Standard Operating Procedure for Hot Works Program
This page intentionally left blank
<table>
<thead>
<tr>
<th>Rev. No.</th>
<th>Effective Date</th>
<th>Revision Description</th>
<th>Pages Replaced</th>
<th>Completed by</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6/9/20</td>
<td>Program writing</td>
<td>N/A</td>
<td>JD</td>
</tr>
<tr>
<td>2</td>
<td>6/8/22</td>
<td>Updated SRS to EHS on pages 1-3, reclassified the responsibilities of each entity on page 3 and organized them based on who has which responsibilities, explained section 4 part 6 for the 24-hour permit holds and extensions, added Section 6 for how to complete a Hot Works Permit</td>
<td>vii-5</td>
<td>VG</td>
</tr>
</tbody>
</table>
## ACRONYMS & DEFINITIONS

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affected Personnel</td>
<td>Includes all operators, supervisors and Fire Watch personnel.</td>
</tr>
<tr>
<td>Authorized Safety Representative</td>
<td>An individual who has been properly trained in accordance with NFPA 51B and OSHA 29 CFR 1910 on the safety aspects of hot work hazards. This individual, who shall be designated in writing, is authorized (under the authority of EHS) to inspect hot work operation sites, ensure safe operation of hot work activities and issue permits.</td>
</tr>
<tr>
<td>Combustibles</td>
<td>Gases, liquids or solid materials that will ignite in the continued presence of an ignition source.</td>
</tr>
<tr>
<td>EHS</td>
<td>Environmental Health and Safety</td>
</tr>
<tr>
<td>Hazardous Location</td>
<td>An area, by nature, which presents an unsafe working condition that could result in a catastrophic ignition of material in the area. Such areas include:</td>
</tr>
<tr>
<td></td>
<td>- Explosive material uses or storage areas.</td>
</tr>
<tr>
<td></td>
<td>- Highly toxic material uses or storage areas.</td>
</tr>
<tr>
<td></td>
<td>- Flammable storage or handling areas.</td>
</tr>
<tr>
<td></td>
<td>- Confined Spaces (see &quot;Confined Space Entry Program&quot;).</td>
</tr>
<tr>
<td></td>
<td>- Any container which contains or has contained flammable or combustible liquids.</td>
</tr>
<tr>
<td></td>
<td>- High angle work performed on scaffolding, roof or other location over 6 ft, high in which a fall hazard exists.</td>
</tr>
<tr>
<td></td>
<td>- Any other area, which by nature of the material stored or used, could result in a fire or explosion due to the heat or sparks produced by the welding or cutting operation.</td>
</tr>
<tr>
<td>Hot Tap/work</td>
<td>A procedure used in the repair maintenance and service activities which involves welding on a piece of equipment (pipelines, vessels or tanks) containing natural gas or flammable liquids under pressure, in order to install connections or appurtenances. Commonly used to replace or add sections of pipeline without the interruption of service for air, gas, water, steam and petrochemical distribution systems.</td>
</tr>
<tr>
<td><strong>Hot Work</strong></td>
<td>Work involving gas or electric welding, cutting, burning, brazing, soldering or similar flame or spark-producing operations.</td>
</tr>
<tr>
<td>------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Fire Watch (also known as Fire Guard)</strong></td>
<td>The process of observing an operation for any safety violations, maintaining a constant vigil for a fire caused by sparks or open flame during welding or cutting operations, and the responsibility for emergency extinguishment of any fire caused by the operation. The fire watcher/guard shall not be assigned other duties during the operation and will continue the fire watch for 30 minutes after the operation is completed.</td>
</tr>
<tr>
<td><strong>Operator</strong></td>
<td>The individual who actually conducts the welding operation. This person has been trained in welding operations and safety, and can provide documentation/certificates of the training by a recognized agency.</td>
</tr>
<tr>
<td><strong>Permit (see Attachment A)</strong></td>
<td>A checklist/tracking device used to authorize all Hot Work operations. Permits shall be issued on all Hot Work operations by an Authorized Safety Representative.</td>
</tr>
<tr>
<td><strong>Shielding</strong></td>
<td>A non-combustible material, such as a welding curtain or other means of placing a non-combustible barrier between the welding operation and any combustibles/flammables, or other materials with the propensity for burning.</td>
</tr>
<tr>
<td><strong>Welding</strong></td>
<td>A general term used to describe the joining of metal by fusing the pieces together utilizing heat. It often is used to describe brazing, cutting, tack-welding and soldering operations.</td>
</tr>
</tbody>
</table>
TABLE OF CONTENTS

1. Introduction ......................................................................................................................... 8
2. Scope ...................................................................................................................................... 8
3. Responsibilities ..................................................................................................................... 8
   3.1. State Fire Marshal ......................................................................................................... 8
   3.2. Environmental Health and Safety .................................................................................. 8
   3.3. Facilities Management .................................................................................................. 8
   3.4. Deans, Directors, and Department Chairs .................................................................... 2
   3.5. Employees ..................................................................................................................... 2
4. Permits .................................................................................................................................... 2
5. Requesting a Hot Work Permit ............................................................................................ 3
6. Issuing a Hot Work Permit ................................................................................................... 3
1. INTRODUCTION

Welding, cutting, brazing, and other similar operations are referred to as "hot work" operations and can present a significant fire hazard in the workplace. This safety program provides instruction and guidance on permits for safe gas and electrical cutting and welding operations, as well as other "Hot Work" conducted on properties under the jurisdiction of UNM. This program complies with NFPA Standard 51B, "Fire Prevention in use of Cutting and Welding Processes," and OSHA 29 CFR 1910.251-257, subpart Q. This program supersedes any current University departmental procedures and shall be complied with by all faculty, staff and contract personnel.

2. SCOPE

The Welding, Cutting and Burning Program covers provisions to prevent the loss of life and property caused by fire during cutting and welding operations. This procedure applies to all faculty, staff, students and contract personnel who perform or are authorized to perform any welding, cutting, brazing or "Hot Work" at UNM. All work involving welding, cutting or brazing equipment shall be required to have an approved permit on site signed by an Authorized Safety Representative.

3. RESPONSIBILITIES

3.1. State Fire Marshal

The State Fire Marshal (SFM), known as the "Authority Having Jurisdiction," or (AHJ) has jurisdictional authority over the University in compliance issues dealing with the scope of this operation.

3.2. Environmental Health and Safety

UNM Environmental Health and Safety (EHS) has the overall responsibility of ensuring compliance with this program and the overall responsibility of implementing the guidance and technical expertise needed to oversee the program for all facilities under UNM jurisdiction.

EHS Provides training and certification to Authorized Safety Representatives and other affected personnel.

3.3. Facilities Management

Facilities Maintenance, Area Managers and other University management or faculty who supervise students or staff using open flame devices shall be responsible for ensuring that all equipment is maintained in a safe operational manner. They shall also ensure that proper safety equipment, checklists and training are made available to each worker involved in welding operations. They shall have the overall responsibility to ensure that the proper safety checklists are complied with and that proper notifications are made prior to start of work.
3.4. **Deans, Directors, and Department Chairs**

The Dean, Director or Department Chair of each affected department shall have the overall responsibility of ensuring that all persons engaged in hot work operations are provided with the needed equipment and resources to conduct safe operations.

3.5. **Employees**

Persons using open flame tools for cutting, welding, brazing or heat treating shall have the responsibility to comply with all safety checklists, ensure that their equipment is in proper working order, to ensure that the work site is made fire safe prior to start of work, and that the area is made fire safe prior to leaving the work area.

Any University department responsible for contracting with outside agencies to perform welding, cutting and burning shall have the responsibility to ensure that the contractors have a welding, cutting and burning program, or that they must comply with the provisions of this program.

4. **Permits**

1. Hot Work Permit Information should include, at a minimum, the following elements:
   a. Requested hot work date
   b. Name of person performing the hot work operation
   c. Description of hot work to be performed
   d. Location of hot work
   e. Fire watch duration (if applicable)
   f. Fire watch inspector (if applicable)
   g. Authorized Safety Representative Approval
   h. A statement declaring that the permit is valid only on the date of issuance

2. All permits for hot work operations by University faculty, staff, and students shall be issued by EHS or an Authorized Safety Representative. Permits for contractors shall be issued by the contractor representative for safety. Requests for contractors to use the UNM permit will be considered on a case by case basis by EHS.

3. The permit shall be issued in two parts:
   a. Part one (original permit) shall be posted at the work site for the length of the operation.
   b. The second part (copy) may be kept by the Authorized Safety Representative or department for their records, with a copy forwarded to EHS immediately after issuance. At the end of the hot work and upon completion of final check-off of the original permit,
it must be returned to the issuer, who immediately forwards a copy to EHS for filing and entry into both the work order system and the Shared Drive.

4. Permit numbers shall be controlled and monitored by EHS, and must be associated with a TMA Work Order number created specifically for that hot work. Permit numbers are generated automatically when a service request for a hot work is submitted to EHS. The request number serves as the permit number.

5. Upon completion of the work, the operator shall sign part one of the permit “work completed section” verifying that the work area is fire safe. The white copy of the permit shall be forwarded to EHS as appropriate immediately after completion of work.

6. Permits shall be valid only for the time period noted on the form. Valid time periods are reset each 24 hours, starting at 8:00 am and ending at 8:00 am; however, the following should be noted:
   a. This is issued with the assumption that one shift may work overtime to complete an emergency work order.
   b. If a new shift is to work on the same work order, a new checklist and permit must be obtained.
   c. Permits issued at other times (i.e. permits issued at 2:00 pm) are valid for the full 24 hours starting at time issued (i.e. 2:00 pm the next day).
   d. Annual permits for shop use, may be issued to education departments or research departments.
   e. Construction sites may be issued an extended use permit based on the time frame of the project.

7. Authorized Safety Representatives and Operators shall conduct a safety inspection in accordance with the Hot Work Permit Checklist (see Attachment A). These checklists shall be signed and maintained on site during the length of the operation.

5. REQUESTING A HOT WORK PERMIT

To request a hot work permit, operators must first fill out and submit the online Hot Works Notification form (Attachment B), located on the EHS website. The Hot Works Notification should be submitted at least 48 hours to the start of the hot work. This will expedite the process when EHS or an Authorized Safety Representative issues the permit.

6. ISSUING A HOT WORK PERMIT

For filling out a Hot Works Permit:

1. Initial Formstack Notification:
a. Receive the Formstack Notification either from the Safety Manager or one of the Safety Specialists; this will have all of the information regarding:
   i. Physical location
   ii. Facilities Management Area
   iii. Type of Work
   iv. Start and End Date/Time
   v. Employee Performing Work
   vi. POC for the Project
b. Open the Hot Work Permit template found: S:\Fire Safety\6) Hot WorkPermits
c. Using the information in the Formstack, fill out the “How Work Being Conducted by” section, including the Employee, Contractor, Issue Date, Location, and Nature of the Task
   i. Note: only fill out the left-hand side of the Hot Works Permit; THE RIGHT-HAND SIDE IS FOR THE ON SITE PRE-INSPECTION
d. Fill out your name under the Name of Person Issuing Permit and write in the Permit Expires Date and Time
e. Submit an FM Work Order, assigning the department as EHS, with the information from 1.a filled out. Use the Work Order Number or the Acceptance Number as the Permit Number.

2. Contact the Employee or Contractor to schedule a date/time to review the space; this should be 1-2 days before the work starts.

3. Meet with the Employee or Contractor at the work-site and go over the right-hand side of the Hot Work Permit
   a. Check off all relevant information depending on the work being performed. An example would be:
      i. If there are no wall or floor openings, the “All wall and floor openings have been covered” box should not be asked about
      ii. If there are wall or floor openings that are not covered, the contractor should either remedy the situation at the time, or schedule a time that the openings are covered
   b. All items that are relevant should be checked before the permit is issued; any issues found must be fixed before signing off on the permit

4. Sign off on the permit under the “Name of Person Issuing Permit” section of the left-hand column; the rest of it will be filled out the day that work is being performed
For emailing out the Hot Works Permit:

1. After returning to the office, the permit should be checked to make sure that all of the information is filled out and scanned into the Shared Drive into the S:\Fire Safety\6) Hot Work Permits folder with the correct year

2. After scanning and checking for accuracy, the permit then needs to be emailed out to the employee performing the work and the POC (if the POC is different than the employee); there should be an email blurb written with the following information:
   a. The right-hand side of the permit needs to be filled out with all relevant information the day that work is being performed
   b. The employee performing the Hot Works needs to sign and date the first line on the bottom left column after completing the work, writing the time the work finished
   c. The employee doing the Fire Watch during the Hot Works needs to sign and date the second line of the bottom left column after completing the Fire Watch; this cannot be the same person as the employee performing the work
   d. Either the employee listed in b or c, or an employee who oversaw the work, needs to sign off on the third line for the Final Check-Off Completed

3. After everything is signed off on, the employee or contractor will email back the completed form, which will then be sent back to our department to be filed
HOT WORK PERMIT
Can the work be completed using a different method or at a less hazardous location, such as the maintenance shop?

Required Precautions Checklist

☐ Review of the operations / tasks have been conducted and temporary Management of Change issued as necessary.
☐ Work permits or line cutting permits have been reviewed and issued as necessary.
☐ Sprinkler protection, hose streams and fire extinguishers are in service and operational.
☐ Hot work equipment is in good repair and secured as necessary.

Within 35 ft (10 m) of task area(s)
☐ Floors have been swept clean of combustibles.
☐ Flammable liquids, combustible liquids, combustible dust, lint and oil deposits have been removed.
☐ Eliminate explosive atmosphere.
☐ Combustible floors have been wet down or covered with damp sand, metal or other noncombustible shields.
☐ Combustible materials have been removed or protected with fire resistive tarpaulins or metal shields.
☐ All wall and floor openings have been covered.
☐ Fire resistive tarpaulins have been suspended beneath the work to collect sparks.

Work on Walls or Ceilings
☐ Construction is noncombustible and without combustible coverings or insulation.
☐ Combustibles have been removed away from opposite side of wall or ceiling.

Work on Enclosed Equipment
☐ Equipment has been cleaned of all combustibles.
☐ Containers have been purged of flammable, combustible liquids, vapors or gases.
☐ Pressurized vessels and piping have been removed from service, isolated and vented (LOCK OUT TAG OUT).
☐ Equipment with stored energy or electrical energy has been removed from service and isolated (LOCK OUT TAG OUT).

Fire Watch
☐ Fire watch will be provided during the task and for a minimum of 1-hour after the task has been completed or for the extended fire watch duration.
☐ Fire watch has been trained in the use of and provided with portable fire extinguishers or charged fire hose line(s).
☐ Fire watch is posted on lower floors if an opening exists that would allow sparks or embers to drop down.
☐ Fire watch is trained on how to properly report a fire alarm via the plant fire alarm procedures or fire alarm system.
☐ Hot work area will be monitored for 3-hours after the job is finished.

Permit Number:
Hot Work Being Conducted by:
Employee:________________________
Contractor:______________________
Issue Date:______________________
Job, Task or PO #:________________
Location, Bldg & Floor:________________
Nature of Task: ☐ Cutting ☐ Welding n Brazing ☐ Grinding ☐ Soldering ☐ Thawing Pipe ☐ Torch Applied Roofing ☐ Other_____________________
The location where this work is to be done has been examined and necessary precautions have been taken. Permission is hereby granted for this work.
Name of Person Issuing Permit:
Signed:________________________________________

Permit Expires Date_______ Time _______ ☐ AM ☐ PM

Extended Fire Watch Required
☐ Yes ☐ No
Extended Fire Watch Duration _______ hours

Instructions:

1. Person Doing Hot Work: Document the time work started and post the permit at HotWork Location. After the Hot Work has been completed, document the date and time the work was completed and leave the permit at the site.

2. Fire Watch: Prior to leaving the Hot Work location conduct a final inspection, sign, and document the date and time the fire watch ended and notify the permit issuer that the Fire Watch has been completed.

3. Final Check Off: The individual who conducts the final check off must sign and document the date and time of the final check off and return the permit to the issuer.

Hot Work Completed. Signed: __________________________ Date/Time ____________
Fire Watch Completed. Signed: __________________________ Date/Time ____________
Final Check-Off Completed. Signed: __________________________ Date/Time ____________
WARNING!

HOT WORK IN PROGRESS!
BE ALERT FOR FIRE!

IN CASE OF EMERGENCY:

Call: ..............................................................................................................................................

At: ...................................................................................................................................................

WARNING!

This permit does not purport to set forth all hazards nor to indicate that other hazard does not exist. By providing this permit, neither AIG Global Property nor any of its employees make any warranty, express or implied, concerning the use of this permit. Furthermore, neither the Company nor any of its employees shall be liable in any manner (other than liability that may be expressed in any policy of insurance that may be issued by the Company) for personal injury or property damage or loss of any kind arising from or connected with this permit.
Environmental Health & Safety
(https://ehs.unm.edu)

Cutting/Welding/Hot Works

Hot Works Manual and Guidance

Instructions: Before submitting this form, please review EHS’s written Hot Works Manual and Guidance Program (../assets/documents/hot-works-documents/cutting-welding-hot-works.pdf). At least 48 hours to the hot work start, fill out this form in its entirety, and press submit. A confirmation email will be sent to the email address you provided. The form will be sent to EHS and the Authorized Safety Representatives in your area (FM Area Managers and Supervisors, Ford Utilities Operations, and Lab Managers). Depending on the hot work type and location, EHS, or your department’s Authorized Safety Representative, will review the form and issue a hot work permit with a unique permit number.

Rather than wait for EHS to issue you a permit number, you can generate your own by visiting the EHS iServiceDesk (https://iservicedesk.unm.edu/srs_home.html) and submitting a Service Request for a hot work permit. A Service Request number will be generated automatically and can be used as the permit number. If you do not submit a Service Request after submitting this form, EHS will generate a hot work permit number and email it. Once the hot work permit is issued, review the permit and post it at a visible location at the job site before beginning the hot work.

Notice: This official system is for exclusive use at the University of New Mexico. No test submissions are permitted.

Please also review OSHA standard 1910.14: Safety & Health Topics, Confined Spaces (https://www.osha.gov/confined-spaces) before proceeding. You must indicate below whether the area your project is in can be classified as a confined space. If you have questions or need more information, please call 277-2753
Building Number *

Building Name *

Area *

☐ Area 1

☐ Area 2

☐ Area 3

☐ Area 4

☐ Unknown/Multiple

Enter the Floor or Room Where the Work Will Occur *

Please provide a detailed description of the specific location (manhole, ceiling, tunnel, vault, closet, etc.) and the purpose of the hot works.*

Is the work being performed in a confined space? If yes, Indicate whether a confined space permit required?*
Estimated Start Time of Project*

Estimated End Time of Project*

Type of Work*

- Brazing
- Grading
- Sweating
- Cutting
- Soldering
- Welding
- Other

Type of PPE Being Used

Will the hot work be done by a third party contractor (non UNM personnel)? Please indicate "yes" or "no". If "yes", please list the name of the contractor.*

If the hot work will be done by a third party contractor does the contractor have a written hot work program? Please indicate "yes" or "no". If "yes", the contractor should use their hot work program and permit. If no, the contractor may use UNM's hot work program and permit.*

Are you requesting to use UNM's hot work program and permit? Please indicate "yes" or "no". If "yes", you will receive a permit number from EHS.*

If using UNM's hot work program and permit, will you generate your own hot work permit number? (You can submit a Service Request for hot work to EHS and use the Service Request number as}
your permit number) Please indicate "yes" or "no". If "no" EHS will generate and email you a permit number (may take up to 48 hours)*

Description of Work*

UNM Employee Performing Work*

Person in Charge of Work *

Person in Charge Phone Number*

Person in Charge Email *

Your Department or Company Name *