Guidance in Writing Standard Operating Procedures

Background:

Provide brief background information on the process and the hazardous materials to be used. If a chemical or biological hazard will be administered to an experimental animal, explain why is it necessary to use this material (to simulate a disease state, to initiate an infection, to determine the biological action of the material, etc). In what form and in what manner will the material be used (topical application, IP injection, inhalation, etc)? What is the dose and application frequency? How much of the material will be on hand at any one time and in what form (solution, powder, pre-measured pellet, frozen stock etc)?

Hazard Assessment:

Discuss the potential for the material to harm human health. For hazardous chemicals include a discussion of acute and chronic toxicity and routes of entry. For microorganisms include a discussion of pathogenicity and virulence, as well as any potential for transmission. Determine the appropriate biosafety level with which to manipulate the organism and what actions may lead to either localized or systemic infection (e.g., needlestick or aerosol exposure).

Hazard Control:

Describe the precautions that will be taken to minimize the hazard potential. Include the use of fume hoods, biosafety cabinets or other enclosures. Determine the need for personal protective equipment (gloves, eye protection, protective clothing). If chemically resistant gloves are needed, state the type of glove to be used for each particular procedure (e.g., Viton gloves for phenol/chloroform extraction; disposable latex gloves for DMSO manipulation). Try to design the protocol so that respiratory protection is not needed.

If an experimental animal will be exposed to a toxic chemical or pathogenic microorganism, discuss whether bedding material may become contaminated with toxic metabolites or pathogens shed by the infected animal. If contaminated bedding is a possibility, describe the methods that will be used to control exposure to potentially hazardous dusts during cage change-out. Who will change soiled animal bedding, RRC staff or laboratory staff? In what room will bedding changes be conducted? How will cages be decontaminated and who will be responsible for the decontamination?

Regulatory Determination:

Determine whether state or federal regulations apply to any aspect of the experiment. If working with human cell lines, unfixed human tissue, human blood or blood products, internal body fluids, or other potentially infectious materials, describe your plan for complying with the OSHA Bloodborne Pathogens Standard. If working with a known or suspected human carcinogen, reproductive toxin, neurotoxin, or material with a high level of acute toxicity describe the additional employee protections that will be taken to safely work with these materials. Include the establishment of a designated area (an entire laboratory, section of the work bench, fume hood or other device); methods used to limit access to the toxin (authorized users, limited access to the laboratory, locked storage cabinet, caution signage for areas of carcinogen use, etc.); and containment procedures for manipulation of powdered and/or volatile compounds (fume hood, glove box, biosafety cabinet, or other enclosure).

Emergency Response / Spill Control:

Submit written spill clean up procedures. Laboratory personnel are encouraged to rely on DEHS for assistance in providing spill clean up of larger than incidental amounts of highly hazardous materials.