CENTRAL ARIZONA PROJECT

FIRE SAFETY PROGRAM

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FIRE SAFETY PROGRAM

1.0 PURPOSE

The purpose of the Fire Safety Program (FSP) is to protect Central Arizona Project (CAP) employees, facilities and visitors from fire hazards. This program provides employees with the basic knowledge of the principles, practices, rules and regulations to identify and control fire hazards.

The Fire Safety Program covers fire hazard identification, fire prevention, proper handling and storage of hazardous materials and evacuation procedures.

2.0 SCOPE

This program applies to all CAP employees, all facilities and all contractor employees.

3.0 RESPONSIBILITIES

3.1 **Management**: CAP management is responsible to see that a fire prevention program is established and enforced, and that fire-suppression systems are inspected and tested on a routine basis. Management (together with the Environmental Health and Safety (EH&S) Department) will also ensure the training of appropriate employees on the use of fire extinguishers, evacuation procedures and fire hazards in the workplace.

3.2 **Facility Supervisors:** Supervisors are responsible for proper storage and handling of flammable and combustible materials in the facilities under their supervision. Supervisors (together with the EH&S Department) shall ensure that employees receive Fire Safety Program training and, where applicable, fire extinguisher use training. Supervisors shall ensure employees follow all fire safety rules and understand how to properly store flammable and combustible materials.

3.3 **Employees**: CAP employees must comply with all fire safety rules, procedures and practices, including the safe storing and handling of flammable and combustible materials, as stated in this program. Every employee is responsible for general housekeeping in his or her work area.

Employees should know where fire alarm boxes are in their work area, be familiar with evacuation routes and the procedures to follow in the event of a fire. Employees should report all potential fire hazards to their supervisor immediately.

4.0 EMERGENCY NOTIFICATION PROCEDURES

4.1 **General Notification Procedures**: In all emergency situations, including fire, terrorism, and medical emergencies, regardless of location, contact the Control Center immediately at “2530” (623-869-2530). Where necessary, evacuate to a safe

location prior to making this notification. It is the Control Center's responsibility to notify the proper emergency response service(s). For specific details and procedures, refer to the CAP Emergency Operations Plan.

4.2 **Pumping Plants**: If the Control Center has not been able to establish communication with pumping plant personnel within two minutes of receiving an alarm signal, the Control Center will contact the appropriate emergency services and have them standing by. If five more minutes elapse without communication being established with plant personnel, the Control Center will request emergency services' response.

If the Control Center receives notification of smoke or fire at a pumping plant during unmanned hours, they will notify the plant supervisor who will call out qualified individuals to assess the situation. If the plant supervisor cannot be reached, the plant personnel will be notified.

5.0 WARNING AND EVACUATION SYSTEMS

5.1 **Headquarters:** In the event of a fire or emergency evacuation at headquarters' facilities, the fire alarm system will sound. All employees, with the exception of protective services personnel and Headquarters Maintenance staff, will immediately evacuate their work area upon hearing the fire alarm. For specific details and procedures, refer to the CAP Emergency Operations Plan.

5.2 **Pumping Plants and Field Facilities**: In the event of a fire or emergency in a pumping plant the code call "99" will sound. All employees will immediately evacuate the plant upon hearing the code call or the fire alarm system activated. Evacuation plans are specific to each pumping plant or field facility. Employees should follow the evacuation procedure for the facility that they are in at the time the fire or emergency notification is activated. For specific details and procedures, refer to the CAP Emergency Operations Plan or consult with the specific facility supervisor.

The following are general emergency procedures for all pumping plants.

1) If you are the first to report a fire or emergency situation dial the plant code, then 7, then 99 or use the manual fire alarm pull station.

2) Once the emergency code call or alarm has been sounded, it is MANDATORY that all personnel exit the plant using the closest available stairway, even if the code call or alarm is in error, a practical joke, or a drill. DO NOT USE THE ELEVATOR.

3) All personnel and visitors known to have been present in the pumping plant or shown on the sign-in sheet must be accounted for. Plant personnel are

responsible for overseeing the emergency evacuation of visiting crews and tour groups.

4) An EMERGENCY SITUATION is defined as an event of a serious nature, developing unexpectedly, that WILL ENDANGER: 1) LIFE, or 2) the structural integrity of the aqueduct, pumping plants and/or property downstream, and which demands immediate attention. If a situation is LIFE THREATENING, evacuate to a safe location, locate a safe communications device and contact the Control Center at 2530 (623-869-2530).

5.3 **Persons with Disabilities**: Supervisors and coworkers are responsible to provide assistance to employees that require aid to evacuate a building or work area in a fire or emergency condition.

5.4 **Resuming Normal Operations**: After an emergency has been fully addressed and neutralized at a pumping plant, complete the following general procedure:

a) Conduct an employee briefing: Code call: 5-5.
b) Identify a meeting place.
c) Establish priorities for resuming operations.
d) Continue to ensure the safety of personnel on the property.
e) Assess remaining hazards.
f) Maintain security at the incident scene.

6.0 MEANS OF EGRESS

6.1 **Basic Requirements**: Every CAP building that is designed for human occupancy must have sufficient exits to allow for a rapid escape by employees in case of a fire or other emergency.

6.2 **Design Requirements**: Any and all modifications designed and implemented on CAP buildings for human occupancy shall not impact the escape routes that employees may need to take. The areas where more than one employee works must have multiple escape routes.

6.3 **Exit Requirements**: To afford all occupants convenient facilities for escape, all buildings or structures will be provided with exits of kinds, numbers, location and capacity appropriate to the individual building or structure, with due regard to the character of the occupancy, the number of persons exposed, the fire protection available, and the height and type of construction of the building or structure.

All exits will be so arranged and maintained as to provide free and unobstructed egress from all parts of the building or structure at all times when it is occupied. It

is understood that no lock or fastening device designed to prevent free escape from the inside of any building will be installed.

6.4 **Egress Marking**: Every exit will be clearly visible or the route to reach it will be conspicuously indicated in such a manner that every occupant of every building or structure who is physically and mentally capable will readily know the direction of escape from any point, and each path of escape in its entirety will be so arranged or marked that the way to a place of safety outside is unmistakable.

Any doorway or passageway not constituting an exit or way to reach an exit, but of such a character as to be subject to being mistaken for an exit, will be so arranged or marked as to minimize its possible confusion with an exit and the resultant danger of persons endeavoring to escape from fire finding themselves trapped in a dead-end space from which there is no other way out.

6.5 **Illumination Requirements**: In every building or structure equipped for artificial illumination, adequate and reliable illumination will be provided for all exit locations. Exit signs will be installed at the point of exit from the building.

Every building, structure, section or area thereof of such size, occupancy and arrangement that the reasonable safety of the occupants may be endangered by the blocking of any single means of egress due to fire or smoke will have at least two means of egress remote from each other, so arranged as to minimize any possibility that both may be blocked by any one fire or other emergency conditions.

6.6 **Remodeled or New Building Construction**: No building or structure under construction will be occupied in whole or in part until all exit facilities required for the part occupied are completed and ready for use.

No existing building will be occupied during repairs or alterations unless all existing exits and any existing fire protection are continuously maintained or other measures are taken which provide equivalent safety.

No flammable or explosive substances will be introduced in a building while the building is occupied, unless the condition of use and safeguards provided are such as not to create any additional danger or handicap to egress beyond the normally permissible conditions in the building.

6.7 **Discharge from Exits**: All exits will discharge directly to the street, or to a yard, court or other open space that gives safe access to a public way. The street to which exits discharge will be of width adequate to accommodate all persons leaving the building. Yards, courts or other open spaces to which exits discharge will also be of adequate width and size to provide all persons leaving the building with ready access to the street.

6.7 **Stairs:** Stairs and other exits will be so arranged as to make clear the direction of egress to the street. Exit stairs that continue beyond the floor of discharge will be interrupted at the floor of discharge by partitions, doors or other effective means.

6.8 **Maintenance**: All required exits, ways of approach thereto and ways of travel from the exit into the street or open space will be continuously maintained free of all obstructions or impediments to full instant use in the case of fire or other emergency.

6.9 **Furnishings and Decorations**: No furnishings, decorations or other objects will be placed as to obstruct exits, access thereto, egress there from or visibility thereof. No furnishings or decorations of an explosive or highly flammable character will be used in any occupancy.

7.0 FIRE FACTS

7.1 **Fire Classifications**: All fires require an ignition source in order to start or be sustained. Fires are classified in four classes by their elements:

- Class “A” - consist of wood, paper, rubber, plastics and cloth materials.
- Class “B” – consists of flammable gases, liquids and greases such as gasoline, oil, oil-based paints and lacquers.
- Class “C” – consists of electrical fires or materials near electrically powered equipment such as fuse boxes, circuit breakers and appliances.
- Class “D” – consists of combustible metals such as magnesium, zirconium, potassium and sodium.

7.2 **Fire Extinguishers**: When operated properly, portable fire extinguishers are effective to fight small incipient fires. To be effectively controlled and extinguished, each class of fire requires a specific type of fire extinguisher. The following table is a general guideline regarding fire extinguisher types and uses.

TYPE	USE	EXTINGUISHING MEDIA
Class A	For ordinary combustible materials such as paper, wood, cardboard and most plastics.	The numerical rating on these types of extinguishers indicates the amount of water it holds and the amount of fire it can extinguish.
Class B	Fires involve flammable or combustible liquids such as gasoline, kerosene, grease and oil.	The numerical rating for class B extinguishers indicates the approximate number of square feet of fire it can extinguish.

Class C	Fires involve electrical equipment, such as appliances, wiring, circuit breakers and outlets.	The C classification means the extinguishing agent is non-conductive.
Class D	Fires that involve combustible metals, such as magnesium, titanium, potassium and sodium.	These types of extinguishers also have no numerical rating, nor are they given a multi-purpose rating - they are designed for class D fires only.
Dry chemical	Extinguishers come in a variety of types and are suitable for a combination of **Class A, B and C fires**.	These are filled with foam or powder and pressurized with nitrogen.
BC	This is the regular type of dry chemical extinguisher. It is filled with sodium bicarbonate or potassium bicarbonate.	The BC variety leaves a mildly corrosive residue, which must be cleaned immediately to prevent any damage to materials.
ABC	This is the multipurpose dry chemical extinguisher.	The ABC type is filled with mono-ammonium phosphate, a yellow powder that leaves a sticky residue that may be damaging to electrical appliances such as a computer.
Carbon Dioxide (CO2)	For **Class B and C fires**.	**CO2** extinguishers contain carbon dioxide, a non-flammable gas, and are highly pressurized.

Fire extinguishers shall be installed according to local, state and federal requirements and placed in conspicuous places easily accessible by employees.

All fire extinguishers at CAP will be inspected routinely and properly maintained in good operating condition. The following table lists the inspection and maintenance schedule

Type of Inspection or Maintenance	Responsibility
Monthly visual inspections	Assigned maintenance staff
Annual maintenance check	HVAC/Fire Protection
Six (6) year tear down maintenance	HVAC/Fire Protection
Twelve (12) year hydrostatic test	HVAC/Fire Protection

7.3 **Fire Systems Operations**: Every automatic sprinkler system, fire detection and alarm system, exit lighting, fire door and other item of equipment, where provided, will be maintained in proper operating condition. Periodic inspections and tests will

be made as are necessary to ensure proper maintenance. Inspections will be conducted on a quarterly basis.

8.0 FIRE PRECAUTIONS

8.1 **Ignition Sources**: Fire hazard control is essential to the elimination of fires. To help avoid fires from starting the following precautions shall be observed:

- Keep sources of open flames such as welding and cutting torches, matches and other heat sources away from flammable materials.
- Never cut or weld on a container unless it has been properly purged.
- Use only non-sparking tools in areas where flammable materials such as batteries are inspected or maintained.
- Avoid static discharges in areas where flammable materials are contained or handled.
- Use Safety Data Sheets (SDS) to ensure that incompatible materials such as oxidizers are stored in separate areas or cabinets.

8.2 **Housekeeping**: Good housekeeping techniques are important for the prevention of fires and keeping evacuation routes clear in case of a fire emergency.

- Floors shall be properly maintained; wet floors shall be identified by conspicuous means such as a warning sign or barriers.
- Aisles and major thoroughfares shall be kept clear of combustibles and not used for storage of materials.
- Combustible materials shall be kept away from heat sources such as portable heaters under desks.
- All solvent wastes and flammable liquids shall be kept in fire-resistant, covered containers.
- Smoking shall be in designated areas only. Cigarette butts must be discarded in approved containers.
- Trash cans in office areas should be emptied on a daily basis.
- Containers for oily rags shall have the covers on except when rags are being added or the container is being emptied.
- Fuel-gas cylinders and oxygen cylinders shall be separated by distance, fire-resistant barriers or other means while in storage.

9.0 FIRE CONTROL TECHNIQUES

9.1 **Fire Identification and Notification**: If a fire starts, the first person to notice it shall activate the nearest fire alarm no matter the size of the fire. Always follow the procedures in the CAP Emergency Operations Plan.

9.2 **Pumping Plants and Aqueduct Facilities:**

1. Dial 8-2530 in the pumping plants. The Control Center will coordinate the emergency response.

2. Familiarize yourself with the evacuation route at your Pumping Plant and work areas before an emergency occurs. The building or work area may be dark and smoky in an actual fire. An evacuation plan should be posted. Locate the manual fire alarm stations in your area.

3. If you are working in a pumping plant, when you hear the Emergency Code Call "99", evacuate the plant immediately and in an orderly manner, using the closest stairway, traveling upwards. Do not use the elevator. Assemble at the plant's emergency assembly area.

4. Upon evacuation, all pumping plant personnel are trained to pick-up the sign-in sheet as they exit the plant. From the sign-in sheet, personnel will account for everyone working in the plant.

5. Personnel familiar with the building's electrical and mechanical systems should be available to advise the fire department.

9.3 Headquarters Facilities:

1. Dial -0- in Building 1 and 2. The Control Center will coordinate the emergency response.

2. Familiarize yourself with the evacuation route in all CAP facilities and work areas before an emergency occurs. The building or work area may be dark and smoky in an actual fire. An evacuation plan should be posted. Locate the manual fire alarm stations in your area.

3. When you hear the fire alarm, evacuate the facility immediately and in an orderly manner, using the closest stairway. Do not use the elevator.

4. The assembly point for Building 1 and 2 is the Helicopter Building parking lot. Make sure you report your presence to your supervisor when you arrive at the assembly point.

5. Personnel familiar with the building's electrical and mechanical systems should be available to advise the fire department.

9.4 General Precautions: The following are general precautions to be followed in the event of a fire:

a) All employees should evacuate the building immediately closing all windows and doors.
b) Do not lock office doors.
c) Never use an elevator to escape a burning building.
d) Do not enter a smoky or superheated atmosphere. Smoke contains toxic gases.
e) Do not get into a situation that would block you from exiting the plant.
f) Firefighting activities shall be limited to fires that may be fought without anyone being subjected to smoke, electrocution, burns or other injury, and then only by trained personnel (see sections 9.5, 10.0 and 11.0 below).
g) Particular attention should be paid to the possibility of coming into contact with electrical current when investigating equipment overheating, suspicious odors, etc.
h) Plant personnel will assist the fire department with plant entry, electrical lockout, technical information, communications (use of telephone), etc., but only if safe to do so.

9.5 **Fire Extinguisher Use**: An employee that has received training in the use of a fire extinguisher may use an extinguisher to fight small or incipient fires. A small or incipient fire typically is about the size of a trash can. If an employee is in doubt of being able to successfully fight the fire, he/she should immediately leave the area of the fire and activate the fire alarm. Never place yourself between a fire and your escape route. ***Never fight a fire unless you have been trained how to use a fire extinguisher.***

9.6 **Trapped in an Office**: If an employee finds himself or herself trapped and unable to safely exit an office or room near a fire, follow this procedure:

- Call for help immediately.
- Close all windows and doors in the room or office.
- If smoke is entering the room under a door, attempt to stuff a non -combustible material under the door.
- Stay close to the floor and position yourself near a window or near an exterior wall if one is available.

10.0 FIRE EXTINGUISHERS

10.1 **Fire Extinguisher Discharge**: The following action(s) shall be taken if a fire extinguisher of the type listed below is discharged.

10.1.1 CF-33 Discharge in Paint Room

a) Account for all personnel
b) Personnel shall refrain from entering the Paint Room
c) See System Reset section in SOP H-5 to clear smoke and vapors.

10.1.2 Halon Discharge in Control Room

a) Account for all personnel
b) Personnel shall not enter the Control Room until authorization is given by the EH&S Department.
c) See System Reset section in SOP H-5 to exhaust the control room
d) When vapors and smoke have cleared, determine if the Halon discharge was caused by valid protection or accidental operation
e) Notify the Control Center of the status of the duplex control board and related Control Room equipment.

10.2 How to Operate a Fire Extinguisher: Where necessary, CAP trains employees to operate fire extinguishers using the PASS method:

Pull the pin on the fire extinguisher handle
Aim the nozzle or horn at the base of the fire
Squeeze the trigger on the handle
Sweep side to side along the base of the fire

11.0 TRAINING

All CAP employees shall receive initial training on this FSP. Refresher training will be provided dependent upon job responsibilities. Retraining may be required for individuals or groups of employees if:

- Changes are made to this program, procedures or state and federal regulations.
- New fire hazards are introduced in the workplace.
- There are deviations in knowledge or understanding of fire safety.

Annual training in the use of fire extinguishers is provided for select employees in maintenance groups (including those assigned to perform hot work), Protective Services, EH&S, and other departments. In the event of a fire, all employees are instructed to evacuate. However, an employee that has been properly trained may choose to use an extinguisher to fight an incipient (beginning) stage fire if it is safe to do so.

Records for all training conducted under this program shall be maintained in the CAP Learning Center.

12.0 FIRE DRILLS

Fire drills will be conducted on a routine basis at various CAP locations for the sole purpose of familiarization with CAP evacuation procedures. Drills will be coordinated and documented.