ADVANCED EXCAVATING SPECIALISTS, LLC (AES)
FIVE RIVERS CONSTRUCTION (FRC)

Fire Prevention and Protection

PURPOSE

The purpose of the Fire Prevention and Protection policy is to provide compliance with all related regulations and standard safe work practices. The purpose of the policy is to prevent fires and provide guidelines for action in the event that a fire does occur.

SCOPE

Fire Prevention program combines the following policies:

- PPE (Personal Protective Equipment)
- Electrical Safety
- Emergency Action Plan

These policies encompass methods used for incident avoidance, incident response and specialized training required in the event of a fire.

Issues addressed in the above policies include, but are not limited to:

- Evacuation Procedures
- Extinguisher Training
- Basic Process Safety Training (if applicable)
- Hot Works Safety Training (if applicable)
- Confined Space Entry Safety Training (if applicable)
- Emergency Life Support Training
- Respiratory Protective Devices Training
- Assured Grounding Programs

POLICY

Employees shall be informed of the proper actions to take in the event of a fire. This includes, but is not limited to, notification and evacuation procedures. It is STRESSED that at no time does the task of fighting fire supersede an employee's primary duties of:

- Ensuring their own personal safety and the safety of others.
- Reporting the incident to the proper authority and ensuring personnel accountability for yourself and all subordinates at the jobsite, in accordance with company and client policy.

PROCEDURE

- All employees are responsible for good housekeeping practices to enhance fire prevention methods. Supervisors will be held accountable for the housekeeping of their job sites.
- If applicable, welding machine mufflers will be equipped with an approved spark arresting muffler.
- Only approved containers will be used during fueling operations. These shall be of the self-closing type.
- Flammable material shall be kept under control. It shall be stored in compliance with applicable OSHA and client regulations. The quantity of flammable or combustible material shall be kept to a minimum on the job site.
- Welding, cutting and griding sparks shall be contained.
- Hot works areas shall be kept wetted down, and fire extinguisher and hose maintained on each jobsite.
- Oily rags shall be immediately disposed of in designated hazardous waste containers.
- No hot work is to be performed without a Hot Work Permit.
- All vehicle entry into process areas requires a permit of permission from the operator.
- Use bonding straps to discharge and prevent static charges during transfer of flammable liquids from one container to another.
- Report all spills or suspicious odors immediately.
- Fire extinguishers are to be kept in areas easily accessible to employees. Only approved fire extinguishers are to be used. They must have an inspection tag attached. Extinguishers are to be maintained in a fully charged, ready to operate state.
- Extinguishers are to be inspected monthly or before each use, and annually will undergo a maintenance check, which is to be documented.
- Training is provided to all employees who use or may use fire extinguishers, with retraining provided annually thereafter.
- **NEVER** put yourself or others at risk while attempting to extinguish an incipient fire.
- **DO NOT USE** any fire hoses larger than 1-3/4”, unless fully trained as an industrial firefighter.
- **NEVER** attempt to extinguish a pressurized fuel fed fire.
- **DO NOT** direct a fire nozzle with a straight stream at any type of LPG fire. This action could extinguish the fire, producing an LPG vapor cloud capable of detonation.
- **DO NOT USE** fire monitors as the force can damage small equipment and certain high chrome alloy equipment cannot have water applied as cracking could occur.

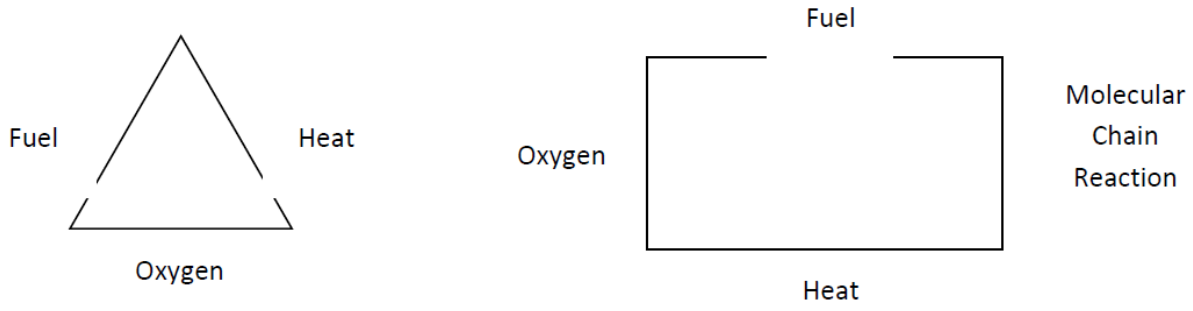
- **DO NOT APPLY** water to any acid or caustic release as it can cause a violent reaction. Additionally, low concentration acids or caustics become extremely corrosive, causing an increasing leak condition.

In the Event of a fire:

- Remain calm.
- Only extinguish the fire when it is clearly within your abilities and the equipment available.
- Know the location of the nearest alarm and how to activate the emergency system.
- Know the evacuation routes and collection points.
- If the fire cannot be extinguished, leave the area immediately and report to your evacuation area.
- Await further instruction from the Incident Commander or designated responsible personnel.

Basic Fire Science:

- The combination of fuel, heat, oxygen equals the well-known fire triangle. To understand fire better, a fourth factor is added, a molecular chain reaction. This is due to the fact that fire results from a series of reactions in which complicated molecules "crack" into easily oxidized fragments. Disruption of this chain, along with the removal of fuel, heat, or oxygen, is recognized as a method of fire extinguishment through the use of dry chemical extinguishers.



- **Heat Energy** – Can be produced by building up molecules (composition) or breaking apart (decomposition) by heat or a solution when materials are dissolved in a liquid, or by combustion.
- **Heat Transfer** - A law of physics states that heat tends to flow up from a hot substance or place to a cold substance or place. This is through conduction (transfer of heat through a medium such as metals) or through convection (transfer of heat with a medium-usually circulatory).

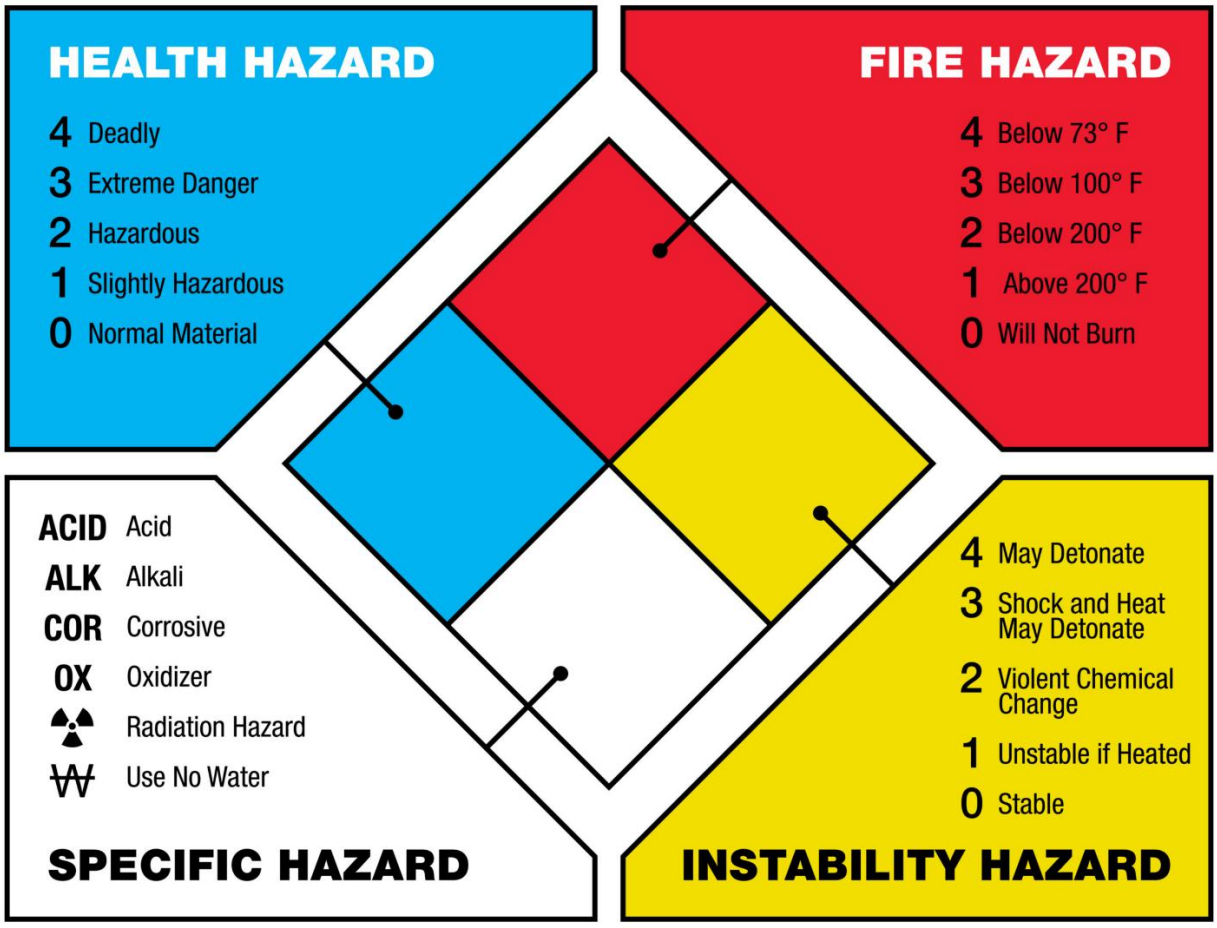
- **Fuels** - Those substances that will burn when heat is applied. The most common fuels are not pure elements such as carbon, but compounds and mixtures such as paper and wood.
- **Oxygen** - Makes up a major portion of the oceans and earth's crust and one-fifth of our atmosphere. Atmospheric oxygen is the major source of oxygen that supports combustion. Oxygen itself does not burn, however, without it, combustion is impossible. Normal burning is the combination of fuels with oxygen under the influence of heat.
- **Combustion** - A rapid oxidation or chemical combination accompanied by heat.
- **Oxidation** - The ability of materials to produce oxygen during a chemical reaction.
- **Spontaneous Combustion** – When oxidation is allowed to occur, enough oxygen is available, heat is produced, molecules become more energetic and combine with oxygen at an increasing rate, temperatures rise, and visible heat (flames) are produced.

Classes of Fires:

- Class A – **Ordinary combustibles (wood/paper/textiles)**
- Class B – **Flammable liquids (gasoline/oils/grease)**
- Class C – **Live electric (wiring/generators/motors)**
- Class D – **Combustible metals (finely divided form/chips, turnings)**
- Class K – **Kitchen (oils/grease)**

Types of Fire Extinguishers:

- **Water** - extinguisher for ordinary combustible fires
- **Dry Chemical or CO2 -** extinguisher for electrical equipment fires and for flammable liquid fires
- **Multipurpose Dry Chemical -** extinguisher for ordinary combustible fires, liquid fires, and electrical equipment fires
- **Foam -** extinguishing agent for hydrocarbon fires



Scale ranges from 0 (lowest hazard) to 4 (highest hazard)