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| --- | --- | --- | --- | --- | --- | --- |
| **Building & Room/Lab No:** | | **Space Principal / Supervisor / Building Manager** | | | | **Risk Assessment Ref:** |
| **Activity Title:** | | | | | | |
| **Description of planned activity:** | | | | | | |
| **Those at risk / affected parties:** (consider authorised operators, Un-trained staff, others e.g. cleaners, maintenance, contractors, visitors) | | | | | | |
| **Risk Assessor**  Name: | | | Signature: | | Date: | |
| **Responsible person: Principal / Supervisor / Line Manager**  Name: | | | Signature: | | Date: | |
| **Related procedure references or links (e.g., SOPs):** | | | | | | |
| **Review Period** (UoN policy - 2 yearly unless there are intervening significant changes)**:** | | | | | | |
| **Section 1: Pressure/Cryogen System information** | | | | | | |
| **Data** | **Response** | | | **Notes** | | |
| **Supply gas OR cryogen type** |  | | |  | | |
| **Supply pressure (Bar)** | Bar | | |  | | |
| **Supply location (select from the following)** | Outdoor cage / Indoor point of use / Indoor remote to point of use | | | What3Words location (<https://what3words.com/soft.trendy.spoken>) = | | |
| **Cylinder/Vessel volume (m3) -where applicable multiply by number of simultaneously connected supply bottles** | m**3** | | |  | | |
| **Pipework construction material/spec** |  | | | Delivery line max pressure rating and material type i.e. Swagelok stainless, Copper tube etc. | | |
| **Point of use location** |  | | | Lab number + access codes where applicable | | |
| **Regulator type** |  | | | Single stage, 2-stage, multi-stage, other | | |
| **Regulator indicated gas type** |  | | |  | | |
| **Regulator expiry date** |  | | |  | | |
| **Regulator low pressure gauge range** | Bar | | | Read off pressure at red mark on low pressure side regulator gauge. | | |
| **System Pressure Relief Valve expiry date** |  | | |  | | |
| **System Pressure Relief Valve vent location** |  | | | Where would exhaust gas be vented to. | | |
| **Low pressure side gas delivery line type** |  | | | Rated tube, pipework etc. | | |
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| **Section 2: Hazard Identification and Risk Assessment** | | | | | | | |
| **Please ensure you give an answer for each section of the risk assessment. If a section does not apply to you, please mark it clearly as such.**  See hierarchy of control guidance at the end of this document for guidance. Please add rows accordingly. | | | | | | | |
| **Hazards** | **Describe the nature of the potential harm associated with the hazard** | **Risk Evaluation without controls in place**  Likelihood (1-5) X Consequences (1-5) = Risk Rating\* (1-25) | | **What control measures are, or will be put, in place to control the risk?**  List all elimination, substitution, engineering and/or administrative controls | | **Risk Evaluation with controls in place** Likelihood (1-5) X Consequences (1-5) = Risk Rating\* (1-25) | |
| **Bottle/Vessel storage and handling** | | | | | | | |
| 1. |  |  | |  | |  | |
| 2. |  |  | |  | |  | |
| 3. |  |  | |  | |  | |
| **Gas / Liquid in use** | | | | | | | |
| 1. |  |  | |  | |  | |
| 2. |  |  | |  | |  | |
| 3. |  |  | |  | |  | |
| **Pipework / Lines** | | | | | | | |
| 1. |  |  | |  | |  | |
| 2. |  |  | |  | |  | |
| 3. |  |  | |  | |  | |
| **Point of use** | | | | | | | |
| 1. |  |  | |  | |  | |
| 2. |  |  | |  | |  | |
| 3. |  |  | |  | |  | |
| **Exhaust / Vent and pressure relief** | | | | | | | |
| 1. |  |  | |  | |  | |
| 2. |  |  | |  | |  | |
| 3. |  |  | |  | |  | |
| **Pressure vessel / Cryogenic Vessel** | | | | | | | |
| 1. |  |  | |  | |  | |
| 2. |  |  | |  | |  | |
| 3. |  |  | |  | |  | |
| **Operators** | | | | | | | |
| 1. |  | |  | |  | |  |
| 2. |  | |  | |  | |  |
| 3. |  | |  | |  | |  |
| **Building and local space considerations** | | | | | | | |
| 1. |  | |  | |  | |  |
| 2. |  | |  | |  | |  |
| 3. |  | |  | |  | |  |

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| --- | --- |
| **Section 3: Additional Requirements** | |
| **First Aid** |  |
| **Waste/Exhaust/Vent handling** |  |
| **Emergency Actions** | **To protect people**: |
| **To render location safe**: |
| **Emergency contact** (name and mobile): |
| **Training, supervision and competency** (Amend to suit) |  |
| **(Maintenance / Servicing) by third parties** |  |

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| **Section 4: Training and Competency Record** | | | |
| **Name (Operator/Trainee)** | **Signature** |  | **Signature** |
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| **Section 5: Itemised System Components** | | | | | |
| **List all pressure system components in the table below** – These are component which have the potential to realise system pressure | | | | | |
| **Component** | **Pressure Rating psi / Bar** | **Construction Material** | **Supplier** | **Protected by upstream PRV YES/NO/NA** | **Purchase date** |
|  |  |  |  |  |  |
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| **Section 6: Modification and Review** | | | |
| **Modification and Review** - where new components are introduced or system modification made, then such changes need to be assessed, and protocols may need to be modified. Record the review of changes below. | | | |
| **Date of Review** | **Name and role of person carrying out review** | **Summarise changes** | **Confirm RA remains suitable or has been updated in the light of the review** |
|  |  |  |  |
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The risk evaluation columns (with and without controls) are based on a 5 x 5 matrix (likelihood x consequences = risk evaluation). This kind of quantitative evaluation is useful as an indicator. The explanation for the matrix is given in the table below:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Table: Risk Evaluation Definitions** | | | | | |
| **Likeli-hood** | **Definition** | **Con-sequences** | **Definition** | **Risk Evaluation / Rating** | **Actions** |
| 1 | Hazard is unlikely to occur | 1 | No injury/ill-health | 1-8 Low or Acceptable Risk | Progress actions that are straightforward and cost effective |
| 2 | Hazard will occur occasionally | 2 | Minor injury/ill-health | 9-12 Moderate Risk | Effort required to reduce risk. Moderate resource may be required |
| 3 | Hazard will occur sometimes | 3 | Injury/Ill-health required first aid | 15-25 High/ Substantial/ Intolerable Risk | Work should stop until control measures have been implemented. Considerable resource might be required to achieve this |
| 4 | Hazard will occur regularly | 4 | Injury/Ill-health requiring medical treatment outside the University |  |  |
| 5 | Hazard will occur frequently | 5 | Severe – Death or major injury/ significant ill health |  |  |

**Hierarchy of control guidance:**



**S2. Personal Protective Equipment**

Use of PPE should be included in the relevant section. Be specific on the type, it is not sufficient to state “wear PPE as appropriate” or “wear suitable PPE.”

**S3. Additional Requirements**

Complete these fields as relevant to the work. Ensure sufficient detail is given on Emergency Actions.

In terms of maintenance/servicing, consider who will be carrying this out. If it is a third party, state who and reference UON sub-contractor policy. If carried out by university members, include details in the process risk assessment and associated safe operating procedures.

**S4. Training and Competency**

Training and the attainment of competence can be recorded in this section or if maintained elsewhere, state where the records are stored.

Ensure that if using individual training record forms that copies are kept by the worker. The University must maintain an up-to-date version.

**S5. Modification and Review**

This section is for recording changes to the setup such as the introduction of new components or modifications to the pressure system