**Instructions:** In accordance with RMM-700, complete this application and forward to Health Physics (NRB-102) for review and Health Physics Advisory Committee approval. If approved, you will be issued a permit containing your HPAC Permit Number and the conditions of approval.

**Project Supervisor:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** |   | **Location** |   |
| **Department** |   | **Phone** |   |
| **Title** |   | **e-mail** |   |

**Project Team:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Department** | **Title** | **e-mail** |
|   |  |  |  |
|  |  |  |  |
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|  |  |  |  |
|  |  |  |  |

**Project Description:**

|  |
| --- |
|  Provide a one-line description of your project |
|   |

When evaluating the potential to perform this project within the McMaster Radiation Safety Program, the Health Physics Advisory Committee needs to know how much radioactive material you are going to purchase, store and use. Complete the table below:

|  |  |
| --- | --- |
| **Isotope** | **Maximum Quantity of Isotope** |
| **In Use per Experiment (Bq)** | **Purchased at One Time (Bq)** | **Purchased per Year (Bq)** | **To be Stored in Laboratory (Bq)** |
|   |   |   |   |   |
|   |   |   |   |   |
|   |   |   |   |   |
|  |  |  |  |  |
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|   |   |   |   |   |
|   |   |   |   |   |

Specify where the radioactive substances will be used:

|  |  |
| --- | --- |
| **Isotope** | **Location** |
| **Activity** | **Building** | **Room** | **Description** |
|  | Shipping / Receiving |   |   |   |
| Storage |   |   |   |
| Use |   |   |   |
|  | Shipping / Receiving |   |   |   |
| Storage |   |   |   |
| Use |   |   |   |
|  | Shipping / Receiving |   |   |   |
| Storage |   |   |   |
| Use |   |   |   |

Provide a layout or drawing of each area where radioactive substances will be used.

|  |
| --- |
| Describe how access to the building, room or source storage locations will be controlled to ensure that they can only be accessed by authorized personnel. |
|   |

**Radiation Safety Program Implementation:**

What radiation instrumentation do you have for measuring contamination and radiation levels in the laboratory?

|  |  |  |  |
| --- | --- | --- | --- |
| **Type** | **Manufacturer** | **Model** | **Detector Type** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

**Note:** If your radiation instrument has a built-in radioactive source, provide the

source serial number, activity and reference date.

|  |
| --- |
| Who is responsible for the day-to-day contamination control in the laboratory and what position does this individual hold:  |
|   |
|  Name any individual whom you wish to have signing authority for the purchase of radioactive material. You remain responsible for the use of material by this individual. |
|   |

What protective equipment will be routinely used?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Equipment or Device | Yes | No | Equipment or Device | Yes | No |
| Laboratory Coats |   |   | Shielded Storage Container |   |   |
| Disposable Gloves |   |   | Safety Glasses |   |   |
| Shoe Covers |   |   | Syringe Shield |   |   |
| Remote Handling Tools |   |   | Local Shielding |   |   |
| Respiratory Protection |   |   | Fume Hood |   |   |
| Other: |
|   |

**Project Detail:**

|  |
| --- |
| Please provide an overview your proposed procedures. Provide sufficient detail so that the HPAC can make a rational decision concerning the safety of the experiments. If you have a written protocol, it may be appended. It would be very helpful if the amount (in Bq or uCi) involved at each stage is noted. If insufficient information is provided, the application will be returned to you.  |
|   |
| Note: Information that should be included: * The quantity of isotope in the container as received from the supplier and from which samples are drawn for the experiment or to make a stock solution;
* What will be labelled with the isotope(s);
* The quantity of radioactivity in uCi in the label;
* The method used to extract the sample of interest;
* The amount of radioactivity involved;
* The disposition of the remainder of the sample;
* The expected maximum radiation field experienced by the body and hand;
* Duration of the maximum exposure
 |

Disposal of radiological waste shall be coordinated through the Health Physics Department. Provide the estimated volume and mass of radioactive material that will be generated as a result of this project.

|  |  |  |
| --- | --- | --- |
| Isotope | Monthly | Annual |
| Solids (kg) | Volume (L) | Solids (kg) | Volume (L) |
|   |   |   |   |   |
|   |   |   |   |   |
|   |   |   |   |   |
|   |   |   |   |   |
|   |   |   |   |   |

If you will use these isotopes with animals, complete the table below:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Isotope** | **Quantity per Animal (Bq)** | **Animals per Experiment** | **Type of Animal** | **Animals per Year** |
|   |   |   |   |   |
|   |   |   |   |   |
|   |   |   |   |   |
|   |   |   |   |   |
|   |   |   |   |   |

If you are using H-3, C-14 or S-35, complete the following table:

|  |
| --- |
|  Will your procedures generate any volatile species such as tritium or 35SO2? (Note that 35S-labelled amino acids are known to generate volatile compounds when incubated). |
|   |
|  What procedures and controls will be used to prevent inhalation of these species and contamination of the laboratory? |
|   |

Users of P-32 and other isotopes with energetic beta emitters such as Y-90, Na-24 or Cl-36, whose energy is >0.5 MeV, complete the following table:

|  |
| --- |
| What protective measures or specialized equipment will be used to prevent or minimize extremity doses, particularly when working with high specific activity material? |
|   |
| How will whole body doses be minimized? |
|   |

Users of radioiodine, complete the following table:

|  |
| --- |
| What controls are going to be taken to prevent the release of I2 vapour? |
|   |
| How will the effectiveness of these precautions me monitored? |
|   |

The Project Supervisor shall read and acknowledge the following:

If this application is approved and an HPAC permit issued, I agree that:

1. The work will be conducted in accordance with the procedures described in this application and approval will be sought from the HPAC before any substantial changes are made;
2. Radioactive waste disposal will be coordinated through the Health Physics Department and all costs associated with radioactive waste disposal are the responsibility of the Project Supervisor;
3. Upon completion of work activities, decommissioning will be coordinated through the Health Physics Department and costs associated with completion of radiological work activities and remediation required to release the area for public use are the responsibility of the Project Supervisor; and
4. The work will be performed in accordance with the Conditions of Approval listed on the HPAC permit, Canadian Nuclear Safety Committee regulations, the Radiation Safety Program approved by the HPAC for this work and any additional instructions provided through the Health Physics Department.

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Project Supervisor Signature Date