CONSTRUCTION SAFETY MANUAL

For

MidAmerica ST. LOUIS AIRPORT

MASCOUTAH, ILLINOIS

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Department of Engineering & Planning
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Construction Safety Manual

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II. AIRPORT SAFETY POLICY

Saint Clair County, the Owner/Sponsor of MidAmerica St. Louis Airport (hereinafter referred to as OWNER) is concerned with the safety and health of all persons who work at the Airport and of the general public transiting the Airport. It is of the utmost importance to the OWNER to ensure that persons are not injured and property is not damaged as a result of projects being accomplished at the Airport.

It is the policy of the OWNER that safety shall not be compromised on this Airport. Safety shall be part of all job planning and execution processes, by all participants, from bidding to completion. All contractors, subcontractors, managers, supervisors, foremen and employees have an obligation to ensure that they give due consideration to safety in their work.

Each contractor, however, is solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with a project. This requires that each contractor meets or exceeds the demands of the written Plan and that they supply the needed degree of safety whether or not the specific situation is covered in this Plan. It is a requirement of this Plan that all contractors actively cooperate with the spirit of the Plan and its basic objectives. All applicable OSHA, ANSI, NFPA, etc., standards and regulations shall apply. Further, this Plan shall be considered as a mandatory minimum requirement for the contractor and its subcontractors of all tiers.

III. SAFETY AND HEALTH RESPONSIBILITIES

The success of this Plan depends on all persons performing their assigned responsibilities to the best of their ability at all times. Construction safety is a team effort.

A. RESIDENT ENGINEER

The on-site Resident Engineer, whether it is an employee of the Airport or a consultant, shall represent the OWNER. It is the responsibility of the Resident Engineer to see that all phases of a project are performed according to contract requirements. This includes oversight of Contractor compliance with applicable contract documents such as the Construction Safety Manual. When dangerous conditions or noncompliance with contract provisions are brought to the attention of the Resident Engineer, he will contact the offending Contractor to insure corrective actions are implemented as may be necessary to achieve contract compliance.

B. ILLINOIS DEPARTMENT OF TRANSPORTATION (IDOT)

When the Illinois Department of Transportation (IDOT) is the Contracting Agent for the OWNER, IDOT will have contractual authority and responsibility on behalf of the OWNER for the project. In most cases, the Resident Engineer will act as the IDOT representative on-site for contractual purposes to include adherence to the safety Plan.

C. CONTRACTORS AND SUBCONTRACTORS OF ALL TIERS

Contractor and subcontractor responsibilities include, but are not limited to, the following:

1. Compliance with the Construction Safety Manual, exceeding the basic requirements of the plan where special hazards would reasonable dictate.

2. Adherence with all OSHA and other contractually referenced standards and generally accepted good safety practices.

3. Pre-job planning relative to controls for all construction safety and health hazards. Pre-job planning shall be in the form of a Job Safety Analysis (JSA) which must be submitted to the Resident Engineer before the start of work. Forms and instructions are available from the Resident Engineer.

4. Maintenance of excellent housekeeping throughout all work areas on a daily basis, in order to prevent work hindrance, slowdown and hazards.

5. Use by all employees of proper personal protective equipment and devices when on the job.

6. Direct all employees to dress in appropriate attire for the work site and to adhere to publish safety rules and job procedures.

7. Report all incidents to the Resident Engineer immediately using the appropriate forms and providing a thorough and detailed description of each incident as required by the Resident Engineer.

8. Comply with all local, State and Federal incident reporting and record keeping requirements.

9. Require employee participation in toolbox safety meetings, special training sessions, and the New Employee Orientation Program.

10. Appoint a Safety Representative and an alternate Safety Representative to insure representation during all work hours and to allot sufficient time for the proper and effective discharge of the following duties:

a. Weekly safety inspection of all areas temporarily or permanently occupied by the contractor. These inspections must be formal with written reports submitted to the Resident Engineer.

b. Participate in special investigations, hazard studies, preplanning for job hazards, and follow up for completion of control of hazards as may be required to comply with the contract.

c. Perform or participate in, toolbox safety meetings for the contractor's employees. Written confirmation of each toolbox safety meeting must be submitted to the Resident Engineer.

d. Review of all supervisory incident investigation reports for quality and completion before forwarding to the Resident Engineer.

11. Provide the Resident Engineer with the name and 24-hour contact telephone number(s) of the contractor's Safety Representative and alternate Safety Representative.

12. Require supervisors to ensure the best possible safety conditions for any job setup.

13. Require supervisors to correct all unsafe acts and conditions immediately upon recognition of a safety problem or being notified of an unsafe situation.

14. Require supervisors to perform daily informal safety inspections of work areas, tools and equipment.

15. Require supervisors to conduct or participate in the required weekly toolbox safety meetings in cooperation with the Safety Representative.

16. Require supervisors to be familiar with the requirements of the fire protection, severe weather, evacuation, and other emergency plans. Further, supervisors must be prepared to have employees react as necessary in response to an alert or other implementation of these plans.

17. Ensure that at least one contractor employee with current first aid training is on site during all working hours and that contractor employees know who the individual is.

18. Maintain a copy of its Written Hazard Communication Program, including chemical inventory lists and Material Safety Data Sheets as required by OSHA 29 CFR 1926.59, at the job site during all work hours. The Contractor will notify the Resident Engineer, in writing, as to the location of these items and the name(s) of the person(s) responsible for maintaining them.

19. Designate "Competent Person(s)" as required by the OSHA Standards. A list of the contractor's designated "Competent Person(s)" shall be provided to the Resident Engineer prior to the start of work, or when a specific "Competent Person" is changed.

D. CONTRACTOR EMPLOYEES

All Contractor and Subcontractor employees shall be briefed on the Plan and applicable OSHA standards and instructed that they must abide by all applicable safety rules and procedures in their daily work. Failure to comply with safety rules and/or regulations may result in disciplinary action up to and including removal from the jobsite.

E. PROGRAM ENFORCEMENT

In order for this Program to be functional and equally binding on all parties involved, it will be enforced to the degree required for compliance. Any one enforcement option or a combination of several enforcement options may be used to enforce the Program. In particular, the Resident Engineer will comply with the enforcement requirements of the OWNER as required herein and in other contract documents.

1. Contractors and subcontractors of all tiers. In the event of the Contractor's noncompliance with the Safety contract provisions and in particular this Plan, the OWNER shall impose such contract sanctions as it may determine to be appropriate, including, but not limited to:

a. Withholding of payments to the Contractor under the contract until the Contractor complies, and/or

b. Cancellation, termination or suspension of the contract, in whole or in part.

2. Individuals. Disciplinary action shall be applied to all levels of employees without regard for position, seniority, race, sex, etc. Any employee who violates safety laws or Owner safety policy shall be warned and/or reprimanded through his/her respective employer(s) or supervisor. Extremely serious violations as determined by the Owner may result in immediate removal from the jobsite. Standard procedure for disciplinary action is as follows:

a. Verbal Warnings. Employee shall receive verbal warnings from a supervisor for failing to follow basic safety rules or procedures, such as: not wearing required personal protective equipment or not following published safety rules.

b. Written Warnings. As a result of a serious violation or several verbal warnings to a specific employee or group of employees, the Resident Engineer shall issue a Written Notice of Safety Violation to the employer of the offending employee(s). The responsible contractor shall be required to respond, in writing, as to the action taken to prevent such further violations.

c. Removal. For very serious violations or as a result of a combination of the items listed above, the Resident Engineer may direct an employer to remove a specific employee(s) from the project. The removal notice will be in writing and will detail the cause for removal and

the time period, if any, and state that the offending employee be banned from the project. The responsible contractor will be required to respond, in writing, as to the exact action taken with regard to this specific case, and what action(s) will be taken to prevent further violation by its employees.

F. EMPLOYEE COMPLAINTS REGARDING SAFETY STANDARD ENFORCEMENT

Employee complaints shall be referred to the Resident Engineer through the Contractor's Safety Representative and shall be investigated by the Resident Engineer or his designated representative. The Resident Engineer shall keep a written record of employee safety complaints and of the results of any investigation into such complaints, and the actions taken to resolve such complaints, if any.

IV. INCIDENT PREVENTION PLANS AND POLICIES

The plans and policies in this section, if applied diligently, are designed to prevent incidents and injuries and resultant losses to both contractors and their employees.

A. TRAINING

1. New Contractor Orientation

After a new contractor (or subcontractor) is issued a notice to proceed, and before personnel begin work, the contractor management staff shall attend a "New Contractor Orientation Program" provided by the Resident Engineer. This Program will last a maximum of one hour and will include information regarding the following:

a. Applicable Federal, State and Local Safety and Health Standards

b. Elements of Owner's Construction Safety Plan.

c. Reporting and Record keeping procedures for the project.

d. Contractor Safety Representative Responsibilities.

e. Airport Emergency Procedures.

f. Site Security Requirements.

2. Employee Orientation

Prior to beginning work on the job site, every employee shall attend a New Employee Orientation Program given by a member of the Contractor Management Staff that has attended the New Contractor Orientation. The Employee Orientation Program shall consist of at least the following items:

a. Project safety rules and specific hazards associated with this job.

b. Airport emergency procedures, including First Aid.

3. Hazard Communication

a. Contractors shall train their employees to recognize the hazards presented by any chemicals in the work place and to properly protect themselves from the hazards of those chemicals as required by 29 CFR 1926.59.

b. All employees shall have access to all information contained in the Contractor's Hazard Communication Program as it applies to the project. A complete copy of the Contractor's Hazard Communication Program including applicable Material Safety Data Sheets shall be maintained and posted on site at all times.

4. Task Specific Safety Training

a. Contractors shall train their employees to safely perform the tasks assigned. Training will be given prior to or at the start of a job assignment. Refresher training will be provided at weekly safety meetings or at times deemed appropriate by the contractor staff. Task specific safety training should be based on the contractor's Job Safety Analysis for the respective task.

b. When change of assignment substantially changes the duties of an individual or when new materials or methods are introduced into the work situation, employees shall receive the appropriate training.

c. All training shall be documented on the "Tool Box Safety Meeting" or other specific forms as may be applicable.

5. Emergency Procedures Training

a. Emergency procedures will be developed for each construction area or task in accordance with Section IV of this manual. All employees will be instructed about emergency procedures.

b. All employees will receive refresher training in emergency procedures on a regular basis.

c. When changes in emergency procedures are necessary, all employees shall be notified immediately.

d. All employees shall receive basic training in the use of fire extinguishers.

6. Specific Function Training

a. Certain job functions require that persons who perform those functions have special training. As an example, the "Competent Person" who is responsible for trench inspections must have certain training about how to recognize soil classifications and hazards associated with trenching.

b. Specific training for specialized job functions shall be developed as applicable for each project.

c. Whenever possible, equipment manufacturers' training manuals, training services, and verification of training should be obtained.

B. JOBSITE INSPECTION AND AUDIT PROCEDURE

1. All job sites shall be inspected daily by the Contractor Safety Representative for the purpose of discovering hazardous conditions in the work area and correcting or eliminating those hazards.

2. At least once a week the Contractor Safety Representative shall thoroughly inspect all areas of the jobsite for the purpose of determining if hazardous conditions exist. A written record shall be made of these inspections. When hazardous conditions are found to exist, the inspection report should also list the corrective action to be taken and the time of completion.

3. Certain work areas or processes are required to be inspected by a "Competent Person." These inspections may be required daily or more frequently as specified in the OSHA standards.

C. PERSONAL PROTECTIVE EQUIPMENT (PPE)

1. Minimum Standard of Dress

a. The minimum allowable clothing and PPE at any MidAmerica St. Louis Airport Project shall consist of hard hat, sturdy work boots, long pants, and shirts with shoulders. Tank tops and shorts are not permitted.

b. Hard hats. Employees working in areas where there is a possible danger of head injury from impact, from falling or flying objects, or from electrical shock and burns, shall be protected by protective helmets. Helmets for the protection of employees shall meet either the specifications contained in American National Standards Institute, Z89.1-1969, Safety Requirements for Industrial Head Protection, or in American National Standards Institute, Z89.2-1971, as applicable. NOTE: Heavy equipment operators and truck drivers are not required to wear their hard hats when they are inside the cab of the equipment if the cab has a Roll Over Protection Structure (ROPS), as defined in 29 CFR 1926 Subpart W.

2. Specialized Personal Protective Equipment (PPE)

a. The need for specialized PPE will be determined by the functions to be performed at each task. If it is determined that a task needs special PPE, the appropriate procedures will be developed and implemented. As an example, eye protection will be mandatory for functions such as: welding, cutting, grinding or chipping.

b. Should the need for respirator protection arise, the Contractor shall institute an administrative Respirator Protection Program as required by OSHA at 29 CFR 1910.134.

c. Whenever employees are required to be working in the same area as moving vehicles, such employees shall wear orange reflective vests, and provide barricades or orange cones when possible.

d. When employees are working in the Airport Operating Area (AOA) adjacent to aircraft engine noise, hearing protection shall be used (OSHA 29 CFR 1926.101 dictates requirements).

3. Fall Protection

a. The Airport has a 100% fall protection policy that requires that personnel on unprotected elevations shall be tied off to structures that will support at least 5,000 lbs. dead weight per employee. This policy also requires personnel to use a double lanyard system if at any time they must unhook lanyard while in use. All lanyards shall be shock absorbing and have locking hooks that prevent rollout.

b. For elevated work above 6 ft. where standard OSHA compliant guardrails are not provided, safety belts will not be permitted. Only full body harnesses may be used. The body harness shall be connected to a point above the workers shoulders whenever possible. All fall protection equipment shall be inspected before each use by the user and quarterly by a "Competent Person." Inspection records shall be made available to the Resident Engineer upon request.

c. Positioning belts will be permitted for those job functions that have a true positioning need, rather than a fall protection need.

d. Lifelines shall be inspected before each use. Vertical lifelines may be used only in conjunction with an appropriate manufactured rope grab system. Wire rope lifelines shall have a termination method that provides the required 5,000-lb. Dead load capacity. Welding, torch cutting, or burning shall not be performed in close proximity to rope lifelines.

4. Chain Saw Operations

Minimum PPE to be worn by personnel operating chain saws shall be full-length Kevlar chaps or the equivalent, hard hat, safety glasses, leather gloves, steel toe boots, and hearing protection.

D. PHYSICAL QUALIFICATIONS

Contractors shall ensure that their employees are physically capable of performing their duties in a safe manner at all times. Employees shall not knowingly be permitted or required to work while their ability or alertness is impaired by fatigue, illness, intoxication, or any other condition that may endanger either themselves or others.

E. FIRE PREVENTION AND PROTECTION

1. Storage and Use of Flammable and Combustible Materials

a. Flammable and combustible liquids or gases such as gasoline, diesel fuel, propane, tanner gas, etc. must always be stored outside of buildings in specifically designated areas. Storage areas must be properly marked with "FLAMMABLE" and "NO SMOKING" signs and

the actual product names shall be posted on the exterior of the storage container or building.

b. Flammable liquids are liquids with a flash point of less than 100°F. Combustible liquids have a flash point of between 100° and 200°F.

c. Storage areas are to be kept free of trash, debris, oxygen storage, other combustible materials, and sources of heat or sparks.

d. Portable containers used to transport flammable liquids shall be the original manufacturer's container or an Approved Safety Can.

e. Fire extinguishers must be kept no further than 30 feet away from any flammable materials storage area.

f. Compressed gases shall be stored in secured racks or other secured storage devices designed specifically for the purpose.

g. Oxygen cylinders shall be stored at least 50 ft. from all compressed fuel gas storage areas and from all other fuels, oils and flammable or combustible liquids.

h. ANY open flame work (welding, brazing, etc) will require a Welding and Brazing permit. Contractors must contact the Public Safety Office to obtain a Welding and Brazing Permit. Refer to Appendix B for additional information.

i. If there is danger of incidental fire during burning and welding operations, a fire watch will be established and remain on duty until 30 minutes after the work has been completed.

2. Fire Suppression Equipment

Every project must maintain a supply of serviceable fire extinguishers or equipment of the type that is suitable for the hazards involved. Each Contractor shall be sure that fire-extinguishing equipment is available as applicable to its work.

3. Temporary Heating

a. Temporary heating units must be in safe working order and have tip-over and/or flameout safety switches. Vented units must be used in enclosed areas. Unvented units may not be used in enclosed areas.

b. Extra fuel for temporary heaters must be stored outside of buildings.

F. HOUSEKEEPING

1. Good housekeeping is critical to a safe and productive job. All work areas shall be maintained in a neat and orderly manner.

a. Combustible trash and debris must be removed from work areas on a daily basis and deposited in construction dumpsters.

b. All walkways, stairways and subfloors shall be kept clear of trash or debris that could cause slips, trips or falls. Particular attention must be paid to access ways where materials are being moved regularly.

c. Spills of oil or grease must be cleaned up and/or sanded immediately.

d. Housekeeping shall receive major emphasis. If the Resident Engineer determines that housekeeping does not meet safety standards, the Resident Engineer may stop work and require clean-up before work resumes.

G. MATERIAL HANDLING AND STORAGE

1. All new material shall be stored on dunnage. All material shall be stored in a manner to prevent blowing, falling, sliding or collapsing. Debris and scrap material need not be stored on dunnage if the material is not to be moved with rigging and can be maintained in a stable manner.

2. Walkways and aisles shall be kept clear at all times, and lay down areas shall be neat and orderly. Material shall be stored on level ground. Poles, pipe and other stock that may roll shall be wedged to prevent spreading and rolling.

3. Nails shall be removed from lumber that is to be reused. Nails that remain in scrap lumber that will not be reused shall be bent back. No material, tools or equipment shall be leaned against other objects or walls unless they are secured from movement. Employees moving material by hand shall use proper lifting techniques and gloves.

H. ILLUMINATION

1. Adequate lighting is extremely important in the safe execution of the work. The minimum illumination intensity in any work area shall be 5-foot candles. In specified areas outlined in the OSHA Standards, required intensity can range as high as 30-foot candles. Lighting intensity shall be surveyed during the Contractor Safety Representative's regular job site inspections.

I. WATER AND SANITATION

1. Drinking Water

An adequate supply of potable water shall be provided in all general work areas, along with a supply of single use drinking cups.

a. Containers for drinking water shall be kept in a sanitary condition and should be properly marked.

b. An enclosed refuse container shall be provided to preclude waste from blowing around the site.

2. Sanitary Facilities

Each Contractor shall provide adequate sanitary facilities for all employees.

a. Toilets or port-a-potties shall be located in areas convenient to the work and shall be maintained in a sanitary condition.

b. Where employees are handling hazardous chemicals or other potentially hazardous substances, the Contractor shall provide adequate emergency eyewash and wash up facilities for employee use.

J. TEMPORARY ELECTRIC

1. All circuits and receptacles that may be used to provide electricity for hand held power tools and portable appliances must be equipped with Ground Fault Circuit Interrupters.

2. All tools and cords must be visually inspected on a daily basis to determine if there are any damaged parts that could create the danger of a shock or other injury.

3. Any cords, electrically powered tools, or other electric devices which are determined to be potentially dangerous shall be removed from service immediately and tagged “DO NOT USE.”

4. Electrical panels, boxes, etc. with open knockouts through which no service has been installed must be covered. Electrical cords and equipment shall not be hung or tied to steel or hung with wire unless a nonconductive material is used to insulate the cord from the metal. Plastic coated wire shall not be used to hang electrical cords. All lights must be equipped with protective, nonconductive covers, and all light bulbs in light stringers must be shatter proof. Cords that pass through doorways or holes, or are exposed to vehicle traffic shall be protected from damage. Flexible electrical cords shall not be spliced or have insulation repaired with tape. Only S0 type cords or equivalent shall be used for extension cords, light stringers, etc.

5. All breaker boxes, electrical receptacles and feed lines shall be labeled to state what circuits they are feeding or being fed from. All breaker boxes and disconnects shall be provided with unobstructed access 36 inches in front of the unit. All 480-volt lines shall be clearly labeled. When passing over walkways, electrical cords shall be strung at least 7 ft. above the walking surface. The contractor and subcontractor(s) shall comply with codes in the current National Fire Protection Association (NFPA) and National Electric Codes (NEC).

6. All temporary electrical installations shall comply with the OSHA Standards (29 CFR 1926, Subpart K); the most recent revision of the National Electric Code or applicable local Codes whichever is most stringent.

K. LOCK-OUT / TAG-OUT (CONTROL OF HAZARDOUS ENERGY SOURCES)

1. Lock-out, Tag-out Procedure

All power activated machinery, circuits, and equipment including electrical circuits, hydraulic systems, compressed air systems and other power driven machinery are included under this procedure. If lock-out/tag-out work is required, the Contractor shall implement its own such procedure, and comply with the applicable OSHA standard.

a. Any circuit or machinery which is being worked on and which, if incidentally activated, will cause injury, shall be locked out.

b. Before work begins on any machinery or circuit, the power supply for that machinery or circuit shall be positively shut off. "Hot" work will not be permitted.

(1) Any stored energy, such as compressed air tanks or springs shall be deactivated, and the unit tested to ensure that a zero energy state exists.

(2) Safety devices such as support blocks or chains shall be installed.

(3) The person to perform the work shall install a LOCK and tag at each switch(s) or other energy supply device that could energize the machine or circuit upon which work is being performed.

(4) Every person who places a lock-out shall hold the only key to that lock and shall not remove that lock until the machinery is thoroughly inspected.

L. TOOLS AND EQUIPMENT

1. Hand tools

All hand tools shall be maintained in proper working order whether company owned or employee owned.

a. Contractors are responsible for ensuring that all tools are visually inspected on a daily basis.

b. Any tool with a defective part(s), such as a cracked handle, shall be removed from service and repaired or replaced immediately.

c. Impact tools shall be free of mushroomed heads and cracks.

2. Power tools

All power tools shall be maintained in accordance with their manufacturers' requirements and instructions.

a. Power tools must be visually inspected before each use. Contractors shall look for defective parts, damage to electrical or other power delivery parts (such as high-pressure hydraulic hoses) and proper guards and guard operation. Defective power tools must be taken out of service and marked with a Defective Equipment tag until they are properly repaired.

b. Defective power tools must only be repaired by a properly trained and qualified person.

c. Explosive actuated tools (also known as powder-actuated tools) such as HILTI or RAMSET guns shall not be used on the Airport without prior written authorization from the Airport Administration (St Clair County Code, 2-5-19). Explosive actuated tools may only be

operated by a qualified person who has been trained and certified by an authorized instructor. Only employees who have been trained in the operation of the particular tool in use shall be allowed to operate a powder-actuated tool (OSHA 1926.302). Persons using the tools must have their certification card with them.

d. All bench mounted and floor mounted tools shall be secured.

e. Work benches and saw horses shall be provided when needed.

f. Belts, gears, shafts, pulleys, drums, flywheels or other reciprocating rotating and moving parts of equipment, shall be guarded if such parts are exposed to personal contact or otherwise constitute a hazard.

3. Scaffolds and Ladders

All scaffolds and ladders shall be used and maintained according to their manufacturer specifications and/or the applicable OSHA standards.

a. Ladders or scaffolds that are found to be defective must be conspicuously tagged or marked “DO NOT USE” and must be removed from service.

b. Specific ladder safety training and ladder inspections must be documented. Use the Tool Box Safety Meeting form and jobsite inspection form.

c. All ladders shall be inspected before use and stored on dunnage or ladder racks. Tools and material shall not be left on the top platforms of unattended ladders, and material shall never be stored on ladders. All ladders shall be labeled with legible manufacturer’s instructions and warning labels. Ladders shall not be painted except for identification marks.

d. All ladders shall be Type 1 or Type 1A. The bases and landings of all ladders shall be kept clear of obstacles. Stepladders shall not be used as straight ladders, and extension ladders shall not be separated for use. When not in use, ladders shall be either laid down or tied off. Ladders should be equipped with skid resistant feet. If a ladder is used in a doorway, the doorway must be barricaded. Ladders shall not be used in lieu of elevated work platforms.

e. Hand lines shall always be used to hoist material. Employees shall never carry material when climbing ladders, nor shall tools or equipment be thrown to or from personnel on ladders. Personnel shall not climb to the top step or top platform of any ladder. When in use, ladders shall be either held or secured by tying off. Personnel working on ladders shall not straddle the ladder or overreach to the point where the body is no longer between the side rails.

f. Job-built ladders shall be inspected by a Competent Person and shall meet the OSHA standard. In addition, all job-built ladders shall have a furring strip attached over the filler block and rung.

g. Scaffolding shall be erected and used according to the most stringent interpretation of the applicable safety regulations. Only heavy-duty (75 pounds per square foot) scaffolds will be permitted. All scaffolding shall be erected and inspected by a competent person. All scaffolding shall be built as completely as possible. This means all decks must be complete. If a handrail can be installed, it must be installed and the scaffold must have ladder access and gates.

h. If a chain or slide bar is used as a gate, a landing between the ladder and the gate shall be erected so that personnel can safely leave the ladder before unchaining the gate or moving the slide bar. All scaffolds shall be equipped with handrails, if possible, regardless of the height of the scaffold. If personnel are required to work or pass under a scaffold, the area between the guardrail and toe board shall be screened with No. 18 gauge ½ inch mesh wire or equivalent.

i. Aluminum walk boards shall be used whenever possible. Walk boards and planking shall not be notched, nailed, used as bearers, or used on the ground as walkways. All planking and walk boards shall be cleated or tied with No. 9 gauge wire to prevent displacement. Planking shall be placed together tightly with a maximum space between planking and toe board of ¼ inch. Crawling boards and chicken ladders are prohibited.

j. Parts from scaffolds made by different manufacturers shall not be interchanged. Welded frame scaffolding shall not be repaired or altered. Anti-sway bars shall be installed on all rolling scaffolds. Only welded frame scaffolds may be used as rolling scaffolds. Personnel shall not ride on rolling scaffolds.

k. All scaffolds must be plumb and tied off either every 15-ft. or three times the minimum base dimension, whichever is the most conservative. Scaffolding shall be placed no more than 4 inches from a wall. Drawings of all two points suspended scaffolds and needle beam scaffolds shall be submitted to the Resident Engineer before such scaffolding is erected.

4. Rigging Equipment

Wire rope, nylon and chain slings and chokers, chain falls, winches and hoisting ropes shall only be used for the purpose intended and within the weight capacity specified.

a. All rigging equipment shall be inspected before each use. Damaged or defective equipment shall be removed from service immediately, and tagged “DO NOT USE.”

b. Welded alloy steel chain slings shall have permanently affixed durable identification stating size, grade, rated capacity, and sling manufacturer. A dated annual inspection tag shall also be affixed. Hooks, rings, oblong links, or other attachments, when used with shop hooks and links, makeshift fasteners, formed from bolts, rods, or other such attachments

shall not be used. Rated capacity and wear shall conform to Table H-1 and Table H-2 of OSHA 29 CFR 1926, Subpart H (1926.251, Rigging Equipment for Materials Handling).

c. Wire rope Table H-3 through Table H-14 of OSHA 29 CFR 1926, Subpart H, (1926.251) shall be used to determine the safe working loads of various sizes and classifications of improved plow steel wire rope and wire rope slings with various types of terminals. For sizes, classifications, and grades not included in these tables, the safe working load recommended by the manufacturer for specific, identifiable products shall be followed, provided that a safety factor of five is maintained. When U-bolt wire rope clips are used to form eyes, the appropriate tables in OSHA 29 CFR 1926.251 Subpart H shall be used. A minimum of three clips shall be used. U-bolt wire rope clips shall not be used to make hoisting slings.

d. Any synthetic sling, whose red warning line has been exposed, shall be removed from service immediately regardless of the extent of exposure and the use of the sling.

e. Knots shall not be tied in rigging for any purpose.

f. To protect slings at sharp corners, use fasteners. Sharp bends, pinching and crushing should be avoided.

M. POWER EQUIPMENT

1. All power driven equipment shall be operated by qualified personnel only. The contractor is responsible for ensuring that individuals who are assigned to operate heavy equipment are properly trained and qualified to safely operate the specific equipment to which they are assigned.

2. All power driven equipment shall be shut down before fueling.

3. The operation, maintenance, and servicing of all power driven equipment shall be performed in accordance with the machine manufacturer's procedures and specifications or the applicable OSHA or ANSI Standards, whichever is most stringent. Manufacturer service and operations manuals for each piece of equipment shall be available at the job site.

4. Air compressors shall be maintained in properly working order. All guards must be in place and pressure relief valves shall be operational.

5. Portable generators that are used to supply power for cord and plug connected equipment must be in proper working condition and the grounding lug on all receptacles shall be bonded to the machine frame. Generators should be visually checked daily to determine that they are not damaged.

6. Any time an operator intends to mount or dismount a machine, the implements (blade, bucket, etc.) must be down on the ground and the engine must be shut off.

7. All heavy and haulage equipment shall have operational back-up alarms.

8. The Contractor Safety Representative shall require that equipment operators perform daily safety inspections of their assigned machinery and equipment. Defective equipment that could endanger personnel or the environment shall be either repaired before further use or red-tagged and removed from service until repairs are made. Written records of these inspections shall be made available to the Resident Engineer upon request.

9. Heavy equipment used for clearing and grubbing must be equipped with protective cabs to prevent falling or flying objects from striking operators.

10. Each unit of heavy/haulage/material handling equipment shall be equipped with a fire extinguisher rated at least 5 BC.

11. Drivers shall be responsible for the safety of all passengers and the stability of materials being hauled. Personnel shall not mount or dismount moving vehicles. Personnel shall not ride in the bed of any vehicle. Every passenger in a motor vehicle shall have a safe place to ride equipped with a seat belt. The use of seat belts shall be mandatory when operating or riding in vehicles.

12. Heavy equipment shall be maintained in proper operating condition at all times. All machines shall be equipped with Roll-Over Protective Structure (ROPS) cabs. Operators shall be trained in the proper methods of working on slopes.

13. All heavy equipment with ROPS cabs shall be labeled as required by 29 CFR 1926.1000. Seat belts shall be installed and used in all equipment with ROPS attachments.

14. Fork Lift Operations. Operators must be trained and certified as instructed under OSHA regulation 29 CFR 1910.66, 67, & 68, entitled “Powered Platforms/Manlifts”. Fork lift operators are required to have a “Fork Lift Trained” decal on their hard hat indicating the person is certified. Fork lifts are to be used for stacking or moving of materials and not to set steel or as a lifting device.

N. TRAFFIC CONTROL

1. The Contractor shall be responsible for orderly traffic control on the job site and on any public roads affected by the work. The Contractor shall provide traffic control signs and Certified Signalmen as necessary to comply with the applicable requirements of the State of Illinois DOT or other governing bodies and where necessary to protect project personnel and/or the general public.

2. All roads constructed or used by the Contractor under this contract shall be graded and maintained by the Contractor in a non-hazardous condition. Haul roads shall be built so as to allow safe operation and passing of vehicles. The Contractor shall control dust on haul roads whenever dust-generating conditions occur.

O. CONCRETE OPERATIONS

1. When using long-handled bull floats, be sure that they cannot contact electrical power lines, or use insulated handles.

2. Always have adequate water available to wash concrete off skin to prevent concrete burns. Emergency eye wash stations shall also be in the immediate area of operation.

3. Troweling machines must have a "deadman switch." A "deadman" is a switch or control lever which stops the paddles if the finisher lets go of the handle.

4. Whenever possible, concrete cutting and grinding operations shall be performed wet to reduce dust generation. If it is not possible to work wet, employees should wear respiratory protection.

5. Cutting and grinding machines must have guards in place at all times. Only those employees necessary to perform cutting and grinding operations shall be working in close proximity to these machines.

6. All protruding reinforcing steel, onto and into which an employee could fall, shall be guarded to eliminate the hazard of impalement.

P. NUCLEAR SOIL DENSITY/MOISTURE TESTING

The use of nuclear soil density/moisture meter shall be allowed with the following provisions. The Contractor shall supply copies of all required licensing and operator certifications regarding the use of the nuclear density/moisture meter. Documentation that a current sealed source leak test has been performed and passed shall be provided by the Contractor. The Contractor shall provide the name(s) of personnel responsible for this equipment and a list of all personnel who will use this equipment. Only certified personnel shall be allowed to handle/operate the nuclear density/moisture meter. The Contractor shall provide documentation of procedures for storage, transport and use of this equipment. All above listed documentation shall be supplied to the Resident Engineer. A daily log must be maintained indicating personnel who use the equipment, duration and time of use, and notes of any unusual circumstances encountered. A copy of this log shall be available to the Resident Engineer upon request. Nuclear density/moisture meters shall not be left unattended (i.e., visual contact) when in use or when not in specified storage.

Q. TRENCHING AND EXCAVATION

1. The Contractor shall be familiar with and comply with all of the requirements of the OSHA Trenching and Excavation Standard, 29 CFR 1926, Subpart P.

2. The Contractor must designate a "Competent Person," as required by OSHA law, to be present whenever personnel are working in any excavation more than five feet in depth. The Competent Person shall inspect all excavations prior to the start of the shift and after any changes in weather, work method, unexpected vibration, change in soil types, or other event

that could affect the stability of the excavation. Each inspection shall include classification or reclassification of the soil types encountered in the specific excavation. A record of all excavation inspections shall be kept by the Competent Person and shall be available to the Resident Engineer upon request. Excavation checklists, soil analysis checklists and daily trenching logs are available in the Resident Engineer's office.

R. CRANES

1. Before they may be used, all cranes shall be inspected by the Contractor according to a checklist that outlines requirements with respect to the ANSI standards and the OSHA regulations.

2. Only qualified operators shall operate cranes.

3. Cranes that do not pass inspection will not be permitted to operate at MidAmerica St. Louis Airport until all faults are corrected.

4. All cranes shall have annual inspections. A copy of the current inspection must be kept with the Operator's Manual on the crane.

5. Operators shall complete a pre-operation checklist before each shift. This checklist shall be maintained by the operator and made available to the Resident Engineer or his designee upon request.

6. The operator shall comply with the manufacturer specifications and limitations on the operation of any crane. Rated load capacities, warnings, and other instructions shall be legible and conspicuously posted on all cranes. No modifications shall be made to a crane without written approval from the manufacturer. Such approval shall be submitted to the Resident Engineer.

7. All cranes shall be set up within one degree of level. All cranes shall make lifts on outriggers. Outrigger pads shall always be used. The pads shall be constructed of hardwood and sized to extend past the outrigger feet. The crane shall be standing on a firm uniform supporting surface with outriggers fully extended and tires raised free of supporting surface. Picks off rubber shall be performed as specified by the manufacturers load chart.

8. All picks that exceed 75% of the capacity of a crane, all tandem picks, and all picks adjacent to power lines require critical lift plans.

9. The weights of all loads must be known or a load-indicating device must be used.

10. All cranes shall be equipped with two anti-blocking devices.

11. All cranes equipped with outriggers shall be marked indicating full extension, and telescoping boom cranes shall have markings on the boom indicating the length of boom that is extended.

12. Each crane shall have a fire extinguisher rated of least of 5 BC.

13. All lattice boom cranes with structural damage to the cords and/or lacing shall be immediately removed from service. All structural repairs to damaged booms shall be approved by the crane manufacturer and be performed in accordance to specifications and procedures prescribed by the crane manufacturer. Following all repairs to a boom, the crane shall be load tested prior to initial use. Testing shall be in accordance with SAE recommended practice, crane load stability test code J765 (April 1961).

14. Crane operators shall be in visual or radio contact with a qualified signalman before and during every lift. If visual or radio contact is interrupted for any reason, the operator shall stop the lift until full contact is restored. The operator shall be responsible for the equipment and the load during the lift.

15. A suspended load shall never be left unattended. Personnel shall not stand or pass under suspended loads. Personnel shall not be permitted to ride the hook or the load. The hoist line shall be vertical at all times.

16. Employees shall not get on or off a crane while it is in motion. Adjustments, repairs, or lubrication shall not be permitted on moving equipment unless it is required by manufacturer recommendations.

17. Tag lines shall be used on all loads. As many tag lines as necessary to adequately control the load shall be used.

18. The supervisor of the crane operator shall ensure that the qualified operator is fit for duty. The foremen for the crew using the crane shall ensure that the area is checked for any unusual conditions and take action as needed to ensure a safe lift. The foreman shall give a safety briefing using the Job Safety Analysis concerning the activity to the crew and the operator prior to the start of the task. Any deviations from the Job Safety Analysis shall be approved by the Resident Engineer.

19. All riggers/signalman shall be properly trained and qualified to perform the assigned tasks.

20. The signalman shall assist the operator in checking for interference within the swing of the counterweight, any obstructions, power lines, and be in full view of the operator or in direct radio contact.

21. All critical lifts shall be prepared by the supervisor of the crane operator. The critical lift plan shall be reviewed with the contractor engineer assigned to the operation and the Resident Engineer.

22. When a job requires that a crane or a load come with 15’ of an overhead power line, a written plan shall be prepared and reviewed by the Resident Engineer. All power lines shall be de-energized or grounded whenever possible.

23. FAA Regulations. Lighting, flagging, raising, and lowering of crane booms shall be done in accordance with FAA rules and airport policies and procedures. Airport Operations must be notified prior to crane operations and FAA Form 7460-1 must be completed and submitted. All operations must be in compliance with FAR Part 77.

S. GUARDRAILS, HANDRAILS, COVERS, STAIRS, DECKS, AND RAMPS

1. Guardrails shall be erected whenever a walking surface changes elevation by more than 2 ft. Tape barricades may be used for this purpose, but such a barricade must be 5 ft. from the change in elevation. All changes in elevation shall be marked with some kind of warning such as yellow and black tape or florescent orange paint. Handrails shall have smooth surfaces or be taped to prevent splinters. All wall openings shall be guarded. Where a door opens onto a platform, the width of the door shall not reduce the effective width of the platform to less than 20 in.

2. Runs and risers on all stairs shall be constructed in accordance with OSHA regulations. Ramps shall have a maximum angle of 7 degrees.

3. Stairs leading to office and warehouse trailers shall be firmly anchored and equipped with handrails on both sides. Risers, including the top and bottom steps, shall be of equal heights. Decks shall be labeled with their rated capacity.

4. Floor hole covers shall be labeled "WARNING – TEMPORARY COVER – DO NOT REMOVE OR STORE MATERIAL." Hole covers shall be cleated and constructed of ¾ inch plywood with supports 18 inch on center or less.

T. SIGNS AND BARRICADES

1. All signs shall be properly colored and labeled as described by the OSHA standard. Signs shall be removed promptly when they are no longer needed. Signs shall be constructed of metal or fiberglass.

2. Two types of barricades shall be permitted on the project - tape and hard barricades. The color of the barricades shall coincide with the OSHA color classifications. If hazard information is not provided on a barricade, signs or tags shall be attached to it at 20-ft. intervals. If hazard information is not printed on barricades at doorways, signs or tags shall be attached to the doorways.

3. Tape barricades shall be installed at a height of 42 in. and at a distance of 5 ft. from the hazard. If a hazard is more than 10 ft. high, the barricade shall be one foot further away for each additional 5 ft. of hazard height. Hard barricades may be adjacent to hazards unless the hazard is elevated. Hard barricades shall also be 42 in. high, include mid-rails and be able to withstand a 200 lb. force in any direction. If work is taking place beneath a barricaded area, hard barricades shall be equipped with toe boards. If the area below is a walkway or passageway, the area between the barricade mid-rail and toe board shall be screened or blocked. All areas where there is a potential for falling objects shall be barricaded.

U. CONFINED SPACE ENTRY

The OSHA definition of a confined space and the requirements for compliance are covered in 29 CFR 1926.21, Safety Training and Education and 29 CFR 1910.146, Permit Required Confined Spaces. Contractors who will be entering confined spaces shall follow the requirements in the OSHA standards reference above. Contractors shall provide all equipment required to safely enter and work in confined spaces. Documentation of employee training, written programs, and equipment inventories shall be submitted to the Resident Engineer for review prior to initiation of confined space operations. Contractor shall use a Confined Space Entry Permit for entry into a Permit-Required Confined Space, and may use the form included in Appendix A.

V. VISITOR/OFFSITE PERSONNEL

All visitors, vendors, offsite personnel, etc. shall report to the contractor field office or the Superintendent and register their name, person visiting, and the location at which they can be located on the project. The primary purpose for this action is to give the construction management staff an accurate account of people on the project other than normal employees in the event of a major emergency or disaster. In certain emergency situations, all people need to be located to ensure their safety and evacuation. The Visitor Register shall be readily available during working hours. Visitors, vendors, etc. will not be allowed onsite without a Contractor's representative. Contractors shall notify the Owner in advance of any work outside of normal work hours and shall check in and check out with the Public Safety Office when working outside of normal working hours.

W. DEMOLITION

All demolition activities shall comply with 29 CFR 1926 Subpart T. Prior to the start of any demolition, a copy of the engineering survey and the Job Safety Analysis shall be submitted to the Resident Engineer for review.

X. APPLICABLE STANDARDS

This Construction Safety Manual incorporates, by reference, the applicable sections of the following standards.

1. U.S. Department of Labor – OSHA – Occupational Safety and Health Administration. Parts 29 CFR 1926 and 29 CFR 1910.

2. State and Local laws and regulations.

3. American National Standards Institute standards.

4. National Fire Protection Association – National Fire Codes

5. Federal Aviation Administration Standards

6. Trade and Industry Association Standards as applicable, such as those of the Scaffolding Industry Association or the Compressed Gas Institute.

V. EMERGENCY PREPAREDNESS

The Resident Engineer, in cooperation with the OWNER, and the various contractors and subcontractors who work on the project, shall develop basic procedures to deal with emergencies of various types. While it is not possible to develop detailed plans for every type of emergency, basic plans should be prepared which, coupled with common sense, will fit most circumstances and provide the best response in an emergency. It is extremely important that all employees be instructed in the procedures that they are to follow in case of an emergency.

A. GENERAL

1. Emergency telephone locations shall be clearly marked and emergency phone numbers posted conspicuously at each phone.

2. All employees shall become familiar with their work area and surroundings. Employees must be shown the location of telephones, fire extinguisher, first aid supplies, and any other pertinent emergency equipment.

3. If called upon to make an emergency telephone call, dial the service required and provide the emergency operator with the information requested. Stay on the line until told that it's proper to terminate the call.

4. Employees, who are in the area when an emergency occurs, should be sure that someone is available to meet emergency responders to lead them to the scene.

B. IN THE EVENT OF INJURY TO AN EMPLOYEE

1. Protect the injured person from further injury.

2. Contact 911 if needed. If time allows, call the Airport Operations Center (AOC) at the Public Safety Office at 618.566.5233.

3. If the employee is in a safe location, do not move the individual. Keep the individual quiet and comfortable until emergency responders arrive.

4. When emergency responders arrive, stand by and assist as necessary.

5. As soon as possible, notify the Resident Engineer or the Airport staff of the situation.

6. In the event of a major emergency, such as a tornado strike, structural collapse, etc., the visitor register in each contractor's office shall be provided to the Resident Engineer to ensure an accurate account of all people can be taken.

7. Contractors and employees will receive site specific information in regards to emergency medical procedures at the contractor/employee safety orientation.

C. IN THE EVENT OF A FIRE

1. Notify everyone in the area of the fire as quickly as possible and move everyone to an upwind location away from the fire.

2. Call 911 immediately. If time allows, call the AOC at 618.566.5233.

3. All personnel should evacuate the area of the fire as soon as possible unless the fire is small and not likely to spread. Fire extinguishers are provided for use on minor fires only. Personnel should not endanger themselves by attempting to fight a large fire.

4. Make sure that someone meets the fire department and guides them to the proper location.

5. As soon as possible, notify the Resident Engineer or the Airport staff of the situation.

D. OTHER EMERGENCY EVENTS

1. Structural Collapse, Equipment Failure, Flooding and Other Emergencies

a. These emergencies require the exercise of good judgment by the contractor management staff and on-site personnel. Some or all of the steps outlined for injury or fire may be applicable to these events. Specific guidelines should be developed by the contractor during job planning and briefed to site personnel.

b. Occurrences must be reported to the contractor management staff immediately, providing as much information as possible.

c. As soon as possible, notify the Resident Engineer or the Airport staff of the situation.

E. SEVERE WEATHER

1. Severe weather of various types may occur at any time throughout the year. Preventive measures must be taken to avoid injury or property damage when severe weather strikes.

a. Monitor weather forecasts daily. Be alert for tornado watches and other severe weather warnings.

b. Make sure that material stockpiles, scrap, decking, plywood, or other items which could be moved by high winds are secured, especially, on roofs and other open areas.

c. When actual tornado watches or warnings are in effect, all personnel must be properly informed and prepared.

d. Snow and ice should be considered a job hazard. Ice can create dangerous conditions leading to falls and injuries. Projects during the winter must be prepared to deal with these problems.

VI. INCIDENT REPORTING AND EVALUATION

All incidents that have resulted in, or could have resulted in serious personal injury, property damage, fire, flood, entrapment, etc., shall be investigated by the Contractor's supervisor personnel.

The primary objective of investigation and reporting is to determine the causes of an incident, so that action can be initiated to prevent recurrence. In addition to supporting this Plan, such reports are required by Federal and State safety agencies and insurance carriers. These reports must be prepared accurately, completely, and as soon as possible, after the incident has occurred.

Incident reports shall be written on forms required by OSHA standards. All reports and records will be maintained in accordance with applicable state and federal laws. Copies of these reports will be available to persons who are properly authorized. All incidents shall be reported immediately to the Resident Engineer.

VII. ENVIRONMENTAL PROTECTION

Contractors and subcontractors shall be responsible for protecting the environment surrounding and included in its work area(s). This includes, but is not limited to the following types of items:

1. Fuel and oil storage areas shall be equipped with a secondary containment system that will prevent the run-off of petroleum products in the event of a spill.

2. Used petroleum products, such as old motor oil or anti-freeze, will be collected and not allowed to run on the ground. The Contractor will remove such products from the job site and properly dispose of them.

3. Plans for the storage of highly hazardous substances or flammables must be submitted to the Resident Engineer before these items are brought onto the work site.

4. In the event of a spill of hazardous chemicals or materials, the Contractor is required to notify the Resident Engineer immediately. The Contractor will be solely responsible for the cleanup of any spills of hazardous chemicals and any and all costs associated with such clean up.

In the event that a Contractor has a spill incident and does not pursue clean up in a timely manner, the Resident Engineer shall have the authority to acquire the necessary specialists to clean up the spill and to prevent further environmental damage. The costs associated with such a cleanup will be the Contractor's responsibility.

*** END OF CONSTRUCTION SAFETY PLAN ***

Construction Safety Manual

APPENDICES

APPENDIX A – CONFINED SPACE ENTRY PERMIT

Confined Space Entry Permit Requirements

1. Refer to Section IV.U (pg. 22) of this Manual.

2. Per OSHA 1910.146(b), the definitions of a confined space and permit space are as follows:

   "Confined space" means a space that:

   (1) Is large enough and so configured that an employee can bodily enter and perform assigned work; and

   (2) Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry.); and

   (3) Is not designed for continuous employee occupancy.

   "Permit-required confined space (permit space)" means a confined space that has one or more of the following characteristics:

   (1) Contains or has a potential to contain a hazardous atmosphere;

   (2) Contains a material that has the potential for engulfing an entrant;

   (3) Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or

   (4) Contains any other recognized serious safety or health hazard.

3. Per OSHA 1926.21(b)(6)(ii), the definition of a confined or enclosed space is as follows:

   For purposes of paragraph (b)(6)(i) of this section, "confined or enclosed space" means any space having a limited means of egress, which is subject to the accumulation of toxic or flammable contaminants or has an oxygen deficient atmosphere. Confined or enclosed spaces include, but are not limited to, storage tanks, process vessels, bins, boilers, ventilation or exhaust ducts, sewers, underground utility vaults, tunnels, pipelines, and open top spaces more than 4 feet in depth such as pits, tubs, vaults, and vessels.

4. Contractors shall comply with OSHA regulations and their Confined Space written programs. Contractors may use the Confined Space Entry Permit included herein or their own permit form provided that it complies with all applicable OSHA regulations.

MidAmerica St Louis Airport

CONFINED SPACE ENTRY PERMIT

1. LOCATION	ENTRY DATE & TIME	PERMIT EXPIRATION (DATE & TIME)

2. JOB DESCRIPTION

3. TYPE OF SPACE

☐ Electric/Comm Manhole ☐ Sanitary Manhole ☐ Lift Station ☐ Water Meter Pit

☐ Other *(specify)* _____

4. ATMOSPHERIC SAMPLING REQUIRED

☐ Prior to Ventilation / start of job *(always required)* ☐ Periodically during occupancy ☐ Continuously

ATMOSPHERIC SAMPLING INSTRUMENT MANUFACTUR	SERIAL NUMBER	DATE OF LATEST CALIBRATION

ATMOSPHERIC SAMPLING RESULTS (Must be repeated if space is vacated for more than 30 minutes without mechanical ventilatio

SAMPLE	ACCEPTABLE RANGES		RESULT	RESULT	RESULT	RESULT	RESULT
	MINIMUM	MAXIMUM	AM	AM	AM	AM	AM
Oxygen	19.50%	21%	PM	PM	PM	PM	PM
Hydrogen Sulfide	0%	10 ppm					
Flammable gas/vapros	0%	10% LEL					
Others (specify)							
Temperature							

NOTE: 1. Monitoring shall be continuous and throughout confined space. 2. If levels are outside the acceptable levels specified above, entry is denied until 3 consecutive tests are done 5 minutes apart with or without mechanical ventilation, indicate. 3. If additional space is needed, record sampling results on back.

5. VENTILATION *

☐ No mechanical ventilation required ☐ Continuous mechanical ventilation

* For high-temperature spaces and/or if any atmospheric data are outside acceptable ranges or if chemicals are present, ventilate at least 15 minutes prior to entry.

6. EMERGENCY PERSONNEL STANDBY

☐ Not Required ☐ Fire / Rescue Protection Service Notes/Comments _____

☐ Safety Officer ☐ Other *(Specify)* _____

7. PROTECTIVE EQUIPMENT REQUIRED

☐ Type "C" supplied-air respirator ☐ Full body coverings

☐ Other respiratory protection *(specify)* _____ ☐ Two-way radio

☐ Hearing Protection ☐ Fire extinguisher

☐ Coveralls

Safety harness/lifeline is required if: 1. any sampling data is outside acceptable ranges: 2. type "C" supplied-air respirator is required: 3. moderate/high risk of burns or scalds; or 4. during emergency rescue. Harness/lifeline use requires the fire protection services to be notified.

8. ISOLATION OF MECHANICAL, ELECTRICAL, PHYSICAL, OR CHEMICAL ENERGY SOURCES REQUIRED?

☐ No ☐ Yes *(Specify)* _____

9. HAS SPACE CONTAINED LIQUIDS, GASES, OR SOLIDS OF TOXIC, CORROSIVE, OR IRRITANT NATURE?

☐ No ☐ Yes *(Specify)* _____

10. NAME OF ATTENDANT (Must maintain visual/voice contact with personnel in space.)

11. NAME(S) OF EMPLOYEE(S) AUTHORIZED TO ENTER

The job described above has been reviewed and it is agreed that it will be accomplished in accordance with requirements

12. SPECIAL INSTRUCTIONS / EQUIPMENT

QUALIFIED PERSON *(Print and Sign)*	DATE

EMERGENCIES

Call 911 immediately. Notify AOC (618-566-5233).

BLV Form EP-1 (Rev 6/2009) **OVER>**

ATMOSPHERIC SAMPLING RESULTS - *Continued*								
RESULT AM PM	RESULT AM PM	RESULT AM PM	RESULT AM PM	RESULT AM PM	RESULT AM PM	RESULT AM PM	RESULT AM PM	RESULT AM PM

COMMENTS OR SPECIAL INSTRUCTIONS

BLV Form EP-1 (Rev 6/2009)

APPENDIX B – WELDING AND BRAZING PERMIT

Welding and Brazing Permit Requirements

1. All Welding/Cutting work must be in accordance with NFPA 51 and 51B.
2. The permit holder must maintain a record of all locations where welding or cutting operations are performed and shall have the record available for inspection by the code official.
3. No combustible materials shall be within 35 feet of operations without approved shields and/or covers.
4. A FIRE WATCH is required during operations and for 30 minutes after completion. Fire watch shall sign an inspection report after completion of the 30 minutes. The inspection report shall be available for inspection.
5. At least one 2A20BC rated fire extinguisher is required where work is being performed.
6. At least one 2A10BC rated fire extinguisher shall be attached to all portable welding carts.
7. NO WELDING/CUTTING during outages of the building sprinkler system.
8. NO WELDING/CUTTING within 50 feet of aircraft.
9. Gas cylinders must be removed from site each day.

MidAmerica Welding and Brazing Permit

Date Permit Issued	Time Permit Issued	Expiration of Permit	Control Number

Airline:	Inside Location:
Aircraft Tail Number:	Outside Location:
Facility Number:	Inside Location:
	Outside Location:
Name of Requester:	Organization of request:

Operation to be Performed:

Special Precautions to be taken:

	Fire Watch is Required during operation only.
	Fire Watch is Required during operation and for 30 minutes after.
	After Operation Inspection Required. Call Public Safety for an inspector and await his/her Arrival. Phone 566-5233
	Call Public Safety after Operation. 566-5233

The location where this operation is to be conducted has been examined. All necessary Precautions have been taken to provide a fire safe environment and permission has been granted.

Name of Fire Inspector:

I am fully qualified to perform this operation and understand my responsibilities to conduct a fire safe Operation at all times.

Name of Operator:

An after operation inspection has been conducted and the area is deemed fire safe.

Signature of Fire Inspector:

An after operation inspection has been conducted and the area is deemed fire safe.

Signature of Operator:

	Operator declared the area fire safe.
	Posted. Date:

APPENDIX C – FIRE SYSTEM SHUTDOWN PROCEDURES

1. **PURPOSE**

   a. This appendix establishes the procedures to be followed when a fire system is required to be shutdown at MidAmerica St Louis Airport.
   b. The purpose of this document is to establish procedures for coordinating fire system shutdowns to prevent unauthorized shutdown of a fire protection system. A shutdown is any situation in which all or part of a fire system is turned off, or otherwise temporarily rendered inoperable. Fire systems shall include automatic fire sprinklers, fire detection and alarm systems, pre-engineered fire systems, water supply mains, etc.
   c. The procedures in this document are especially important due to atypical conditions that exist with the fire water supply system.

2. **SHUTDOWN RESPONSIBILITY**

   a. Any person, and his/her organization, who performs fire system installation, maintenance, testing, repair, or other operation which requires shutdown of a fire system shall be responsible for compliance with the procedures established in NFPA, BOCA, and this Appendix.

3. **NOTIFICATION/COORDINATION**

   a. The Airport Operations Center (AOC) at the Public Safety Office shall be notified immediately for all emergency discovered unauthorized shutdowns. The phone number is 618.566.5233.
   b. The person or organization reporting or scheduling a fire system shutdown, hereafter referred to as the requestor, is responsible for coordinating the shutdown. Fire system shutdowns shall be coordinated and scheduled by the requestor to minimize life and property risks and inconveniences to the affected tenants.
   c. Coordination of fire system shutdowns shall start approximately 2 weeks prior to the anticipated shutdown date. A “Utility Outage Request” form shall be completed for all fire system shutdown requests. All coordination and scheduling of shutdowns shall be completed a minimum of 72 hours prior to the shutdown, except for minor and emergency outages which are addressed below.
   d. Minor and emergency fire system shutdowns may be accomplished with less than 72 hours’ notice, provided that all notification and coordination is complete. Fire system shutdowns considered to be minor in nature include fire system testing, maintenance, and repairs which are of a short duration, of 24 hours or less, do not impact critical operations, and do not include substantial risk for life or property loss.
   e. Written notification of fire system shutdowns is required when substantial risk to life or property is involved, critical operations are affected, numerous tenants are affected, or the shutdown is for an extended period of time (in excess of 48 hours). The decision whether to require written notification in addition to verbal notification shall be made by the Fire Code Official as part of the approval, coordination, and scheduling process.
   f. The requestor shall notify the following airport departments to coordinate and schedule fire system shutdown:
      - AOC at the Public Safety Office – 618.566.5233

- Engineering and Planning – 618.566.5321
- Maintenance – 618.566.5211

g. The requestor shall notify, coordinate, and schedule fire system shutdowns with all tenants and organizations that will be affected.

h. When a fire system is placed back in service, all personnel who were previously notified of the system shutdown shall be notified that the fire system is back in service. Responsibility for notifying tenants and other agencies when the fire system is placed back in service shall rest with the requester. This notification may be verbal. In addition, the fire department person shall be notified immediately by radio or telephone or in person when the system is back in service.

4. **SYSTEM SHUTDOWN**

a. Immediately before the scheduled shutdown of any fire system, the AOC shall be notified at 618.566.5233.

b. The requestor may not proceed with the scheduled shutdown unless a representative of Airport Maintenance is present. Airport Maintenance personnel will be required to monitor and make adjustments to the fire water pumps at the fire water pump house prior to shutdown and after the system is placed back in service.

c. When a fire sprinkler or standpipe system or any portion is shut down for testing, maintenance, repair, or other reason, the personnel working on the system shall attach impairment tags to the exterior fire department connection for that system and to the affected valve(s) at the point of work (or any other location required by applicable procedures) to indicate that the system is inoperative. The exterior fire department connection should not be tagged out if only a portion of the system is shut down and use of the exterior connection would not affect the shutdown portion of the system. The personnel performing the work shall remove the impairment tags attached to any connection when the system is place back in service.

d. Whenever a fire alarm/detection system is shut down for testing, maintenance, repair, or any other reason, a tag shall be attached to the annunciator panel for that system and at any other location, as required by other applicable procedures, to indicate the inoperative status of the system.

e. All work on a fire system shall be continuous, when possible, until the system is restored to operational status. All work on a fire system shall be completed as quickly as possible to minimize downtime. In the event of interruptions or lengthy delays in excess of 48 hours, the Fire Code Official shall use discretion to exercise their powers and authority to alleviate a fire hazard.

f. Upon completion of all fire system work, all affected components of the system shall be inspected and tested by personnel from Airport Maintenance or the airport's fire prevention consultant.

g. All fire systems shall be mechanically secured when they are placed back in service (fire alarm system panels shall be locked, fire sprinkler system valves shall be locked open, etc).

h. The Fire Code Official shall determine the appropriate level of occupancy or activity that may take place in a building or area during fire system shutdown. Building requiring fire system shutdown shall be evaluated by the Fire Code Official to determine if any temporary fire protection measures need to be implemented during the shutdown. At the discretion of the Fire Code Official, any shutdown of fire system may be canceled if the required temporary fire protection measures have not been fully implemented, or at the discretion of the Fire Code official the building may be ordered vacated if fire system shutdown renders a building unsafe for occupancy.

i. Any discovered unauthorized fire system shutdown shall be reported to the Public Safety Office for immediate follow-up and initiation of legal action, if appropriate.
j. Fire Department personnel required to perform emergency shutdown of a fire system shall implement the provisions specified in this document.

5. **FIRE SYSTEMS NOT MAINTAINED BY THE AIRPORT**

a. Whenever fire systems are required to be shut down for any reason and the maintenance of the system is not the responsibility of MidAmerica St Louis Airport, the Public Safety Office shall be notified before the system is shut down and upon completion of work and restoration of the system to operational status.
b. Persons performing a shutdown of any fire system must comply with all aspects of this document but for the inspection requirements listed in 4.f.