



Chapter 8:

Protective Clothing

Objectives:

Describe the purpose of protective clothing.

Describe clothing items to be used and how to select them.

Demonstrate the proper techniques for donning and removing protective clothing.

Describe actions normally required after removal of protective clothing.

Protective Clothing

Protective clothing (PC) is worn to keep contamination off of your body.

PCs may shield you from alpha and low energy beta radiation, but they will not shield you from higher energy beta, neutron, and gamma radiation. Since these are of concern in commercial reactor facilities, PCs provide little in terms of shielding for doses.

Review the radiation work permit (RWP) for the area/ task you are accessing to determine if PCs are required. Survey maps can provide information on expected levels of contamination.

Protective Clothing

The PC requirements will vary depending on the levels of contamination and the work you will be doing. They vary from as simple as: labcoats, gloves & booties, double PCs and double gloves, to bubble suits with supplied air.



The RWP will also inform you of other requirements, such as having an HP Tech with you, having an ED (electronic dosimeter with a dose/dose rate alarm), having a survey meter, etc.

Protective Clothing

Most likely you will encounter “single dress-out” requirements which are:

cloth hood, cloth coverall, cotton glove liners and rubber gloves, booties and overshoes, and seal all boot and glove seams with tape.



Gloves & Coveralls



Headwear/Footwear



Preparing to enter the RCA

Each time you go to a plant you should anticipate “dressing out.” Some suggestions are:

Leave jewelry, wallets and other valuables in a secure location (such as the trunk of your car or at the resident inspectors office, etc.). This is known as “empty pockets.”

Consider wearing all cotton clothing items. They will be less likely to absorb radioactive gases, such as radon or fission product gases (e.g., xenon). Radioactive gases trapped in your clothing fibers will cause it to look like you are contaminated.

Always remember to talk with the HP personnel before you enter the RCA. They will be able to fill you in on any issues that you might encounter, as well as inform you of all requirements for your entry.



Donning Protective Clothing

Dress for undressing - wear gym shorts or running shorts or other “modesty” clothing. Note that T-shirts are sometimes considered personal outer clothing unless worn as an undershirt. Don’t wear shoes that won’t fit into, or securely, to rubber booties (e.g., don’t wear heels, or running shoes with thick soles, work boots or clogs might not fit into the rubber overshoes that are typically worn).



Protective Clothing

Check the RWP requirements.

Remove personal outer clothing (as required).

Obtain protective clothing (PC).

Check clothing for rips and tears (sites that use “OREX” suits are not reused). Do not use damaged PCs.

Dressing out (ASK FOR HELP IF YOU CAN'T REMEMBER!!!!):

- 1. Don glove liners, surgeons cap, & booties (over safety shoes).**
- 2. Don coveralls.**
- 3. Don rubber overshoes and rubber gloves.**
- 4. Tape/secure rubber gloves and boots to coverall sleeves and pant legs.**
- 5. Put dosimeter in pocket,**
- 6. Put hood over head. Ensure hair tucked in.**

Leaving the Contaminated Area

Much of the protective clothing that you will wear will be reusable.

You will be removing all of the PC's down to your scrubs BEFORE stepping across the line.

Many facilities will have posters or other aids to assist you in the undress procedure.

ASK IF YOU NEED HELP!



Removing Protective Clothing

Approach the Step-Off-Pad (SOP) don't step on it ... yet!

General approach - Remove most contaminated items first.

Remove: tape (so you can easily remove other items)

rubber overshoes - place in appropriate container

rubber gloves - put in appropriate container

hood and surgeons cap (tilt head back)

dosimetry - put on the step-off pad (or hand to HP)

coveralls – touch only on the inside w/cotton liners

booties – one at a time, while stepping onto SOP

cotton glove liners - keeping hands over dirty area

Retrieve dosimetry.

Go to frisking station and frisk self (hands first), as well as dosimetry.

Use the personal contamination monitor (PCM), if available.

Sign out on RWP (or log out with electronic dosimeter if used).

Removing Protective Clothing

If you are uncertain of the process, you should **ask for help**.

At some sites/locations there may be a poster providing this information.

Another reminder may be simply to observe other people (be cautious: they might not know what to do either!).

Review

Check the RWP!

Have “modesty clothing,” (scrubs, gym clothes) available if you anticipate wearing anti-contamination (PC’s) clothing.

PC’s help keep contamination off of your skin; they do not shield you from most radiation doses!

Be careful when removing coveralls to keep from becoming contaminated. (one technique is to ‘roll’ them down your body.)

Tape and tab all seams prior to entering areas. Some sites use elastic cuffs, vice tape, to cut down on low-level waste.

When removing PC’s, start with the most contaminated item first (generally, rubber boots).

Don’t forget to remove your dosimetry from your PC’s before leaving!