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| **Hot Work Program** | **Revision Date**: 04-2020 |
| **Purpose**: This program is a control system used whenever internal personnel or outside contractors conduct hot work outside a maintenance shop or other safe area designated specifically for hot work operations. | **Topics Covered*** Responsibilities
* Procedures
* Fire Watch
* Checklist
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Hot Work Operations

**Management Commitment:** Management must support is necessary for any system if it is to be successful. This includes:

* Designating a **Permit Authorizing Individual (PAI)**
* Establishing permissible areas for hot work
* Implementing established disciplinary procedures when employees fail to follow protocol, regardless of an incident occurring.
* Engaging all necessary departments in development of the permit process. This may include maintenance, plumbing, HVAC and construction departments, procurement and operations.
	+ Enforcing “stop work” processes when employees, contractors, contracted workers and/or organizations fail to follow hot work protocol.
	+ Issuing a signed policy statement which outlines its support of this system. An example:

“[**ABC management]** has implemented a hot work program that must be utilized anytime that work activities outside designated hot work areas can produce a fire hazard. Hot work includes such activities as cutting, grinding, and any activities using an open flame or electrical current to braze and/or weld piping. ABC policy must be adhered to by all ABC employees, contracted employees and/or third party contractors performing work on ABC property. Failure to follow this policy will result in employee disciplinary action up to and including termination. Third party contractors and/or their employees will be escorted from ABC premises and all work hot work related activities will cease until the issue is rectified. “

**Hot Work Responsibilities:**

* The designated **PAI** has the ultimate authority over the hot work program and is responsible for the safe operation of hot work activities.
* The **PAI** will identify site specific flammable materials, hazardous processes, or other potential fire hazards
* The **PAI** should consider prior to issuing a permit:
	+ Alternative methods to hot work
	+ Moving the work to a location which is free from combustibles
	+ If work cannot be moved, move combustibles a safe distance or shielding combustibles against ignition
	+ Schedule operations so hot work is not done when combustibles could be exposed to it
* The supervisor and/or Hot Work operator will submit hot work permits **prior to any hot work being conducted. Work will not begin until a valid permit is in place.**
* The **PAI** will ensure appropriate fire protection and extinguishing equipment is available at the hot work site.
* The **PAI** will ensure a fire watch is utilized at the site when required.
* The Hot Work Operator will ensure equipment is safe, hot work permit is in place prior to beginning work, and cease if unsafe conditions develop.
* The Fire Watch shall ensure safe conditions are maintained throughout the hot work operations and the fire watch period. The fire watch is only permitted to perform additional tasks while on duty if the tasks do not interfere with fire watch responsibilities.
* Designated hot work coordinator will maintain all documentation for up to 12 months after the work was completed. Training records will be provided to human resources, environmental health and safety or directly to the employees’ supervisor to be maintained consistent with other safety and health training documentation.
* Designated hot work coordinator will ensure that all employees have been trained on an annual basis to include initial hot work and refresher training, use of fire extinguishing equipment used for fire watch.
* Designated hot work coordinator will provide orientation for all sub-contractors performing hot work as part of their contracted work.
* Designated hot work coordinator will review the third party contractor hot work program and address any discrepancies prior to the commencement of work. Contractors will provide all pertinent hot work information prior to starting work.

**Permit Procedures:**

* Hot work permit time period will be determined by the PAI, but will never be valid for more than 24 hours. New hot work permits will be issued if needed to continue work.
* Equipment must be in good working order. Where compressed gases are used, they must be appropriately secured. Valves and regulators must be working properly.
* Work areas will be thoroughly inspected for items that may contribute to a fire hazard and all combustible and/or flammable materials will be removed from the area as appropriate and practical. This includes flammable liquids and residues, and floors will be swept clean.
* Combustible materials which cannot be removed will be moved a minimum of 35’ for the area of hot work. If this is not practical, combustibles must be shielded by a non-combustible barrier or fire blanket.
* If floors are of combustible construction, they should be adequately protected to prevent ignition.
* Prohibit hot work until all wall and floor openings within 35 feet of the operations have been tightly sealed or otherwise protected with metal guards or flameproof tarpaulins. Do not work on combustible walls or ceilings, or those containing combustible insulation.
* Combustibles on the other side of the wall should be moved away so any heat that is transmitted through the wall cannot ignite the combustibles. If this is impractical, a fire watch should be set on the other side of the wall.
* When working on ceilings or upper levels of process equipment, fire resistant tarpaulins should be suspended beneath the work area to collect sparks.
* Fire & life safety systems must remain active during hot work procedures. For those circumstances where fire & life safety systems are not active, sprinkler impairment procedures must be followed.
* Before working on enclosed equipment, remove any combustible residue from its interior. When working on duct systems, in addition to removing combustible residue from its interior, also remove any combustible screens or dust bags. Prohibit hot work in or on vessels containing flammable or combustible contents or residue, until they have been completely cleaned and purged or made inert, and verified vapor free by combustible gas detectors. If there is a chance of a gas vapor release during the hot work operations, use gas detectors to constantly monitor the area.
* The PAI must re-inspect the hot work area **a minimum** of once per shift during the permit time period to ensure fire safe area.

**Fire Watch:**

* Fire watch is mandatory for all hot work procedures. This involves a 2nd employee. His/her responsibilities include observing the fire area and any area above, below and/or adjacent to the fire area during the fire watch period.
* A fire watch may also be required by the PAI if any of the following are present:
	+ Combustible materials in building construction or contents closer than 35’ to hot work operations
	+ Combustible materials more than 35’ away but easily ignited by sparks
	+ Wall or floor openings within 35’ radius expose combustible materials in adjacent areas, including concealed spaces
	+ Combustible materials adjacent to the opposite side of partitions (walls, floors, ceilings) and easily ignited.
* The fire watch has the authority to stop all hot work operations if an unsafe condition exists.
* The fire watch period lasts for a minimum of 1 hour after the procedure is complete. *This duration can be extended if the PAI determines the present fire hazards warrant it.*
* Fire watch personnel must be equipped with the appropriate type and size fire extinguisher or a charged fire hose. Fire watch personnel may not remove extinguishers in the area and use them for the fire watch.
* Fire watch personnel must be trained in recognition of fire hazards, activation of manual alarm pull stations, use of emergency phones and/or other equipment requiring manual activation.

Upon completion of hot work, complete the permit and return it to the designated hot work coordinator. The hot work coordinator should return to the scene within two to four hours after the work has been completed to check the area. After this final check, the supervisor signs the permit. Both sections of the permit should then be stapled together and kept on file for review by the designated hot work coordinator.

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| **HOT WORK PERMIT**5500 |
| **Before initiating hot work, ensure precautions are in place as required by NFPA 51B and ANSI Z49.1. Confirm an appropriate fire extinguisher is readily available.** |
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| **Date:** |  | **Location:** |  |
| **Purpose:** |  |
| **Work By:** | [ ]  Employee [ ]  Contractor |
| **Name (Print):** |  | **Company:** |  |
| **Permit Expires:** |  / / at : [ ]  am [ ]  pm |
|  |
| **REQUIRED PRECAUTIONS - Within 35 ft (11m) of Work** |
|  | Available sprinklers, hose streams, and extinguishers are in service and operable |  | Hot work equipment is in good working condition in accordance with manufacturer’s specifications. |
|  | Flammables Removed (dust, lint & oil) |  | Floors swept/clean |
|  | Combustibles covered w/ fire-resistant tarpaulins or metal shield |  | Combustible floors wet down, covered with damp sand or fire resistive/noncombustible material, or equivalent  |
|  | Explosive atmosphere eliminated |  | Wall/floor openings covered |
|  | Special permission obtained to conduct hot work on metal vessels or piping lined with rubber or plastic. |  | Ducts and conveyors that might carry sparks to distant combustible material covered, protected, or shut down |
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| **WORK ON WALLS, CEILINGS OR ROOFS:** |
|  | Construction is non-combustible and without combustible covering or insulation. |  | Combustibles on other side of walls, ceilings or roofs are moved away |
| **WORK ON ENCLOSED EQUIPMENT:** |
|  | Enclosed equipment free of all combustibles |  | Containers purged of flammable liquids/vapors |
|  | Pressurized vessels, piping, and equipment removed from service, isolated and vented. |
|  | Equipment with stored energy or electrical energy has been removed from service and isolated. |
| **REQUIRED PRECAUTIONS DURING WORK:** |
|  | Automatic protection in service |  | Fire watch present during and within break period |
|  | Portable extinguishers on-hand, in service/operable  |
| **Time Started** |  :  |  [ ]  am [ ]  pm | **Time Completed**  |  : | [ ]  am[ ]  pm |
| **THIS PERMIT IS GOOD FOR ONE DAY ONLY** |
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| **PRECAUTIONS AFTER WORK** |
|  | Inspect Area |  | Remove covers used |
|  | Fire watch for 1 hour after completion of hot work operations. |  | Fire watch is trained (use of equipment/ sounding alarms) |
|  | Supplied with suitable extinguishers and where practical, a small charged hose. |  | Fire watch may be required in adjoining areas (above and below). |
|  | Fire monitoring may be provided within hot work area up to an additional 3 hours as determined by the PAI (Permit Authorizing Individual) **Check One:** [ ]  **Addl. 1 Hour** [ ]  **Addl. 2 Hours** [ ]  **Addl. 3 Hours** |
|  |
| **X** | **X** |
| **Signed (Fire Safety Supervisor)** | **Signature - Person Performing Hot Work** |
| *I verify the above location has been examined and precautions on “required precautions checklist” have been taken to prevent fire. Permission is authorized for this work.* | *I verify the precautions during and after work have been taken.* |
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| **AlliantLogo_Color_Final****(888) 737-4752** **riskcontrol@alliant.com** | **Alliant Insurance Services, Inc.****18100 Von Karman Ave. 10th Floor** **Irvine, CA 92612** |

**REQUIRED HOTWORK PRECAUTIONS
CHECKLIST**

[ ]  Available sprinklers, hose streams and extinguishers are in service/operable.

[ ]  Hot Work equipment in good repair.

**Requirements Within 10 m (35 ft.) of Work**

[ ]  Flammable liquids, dust, lint and oily deposits removed.

[ ]  Explosive atmosphere in area eliminated.

[ ]  Floors swept clean.

[ ]  Combustible floors wet down, covered with damp sand or fire-resistive sheets.

[ ]  Remove other combustibles where possible. Otherwise protect with fire-resistant tarpaulins or metal

 shields.

[ ]  All wall and floor openings covered.

[ ]  Fire resistant tarpaulins suspended beneath work.

**Work on Walls or Ceilings/Enclosed Equipment**

[ ]  Construction is noncombustible and without combustible covering or insulation.

[ ]  Combustibles on other side of walls moved away.

[ ]  Danger exists by conduction of heat into another area.

[ ]  Enclosed equipment cleaned of all combustibles.

[ ]  Containers purged of flammable liquids/vapors.

[ ]  Pressurized vessels, piping and equipment removed from service, isolated and vented.

**Fire Watch/Hot Work Area Monitoring**

[ ]  Fire watch will be provided during and for 1 hour after work, including any coffee or lunch breaks.

[ ]  Fire watch is supplied with suitable extinguishers.

[ ]  Fire watch is trained in use of this equipment and in sounding alarm.

[ ]  Fire watch may be required for adjoining areas above, and below.

[ ]  Monitor Hot Work area for 1 hour after job is completed.

**Other Precautions Taken**

[ ]  Confined space entry permit required.

[ ]  Area protected with smoke or heat detection.

[ ]  Ample ventilation to remove smoke/vapor from work area.

[ ]  Lockout/tagout required.

Note: When used in accordance with NFPA 51B, this permit is to be used for, but not limited to, the following: welding, cutting, grinding, open-flame soldering, thawing pipe, and torch-applied roofing.

This Tribal First Risk Control Consulting fact sheet is not intended to be exhaustive. The discussion and best practices suggested herein should not be regarded as legal advice. Readers should pursue legal counsel or contact their insurance providers to gain more exhaustive advice. For more information on this topic, please contact Tribal First Risk Control Consulting at (888) 737-4752 or riskcontrol@tribalfirst.com.