BY ORDER OF THE
SECRETARY OF THE AIR FORCE

AIR FORCE OCCUPATIONAL SAFETY AND HEALTH STANDARD 91-8

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Safety

MEDICAL FACILITIES

OPR: HQ AFSC/SEGS (Karen N. Kinkle)

Certified by: HQ AFSC/SEG (Colonel Robert W. Scott)

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The criteria in this standard are the Air Force's minimum safety, fire prevention, and occupational health requirements. Major commands (MAJCOM), direct reporting units (DRU), or field operating agencies (FOA) may supplement this standard when additional or more stringent safety, fire prevention, and health criteria are required. Refer to Air Force Instruction (AFI) 91-301, *Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) Program*, for instructions on processing supplements or variances. Report conflicts in guidance between this standard, federal standards, or other Air Force directives through MAJCOM, DRU, or FOA ground safety offices to Headquarters Air Force Safety Center, Ground Safety Division, Safety Engineering and Standards Branch (HQ AFSC/SEGS), 9700 G Avenue, SE, Suite 222, Kirtland AFB NM 87117-5670.

This standard applies to all Air Force military and civilian personnel working in medical facilities, including all United States (US) Air Force Reserve personnel and when Air National Guard personnel are on federal service. Its purpose is to assist the managers of US Air Force medical organizations to maintain a safe environment and to administer a safety program compatible with Air Force Directives, National Fire Protection Association (NFPA) Codes and Standards, Standards of the Joint Commission on Accreditation of Healthcare Organizations (JCAHO), pertinent federal regulations, and national consensus standards. Information provided in this standard highlights hazards peculiar to health care and health care-related institutions and activities. See the JCAHO *Comprehensive Accreditation Manual for Hospitals (CAMH)* and *Comprehensive Accreditation Manual for Ambulatory Care (CAMAC)* for additional safety requirements.

No Technical Order (TO), AFOSH Standard, or Operating Instruction can possibly address every hazard or potential hazard that may arise from a specific task or combination of tasks. Where situations exist that do not appear to be adequately covered by existing directives, use an Operational Risk Management (ORM) process to assess risk associated with those situations and determine adequate safeguards or procedures to manage the risk. **NOTE**: The ORM process may not be used to violate directives or other regulatory guidance. Normal waiver or variance procedures must be followed in all cases (refer to the first paragraph on page 1).

SUMMARY OF REVISIONS

Administrative changes have been made to update this standard to electronic format. Paragraphs have been renumbered and references updated. Requirement to use ORM process is addressed in the third paragraph, page 1. Instructions how to obtain NFPA and Compressed Gas Association (CGA) codes, standards, and pamphlets is updated (paragraph 7.2.). Information in paragraph 16.2.2. is changed to match the required frequency for safety surveys specified in the JCAHO Accreditation Manual. A glossary of references and supporting information is provided at Attachment 1. Minor changes will be annotated by a bar (|). **Note**: AFOSH 127-series standards are being converted to 91-series standards and 161-series to 48-series standards. However, not all standards have been converted as of the effective date of this standard. To help you locate these documents, references to AFOSH standards are stated in the updated series and standard number in the references section of Attachment 1.

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1. Assigned Qualified Safety Person and (or) Appointed Safety Monitor . The assigned qualified safety person or the appointed safety monitor will be responsible for the internal hospital safety program and will coordinate with the installation ground safety staff.

2. Safety Committee . The Commander or Director Base Medical Services (DBMS) of US Air Force medical centers, hospitals, and clinics will appoint a multi-disciplinary safety committee to develop, implement, and monitor the organizational safety program.

2.1. The committee will be chaired by the DBMS or the Hospital or Clinic Administrator.

2.2. The qualified safety person or safety monitor will be a member of the committee and will act as the recorder.

2.3. The size of the committee will be dictated by the mission of the organization. It will be multi-disciplinary and have (as a minimum) representatives from Facility Management, Medical Materiel, Medical Equipment Maintenance, Dental Services, Hospital Services, Nursing Services, Flight Medicine, Veterinary Services, Dietetic Services, and Housekeeping. Organizations having assigned Clinical Engineers, Physiological Training Officers, Health Physicists, Bioenvironmental Engineering Services, Environmental Health Services, and similar uniquely-qualified functional specialists will ensure these individuals are appointed as members of the committee.

2.4. The safety committee will meet as specified by the JCAHO.

2.5. The committee will maintain written minutes of each meeting. The minutes, including pertinent findings and recommendations of the committee, will be forwarded to the Commander or DBMS for approval. Copies of the approved minutes will be furnished to the quality assurance (QA) and resource manager (RM) coordinator, all major division chiefs, committee members, and the installation ground safety staff.

3. Safety Practices :

3.1. Experience indicates the injury rate of medical care facilities is higher than many industries. Most of the injuries result from slips, trips, and falls or from using incorrect lifting techniques, especially when lifting patients.

3.2. The responsibility to provide an environment free from unsafe acts or unsafe conditions requires that all levels of the hospital staff, functional managers, supervisors, and employees must be vigilant in the performance of their jobs to eliminate practices or conditions that could result in patient, visitor, or employee injury.

3.3. To make the medical treatment facility as safe as possible, employees will:

3.3.1. Report any unsafe act or condition to their supervisor.

3.3.2. Contact housekeeping to remove any foreign material or liquid observed on floors.

3.3.3. Know relevant work procedures and safe work practices.

3.3.4. Not use any damaged or defective equipment and immediately identify this equipment to medical maintenance.

3.3.5. Learn correct lifting and handling procedures (especially when working with patients) to prevent back, muscle, or hernia-type injuries which frequently result from incorrect lifting techniques.

3.3.6. Not participate in horseplay or practical jokes which often result in injuries.

3.3.7. Report all injuries, however slight, to their supervisor and get immediate first aid.

3.3.8. Ensure used needles, syringes, and sharp instruments are properly discarded in approved containers—NEVER in wastebaskets, trash bags, or linen carts. Needle and syringe disposal in health care facilities should comply with current Center for Disease Control (CDC), JCAHO, and Environmental Protection Agency (EPA) recommendations.

3.3.9. Wear appropriate protective clothing and equipment when using cleaning solutions, solvents, caustics, etc., or whenever the job requires it — such as in laboratories, shops, etc.

3.4. Functional managers, service chiefs, and supervisors will ensure that personnel under their supervision are trained and indoctrinated on specific safety procedures that apply to their work areas such as laboratories, housekeeping, food service, facility management, supply, radiology, or nursing. The training will be documented according to AFI 91-301.

4. Fire Prevention and Protection:

4.1. General . Persons who are physically or mentally disabled must receive the highest degree of fire protection practical; therefore, fire prevention programs in health care facilities will receive continual emphasis.

4.2. Fire Protection . Construction Standards. Basic standards for fire resistivity and (or) protection of buildings occupied by patients are outlined in NFPA 101, *Code for Safety to Life From Fire in Buildings and Structures (The Life Safety Code).* These standards will apply to Air Force medical facilities. Additional guidance provided in the JCAHO Accreditation Manual should be followed. Each facility will be surveyed for compliance with these standards by a qualified fire inspector. These surveys are in addition to the annual inspections required by AFI 91-301 and will be updated with each change or addition to the facility. A record of these surveys will be maintained and any uncorrected deficiencies monitored per instructions contained in AFI 91-301.

4.3. Fire Extinguishers :

4.3.1. All medical personnel will know the location of fire extinguishers in their work area and how to operate them. Four general classifications of fires have been adopted by the NFPA. The classifications are:

4.3.1.1. Class A. Fires involving ordinary combustible materials such as wood, paper, and rubbish.

4.3.1.2. Class B. Fires involving flammable liquids such as gasoline, oil, organic solvents, and so forth.

4.3.1.3. Class C. Fires involving electrical equipment.

4.3.1.4. Class D. Fires involving combustible metals.

4.3.2. Each fire extinguisher will be labeled to indicate the classes of fires it can be used on. Using the wrong type extinguisher may not only fail to put out a fire, but may actually spread it. Using water on an electric (Class C) fire could result in electrocution of the operator.

4.3.3. A joint survey of the medical facility by a qualified fire inspector and the medical facility safety representative will be conducted to ensure the types and quantities of fire extinguishers are adequate.

4.3.4. If extinguishers intended for different classes of fires are grouped, each extinguisher will be marked to identify its intended use.

4.3.5. Extinguishers will not be obstructed or hidden from view. Extinguisher locations will be clearly identified.

4.3.6. Fire extinguishers will be inspected at least quarterly and included in a regular maintenance program.

4.4. Smoking Regulations . Written regulations governing smoking will be published by each medical facility, complying with standards published in the JCAHO Accreditation Manuals and in AFI 40-102, *Tobacco Use In the Air Force*.

5. Electrical Safety:

5.1. Every effort will made to maintain an electrically-safe environment within the medical facility and its grounds. Specific design and construction standards for electrical distribution systems are contained in AFI 32-1023, *Design and Construction Standards and Execution of Facility Construction Projects*, and NFPA 70, *National Electrical Code (NEC)*, Article 517.

5.2. Testing of the electrical distribution system and electrically operated equipment will be as specified in AFI 32-1063, *Electric Power Systems*, and AFI 41-203, *Electrical Safety in Medical Treatment Facilities.*

5.3. The effectiveness of the grounding system shall be evaluated before acceptance, or initially if never before performed. This evaluation will be documented and repeated when major modifications to the electrical system are made.

5.3.1. The use of electrical extension cords will be minimized in patient care areas. If extension cords are necessary, they will be heavy duty, three-conductor cords with Underwriters' Laboratory (UL) Hospital Grade connectors. Two-wire extension cords are prohibited in any patient care area. Metallic-bodied two or three blade end connectors are also prohibited. Extension cords of any type are prohibited in areas where flammables are used or stored (see NEC Article 517 and Federal Specification W-C-596). Individual hospital policy should be developed and documented regarding the use of extension cords.

5.3.2. Multiple plug adapters are prohibited except when combined with a surge suppresser and used with computer equipment or when used by qualified electronic technicians in the performance of essential maintenance programs.

5.3.3. With the exception of double-insulated appliances, all electrical equipment used in patient care areas will be grounded as specified in NFPA 99, *Standard for Health Care Facilities*, and AFI 41-203.

5.3.4. Grounding and leakage requirements for electrically operated equipment will be according to AFI 41-203 or the appropriate NFPA code or standard. In the event of conflict, the more restrictive directive will apply.

6. The Medical Facility:

6.1. General . The medical facility is subject to most of the types of mishaps common to other locations frequented by workers and visitors. The nature of the facility creates a false sense of security to many who enter; therefore, there is a tendency for carelessness. Patients, especially the sick and the elderly, are more prone to certain types of mishaps, such as slips and falls.

6.2. Hospital Grounds and Parking Areas:

6.2.1. Hospital grounds will be well kept at all times. Power equipment such as lawn mowers, hedge trimmers, etc., will not be left unattended.

6.2.2. Hospital parking lots and walkways will be in good repair, illuminated, and kept free of debris, sand, gravel, snow, and ice.

6.2.3. Pedestrian crosswalks will be marked and identified. Crosswalks across ambulance routes in the immediate vicinity of the medical facility will be posted with a warning sign stating **"EMERGENCY VEHICLE ROUTE."**

6.2.4. Emergency parking spaces should be established near the emergency room entrance.

6.2.5. Ambulance parking areas should be located to allow the best possible exit into common emergency routes. If possible, the ambulance should not have to pass through a parking lot. Ambulances will be parked for immediate response in a forward direction; that is, backing out of stalls will be avoided.

6.3. Entrances and Exits:

6.3.1. Each entrance to the facility will be appropriately identified. Emergency room entrance signs will be illuminated. Doormats will be in good repair and lie flat. Clear glass doors and panels will be affixed with decals or other visible means to preclude being mistaken for an opening. Elevated thresholds will be eliminated wherever possible.

6.3.2. Every exit will be clearly visible, or the route to it conspicuously identified, so every occupant of the building will readily know the direction of escape from any point.

6.3.3. Any doorway or passageway, which is not an exit or access to an exit but which may be mistaken for an exit, will be identified by a sign reading **"NOT AN EXIT"** or a sign indicating its actual use, such as **"STOREROOM."**

6.3.4. Exits and access to exits will be marked by a readily visible sign. Each exit sign (other than internally illuminated signs) will be illuminated by a reliable light source providing not less than 5 foot-candles on the illuminated surface.

6.3.5. Mirrors will not be placed on or near exits in a way that confuses the direction of exit.

6.3.6. At no time will exits be blocked.

6.3.7. Identification of exits, illumination of exits, and types and numbers of exits will be according to NFPA 101.

6.4. Stairs and Corridors:

6.4.1. Handrails will be installed on each stairway.

6.4.2. Stairways should be illuminated to a level of at least 20 foot-candles.

6.4.3. Bulletin boards or other similar distractions will not be located in or near stairways.

6.4.4. Stairs will be maintained in good repair and free from slippery surfaces.

6.4.5. Stairways and corridors should be wet-mopped only one side at a time. **"CAUTION — WET FLOOR"** signs will be posted and slippery areas blocked off.

6.4.6. In stairways, doors at each floor level will be kept closed to provide a fire stop. With the approval of the authority having jurisdiction, doors may be held open with an automatic-closing device installed according to instructions in NFPA 101.

6.4.7. Corridors and stairways will be kept free of unnecessary obstructions and will not be used as storage space.

6.5. Elevators . Facilities in which patients are housed on floors other than grade level will have at least one elevator that will accommodate at least one adult-size bed. Elevators will be equipped with a telephone or intercommunication system. **"NO SMOKING"** signs will be posted in each elevator. If elevators are not self-service, qualified and trained personnel will be assigned to operate them. Elevators will be inspected according to instructions in American National Standards Institute (ANSI) A17.2, *Practice for the Inspection of Elevators, Escalators, and Moving Walks.*

6.6. Emergency Power Requirement. The requirement for emergency power is covered in AFI 32-1023 and the JCAHO Accreditation Manuals. Each medical facility will review and comply with these references.

7. Compressed Gases . The handling, care, and storage of compressed gases, cylinders, distribution systems, and devices for administering or otherwise using compressed gases will be according to current NFPA codes and standards, CGA pamphlets, Air Force TOs, and JCAHO requirements.

7.1. Specific codes, standards, pamphlets, and TOs which apply are as follows:

7.1.1. NFPA 50, *Bulk Oxygen Systems at Consumer Sites.*

7.1.2. NFPA 53M, *Fire Hazards in Oxygen-Enriched Atmospheres*.

7.1.3. NFPA 99, *Standard for Health Care Facilities,* Chapters 4, *Gas and Vacuum Systems,* and 10, *Laboratories.*

7.1.4. CGA Pamphlet G-4, *Oxygen.*

7.1.5. CGA Pamphlet P-1, *Safe Handling of Compressed Gases in Containers*.

7.1.6. CGA Pamphlet P-2, *Characteristics and Safe Handling of Medical Gases.*

7.1.7. TO 42B-1-2, *Gas Cylinders Use, Handling*.

7.2. Codes, standards, and pamphlets (for a fee) are available from:

7.2.1. National Fire Protection Association (NFPA) Publications Service Department, 1 Batterymarch Park, Quincy, MA 02269-9101, Web Site: http://www.nfpa.org.

7.2.2. The Compressed Gas Association, 1725 Jefferson Davis Highway, Suite 1004, Arlington VA 22202-4102, Web Site: http://www.cganet.com. **NOTE:** Data on changed or revised codes is presented periodically in the Air Force Medical Logistics Letter (AFMLL).

7.3. Medical gas systems will be constructed according to NFPA 99, Chapter 4. Key requirements that should be periodically checked are as follows:

7.3.1. Doors or gates to enclosures for the gas supply systems will be locked.

7.3.2. Enclosures for gas supply systems will not be used for storage purposes other than for cylinders containing the nonflammable gases which are to be distributed through the pipeline. Storage of empty containers disconnected from the supply equipment is permissible. Empty cylinders will be segregated and identified. Cylinders not in use will be capped and secured in a vertical position by a chain or similar device. Cylinders connected to a manifold will also be secured. Plumbing (tubing and so forth) to the manifold will not suffice for this purpose.

7.3.3. Smoking is prohibited in the gas supply system enclosure. **"NO SMOKING"** signs will be posted.

7.3.4. Operating and emergency alarm systems and pressure gauges will be located to ensure continuous responsible surveillance. Each signal and gauge will be appropriately labeled. Local operating instructions will be written regarding actions required upon activation of these alarms.

7.3.5. The gas content of pipelines will be readily identifiable by appropriate labeling with the name of the gas contained. Labels will appear on exposed pipe at intervals not less than 20 feet and at least once in each room and story traversed by the pipeline.

7.3.6. A pressure relief valve set at 50 percent above normal pipeline pressure should be located downstream of the pressure-regulating valve and ahead of any shut-off valves in the central oxygen system.

7.3.7. Piping systems for gases will not be used as a grounding point.

7.3.8. Shut-off valves accessible to other than authorized personnel will be labeled:

"CAUTION (NAME OF MEDICAL GAS)

DO NOT CLOSE EXCEPT IN EMERGENCY

THIS VALVE CONTROLS SUPPLY

TO _____"

7.3.9. Disaster plans will address operation of oxygen shut-off valves.

7.3.10. Medical gas systems will be equipped with manually-operated zone shut-off valves labeled with the name of the gas according to NFPA 99, Chapter 4.

7.3.11. Each pressure gauge and manometer for oxygen, including gauges applied temporarily for testing purposes, will be those manufactured expressly for the gas and labeled: **"OXYGEN — USE NO OIL."**

8. Autoclaves and Sterilizers:

8.1. Steam autoclaves and sterilizers may be found in various locations within a medical facility. The following safety rules are applicable:

8.1.1. Preventive maintenance schedules will be strictly adhered to (see Air Force Manual [AFMAN] 23-110V5, *Air Force Medical Materiel Management System — General*).

8.1.2. Safety relief valves and sealing gaskets will be maintained in good condition.

8.1.3. Sterilizers will not be opened until steam pressure has dropped to zero. Steam pressure will never be used to blow open a stuck door.

8.1.4. Use of autoclaves will be restricted to trained personnel.

8.1.5. All autoclaves, sterilizers, glass-washers (as well as any other major electrical equipment item) should have a main power shut-off switch or breaker switch located near the unit so personnel can quickly shut off power in case of an emergency or malfunction.

8.2. Ethylene oxide sterilizers present both toxic and fire hazards and will be operated only by personnel well trained in their use. Aeration of sterilized materials will adhere to manufacturer's instructions to reduce residual ethylene oxide contamination. Aeration cabinets designed for this purpose will be used. Personnel responsible for conducting ethylene oxide sterilization or aeration will be thoroughly familiar with recommended minimum aeration time for various materials. A copy of the manufacturer's recommended aeration time schedule will be maintained in the immediate area of the sterilizer. Sterilizers using ethylene oxide and aerators will be vented to the exterior of the building. Venting of these units to the interior of the building (for example, into a moistened sponge) is unacceptable. Ethylene oxide sterilizers should be located in a way that minimizes the length of exterior vent lines. In no case will vent lines deviate from the manufacturer's recommended specifications for vent diameter, length, vertical rise, or material. An excellent guide titled: *Ethylene Oxide Sterilization, A Guide for Hospital Personnel*," which outlines general techniques applicable to all hospital ethylene oxide systems, is available from the American Association of Medical Institutes (AAMI), Suite 602, N. Ft Meyer Drive, Arlington VA 22209.

9. Laboratory:

9.1. Personnel Practice:

9.1.1. Eating, drinking, smoking, and the application of cosmetics within the laboratory are prohibited.

9.1.2. Pipetting of infectious, toxic, or corrosive fluids by mouth is prohibited.

9.1.3. Personnel will avoid hand-to-face motions when working with infectious or toxic materials.

9.1.4. Wrist jewelry, watches, and rings will not be worn when infectious materials are handled.

9.1.5. In laboratory areas where eye hazards exist, contact lenses will not be worn without the use of appropriate safety eyewear (see AFOSH Standard 91-31, *Personal Protective Equipment*).

9.1.6. Foods will not be stored in laboratory refrigerators.

9.2. Procedures and Equipment:

9.2.1. Work with flammable or toxic materials should be conducted in exhaust ventilation hoods. The nature of the work being done will determine the type of hood required (see AFOSH Standard 48-2, *Industrial Ventilation*). In general, the hood exhaust system should operate independently of

the general ventilation system and have its own air supply. Exhaust hoods will meet the following requirements:

9.2.1.1. Hoods should be located away from doors and windows in areas of minimum air turbulence.

9.2.1.2. Glazing shall be of a material that will provide protection to the operator or environment against the hazards normally associated with the use of the hood.

9.2.1.3. Hoods will be designed to prevent backflow of contaminants into the room (see AFOSH Standard 48-2).

9.2.1.4. Shut-off valves for services, including gas, air, vacuum, and electricity, will be located outside the hood enclosure.

9.2.1.5. Exhausts from hoods in which infectious materials are processed will pass through high-efficiency particulate air (HEPA) filters (99.9 percent at 0.3 microns) before discharging to the atmosphere. HEPA filters will be changed only by trained personnel. The general classification and requirements for biological safety cabinets are contained in National Sanitation Foundation (NSF) Standard 49-1992, *Class II (Laminar Flow) Biological Cabinetry.*

9.2.2. Eyewashes and emergency showers or equivalent devices will be located within the laboratory convenient to work stations that utilize corrosive liquids, acids, etc. Floor drains should be provided in the area. Electrical devices should not be located near the drainage area in order to prevent an electrical shock hazard to anyone using the shower. (Reference AFOSH Standard 91-32, *Emergency Shower and Eyewash Units*.)

9.2.3. Supplies of hazardous chemicals within the laboratory will be kept to a minimum. A week's supply or the smallest unit stock listed container is considered reasonable. All containers will be clearly labeled. Hazardous chemicals will be separated from nonhazardous materials. Care will be taken to segregate chemicals that react violently when mixed together, such as the following:

9.2.3.1. Ammonia and mercury.

9.2.3.2. Chromic acid and certain organics.

9.2.3.3. Nitric acid and aniline organics.

9.2.3.4. Chlorine and ammonia, hydrogen, metal powders.

9.2.3.5. Oxidizers with most metal powders, flammable liquids.

9.2.3.6. Alkali metals and water.

9.2.4. Storage of flammable or combustible liquids will be kept to a minimum. Not more than 10 gallons or 1-week's supply (whichever is less) of flammable and (or) combustible liquids (aggregate capacity) will be maintained outside of storage cabinets within the laboratory. If laboratory activities require more than 10 gallons or 1-week's supply to be present, the excess will be stored in an approved flammable storage cabinet.

9.2.4.1. These liquids will be used from and stored in the manufacturer's original container or an approved and properly labeled safety can.

9.2.4.2. Laboratory storage area for small quantities of these liquids will be ventilated and

kept away from all heat sources. Wooden or metal cabinets may be used. Flammable liquids will not be stored in refrigerators.

9.2.4.3. If refrigeration is necessary to control reaction rates or other similar operations, where no convenient alternative exists, storage of liquids in well-sealed containers is permissible in explosion-proof refrigerators. Each refrigerator will be labeled on the outside of its door to denote whether or not they are safe for storage of flammables.

9.2.5. Use of flammable gases in conjunction with laboratory equipment such as flame photometers will be according to NFPA 99, chapter 10.

9.2.6. Centrifuges will be covered when operated. Centrifuge tubes will fit the metal buckets and will not have defects or cracks. Cushions at the bottom of the cups should be in good condition.

9.2.7. An inspection and maintenance schedule should be established for equipment installed in the laboratory.

9.2.8. Bunsen burners will not be left burning unattended. They will never be used to heat flammable liquids. Heavy tubing will be used to connect the burner with the gas jet. Thin-walled rubber (surgical) tubing will not be used since it is easily collapsed by a sharp bend or weight. Gomco tubing is prohibited for use with Bunsen burners.

9.2.9. Microtomes will not be left unattended with blades in place. When not in use, blades will be stored in appropriate containers. When in use, exposed blade edges other than the actual cutting surface should be guarded. Simple guards can be locally constructed from segments of rubber tubing slit lengthwise.

9.2.10. All electrical heating equipment will be equipped with over-temperature shut-off controls.

9.2.11. Thermal gloves, beaker and crucible tongs, and test tube holders will be available for handling hot items.

9.2.12. Precautions should be taken with sodium azide which is a common preservative in many in vitro diagnostic products. Sodium azide poured into drains reacts with metal in the plumbing and forms a powerful contact-sensitive explosive. Decontamination procedures for azide-contaminated plumbing have been published by the Center for Disease Control (CDC), Atlanta, Georgia, Manual Guide—Safety Management No. CDC-22, *Decontamination of Laboratory Sink Drains to Remove Azide Salts,* dated April 30, 1976.

9.2.13. Laboratories will comply with the requirements of NFPA 99, chapter 10 and AFOSH Standard 91-68, *Chemical Safety*.

10. Surgery:

10.1. Locations employing inhalation anesthetics will conform to standards in NFPA 99, Chapter 3, *Use of Inhalation Anesthetics (Flammable and Nonflammable).* Key requirements that will be checked on a regular basis will include, but are not limited to, the following:

10.1.1. The relative humidity in anesthetizing locations will be maintained above 50 percent. Humidity measuring and recording instruments should be installed in areas where anesthesia is routinely used.

10.1.2. An isolated electrical power supply will be provided for each flammable anesthetizing location. The system will include either a line isolation monitor (dynamic detector—required for new facilities) or a ground detection alarm (static detector—permitted by NFPA in older existing facilities). Whichever detector is used, it will be tested according to NEC Article 517 by medical maintenance personnel and a record of these tests will be maintained.

10.1.3. Conductive flooring will be provided for each flammable anesthetizing location. It will be tested according to AFMAN 23-110V5. If conductive flooring is installed in nonflammable locations, it will also be tested according to the referenced manual.

10.1.4. Conductive footwear will be worn in flammable anesthetizing locations. Resistance of the footwear will not exceed 500,000 ohms.

10.1.5. In flammable or mixed anesthetizing locations, the following will not be permitted for outer garments or for nonapparel purposes in anesthetizing locations unless such materials have been tested and found anti-static:

10.1.5.1. Silk

10.1.5.2. Wool;

10.1.5.3. Synthetic textile materials;

10.1.5.4. Blends of synthetic textile materials;

10.1.5.5. Blends of synthetic textile materials with unmodified cotton or rayon; and

10.1.5.6. Nonwoven materials.

10.1.6. Portable electrical equipment, such as incubators, X-ray machines, etc., used in flammable anesthetizing locations will be “explosion-proof” according to NFPA.

10.1.7. Casters on portable conductive equipment will be kept clean and free of wax or other foreign matter. Furniture used in flammable anesthetizing locations will be constructed of electrically conductive material and will be outfitted with conductive wheels, pads, or other conductive floor contact devices. Surfaces should not be painted.

10.2. Only noncombustible agents will be used for anesthesia or for pre-operative preparation of the surgical field if electrocautery, electric coagulation, or any other electrical equipment employing an open spark is to be used during the operation.

10.3. Anesthesia equipment should not be covered. Covers may confine small leaks, producing an explosive or flammable atmosphere that could ignite when the cover is removed.

10.4. Patient electrodes (ground plate) of Radiofrequency (RF) electro-surgical units will be kept free of corrosion and irregular surfaces. Reusable (nondisposable) patient electrodes should be permanently connected to the patient return cable without the use of clips or clamps. Disposable patient electrode plates and adhesive electrodes are exempt from this requirement when used with reusable (nondisposable) patient cables.

10.5. Lint removal pads may be placed at each entrance to the surgical suite. These pads will be replaced frequently.

10.6. Only ventilators which have a low-pressure alarm system will be used. Periodic maintenance leakage testing will be accomplished as prescribed by the manufacturer.

11. Radiology:

11.1. All X-ray equipment and facilities (including dental) will be surveyed by a qualified person.

11.2. Collimation of the useful beam to the smallest size necessary for the diagnostic procedure will be enforced by the person in charge. Collimators will be checked for accurate beam size control and alignment during routine safety inspections. X-ray technicians can easily accomplish this check by exposing a single film with the beam size limited to less than the film size and centered. A simple comparison of the image produced against that which was desired will indicate accuracy. Facilities utilizing collimators with beam-defining lights should have the capability to dim the overhead lighting to allow accurate alignment of the light field.

11.3. Leaded aprons and gloves will be in good condition. Racks will be provided to hang aprons when not in use. Aprons should not be folded because sharp creases result in cracks.

11.4. Thermoluminescent Dosimeter (TLD) badges will be worn by all physicians and technicians (including medical maintenance and bioenvironmental engineering [BE] personnel) as determined by the medical Radiological Officer and (or) Bioenvironmental Engineer (BEE), as outlined in AFI 48-125, *The US Air Force Personnel Dosimetry Program.*

11.5. Positioning locks and motion limiters for X-ray equipment will be maintained in good working condition. Malfunctioning locks and limiters will be reported to medical maintenance immediately.

11.6. Counter balance systems, as well as all mechanical movements (weight, pulleys, cables, springs, locks, and brakes), should be checked on a semiannual basis by medical maintenance personnel.

11.7. Overhead mobile X-ray equipment and cables will be positioned out of the way when not in use.

11.8. Doors leading to X-ray exposure rooms will be labeled **"X-RAY EXPOSURE ROOM—KNOCK BEFORE ENTERING".** Doors will be kept closed during exposures.

11.9. Leaded drapes and the bucky slot shield on fluoroscopy units will be maintained in good condition. Leaded drapes should be easily positioned and the bucky shield should effectively cover the entire slot.

11.10. Good housekeeping is essential since a considerable amount of work is gone under low levels of illumination.

11.11. Portable X-ray equipment will be stored to prevent unauthorized use. A leaded apron for the operator should be kept with the machine. When the machine is transported, the tube head should be in a lowered and locked position.

11.12. Use of radioactive materials will be strictly controlled according to Nuclear Regulatory Commission (NRC) license and (or) US Air Force permit conditions. The Radiation Protection Officer specified on the license or permit will monitor this program.

11.13. AFOSH Standard 48-10, *Health Hazards Control for Laser Radiation,* will be consulted.

12. Pharmacy:

12.1. Drugs stored within the pharmacy and throughout the hospital will be under the supervision of the pharmacy officer.

12.2. Each drug preparation area will be well lighted. An illumination level of at least 100 foot-candles will be maintained on working surfaces.

12.3. Disinfectants and drugs for external use will be stored separately from internal and injectable medications. Poisons will be segregated from therapeutic agents.

12.4. All drugs will be labeled, including the addition of appropriate accessory or cautionary statements, as indicated. No unidentified or outdated substances will be permitted in the pharmacy.

12.5. Supplies of flammable liquids will be kept as small as possible. If more than 10 gallons (aggregate total) must be maintained, an approved flammable storage cabinet will be provided.

12.6. Heavy or bulky items should be stored on lower shelves. If storage space above 6 feet is used, suitable stepladders will be provided. Chairs, boxes, etc., will not be used as substitutes for ladders.

12.7. Each hospital using chemotherapeutic and antineoplastic agents will have a response plan for dealing with spills or mishaps involving these agents.

13. Nursing Units, Emergency Rooms, and Clinic Treatment Rooms:

13.1. Good housekeeping is essential. Spills will be wiped up immediately.

13.2. Patients will always wear shoes or slippers when walking.

13.3. Side rails should be required on all beds and used with the following types of patients:

13.3.1. Patients that have just undergone an operation.

13.3.2. Patients that are confused, disoriented, or senile.

13.3.3. Children.

13.3.4. Patients that have received a sedative, narcotic, or barbiturate.

13.4. Adjustable beds should be maintained in the low position unless otherwise needed. Bed wheels will be locked.

13.5. Litter straps will be used when transporting patients.

13.6. Nursing staff will be trained on patient moving and evacuation procedures. Evacuation procedures should be explained to patients. Evacuation plans will include procedures for moving patients who require assistance (patients in traction, etc.). These procedures will be practiced using substitutes for patients. Elevators are not to be considered a primary means of exit during fire emergencies (see NFPA 101).

13.7. Patient-owned electrical or electronic devices (heating pads, televisions, radios, shavers, etc.) will not be allowed in a known hazardous area.

13.8. Patient-owned electrical or electronic devices may be used in general care units (unless disapproved by the attending physician or nursing staff) if the following conditions are satisfied.

13.8.1. A determination of essentiality will be made by the attending physician and documented.

13.8.2. Patient-owned devices will be inspected on a regular basis by appropriately trained personnel. Grounded devices will comply with the chassis leakage current specification of AFI 41-203. Ungrounded devices may be allowed if they have no exposed conductive surfaces.

13.9. Staff-owned non-medical devices such as coffee machines and radios (if they are in good condition and present no safety hazard) may be utilized in areas not frequented by patients. The operators of such devices will be constantly alert to their potential for fire and electric hazards. Staff-owned medical devices will conform to the electrical safety standard of AFI 41-203 and be inspected by appropriately trained personnel on a regular basis. Installation 32-series documents will be referred to for further guidance.

13.10. Hot water vaporizers that produce a "hot-mist" are hazardous and will not be used in patient care areas. Vaporizers that are designed to keep water in the storage tank below 130-degrees Fahrenheit (F) and produce a "cool-mist" are considered safe for use.

13.11. **"NO SMOKING"** rules will be strictly enforced where oxygen is used or stored.

13.12. Grab bars will be located in patient bathrooms and in patient clinic areas where patients may be seen or treated (bathrooms in radiology, physical therapy, etc.). Patient showers and bathtubs will have nonskid surfaces. Nurse call or panic-light systems will be installed and appropriately identified in patient bathrooms, clinics, other support areas, radiology, etc.

13.13. Light cradles and infrared lamps will not be used unless someone is in attendance. Only 25-watt bulbs should be used in light cradles; the bulb should be kept at least 18 inches from the patient.

13.14. Television sets used in patient care locations should be floor-standing console type or portable sets permanently mounted on wall or ceiling supports designed for that purpose.

14. Medical Materiel:

14.1. All medical supplies will be clearly labeled.

14.2. Flammable and combustible liquids and gases will be stored in approved flammable storage rooms or cabinets.

14.3. The following general requirements apply to the storage of all gas cylinders:

14.3.1. Flammable gases (ethylene, ether) and fuel gases (acetylene, propane) will be stored separately from oxidizing gases (oxygen, nitrous oxide).

14.3.2. Cylinders will be chained or otherwise secured in a vertical position with safety caps in place.

14.3.3. US Air Force-owned cylinders will be color coded and contents stenciled on the cylinder according to Military Standard 101B, *Color Code for Pipelines and Compressed Gas Cylinders*. Color codes for commonly used gases will be posted in the area.

14.3.4. Empty cylinders will be identified and stored apart from full containers.

14.3.5. Cylinders will not be subjected to temperature extremes, especially heat.

14.3.6. Oil, grease, and other petroleum products will be kept away from cylinders, regulators, etc.

14.3.7. Smoking or flames will not be permitted in cylinder storage areas and "**NO SMOKING**" signs will be posted.

14.4. Heavy, bulky items should be stored on lower shelves. If storage above 6 feet is required, appropriate ladders will be provided. Shelves will not be overloaded.

14.5. Medical maintenance work shops are typical of other Air Force shops. They will conform to all safety standards applicable to those shops, e.g., AFOSH Standard 91-12, *Machinery*, Occupational Safety and Health Administration (OSHA) 29 Code of Federal Regulations (CFR) 1910, Subpart O, *Machinery and Machine Guarding*, and OSHA 3067, *Concepts and Techniques of Machine Safeguarding*, in addition to the requirements of this standard.

15. Hazardous Waste:

15.1. Each medical treatment facility will have a hazardous waste management plan that contains procedures for identification, handling, storage, use, and disposal of hazardous materials from receipt through use. The plan will identify and manage infectious waste from generation to final disposition. The hazardous waste management plan will follow all applicable state, local, and federal guidelines for the management of hazardous waste.

15.2. Incinerators will be used only for their intended purpose and will conform with existing pollution abatement criteria. Incinerators will be operated and maintained using the manufacturer's guidelines. Use of the incinerator should be restricted to authorized personnel only. When not being used, the incinerator room and controls will be locked to prevent unauthorized use.

16. Inspections:

16.1. Safety inspections are one of the principal methods of locating hazards and helping to determine what actions are necessary to provide a safe environment for hospital personnel, patients, and visitors. The purpose of safety inspections is to identify hazards and discrepancies and, if discrepancies are observed, to recommend corrections which will bring the hospital up to accepted standards.

16.2. The following inspections are considered minimum requirements:

16.2.1. A comprehensive, detailed safety inspection of the medical facility including grounds, loading docks, outside structures, floors, stairways, housekeeping, electrical equipment, elevators, roofs, laboratories, storage areas, maintenance shops, heating or air conditioning plant, and dining facility will be conducted annually by installation ground safety personnel, in cooperation with the medical facility safety representative and appropriate functional specialists. When a medical facility has an assigned qualified safety person, the annual inspection requirement will be accomplished by this individual unless the Host-Tenant Agreement specifies differently. Hazards identified during any inspection will be abated according to procedures in AFI 91-301.

16.2.2. The medical facility safety representative will conduct semiannual safety inspections to identify unsafe conditions or acts for correction by functional managers or supervisors. These inspections shall be documented and maintained in the medical organization. This requirement applies to all Air Force hospitals and clinics.

16.2.3. Functional managers and supervisors will conduct frequent (at least monthly) inspections of their areas to monitor for unsafe conditions or unsafe acts by employees, determine the reasons, and find solutions.

17. General:

17.1. Liquid oxygen will not be used for treatment of skin disorders. Liquid nitrogen is acceptable if suitable containers (Dewar Flasks) are provided. Containers will be labeled, guarded, and supported to prevent accidental spillage during transport and use. Thermal gloves, eye protection (face shields), and rubber aprons will be used when liquid nitrogen is transferred from one container to another.

17.2. Thermometers will be used to check temperatures of hot pack machines and hot pack paraffin baths used in the physical therapy department. Water temperature of the hot pack machine will be maintained between 165 and 170 degrees F. The therapist will provide proper insulation by applying toweling around the pad for protection of the patient. Temperature of all other equipment will not exceed 130 degrees F. Temperature indicators on equipment such as whirlpool baths will be calibrated according to information in the manufacturer's manuals.

17.3. Many patients receiving treatment in physical therapy departments are on crutches or have difficulty walking. To prevent falls, spills will be wiped up immediately and hallways and walking areas kept free from tripping and stumbling hazards.

17.4. Electrical wall outlets in pediatric clinics, psychiatric examination and interview areas, waiting rooms, nursing units, and other areas where children are cared for will be the "child-safe variety" or covered when not in use.

17.5. Storage cabinets containing hazardous materials, including strong cleaning agents, (in all clinics) will be kept locked.

17.6. Toys in pediatric clinics and waiting rooms will be safe and kept in good condition. Electrical "plug-in" toys or toys that produce sparks are prohibited. Toys banned by the Consumer Product Safety Commission will not be used.

17.7. Nuclear medicine clinics will comply with all NRC licenses and US Air Force permit conditions. The Radiation Protection Officer named on the permit will monitor this program.

17.8. The delivered oxygen concentration on all incubators with supplied oxygen will be monitored by an oxygen analyzer, set to alarm when the concentration deviates from that prescribed by the physician. Incubator vent ports will not be obstructed in any manner.

17.9. Dentists, hygienists, and assistants will use appropriate eye protection when using polishing or grinding equipment (see AFOSH Standard 91-31).

17.10. Areas where polishing, grinding, and other similar operations are conducted in dental laboratories will be properly ventilated. Where special filters are used to control beryllium, they will be cleaned or changed-out only by trained personnel using approved procedures. BE personnel will evaluate the effectiveness of ventilation systems for these operations (see AFOSH Standard 48-2).

17.11. Soiled linen will be bagged at the source of use. Personnel handling soiled linens will wear gloves. These linens will be transported in covered carts used exclusively for that purpose. Cart liners should be laundered when visibly soiled.

17.12. All equipment in ambulances, especially oxygen bottles and litters, will be secured.

17.13. Operators of ambulances will not exceed the legal speed limit for such vehicles at any time, on or off base. The use of colored lights and (or) sirens will be considered by the operator as a request for other vehicles to yield right-of-way. Under no circumstances will the use of warning devices be interpreted by the operator to mean that such devices give them clearance to operate the vehicle without

due regard for life, property, and local and state traffic laws. When responding to an emergency, operators of ambulances will comply with local and state laws to enhance their safe operation.

17.14. All newly purchased cribs will meet current safety requirements. All practical efforts will be made to modify existing cribs to meet current standards.

17.15. Local written policy will be developed for the safe handling, storage, and disposal of needles, syringes, and other sharp objects (scalpel blades, razor blades, etc.).

17.16. Occupational therapy sections will conform to the requirements of this and other appropriate AFOSH standards regarding industrial practice and the use and maintenance of machines and tools (AFOSH Standard 91-12).

17.17. The hot water supply should be regulated by thermostatic control or other device so the temperature of water commonly used by patients or visitors does not exceed 110 degrees F. Control devices will be inaccessible to patients and the general public.

17.18. Mercury and other hazardous materials specific to the dental environment will be handled as directed in AFI 47-101, *Managing Air Force Dental Services*.

17.19. Where the safe handling and storage of hazardous materials is not covered by Air Force Joint Manual (AFJMAN) 23-209, *Storage and Handling of Hazardous Materials*, or other Air Force directives, local written policies will be prepared according to JCAHO requirements.

17.20. Backflow prevention devices should be installed as needed on plumbing systems to prevent back siphoning of pathogenic and hazardous substance into water distribution systems. Hoses, etc., containing hazardous or pathogenic materials, should not be permitted to extend from faucets and beyond the rim of sinks, trays, etc.

FRANCIS C. GIDEON, Maj Gen, USAF
Chief of Safety

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

Air Force Instruction (AFI) 32-1023, *Design and Construction Standards and Execution of Facility Construction Projects.*

AFI 32-1063, *Electric Power Systems.*

AFI 40-102, *Tobacco Use in the Air Force.*

AFI 41-203, *Electrical Safety in Medical Treatment Facilities*.

AFI 47-101, *Managing Air Force Dental Services.*

AFI 48-125, *The US Air Force Personnel Dosimetry Program.*

AFI 91-301, *Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) Program.*

Air Force Joint Manual (AFJMAN) 23-209, *Storage and Handling of Hazardous Materials*.

Air Force Manual (AFMAN) 23-110V5, *Air Force Medical Materiel Management System.*

Air Force Occupational Safety and Health (AFOSH) Standard 48-2, *Industrial Ventilation*.

AFOSH Standard 48-10, *Health Hazards Control for Laser Radiation.*

AFOSH Standard 91-12, *Machinery*.

AFOSH Standard 91-31, *Personal Protective Equipment*.

AFOSH Standard 91-32, *Emergency Shower and Eyewash Units*.

AFOSH Standard 91-68, *Chemical Safety*.

American Association of Medical Institutes (AAMI) guide, *Ethylene Oxide Sterilization, A Guide for Hospital Personnel.*

American National Standards Institute (ANSI) A17.2, *Practice for the Inspection of Elevators, Escalators, and Moving Walks.*

Center for Disease Control (CDC) Manual Guide—Safety Management No. CDC-22, *Decontamination of Laboratory Sink Drains to Remove Azide Salts.*

Compressed Gas Association (CGA) Pamphlet G-4, *Oxygen*.

CGA Pamphlet P-1, *Safe Handling of Compressed Gases in Containers.*

CGA Pamphlet P-2, *Characteristics and Safe Handling of Medical Gases.*

Joint Commission on Accreditation of Healthcare Organizations (JCAHO) *Comprehensive Accreditation Manual for Hospitals (CAMH).*

JCAHO *Comprehensive Accreditation Manual for Ambulatory Care (CAMAC).*

Military Standard 101B, *Color Code for Pipelines and Compressed Gas Cylinders*.

National Fire Protection Association (NFPA) 50, *Bulk Oxygen Systems at Consumer Sites*.

NFPA 53M, *Fire Hazards in Oxygen-Enriched Atmospheres.*

NFPA 70, *National Electrical Code (NEC).*

NFPA 99, Standard for Health Care Facilities, Chapter 3, *Use of Inhalation Anesthetics (Flammable and Nonflammable)*, Chapter 4, *Gas and Vacuum Systems*, and Chapter 10, *Laboratories*.

NFPA 101, *Code for Safety to Life From Fire in Buildings and Structures (The Life Safety Code).*

National Sanitation Foundation (NSF) Standard 49-1992, *Class II (Laminar Flow) Biological Cabinetry.*

Occupational Safety and Health Administration (OSHA) 29 Code of Federal Regulations (CFR) 1910, Subpart O, *Machinery and Machine Guarding*.

OSHA 3067, *Concepts and Techniques of Machine Safeguarding.*

Technical Order (TO) 42B-1-2, *Gas Cylinders Use, Handling*.

Abbreviations and Acronyms

AAMI—American Association of Medical Institutes

AFI—Air Force Instruction

AFJMAN—Air Force Joint Manual

AFMAN—Air Force Manual

AFMLL—Air Force Medical Logistics Letter

AFOSH—Air Force Occupational Safety and Health

AFSC—Air Force Safety Center
—Air Force Specialty Code

ANSI—American National Standards Institute

BE—Bioenvironmental Engineering

BEE—Bioenvironmental Engineer

CAMAC—Comprehensive Accreditation Manual for Ambulatory Care

CAMH—Comprehensive Accreditation Manual for Hospitals

CDC—Center for Disease Control

CGA—Compressed Gas Association

CFR—Code of Federal Regulations

DBMS—Director Base Medical Services

DRU—Direct Reporting Unit

EPA—Environmental Protection Agency

EtO—Ethylene Oxide

F—Fahrenheit

FOA—Field Operating Agency

GM—General Manager

GS—General Schedule

HEPA—High-Efficiency Particulate Air

HQ—Headquarters

JCAHO—Joint Commission on Accreditation of Healthcare Organizations

MAJCOM—Major Command

NEC—National Electrical Code

NFPA—National Fire Protection Association

NRC—Nuclear Regulatory Commission

NSF—National Sanitation Foundation

OPM—Office of Personnel Management

ORM—Operational Risk Management

OSHA—Occupational Safety and Health Administration

PDO—Publishing Distribution Office

QA—Quality Assurance

RF—Radiofrequency

RM—Resource Manager

TLD—Thermoluminescent Disimeter

TO—Technical Order

UL—Underwriters' Laboratory

US—United States

WWW—World-Wide Web

Terms

Authorized Personnel—One of the following:

a. Qualified ground safety, fire protection, and bioenvironmental engineering (BE) personnel; or

b. Other personnel whose duties require them to be in a regulated area and who are authorized entry.

Critical Care Areas—Those special care areas, such as intensive care units, coronary care units, angiographic and cardiac catheterization laboratories, delivery and operating rooms, and similar areas in which patients are intended to be subjected to invasive procedures and connected to line-operated, electromedical devices.

Emergency Parking Spaces—Those spaces reserved for patients who come to the emergency room by private automobile under critical emergency conditions and need temporary parking.

Ethylene Oxide (EtO)—An extremely volatile liquid which vaporizes readily at room temperature to form a colorless, flammable, toxic gas. It is effectively used in ethylene oxide sterilizers and aerators to

kill all bacteria, viruses, and pathogenic organisms.

Flammable or Combustible Storage Cabinet—An approved cabinet which is used to store flammable or combustible items.

May—Indicates an acceptable or satisfactory method of accomplishment.

Qualified Ground Safety Persons—Civilian personnel who are qualified under the Office of Personnel Management (OPM) General Schedule (GS) or General Manager (GM), 018 positions or military personnel qualified in Air Force Specialty Code (AFSC) 150X1). These personnel are the agents for the hospital commander in safety-related issues.

Safety Monitor—An individual who is appointed by the Hospital Commander or Director Base Medical Services (DBMS) and trained by the installation ground safety staff. This appointed position will normally be filled by the Facility Manager and be responsible to the hospital commander.

Shall—Indicates a mandatory requirement.

Should—Indicates a preferred method of accomplishment.

Will—Is also used to indicate a mandatory requirement and in addition is used to express a declaration of intent, probability, or determination.

Attachment 2

MEDICAL FACILITIES CHECKLIST

This is not an all-inclusive checklist. It simply highlights some critical items in this standard. Other requirements exist in the standard that are not included in the checklist. Where appropriate, MAJCOMs, DRUs, FOAs, local safety personnel, and supervisors will add to this checklist to include command or individual shop-unique requirements or situations.

A2.1. Are floors kept clear of foreign materials and liquids? (Reference paragraph 3.3.2.)

A2.2. Do employees refrain from using damaged or defective equipment? (Reference paragraph 3.3.4.)

A2.3. Do employees properly discard used needles, syringes, and sharp instruments in approved containers? (Reference paragraph 3.3.8.)

A2.4. Do all medical personnel know the location of fire extinguishers and how to operate them? (Reference paragraph 4.3.1.)

A2.5. Are written regulations governing smoking published by the medical facility? (Reference paragraph 4.4.)

A2.6. Are only heavy duty, three-conductor extension cords with UL Hospital Grade connectors used when absolutely necessary? (Reference paragraph 5.3.1.)

A2.7. Are extension cords of any type prohibited in areas where flammables are used or stored? (Reference paragraph 5.3.1.)

A2.8. Are hospital parking lots and walkways kept in good repair, free of snow and ice, and illuminated? (Reference paragraph 6.2.2.)

A2.9. Are entrances and exists appropriately identified? (Reference paragraphs 6.3.1. and 6.3.2.)

A2.10. Are stairways free of slippery surfaces? (Reference paragraph 6.4.4.)

A2.11. Are compressed gas cylinders handled, cared for, and stored according to current NFPA codes, CGA pamphlets, Air Force TOs, and JCAHO requirements? (Reference paragraph 7.)

A2.12. Are gas pipelines identified by appropriate labeling at specified intervals and locations? (Reference paragraph 7.3.5.)

A2.13. Are piping systems for gases NOT used as a grounding electrode? (Reference paragraph 7.3.7.)

A2.14. Are shut-off valves that are accessible to other than authorized personnel appropriately labeled? (Reference paragraph 7.3.8.)

A2.15. Are safety relief valves and sealing gaskets on autoclaves and sterilizers maintained in good condition? (Reference paragraph 8.1.2.)

A2.16. In case or emergency of malfunctions, are main power shut-off switches or breaker switches located near the unit so personnel can quickly shut off the power? (Reference paragraph 8.1.5.)

A2.17. Do laboratory personnel know that pipetting of infectious, toxic, and corrosive fluids by mouth is prohibited? (Reference paragraph 9.1.2.)

A2.18. Do laboratory personnel avoid hand-to-face motions when working with infectious or toxic materials? (Reference paragraph 9.1.3.)

A2.19. Do laboratory personnel remove wrist jewelry, watches, and rings when handling infectious materials? (Reference paragraph 9.1.4.)

A2.20. Do exhausts from hoods in which highly-infectious materials are processed pass through HEPA filters before discharging to the atmosphere? (Reference paragraph 9.2.1.5.)

A2.21. Are hazardous and nonhazardous materials separated and is care taken to segregate chemicals that react violently when mixed together? (Reference paragraph 9.2.3.)

A2.22. Are Bunsen burners never left burning unattended? (Reference paragraph 9.2.8.)

A2.23. Are TLD badges worn by all personnel as determined by the Medical Radiological Officer and (or) the BEE, as outlined in AFI 48-125? (Reference paragraph 11.4.)

A2.24. Are doors leading to X-ray exposure rooms appropriately labeled and are the doors kept closed during exposures? (Reference paragraph 11.8.)

A2.25. Are disinfectants and drugs for external use stored separately from internal and injectable medicine? Are poisons segregated from therapeutic agents? (Reference paragraph 12.3.)

A2.26. Are all drugs labeled, including the addition of appropriate accessory or cautionary statements? (Reference paragraph 12.4.)

A2.27. Are grab bars located in patient bathrooms and in patient clinic areas (bathrooms in radiology, physical therapy, etc.)? (Reference paragraph 13.12.)

A2.28. Are all medical supplies clearly labeled? (Reference paragraph 14.1.)

A2.29. Are all flammable and combustible liquids and gases stored in approved flammable storage rooms or cabinets? (Reference paragraph 14.2.)

A2.30. Does each medical treatment facility have a hazardous waste management plan? (Reference paragraph 15.1.)

A2.31. Does the hazardous waste management plan identify and manage infectious waste from generation to final disposition? (Reference paragraph 15.1.)

A2.32. Does the hazardous waste management plan follow applicable state, local, and federal guidelines for the management of hazardous waste? (Reference paragraph 15.1.)

A2.33. Is the water temperature of the hot pack machine maintained between 165 and 170 degrees F? (Reference paragraph 17.2.)

A2.34. Are electrical wall outlets in pediatric clinics, waiting rooms, nursing units, and other areas where children are cared for, the “child-safe variety” or covered when not in use? (Reference paragraph 17.4.)

A2.35. Is the delivered oxygen concentration of all supplied oxygen incubators monitored by an oxygen analyzer, set to alarm when the concentration deviates from that prescribed by the physician? (Reference paragraph 17.8.)

A2.36. Do all newly purchased cribs meet current safety requirements? Are existing cribs modified to meet current standards, if possible? (Reference paragraph 17.14.)