

Flame Effect Plan Form

[To be completed by participants wanting to use **FLAME EFFECTS** at The Forgotten City]

Event Information

Event Name:

The Forgotten City

Event Date and Times

- Friday May 24th 8am until Monday May 27th 1pm
- Setup times from Friday May 24th 8am
- Break down time from Monday May 27th 6am until 1pm

Event Location:

- New Pahrump Fair Grounds (Gamebird Road and Fox Avenue)

Overview

The following document describes the requirements for Flame Effects at The Forgotten City Event. Any participant wanting to operate Flame Effects at the Event must obtain prior authorization and pre-approval of their Flame Effect Plan by:

1. The Fire Department
2. The Fire Safety Manager at The Forgotten City

All flame effect Operators and their Assistants are responsible for their own equipment and its use. Because of the dangerous nature of Flame Effects no one may display, exhibit, or discharge any flames that are automated, switched, or pressurized, without authorization, this specifically includes all projects using propane. Responsibility includes verification by testing that an installation or performance will not endanger participants, operators or members of the Fire Safety Team.

Document Revisions

04/08/2012 Added requirement that only named operator and assistants are allowed to operate the flame effect

2/24/2013 Updated for Forgotten City 4

Name of Person Responsible for Flame Effect (Operator)

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Phone Number

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Email Address

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Additional named persons Flame Effect operators (Operators)

Additional named fire safety assistants (Assistants)

All Assistants and Operators must be 21 years of age or older and trained in fire safety and suppression.

Flame Effect operation date and times:

Specify date (May 25/26th 2013) and times of operation.

Flame Effect Classification

Specify the flame effect classification using the below table as a guide (taken from NFPA 160 guidelines)

- I
 II
 III
 IV
 V
 VI
 VII

Classification	Description
I Manual controls	1. No automatic controls shall be required.
II Automatic controls	1. Ignition supervision shall be provided. 2. Automatic shutoff shall follow failure.
III Automatic controls	1. Manual operation of the effect valve shall be permitted. 2. If the operator cannot confirm the pilot or direct ignition source for the flame special effect, a primary safety control shall be installed. 3. Two fuel shutoff valves, one of which will be a safety shutoff valve, shall be provided and installed in series.
IV Automatic controls	1. Primary limit device(s) shall be installed as required. 2. A fuel supervisory station shall be installed with fuel pressure limit switches to control the supervisory station valves. 3. Each flame effect burner shall be equipped with a primary safety control and an effect valve. 4. A flame effect safety control system that is capable of safely operating the entire flame effect consistently for repeated cycles shall be used.
V Automatic controls	1. The requirements for Group IV shall apply. 2. A flame effect safety control system that is capable of safely operating the entire flame effect consistently that is sequenced by the main control system shall be used. The flame effect safety control system shall maintain all of its internal safety features, with the interface between the flame effect control system and the main show control system limited to those commands and status indicators that cannot alter or override the flame supervisory system control logic.
VI Automatic controls	1. The requirements for Group V shall apply. 2. Where cast members are in close proximity to the flame effect, the flame effect shall be under the active control of a main show control system and a fail-safe positive manual enable (PME).
VII Manual or automatic controls	1. Controls shall be as recommended by the designer and acceptable to the authority having jurisdiction.

The location of flame effect devices to be fired and their controls and control sequence

The area affected by the flame effect device

Additionally describe means to protect equipment, perimeter from vehicle and participant traffic.
Lighting at night etc.

The location of the audience

The fuels used and their estimated consumption

Flammable materials piping

Storage and holding areas and their capacities

Supplemental fire protection features

Emergency response procedures

Means of egress (exit path participants may take to safety evacuate the area)

Maximum and normal operating size of flame

List of additional fire extinguishers and/or fire safety devices

Fuel inventory and location of any fuels to be used

A current material safety data sheet (MSDS) for the materials (fuels) consumed in the flame effect

[Attach]

(7) Documentation that the combustible materials used for construction of the flame effects have been rendered flame retardant

[Attach]

Safety Requirements

Operators and Assistants

A Knowledgeable representative of the installation or performance shall serve as a liaison, who is responsible for the exchange of information about the installation / performance to the Fire Safety Team. They will maintain communication of all aspects of the Installation / Performance prior and during the Event. This may include changes to description of the Installation / Performance, diagrams, the performance schedule, safety plan and emergency plan during the use of the Flame Effect.

Approval

- For the Installation / Performance to receive approval, the operator must:
 - Have submitted a Flame Effect Plan prior to the event and have it approved by the Fire Safety Manager
 - Attend a technical walk-through meeting prior to any use of the Flame Effects with the Fire Safety Team
- If the Installation/Performance has not been approved a Laminate will not be issued
- If the pre-meeting is missed the Installation / Performance may not operate during the Event
- All flame effects must be approved and during operation a Laminate must be worn to operate the Installation / Performance.
- All Flame Effects must occur outdoors
- All Flame Effects will comply with NFPA 160 guidelines and requirements

Safety Perimeters

An appropriate audience safety perimeter and performer's safety zone shall be set well in advance of the performance and approved by the Fire Safety Team:

- 4 feet: Finger fire, handheld finger props
- 15 feet: Chains, staves, torches, or smaller props.
- Chains and fire tools must come no closer than 5 feet to lights or overhead structures
- 25 feet: All scenery and decorations, other than those that are flame retardant (unless intended to combust)
- Open Fire Perimeter - multiply the height of artwork times 2 from expected flame impingement or based on the size of the fuel load (example, if artwork is 10 feet high the perimeter would be 20 feet radius)

Safety Requirements

- No Flame Effects or Open Fire shall be used within Open Camping areas. A designated area away from other camps and common structures must be used
- All Operators and Assistants must be 21 years of age or older and be trained in the use of fire extinguishers
- Operators and Assistants shall wear fire resistant clothing during the operation of a flame

effect

- Only people familiar with the safety considerations and hazards involved are permitted to do fuel loading. Wearing personal safety gear (glasses, gloves, etc.) during fuel loading is required
- Flame effects may only be operated by those identified in the plan as operators or assistants under the supervision of operators.
- No carelessness, negligence, or unsafe conditions with Flame Effects shall be tolerated
- Operators and Assistants are prohibited, during the operation of the flame effect, from being intoxicated or under the influence of drugs
- No smoking or open flame within 25 feet of any location of fuel, flammable liquids, hazardous materials or anything potentially dangerous.
- All fuel and flammables shall be secured in approved containers, stored in a safe and secure area located a minimum of 50 feet from any open flame
- Fuel tanks must be protected from vehicle traffic and be well lit at night
- Fuel containers shall be labeled with the Operator's name, the material and quantity of material in the containers

Performance Schedule

- Performance schedule can be either a single performance or a series of nightly occurrences during the Event.
- A performance may not be started until all performers, safety team members, and participant are in place and ready.
- Operation of a flame effect may not occur until the equipment has been inspected and approved

Daily Safety Check

- A daily check of all fuels, materials, hoses, pumps, wicking, pressure of tanks, etc. will be mandatory before the daily or nightly installation / performance begins
- If a safety hazard has been identified by either Fire Safety Team or operator/assistant the installation/performance will be halted until the safety concern has been addressed.

Fire Extinguishers

- A Dry Chemical Fire Extinguisher must be available in case of accidental fire with any Flame Effect installation.

Notes about Fire Extinguishers

Not all fire extinguishers work for fighting all fires. Fire extinguishers rated for the specific fuel in use will remain available at the Installation site or performance with flame effects for response to accidental fire. A wet blanket or towel must be available for response to accidental burn to a person or to extinguish a prop.

Dry chemical extinguishers are required where fuel is stored, as they provide the best way to put

out a fuel fire. They do make a mess that must be cleaned up after use. Also, dry chemical extinguishers start to lose charge after a single discharge and must be serviced and refilled.

Water fire extinguishers are useful for fires involving wood, paper, fabric. These extinguishers must never be used on liquid fuel fires, as they will spread the fire. Water is a good conductor of electricity, so these extinguishers are a poor choice for electric fires.

CO2 (Carbon Dioxide) extinguishers are good responses to problems with fire props and electric fires. They leave no residue and can be used repeatedly until they run out. But they work for small fires only.

First Aid

- A basic first aid kit should be available consisting of the following items:
Non-petroleum-based burn cream or aloe vera gel, several rolls of 100% cotton gauze, and some large gauze pads, as well as a jug of water for flushing fuel.

Severe burns should be treated by Emergency Medical Services. An EMT will be available onsite and can be contacted via radio. Rangers and other volunteers including greeters at the gate will be carrying a radio.

In case of fire, on a person's body or clothing, remember this rule: Stop, Drop & Roll! Many people have saved their own lives by dropping and rolling when their clothes caught fire.

- STOP Stop where you are DO NOT RUN!
- DROP Drop to the ground or to the floor and cover your face with your hands
- ROLL Roll to put out the flames.

Cool a burn right away with water, and obtain medical help. If you are near someone whose clothing catches on fire, be sure to stop him or her from running and make them STOP, DROP and ROLL!

Leave No Trace

- The Operator (and assistants/performers) are responsible for all clean up at the Installation / Performance site after the Event
- The area should be as clean as when you found it and must 'Leave No Trace'
- The Operator / Assistants must carry "Spill Cleanup Material" for accidental spillage of material (eg shovel, rake, metal garbage can etc)

Fuel Safety

All participants using combustible fuels or storing fuel at the Event must comply with the following practices for storing and handling these materials.

Storage of Compressed and Liquefied Gases (CO2, oxygen, propane, nitrogen, etc.)

- All gas cylinders must be secured in an upright position to prevent tipping.
- All cylinder valve caps must remain on the assemblies unless in use with plumbing or regulator set.
- Main shut off valve (Key Valve) must be marked.
- The Emergency Services Department (ESD) must be notified of fuel presence and location of acetylene cylinders of any size.
- Acetylene cylinders should not be stored in a horizontal position and must be separated from oxygen cylinders by 20 ft. unless plumbed or on a cutting cart.
- Propane cylinders of 100 gallons or more are not permitted within the city limits.
- Compressed gases stored in camping areas require a 30 ft. safety perimeter, and unobstructed ESD access in case of fire.
- Signage stating "Flammable Fuel" must be easily seen.

Storage of Liquid Fuels (gasoline, kerosene, diesel, and white gas)

- 20 gallons or more of flammable liquid must be kept within a secondary containment area, such as a petroleum resistant tarp rolled up to provide a berm.
- A supply of cat litter or other fuel absorbent material must be kept on hand near any spills basin.
- All liquid fuel containers must be clearly labeled. Original labels are preferred.
- Liquid fuel containers in camping areas require a 30 ft. safety perimeter, and unobstructed ESD access in case of fire.
- A dry chemical fire extinguisher must be kept visible near the storage location of any liquid fuel.

Note: A petroleum, flammable liquid fire burns at the surface of the material. Water will spread the flaming liquid over a wider area, vaporizing it rapidly, spreading the fire. To put out such a fire, cut off its air supply or interrupt its chemical chain reaction using carbon dioxide (CO₂) or dry chemical powder. Both are effective, but dry chemical is best for outdoor use; it's not subject to wind, has a longer range, and can extinguish pressurized leaks of gas and liquid. For good all-around fire protection, use an ABC or all-class fire extinguisher.

Notes about Fuel Safety

- Fuel must be stored away from running generators
- Generators must be turned off before refueling
- Use a pump when transferring fuel. Do not siphon using your mouth. A mouth full of fuel could be fatal. Wash hands after fueling.
- Keep all equipment in good condition. Watch for leaks, deterioration, or damage.
- If fuel is spilled on clothing, move away from any ignition source, and allow clothing to dry. Use waterless soap for hands. If fuel should splash in eyes, use water to flush.
- Be aware of static electricity. Any spark can ignite gasoline vapors. Always fill containers on the ground, not in vehicles.
- Always use a bonding strap when transferring flammables and combustibles between containers.

Open Fire Requirements

- All Open Fire Burns will have EMT, rangers and volunteers on hand to form a safety perimeter
- All Open Fire Burns will only be ignited in winds not exceeding 25mph with approval of Fire Safety Manager
- All Open Fire Burns will have a safety perimeter of at least 2 times the height of the object being burnt with a minimum perimeter of 50 feet.
- All Open Fire Burns will only occur with all precautions necessary to keep participants safe
- All accelerants must be pre approved

Camping Rules

Open Camping is available at the Event for all attendees/participants.

- Open Fire and Flame Effects are not permitted in any open camping area
- Open Fire is permitted at "Theme Camps". These camps must have have an authorized Fire Plan for their camp

Theme Camp Fire Rules

- All Open Fire within theme camps must present a Fire Plan prior to the event
- Flame Effects must have an approved Flame Effect Plan prior to the Event and be inspected prior to first operation at the Event
- Fire barrels must be attended until extinguished
- Open Fire must be less than 10 feet tall
- A supply of 5 gallons of water must be kept nearby to extinguish the fire in case of high winds
- A 25 foot perimeter around the fire must be free of flammable materials such as cloth, paper, tents, plastic
- All liquid fuels must be kept 50 feet from any source of flame
- Any open fire or flame effect must be extinguished on request of a ranger or emergency personnel
- An appropriate safe perimeter will be maintained at all times to prevent injury to participants

Fireworks and Pyrotechnics

- At no time shall fireworks or pyrotechnics be permitted in open camping, theme camps or any other area within the Event. The use may result in steep fines and or arrest from the police dept, fire dept or ejection from the Event by event organizers.

Definitions

- **Operator** - An individual authorized to operate the Flame Effect
- **Assistant** - An individual authorized to assist in the safe operation of the Flame Effect and ensure the safety of the Audience/ Participants
- **Event** - The Forgotten City event
- **Participant** - A person attending the event, eg audience
- **Fire Safety Manager** - The individual in charge of Fire Safety at The Forgotten City
- **Fire Safety Team** - An individual member of The Forgotten City Fire Safety team. An example would be a Ranger.
- **Ranger** - A volunteer at The Forgotten City who addresses safety concerns which includes Fire Safety.
- **Installation** - All equipment, props or art related to the Flame Effect
- **Performance** - The usage of the Flame Effect
- **Laminate** - A small laminated certificate given upon approval of an Installation/Performance and worn during operation
- **Theme Camp** - An organized camp of individuals who have been given a preassigned area at the Event in order to provide something for attendees (eg yoga, music, pancakes, play)
- **Open Camping** - Camping at the Event in any area that has not been preassigned by the Event organizers. Eg any attendee or participant at the Event.

Disclaimer

- I have read and understand the information and requirements regarding the Flame Effect Plan Document
- I understand that I participate in this Event at my own risk.
- I agree to comply with the requirements of the Flame Effect Plan Document.
- I understand that my operation of the Flame Effect described in this document may be dangerous and that it is my responsibility to not endanger any participant, assistant or volunteer at the Event.
- I hereby acknowledge this waiver, release and indemnity discharge all persons, corporations, associations and bodies involved. This includes but is not limited to Nexus Concepts LLC, Black Rock City LLC and Boulder City, and the various volunteers at the Event whether or not the loss, injury or damage is attributed to the act or neglect of any or more of them.

Name (Please Print)	Signature	Date