#### National Space Centre - Risk Assessment Form

#### General Risk Assessment Reference – G400

| **Location** | National Space Centre |
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| **Equipment or Activity to be assessed** | Plasma Ball Demonstration |
| **Description of Activity** | Demonstration of electric field strength and induced charge. Touch various things to the plasma ball and touch with your hand. Fluorescent tube touched to the plasma ball to show that it lights up. |
| **Date of assessment** | 02/10/2024 |
| **Last review date (if applicable)** | 22/04/2024 |
| **Next review date** | October 2025 but earlier review date required following outcomes of accidents, absences and near misses, or changes to processes, work methods, materials, technology, equipment or legislation. |
| **Risk Assessment created by [name / date]** | Sophie Allan [02/10/2024] |
| **Authorised by Line Manager [name / date]** | Sophie Allan [02/10/2024] |
| **Authorised by Health and Safety Manager [name/ date]** | Katrina May Neve [02/10/2024] |

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| **What are the hazards?**  *Something with the potential to cause harm* | **Who might be harmed and how?** | **Control Measures**  *What is already in place to reduce the risk?* | **Additional Control Measures**  *What needs to be put in place to further reduce the risk?* | **Risk Rating**  *Refer to risk matrix below* | **Authorised by Health and Safety Manager** |
| Plasma ball | **Who**  Staff and students  **How**  Cuts from broken glass | In the event of a breakage, all participants to carefully vacate the area. Demonstrator to put on thick gloves and clear away all glass with dustpan and brush.  Participants warned of the fragile nature of the plasma ball. |  | Likelihood: 1  Severity: 3  Risk Rating: 3  [Low] | Katrina May Neve  Health and Safety Officer  [02/10/2024] |
| Strip light | **Who**  Staff and students  **How**  Cuts from broken glass | In the event of a breakage, all participants to carefully vacate the area. Demonstrator to put on thick gloves and clear away all glass with dustpan and brush.  Participants warned of the fragile nature of the strip light. |  | Likelihood: 1  Severity: 3  Risk Rating: 3  [Low] | Katrina May Neve  Health and Safety Officer  [02/10/2024] |
| Electrocution | **Who**  Staff and students  **How**  Electric shock | All electrical equipment PAT tested on a rolling annual basis.  Spillages cleaned up immediately. |  | Likelihood: 1  Severity: 5  Risk Rating: 5  [Low] | Katrina May Neve  Health and Safety Officer  [02/10/2024] |
| Sparking the plasma ball | **Who**  Staff and students  **How**  Static shock | Any participants with electrical aids (hearing aids / pacemakers) should stand a minimum of 2m away from the demonstration.  There is no recorded incidence of harm caused by this demonstration.  Demonstrators to individually warn participants and ask them to step back. |  | Likelihood: 1  Severity: 2  Risk Rating: 2  [Low] | Katrina May Neve  Health and Safety Officer  [02/10/2024] |
| Spark from the metal contacts on the strip light | **Who**  Staff and students  **How**  Static shock | Any participants with electrical aids (hearing aids / pacemakers) should stand a minimum of 2m away from the demonstration.  There is no recorded incidence of harm caused by this demonstration.  Demonstrators to individually warn participants and ask them to step back.  Contacts at the end of the strip light are wrapped in insulated electrical tape to prevent electrical spark. |  | Likelihood: 1  Severity: 2  Risk Rating: 2  [Low] | Katrina May Neve  Health and Safety Officer  [02/10/2024] |

**Risk Rating Matrix**

**Risk = Likelihood of injury x Severity of injury**

**R = L x S**

**Low risk = 1 – 6, Medium risk = 8 - 12, High risk = 15 - 25**

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|  | | **S = Severity of injury** | | | | |
| **Minor injury or illness (1)** | **First aid injury or illness (2)** | **3-day injury or illness (3)** | **Major injury or illness (4)** | **Fatality, disabling injury, etc (5)** |
| **L = Likelihood of injury** | Very unlikely (1) | 1 = Low | 2 = Low | 3 – Low | 4 = Low | 5 = Low |
| Unlikely (2) | 2 = Low | 4 = Low | 6 = Low | 8 = Medium | 10 = Medium |
| Likely (3) | 3 = Low | 6 = Low | 9 = Medium | 12 = Medium | 15 = High |
| **Very likely (4)** | 4 = Low | 8 = Medium | 12 = Medium | 16 = High | 20 = High |
| **Almost certain (5)** | 5 = Low | 10 = Medium | 15 = High | 20 = High | 25 = High |

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|  | **Risk Rating Definitions and Guidelines** |
| **Low** | **Minor to no injury.**  This is an acceptable level of risk. No further controls are required as the risk rating cannot be reduced any further. However, it is advised continual monitoring occurs to ensure that no changes/deviation of control measures occur. |
| **Medium** | **An injury requiring further medical assistance or is a RIDDOR related incident.**  It is advised that further control measures are implemented to reduce the risk rating to a low a level as possible. If the risk cannot be reduced to lower than a medium, then on-site monitoring should occur to ensure that all stipulated controls are bring adhered to. |
| **High** | **Death, paralysis, long term serious ill health.**  This is an unacceptable risk rating. Urgent interim controls should be implemented to reduce the risk so far as is reasonably practicable. If the risk rating cannot be reduced to lower than high, then a documented safe system of work should be implemented to control the activity. It may be necessary to seek further professional advice. Serious consideration should be given to the validity of carrying out the activity at all. Regular Monitoring of the activity should occur. |