

Instructions for “Experimental/Procedural Safety Review for Building 211”

This form will be completed by the experimenter(s) and returned to the Safety Committee Chairperson. The chairperson may review the form, suggest additions and assist in meeting with a health physicist to determine health physics requirements. This preliminary review is only to facilitate the preparation of the material and to assist the experimenter; the review committee may make further additions to the experimental plan. The form and accompanying material will be reviewed by a knowledgeable committee. The material can be 1) approved as written. 2) approved with qualifiers (these will be added in the last column of the second page 3) Returned for clarification or 4) rejected. Remember that this form and accompanying material must make it possible for an auditor to review the experiment, so verbal assurances and clarification are only worth the paper they are written on. A copy of the form with approval signatures and recommendations will be returned to the experimenter.

Note that paragraphs with bars beside them are additions. This experimental review process is intended to substitute of the review necessary for a radiation workers permit and thus is in compliance with the Radiological Control Manual DOE N 5480.6

Top:

This is the assigned number by the safety committee chairperson. The first two digits will be the year; the second two digits will be the month submitted; the last two digits will be the sequence number of the experiment. Finally there will be a revision date. If an experiment is re-reviewed, the number will remain the same, only the revision date will change. The appropriate experiment number will be entered on the daily log of all accelerator runs.

Review Dates

A short review will be done at least once a year to make sure no changes have been made. A complete review including a new form will be required every two years.

Experimenters

Name(s) of experimenters including a contact person for spills or other experimental problems. The submitter of this form is responsible for making sure that all experimenters are familiar with the experimental protocol and agree to carry out the experiments in agreement with the protocol.

Safety

These items are to remind you of important safety components that you should check before starting experiments. Put a check in the box if the hazard is present. It is assumed that compounds for which you do not have MSDS sheets are synthesized compounds. MSDS sheets for all other compounds should be with the 211 MSDS sheet collection.

Describe what training or briefing is necessary before doing the experiment. This could include what required courses are necessary or specific training for specialized operations

Emergency

These are to remind you of the items that you should know about or have on hand before starting the experiment. If special clean-up procedures would be useful in the case of a spill, they should be written up and submitted. The review committee will place them in the "Spill Cleanup Notebook" that will be kept in the health physics office. An example where such a procedure would be necessary is a radioactive compound that complexes to the proteins in the skin. Appropriate chemicals and procedures to remove it from the skin protein should be written up.

Industrial hygiene

Again these are reminders and should be checked if the particular hazard is present. Acutely hazardous compounds are defined in the Argonne "Waste Handling Procedures Manual".

All experiments generate waste of some sort. The waste must be classified. Note that waste must be removed in accordance with Argonne rules.

Compound lists etc.

This should include the classes of compound if such classes are sufficient (for example aliphatic hydrocarbons or aliphatic alcohols. If methane under high pressure is used, describing it as an aliphatic hydrocarbon would be insufficient). Specific compounds should be listed if appropriate along with their characteristics.

Check offs

Again these are reminders and will be used to assist us in evaluating the experiment.

Experimental description

If the experiment is a variant of a well-known or previously reviewed procedure, enter the information here.

A protocol should be given. For simple experiments with few hazards, the space may be sufficient. If not check the box and attach a protocol. The protocol should be step-by-step and in sufficient detail that any experimental hazards can be ascertained.

Maximum hazards and environmental impacts.

These two sections must be filled out. This requires an analysis of your experiment. It may be as simple as dropping a bottle on the floor. Clearly the hazard is different if it is water or hydrofluoric acid.

Health Physics

This section covers the radiological hazards. Isotope, quantity of radiation and lifetimes are all appropriate. If strong betas or gammas are present, they should be noted. Use discretion when describing the amounts of material present. This approval form will be good only for amounts up to those described in this procedure. However if larger amounts are entered than are needed, a more elaborate review procedure may be invoked.

If it is expected that the dose will give an exposure above the limits of 100 mRem (1 mSievert) skin dose, or if possible airborne contamination will be above 10% of a DAC, or if contamination (not activation) will be above the limits in the Radiological Control Manual. (approximate values are, in units of dpm/100cm², 100,000 alpha from uranium, 2000 transuranics, 100,000 beta-gamma or 1,000,000 from tritium) mark here. These are not definitions for contamination.

Requirements for experiment

This is where the review committee adds its input to the experiment.

Intermittent coverage would mean that the health physics technician must be in the building and available for assistance. Continuous means that the health physics technician will be present at all times.

Attachments

All attachments should be listed here.

Signatures

Submitters and Approval signatures.