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| **STANDARD OPERATING PROCEDURE** |
| **Operation**  |  Use of Hot Cutting Equipment | **Ref** | SOP-047 |
| **Location** | All Sites | **Revision** | 2 |
| **Date** | 22/08/2023 | **Document Owner** | Health and Safety Manager  |

**Overview**

Standard Operating Procedure to describe the process required for the competent and safe operation of Use of Hot Cutting Equipment and the environmental impacts to be considered.

This procedure must be reviewed annually or any time the task, equipment or materials change.

DO NOT perform this procedure until you have been appropriately trained and authorised to do so

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| **PPE Required** |
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| **Safety Boots** | **Safety Helmet** | **Protective Clothing** | **Dust Mask** | **Visor** | **Gloves** | **Ear Plugs** | **Safety Glasses** | **Lock Out** |
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**Process**

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| **Ref** | **1.0 Pre-task** | **Photo/ Reference** |
| 1.1 | **Pre-Operation Checks.**Cutting equipment should be checked before use. Report faults to your Supervisor or Manager. **DO NOT** use faulty equipment.* Both fuel and oxygen lines should be fitted with flash-back arrestors, Oxygen/propane banks minimum 10mtrs away from naked flames.
* Check hoses for leaks, damage and defect.
* Check gauges, flash-back arrestors and valves for defects and damage.
* Torches should be free from damage and defects and nozzles of torches should be clean and free from leaks.
* Ensure oxygen connections are free from oil / grease contamination as this is an explosion hazard.
* Ensure you are wearing **ALL** required P.P.E. Inspect it for damage / defects. If any equipment is faulty, report it to your Manager or Supervisor and obtain a replacement if necessary
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| 1.2 | **PPE Required*** Safety Helmet (EN 397)
* Hi-Vis Vest / Jacket (BS EN ISO 20471, BS EN ISO 11612 (fire))
* Foundry type Safety Boots EN: ISO 20349- 2010 S3 HI HRO fe
* Leather gauntlets
* Proband overalls (BS EN ISO 11612)
* Face visor protection (EN 166)
* Hearing protection (EN 352)
* Respiratory protection from fumes (EN 149 (daily disposable FFP2 or FFP3 filters suitable for metal fumes), EN 140 (half mask with P2 or P3 filter), BS EN 12941 with P2 or P3 filter (powered respirator)).
* Cutting equipment should be used with flash-back arrestors and non-return valves.
* Adequate fire-fighting equipment should be on stand-by at all times during the process
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| 1.3 | Before undertaking any burning activity, you must satisfy yourself that all safety requirements are implemented. If there are queries or doubts on the safety of a job, discuss it with you Manager and together, agree a safe method of work |  |
| 1.4 | If Hi-Vis clothing is not fire-retardant then it should be removed during burning activities but **MUST** be worn when moving around site as a pedestrian |  |
| 1.5 | P.P.E. should be kept as clean as possible and free from excessive oil / grease contamination |  |
| 1.6 | You should ensure that oxygen/propane bottles are adequately secured to a trolley or other stable structure to prevent the cylinders from falling.  |  |
| 1.7 | Ensure bottle banks are positioned a minimum of 6 metres away from mobile plant handling scrap metal |  |
| 1.8 | When burning within the workshop/ confined areas, steps should be taken to ensure adequate ventilation, either by direct ventilation of the workshop / confined area or by provision of fume extraction equipment. If this is not practicable, air feed respiration equipment should be worn |  |
| 1.9 | All non-essential personnel should be kept clear during operation |  |
| 1.10 | Portable physical red and white barriers in a quantity sufficient to section off the hazardous area from burners, pedestrians and mobile plant. |  |

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| **Ref** | **2.0 Work Steps** | **Photo/ Reference** |
| 2.1 | Ensure adequate fire-fighting equipment is available and that combustible materials, e.g. old rags, newspapers, etc, are cleared away from the working area |  |
| 2.2 | If working on plant or equipment, ensure hydraulics/ fuel-lines are drained and isolated from the burning activity. If necessary, remove hydraulic/ fuel components before hot-cutting operations begin |  |
| 2.3 | If working on potentially combustible or ‘high risk’ material, ensure that it is completed 4 hours before close of operations. For all other work, ensure that burning ceases 1 hour before close of operations.Dousing down should be done for at least 15 minutes following burning and the material spread out of possible ensuring that it is 10 metres away from any stockpile |  |
| 2.4 | Processed material should not be added to a stockpile until the following day |  |
| 2.5 | **NEVER** hot-cut onto or near sealed tanks/ drums or cylinders/ containers even if they are thought to be empty. The heat could cause the sealed unit to explode / rupture. Tanks should only be cut if they have a certificate of cleaning and suitability for hot-cutting (**NB.** These certificates only apply up to 24 hours after issue). |  |
| 2.6 | **NEVER** cut pipes, or near electrical / hydraulic equipment, on plant unless specific instructions have been given, ensuring that such pipes are safe to cut. Always ensure when burning large structures or items that collapse will not occur, causing injury to either yourself or others |  |
| 2.7 | Ensure sparks from the burning process do not land on the cylinders, other burners or roadway / pedestrian routes |  |
| 2.8 | **ALWAYS** check working area afterwards to ensure no fires are likely to start |  |
| 2.9 | Always ensure that you have ample space to cut safely with your feet on the ground. Do **NOT** stand directly over the scrap or overreach to make a cut and always cut away from yourself. Be mindful that the material may move once you have completed cutting through. Check your feet are out of the way and firmly on the ground before making your cut.  |  |
| 2.10 | **ALWAYS** Stand well clear of area when crane is moving material for processing. Do **NOT** approach until crane has finished |  |
| 2.11 | Use the wind to help ventilate the work area by standing in a position where the wind blows the fumes away from you |  |

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| 2.12 | **ALWAYS** Stop burning if people approach the burning area. Only resume work if they have moved to a safe area. If necessary, advise them where it is safe to stand so that you can continue working. Ensure work area is sectioned off from pedestrians not involved in work activity / burning |  |
| 2.13 | Use the wind to help ventilate the work area by standing in a position where the wind blows the fumes away from you |  |

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| **Ref** | **3.0 Post Task** | **Photo/ Reference** |
| 3.1 | **REMEMBER** to always turn valves off on burning equipment when not in attendance of oxygen / propane bottles |  |
| 3.2 | In accordance with the Control of Lead at Work Regulations, because of the potential exposure to toxic fumes, i.e.. Lead. **DO NOT** smoke, eat or drink in the working area |  |
| 3.3 | To avoid ingestion of toxic or harmful substances, maintain a good standard of hygiene and wash your hands and face before you smoke, eat or drink |  |
| 3.4 | Check the burnt material with a heat gun if available to ensure any residual heat has been extinguished |  |

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| **Hazards** |
| * Fire hazards
* Explosive Atmospheres
* Combustible Materials
* Oil Spills & highly Flammable substances
* Naked Flames
* Compressed Gas Cylinders
* Failure of equipment
* Gas Exposure
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| **Additional Information** |
| Burners will attend regular blood-lead health surveillance examinations as organised by the company. Contractors will be required to make their own arrangements |

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| **Competency Assessment** |
| **Assessment Date** |  | **Location** |  |
| **Employee Name** |   | **ID No.** |  | **Assessor** |  |

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| **Confirmation of competency (please tick)** | **YES** | **NO** | **Date of Final Approval** |  |
| **Notes:** |
| **Any further training required?** | **YES** | **NO** | **Date of refresher training (if applicable)** |  |
| **Assessor Signature** |    | **Employee Signature** |  |

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| **Reference** |
| * RA- 075 COSHH Hot Cutting of Metal Scrap
* RA-055 Using a Single Oxygen, Propane and Dissolved Acetylene pack
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| **List of Forms** |
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| **Record of Revision** |
| **Revision** | **Date** | **Description of Change** |
| 1 | 04/12/2019 | Initial launch of SOP (Previously Use of Hot Cutting Equipment SWP-002) |
| 2 | 22/08/2023 | Amendment to section 2.9: Always ensure that you have ample space to cut safely with your feet on the ground. Do **NOT** stand directly over the scrap or overreach to make a cut and always cut away from yourself. Be mindful that the material may move once you have completed cutting through. Check your feet are out of the way and firmly on the ground before making your cut. |