturer, either directly or indirectly.

§ 5:14A-5.8 Name and address for official correspondence

(a) The manufacturer of an amusement ride shall maintain a name and address, or designate the name and address of a representative, for the purpose of accepting official correspondence from the Department.

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- 1. If a manufacturer uses an address outside the State of New Jersey, but within the United States of America, that address shall be established and recognized under the law of that state as an "official" location which to send correspondence.
- 2. If a manufacturer that is a non-U.S. corporation chooses to utilize provisions of the Hague Convention and use an address outside the United States of America, it shall provide the Department with the address of the appropriate foreign government office to send correspondence, provide the corporation office and address within that country, agree to accept delivery of official correspondence written in English, and waive any right to have such correspondence translated into another language.
- 3. Such address shall not be a post office box, but shall specify a physical location where such manufacturer or representative may be found during normal business hours.
- 4. Where the manufacturer or representative is a corporation, partnership, or other business entity, the name and address of an officer, or other responsible person, to whom correspondence is to be addressed, shall be provided.
- 5. It shall be the responsibility of the manufacturer to notify the Department of any change in the identity, address or phone number of the manufacturer or representative. Any change shall be reported to the Department in writing within 30 days of the change.

§ 5:14A-6.1 Title; scope; intent

- (a) This subchapter, adopted pursuant to authority of the Carnival-Amusement Rides Safety Act and entitled "Violations, Penalties, Remedies and Investigations," shall be known and may be cited throughout the rules as N.J.A.C. 5:14A-6, and when referred to in this subchapter may be cited as "this subchapter."
- (b) This subchapter establishes the procedures for owners, operators or manufacturers to follow upon receipt of an order of the Commissioner and establishes the amount of penalties and reasons for action and provides information on Department investigations.
- (c) A violation of the Act occurs whenever an owner, manufacturer, officer, agent, employee or person interferes in any manner with the implementation of, or otherwise fails to comply with, the provisions of the Act or rules promulgated pursuant to the Act.

§ 5:14A-6.2 Revocation of carnival-amusement ride permit, certification or approval

- (a) Any owner may have his or her amusement ride permit or individual approval revoked for:
 - 1. Incompetence;
 - 2. Negligence;

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- 3. Continuing to operate an amusement ride without the Department's authorization when an incident as described in N.J.A.C. 5:14A-4.13 occurs;
 - 4. Failure to notify the Department of any incident as required by N.J.A.C. 5:14A-4.13;
- 5. The discovery of false, invalid, incorrect or fraudulent information related to the design of the ride or its safe operation;
- 6. Continuing to operate an amusement ride after having been notified by the Department that the ride has been determined by the Department to be unsafe or hazardous, or potentially unsafe or hazardous;
- 7. Failure or refusal to comply with an order to provide to the Department any engineering data or report or other information concerning the ride that may be required by the Department;
- 8. Failure to maintain, or failure or refusal to provide, records concerning the maintenance of the ride that may be required by the Department;
- 9. Knowingly submitting false, invalid or fraudulent information that is not related to the design of the ride or its safe operation; or
- 10. Failure to comply with the Carnival-Amusement Ride Safety Act, N.J.S.A. 5:3-31 et seq., orders of the Commissioner, or this chapter.
- (b) Any owner who has an amusement ride permit revoked pursuant to this section shall not operate the affected amusement ride until such permit is restored by the Department through the regular application process.
 - (c) Any manufacturer may have a type certification or amended type certification revoked for:
 - 1. Failure to report incidents as required by N.J.A.C. 5:14A-5.7;
 - 2. Failure or refusal to issue safety bulletins required by the Department;
 - 3. Failure or refusal to supply requested engineering analyses;
- 4. The determination by the Department that the ride for which the type certification or amended type certification was issued is unsafe or hazardous, or potentially unsafe or hazardous;
- 5. The discovery of or knowingly submitting false, invalid, incorrect or fraudulent information related to the design or manufacture of a ride; or
- 6. Failure to comply with the Carnival-Amusement Ride Safety Act, N.J.S.A. 5:3-31 et seq., orders of the Commissioner, or this chapter.
- (d) Any manufacturer who has a type certification or amended type certification revoked, after exhaustion of all available remedies at law, shall be prohibited to sell, erect, use or install that carnival-amusement ride in this State.

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§ 5:14A-6.3 Administrative penalties

- (a) The Commissioner or the Commissioner's designee is authorized to assess and collect an administrative penalty in the amount of up to \$5,000 for each violation.
 - (b) In determining the amount of the penalty, the following factors shall be considered:
 - 1. Whether there has been a good faith attempt at full compliance;
 - 2. The seriousness of the violation;
 - 3. The past history of violations or non-compliance with orders;
 - 4. Whether the violation was willful;
 - 5. Whether the violation did cause or could have caused injury or bodily harm;
 - 6. Whether the violation poses an imminent hazard to public health and safety; and
 - 7. Any other appropriate factors.
- (c) Each day in which the owner, operator or manufacturer operates a ride in violation of an order issued by the Department or allows a violation to continue, shall be considered a separate violation.
- (d) Except as otherwise set forth in this section, no administrative penalty shall be levied pursuant to this section unless the alleged violator is provided with a notice and order to abate the violation, the amount of any penalty and an opportunity to request an administrative hearing. Penalties may be issued without prior notice to abate for the following violations:
 - 1. Operating a ride without a permit;
 - 2. Modification of a ride without approval by the Department;
 - 3. Operating a ride in a manner likely to cause injury;
 - 4. Submission or maintenance of false, invalid or fraudulent information;
 - 5. Failure to cease operation after a serious incident;
 - 6. Failure to report an incident;
- 7. Failure to comply with an order of the Commissioner that is in the form of an express condition of a permit, individual approval, type certification, or amended type certification;
- 8. An owner offering or advertising a ride for use or rental within the State without a valid annual permit for that ride, pursuant to N.J.A.C. 5:14A-2.10; or
- 9. A manufacturer stating or implying in advertising that a ride is approved for use within the State without a valid type certification for that ride.

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§ 5:14A-6.4 Appeals and hearings

- (a) A request for an administrative hearing shall be submitted, in writing, within 10-calendar-days following the receipt of the notice or order. Hearing requests shall be addressed to: Hearing Coordinator, Department of Codes and Standards, PO Box 802, Trenton, New Jersey 08625-0802. All hearings shall be conducted pursuant to the Administrative Procedure Act, N.J.S.A. 52:14B-1 et seq., and the Uniform Administrative Procedure Rules, N.J.A.C. 1:1.
- (b) When an aggrieved person fails to request a formal hearing within the 10-calendar-day period specified in (a) above, his or her right to a formal hearing shall be deemed waived and the agency action shall become final.
- (c) Recipients of an administrative penalty assessment may request the initiation of a settlement conference at the time that a hearing request is made. If a party requests a settlement conference, or the Department determines that a settlement conference might be useful, a settlement conference shall be scheduled and conducted by the Department within 30 days of the receipt of the hearing request.
- (d) If a settlement is not agreed upon or no settlement conference is scheduled and a hearing has been requested, the matter shall be transmitted to the Office of Administrative Law (OAL) for hearing.
- (e) Payment of the penalty shall be due when a final agency determination is issued or when a notification becomes a final decision because no appeal has been filed.
- (f) All payments shall be made payable to the "Treasurer, State of New Jersey" in the form of a certified check or money order, or such other form of payment as may be acceptable to the Department.
- (g) Upon final order, the penalty imposed may be recovered with cost pursuant to the Penalty Enforcement Law of 1999, N.J.S.A. 2A:58-10 et seg.

§ 5:14A-6.5 Suspension or revocation of permit

- (a) The Department may immediately suspend or revoke a permit, prior to a hearing, when it is determined that the violations listed in N.J.A.C. 5:14A-6.2 exist or that the continued holding of the permit, approval or certifications is otherwise a hazard to public health and safety. An owner or manufacturer may request an expedited hearing to contest any such suspension in accordance with the Administrative Procedure Act N.J.S.A. 52:14B-1 et seq., and the Special Hearing Rules at N.J.A.C. 1:12D.
- 1. In such cases, the Commissioner shall adopt, reject or modify the recommended decision of the Administrative Law Judge on the next business day following receipt of the Administrative Law Judge's decision. The Commissioner of Community Affairs' decision shall be final, subject to the right of the owner to appeal to the Superior Court of New Jersey, Appellate Division. The expedited

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hearing shall be held, and a final decision issued by the Commissioner, within 48 hours of receipt of a written request for such a hearing, except as extended with the consent of both parties.

- 2. Failure of the Department to transmit the hearing request to the Office of Administrative Law within one business day of the Department's receipt thereof shall be deemed to be a final agency decision.
 - 3. Failure to issue a decision shall constitute denial of the appeal.

§ 5:14A-6.6 Re-inspections following a suspension or shut down and investigations

- (a) The Department shall issue a notice and order to cease operation for any amusement ride found to be hazardous or unsafe. Operation of the ride shall not be resumed until the ride has been re-inspected by the Department and found to be safe for operation unless the order allows operation to resume or unless re-inspection is waived by the Department.
- (b) Notwithstanding any appeal procedures covered by this subchapter, the Department shall re-inspect any carnival-amusement ride for which a permit has been suspended within 48 hours of receiving written notice from the owner of the ride stating that the condition or violation for which the permit was suspended has been corrected. If upon re-inspection, the Department determines that the condition or violation has been corrected, the Department shall reinstate the permit immediately.
- (c) When, as required by N.J.A.C. 5:14A-4.13, a ride has been shut down following an incident, the ride shall not operate until the Department issues an approval for operation.
- 1. Where a verbal approval to operate is given, it shall be followed by a written approval. The written approval may be sent via facsimile.
- 2. The Department shall investigate each of these incidents, and may require records, tests, and may take temporary possession of the ride or portions of it. In cases involving death or serious injury, the Department may issue and enforce subpoenas to compel the testimony of any person who may have knowledge of any relevant matters and the production of any relevant documents.
- (d) The Department may request and the owner or manufacturer, as appropriate, shall provide documentation of repairs as specified in N.J.A.C. 5:14A-9.11.

§ 5:14A-6.7 Departmental remedies for non-compliant manufacturers

(a) The Department shall have the authority to prohibit the sale, erection, use, or installation of any carnival-amusement ride in this State upon final determination, following exhaustion of all available remedies at law, that the manufacturer of the ride has repeatedly failed to comply with orders requiring engineering analyses to be prepared and submitted to the Department or safety bulletins to be issued for individual carnival-amusement rides or classes of carnival-amusement

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rides or upon final determination, following exhaustion of all available remedies at law, that the manufacturer has refused, on a repeated and egregious basis, to comply with orders to carry out the duties and obligations imposed by P.L. 1975. c.105 (N.J.S.A. 5:3-31 et seq.) or this chapter.

1. For purposes of this section, the term "manufacturer" applies equally to the original manufacturer and to any successor or other person acting in the place of the manufacturer pursuant to these regulations.

§ 5:14A-6.8 Stop work orders

If the construction, assembly, alteration or repair of a ride is being undertaken contrary to the provisions of this chapter, or in a manner that presents a danger to the public or employees, the Department may issue a stop work order in writing which shall be given to the owner or the owner's representative. No person shall continue or cause to allow to continue the assembly or maintenance of any ride in violation of a stop work order except with the permission of the Department to abate a dangerous condition, or remove a violation, or except by court order. If a stop work order is not obeyed, the Department may apply to the appropriate court as established by law for an order enjoining the violation of the stop work order. The remedy for violation of such an order provided in this section shall be in addition to, and not in limitation of, any other remedies provided by the chapter, law or ordinance.

§ 5:14A-7.1 Title; scope; intent

- (a) This subchapter, adopted pursuant to authority of the Carnival-Amusement Rides Safety Act and entitled "Design and Construction," shall be known and may be cited throughout the rules as N.J.A.C. 5:14A-7, and when referred to in this subchapter may be cited as "this subchapter."
- (b) The intent of this subchapter is to provide minimum criteria for the design and construction of amusement rides and devices.
- (c) The scope of this subchapter shall include the design and construction of all amusement rides and devices whose design criteria are not specifically addressed in another subchapter of this chapter.
 - (d) The scope of this subchapter shall not include:
- 1. Unmodified portions of rides subjected to a major modification when certified by the manufacturer or by the engineer as unaffected by the modification;
- 2. Amusement rides and devices whose design criteria are specifically addressed in another subchapter of this chapter;

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- 3. Soft-play equipment, subject to these rules because of its location with other amusement rides, which shall meet ASTM F 1918-98, Standard Safety Performance Specification for Soft Contained Play Equipment, and all applicable rules.
- 4. Passenger tramways, which shall comply with ANSI B77.1-1999, Aerial Passenger Tramways, with the following amendments:
 - i. Section 1.1 through 1.3 and section 8 shall be deleted.
 - ii. Any section or provision relating to administration or to reporting shall be deleted.
- (e) In addition to the requirements set forth in this subchapter, all rides shall be designed to allow for compliance with any applicable provisions of N.J.A.C. 5:14A-9.
- (f) Where there is a conflict between these regulations and any standard referenced in this subchapter, these regulations shall govern.

§ 5:14A-7.2 Adoption as amended of ASTM practice F 2291-04

- (a) The Standard Practice for Design of Amusement Rides and Devices, designated by the American Society for Testing Materials (ASTM) as F 2291-04, is adopted by reference, as amended, and made part of this subchapter and shall be enforced as part of this subchapter.
- (b) Notwithstanding any provisions stated in the standard, where specific provisions of the standard conflict with the provisions expressly set forth in this chapter, the provisions set forth in this chapter shall govern.
 - (c) The following sections of the standard are modified as follows:
 - 1. Chapter 1, Scope, shall be amended as follows:
 - i. Section 1.1 shall be deleted in its entirety.
 - ii. Section 1.2 shall be deleted in its entirety.
 - iii. Section 1.5 shall be deleted in its entirety.
 - 2. Chapter 2, Referenced Documents, shall be deleted in its entirety.
 - 3. Chapter 3, Terminology, shall be amended as follows:
 - i. Section 3.1.20, the definition of "manufacturer" shall be deleted.
- ii. Section 3.1.22, the words "ASTM Standard" shall be deleted and the words "provisions of N.J.A.C. 5:14A-7" shall be inserted in their place.
 - 4. Chapter 4, Significance and Use, shall be deleted in its entirety.
 - 5. Chapter 5, General Design Criteria, shall be amended as follows:

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- i. Section 5.1.1.3: In the second sentence, the word "either" shall be deleted and following the words "Fault Tree Analysis" the word "or" shall be inserted.
- ii. Section 5.2.1.4: In the first sentence, the words "for passenger and vehicles" shall be inserted after the word "Calculations".
- iii. Section 5.4.1 shall be deleted and replaced with, "The manufacturer shall produce and retain as-built drawings, calculations, and control software as necessary for a full and complete review, as required by N.J.A.C. 5:14A-2.12. These documents shall be retained in accordance with N.J.A.C. 5:14A-5.6."
- iv. Add new section "5.4.1.1 If a voice communication or signal system is required under N.J.A.C. 5:14A-9.13, to the extent that the manufacturer has been involved in its development, it shall be included in the manufacturer's documentation to the Department."
- v. Section 5.4.2: In the second sentence, the word "review," shall be inserted after the words "to the".
 - vi. Section 5.5 shall be deleted in its entirety.
- 6. Chapter 6, Patron Restraint, Clearance Envelope, and Containment Design Criteria, shall be amended as follows:
- i. Section 6.3.1, the wording "designer/engineer. This determination shall be based on the" shall be deleted.
- ii. Section 6.3.4: At the end of the section, the following sentence shall be added, "Restraints required because of ride elevation shall be the locking type, not capable of being unlocked by patrons."
- iii. Section 6.3.6: In the first sentence, the word "manufacturer" shall be deleted and the word "design" shall be inserted in its place. Also, at the end of the section, the following sentence shall be added, "The design for emergency evacuation shall be such that riders shall be kept safely on the ride or shall be safely evacuated."
- iv. Section 6.3.7: In the first sentence, the word "manufacturer" shall be deleted and the word "design" shall be inserted in its place.
- v. Section 6.3.10: In the first sentence, the word "manufacturer" shall be deleted and the word "design" shall be inserted in its place.
- vi. Section 6.3, Patron Restraints, add new subsection: "6.3.12 Any ride where it is possible for a rider to slide laterally shall be designed to adequately and safely contain the rider in the ride. When designing ride pieces which riders will slide into, the design shall account for the rider and any fellow riders who will be sliding into those pieces while being contained by the ride."
- vii. Section 6.3, Patron Restraints, add new subsection: "6.3.13 Restraints shall not be required for water slides, wave pools, water play areas, lazy rivers or other, similar rides."

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- viii. Section 6.3, Patron Restraints, add new subsection: "6.3.14 If Gx exceeds +0.2 g for more than 0.2 seconds, a backrest shall be required. If Gx exceeds +0.5 g for more than 0.2 seconds, a full backrest shall be required. If Gx exceeds 1.5 g for more than 0.2 seconds, see Note 1 on Figure 5. If +Gx exceeds +2.5 g for more than 0.2 seconds, a headrest, which discourages both lateral movement and movement away from the headrest, shall be required. As used in this subsection, a backrest does not allow a person to slide off the seat backwards. A full backrest supports the torso up to the shoulders. A headrest supports the back of the head."
- ix. Section 6.3, Patron Restraints, add new subsection: "6.3.15 Unless the ride analysis indicates otherwise, if there are accelerations in the X or Z direction that exceed 1 g or Gy exceeds 0.5 g in either direction, there shall be hand holds (including, for example, the lap bar) with a 1 1/2 inch maximum diameter for the riders to grasp to help support themselves."
- x. Section 6.3, Patron Restraints, add new subsection: "6.3.16 For any ride in which accelerations exceed 2 g or are less than-2 g in any direction, the rider shall be well and closely restrained in the direction to resist the acceleration.
 - 6.3.16.1 One of the following may be used as an alternative method of rider protection:
- 6.3.16.1.1 The ride dynamics shall be designed such that no impact or only light impact with the restraint takes place while still keeping the rider well restrained;
 - 6.3.16.1.2 Ride padding shall be designed to absorb impact load; or
 - 6.3.16.1.3 Another means acceptable to the Department shall be used."
 - xi. Section 6.4.1: In the first sentence, following the word "part" the word "of" shall be inserted.
- xii. Section 6.4.2: The first sentence shall be deleted in its entirety. In the second sentence, the words "another class of restraint" shall be deleted and replaced with the words "a class of restraint other than that indicated by Fig. 2."
- xiii. Section 6.6.2: In the first sentence, the words "The designer/engineer shall determine" shall be deleted and the words "shall be inserted after the word "envelope."
- xiv. Section 6.6.3.3: In the first sentence, following the word "ride," the word "and" shall be deleted and the word "or" inserted in its place. Also, the words "(for example, while seated in separate vehicles), the Designer/Engineer shall take reasonably" shall be deleted and the words "shall be taken" shall be inserted after the word "steps." Also, add the following sentence to the end of this section, "Patron safety shall be addressed as dictated by the Ride Analysis."
- xv. Section 6.6.4: In the first sentence, the words "The designer/engineer or manufacturer shall determine" shall be deleted and the words "The design shall specify" shall be inserted in its place.
- xvi. Section 6.6.4.1: In the first sentence, the word "determined" shall be deleted and the word "specified" shall be inserted in its place. Also, in the first sentence, the word "may" shall be deleted and the word "shall" shall be inserted in its place.

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xvii. Section 6.7: In the first sentence, the words "manufacturer shall determine and may make" shall be deleted and the words "design shall include" shall be inserted in its place. In the second sentence, the word "should" shall be deleted and replaced with the word "shall."

xviii. Add new section: "6.8 Secondary safety devices such as latching belts, straps or other devices that limit the travel of a primary restraint device are acceptable."

- 7. Chapter 7, Acceleration Limits, shall be amended as follows:
- i. Section 7.1.1 shall be deleted and replace it with the following: "7.1.1 Amusement rides and devices shall be designed such that the accelerations are within the limits specified in this practice. Any ride submitted for type certification/amended type certification or individual approval/supplemental modification certification, designed with g's in excess of 75 percent of the limits of this subchapter, shall be tested in accordance with ASTM F 2137. Any ride that has peaks greater than 75 percent of any value in the pulse width of less than 60 seconds in Figures 5 through 9, no matter how long its total run time, requires a Department-witnessed accelerometer test at the time of the acceptance inspection. For a portable amusement ride, this test may be performed at the factory by a third party testing agency. Test data intended for evaluation against the limits specified in this subchapter shall be acquired and prepared as follows:"
- ii. Section 7.1.3: In the fourth sentence, the words "Designer/Engineer" shall be deleted and the words "Ride Analysis" shall be inserted in its place. Also, add the following sentences to the end of this section, "For roller coasters, the maximum pitch, roll, and yaw design acceleration rates on the ride are (1rev/sec<2>) or (2 [PI] /sec2). Higher values may be used if demonstrated to be safe in the Ride Analysis. These are not to be used to exceed maximum acceleration rate from Figures 5 through 9."
- iii. Section 7.1.4.3: In the second sentence, the words "designer/engineer" shall be deleted and the words "Ride Analysis" shall be inserted in their place.
 - iv. Section 7.1.4.4 shall be deleted in its entirety.
- v. Section 7.1.4.6: The second sentence shall be deleted and the sentence "Sustained exposure shall not exceed 90 seconds in a single event." shall be inserted in its place.
- vi. Section 7.1.8: The sentence "Sustained exposure in +Gz shall not exceed 40 seconds in a single event." shall be added.
 - 8. Chapter 8, Loads and Strengths, shall be amended as follows:
- i. Section 8.3.1: In the second sentence, the words "designer/engineer shall verify" shall be deleted and the words "design shall demonstrate" shall be inserted in its place.
- ii. Section 8.3.2.1: In the second sentence, the words "designer/engineer-defined" shall be deleted and the word "design" shall be inserted in its place. Also, in the third sentence, "50%" shall be deleted and "30%" shall be inserted in its place.
- iii. Section 8.3.3: In the first sentence, the words "designer/engineer shall determine" shall be deleted and the words "design shall specify" shall be inserted in its place.

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- iv. Section 8.4.1: In the first sentence, the words "per the designer/engineer's" shall be deleted and the words "as specified in the ride inspection and maintenance" shall be inserted in its place.
- v. Section 8.4.2: In the first sentence, the words "designer/engineer" shall be deleted and the words "design" shall be inserted in its place.
- vi. Section 8.5 shall be deleted and replace it with the following: "8.5 Operation beyond the 35,000 operational hour criteria:
- 8.5.1. No ride may operate beyond the life span of a ride, as provided in this practice and as calculated by the manufacturer, unless the ride has been reviewed by the design engineer or another licensed professional engineer and the ride has been determined to have remaining life. (In cases where such a review is undertaken by a licensed professional engineer who is not the design engineer, the design engineer shall be notified, where possible.)
- 8.5.1.1 To extend operation, the reviewing engineer shall perform an evaluation and inspection of the amusement ride and either prescribe appropriate inspection and testing at specified intervals, including a date when the ride is to be reevaluated for continued operation, or calculate a new, extended fatigue life or both.
- 8.5.1.1.1 The engineer's review shall include a review of the operating or maintenance instructions and a list of any new or modified operating or maintenance procedures, in addition to inspection and testing, to be followed.
- 8.5.1.2 Any new or modified operating or maintenance procedures, including any inspection and testing prescribed, shall be incorporated in the ride operating or maintenance instructions, or both, as may be appropriate. An amended type certification or an individual approval for the ride shall be required and the ride shall not be used or operated beyond the lifespan unless and until such amendment is approved by the Department."
- vii. Section 8.6.4: The words "designer/engineer" shall be deleted and the words "ride analysis or other design documentation" shall be inserted.
 - viii. Section 8.6.6: The words "as specified by the designer/engineer" shall be deleted.
 - ix. Section 8.6.7: In the first sentence, the words "the designer/engineer in" shall be deleted.
- x. Section 8.6.8: Add the following sentence to the end of this section, "For kiddie rides, this analysis shall be performed using 160 pounds per seat."
 - xi. Section 8.7.1: In the first sentence, the words "designer/engineer-defined" shall be deleted.
- xii. In Section 8.7, Loads, add new subsection: "8.7.4 For portable rides, an evaluation shall be done in the trailering position. Steps shall be taken to provide any bracing that may be needed to support the ride structure, in order to protect it from fatigue and overload conditions."
- xiii. In Section 8.10, Operational (Dynamic) Loads, add new subsection: "8.10.3 Elevated walking surfaces, including, but not limited to, waiting areas, loading and unloading areas, platforms,

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landings, stairs, and ramps, shall be designed to accommodate a live load of at least 100 pounds per square foot."

- xiv. Section 8.11.1: The word "design" shall be added after the word "the."
- xv. Section 8.12.1: The words "designer/engineer defined" shall be deleted. Also, add the words "that can be reasonably anticipated." following the word "loads."
- xvi. In Section 8.12, Environmental Loads, add new subsection: "8.12.2.1 Each type certified ride shall comply with 8.12.2 above or shall be designed for the worst case environmental conditions in New Jersey."
- xvii. Section 8.12.3: The first sentence shall be deleted and replaced with, "The operating and maintenance instructions shall clearly indicate the environmental loads for which the amusement ride or device was designed."
- xviii. In 8.13.1, add new section: "8.13.1.1 The Department may permit an exception to 8.13.1 when it is impractical and unnecessary to operate in wind speeds of 34 mph or greater. Rides designed to operate in winds of less than 34 miles per hour shall have operating limitations clearly stated in operating and maintenance manuals. This shall include, but not be limited to, clear instructions on wind speeds at which to cease operation."
- xix. Section 8.13.2: In the first sentence, the words "designer/engineer or manufacturer" shall be deleted and replaced with the words "operating and maintenance instructions." Also, the words "in the operating and maintenance instructions" shall be deleted.
- xx. Add new section: "8.13.3 Overturning calculations and load and strength calculations, as necessary, shall be required for operational wind loads."
- xxi. Section 8.14.1: In the first sentence, the words "designer/engineer or manufacturer" shall be deleted and replaced with the words "operating and maintenance instructions." Also, the words "in the operating and maintenance instructions" shall be deleted.
- xxii. Add new section: "8.14.2 Overturning calculations and load and strength calculations, as necessary, shall be required for non-operational wind loads."
- xxiii. Add new section: "8.14.3 The maintenance manual shall clearly indicate wind speeds at which partial disassembly and removal shall take place if necessary."
- xxiv. Section 8.15.1: Add a second sentence, "Test and measurement data may be substituted for numerical analysis."
- xxv. Section 8.15.3: The first sentence shall be deleted and replaced it with the following, "The structural analyses shall consider and incorporate all significant loads and shall evaluate all significant stresses, strains and deflections that may be experienced by the amusement ride or device."
- xxvi. Section 8.15.4: In the first sentence, the words "designer/engineer defined" shall be deleted.

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xxvii. Section 8.15.7: At the beginning of the first sentence, add the words "An analysis of." Also, in the first sentence, the word "evaluated" shall be deleted and the word "required" shall be inserted in its place. In the third sentence, the words "engineer/designer" shall be deleted and the word "design" inserted in its place.

xxviii. Section 8.16.1: Add the following sentence to the end of this section, "Amusement rides or devices that exceed 60 miles per hour shall use an impact factor of not less than 1.5 in the calculations unless empirically measured values show that a value less than 1.5 is appropriate."

xxix. Section 8.16.5: In the first sentence, the words "design shall account for" shall be added after the first "The." Also, in the first sentence, the words "(as defined by the Designer/Engineer) shall be considered" shall be deleted.

xxx. Section 8.18.1: In the third sentence, the words "in addition" shall be deleted and the words "a multiplier" shall be inserted in their place.

xxxi. Section 8.20.1: In the second sentence, "M105" shall be deleted and the words "Manual of Steel Construction ASD, 9th edition" shall be inserted in its place.

xxxii. In Section 8.21, Design for Strength, add new subsection: "8.21.3 The manufacturer shall perform a load combination analysis according to the equations in section 2.3.2 or section 2.4.1 of ASCE 7 or an equivalent standard for load combinations.

- 8.21.3.1 Live loads shall include dynamic loads.
- 8.21.3.2 Thermal loads affecting components of the ride or foundation shall be included in load combinations.
- 8.21.3.2.1 If it can be shown that footings may be allowed to move to accommodate thermal expansion and contraction without degrading the footings' ability to resist other loadings, then thermal loads may be treated separately and taken out of the combined loading equation.
- 8.21.3.3 The multiplier for the live load equations 2 and 3 in section 2.3.2 of ASCE 7 may be 1.33 instead of 1.6 as long as the live load is already being multiplied by an impact factor of 1.2, or greater."
 - xxxiii. Section 8.22 shall be deleted in its entirety.
 - xxxiv. Section 8.23 shall be deleted in its entirety.
 - xxxv. Section 8.24 shall be deleted in its entirety.
 - xxxvi. Section 8.25 shall be deleted in its entirety.
 - xxxvii. Section 8.26 shall be deleted in its entirety.

xxxviii. Section 8.27.3: In the first sentence, the words "Designer/Engineer either know (through empirical measurement) or estimate" shall be deleted and the words "design account for" shall be inserted in its place. Also, the following sentence shall be inserted after the first sentence, "This can be shown either through empirical measurement or by estimating."

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- xxxix. Section 8.27.4: In the first sentence, the words "and allowable utilized to evaluate the same structure" shall be deleted and the word "used" shall be inserted in its place.
- xl. Section 8.27.5: In the first sentence, the words "by a" shall be deleted and the words "that in the AISC Manual of Steel Construction, 9th edition, Chapter K or another" shall be inserted in their place.
- xli. In Section 8.27, Design for Fatigue, add new subsection: "8.27.7 For portable rides, an evaluation shall be done in the trailering position. Steps shall be taken to provide any bracing that may be needed to support the ride structure, in order to protect it from fatigue and overload conditions."
- xlii. Section 8.30.1: In the first sentence, the words "designer/engineer" shall be deleted and the word "design" shall be inserted in its place.
- xliii. Section 8.30.2 shall be deleted and replace it with the following: "8.30.2 In the case where the raw fatigue property data is available, the "Mean-2 [sigma] " value can be calculated by standard statistical techniques illustrated in Figure A1.1. In the absence of such data, a reduction of 18 percent for welded joint details shall be used and a reduction of 12 percent for parent materials shall be used."
- xliv. In Section 8.30, Fatigue Material Allowable Properties, add new subsection: "8.30.3 Performing cumulative damage analysis: If the Ride Analysis defines primary structure that should be designed or a finite fatigue life, the steps listed in the following subparagraphs should be followed.
- 8.30.3.1 Identification of loads and determination of the proper stress allowables are two key elements required to ensure amusement rides and devices possess adequate structural capability.
- 8.30.3.2 The procedure to be used to verify that structures possess adequate structural capability consists of the following basic steps:
- 8.30.3.2.1 Identifying all expected external and internal loading including where these loads will be applied.
 - 8.30.3.2.2 Calculating, or empirically measuring, stresses and strains.
 - 8.30.3.2.3 Determining the appropriate stress allowables (that is, strengths of materials).
- 8.30.3.2.4 Comparing the computed or measured values for stresses or strains, based upon expected loading conditions, to the values for the respective design stress allowables.
- 8.30.3.2.5 If the calculated stresses are determined to be greater than the material allowables, redesigning and validation of analytical predictions with empirical testing shall be done."
- xlv. Section 8.31.1: In the first sentence, the words "designer/engineer provided" shall be deleted. In the second sentence, the words "designer/engineer" shall be deleted and the word "design" shall be inserted in its place.

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xlvi. Section 8.31.2: In the first sentence, the words "Within the Manufacturer-provided written" and "the manufacturer" shall be deleted. In the second sentence, the words "specific" and "instruction" shall be deleted. In the third sentence, the word "written" shall be deleted.

xlvii. In Section 8.32, Metal Structures, add new subsection: "8.32.2 For steel structures, the AISC Manual of Steel Construction shall be used for design and acceptance criteria. Another standard may be used if it can be shown to be equivalent."

xlviii. In Section 8.32, Metal Structures, add new subsection: "8.32.3 Materials shall be resistant to corrosion from salt air or shall be protected from such corrosion."

xlix. Section 8.33.2: In the first sentence, the words "shall be reduced as deemed adequate by the designer/engineer as required" shall be deleted and the words "may be reduced" inserted in their place.

- I. In Section 8.33.3, in the first sentence, the words "As a general rule" shall be deleted.
- li. In Section 8.33.3, add a new section "8.33.3.1 To prevent compression damage to timber members around fasteners, appropriate methods, such as steel plates or large outside diameter washers, shall be provided. Star washers or other such devices shall not be used in disconnectable timber joints."
- lii. In Section 8.33.3, add a new section "8.33.3.2 Where tensile forces associated with holes in timber members act at right angles or obliquely to the direction of the grain, where splitting or tearing of the wood might result, wraparound plates or other suitable means shall be used on either side of fastener holes to absorb these forces."
- liii. Section 8.33.4: In first sentence, the words "designer/engineer shall design the" shall be deleted and the words "design shall include" shall be inserted in its place. In the second sentence, the words "designer/engineer" shall be deleted and the word "design" shall be inserted in its place.
- liv. Section 8.35.2: In the first sentence, the words "designer/engineer shall properly select and design" shall be deleted and the words "design shall include" shall be inserted in its place.
 - 9. Chapter 9, Hydraulic Systems and Components, shall be amended as follows:
- i. Add section "9.6 The design of hydraulic systems shall include means for isolating and locking-out stored hydraulic energy from ride components subject to maintenance and inspection."
 - ii. Add section "9.7 Pressure vessels shall conform to requirements of N.J.A.C. 12:90."
 - 10. Chapter 10, Pneumatic Systems and Components, shall be amended as follows:
 - i. Section 10.2: In the second sentence, the words "or designer/engineer" shall be deleted.
- ii. In Section 10.3.2, the word "should" shall be deleted and the word "shall" shall be inserted in its place.

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- iii. In Section 10.3.5, the words "not create additional hazard (for example, by releasing any locating pin, index drive engagement, latch, clamping or similar device)" shall be deleted and the words "be deleted" shall be inserted in their place.
- iv. Add section "10.4 The design of pneumatic systems shall include means for isolating and locking-out stored pneumatic energy from ride components subject to maintenance and inspection."
 - v. Add section "10.5 Pressure vessels shall conform to requirements of N.J.A.C. 12:90."
- 11. Chapter 11, Safety Related Electrical/Electronic/Programmable Electronic Control Systems, shall be amended as follows:
- i. Section 11.2.1: Following "IEC 61508-1," and preceding the word "and," the words "EN 61496, UL 508A," shall be inserted.
 - ii. Section 11.3.1 shall be deleted and replaced with the following:
 - "11.3.1 General requirements:
- 11.3.1.1 The safety-related control system shall be capable of maintaining the designed safety integrity level under operating conditions.
- 11.3.1.2 Safety-related control systems and functions shall have priority over all other control systems and functions.
- 11.3.1.3 Non-safety-related functions within or outside of the safety-related control system shall be designed so that non-safety related functions cannot compromise the integrity of the safety-related control system.
- 11.3.1.3.1 This requirement shall not apply to necessary manual procedures (for example, reset, maintenance, evacuation) undertaken with adequate safeguards.
- 11.3.1.4 The safety-related control system shall be designed and constructed so that the principles of IEC 61508, Functional Safety of Electrical/Electronic/Programmable Electronic Safety-related systems, and UL 508A, UL Standard for Safety for Industrial Control Panels, are fully taken into account; and
 - 11.3.1.5 The safety-related control system shall be maintained when faults occur.
- iii. In Section 11.4.1.1, delete the word "control" where preceding the word "power" in two locations.
- iv. In Section 11.4.1.2, the word "control," where preceding the word "power," shall be deleted in two locations.
- v. Section 11.5: In the first sentence, the word "manufacturer" shall be deleted and the word "design" shall be inserted in its place. Also, in the first sentence, the word "manufacturer's" shall be deleted.

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- vi. In Section 11.6, the words "that are" shall be deleted and the words "which shall be" inserted in their place.
 - 12. Chapter 12, Electrical Requirements, shall be amended as follows:
- i. Section 12.1.1: In the third sentence, the words "this guideline for North America" shall be deleted and the words "these requirements, except as modified by these rules." In the forth sentence, following the word "code," insert the words "and standards." In the fifth sentence, the words "authority having jurisdiction" shall be deleted and the word "Department" shall be inserted.
- ii. Add new section "12.1.1.1 In subsection 525.21(A) of NFPA 70, National Electrical Code, 'Rides, Tents and Concessions', 'Disconnecting Means', the phrase 'Where accessible to unqualified persons' shall be deleted."
 - iii. In Section 12.1.2.2, the word "Other" shall be deleted and the word "A" inserted in its place.
- iv. Section 12.1.3, Table 1: In the subtitle line, the words "ASTM F 1159" shall be deleted and the words "ASTM F 2291" inserted in its place, in two locations. Also, in the subtitle line, the words "NFPA 70-2000" shall be deleted and the words "NFPA 70-2002" shall be inserted in its place. In the line starting with 12.6 (ASTM F 1159 Section Number), the corresponding NFPA 70 Chapter 7 shall be deleted and Chapters "6 and 8" shall be inserted in its place. In the line starting with 12.7 (ASTM F 1159 Section Number), the corresponding NFPA 70 Chapter 8 shall be deleted and Chapter "5" shall be inserted in its place.
- v. Section 12.1.4.1: In the first sentence, the words ", other than for routine maintenance/repair," shall be deleted. In the second sentence, the words "that changes the operation/function of the equipment" shall be deleted.
 - vi. Section 12.1.4.2 shall be deleted in its entirety.
 - vii. Section 12.1.4.3 shall be deleted in its entirety.
- viii. Section 12.1.5.1: Add "F" after ASTM in line 10 and add "or ASTM F 2291" after 1159 in the same line.
- ix. In section 12.1.5, Signage Requirements, add new subsection: "12.1.5.3 All electrical outlets operating at more than 120 volts to the ground shall be clearly marked to indicate their voltage.
- x. In Section 12.2.1.1, the words "20-ampere line-neutral branch circuit" shall be deleted and the words "125 volt, 20 ampere, branch circuit with GFCI protected receptacle outlet" shall be inserted in their place.
- xi. In Section 12.2.2.1, following the word "be," the words "grouped and shall be" shall be inserted.
- xii. In Section 12.2.3.1, the words "Refer to" shall be deleted and the words "shall be used, except when overridden by this subchapter or chapter." shall be added at the end of the sentence.
- xiii. In Section 12.2.3, add a new section "12.2.3.3 No overcurrent protection device shall be installed in neutral or grounding conductors."
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- xiv. In Section 12.2.3, add a new section "12.2.3.4 All stepping and control transformers shall be grounded."
- xv. In Section 12.3.2, the words "have a rating for the appropriate environment." shall be deleted and the words "be rated minimum 'NEMA 3R,' equivalent or better as necessary to address environmental conditions." shall be inserted in its place.
- xvi. Section 12.4.1.4: Add the following words to the end of the first sentence, "except where riders and by-standers may have access to it."
 - xvii. Section 12.5.1 shall be deleted in its entirety.
- xviii. In Section 12.5.3.1, the words "NEC 2000" shall be deleted and "NEC/2002" shall be inserted in its place.
- xix. In Section 12.5.3.2, the words "NEC 2000" shall be deleted and "NEC/2002" shall be inserted in its place.
- xx. Section 12.5.4.1: In the first sentence, the word "located" shall be deleted and the words "shall be" shall be inserted in its place. Also, in the second sentence, the words "shall be" shall be inserted between the words "or" and "near."
 - 13. Chapter 13, Mechanical Systems and Components, shall be amended as follows:
- i. In Section 13.2.2, the words "design/engineer specified" shall be deleted and the words "specified design" shall be inserted in their place.
- ii. In Section 13.2, Chain, add new section: "13.2.12 Chains on lift hills shall be retained in the trough."
- iii. In Section 13.3.4, the words "design/engineer" shall be deleted and the word "the" shall be inserted in their place.
- iv. In Section 13.3.5, the word "patch" shall be deleted and the word "path" shall be inserted in its place.
- v. In Section 13.3.9, the word "should" shall be deleted and the word "shall" shall be inserted in its place.
- vi. In Section 13.3.10, the word "should" shall be deleted and the word "shall" shall be inserted in its place.
- vii. In Section 13.3.13, the words "should be considered" shall be deleted and the words "shall be in place," shall be inserted in its place.
- viii. Section 13.4.5: Delete the third sentence and replace it with the following sentence, "When a rollback has occurred, at least one anti-rollback device shall be engaged until the rollback has been corrected."
- ix. Section 13.6.3.3: In the first sentence, the word "should" shall be deleted and the word "shall" shall be inserted in its place.
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- x. In Section 13.7.2.1, the words "designer/engineer specified" shall be deleted and the word "design" inserted in their place.
- xi. Add new section "13.7.2.1.1 If vehicles, or other components, of an amusement ride may collide upon failure of normal controls, a safety brake shall be provided to prevent such collision."
- xii. Add new section "13.7.2.2 Safety brakes shall be designed such that no single component failure can diminish the effectiveness of the brake(s) such that the intended safety brake function is compromised."
- xiii. Add new section "13.7.2.3 Safety brakes shall be equipped with an automatic system that causes correct positioning (closed or open) of the brakes, preventing a vehicle from entering a zone of block ahead of it that is occupied."
- xiv. Add new section "13.7.2.3.1 Safety brakes pursuant to 13.7.2.1.1 shall have a redundant safety system that, in the event of a single component failure, prevents two vehicles or two trains from occupying the same block at the same time."
- xv. Add new section "13.7.2.3.2 Alternative systems that achieve the same result may be used."
- xvi. Add new section "13.7.2.4 Amusement rides and devices that make use of multiple vehicles of trains shall be equipped with a 'fail-safe' braking system that, in the event of a complete power failure, is designed to stop all vehicles or trains at the next stopping location. If a stoppage occurs, some vehicles may be on elevated parts of the ride. A written procedure for evacuation shall be in place to address such situations."
- xvii. Add new section "13.7.2.5 All remote operator stations shall be equipped with an emergency stop button, or stop button, for the purpose of correctly positioning the safety brakes to stop the vehicle without allowing it to pass to another block."
- xviii. Add new section "13.7.2.6 Safety braking systems utilizing air to activate brakes shall have a pressure sensing device installed after the main air source, which causes an emergency stop condition in the event of loss of air pressure."
- xix. Add new section "13.7.2.7 Safety braking systems utilizing air to activate brakes shall have an individual holding tank at each set of brakes with a 'check valve' or 'one-way valve' to prevent complete loss of air pressure, in the event of a line break or compressor fault."
- xx. In Section 13.7.3.1, the words "designer/engineer specified" shall be deleted and the word "design" inserted in their place.
 - xxi. Add new section: "13.8 Internal combustion engines."
- xxii. Add new section: "13.8.1 Internal combustion engines for amusement rides shall be of adequate type, design, and capacity to handle the design load."
- 14. Chapter 14, Fencing, Guardrails, and Handrails for Amusement Rides and Devices, shall be amended as follows:
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- i. The words "Manufactured After January 1, 2003" shall be deleted from title.
- ii. In Section 14.1, the word "patron" shall be deleted in two locations.
- iii. In Section 14.2.1, the word "patron" shall be deleted in two locations.
- iv. In Section 14.2.1.1, the word "patron" shall be deleted in four locations.
- v. Section 14.2.1.2: Add the following words to the end of the first sentence, "and shall be designed to resist a load of 50 pounds per linear foot applied in any direction and to transfer the loads through the supports to the structure."
 - vi. In Section 14.3.1.1, the word "patron" shall be deleted in two locations.
 - vii. In Section 14.5.2, the word "patron" shall be deleted.
- viii. Add new section "14.5.3 Gates shall be self-closing and self-latching or have an operator at gate when ride is operating."
- ix. Add new section "14.6 For lift hills, guardrails shall have a top rail, an intermediate rail, and a toe board."
 - 15. Chapter 15, Welding, shall be amended as follows:
- i. Section 15.1: Add the following sentence to the end of the section, "All welding used as a method of fabrication or assembly shall conform to AWS D1.1-2000, Structural Welding Code or equivalent."
- ii. In Section 15.4, the words "manufacturer's retention policy" shall be deleted and the words "record retention requirements of N.J.A.C. 5:14A" shall be inserted in their place.
 - 16. Chapter 16, Fasteners, shall be amended as follows:
- i. In Section 16.1.4, the words "designer/engineer" shall be deleted and the word "design" shall be inserted in their place.
- ii. Section 16.1.5: In the first sentence, the words "is the preferred" shall be deleted and the words "shall be the" shall be inserted in its place. Also, the second sentence shall be deleted in its entirety.
- iii. Add new section "16.1.5.1 An exception may be made by the Department for items which cannot be through bolted or are not intended to be removed for service or maintenance. In these cases, other fastening methods may be used, if demonstrated by the design to be appropriate.
- iv. In Section 16.1.6, the word "should" shall be deleted and the word "shall" shall be inserted in its place.
- v. In Section 16.1.9. the word "should" shall be deleted and the word "shall" shall be inserted in its place.
- vi. In Section 16.1, General, add new subsection: "16.1.10 All bolts, cap screws, and studs shall be SAE Grade 5, ASTM A325, equivalent or better."
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- vii. Add new section, "16.1.10.1 An exception shall be permitted where the design demonstrates graded fasteners are not required."
- viii. Add new section, "16.1.10.2 In safety-related structures, fasteners shall be proof tested by lot."
 - ix. In Section 16.2.2, the words "where specified torque values" shall be deleted.
- x. Add new section "16.2.2.1 An exception shall be permitted where the design demonstrates hardened washers are not required."
 - 17. Annex A1, Loads and Strengths, shall be amended as follows:
- i. Section A1.1.1: In the first sentence, the words "(that is, minimum design requirements and considerations) to be applied by the designer/engineer" shall be deleted and the words "for minimum design requirements that shall be used" inserted in their place.
- ii. Section A1.1.2: In the second sentence, the words "by allowing the designer/engineer to determine" shall be deleted and the words "in defining" shall be inserted in their place. Also, in the third sentence, the words "determined and treated by the designer/engineer" shall be deleted and the words "used in the design" shall be inserted in their place.
- iii. In Section A1.2.1, the words "the designer/engineer can design" shall be deleted. Also, following the word "device," the words "may be designed" shall be inserted.
- iv. Section A1.2.2.1: In the first sentence, "50%" and "43%" shall be deleted and "30%" shall be inserted in both places. Also, in the calculation, "0.43" shall be deleted and "0.30" shall be inserted in its place and "19,500 Operational hours" shall be deleted and "24,500 Operational hours" shall be inserted in its place.
- v. Section A1.2.3: In the last sentence, the word "could" shall be deleted and the word "may" shall be inserted in its place.
- vi. Section A1.2.4.1: In the first sentence, "19,500" shall be deleted and "24,500" inserted in its place. In the second sentence, the word "or" shall be deleted and the word "of" shall be inserted in its place. In the calculation, "19,500 Operational hours" shall be deleted and "24,500 Operational hours" shall be inserted in its place. Also, in the calculation, "2,394,000 load cycles" shall be deleted and "2,940,000 load cycles" shall be inserted in its place. In the last sentence, "2.39 x 10 to the 6 power" shall be inserted in its place. Also in the last sentence, "19,950" shall be deleted and "24,500" shall be inserted in its place.
- vii. In Section A1.3.1, the words "the designer/engineer to exempt" and the word "that" shall be deleted. Also, following the words "covered by 8.3.1," the words "to be exempt" shall be inserted.
- viii. Section A1.4.1: In the second sentence, the words "Designers/engineers and manufacturers that design" shall be deleted and the words "Design of" shall be inserted in their place.
- ix. Section A1.5.1.2: In the second sentence, the words "designer/engineer is required to" shall be deleted and the words "design shall" shall be inserted in their place.

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- x. In Section A1.5.1.5, the word "should" shall be deleted and the word "shall" shall be inserted in its place.
 - xi. Section A1.5.1.6 shall be deleted in its entirety.
 - xii. Section A1.6.2 shall be deleted in its entirety.
- xiii. Section A1.7.1: In the second sentence, the words "needs to" shall be deleted and the word "shall" shall be inserted in its place.
- xiv. Section A1.8: In the last sentence, the words "as determined by the designer/engineer" shall be deleted.
 - xv. In Section A1.9.1.3, the words "Wind (operational)" shall be added.
- xvi. Section A1.9.2.6 (5) shall be deleted in its entirety and the sentence "Validate analytical predictions with empirical testing as necessary." shall be inserted in its place.
- xvii. Section A1.9.2.7: Delete the first sentence and replace it with the following sentence, "The design shall account for the following loads:"
- xviii. Section A1.10.4.4: In the fifth sentence, the word "must" shall be deleted and the word "shall" shall be inserted in its place.
- xix. In Section A1.10.5, the words "designer/engineer" shall be deleted and the word "design" inserted in its place.
- xx. Section A1.11.1: In the second sentence, the words "that would concern patrons and operators" shall be deleted.
 - xxi. Section A1.12.3: The third, fourth and fifth sentences shall be deleted in their entirety.
 - xxii. Section A1.14 shall be deleted in its entirety.
- xxiii. Section A1.15.3: In the first sentence, "ASCE 16" shall be deleted and "AF&PA/ASCE 16" shall be inserted in its place.
 - xxiv. Section A1.16 shall be deleted in its entirety.
 - xxv. Section A1.17.2: In the first sentence, the words "Note also that" shall be deleted.
- xxvi. Section A1.18.1.1: In the second sentence, the word "resent" shall be deleted and the word "present" shall be inserted in its place.
- xxvii. In Section A1.18.1.2, the third and fourth sentences shall be deleted in their entirety and the sentence "A ratio of standard deviation to mean value of fatigue strength shall be taken as 18% for welded joints and 12% for parent materials." shall be inserted in their place.
- xxviii. Section A1.18.1.5 shall be deleted in its entirety and the following inserted in its place: "Stresses within a structure shall be less than the endurance limit for the material being used. This infers that the structure will last indefinitely without cracking for the given loading duty cycle. Where it is not feasible to keep the stresses within a structure less than the endurance limit for the mate-
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rial being used, where the presence of an endurance limit cannot be justified on the basis of available material data, or in the case of welded components, where the effect of corrosive agents on some metals, especially when in a welded configuration, leads to an S-N curve that does not exhibit a distinct flattened region at a high cycle count, a finite life calculation shall be required. See Fig. A1.1."

xxix. Section A1.18.2.1: In the first sentence, the words "considered by the designer/engineer" shall be deleted and the word "followed" shall be inserted in their place.

(d) The ASTM standard F 2291-04 may be obtained from:

American Society for Testing Materials 100 Barr Harbor Drive West Conshohocken, PA 19428-2959.

§ 5:14A-7.3 Speed-limiting devices and operator presence devices

- (a) An amusement ride capable of exceeding its maximum safe operating speed shall be provided with a speed-limiting device.
- (b) All powered amusement rides and devices shall be equipped with a properly functioning operator presence device.
- 1. Exception: For rides and attractions where the operator presence device does not add to safety, including roller coasters, bumper cars, log flumes, go-karts and some computer controlled rides, an operator presence device shall not be required.

§ 5:14A-7.4 Fire prevention

- (a) Fabrics constituting part of an amusement ride shall be documented to have a flame resistance that meets NFPA 701, or shall meet the NFPA 705 field test. Products which do not meet any of these requirements or an acceptable equivalent standard approved by the Department shall not be permitted.
- (b) All materials used in an amusement ride in rider compartments and larger volume or surface area materials shall comply with the following:
- 1. Materials used in fully enclosed rider compartments where riders cannot get out of the compartment independently shall have a Class I flame spread rating (0-25) in accordance with ASTM E 84 and shall have a smoke development rating of 450 or less. All padding or upholstered materials within the compartments shall have a char length not exceeding 1.5 inches when tested in accordance with NFPA 261.

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- 2. All materials other than those used in fully enclosed rider compartments shall have a Class III flame spread rating (76-200) in accordance with ASTM E 84. For rides in an enclosable building, materials shall have a smoke development rating of 450 or less.
- 3. Exception: Paints, wall coverings not greater than 1/28 inch thick, lubricants and fuels shall not be required to meet the flame spread and smoke development rating requirements.

§ 5:14A-7.5 Construction requirements

- (a) All rides shall be subject to approval pursuant to N.J.A.C. 5:14A-2. Any building or structure associated with, as a functional part of or housing the ride shall be constructed in conformance with the State Uniform Construction Code and maintained in conformance with the State Uniform Fire Code. Additionally, permits and inspections, as required by the State Uniform Construction Code, N.J.A.C. 5:23, or the State Uniform Fire Code, N.J.A.C. 5:70, shall be obtained for the following:
 - 1. Footings and foundations;
 - 2. Plumbing or electrical connections, whether permanent or temporary;
 - 3. Closed construction:
 - 4. Tents; or
 - 5. Flame producing appliances.

§ 5:14A-7.6 Design for loading and unloading

- (a) Safe and adequate means of loading and unloading each ride, ride element, or ride vehicle shall be provided. The ride shall be designed to protect against unsafe loading or unloading.
 - (b) When a ride is in a building, the following shall apply:
- 1. The minimum clear width to access a seat is 12 inches. If more than seven seats must be accessed, the access width shall be increased by 0.6 inches per seat up to a maximum of 22 inches; and
- 2. The maximum number of seats that can be accessed from one side is 24 seats or 30 feet, whichever is less.

§ 5:14A-7.7 Identification, data plates and manufacturer's information

(a) Amusement rides and devices shall be identified and have an Information Plate as required by ASTM F 698.

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(b) The information plate shall be of metal, or equivalent, with information legibly impressed.

§ 5:14A-7.8 Quality assurance program

- (a) The quality assurance program for manufacture, assembly, erection, modification, or reconditioning, shall contain, at a minimum, all of the following:
 - 1. Drawings:
 - i. Drawing numbers shall be unique;
 - ii. Revision blocks shall be clear and track what changed in the revision;
- iii. If jigs were fabricated or used, each jig shall have a jig identification, and each jig used shall be identified, with appropriate settings, on the assembly or fabrication drawing;
 - iv. Tolerances and finishes shall be specified, where necessary; and
 - v. Drawings shall adhere to an accepted drawing standard;
 - 2. Welding:
 - i. Welding, when necessary, shall conform to AWS D1.1 or an equivalent standard;
- ii. Pre-qualified weld joints shall include base metal, electrodes, inserts, weld preparation, inert gas shielding requirement, backing, speeds, feed rates, techniques, preheat requirements, and postheat requirements;
- iii. AWS or equivalent certified welders shall be qualified on the pre-qualified weld joint(s) they actually weld; and
 - iv. Welds shall be inspected by AWS or equivalent certified weld inspectors;
 - 3. Machining requirements shall identify how requirements are met and how they are checked;
 - 4. Materials:
- i. Material certifications shall be obtained for each material ordered that is related in any way to structure or safety;
- ii. Flame retardant certification shall be obtained for all materials with a specified flame retardance, including, but not limited to, fabrics and plastics; and
- iii. A method shall be in place to verify that the material called for on the drawing is received and is actually used in the part or assembly;
 - 5. A method shall be in place to assure that assemblies are done properly;
 - 6. A method shall be in place to assure that erection of the ride is done properly;

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- 7. Testing shall be performed, in accordance with ASTM F 846-92, on the ride, and subassemblies and parts, if necessary; and
- 8. When timber is used, it shall be stored and assembled in such a way as to eliminate or to minimize decay or rotting. Inspection points shall be set up so that timber may be evaluated at several steps during the process to ensure the highest quality.
- i. Prior to assembly into the ride, fasteners shall be inspected to ensure that there is not corrosion sufficient to produce fretting in the timber thereby reducing joint strength.

§ 5:14A-7.9 Means of access and egress

- (a) All walking surfaces, including, but not limited to, waiting areas, loading and unloading areas, platforms, landings, stairs and ramps, shall be stable, firm and slip resistant.
- (b) Safe and adequate means of access to and egress from an amusement ride shall be provided. Stairways or ramps and connecting landings or platforms shall be provided where the entrance to or exit from a ride is not at grade.
- (c) A building housing an amusement ride shall comply with the requirements of the Uniform Construction Code (N.J.A.C. 5:23).
- (d) When a ride is in a building, the exit access travel distance shall be measured from the most remote point on the ride to determine compliance with the maximum exit access travel distance requirements of the Uniform Construction Code.
 - (e) Where the ride itself creates an enclosed space, two means of egress shall be provided.
- 1. A single means of egress shall be permitted if the occupant load does not exceed 50 persons and the exit access travel distance does not exceed 75 feet.
 - 2. Dead end passageways shall not exceed 35 feet.
- (f) The normal "access only" path may be used for egress in an emergency provided that the path is clearly marked as a means of egress and there are no obstructions (for example, one-way turnstiles) blocking egress travel.
 - (g) Stairs: All stairs on amusement rides shall comply with the following:
- 1. Stairs used for unassisted egress shall be 22 inches in width minimum for single lane passage or 44 inches for double lane passage.
- 2. Stair tread shall be dimensionally uniform within a given run. The maximum tolerance between largest and smallest tread and risers shall be 0.375 inches.
 - (h) Ramps: All ramps on amusement rides shall comply with the following:
- 1. Ramps used for unassisted egress shall be 22 inches in width minimum for single lane passage or 44 inches for double lane passage.

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- 2. Ramps attached to lift hills shall have a slope not exceeding 20 degrees provided that the operator controls emergency evacuation and that the ramp is otherwise used only for maintenance and inspection access.
- i. Where the slope exceeds 25 degrees, stairs that conform to the slope of the lift hill or another means of access shall be provided.
- 3. Ramps attached to rides which provide normal access to vehicles shall have a slope not to exceed 15 degrees when necessary to conform to the contour of the ride.
- i. Where the slope exceeds 21 degrees, stairs that conform to the contour of the ride or another means of access shall be provided.

§ 5:14A-7.10 (Reserved)
§ 5:14A-7.11 (Reserved)
§ 5:14A-7.12 (Reserved)
§ 5:14A-7.13 (Reserved)
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§ 5:14A-7.35 (Reserved)

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N.J.A.C. 5:14A (2012)

§ 5:14A-7.36 (Reserved)

§ 5:14A-7.37 (Reserved)

Title 5, Chapter 14A, Subchapter 8. (RESERVED)

§ 5:14A-9.1 Title; scope; intent

- (a) This subchapter, adopted pursuant to authority of the Carnival-Amusement Rides Safety Act and entitled "Operation," shall be known and may be cited throughout the regulations as N.J.A.C. 5:14A-9, and when referred to in this subchapter may be cited as "this subchapter."
- (b) This subchapter establishes the procedures for owners, operators and manufacturers to follow during the operation of a carnival-amusement ride in New Jersey to assure that the ride is properly set-up, maintained and will be safe for the riding public.
- (c) All rides shall be maintained in conformance with the manufacturer's specifications and the approved design.
- § 5:14A-9.2 Required notice, itinerary and book-on rides
- (a) No amusement ride shall be used at any time or location unless prior notice of intent to use the same has been given to the Department.
 - (b) Notice of planned schedules shall:
 - 1. Be in writing;
 - 2. Identify the ride;
- 3. State the intended dates and specific locations of use including the municipality, street and street number or block and lot; and
 - 4. Include any additions or book-ons which will be operating at the site.
- (c) Such written notice shall be mailed to PO Box 808, Trenton, New Jersey 08625-0808 or faxed to a telefacsimile number provided for that purpose to attention of the Department at least five days before the first intended date of use.
- (d) Book-on rides included after initial notification in (b) above shall provide the same information as in (b)2 and 3 above.

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(e) When a book-on ride is included outside of the initial notification, the owner shall give at least 72 hours advance notice to the Department before the ride is placed in operation.

§ 5:14A-9.3 Maintenance, inspections and tests

- (a) No amusement ride shall be opened to the public without having completed all applicable maintenance and operation inspections, including recording of results.
- (b) Maintenance shall be performed, and maintenance checklists shall be completed, by a maintenance technician experienced in the proper maintenance of the ride, as per the maintenance manual. This work shall be performed within the timeframe specified in the maintenance manual and records shall be in compliance with N.J.A.C. 5:14A-4.7.
- (c) The Department shall not inspect or issue a permit for a carnival-amusement ride without a current copy of the following items being on site and available to the inspector:
 - 1. The manufacturer's set up and assembly manual;
 - 2. The manufacturer's maintenance manual;
 - 3. The manufacturer's operation manual;
 - 4. The daily maintenance inspection and checklist;
 - 5. The daily operational inspection and checklist;
 - 6. The daily maintenance log; and
 - 7. The NDT plan, if applicable.
 - (d) The maintenance or operational checklist shall include, but not be limited to, the following:
 - 1. The name and manufacturer's serial number of the ride;
 - 2. The printed name and signature of the person completing the checklist;
 - 3. The date the checklist is completed:
- 4. A detailed list and description of all items being checked. Items listed shall be at a minimum those required by the manufacturer; and
- 5. Testing within the timeframe specified in the operating manual of all control devices, speed-limiting devices, block system, emergency brakes, automatic and manual lowering devices and any other equipment provided for safety.
- (e) Each amusement ride shall have a dedicated maintenance log with pages identified in numerical or chronological order for recording all maintenance, set-up, and repair, excluding that of the maintenance checklist(s). Each log shall be identified with the ride name and manufacturer's serial number of that ride. Each maintenance log entry shall be made within 48 hours of performing work and include, but not be limited to, the following:

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- 1. The printed name and signature of the person performing, or responsible for performance of, the work;
- 2. The nature of the work (for example, malfunction, repair, adjustment, lubrication, set-up, inspection, violation abatement, etc.);
 - i. If other than routine maintenance, a notation as to the reason;
 - ii. If safety bulletin, a reference to the manufacturer's bulletin;
 - iii. If "order to cease violations" issued by a regulatory agency, a reference to said order;
 - iv. Account of work performed and all parts repaired or replaced;
 - v. A copy of the manufacturer's recommendations for repair or repair procedures, if any; and
 - vi. For set-up, only identifying the set-up procedure followed is sufficient;
 - 3. The date(s) work was performed; and
- 4. The printed name and signature of the RCMT, when such individual is required for supervision of the work by this chapter. This information may be omitted at time of entry, but shall be added within seven days of work completion.
- (f) Any maintenance or operational inspection or test by a party other than the ride owner shall be performed by a maintenance technician and documented in compliance with N.J.A.C. 5:14A-4.7. This documentation shall include, but not be limited to, the following:
 - 1. The name and manufacturer's serial number of the ride:
 - 2. The name and address of the organization performing the inspection or test;
 - 3. The printed name and signature of the person performing the inspection or test;
 - 4. The nature of the inspection or test, including the:
 - i. Reason for inspection or test;
 - ii. Description of items being inspected or tested; and
 - iii. Results of inspection or test; and
 - 5. The date the work was performed.
- (g) After all required maintenance is completed, all applicable operational inspections, tests, and checklists shall be completed by a person experienced in proper operation of the ride, as per the operation manual. This work shall be performed within the timeframe specified in the operation manual and records shall be in compliance with N.J.A.C. 5:14A-4.7.
- (h) Individual tubs, sweeps, vehicle chassis, bents, towers, and supports to ground shall be uniquely identified and marked with no more than a combination of six characters or numbers to facilitate identification during maintenance and inspection.

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§ 5:14A-9.4 Identification, data plates and manufacturer's information

- (a) A data plate that conforms to the requirements of N.J.A.C. 5:14A-7.7 shall be affixed to each ride.
- 1. Where no manufacturer's serial number is available and the ride was manufactured prior to December 16, 2002, an identification number supplied by the owner and registered with the Department shall be used.

§ 5:14A-9.5 Assembly and disassembly

- (a) Assembly or disassembly of an amusement ride, and inspection thereof, shall be performed in accordance with the appropriate manual (N.J.A.C. 5:14A-2.14) by, or under the supervision of, an RCMT.
- 1. Exception: Assembly and disassembly required during the set-up or tear down of an inflatable amusement ride, as described in the set-up manual, shall not require an RCMT, but shall be performed by a maintenance technician.
- 2. Exception: Assembly and disassembly required during performance of a minor repair shall not require an RCMT, but shall be performed by a maintenance technician.
- (b) Assembly work shall be performed in a proper and workmanlike manner. Parts shall be properly aligned, and shall not be bent, distorted, cut or otherwise injured to force a fit. Parts requiring lubrication shall be lubricated in the course of assembly. Fastening and locking devices, such as bolts, caps, screws, cotter pins and lock washers, shall be installed where required for safe operation. Nuts shall be drawn tight, cotter pins shall be spread and lock nuts firmly set.
- (c) Parts which are excessively worn or which have been materially damaged shall not be used. Close visual inspection of parts shall be made during assembly to discover such wear or damage and immediate inspection of fastening devices shall be made after assembly to assure that they have been properly installed.
- (d) Tools of proper size and design, to enable work to be done in a proper manner, shall be used. Broken, damaged and unsuitable tools shall not be used.
- (e) Assembly or disassembly of amusement rides shall be done under light conditions adequate to permit the work to be properly performed and inspected.
- (f) A sufficient number of persons to perform work properly shall be engaged for assembly or disassembly. The public shall be prevented from entering the area in which work may create a hazard.
- (g) An amusement ride shall be inspected for compliance with the manufacturer's assembly requirements by a maintenance technician each time the ride is assembled.

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§ 5:14A-9.6 Prohibited use

- (a) No person shall knowingly use or permit to be used an amusement ride which is not properly assembled or which is defective or unsafe in any of its parts, components, controls or safety equipment.
- (b) No ride shall be used if all manufacturer's requirements, based on current bulletins, have not been completed.
- (c) No ride shall be used without a current Certificate of Compliance issued by the local fire inspector, if required.
- (d) No ride shall be used without a valid Certificate of Occupancy or Certificate of Approval issued by the local construction official, if required.
- (e) No ride shall be used without a current and valid annual ride permit except as allowed by this chapter.
- (f) No ride shall be used without a New Jersey State serial number except as allowed by this chapter.
- (g) No ride with a maximum safe operating wind speed shall be used if the wind velocity exceeds the manufacturer's recommended safe operating wind speed. Wind speeds shall be measured with an anemometer mounted at a high point capable of being read from ground level or the operations office or tied into the control system to prohibit starting or to shut down the ride if operating.
- (h) No ride shall operate after being issued a shut down order from the Department until the ride has had and passed a complete inspection by the Department unless the order allows operation to resume or unless re-inspection is waived by the Department.
- (i) No ride requiring NDT shall be operated without the receipt of a current NDT report by the Department based on the current NDT plan filed with the Department.
- (j) No ride shall be permitted to operate without correction of all items on the list of nonconformances issued by the inspector unless the inspector gives the operator a specific completion date and permission to operate until that date.

§ 5:14A-9.7 Set-up and installation

- (a) The site on which rides are to be erected shall be reasonably:
 - 1. Free of large rocks and debris that might pose a hazard;
 - 2. Well maintained to ensure safe operation;

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- 3. Free of holes that might pose a hazard;
- 4. Sufficiently level to allow safe operation of the ride; and
- 5. Far enough away from vehicle traffic to provide a safe environment for the public.
- (b) Wherever required by the manufacturer, proper protection between the amusement device and the ground shall be provided.
- (c) Whenever foundations are required for a ride, the owner shall submit the required documentation pursuant to N.J.A.C. 5:14A-2.12 and 2.13.
- (d) A mobile amusement ride set-up at a fixed location shall be permitted to have utility lines (that is, electric, water, pneumatic, hydraulic, liquid waste) for portable equipment, in compliance with the New Jersey Uniform Construction Code, N.J.A.C. 5:23, extending a maximum of 20 feet beyond the ride perimeter. Utility lines beyond 20 feet from the ride perimeter shall be part of the fixed location infrastructure and comply with N.J.A.C. 5:23 for permanent installations. Portable utility lines in at a fixed location, and connection of those lines, shall be surrounded by barriers to limit access to only authorized personnel. Means of shutting off utility supply that comply with applicable codes shall be provided at the point where a portable line connects to a permanent line.
- 1. Portable electrical wiring shall comply with Article 525 of the National Electric Code as required under the Uniform Construction Code, N.J.A.C. 5:23.
 - (e) Set-up and installation of amusement rides shall comply with N.J.A.C. 5:14A-7.5.
- (f) Set-up of an amusement ride and inspection thereof, shall be performed in accordance with the Set-Up Manual (N.J.A.C. 5:14A-2.14) by, or under the supervision of, an RCMT each time the ride is set-up.
- 1. Exception: Set-up of an inflatable amusement ride and inspection thereof, as described in the Set-Up Manual, shall not require an RCMT, but shall be performed by a maintenance technician.

§ 5:14A-9.8 Control of operation

- (a) All amusement rides shall have an operating manual. The owner of an amusement ride shall operate the ride in accordance with the manufacturer's operating manual. In the absence of a manufacturer's operating manual, the owner shall write an approved operating manual. Where any conflict occurs between the operating manual and this chapter, this chapter shall govern. The operating manual shall be kept at the site where the ride is in use and shall be available for use by the Department.
- (b) The owner shall ensure compliance with the requirements of N.J.A.C. 5:14A-4.8 for ride operators.

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- (c) The ride operator shall not allow anyone obviously under the influence of alcohol or drugs to ride the ride.
 - (d) The ride operator shall operate no more than one ride at any given time.
 - (e) The ride operator shall monitor the riders until the ride is completed.
- (f) The correct number of operators necessary to safely operate the ride, based on the operating manual, shall be on site and in the correct location(s).
- (g) The Department may require additional operators in the event of "blind spots." An additional operator with emergency stop capabilities shall be stationed in each "blind spot" location during operations.
- (h) An operator shall not leave the ride unattended without disabling the controls so the ride cannot be started by unauthorized persons. If the ride is left unattended and disabled during an operational day, the operator, upon returning, shall run a complete cycle of the ride.
- (i) The operator or operator assistants shall check each and every restraint, constraint, seatbelt, lap bar and any other device used in securing riders into a vehicle individually to assure that it is locked properly and that the rider fits properly in the safety system.
- (j) Additional operation start button(s) shall be provided where loading and unloading operations are being performed in an extended area where safety restraints, harness and other devices are required to prevent ejection from the ride during operations. The start button(s) shall work in series in that all button(s) shall be depressed by operators before the ride will start.
- (k) The operator or operator assistant shall check the height, weight or size of riders, as applicable, with the height mark, scale or other means of measurement provided by the owner. The means of measurement shall enable the operator to determine whether a rider meets the required limit in a "go, no go" fashion. No one who does not meet the required limits shall be permitted to ride the ride.
- 1. When the weight of a rider is used to determine entry to or use of an amusement ride, an accurate scale shall be provided.
- 2. A rider not meeting the approved height restriction may be accompanied by a companion if provided for in the manufacturer's operations manual or otherwise specified by the manufacturer. Companions shall meet any requirements given in the manufacturer's specifications. The larger person shall be by the exit door to ensure it stays closed and latched during operation unless this arrangement of riders creates a conflict with (k)3 below.
- 3. Where riders are of disparate sizes, riders shall be placed in the ride such that any action caused by centrifugal forces shall push the weight of the lighter rider into the heavier rider.
- 4. Riders at or above the maximum weight may be allowed if such riders are provided for in the manufacturer's operations manual. Distribution of such riders shall be as per the operations manual.

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- (I) All powered amusement rides and devices shall be equipped with a properly functioning operator presence device.
- 1. The operator shall be in constant contact with the operator presence device at all times during normal operation of the ride. This rule shall not be construed to prohibit riders from using amusement ride operating controls designed for use by a rider.
 - 2. The operator presence device shall be tested at each inspection.
- 3. Exception: For rides and attractions where the operator presence device does not add to safety, including roller coasters, bumper cars, log flumes, go karts and some computer controlled rides, an operator presence device shall not be required.
- (m) The ride operator shall exercise control over the ride to prevent dangerous actions by a rider.
- (n) In the event of an emergency stop, routine stop (for the purpose of loading or unloading of a rider), or a stop for any other reason, the operator or operator assistants shall assure that no other riders have exited their vehicles unexpectedly.

§ 5:14A-9.9 Operator qualifications and training

- (a) The ride operator shall be at least 16 years of age.
- (b) The ride operator or operator assistant shall not operate any ride while under the influence of drugs or alcohol.
- (c) The ride operator shall be properly trained before being assigned the duties of operating a ride. The operator training shall include, but shall not be limited to, any manufacturer's recommendations for the operation of the ride. The owner shall require a certification to be signed by each ride operator and operator assistant indicating the ride name and operator's level of authority regarding the ride. This certification shall be kept on file by the owner for at least three years.
- (d) The ride operator shall have a copy of the manual and shall have the ability to read and understand the manual as written by the manufacturer and to safely operate and communicate safe riding policies to the public for the ride.
- (e) The operator and all operator assistants shall have a complete knowledge of the operation of the restraint system, lap bar locking system, seatbelts and the proper way to seat a rider in a vehicle.
- (f) The operator and all operator assistants shall be trained to be aware of the motions and sounds attributed to the normal operation of the ride. The operator shall be familiar with how the ride looks when it is functioning normally, and be alert to any unusual conditions. If there are any changes in the normal operating condition, operation shall cease and the owner shall be called immediately. The owner will decide the appropriate action to be taken.

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(g) Operators and operator assistants shall know the whereabouts of all safety equipment such as fire extinguishers, emergency main electrical disconnect, lock-out point and nearest telephone for routine or emergency assistance.

§ 5:14A-9.10 Lock-out procedure

- (a) All amusement ride disconnecting devices shall be provided with a means of lock-out. Where rides have mechanical, pneumatic or hydraulic energy, these shall have a means of being locked out when necessary for doing maintenance and inspections.
- (b) The ride operator or maintenance staff shall lock-out the disconnect switch when restoration of power to an amusement ride could create a hazard to persons during the performance of maintenance, repair, inspection or an emergency evacuation of riders, and ensure that it remains locked-out until such time that restoration of power will not create a hazard.
 - (c) All amusement ride owners shall have in place a written lock-out procedure.
- (d) A lock-out shall not be removed by any person other than the person who installed it, except as allowed by the written procedure for lock-outs. Lock-outs put in place by the Department shall be removed only by the Department.

§ 5:14A-9.11 Maintenance and repair

- (a) Amusement rides and attractions shall have no corrosion or pitting affecting structural integrity or the functioning of key components.
- (b) Rides shall be operated and maintained in compliance with the manufacturer's specifications for fatigue loading. No holes shall be drilled into tubing that might compromise the integrity of the structure without written permission from the manufacturer. In the event the manufacturer does not exist, a professional engineer licensed to practice in the State of New Jersey shall review and approve, in writing, the actions and reasons for said actions. The manufacturer or the professional engineer shall show, from materials standards or from the maintenance manual, that the proposed hole sizes and locations will not compromise the integrity of the structure.
- (c) No structural shaft may be cross-drilled or welded without the written permission of the manufacturer. In the event the manufacturer does not exist, a professional engineer licensed to practice in the State of New Jersey shall review and approve, in writing, the actions and reasons for said actions.
- (d) During installation, set-up to begin seasonal operational or assembly after disassembly for mechanical malfunction, an owner shall use or order to be used fasteners supplied by or the equivalent to those specified by the manufacturer.
 - 1. All pins used shall adhere to manufacturer's specifications in length, hardness and type.

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- 2. All safety pins, such as "R" keys, and "cotter pins," shall be as per manufacturer's specifications.
 - 3. All fasteners shall be tightened to manufacturer's specified torque values.
- (e) Before being used by the public, amusement rides shall be so placed or secured with blocking, cribbing, outriggers, guys or other means as to be stable under all operating conditions.
- (f) Any and all welding done on the amusement ride shall be performed by a welder certified by the American Welding Society (AWS) or an acceptable alternative welding certification with proof of certification on site at all times.
- (g) Any and all work performed by a machine shop, repair facility, or a third party of any kind for any reason shall be done to the documented specifications of the manufacturer or of a professional engineer licensed to practice in the State of New Jersey, as appropriate, based on the approved written repair plan.
 - (h) All work done shall be done to manufacturer's specifications.
- (i) Prior to re-inspection following a repair, documentation for the repair shall be provided from the maintenance manual or from an original letter from the manufacturer.
- 1. When requested by the Department, copies of all correspondence regarding a specific repair not covered in the manual shall be sent to the Department. Copies of subsequent correspondence shall be sent as they occur.
- 2. If a manufacturer no longer exists or no other manufacturer has taken over responsibility for the technical support of the ride, then the ride owner shall make the repair following accepted engineering practice. Notice of such repair, including a description of the repair procedure, shall be given to the Department.
- i. The owner takes responsibility for the repair and may be required to have the repair certified by a licensed professional engineer or other individual acceptable to the Department.
 - (j) Repair of an amusement ride shall be performed by, or under the supervision of, an RCMT.
- 1. Exception: A minor repair shall not require an RCMT, but shall be performed by a maintenance technician.

§ 5:14A-9.12 Vehicle integrity

- (a) The interior and exterior parts of all rider carrying amusement rides with which a rider may come in contact shall be smooth and rounded, free from sharp, rough or splintered edges and corners, with no protruding studs, bolts, screws or other projections which might cause injury.
- (b) Interior parts upon which a rider may be forcibly thrown by the action of the ride shall be adequately padded.

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- (c) Seatbelts, lap bars, straps, shoulder harnesses, chains, secondary locking devices and any other form of restraint, constraint or containment device shall be in proper working order or vehicle shall be tagged "Out of Service."
- (d) Handholds, bars, footrests and other equipment as may be necessary for safe entrance and exit to and from amusement rides shall be provided and maintained in a safe condition. Such equipment shall be of sufficient strength to support the riders.
- (e) Where only individual units of a ride, such as cars, seats or other carriers are defective and not in compliance with this chapter, such units shall be taken out of service and clearly marked with a sign reading "Out of Service," provided, however, that such defects do not jeopardize safety and that removing these units does not unbalance the ride.

§ 5:14A-9.13 Voice communication and signal system

- (a) Voice communication shall be provided between the ride operators at the entrance, intermediate points, and the termination of an amusement ride where voice communication improves control of the ride by reducing a hazardous condition created by distance or lack of visibility between these points.
- (b) An additional operator and a signal system shall be provided where the operator of the ride does not have a clear view of the point at which riders are loaded or unloaded. The additional operator shall be stationed so as to be able to observe all areas not visible to the operator of the ride.
- (c) For rides and attractions which require a spoken message of instruction or warning prior to operation, this message shall be given in a manner that is clearly audible to all riders prior to the start of each ride cycle. This message shall be in writing in the operation manual.
- (d) Any code of signals adopted for the operation of any amusement ride shall be printed and kept posted at both the operator and signalman's stations. All persons who may use these signals shall be carefully instructed in their use.
- (e) Signals for the movement or operation of an amusement ride shall not be given until all riders and other persons who may be endangered are in a position of safety.

§ 5:14A-9.14 Proximity to high voltage lines

Amusement rides shall be located so that they conform to the requirements of the High Voltage Proximity Act, N.J.S.A. 34:6-47.1 et seg.

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§ 5:14A-9.15 Ride loading and unloading

- (a) The means of loading and unloading from each ride shall be maintained in compliance with the specifications and N.J.A.C. 5:14A-7.6.
- 1. Controls and dimensions in place as of the effective date of these regulations shall be permitted to remain. All replacement components shall comply with the requirements of N.J.A.C. 5:14A-7.6 to the greatest extent possible.

§ 5:14A-9.16 Means of access and egress

- (a) Safe and adequate means of access and egress from amusement rides shall be maintained and shall be free from debris, obstructions, projections and slipping, tripping and other hazards.
- (b) A building housing an amusement ride shall comply with the requirements of the Uniform Construction Code (N.J.A.C. 5:23) or the Uniform Fire Code (N.J.A.C. 5:70-4), as appropriate.
- (c) Handrails shall be provided for stairs or ramps with a change in elevation of 30 inches or greater. Guardrails shall be provided along all open-sided walking surfaces, platforms, stairways, ramps and landings which are located more than 30 inches above the floor or grade below.
- 1. Handrails or guardrails shall be continuous without interruption and shall be free of any sharp or abrasive elements.
- 2. Existing guardrails shall be at least 30 inches above the ramp surface or nose of steps and 42 inches above landings.
- i. Newly-installed or replacement guardrails shall be at least 42 inches above the ramp surface, nose of steps or landing.
- 3. Handrails and guardrails shall be maintained so that they are not hazardous for use under emergency exiting conditions.

§ 5:14A-9.17 Safety brakes

Safety brakes and anti-rollback devices shall be provided and maintained in compliance with sections 13.4 and 13.7 of ASTM F 2291, as amended in N.J.A.C. 5:14A-7.2, and N.J.A.C. 5:14A-9.3.

§ 5:14A-9.18 Protection against moving parts or other hazards and clearance envelopes

(a) Owners, operators and operator assistants shall be aware of any construction equipment or vehicles operating in the immediate vicinity. Any equipment encroaching on the normal range of

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motion (clearance envelope) of the ride shall be removed to a safe distance or the ride shall not be operated.

- (b) An amusement ride shall not be used or operated while any person is so located as to be endangered by it. Areas in which persons may be so endangered shall be fenced, barricaded or otherwise guarded against public intrusion.
- (c) Where a public access, queuing, loading or unloading area is under the ride, overhead protection from objects that might reasonably be expected to fall from a ride (for example, items carried or worn by riders) shall be provided.
- (d) Machinery used in or with an amusement ride shall be enclosed, barricaded or otherwise effectively guarded against contact. Guards removed for maintenance purposes shall be replaced before normal operation is resumed.
- (e) Amusement rides which are self-powered and which are operated by a rider shall have the driving mechanism so guarded and the guard so secured in place as to prevent riders from gaining access to the mechanism.
 - (f) Each mechanical ride shall be rendered inoperable when not attended or in use.
- (g) Clearance envelopes shall be maintained as per manufacturer's specifications at all times during the operation of an amusement ride.
- (h) Decorations, such as flags, or lighting fixtures shall be secured in a fashion that they will not create a hazard to riders or members of the public in the event of high winds or normal vibration caused by moving equipment and shall be placed far enough from the ride so as not to encroach on the clearance envelope.

§ 5:14A-9.19 Rider restraint, restrictions, containment

- (a) Restraining, containing, or cushioning devices shall be maintained in compliance with the manufacturer's specifications and Chapter 6 of ASTM F 2291, as amended in N.J.A.C. 5:14A-7.2.
- 1. The design requirements of Chapter 6 of ASTM F 2291, as amended in N.J.A.C. 5:14A-7.2 shall not apply to devices in place as of December 16, 2002. Replacement devices shall comply with Chapter 6 of ASTM F 2291, as amended in N.J.A.C. 5:14A-7.2 to the greatest extent possible.

§ 5:14A-9.20 Overload and over speed

(a) An amusement ride shall not be overcrowded, or loaded in excess of its safe carrying capacity. The maximum safe number of riders listed in the manufacturer's operations manual and on the data plate affixed to the ride shall govern loading.

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- (b) Amusement rides and attractions clearly suitable for children only shall not carry adults, unless allowed by the manufacturer's operations manual.
- (c) Amusement rides shall not be operated at an unsafe speed or at any speed beyond that recommended by the manufacturer. The maximum safe operating speed of an amusement ride can be found in the operations manual provided by the manufacturer and on the data plate affixed to the ride.
- (d) An amusement ride capable of exceeding its maximum safe operating speed shall be provided with a maximum speed-limiting device.
- 1. An amusement ride requiring a maximum speed-limiting device shall have the device connected in the control circuit immediately bringing the ride to a safe stop if the ride exceeds the maximum safe operating speed or the device is disabled or malfunctioning.
 - 2. The speed-limiting device shall not be by-passed or disabled in any way.
- 3. The Department, when necessary, shall require the testing of speed limiting devices by the owner or owner's representative for reasons of ensuring proper functioning of these devices.

§ 5:14A-9.21 Electrical equipment and wiring

- (a) All electrical equipment and wiring shall be installed and maintained in compliance with Chapter 12 of ASTM F 2291, as amended in N.J.A.C. 5:14A-7.2.
- 1. Equipment and wiring in place as of December 16, 2002 shall be permitted to remain provided that it is not in an unsafe or hazardous condition. Replacement or new equipment or wiring shall conform to the requirements of Chapter 12 of ASTM F 2291, as amended in N.J.A.C. 5:14A-7.2.
- i. Such works shall be identified in the maintenance log required to be maintained pursuant to N.J.A.C. 5:14A-9.3.
- 2. The continuity of the grounding conductor system used to reduce electrical shock hazards shall be verified as outlined in section 525.32 of the NEC each time a portable ride is connected.
- 3. During assembly/disassembly, no energized points/surfaces shall be exposed to any personnel.

§ 5:14A-9.22 Pressure vessels, air compressors, pneumatic and hydraulic systems

(a) Air compressors, air compressor tanks and appurtenances used in connection with amusement rides and attractions shall be designed, constructed, equipped and maintained to ensure safe operation.

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- 1. Air compressors and holding tanks used in air systems for amusement rides shall be marked with one of the following certifications:
 - i. ASME: American Society of Mechanical Engineers; or
- ii. An equivalent certification approved in advance by the Bureau of Boiler and Pressure Vessel Compliance in accordance with N.J.A.C. 5:11.
- 2. Air compressor tanks and other air receivers used in connection with air compressors shall be inspected to manufacturer's specifications at least once a year by a qualified person and a record of each inspection shall be kept in the maintenance log at the ride at all times.
- 3. Air compressor tanks and other air receivers used in connection with air compressors shall have the maximum allowable working pressure conspicuously marked thereon.
- (b) Air compressor tanks and other receivers used in connection with air compressors shall comply with the provisions set forth at N.J.A.C. 5:11, concerning boilers, pressure vessels and refrigeration.
- (c) Air systems used in connection with safety-related devices on rides and attractions shall have a pressure-monitoring device which causes an emergency condition and ride stoppage in the event of loss of air pressure.
- 1. In the event of power or air system pressure failure, all components shall fail to a position which will put the ride into the safest condition even if a mechanical means is needed to do that.
- 2. In the event of restoration of air or power, the system shall not operate automatically without action by the operator to reset the system and restart the ride.
- (d) Pneumatic tubing, hose and fittings shall conform to Society of Automotive Engineers (SAE) standards or equivalent.
- (e) Hydraulic or pneumatic systems and other related equipment used in connection with amusement rides shall be free of leaks, clean and maintained to ensure safe operation at all times.
- (f) When necessary, hydraulic systems shall be equipped with a thermostat to sense overheating and prevent premature failure of components and ride breakdown.
- (g) An amusement ride which depends upon hydraulic or pneumatic pressure to maintain safe operation shall be provided with a positive means of preventing loss in hydraulic pressure that could result in injury to a rider.
- 1. In the event of power, air pressure or hydraulic pressure failure, all components shall fail to a position which will put the ride into the safest condition even if a mechanical means is needed to do that.
- 2. In the event of restoration of air, power or hydraulic pressure, the hydraulic system shall not operate automatically without action by the operator to reset the system and restart the ride.

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(h) Hydraulic or pneumatic lines shall be guarded so that sudden leaks or breakage will not endanger the riders or the public.

§ 5:14A-9.23 Fire prevention

- (a) All rides manufactured after December 16, 2002 shall meet and be maintained in compliance with the requirements of N.J.A.C. 5:14A-7.4.
- (b) Replacement materials shall comply with the flame retardancy requirements of N.J.A.C. 5:14A-7.4.
- (c) Approved fire extinguishers shall be provided in accordance with NFPA 10. Flammable waste, such as oily rags and other flammable materials, shall be placed in covered metal containers. Such containers shall not be kept at or near exits.
- (d) Gasoline and other flammable liquids and flammable gases when stored shall be kept in approved containers in reasonably cool and ventilated places and in accordance with Federal guidelines for storage of such materials. Smoking or the carrying of lighted cigars, cigarettes, pipes, candles or other open flame is prohibited in any area where such liquids or gases are stored or are transferred from one container to another.

§ 5:14A-9.24 Non-destructive testing

- (a) Non-destructive testing shall be performed by the owner pursuant to the provisions of the nondestructive testing plan required at N.J.A.C. 5:14A-2.15, with such additional requirements as may be established by the Department for a specific ride.
 - (b) The nondestructive testing plan shall include, but not be limited to:
 - 1. The part to be tested, including photographs or illustrations;
 - 2. The percentage of parts of each type to be tested;
 - 3. How often the parts are to be tested; and
 - 4. Type of NDT specified by manufacturer.
 - (c) The owner shall prepare a report, in writing, for all non-destructive tests performed.
 - (d) The report of the non-destructive tests shall include the following:
 - 1. The name and business address of the owner;
 - 2. The date and location where the test was performed;
 - 3. The name of the ride;
 - 4. The manufacturer's name and the serial number of ride;

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- 5. The name and business address of firm that conducted the test;
- 6. The type of non-destructive test performed and a description of the test equipment by name and serial number;
- 7. The results and certification of results and the criteria used for acceptance or rejection of the part(s);
 - 8. The part name, part number, and quantity of each part that was inspected;
- 9. A statement that the test was performed in compliance with the ride manufacturer's maintenance manual or bulletin, identifying the bulletin by number and giving the date of publication or revision, a copy of the NDT statement, U.S. Consumer Product Safety Commission (CPSC) test requirement, owner's requirement or Department requirement being followed;
 - 10. A detailed map, drawing, or photograph of sufficient clarity showing the area tested;
- 11. If rejected, a detailed sketch of the area repaired, the manufacturer's recommendation for repair, repair method used and the results of the retest;
 - 12. Level of certification and signature of person performing test; and
 - 13. Level of certification and signature of person interpreting the test results.
- (e) The report required in (d) above shall be received by the Department prior to operation of the ride in the State or prior to the expiration date of the NDT report on file with the Department.
- (f) The inspector witnessing the NDT or inspecting the ride for the first time shall receive a copy of the technician's field report to submit with the inspection report.
- (g) In the event a visual NDT inspection is ordered by the manufacturer or a regulatory agency, and discontinuities are found, the owner or regulatory agency shall order additional NDT inspection using another more stringent method of NDT inspection.
- (h) A visual weld or crack inspection recommended or required by a manufacturer in the form of a supplemental notification bulletin requiring a "qualified person" perform the inspection, shall be done by an AWS Certified Weld Inspector or qualified NDT inspector in accordance with ASTM Practice E 543. The testing shall be done in accordance with the procedures and acceptance criteria of AWS D1.1, section 6 Inspections.

§ 5:14A-9.25 Wind and storm hazards

- (a) Operators and operator assistants shall be aware of weather conditions including, but not limited to, wind, rain, lightning and any approaching storm.
- (b) An amusement ride which is exposed to wind or storm shall not be operated under dangerous weather conditions except to release or discharge riders.

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(c) Manufacturer wind and weather related restrictions shall be followed during periods of wind or storm. The restrictions shall be addressed in the operation manual, which shall be on site at all times.

§ 5:14A-9.26 Accident, incident or mechanical breakdown reporting

Accidents, incidents or mechanical breakdowns shall be reported as required by N.J.A.C. 5:14A-4.13.

§ 5:14A-9.27 Imminent danger

- (a) If the Department finds that an amusement ride presents an imminent danger, a notice warning all persons against the use of the ride shall be attached to the ride. Such notice shall not be removed until the ride is made safe, re-inspected and then the warning notice will be removed by the Department.
 - (b) The amusement ride shall not be used while the Department's notice is posted.

§ 5:14A-9.28 Cleanliness

- (a) A suitable number of trash containers shall be provided in and around amusement rides. Accumulations of trash shall be promptly removed.
- (b) All parts of amusement devices and temporary structures used by riders or customers shall be maintained in a clean condition.
 - (c) The operator and operator assistants are responsible for the cleanliness of the ride.

§ 5:14A-9.29 Water quality

- (a) Water impounded by the ride owner and used as an integral part of a water amusement ride, whether it be a part of a water contact ride or a water noncontact ride, which could expose the public to a safety or health hazard shall be maintained in a safe and sanitary condition in accordance with this section.
- (b) The owner of any water amusement ride as described in (a) above shall provide evidence of the sanitary condition of such water when requested by the Department and shall comply with N.J.A.C. 8:26, as applicable.
 - (c) Impounded water, when in use, shall be:

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- 1. Sufficiently clear to permit the bottom of the water reservoir, at its deepest point, to be visible from an outside edge of the reservoir;
 - 2. Aesthetically pleasing;
 - 3. Free of floating or suspended matter; and
 - 4. Sanitary for water contact rides.

§ 5:14A-9.30 Lighting

Amusement rides, access thereto, and means of egress therefrom, while in operation or occupied, shall be provided with illumination by natural or artificial means sufficient to guard against injuries to the public.

§ 5:14A-9.31 Wire rope

- (a) Wire rope on amusement rides shall be thoroughly examined periodically. Wire rope found to be damaged shall be replaced with new rope of proper design and capacity as per the manufacturer's specifications. Any of the following conditions shall be cause for replacement:
- 1. In running ropes, six randomly distributed broken wires in one rope lay or three broken wires in one strand in one rope lay;
 - 2. In pendants or standing ropes, evidence of more than one broken wire in one rope lay;
- 3. Any condition which causes the loss of more than one-third of the original diameter of the outside individual wires:
 - Severe corrosion;
 - 5. Kinking, crushing, bird-caging, or other damage resulting in distortion of the rope structure;
 - 6. Heat damage;
- 7. Reduction from normal diameter of more than 3/64 inch for diameters up to and including 3/4 inch, 1/16 inch for diameters, 7/8 inch to 1 1/8 inches, 3/32 inch for diameters 1 1/4 inches to I 1/2 inches:
- 8. Bird-caging or other distortion resulting in some members of the rope structure carrying more load than others; or
- 9. Noticeable rusting or development of broken wires in the vicinity of attachments. When this condition is localized in an operational rope, it may be eliminated by making a new attachment.
- (b) Wire ropes used to support, suspend, bear or control forces and weights involved in the movement and utilization of tubs, cars, chairs, seats, gondolas, other carriers, the sweeps, or other

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supporting members of an amusement ride shall not be lengthened or repaired by splicing. In addition, these shall have a redundant support system capable of carrying the full load. Redundancy of the support system may also be accomplished with a design that includes a higher safety factor in the manufacture of the support system.

- (c) Rides utilizing vehicles hanging or suspended from a wire rope shall relocate the vehicles on an annual basis as required by manufacturer's specifications.
 - (d) Previous fastening points shall be clearly marked for identification when disassembling.

§ 5:14A-9.32 Internal combustion engines

- (a) Internal combustion engines shall be of adequate type, design, and capacity to handle the design load.
- (b) Where fuel tanks of internal combustion engines for amusement rides are not of adequate capacity to permit uninterrupted operation during normal operating hours, the amusement ride shall be closed down and unloaded or evacuated during the refueling procedure. The fuel supply shall not be replenished while the engine is running.
- (c) Where an internal combustion engine for an amusement ride is operated in an enclosed area, the exhaust fumes shall be discharged to the outside.
- (d) Internal combustion engines for amusement rides shall be located to permit proper maintenance and shall be protected by guards, fencing or enclosure.

§ 5:14A-9.33 Rider conduct

- (a) The owner shall have the right to refuse any member of the public admission to a ride if his or her bearing or conduct might endanger himself or herself or other members of the public.
- (b) The owner shall have the right to refuse admittance to any ride if the intended rider's health or physical condition makes it unsafe for him or her to use the ride.
- (c) The owner shall refuse a rider admission to a major or super ride if the rider cannot meet a companion or height restriction if the ride is subject to such a restriction. Legible signs to this effect shall be posted in full view of the public seeking admission to major or super rides.
- (d) The following sign shall be placed in a conspicuous public place on or near the ride at a height that is easy to read.
- 1. "State law requires that each rider must obey all written warnings and directions regarding this ride and refrain from behaving in a reckless manner which may cause or contribute to injury to the rider or others. Failure to comply is a violation of law and subject to penalty under the New Jer-

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sey Code of Criminal Justice pursuant to N.J.S.A. 5:3-36.1. Violators may be subject to a fine of up to \$ 1,000 and imprisonment of up to six months."

2. This sign is in addition to any other required signage per this chapter.

§ 5:14A-9.34 Warning sign

- (a) On major or super rides that expose a rider to high speed, substantial centrifugal force or a high degree of excitement, the owner shall post a conspicuous warning sign at the entrance of the ride advising the public of the potential risk to riders.
- (b) The signs required shall be in sharply contrasting colors and be legible to a person of normal vision standing at a point of entrance to the ride.
 - (c) The sign required by this section shall read as follows or express an equivalent warning:

"Normal operation of this ride may be hazardous to the following people:

Those who are pregnant;

Those with heart conditions;

Those with serious back problems;

Those subject to motion sickness; or

Those with other health problems that may make them more vulnerable to injury.

The following people shall not use this ride:

Those under the influence of alcohol or drugs."

- 1. Exception: Signs installed before October 1, 2002 and conforming to N.J.A.C. 5:14-5.11 may continue to be used until they are replaced on a normal replacement basis.
- (d) Operators and operator assistants are responsible for the maintenance of signage in or around the ride. Rides and attractions requiring signs inside each vehicle instructing riders of the safest way to ride shall be maintained at all times. If any vehicle is missing the safety signage, the vehicle should be tagged "Out of Service" until the sign can be replaced.
- (e) All rides and attractions shall have a legible sign in plain view of the riding public indicating the height restriction for that ride. Any other limitations on who can use the ride shall be clearly stated on the sign.
- (f) The owner or operator shall not post any sign that prohibits or discourages any handicapped or physically challenged person from using the ride, provided, however, that this prohibition shall not apply to any notice of manufacturer's requirements for safe use of the ride.

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§ 5:14A-10.1 Title; scope; intent

- (a) This subchapter, adopted pursuant to the authority of the Carnival-Amusement Rides Safety Act and entitled "Special Provisions for Bungee Jumping Operations," shall be known and may be cited throughout the rules as N.J.A.C. 5:14A-10 and when referred to in this subchapter may be cited as "this subchapter."
- (b) This subchapter establishes special rules to maximize safety for bungee jumpers and spectators while bungee jumping operations are in progress.
- (c) The scope of this subchapter shall be to set forth specific rules applicable to bungee jumping operations. These rules shall be in addition to the general provisions of the rules governing carnival and amusement rides in this chapter. Where a specific provision covering bungee jumping conflicts with the general provisions of this chapter, the provision set forth in this subchapter shall govern.

§ 5:14A-10.2 Definitions

When used in this subchapter, the following words and terms shall have the following meanings, unless the context clearly indicates otherwise:

"Air bag" means a device that cradles the body using a multi-cell release breather system to dissipate the energy due to a fall, thereby allowing the jumper to land without an abrupt stop or bounce.

"Approved operating site" means the area of bungee jumping operations including the preparation area, the jump space, the landing area, and the recovery area as shown on the site plan drawings submitted by the operator pursuant to this chapter with the registration of a bungee jumping operation and as approved by the Department.

"Binding" means material tied together and attached to the bungee cord and used to wrap and hold together the jumper's ankles.

"Bungee cord" means the elastic rope attached to the jumper that lengthens and shortens to produce a bouncing action.

"Bungee cord end connections" means a static line runner commonly made from tubular nylon webbing.

"Bungee jumping" means the activity where a person free falls from a height and the person's descent is limited by his or her attachment to a bungee cord.

"Bungee jumping operation" means all activity associated with bungee jumping.

"Equipment" means each component of a bungee jumping operation, including power or manually operated devices to raise, lower and hold loads.

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"Harness" means an assembly to be worn by a jumper and attached to a bungee cord.

"Jump master" means a person at least 18 years of age who is responsible for the supervision and control of the entire bungee jumping operation.

"Jump operator" means a person at least 18 years of age who assists the jump master preparing a jumper for bungee jumping.

"Jump point" means the position from which the jumper leaps from the platform.

"Jumper" means a person at least 18 years of age who leaps from a platform while attached to a bungee cord.

"Landing area" means the surface area on which the jumper is lowered.

"Platform" means the designated part of the structure from which the jumper leaps.

"Preparation area" means a separate area on the support structure or part where the jumper is prepared for bungee jumping.

"Recovery area" means an area near the landing area where the jumper may choose to recover from the jump before exiting the bungee jumping operation site.

"Scale" means a weighing device which has been approved as to type, construction and operation by the Superintendent of the State Office of Weights and Measures pursuant to N.J.S.A. 51:1-93.

"Structure" means a permanent building or tower used for bungee jumping.

§ 5:14A-10.3 Prohibited activities, practices and conditions

- (a) The following activities, practices, and conditions shall be prohibited:
- 1. Catapulting, launching or reverse jumping, which shall mean the practice of stretching the bungee cord while attached to the jumper who is held on the ground, and then released and propelled upward:
- 2. Double or tandem jumping, which shall mean the practice of two or more individuals jumping simultaneously from the same jump platform, whether from a common bungee cord or individual bungee cords;
- 3. Sandbagging, which shall mean the practice of loading excess weight to a jumper intending to release the excess weight at the bottom of the jump, thus gaining extra momentum on the rebound;
 - 4. Stunt jumping, which shall mean combining any other activity with bungee jumping;
- 5. Bungee jumping from a mobile or fixed-type crane or lifting device not designed, approved or manufactured to carry, transport or, in any fashion, move a person;

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- 6. A bungee jumping operation that is in violation of any Federal, State or local law or regulation with respect to any part of its operation;
 - 7. Any bungee type not specifically approved by the Department;
- 8. More than two persons shall not be allowed on the jump point, except that one additional employee who is approved for training shall be allowed for training purposes only; and
- 9. A bungee jumping operation that is exposed to wind velocity exceeding 25 miles per hour, or other dangerous weather condition;
- i. Wind velocity shall be measured by an anemometer mounted on the tower at least as high as the jump point and shall be capable of being read from ground level as well as the jump point.

§ 5:14A-10.4 Inspection fee and permit fee

An owner of a bungee jumping operation shall comply with all provisions of N.J.A.C. 5:14A-2 pertaining to inspection and permitting procedures and requirements, except that the inspection fee for a bungee jumping operation shall be \$ 1,000 and a duplicate permit fee shall be \$ 50.00.

§ 5:14A-10.5 Operating manual

- (a) There shall be an operating manual for the safe operation of bungee jumping on the each site of a bungee jumping operation. The manual, including all amendments, shall be held on the site and shall be freely available to the Department.
 - (b) The manual shall include, but not be limited to, the following:
 - 1. A site plan;
 - 2. A description of operating system and equipment;
 - 3. Job procedures for each task in the operating system;
 - 4. Job descriptions;
 - 5. Maintenance inspection records;
 - 6. Testing procedures and recording;
- 7. Criteria for the periodic maintenance or replacement of rigging, hardware, bungee cords, harnesses, or lifelines as required by the manufacturer;
 - 8. An emergency plan and procedures;
 - 9. Reports of injuries, damage, and incidents;
 - 10. Bungee cord and equipment log books;

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- 11. Inspection procedures, standards, and follow-up actions;
- 12. Instructions for setting up the site equipment;
- 13. Lists of all staff, including their qualifications and training; and
- 14. Testing and checking procedures for the following:
- i. Personnel protective equipment including gloves, harnesses, and life lines;
- ii. The communication system(s)-communications shall be maintained between all operations personnel involved with the actual jump. For example, the jump master and jump operator shall be in communication at all times by way of telephone or radio;
 - iii. Jump equipment and rigging;
 - iv. Telephone service to reach emergency medical personnel;
 - v. Documentation of test jumps and bungee cord performance;
 - vi. Documentation of staff briefing for the day's operations; and
 - vii. Exclusion of the public from the operating areas.

§ 5:14A-10.6 Insurance, bond or other security

An owner of a bungee jumping operation shall adhere to all of the provisions found at N.J.A.C. 5:14A-2.9 pertaining to insurance, bond or other security.

§ 5:14A-10.7 Engineering review

- (a) Before an engineering review can be conducted, the following shall be submitted to the Department:
 - 1. One complete set of ride drawings signed and sealed by a licensed professional engineer;
- 2. One complete set of ride design calculations signed and sealed by a licensed professional engineer, including local environmental conditions;
 - 3. A NDT Statement; and
 - 4. Fixed site requirements, including:
- i. Foundation drawing(s) and calculations or a letter signed and sealed by a New Jersey licensed professional engineer certifying that the existing foundation, pad, or other support structure supports the ride in all conditions;
 - ii. Soil data for rides for which new foundation work was required; and

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iii. One copy of the applicable Uniform Construction Code Certificate of Occupancy or Certificate of Approval.

§ 5:14A-10.8 Engineering certification

- (a) An engineering certification shall be required before a bungee jumping operation shall function in this State.
- (b) An application for an engineering certification for a bungee jumping operation shall include two copies of the following documents, signed and sealed by a licensed professional engineer:
 - 1. Certification of the hoisting equipment, tower or other methods of hoisting or suspension;
 - 2. A plot plan of the jump site within 200 feet of a bungee jumping operation;
 - 3. Schematic drawings of structure foundation and load bearing certification;
- 4. An elevation schematic and calculations of G forces, bungee height and safety zone between maximum bungee elongation and air bag;
- 5. Certification of all equipment used in a bungee jumping operation, such as bungee ropes, harnesses, carabiners, and straps;
 - 6. Certification of operation, training and maintenance manuals;
 - 7. Certification of inspection of the entire bungee jumping operation and equipment;
- 8. Certification that documents that design and construction are in accordance with accepted engineering practices, and that all reasonably foreseeable hazards have been guarded against in design; and
- 9. A definitive statement by a professional engineer that the bungee jumping operation is safe and acceptable to operate with the equipment identified in the submittal.

§ 5:14A-10.9 Mechanical equipment

(a) Scales:

- 1. Scales shall be tested and sealed by a New Jersey Weights and Measures officer at least once a year; and
 - 2. Scales shall be tested using certified test weights before the opening of the ride each day.
 - (b) Weights:
- 1. Each bungee jumping operation shall obtain test weights that have been tested and sealed by the Superintendent of the State Office of Weights and Measures in the aggregate capacity of 300 pounds.

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- (c) Bungee cords:
- 1. Operating testing: All commercial operators shall follow the inspection and testing recommendations set forth by the bungee cord manufacturer;
- 2. All bungee cord manufacturers shall provide specifications to purchasers on maximum usage of bungee cords expressed in number of jumps;
- 3. Bungee cords shall be retired when the bungee cords exhibit deterioration or damage or when maximum usage expressed in number of jumps as specified by the manufacturer is reached, whichever is first. All commercial operators shall have an auditable system for recording the number of jumps on each individual bungee cord in use. This data shall be readily available to the Department upon request; and
- 4. Bungee cords retired from use shall be destroyed by cutting the bungee cord into five-foot lengths.
 - (d) Bungee cord end connections:
- 1. All bungee cord end connections shall be of a size and shape to allow easy attachment to the harnesses and to the rigging. On multiple cord systems, each bungee cord shall meet its own independent end connection;
- 2. All bungee cord end attachment points subject to wear shall be retired when the bungee cord is retired;
- 3. On multiple bungee cord systems, all bungee cord end attachment points shall be bound together in a protective sheath that allows the individual ends to move with respect to each other; and
- 4. All bungee cords shall be inspected each day for wear, slippage, or any other abnormalities, unless the manufacturer specifies more frequent inspections.
 - (e) Harnesses:
 - 1. A harness shall be either:
 - i. A full body harness; or
- ii. An ankle harness or ankle strapping that is tied off in such a manner so as to secure the jumper to the cord end connection. The ankle harness/strapping shall evidence redundancy. A link to a waist harness shall be required;
 - 2. No harness shall cause bruising.
 - 3. Harnesses shall be available to fit the range of jumper sizes accepted for jumping.
- 4. The harness shall have a minimum breaking strength of 4,000 pounds, shall be suitable for the type of jumping conducted, and shall be manufactured by an organization approved to manufacture similar harnesses to an approved standard; and

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- 5. Each harness shall be inspected prior to harnessing a bungee jumper and shall be removed from service when it exhibits signs of excessive wear, damage, or when it has met the manufacturer's maximum usage allowance.
 - (f) Carabiners and locking devices:
- 1. Specification: Carabiners shall be of the screw type lock with a minimum main axis breaking strength of 8,000 pounds;
 - 2. Use: A minimum of two carabiners shall be used at each bungee cord end connection point;
- 3. Design and construction: All carabiners shall be designed and constructed using the existing standards for mountaineering and rescue gear; and
- 4. Testing: All carabiners shall be inspected daily and shall be removed from service when the locking mechanisms fail to lock properly, the springs are worn, or the locking gates deform.
 - (g) Anchors:
- 1. Specifications: There shall be two anchors that attach the bungee cord to the structure. Each anchor shall have a minimum strength of 8,000 pounds or shall be designed with a minimum factor of safety of five, whichever is more. There shall be a carabiner that attaches each anchor to the bungee cord end connections The two carabiners shall not be connected to each other;
- 2. Where wire rope is used, it shall have staged ends with a thimble eye or it shall be continuous. Other connection systems shall be acceptable if they meet the aforementioned strength specifications; and
- 3. Daily inspection of the anchors shall be carried out, and any portion showing signs of excessive wear shall be removed from service immediately.
 - (h) Air bags:
 - 1. An air bag shall be provided; and
 - 2. A minimum of a 10-foot safety zone shall be maintained above the air bag.
 - (i) Platforms:
- 1. Platforms shall be constructed to provide safety and security to the public. Every platform shall:
 - i. Be completely enclosed except for the jumping off area;
 - ii. Have a nonskid floor surface;
 - iii. Be provided with a gate equipped with locking devices to prevent accidental openings;
- iv. Be provided with anchor rails or points to secure the bungee jumper prior to the bungee jump;

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- v. Have no more than two persons on the platform during bungee jumping operations, the bungee jumper, and bungee jump master. A third person, who shall be an employee, may be added only for training and instruction purposes;
 - vi. Be permanently attached to a structure; and
- vii. Be constructed so that the bungee jump point shall not exceed 100 feet above the ground surface.
- (j) Rescue procedures: All operations regardless of jump platform in use shall have a secondary retrieval system. All appropriate staff shall be trained on proper rescue procedures. Prior to bungee jumping operations, all appropriate staff shall conduct a test rescue.

§ 5:14A-10.10 Communication

Radio communication shall be provided between the jump master and the jump operator(s).

§ 5:14A-11.1 Title; scope; intent

- (a) This subchapter, adopted pursuant to the authority of the Carnival-Amusement Rides Safety Act and entitled "Go Kart Operations," shall be known and may be cited throughout the rules as N.J.A.C. 5:14A-11, and when referred to in this subchapter may be cited as "this subchapter."
- (b) The purpose of this subchapter is to provide the standards necessary for the safety of gokart drivers, riders, and the general public.
- (c) The scope of this subchapter shall be to set forth specific rules applicable to go-kart operations that shall be adhered to in addition to the general provisions of the rules governing carnival and amusement rides in this chapter. Where a specific provision covering go-karts conflicts with the general provisions of this subchapter, the provisions set forth in this subchapter shall govern.

§ 5:14A-11.2 Control of operations

Each go-kart operation shall be equipped with a device to control all vehicles on the track. The device shall be capable of placing vehicles in an idle mode and preventing acceleration in the event of an emergency. This device shall be under the sole control of the operator.

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§ 5:14A-11.3 Driver limitations

At go-kart tracks where the design speed is 25 miles per hour (mph) or more, all drivers shall possess a valid driver's license and shall show such driver's license to the operator prior to entering the go-kart.

§ 5:14A-11.4 Adoption as amended, of ASTM practice F 2007-00

- (a) The Standard Practice for the Classification, Design, Manufacture, and Operation of Concession Go Karts and Facilities, designated by the American Society for Testing and Materials (ASTM) as F 2007-00, is adopted by reference, as amended, and made part of this subchapter and shall be enforced as part of this subchapter.
- (b) Notwithstanding any provisions stated in the standard, where specific provisions of the standard conflict with the provisions expressly set forth in this chapter, the provisions set forth in this chapter shall govern.
 - (c) The standard shall be amended as follows:
 - 1. Section 5.5--insert ", or normal operation" after "rollover";
 - 2. Section 5.6--delete "or" after "go-kart" insert "and";
- 3. Section 6.2--delete the phrase "free of vertical misalignment greater than 3/4 in within one inch horizontal distance" and insert "maintained in good repair and free of cracks, obstructions and/or potholes which could damage the cart or cause the rider/driver to lose control of the vehicles." Delete the phrase "material that cannot be moved or displaced by normal go-kart operation" and insert "solid asphalt or concrete binding material";
- 4. Section 6.3--delete "on the same horizontal plane for classes of concession go-karts 2, 3, 4 or 5, with the exception of the entrance and exit points of the pit area" and insert "of the cart track which allow or enable go-karts on a go-kart track to cross one another in opposite directions on the same track plan";
- 5. Section 6.10.1--delete "may" and insert "shall." Add the phrase "but not be limited to," after the word "include";
 - 6. Section 6.11--delete "may" and insert "shall"; and
- 7. Section 7.16--delete "of greater than 3/4 in. in vertical change within a one inch horizontal distance."
 - (d) The ASTM standard F 2007-00 may be obtained from:

American Society for Testing and Materials

100 Barr Harbor Drive

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West Conshohocken, PA 19428-2959

§ 5:14A-12.1 Title; intent; scope

- (a) This subchapter, adopted pursuant to authority of the Carnival-Amusement Rides Safety Act and entitled "Water Amusement Rides," shall be known and may be cited throughout the rules as N.J.A.C. 5:14A-12, and when referred to in this subchapter may be cited as "this subchapter."
- (b) The intent of this subchapter is to provide minimum criteria for the design, construction, and operation of water amusement rides. The requirements contained in this subchapter are intended to supplement the provisions in the balance of this chapter.
- (c) The scope of this subchapter shall include water amusement rides (for example: leisure rivers, water slides, aquatic activity areas, wave action pools). Where a specific provision within this subchapter conflicts with the general provisions of this chapter, the provisions set forth in this subchapter shall govern.
- (d) A detachable component of a ride, which is also intended to be operated as a stand-alone amusement ride (separately from the remaining components of that ride), shall additionally be considered an independent carnival-amusement ride and comply with the provisions of this chapter as such.
- (e) The scope of this subchapter shall not include an amusement ride where contact with water is incidental (for example: log flume, shoot-the-chutes, river rapids, bumper boats, kiddie boats, paddle boats).
- (f) A water slide with a slide height of 15 feet or less shall be considered a water amusement ride, and governed by the provisions of this chapter, only when located in an amusement area, amusement park, or water park in which there are other rides covered by this chapter.
- (g) An aquatic activity area shall be considered a water amusement ride, and governed by the provisions of this chapter, only when located in an amusement area, amusement park, or water park in which there are other rides covered by this chapter.

§ 5:14A-12.2 Definitions

The following words and terms, when used in this subchapter, shall have the meanings listed, unless the context clearly indicates otherwise or the term is redefined for a specific section or purpose.

"Action wave pool" means a wave pool designed to produce waves that do not exceed four feet in height, measured from trough to crest, and are choppy, with a continuous rolling or bobbing action. Waves are oscillating or standing in nature, produced by cyclic pulsing with little longitudinal or cross flow of water.

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"Aquatic activity area" means an area containing aquatic play equipment.

"Aquatic activity deck" means a deck containing aquatic play equipment, which is not intended to retain standing water. Also known as "spray deck," "spray pad," "spray park" or "sprayground."

"Aquatic activity pool" or "activity pool" means an aquatic recreation pool that contains aquatic play equipment.

"Aquatic play equipment" means water related play equipment or devices intended for use in aquatic activity areas. Examples include, but shall not be limited to, rope ladders, hand-over-hand activities, slides, and devices designed to squirt, shoot, spray, dump, discharge, or disperse water intended to come in contact with people for recreational purposes.

"Aquatic recreation pool" means a structure intended to hold a filtered and disinfected water supply, including appurtenances and equipment used in connection therewith, as part of a system for free-form aquatic play and recreation.

"Catch pool" means an aquatic recreation pool at the exit of a water amusement ride, intended to receive riders and provide egress.

"Flotation device" means a device used by patrons to increase buoyancy in water.

"Flume" means a channel or tube for conveying water and providing a path along which a rider is transported.

"Landing area" means an area on the surface of a body of water designated specifically to receive riders.

"Leisure river" means an aquatic recreation pool whose unique feature is the stream of water created by mechanical means, which slowly propels patrons on flotation devices in a flume, which is circuitous and level, or nearly level, along the length of the pool.

"Rope drop" means a water amusement ride on which a rider grasps a rope, or handle attached to a rope, that swings said rider from a deck over a catch pool, into which the rider is discharged by releasing the rope or handle.

"Transitional wave pool" or "high wave pool" means a wave pool designed to produce waves exceeding four feet in height, measured from trough to crest, which are uniform across the pool. Waves are moving walls of water, which travel the length of the pool.

"Vehicle" means a device intended for transporting riders on a water amusement ride, on which the rider sits or lies while in transit.

"Water slide" means a water amusement ride utilizing a flume along which a continuous stream of water on the bed lubricates the rider's transport, conveying riders independently or riding on a sled, mat, or inflatable device, which empties into a catch pool or a run-out.

"Wave pool" or "wave action pool" means an aquatic recreation pool that utilizes mechanical equipment to produce waves for recreation.

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§ 5:14A-12.3 Owner responsibility

- (a) The owner of a water amusement ride shall comply with applicable requirements of N.J.A.C. 5:14A-4.
- (b) The owner of a water amusement ride shall operate that ride in accordance with the provisions of N.J.A.C. 5:14A-12.6 and 5:14A-9.
- (c) The owner of a water amusement ride shall prohibit interference with, or adjustment of, the water flow rate(s) for water slides by unauthorized personnel.
- (d) The owner of a water amusement ride shall established and implement a written staffing plan.
 - 1. For aquatic recreation pools: in accordance with N.J.A.C. 5:14A-9.8 and 8:26-5.2.
 - 2. For bathing beaches: in accordance with N.J.A.C. 5:14A-9.8 and 8:26-5.10.

§ 5:14A-12.4 Manufacturer responsibility

- (a) The manufacturer of a water amusement ride shall comply with applicable requirements of N.J.A.C. 5:14A-5.
- (b) The manufacturer of a water amusement ride shall ensure that ride is designed and constructed in accordance with N.J.A.C. 5:14A-12.5.
- (c) The manufacturer of a water amusement ride shall establish the elevation, including a range of acceptability, at which water level is to be maintained in run-outs or landing pools and specify this information in the operation manual (N.J.A.C. 5:14A-2.14).
- (d) The manufacturer of a water amusement ride shall determine all water flow rates, including a range of acceptability, for each ride and specify this information in the operation manual (N.J.A.C. 5:14A-2.14).

§ 5:14A-12.5 Design and construction

- (a) This section establishes minimum criteria for the design, manufacture, and modification of water amusement rides manufactured on or after June 16, 2009.
- (b) This section shall not apply to water amusement rides manufactured prior to June 16, 2009, unless specifically required elsewhere in this chapter.
- (c) Water amusement rides shall be designed and constructed in accordance with applicable provisions of N.J.A.C. 5:14A-7 and to facilitate conformance with provisions of N.J.A.C. 5:14A-12.6.

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- (d) Aquatic recreation pools shall be designed and constructed in accordance with ANSI/IAF-9 (2005), American National Standard for Aquatic Recreation Facilities, as amended by N.J.A.C. 5:14A-12.9.
 - (e) Water amusement rides shall not require:
 - 1. An "operator presence device";
 - 2. A "patron restraint"; or
 - 3. An "emergency stop" and/or "category 0 stop."
- (f) Surfaces of decks, platforms, walkways, and stairs, which are likely to become wet, shall be self-draining and slip-resistant.
- (g) Water slides: Design of water slides shall be in accordance with ASTM F 2376-06, as amended by N.J.A.C. 5:14A-12.8.
 - (h) The following apply to leisure rivers:
 - 1. Entry and egress shall be via stairs or ramps.
- 2. Construction, dimensions, and mechanical attachments of the flume shall be such that the interior surface is continuous and unobstructed for the entire length, except for acceptable entry and egress openings. Stairs, ramps, and railings shall not obstruct or impede the path of riders.
- 3. The patron clearance envelope shall extend vertically above the flume bottom a minimum distance of 90 inches.
 - 4. The depth of water shall not exceed 42 inches.
 - 5. The flume width, excluding entry and egress paths, shall be a minimum of eight feet.
 - 6. The flow rate shall be a maximum of seven feet per second (five miles per hour).
- 7. Exit paths shall have a dedicated deck with a minimum, unobstructed, distance of 10 feet in direction of travel and a minimum width of four feet.
- 8. The pump discharge stream shall be located so as to produce minimal undertow and/or cross currents that may adversely affect riders.
 - (i) The following apply to wave pools:
- 1. Any barrier utilized to limit access to the pool by unauthorized personnel shall be no closer than 36 inches from the pool edge, and terminate at the side of zero static water depth.
 - 2. Unauthorized personnel shall be prevented from accessing wave-generating machinery.
- 3. Following suspension of wave action, an audible signal shall be used to notify patrons of the impending resumption of wave action.
- 4. A "ride stop" switch, to cease wave action, shall be located at each designated lifeguard station or mobile with each designated lifeguard.

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- 5. Ladders shall be recessed into the pool wall. Handrails and treads shall extend down the pool wall in such a way so that they will be easily accessible at the lowest water level during wave action.
 - (j) The following apply to rope drops:
 - 1. Design shall be such that the rope does not contact the dispatch deck.
- 2. The deck in the area of dispatch shall provide sufficient space for patrons to safely dispatch, attendant workspace, signage, and any communication devices needed for operation.
 - 3. The rope shall have a means for the rider to safely grasp the lower end with two hands.
- 4. The lower end of the rope shall be a minimum of four feet above the water surface of the catch pool.
 - 5. The rope pivot point shall be over the catch pool.
- 6. The patron clearance envelope for a rope swing shall be a three dimensional unobstructed zone, with the landing area being the base and a height from the water surface to the pivot point of the swing.
 - 7. The following apply to rope drop catch pools:
- i. Catch pools shall be designed to receive riders for safe exit from the rope. Water depth in the landing area shall be a minimum of 10 feet and be sufficient to absorb rider impact without contacting the pool bottom.
 - ii. A separate landing area shall be designated and dedicated to each rope drop.
 - iii. The exit path of the rider shall not cross the landing area of another ride.
- iv. The designated catch pool exit(s) shall be such as to direct riders to move forward and away from the paths of other riders.
- v. The landing area shall be an area on the catch pool surface, which contains the reasonably foreseeable points at which the rider may enter. The catch pool shall extend a minimum of three feet beyond the perimeter of the landing area.
 - (k) The following apply to aquatic activity areas:
 - 1. An aquatic activity area shall be classified as one of two types:
- i. Type 1 aquatic activity pool, with standing water of any depth, including "zero depth entry" or "beach entry" pools; or
 - ii. Type 2 aquatic activity deck, with no standing water.
- 2. Aquatic play equipment operating in a system that re-circulates water shall operate with a fil-tration/sanitizing system.

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- 3. Aquatic play equipment operating with potable water, without a re-circulating system, shall discharge water per applicable local codes, while ensuring water quality.
- 4. Aquatic play equipment shall be designed and constructed in accordance with the provisions of ASTM F1487-01, as amended by N.J.A.C. 5:14A-12.7.
- 5. Floating aquatic play equipment, such as lily pads, log rolls, and stepping/balancing devices, shall be anchored.
- 6. Floating aquatic play equipment, on which standing is permitted, shall have a landing area extending six feet beyond the equipment perimeter. Water in this landing area shall be a minimum depth of four feet.
- i. Floating aquatic play equipment, on which standing is permitted, may be positioned closer than six feet from a deck, for purposes of accessing to/from that deck, when the deck is treated with an impact attenuating surface that meets, or exceeds, requirements of ASTM F 1292, Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment. This deck shall have a minimum unobstructed area extending three feet from the water's edge or any obstacle within three feet from the water's edge shall be treated with an impact attenuating surface that meets, or exceeds, the requirements of ASTM F 1292.
 - (I) The following apply to materials of construction:
- 1. Water amusement rides shall be manufactured and constructed only of materials that have demonstrated durability in an aquatic environment. Any new material shall be documented or tested accordingly for durability by the water amusement ride manufacturer.
- 2. Materials shall not be toxic or harmful to man or the environment under the intended use and reasonable foreseeable abuse.
- 3. Surfaces which patrons can be expected to contact shall be easily cleaned. Surfaces and edges shall be assembled, arranged, and/or finished (deburred, polished, etc.) so as to not constitute a cutting, pinching, puncturing, or abrasion hazard under casual contact and the intended use. Sharp edges and points shall be eliminated.
- 4. Surfaces, which are intended to provide a footing for patrons, shall have a slip-resistant surface, but shall not be so rough as to cause a reasonably foreseeable injury.
- 5. There shall be no protrusions, extensions, means of entanglement, or other obstruction, which can cause entrapment or injury of patrons.
- 6. Support structures shall be constructed of durable materials such as wood, steel, aluminum, concrete, or engineered composites.
- 7. Metal structures shall be either inherently corrosion resistant, or be finished in such a way as to provide protection from corrosion. Any such finish shall assume reasonable maintenance.
- 8. Wood materials shall be finished in such a way as to provide protection against deterioration. Any such finish shall assume reasonable maintenance.

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- 9. Fasteners, connecting, and covering devices shall be corrosion resistant or provided with a corrosion resistant coating.
- 10. Paints or similar coatings shall comply with Consumer Product Safety Commission 16 CFR Part 1303, Ban of Lead-Containing Paint and Certain Consumer Products Bearing Lead-Containing Paint.
- 11. Orifices within reach of patrons, including water nozzle openings, shall be designed to minimize entrapment.
 - 12. Padded surfaces shall not leach any chemicals that may adversely affect water chemistry.

§ 5:14A-12.6 Operation

- (a) Operation of water amusement rides shall comply with applicable requirements of N.J.A.C. 5:14A-9 and be in conformance with applicable provisions of N.J.A.C. 8:26, Public Recreational Bathing.
- (b) A water amusement ride, using re-circulated water, shall not be operated without a completed inspection report from the health authority, in accordance with N.J.A.C. 8:26-8.3. Reports shall be kept with the ride for a minimum of 12 months and be available at all times for review by the Department.
- (c) Water flow and water levels shall be maintained in accordance with the manufacturer's specifications, as specified in the operation manual.
- (d) Electrical systems shall be maintained in conformance with requirements for swimming pools as found in the New Jersey Uniform Construction Code, N.J.A.C. 5:23.
- 1. A current "electrical bonding and grounding certificate" and "electrical certification of compliance" shall be obtained and posted on the premises, in accordance with N.J.A.C. 5:23-2.18C. These documents shall be available at all times for review by the Department.
 - (e) All decks and platforms shall be maintained in a sanitary condition.
- (f) Only patron vehicles approved by the manufacturer or acceptable to the Department shall be permitted for use.
- (g) Vehicles shall be maintained in accordance with the manufacturer's requirements, when specified in the operation manual.
- (h) Water slide staffing shall be such that both entry and exit are manned as stated in the operations manual and in a manner acceptable to the Department. An operator shall be stationed at the dispatch point of a water slide and be capable of communicating with a lifeguard who has clear view and rapid access to the landing area or run-out.
- (i) Patron entry and exit to wave pools shall be permitted only at the side of zero static water depth, except when authorized personnel direct otherwise for evacuation purposes.

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- (j) On activities that are designed for use by one patron at a time, teaming and grouping of patrons shall be prohibited.
 - (k) Landing areas shall be used solely for patrons entering from the water amusement ride.
- (I) Patrons shall only enter and exit a leisure river at the designated areas, which are designed for this purpose.
 - (m) Any existing pool having a single suction outlet, with or without a skimmer, shall have:
- 1. Any valves of the suction outlet and skimmer locked in the open position (preventing the suction outlet from becoming the sole source of suction) or have installed a secondary backup system (intervening switch) that shuts off the pump when a blockage is detected;
 - 2. The suction outlet cover inspected daily to ensure it is firmly attached and in sound condition;
 - 3. The suction outlet cover secured using non-corroding fasteners; and
 - 4. An anti-vortex suction outlet cover installed, if commercially available for the size of drain.
- i. If an anti-vortex suction cover is not available and installed, an emergency pump shutoff switch shall be installed that is accessible, within sight of the pool, and prominently marked.
- (n) Each aquatic recreation pool, or grouping of pools, shall be surrounded by appropriate barriers to inhibit access by unauthorized personnel or be staffed in accordance with the staffing plan.
- 1. When barriers are provided, they shall comply with ANSI/IAF-9, Section 16.6, as amended by N.J.A.C. 5:14A-12.9.
 - (o) The following signs shall be required:
 - 1. Signs required or recommended by the ride manufacturer.
- 2. Signs indicating "No Diving" shall be posted in the area of pools greater than 18 inches in depth.
- 3. "Prolonged exposure to wave action may result in fatigue. Exercise caution in deep water" shall be posted at the entrance to wave pools.
 - 4. "No Running" signs shall be posted.
 - 5. "No glass bottles or containers permitted" signs shall be posted.
 - 6. Patron riding posture instructions shall be posted at the ride dispatch point.

§ 5:14A-12.7 Adoption as amended of ASTM practice F 1487-01

(a) The Standard Consumer Safety Performance Specification for Playground Equipment for Public Use, designated by the ASTM International (ASTM) as F1487-01, is adopted by reference, as amended, and made part of this subchapter and shall be enforced as part of this subchapter.

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- (b) Notwithstanding any provisions stated in the standard, where specific provisions of the standard conflict with the provisions expressly set forth in this subchapter, the provisions set forth in this subchapter shall govern.
 - (c) The following sections of the standard are modified as follows:
 - 1. Introduction shall be deleted in its entirety.
 - 2. Section 1, Scope, shall be amended as follows:
- i. Section 1.1: The words "public playground" shall be deleted and the word "play" shall be inserted in its place.
 - ii. Section 1.3 shall be deleted in its entirety.
 - iii. Section 1.4 shall be deleted in its entirety.
 - 3. Section 2, Referenced Documents, shall be amended as follows:
 - i. Section 2.1:
 - (1) "D 2240" shall be deleted and "D 2240-04" inserted in its place.
 - (2) "F 698" shall be deleted and "F 698-94" shall be inserted in its place.
 - (3) "F 846" shall be deleted and "F 846-92" shall be inserted in its place.
 - (4) "F 853" shall be deleted and "F 853-04" shall be inserted in its place.
 - (5) "F 893" shall be deleted and "F 893-04" shall be inserted in its place.
 - (6) "F 1004" shall be deleted and "F 1004-04" shall be inserted in its place.
 - (7) "F 1077" shall be deleted and "F 1077-05" shall be inserted in its place.
 - (8) "F 1148" shall be deleted and "F 1148-03" shall be inserted in its place.
 - (9) "F 1159" shall be deleted and "F 1159-03a" shall be inserted in its place.
 - (10) "F 1292" shall be deleted and "F 1292-04" shall be inserted in its place.
 - (11) "F 1951" shall be deleted and "F 1951-99" shall be inserted in its place.
 - ii. Section 2.2:
 - (1) "Z535.1" shall be deleted and "Z535.1-2002 shall be inserted in its place.
 - (2) "Z535.4" shall be deleted and "Z535.4-2002" shall be inserted in its place.
 - iii. Section 2.3:
 - (1) "16 CFR Part 1303" shall be deleted and "16 CFC 1303 (1/04)" shall be inserted in its place.
 - (2) "16 CFR 1500" shall be deleted and "16 CFR 1500 (1/04)" shall be inserted in its place.

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- (3) "16 CFC Section 1501" shall be deleted and "16 CFR 1501 (1/04)" shall be inserted in its place.
 - (4) "36 CFR Part 1191" shall be deleted and "36 CFR 1191 (7/04)" shall be inserted in its place.
 - iv. Section 2.4: "UL 696" shall be deleted and "UL 696-01" shall be inserted in its place.
- v. Section 2.5: "CAN/CSA-Z614" shall be deleted and "CAN/CSA-Z614-03" shall be inserted in its place.
 - 4. Section 3, Terminology, shall be amended as follows:
- i. Section 3.1.10: The word "playground" shall be deleted and the word "play" shall be inserted in its place.
- ii. Section 3.1.13: The word "playground" shall be deleted and the word "play" shall be inserted in its place.
- iii. Section 3.1.27: The word "playground" shall be deleted and the word "play" shall be inserted in its place.
 - iv. Section 3.1.29 shall be deleted in its entirety.
- v. Section 3.1.38: The word "playground" shall be deleted and the word "play" shall be inserted in its place.
 - vi. Section 3.1.45 shall be deleted in its entirety.
 - 5. Section 4, Materials and Manufacture, shall be amended as follows:
- i. Section 4.1: In the first sentence, the word "Playground" shall be deleted and the words "Aquatic play" shall be inserted in its place. Also in the first sentence, the words "the playground" shall be deleted and the words "an aquatic environment" shall be inserted in their place. In the second sentence, the word "playground" shall be deleted and the word "play" inserted in its place.
- ii. Section 4.1.2: The word "playground" shall be deleted and the word "play" shall be inserted in its place.
- iii. Section 4.1.3 shall be deleted in its entirety and replaced with the words "Wood products shall only be used on aquatic play equipment for decoration and theming, not for structural or safety related members. Where used, wood products shall be naturally rot-resistant and insect-resistant or treated to resist such deterioration. Creosote, pentachlorophenol, tributyltin oxide, and surface coatings that contain pesticides shall not be permitted. Manufacturers shall practice technologies and procedures that minimize the level of dislodgeable toxin."
- iv. Section 4.2: The words "public playground" shall be deleted and the word "play" shall be inserted in its place.
 - 6. Section 5, General Requirements, shall be amended as follows:
 - i. Section 5.1: The word "Playground" shall be deleted and the word "Play" inserted in its place.

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- 7. Section 6, Performance Requirements, shall be amended as follows:
- i. Section 6.1: The words "Public playground" shall be deleted and the word "Play" inserted in their place.
 - ii. Section 6.2: The word "public" shall be deleted.
 - iii. Section 6.2.1: The word "public" shall be deleted.
 - iv. Section 6.3: The word "public" shall be deleted.
 - v. Section 6.4: The word "public" shall be deleted.
 - vi. Section 6.4.1.2: The words "(roller slides exempt)" shall be deleted.
- vii. Section 6.6: In the second sentence, the words "It is recommended that the" shall be deleted and the word "Any" inserted in their place. Also in the second sentence, following the word "elements," the word "shall" shall be inserted.
- viii. Section 6.6.2.2: In the first sentence, following the word "Chain," the word "rope," shall be inserted. The second sentence shall be deleted.
 - 8. Section 8, Equipment, shall be amended as follows:
 - i. Section 8.5 shall be deleted in its entirety.
 - ii. Section 8.6 shall be deleted in its entirety.
 - iii. Section 8.7 shall be deleted in its entirety.
 - iv. Section 8.8 shall be deleted in its entirety.
 - v. Section 8.9 shall be deleted in its entirety.
 - vi. Section 8.10 shall be deleted in its entirety.
- vii. Section 8.12.2: The words "are not recommended" shall be deleted and the words "shall not be permitted" shall be inserted in their place.
- viii. Section 8.13.1: The words "are not recommended" shall be deleted and the words "shall not be permitted" shall be inserted in their place.
 - ix. Section 8.14 shall be deleted in its entirety.
 - x. Add new section "8.15, Water Dispersing Equipment
- 8.15.1 Orifices, or water nozzle openings, within reach of patrons shall be designed to minimize finger entrapment.
- 8.15.2 Equipment shall be designed and constructed to permit control of water pressure and volume to each affect. This control shall be separate, and upstream, of any control valve used by patrons. This control valve shall be accessible to only authorized personnel.
 - 8.15.2.1 Exception: identical effects, with identical flow rates, may share a common control.

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- 8.15.3 Equipment shall be designed and installed to be drainable of water, when not in use."
- 9. Section 9, Playground Layout, shall be amended as follows:
- i. The word "Playground" shall be deleted "in the section heading" and the words "Play Area" inserted in its place.
- ii. Section 9.2.1: The words "(for example, free standing talk tubes, free standing activity panels, ground level sandboxes)" shall be deleted.
 - iii. Section 9.4 shall be deleted in its entirety.
 - iv. Section 9.6 shall be deleted in its entirety.
- v. Section 9.8.3: The word "playground" shall be deleted and the words "play area" shall be inserted in its place.
- vi. Section 9.8.4.1: The word "playground" shall be deleted and the words "aquatic play" shall be inserted in its place.
 - 10. Section 10, Accessibility, shall be deleted in its entirety.
 - 11. Section 11, Installation, shall be deleted in its entirety.
 - 12. Section 12, Structural Integrity, shall be deleted in its entirety.
 - 13. Section 13, Maintenance, shall be deleted in its entirety.
 - 14. Section 14, Labeling, shall be deleted in its entirety.
 - (d) The ASTM standard F1487-01 may be obtained from:

ASTM International 100 Barr Harbor Drive West Conshohocken, PA 19428-2959

§ 5:14A-12.8 Adoption as amended of ASTM practice F2376-06

- (a) The Standard Practice for Classification, Design, Manufacture, Construction, and Operation of Water Slide Systems, designated by the ASTM International (ASTM) as F2376-06, is adopted by reference, as amended, and made part of this subchapter and shall be enforced as part of this subchapter.
- (b) Notwithstanding any provisions stated in the standard, where specific provisions of the standard conflict with the provisions expressly set forth in this subchapter, the provisions set forth in this subchapter shall govern.
 - (c) The following sections of the standard are modified as follows:

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- 1. Section 1, Scope, shall be amended as follows:
- i. Section 1.1: The words "Water slide systems shall be defined as rides intended for use by riders in bathing attire where the action of the ride involves possible and purposeful immersion of the rider's body either in whole or in part in water, and uses circulating water to mobilize or lubricate the rider's transport along a purpose built path." shall be deleted.
- ii. Section 1.3.5: The words "Pre-existing designs manufactured after the effective date of publication of this practice if" shall be deleted and the words "Amusement rides manufactured after June 16, 2009, provided the design existed prior to that date and" shall be inserted in their place. Also, the words "as defined in Section 3.1.26 of Practice F 2291" shall be deleted.
- iii. Section 1.3.5.1: Following the words "water slide," the words "amusement ride" shall be inserted. Also, the words "as defined in Terminology F 747" shall be deleted.
- iv. Section 1.3.5.2: The words "for five years following the date of publication of this practice" shall be deleted and the words "until June 16, 2009" shall be inserted in their place.
 - v. Section 1.3.5.3 shall be deleted in its entirety.
 - 2. Section 2, Referenced Documents, shall be amended as follows:
 - i. Section 2.1:
 - (1) "D 570" shall be deleted and "D 570-98" inserted in its place.
 - (2) "D 638" shall be deleted and "D 638-03" inserted in its place.
 - (3) "D 790" shall be deleted and "D 790-03" inserted in its place.
 - (4) "F 698" shall be deleted and "F 698-94" inserted in its place.
- (5) The sentence "F 747 Terminology Relating to Amusement Rides and Devices" shall be deleted.
 - (6) "F 770" shall be deleted and "F 770-93" shall be inserted in its place.
 - (7) "F 846" shall be deleted and "F 846-92" inserted in its place.
 - (8) "F 853" shall be deleted and "F 853-04" shall be inserted in its place.
 - (9) "F 893" shall be deleted and "F 893-04" shall be inserted in its place.
 - (10) "F 1193" shall be deleted and "F 1193-04" shall be inserted in its place.
 - (11) "F 1305" shall be deleted and "F 1305-94" shall be inserted in its place.
 - ii. Section 2.2: "ACI-318" shall be deleted and "ACI-318 (2002)" inserted in its place.
- iii. Section 2.2: "ANSI/ASCE 7" shall be deleted and "ANSI/ASCE 7 (1998)" inserted in its place.
 - 3. Section 3, Terminology, shall be amended as follows:

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- i. Section 3.1.10: Following the words "and other emergencies," the words "that holds a life-guarding certificate from an organization recognized by the New Jersey Department of Health and Senior Services" shall be added.
- ii. Section 3.1.14: The words "person or organization that is responsible for the maintenance and operation" shall be deleted and the words "owner" inserted.
 - iii. Section 3.1.15 shall be deleted in its entirety.
 - iv. Section 3.1.19 shall be deleted in its entirety.
 - v. Section 3.1.32 shall be deleted in its entirety.
 - 4. Section 6, Structural Design of Water Slides, shall be amended as follows:
- i. Section 6.3.2.1: Following the words "Practice F 2291," the words "as amended by N.J.A.C. 5:14A-7.2." shall be added.
- ii. Section 6.3.2.3: following the words "Practice F 2291," the words "as amended by N.J.A.C. 5:14A-7.2." shall be added.
- iii. Section 6.4.1: The words "in accordance with applicable local code requirements or ANSI/ASCE 7, or other equivalent national standard" shall be deleted and the words "as specified in section 8.12 of Practice F 2291, as amended by N.J.A.C. 5:14A-7.2." shall be inserted.
- iv. Section 6.4.2: The words "instructions as specified in the sections on Manufacturer's Responsibility of Practice F 770 and F 853" shall be deleted and the words "manuals, per N.J.A.C. 5:14A-2.14" shall be inserted in their place.
- v. Section 6.4.3: The words "Lateral wind load may be reduced by an importance factor of less than 1.0, where appropriate, for water slide structures that are unoccupied during extreme weather." shall be deleted.
- vi. Section 6.4.4: The words "For outdoor slides," shall be deleted and following the words "Practice F 2291 for operational conditions," the words "as amended by N.J.A.C. 5:14A-7.2," shall be inserted.
 - 5. Section 7, Performance Requirements, shall be amended as follows:
- i. Section 7.2.1: Following the words "Practice F 2291," the words "as amended by N.J.A.C. 5:14A-7.2." shall be added.
- ii. Section 7.2.2: Following the words "Practice F 2291," the words "as amended by N.J.A.C. 5:14A-7.2." shall be added.
- iii. Add new section "7.6.4 Deck surfaces shall be provided at perimeter areas of run-out where the design has specified rider exit. Elevation of deck surface shall be within +/- 3 inches of the surface from which rider is exiting and a minimum of 48 inches wide."
 - 6. Section 9, Identification Marking, shall be amended as follows:

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i. Section 9.1:

the words "Specification F 698" shall be deleted and the words "N.J.A.C. 5:14A-7.7" shall be inserted.

- 7. Section 11, Owner/Operator Responsibilities, shall be amended as follows:
- i. Section 11.2.1.3: The word "attendant" shall be deleted and the word "operator" inserted.
- ii. Section 11.5: The words "As specified in Terminology F 747," shall be deleted.
- iii. Section 11.5.1: The words "different manufacturer or design/engineer" shall be deleted and the words "licensed professional engineer" inserted.
- iv. Section 11.7.1: The words "Practices F 770 and F 853" shall be deleted and the words "the manufacturer's manuals, per N.J.A.C. 5:14A-2.14." shall be inserted.
 - 8. Section 12, Rider Responsibility, shall be deleted in its entirety.
 - 9. Section X1.7, Section 12, Rider, shall be deleted in its entirety.
 - (d) The ASTM standard F2376-06 may be obtained from:

ASTM International 100 Barr Harbor Drive West Conshohocken, PA 19428-2959

§ 5:14A-12.9 Adoption as amended of ANSI/IAF-9 (2005)

- (a) The American National Standard for Aquatic Recreation Facilities, designated by the American National Standards Institute (ANSI) as ANSI/IAF-9 (2005), is adopted by reference, as amended, and made part of this subchapter and shall be enforced as part of this subchapter.
- (b) Notwithstanding any provisions stated in the standard, where specific provisions of the standard conflict with the provisions expressly set forth in this subchapter, the provisions set forth in this subchapter shall govern.
 - (c) The following sections of the standard are modified as follows:
 - 1. Section 1, Scope and application, shall be amended as follows:
- i. Section 1.1: In the first sentence, the words "operation," "signs," and "sanitation" shall be deleted.
 - 2. Section 4, Design, shall be amended as follows:
- i. Add new section "4.13.4 Pool walls shall be vertical, or within eleven (11) degrees of vertical, above any transitional radius at base."

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- 3. Section 5, Decks, shall be amended as follows:
- i. Add new section "5.9.4 Yard drains shall be installed so as to prevent the accumulation or puddling of water in the general area of the deck and related improvements."
- ii. Add new section "5.9.5 Gutters and downspouts shall be provided and located to adequately carry roof water away from pools, deck, and walking areas."
 - 4. Section 6, Circulation systems, shall be amended as follows:
- i. Section 6.3.2: Following the word "that" and preceding the word "the," the words ", when viewing from the pool edge," shall be inserted.
- ii. Section 6.9.3: The words "the filter system" shall be deleted and the words "each filter" shall be inserted.
- iii. Add new section "6.9.3.1 Flow meters shall be installed on a straight length of pipe at a distance equal to at least six times the diameter of the pipe from any valve, elbow, or other source of turbulence. This requirement may be waived by the Department for meters which are not affected by pipeline turbulence."
 - 5. Section 7, Filters, shall be amended as follows:
- i. Add new section "7.3.4 Pressure filters shall have sight glasses installed on the wastewater discharge line in order that filter washing progress may be determined. The sight glasses shall be readily removable for cleaning purposes."
- ii. Add new section "7.5 Gauges which measure loss of head across each filter shall be installed. Gauges tapped into the influent and effluent lines of a filter shall be located together, at the same elevation."
 - 6. Section 8, Pumps and motors, shall be amended as follows:
 - i. Add new section "8.8 Pump rotation direction shall be clearly indicated on the pump."
 - 7. Section 9, Return inlets and suction outlets, shall be amended as follows:
 - i. Section 9.4.2.1 shall be deleted in its entirety.
 - 8. Section 10, Surface skimming systems, shall be amended as follows:
- i. Add new section "10.5.1.3 When a perimeter type surface skimmer is used as the sole surface skimming system, it shall extend around a minimum of fifty (50) percent of the pool perimeter."
 - 9. Section 11, Electrical and illumination requirements, shall be amended as follows:
- i. Section 11.1 shall be deleted in its entirety and the words "Electrical systems shall be designed and constructed in conformance with The New Jersey Uniform Construction Code N.J.A.C. 5:23, including the National Electric Code NFPA 70 Swimming Pools, Fountains, and Similar Installations." shall be inserted."
 - 10. Section 12, Heaters, shall be amended as follows:

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- i. Section 12.2.1 shall be deleted in its entirety and the words "Systems for heating pool water shall be designed and constructed in conformance with the New Jersey Uniform Construction Code, N.J.A.C. 5:23." shall be inserted.
 - ii. Section 12.2.2 shall be deleted in its entirety.
 - iii. Section 12.2.3 shall be deleted in its entirety.
 - iv. Section 12.2.4 shall be deleted in its entirety.
 - 11. Section 13, Water supply, shall be amended as follows:
- i. Section 13.1: The words "article 15" shall be deleted and the words "N.J.A.C. 8:26" shall be inserted.
- 12. Section 15, Sanitizing equipment, chemical feeders, and chemical operational parameters, shall be amended as follows:
- i. Section 15.1 shall be deleted in its entirety and the words "Sanitizing and chemical feeder system(s) shall be designed and constructed to conform to the requirements of N.J.A.C. 8:26" shall be inserted.
 - ii. Section 15.2 shall be deleted in its entirety.
 - iii. Section 15.3 shall be deleted in its entirety.
 - iv. Section 15.4 shall be deleted in its entirety.
 - v. Section 15.5 shall be deleted in its entirety.
 - vi. Section 15.6 shall be deleted in its entirety.
 - vii. Section 15.7 shall be deleted in its entirety.
 - 13. Section 17, Restroom and sanitary facilities, shall be deleted in its entirety.
 - 14. Section 19, Food consumption, shall be deleted in its entirety.
 - 15. Section 20, Operations, shall be deleted in its entirety.
- 16. Section 21, Entries/exits, stairs and ladders, swimouts, and benches, shall be amended as follows:
- i. Add new section "21.9.8 Underwater seats and benches shall not be permitted in water depths of five feet or greater."
 - 17. Section 22, Signs, shall be deleted in its entirety.
- 18. Section 23, Entry and exit requirements for persons with disabilities, shall be deleted in its entirety.
 - (d) The ANSI standard ANSI/IAF-9 may be obtained from:

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N.J.A.C. 5:14A (2012)

American National Standards Institute 11 West 42nd Street New York, NY 10036

§ 5:14A-13.1 Title; scope; intent

- (a) This subchapter, adopted pursuant to authority of the Carnival-Amusement Rides Safety Act and entitled "Inflatable Rides," shall be known and may be cited throughout the regulations as N.J.A.C. 5:14A-13, and when referred to in this subchapter may be cited as "this subchapter."
- (b) The purpose of this subchapter is to provide reasonable standards for the design, construction, and operation of inflatable amusement rides as a separate class of rides. The requirements contained in this subchapter are intended to supplement the requirements found in the balance of this chapter.
- (c) This subchapter shall apply to inflatable devices that are designed to allow riders to bounce, slide or be supported on them. The structures shall be fabricated from flexible material, kept inflated by one or more blowers, and rely on air pressure to maintain their shape.
- (d) When an individual component may be used as a stand-alone ride, the review, registration, permitting, and inspection of attachable rides shall be based on the individual components of the ride.

§ 5:14A-13.2 Type classification

- (a) Air-supported structures shall be classified as one of the following four types:
 - 1. Type 1 shall be air-supported structures that are:
 - i. Either sealed or continuously or intermittently inflated; and
 - ii. Are intended to have no human inside or supported by it during operation.
 - iii. Examples shall include, but not be limited to, ball throws and golf simulators;
 - 2. Type 2 shall be air-supported structures that are either:
 - i. Sealed or continuously or intermittently inflated; and
- ii. That allow entry by the public, but where the public is not supported by the structure. Occupants stand on the ground.
 - iii. Examples shall include, but not be limited to, inflatable buildings and entrance gates;
 - 3. Type 3 shall be air-supported structures that are sealed, and:

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- i. Are intended to be occupied or ridden by the public; and
- ii. That the public enters or mounts.
- iii. Examples shall include, but not be limited to, pillows and ball crawls; or
- 4. Type 4 shall be air-supported structures that are continuously or intermittently inflated by a mechanical device, and:
 - i. Are intended to be occupied or ridden by the public; and
 - ii. That the public enters or mounts.
 - iii. Examples shall include, but not be limited to, moonwalks and inflatable slides.
- (b) Air-supported structures, Type 4, as described in (a) above, shall be considered amusement rides, regardless of their location, and shall comply with this subchapter.
- (c) Air-supported structures, Types 1 and 2, as described in (a) above, shall not be considered rides.
- 1. Tensioned membrane structures of more than 900 square feet or 30 feet in any dimension but less than 16,800 square feet or 140 feet in any dimension shall require a permit pursuant to the Uniform Fire Code, N.J.A.C. 5:70. Tensioned membrane structures of 16,800 square feet or greater or 140 feet or more in any dimension shall require a permit pursuant to the Uniform Construction Code N.J.A.C. 5:23.
- (d) Air-supported structures, Type 3, as described in (a) above, shall be considered amusement rides only when located with other rides covered by the Carnival-Amusement Rides Safety Act.
- 1. Tensioned membrane structures of more than 900 square feet or 30 feet in any dimension but less than 16,800 square feet or 140 feet in any dimension shall require a permit pursuant to the Uniform Fire Code, N.J.A.C. 5:70. Tensioned membrane structures of 16,800 square feet or greater or 140 feet or more in any dimension shall require a permit pursuant to the Uniform Construction Code, N.J.A.C. 5:23.

§ 5:14A-13.3 Type certification

- (a) Prior to selling the units to ride owners in the State, manufacturers shall obtain from the Department the applicable type certification for their inflatable rides.
 - (b) Registration of one inflatable ride design per application is required.
 - (c) Manufacturers shall submit the following documentation for each inflatable ride:
 - 1. An illustration or picture of the ride;
 - 2. A description of the ride (height, width, length, and, if applicable, slide length);

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- 3. Calculations for tie-down requirements for both soft and hard surfaces with a list of the requirements;
 - 4. Operation, maintenance, and set-up manuals as required by N.J.A.C. 5:14A-2.14 and 13.6;
- 5. Design calculations per inflatable ride, or class of ride if the wind load areas are comparable, indicating the number of anchorage points and anchor size based upon live and wind loads. The calculations shall be signed and sealed by a licensed professional engineer; and
- 6. Flame resistant standards to which all materials used in the fabrication of the ride were tested and which those fabrics passed. Fabric manufacturer test certifications shall be available from the ride manufacturer for each inflatable unit.

§ 5:14A-13.4 Individual approval

An owner may apply for an individual approval of a ride that has not been type certified. Such application shall contain the same information required for type certification in N.J.A.C. 5:14A-13.3.

§ 5:14A-13.5 Design and construction

- (a) The inflatable ride shall be constructed to sustain appropriate design loads.
- (b) The inflatable ride design shall ensure that no parts of the device or ancillary equipment, such as sharp edges or exterior angles, are accessible to users that may cause injury if contact is made with them.
- (c) The inflatable ride design shall have no significant trapping points between adjacent surfaces.
- (d) The outside walls shall be sufficient in height and strength, and shall be attached to the base, to prevent riders from bouncing over the wall and to prevent the wall from collapsing if run into by a rider.
- 1. When the inflatable ride design allows for jumps, obstacles, or other structures upon which a rider may climb, the ride shall provide an extended base or floor beyond the main area of the ride to ensure that the rider does not fall outside the ride.
- (e) The number and maximum size or weight of riders that the structure can safely hold at any one time shall be specified in the operating manual.
- (f) The design shall be such that no one can be injured or trapped by deflation, and deflation time shall be sufficient to allow the structure to be safely evacuated.

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(g) Designs with open fronts that serve as both an entrance and an exit to a ride shall have a safety mat if the base of the inflatable ride is more than 7.5 inches above the ground. The minimum distance this "step" shall extend from the inflatable ride shall be 36 inches.

§ 5:14A-13.6 Manuals

- (a) The operations manual shall contain a description of the ride, its intended use, and full operating instructions. At a minimum, the manual shall contain:
 - 1. The number of required operators;
 - 2. An emergency evacuation plan;
 - 3. Disassembly, cleaning and storage instructions;
- 4. Information on setting up and maintaining the inflatable ride may be in the operations manual or in separate maintenance and erection and assembly manuals;
- 5. Instructions and drawings that clearly describe the steps to be followed in the assembly and inflation, and the disassembly and deflation; and
 - 6. The number of anchorage points per inflatable ride.

§ 5:14A-13.7 Anchorage

- (a) The number of anchorage points per inflatable ride shall be clearly indicated and pictured in the manuals.
- (b) The size and number of anchorage points shall be adequate for the structure, and take into account live and wind loads.
- (c) Anchors may be straight stakes, screw stakes, ground weights or sandbag ground anchors, and shall be specifically described within the inflatable ride design documents. If substitutions are allowed by the manufacturer, such substitutions shall be clearly indicated in the design documents and manuals
 - (d) Ground stakes shall be a minimum of 40 inches long for slides 15 feet or higher.
 - (e) Manufacturers shall include one set of ground anchors with each inflatable ride.
 - (f) All anchors shall be protected to prevent them from being a hazard to the public.

§ 5:14A-13.8 Ride loading and unloading

(a) Safe and adequate means of loading and unloading from amusement rides shall be provided.

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- (b) For completely enclosed, dark structures:
- 1. Exits shall be marked by readily visible signs in compliance with IBC 2000, Section 1003.2.10 in all cases where it is not immediately visible to the riders;
- 2. An independent system shall be provided for any lighting, emergency lighting, and loud-speaker system;
 - 3. The electrical installation shall conform to Article 700 of the electrical subcode; and
- 4. Structures designed to accommodate more than 50 people shall have more than one exit at opposite ends or sides. All additional exits shall be clearly marked as exits and shall have a latching gate, door, or an operator to prevent entrance at that point.
 - (c) For structures not covered by (b) above:
 - 1. Entrances and exits shall be clearly marked as such and shall be staffed at each location;
- 2. Riders waiting to board the ride shall be in a controlled area and shall not be permitted to gather around the entrance; and
- 3. If rides have exits as well as entrances, the exit shall be staffed and a fenced area shall direct riders away from any equipment, such as generators or transportation equipment.

§ 5:14A-13.9 Materials

- (a) Knitted and woven fabrics, whether coated or uncoated (such as netting, webbing, and fabrics), shall meet the specifications of NFPA 701, Standard Methods of Fire Test for Flame Resistant Textiles and Films, or an equivalent standard.
 - (b) Foam padding shall meet the requirements of ASTM F 1918, Section 11.5.2.

§ 5:14A-13.10 Electrical equipment, wiring and generators

- (a) Blowers shall be specific to the inflatable ride to avoid over inflation and possible rupture or under inflation, and shall be suitably guarded at the inlet and outlet. Blowers shall not be sited internally unless they are in a part of the structure not used by riders and out of possible contact with riders.
- (b) Extension cords shall be of minimum length, proper gauge, and connected to a GFCI (ground fault circuit interrupter) receptacle.
 - (c) Extension cords shall not be connected.
 - (d) Extension cords shall be protected and secured so as not to present a tripping hazard.
 - (e) When an electrical generator is used, the generator shall:

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- 1. Be in good operating condition;
- 2. Be free from leaks;
- 3. Have a proper spark arresting muffler arranged such that the exhaust fumes are directed away from the blower intake;
 - 4. Have circuit protection with ground fault interrupt outlets; and
 - 5. Be located at a safe distance from the inflatable ride and the public.
 - (f) All riders shall be removed from the inflatable ride during refueling of the generator.

§ 5:14A-13.11 Fire prevention

Fire prevention shall be provided per N.J.A.C. 5:14A-9.23.

§ 5:14A-13.12 Identification and data plate

- (a) Every inflatable ride shall have an identification and data plate attached to it that is either sewn or glued to the unit. The identification and data plate shall include the following information:
 - 1. The name and address of manufacturer:
 - 2. The ride name:
 - 3. The ride serial number;
 - 4. The date of manufacture;
 - 5. The rider capacity by weight and number;
 - 6. Cubic feet per minute (CFM) required to properly inflate the ride;
 - 7. The type of blower to be used; and
- 8. The flame resistant standards by which all materials used in the fabrication of the ride were tested and passed.

§ 5:14A-13.13 Assembly and disassembly

- (a) A thorough check of the inflatable ride and its accessories shall be carried out by a qualified person before its use. This check shall ensure that all anchor points, anchor ropes, and anchor stakes or ballasts are undamaged and suitable for continued use.
 - (b) Illustrations and detailed instructions shall be provided for setting up an inflatable ride.

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- (c) Anchorage requirements:
- 1. Stakes or ballast shall be used at every anchorage point and shall be installed per manufacturer requirements;
- 2. Stakes with restraining hooks or collars at the top shall be used to prevent the attached rope from sliding up and releasing; and
 - 3. Anchoring shall not create a tripping hazard.
- (d) All tie-down ropes attached to the inflatable ride shall be fastened to a stake or anchorage. Any rope that becomes detached from the structure shall be replaced with ropes of at least equivalent breaking strength, and shall be attached with equivalent or greater attachment strength.
- (e) During assembly, proper clearance on all sides and top of the inflatable ride shall be observed as per the manufacturer's requirements and N.J.A.C. 5:14A-9.14.

§ 5:14A-13.14 Auxiliary equipment

- (a) Specification sheets for auxiliary components, including, but not limited to, harnesses, bungee cords, carabineers and other fasteners that support or limit riders on inflatable rides shall be provided. The specification sheets shall include:
 - 1. The life cycle of component;
 - 2. The conditions that would indicate mandatory replacement of component; and
 - 3. Instructions indicating proper replacement procedures.

§ 5:14A-13.15 Operation

- (a) Notice shall be provided as per N.J.A.C. 5:14A-9.2.
 - (b) Daily inspection and testing shall be provided as per N.J.A.C. 5:14A-9.3.
 - (c) Inflatable rides shall comply with N.J.A.C. 5:14A-9.6, as applicable.
 - (d) Control of operation shall be as follows:
 - 1. Operators shall operate only one inflatable ride at a time;
- 2. Operators shall be stationed at the exit as well as the entrance when the exit and entrance are in different locations not easily viewed and controlled from one location; and
- 3. On slides over 15 feet from the top of the sliding surface to the ground, an operator shall be stationed at the top of the slide.

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- (e) Operators shall not mix small riders with larger riders whose actions could cause injury to the smaller riders.
 - (f) Operators shall not allow riders to flip.
 - (g) Operators shall not allow any rider to wear shoes on an inflatable ride.
- (h) Provisions shall be made to ensure that riders cannot conceal themselves from the operator's view.
 - (i) Wind and storm hazards:
- 1. In the event of an approaching thunderstorm, gusting or sustained wind, rain, or any other hazardous weather related condition, inflatable rides shall be evacuated and deflated; and
- 2. After the weather condition passes, the inflatable ride shall be dried of rainwater, re-inflated, re-inspected by the operator and shall be re-opened when deemed safe to operate.
 - (j) Imminent danger:
 - 1. Inflatable rides shall not be placed under power lines;
 - 2. Inflatable rides shall be placed a reasonable distance from roadways or motor vehicle traffic;
- 3. Inflatable rides shall have the proper manufacturer-recommended ground cover, and shall not be set up on a surface that could puncture the structure and cause sudden deflation;
 - 4. Areas in which inflatable rides are used shall be sufficiently lighted; and
 - 5. Inflatable rides shall be placed on relatively level ground.
 - (k) Cleanliness:
 - 1. Inflatable rides shall be cleaned as per manufacturer's specifications on a regular basis; and
 - 2. The air intake filter screen on the blower unit shall be free of debris at all times.
 - (I) Rider conduct:
- 1. Warning signs: On inflatable rides that require physical exertion by the riders, the owner shall post a conspicuous warning sign at the entrance of the ride advising the public of the risk to participants;
- 2. All operators and operating assistants shall be aware of and understand the use of and reasoning behind the required warning sign; and
- 3. The sign posted shall comply with the requirements of N.J.A.C. 5:14A-9.34, and shall include "NO FLIPS".
- (m) All rides shall have a legible sign in plain view of the riding public indicating the height restriction for that ride.

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§ 5:14A-14.1 Title; intent; scope

- (a) This subchapter, adopted pursuant to authority of the Carnival-Amusement Rides Safety Act and entitled "Climbing Wall Amusement Rides," shall be known and may be cited throughout the regulations as N.J.A.C. 5:14A-14, and when referred to in this subchapter may be cited as "this subchapter."
- (b) The intent of this subchapter is to provide minimum criteria for design, construction, and operation of climbing wall amusement rides. The requirements contained in this subchapter are intended to supplement the provisions in the balance of this chapter.
- (c) The scope of this subchapter shall include climbing wall amusement rides. Where a specific provision within this subchapter conflicts with the general provisions of this chapter, the provisions set forth in this subchapter shall govern.
- (d) An artificial climbing wall shall be considered a climbing wall amusement ride, and governed by the provisions of this chapter, only when located in an amusement area, amusement park, or water park in which there are other rides covered by this chapter.

§ 5:14A-14.2 Definitions

The words and terms found in section 3 of ASTM F 1773-97, as amended within N.J.A.C. 5:14A-14.7, when used in this subchapter shall have the meanings stated therein, unless the context clearly indicates otherwise.

§ 5:14A-14.3 Owner responsibility

- (a) An owner of a climbing wall amusement ride shall comply with applicable requirements of N.J.A.C. 5:14A-4.
- (b) A climbing wall amusement ride shall be operated in accordance with the provisions of N.J.A.C. 5:14A-14.6 and 5:14A-9.

§ 5:14A-14.4 Manufacturer responsibility

- (a) A manufacturer of a climbing wall amusement ride shall comply with applicable requirements of N.J.A.C. 5:14A-5.
- (b) A climbing wall amusement ride shall be designed and constructed in accordance with N.J.A.C. 5:14A-14.5 and applicable provisions of N.J.A.C. 5:14A-7.

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§ 5:14A-14.5 Design and construction

- (a) Design of a climbing wall amusement ride shall include, but not be limited to, all components required for use by, and protection of, the climber.
 - (b) Design shall facilitate conformance with provisions of N.J.A.C. 5:14A-14.7.
 - (c) Design and construction shall be in accordance with N.J.A.C. 5:14A-7, where applicable.
 - (d) A climbing wall amusement ride shall not require:
 - 1. An "operator presence device"; or
 - 2. An "emergency stop" and/or "category 0 stop".
 - (e) A climbing wall amusement ride greater than 12 feet in height shall have a belay system.
- (f) Design of an artificial climbing wall shall be in accordance with EN 12572:1999, Artificial climbing structures Protection points, stability requirements, and test methods.
- (g) Mounting of holds shall be designed to prevent damage to the artificial climbing wall when replacing or relocating.
 - (h) Rock walls employing manual-belay devices shall comply with the following:
- 1. The use zone shall be a volume area extending a minimum of eight feet perpendicular from the outermost vertical plane of the climbing face and the width of the climbing zone.
- 2. Surfacing of the landing area shall meet, or exceed, the impact attenuation requirements of ASTM F 1292 for a height of at least six feet. Multiple sections shall be secured together, to eliminate separation.
 - (i) Rock walls employing auto-belay devices shall comply with the following:
- 1. The use zone shall be a volume extending a minimum of eight feet perpendicular from the outermost vertical plane of the climbing face and the width of the climbing zone.
- 2. Surfacing of the landing area shall meet, or exceed, the impact attenuation requirements of ASTM F 1292 for a height of at least six feet. Multiple sections shall be secured together, to eliminate separation.
 - (j) Rock climbing walls where lead-climbing is permitted shall comply with the following:
- 1. The use zone shall be a volume extending a minimum of eight feet perpendicular from the outermost vertical plane of the climbing face and the width of the climbing zone.
- 2. Surfacing of the landing area shall meet, or exceed, the impact attenuation requirements of ASTM F 1292 for a height of at least six feet. Multiple sections shall be secured together, to eliminate separation.
- 3. Spacing of protection points shall be a maximum of six feet from the prior protection point in the climbing path.

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- (k) Rock climbing walls where a bouldering feature is provided shall comply with the following:
- 1. Bouldering shall be restricted to a maximum of 12 feet in height.
- 2. The use zone shall be a volume extending a minimum of eight feet perpendicular from the outermost vertical plane of the climbing face and eight feet to each side of the climbing zone.
- 3. Surfacing of the landing area shall meet, or exceed, the impact attenuation requirements of ASTM F 1292 for the maximum bouldering wall height. Multiple sections shall be secured together, to eliminate separation.

§ 5:14A-14.6 Operation

- (a) Operation of a climbing wall amusement ride shall comply with applicable requirements of N.J.A.C. 5:14A-9.
 - (b) Patrons shall be supervised at all times.
 - (c) Access to a climbing wall amusement ride shall be restricted to prevent unauthorized use.
 - 1. Each climbing wall amusement ride shall have a system for controlling patron access.
- 2. Prior to being permitted access to a climbing wall amusement ride, adequate instruction for safe use of that climbing wall shall be given to each patron. As a minimum, this instruction shall include that required or recommended in the operation manual (N.J.A.C. 5:14A-2.14).
- (d) A written staffing plan, acceptable to the Department, shall be established and implemented.
- (e) Rules for use of a climbing wall amusement ride shall be prominently posted in the climbing area and at the entrance to the climbing area.
 - (f) A written policy regarding use of personal equipment shall be established and implemented.
- (g) Climbing rope on a climbing wall amusement ride shall be as specified in the artificial climbing structure manufacturer's manual and conform to one or more of the following standards: EN 892 or UIAA 101.
- (h) Low elongation rope on a climbing wall amusement ride shall be as specified in the artificial climbing structure manufacturer's manual.
- (i) Harnesses on a climbing wall amusement ride shall be as specified in the artificial climbing structure manufacturer's manual and conform to one or more of the following standards: EN 12277, UIAA 105, or ASTM F 1772.
- (j) Connectors on a climbing wall amusement ride shall be as specified in the artificial climbing structure manufacturer's manual and conform to one or more of the following standards: EN 12275, UIAA 121, or ASTM F 1774.

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- (k) Slings on a climbing wall amusement ride shall be as specified in the artificial climbing structure manufacturer's manual and conform to one or more of the following standards: EN 566 or UIAA 104.
- (I) The use zone of a climbing wall amusement ride shall be free of objects not used in the climbing process.
 - (m) Self-belay shall not be permitted on a climbing wall amusement ride.
 - (n) Rappelling without belay shall not be permitted on a climbing wall amusement ride.
 - (o) Rock walls employing manual-belay devices shall comply with the following:
- 1. The belayer shall pass a test, demonstrating competency in use of the belay system, prior to performing belay of a climber.
- 2. The belayer shall check the connection from the climber to the belay system and the fitting of the climber's harness, in accordance with the pre-climb checklist found in the operation manual, immediately prior to climb commencing.
- 3. If the climber or belayer detect any abnormalities with the wall, rope, or equipment, they shall notify the floor supervisor immediately and follow the floor supervisor's instructions.
- 4. Only manual-belay devices specified in the operation manual and rated for such application shall be used.
- 5. The belay device shall be attached to the belayer's belay loop on their harness, or where specified by the manufacturer, using a locking carabiner.
- 6. The climbing rope is to be attached to the belay device in accordance with the manufacturer's specifications found in the operation manual.
- 7. While operating a belaying device, the belayer shall always keep a hand around the brake end of the rope.
 - (p) Rock walls employing auto-belay devices shall comply with the following:
- 1. A floor supervisor shall check the connection from the climber to the auto-belay system and the fitting of climber's harness, in accordance with the pre-climb checklist found in the operation manual, immediately prior to climb commencing.
 - (q) Rock walls where lead-climbing is permitted shall comply with the following:
- 1. The belayer and climber shall pass a test, demonstrating competency in use of the leadclimbing system, prior to their being permitted to use the climbing wall.
 - (r) Rock walls where a bouldering feature is provided shall comply with the following:
- 1. A floor supervisor shall monitor the safety of the climber and ensure the climber does not move into another climbing zone.

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§ 5:14A-14.7 Adoption as amended of ASTM practice F 1773-97

- (a) The Standard Terminology Relating to Climbing and Mountaineering Equipment and Practices, designated by the American Society for Testing Materials (ASTM) as F 1773-97, is adopted by reference, as amended, and made part of this subchapter and shall be enforced as part of this subchapter.
- (b) Notwithstanding any provisions stated in the standard, where specific provisions of the standard conflict with the provisions expressly set forth in this subchapter, the provisions set forth in this subchapter shall govern.
 - (c) The following sections of the standard are modified as follows:
 - 1. Section 3, Terminology, shall be amended as follows:
- i. Section 3.1.2: Following the words "a stationary person," the words "or mechanical device" shall be inserted. Also, the words "catch the climber" shall be deleted and the words "restrict speed of descent" shall be inserted in their place.
- ii. Section 3.1.4: The words "person who is belaying" shall be deleted and the words "ride operator who performs the manual-belay of a climber" shall be inserted in their place.
- iii. Section 3.1.6: The words "person engaging in the sport of climbing and mountaineering" shall be deleted and the words "patron engaged in climbing a climbing wall amusement ride" shall be inserted in their place.
- iv. Section 3.1.13: The words "the path chosen by a climber" shall be deleted and the words "a series of specified holds to be followed by a climber during the ascent of an artificial climbing wall" shall be inserted in their place.
- v. Add Section "3.1.17 Auto-belay, n--an automated mechanical device used to belay a climber."
 - vi. Add Section "3.1.18 Auto-belay, v--the technique of using an auto-belay device."
- vii. Add Section "3.1.19 Climbing wall amusement ride, n--an amusement ride where an artificial climbing wall is used as an integral part of the ride and where it is intended for rider to climb."
- viii. Add Section "3.1.20 Climbing zone, n--the surface on an artificial climbing wall, defined by two vertical planes extending from the base of the wall to the apex, which is designated for use by one or more climbers."
- ix. Add Section "3.1.21 Floor supervisor, n--a ride operator who's primary responsibility is to train and supervise other operators and patrons."
- x. Add Section "3.1.22 Landing area, n--an area at the base of the use zone, where it is predicted a climber would land when falling or exiting the climbing wall."

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xi. Add Section "3.1.23 Manual-belay, v--the technique of using a person to belay a climber, by securing the end of the climbing rope, not attached to the climber, to a braking device and regulating the rope travel through this device."

xii. Add Section "3.1.24 Protection point, or anchor point, n--a point to which a climber can be attached for fall protection."

xiii. Add Section "3.1.25 Use zone, n--the volume immediately adjacent to an artificial climbing wall that is restricted for use by climbers and support personnel."

xiv. Add Section "3.2.40 Hold, n--a device on the face of an artificial climbing wall for a climber to grasp, grip, or step on for support during ascent."

(d) The ASTM standard F 1773-97 may be obtained from:

American Society for Testing Materials 100 Barr Harbor Drive West Conshohocken, PA 19428-2959