

## Safe Operating Procedure #04 – Oxy-cutting

|   | Activities                   | Procedures   | Hazards/Risks   | Controls  |
|---|------------------------------|--|---|---|
| 1 | Check gas bottles            | Check oxy and LPG bottles are upright and connections are firm   | Both LPG and Acetylene are extremely flammable (classified as both a <i>Hazardous Substance</i> and a <i>Dangerous Good</i> ). Bottles fall, and move or travel and/or loose connections cause leaks which could lead to fire, burns or explosion | <ul style="list-style-type: none"> <li>Bottles to remain upright and connections to be tight and leak-proof.</li> <li>Fire extinguisher to be located. In the event of a fault, do not proceed until Supervisor instructs you to however Supervisor must document fault in the Works Diary. Repair to be arranged and alternate safe-to-use equipment to be provided.</li> </ul>  |
| 2 | Check condition of equipment | Check condition of hoses, flashback arrestors and torch and availability of ignition clicker and check regulator/O rings for leaks | <p>Damaged hose(s) causing leaks which could lead to fire, burns or explosion.</p> <p>Flashback or back-feed caused through faulty or absent flashback arrestors(s).</p> <p>Use of means other than ignition striker causing burns, explosion</p> | <ul style="list-style-type: none"> <li>Hose assemblies to be checked for cracks, splits or other signs of wear and tear.</li> <li>Ensure hoses have flash-back arrestors.</li> <li>Flash-back arrestors should be inspected and tested every 12 months – check that this has been done by consulting the Supervisor.</li> <li>If hoses are more than 3 m in length they must have flash-back arrestors at each end.</li> <li>Ensure that an ignition striker is available and is the only way to ignite the torches.</li> <li>If any of these risks are present due to lack of</li> </ul> |

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|   |  |   |  |  |
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|   |  |   |  | proper gear or faulty gear then do not proceed until Supervisor instructs you to however Supervisor must document fault in Works Diary. Repair to be arranged and additional or alternate safe-to-use equipment to be provided.              |
| 3 | Check work area                        | Check work area is free of combustible materials and area of work is slip & trip free | Smouldering or fire, operator at risk of a trip or slip during cutting   | Ensure area is free of all combustible materials during and after cutting has ceased   |
| 4 | Secure or position the steel to be cut | Ensure steel to be cut is secured and cannot move                                     | Steel moves or is moved by hand causing manual handling injury   | Ensure steel is in position after being moved or craned or wheeled to cutting area – do not manually handle unless you have assessed that it is safe to do so  |
| 5 | Work area not safe                     | Personnel smoking in vicinity of flammable gases                                      | Acetylene or LPG ignited by unintentionally  | Ensure No Smoking or other sources of ignition are close by  |
| 6 | Use Oxy/LPG to cut steel               | Ensure work is secured against movement and proceed to cut                            | Flame moves over clothing or body parts slag drops onto feet or hoses sparks fly to face or eyes                         | Ensure leather apron or equivalent body protection is worn, leather gloves are worn, eye protection with shaded filter (within the range of a No. 3 to 7) is worn and others are clear of work area  |
| 7 | Cutting                                | Fumes given off or flash-back occurs  | <p>Fumes affecting operator or others in close vicinity.</p> <p>Loud bang is heard. Flash-back can lead to explosion</p> | <ul style="list-style-type: none"> <li>Ensure work area is well ventilated.</li> <li>Do not re-light</li> <li>Check condition of hoses, torch tips, gas pressure. If any of these risks are present due to lack of proper gear or</li> </ul> |

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|   |                          |                                       |  |  |
|---|--------------------------|---------------------------------------|--|--|
|   |                          |                                       |  | <p>faulty gear then do not proceed until Supervisor instructs you to however Supervisor must document fault in Works Diary. Repair to be arranged and additional or alternate safe-to-use equipment to be provided.</p>  |
| 8 | Steel cut complete       | Steel cooling/slag cooling            | Steel remains hot, causing burns   | <p>Wait approx. one hour before handling steel pieces. Wear leather gloves when handling steel that is cooling.</p>  |
| 9 | Storage of gas cylinders | move unused cylinders to safe storage | <ul style="list-style-type: none"> <li>• Damage especially to valves</li> <li>• Close proximity to sources of ignition creating risk of explosion or fire</li> <li>• Acetone build-up</li> </ul> | <ul style="list-style-type: none"> <li>• Ensure gas cylinders are stored upright and well-ventilated storage cages are available away from all sources of ignition. Empty cylinders should be stored separate to full bottles and with signage “<i>Danger - No Smoking</i>”.</li> <li>• Never roll cylinders. They should be moved horizontally and should be allowed to stand for 12 hours before next use to allow acetone to be evenly distributed within the cylinder and not have it build up to the flame</li> </ul> |

- leather apron or equivalent protection, eye protection within the range of a No. 3 to 7, leather gloves, steel capped footwear, flame-proof clothing eg cotton or wool

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This SOP has been developed in consultation with me and I agree to follow it and carry out tasks in a safe manner, reporting any problems to my immediate Supervisor.

|    | Name | Signature | Date |
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