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| **RA-011 RISK ASSESSMENT** | **Hot Work (welding, soldering, grinding, cutting etc.)** | | **Frequency and Job Specific Information:** Please Refer to Project/ Method Statement | | |
| **Risk Assessment prepared by** |  | **Name of Person approving RA:** |  | **Date of last review:** |  |
| **Next review due** |  |
| **Limits of use without need for project specific sign off** |  | | | **Circulation List** | All site staff and Project Managers |

**Project specific details & Sign-off by Project Manager (only completed where the standard controls no longer apply)**

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| **Job Number** |  | **Site:** |  | **Project Manager Approving Amended Risk Assessment** |  | **Date:** |  |

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| **Activity** | **Hazard** | **Main Risks**  **&**  **Affected Persons** | **Risk Rating** | | | Existing **Risk Controls** | AdditionalRisk Controls | **Residual Risk** | | |
| **P** | **O** | **RR** | **P** | **O** | **RR** |
| **HOT WORK**  Work on vessels, including tanks and pipes, that have contained flammable materials or are lined or coated with flammable or combustible materials | Open flames  Flying sparks-able to ignite any flammable gases and vapours | **Site staff**  **Others**  Fire  Explosion  Asphyxiation  Serious long-term health issues | **3** | **4** | **12** | * Before undertaking hot work in rooms with potential explosion hazards, the site manager must be contacted in order to go through the planned work. * Acetylene or oxygen canisters must not be brought into the premises. * Special care must be taken in safeguarding good ventilation. * Safety training in the hazards of hot work; | * Immediately before and after, as well as during the work, the premises must be monitored for potentially flammable gases. * Have written permit identifying hot work to be done; * In-depth hazards evaluation of location; * Suitable firefighting equipment to be available in the work area | **1** | **4** | **4** |
| Hot work may produce toxic fumes and gases. | **Site staff**  **Others**  Asphyxiation  Serious long-term health issues | **2** | **5** | **10** | * Test atmosphere for suitable oxygen content; * Perform gas monitoring; * Refer to the specific method statement before the start of   any Hot works | * Empty and purge tanks beforehand; * Check tanks, vessels, and pipe for corrosion; | **1** | **5** | **5** |

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| **Activity** | **Hazard** | **Main Risks**  **&**  **Affected Persons** | **Risk Rating** | | | Existing **Risk Controls** | AdditionalRisk Controls | **Residual Risk** | | |
| **P** | **O** | **RR** | **P** | **O** | **RR** |
| **WORK ON VESSELS** including tanks and pipes that have contained flammable materials or are lined or coated with flammable or combustible materials.  Continued. | An explosion within a tank therefore liable to cause violent failure of the vessel  Sparks  Heat  Hot spots  Flammable materials | **Site staff**  **Others**  Damage to the  building or surroundings as a result of work  fire  Serious personal injury | **2** | **5** | **10** | * Gas detectors should always be used prior to and during hot work; Vapours rise as outside temperature warm up, so continuous monitoring is important; * Keep vents open; * Be sure valves are leak-free; * Be sure all power sources are turned off; * Equipment should never block exits; * Have constant communication with rescue personnel close-by. * If the work is of a nature that requires a fire guard, the fire guard must be present at all times during which work is conducted, during break-times, and for at least one hour after the work has been completed. | * Specific hazards to be covered in the site induction * Regular checks by supervisors * PPE to be issued when required * Have approved breathing devices when required; * Evacuation route to be explained before the start of work * Signage to be displayed in volatile areas   Areas where hot work is completed to be checked before site close down for the day   * A minimum of two escape routes must be available and obstacle-free. | **1** | **5** | **5** |
| **WORK ON VESSELS**  that may release harmful gases, fumes or vapours, | Lack of appropriate PPE or eye protection  Weld fume  Hot working atmosphere  Fume  Vapours | **Site staff**  **Others**  Eye injury including ultra-violet damage (i.e. “arc-eye”), Burns  Heat exhaustion.  Long term ill health | **2** | **4** | **8** | * All staff must wear appropriate eye protection * Flame proof clothing to be worn * Ensure site staff are given regular breaks * Shorten working time in hot weather or consider staff rotation | * When welding ensure appropriate LEV is provided * Ensure testing of LEV equipment to ensure all vapour/fume is captured * Ensure appropriate RPE is provided and worn for welding activities | **1** | **4** | **4** |

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| **Activity** | **Hazard** | **Main Risks**  **&**  **Affected Persons** | **Risk Rating** | | | Existing **Risk Controls** | AdditionalRisk Controls | **Residual Risk** | | |
| **P** | **O** | **RR** | **P** | **O** | **RR** |
| **WORK IN AREAS THAT CONTAIN FLAMMABLE OR COMBUSTIBLE MATERIALS**  that cannot be protected by following the Safe Operating Procedure alone | Gas  Vapours  Combustible materials  Flammable items | **Site staff**  **Others**  Asphyxiation by gases and vapours and/or asphyxiation or poisoning by toxic fumes | **2** | **5** | **10** | * The person conducting the work must never leave the premises without ascertaining that all sparks or embers have been extinguished. * Cutting and welding operations restricted to authorised, properly trained individuals; * If possible, hot work performed in a properly designed shop area equipped with all necessary controls and adequate ventilation; * Move combustible materials at least 35 feet from the work site. If this is not possible, protect combustible materials with metal guards or by flameproof curtains or covers (other than ordinary tarpaulins);   Cover floor and wall openings within 35 feet of the work site to prevent hot sparks from entering walls or falling beneath floors or to a lower level; | * The person(s) performing the work must have a valid hot work license. * A hot work permit must be issued by the employer before the work can begin. * If asked while on the premises to do the work, the person(s) performing the work must be able to produce the hot work permit | **1** | **5** | **10** |
| **WORK IN LOCATIONS THAT COULD EXPOSE OTHER USERS OF THE AREA TO HAZARDS**  e.g. work above building entrances or on circulation routes (unless this is a regular activity for which a Standard Operating Procedure is available). | Sparks  Heat  Fume | **Site staff**  **Others**  **General public**  Damage to the building or surroundings as a result of work activities that generate sparks and heat, such as Grinding, Burning and Welding etc | **2** | **4** | **8** | **1** | **4** | **4** |

**PPE Required**

**(Please tick all that apply)**

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| **SAFETY HELMET**  **MUST BE WORN** | **HIGH VISIBILITY VEST**  **MUST BE WORN** | **SAFETY BOOTS**  **MUST BE WORN** | **SAFETY GLOVES**  **MUST BE WORN** | **EYE PROTECTION**  **MUST BE WORN** | **EAR PROTECTION**  **MUST BE WORN** | **SAFETY OVERALLS**  **MUST BE WORN** |
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|  |  |  |  |  |  |  |
| **LABORATORY COATS**  **MUST BE WORN** | **WELDING MASK**  **MUST BE WORN** | **VISORS**  **MUST BE WORN** | **HAIR NETS**  **MUST BE WORN** | **ESCAPE ROUTES**  **TO BE KEPT CLEAR** | **SAFETY HARNESSES**  **MUST BE WORN** | **NO MOBILE PHONES** |
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|  |  |  |  |  |  |  |
| **REPIRATORS**  **MUST BE WORN** | **HAVE YOU BEEN**  **FACE FIT TESTED?** | **PEDESTRIAN MUST**  **USE THIS ROUTE** | **INTRINSICALLY SAFE OVERALLS**  **TO BE WORN** | **INTRINSICALLY SAFE FOOTWEAR**  **MUST BE WORN** | **OPAQUE SAFETY GLASSES**  **MUST BE WORN** | **DRIVERS MUST REPORT TO SITE OFFICE** |
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**Notes**

* For risk assessments requiring project specific amendment - the Risk Assessment shall be reviewed weekly to ensure, it remains current as the project progresses.
* All employees to attend site induction/sign-in prior to commencing work on site.
* First Aid facilities to be provided by Client/Principal Contractor
* Welfare facilities to be provided by Client/Principal Contractor

**Risk Assessment Matrix**

**Multiply scores to arrive at risk rating (RR)**

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| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Probability** | | | | | |
|  |  | **Remote** | **Unlikely** | **Possible** | **Probable** | **Very Likely** | **Certain** |
| **Outcome** | **No Injury** | **0** | **1** | **2** | **3** | **4** | **5** |
| **Minor Injury** | **1** | **1** | **2** | **3** | **4** | **5** |
| **First Aid Injury** | **2** | **2** | **4** | **6** | **8** | **10** |
| **Reportable Injury**  **(7 Day)** | **3** | **3** | **6** | **9** | **12** | **15** |
| **Major Injury** | **4** | **4** | **8** | **12** | **16** | **20** |
| **Fatality/Disability** | **5** | **5** | **10** | **15** | **20** | **25** |

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| **Low** | **1 – 6** | **Monitor** | **Tolerable risk. No additional controls required. Employees made aware of safe/correct system of work.** |
| **Med** | **8 – 12** | **Improvement** | **Action required to further reduce risk to acceptable level. Review of process or activity.** |
| **High** | **15+** | **Immediate Action** | **Unacceptable risk. Stop activity immediately. Inform next level of management & refer to Manager/Safety Coordinator. Possible withdrawal of process or activity.** |

**Monitoring and Review**

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| **Date Completed** | **Assessed by:** | **Job Title:** | **Signature:** | **Review Date:** |
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**Further Actions**

**(Please detail any actions for the risk assessment here)**

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| **Issue** | **Further action** | **Action by who?** | **Action by when?** | **Completed** |
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**All actions to be followed up are marked in bold in the body of the risk assessment above.**

**Confirmation of Risk Assessment & Method Statement Briefing**

**Before commencing the activities covered in this safe system of work document all staff are to sign below to confirm that a clear briefing explaining the job has been given and is understood**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Signature** | **Date** | **Comments** |
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