

Working Alone Policy / Two-Person Rule Synchrotron Radiation Center

To minimize the risk of injury to staff and users, the following policy/rule has been established to identify specific tasks which require two persons to be present in order to perform these tasks. (Being present means within audible or visual range.) The second person must be someone who can provide appropriate assistance in the event of an emergency (e.g. call for help). Normal operating hours, as referred to in this policy, shall be identified as anytime there is an assigned operator or security guard on duty.

1. General Rules, After Normal Hours, Administrative Work, and Additional Tasks:

SRC shall have two-way radios available which, when activated, will call an emergency phone number. These radios will be located on the user badge distribution desk, which is located at the bottom of the main stairway of the SRC building. Any time staff and/or users are working alone, or they recognize that they are working alone, in the lower level of SRC (Experiment Preparation Area, Vault, Machine Shop, Annex, etc.) or the balcony/air handling room it is their responsibility to obtain a two-way radio and keep it on their person until they leave the facility. Upon leaving, the two-way radio should be returned to its charger cradle.

The two-way radios are connected to the outside phone lines through a telephone auto-dial interconnect. **The emergency system is activated by pushing the transmit (talk) button and either of the two red buttons on the two-way radio (see diagram posted at the desk).** When the two buttons are pushed, the radio is connected to the telephone auto-dial interconnect, which will automatically connect its user to the UW-Madison Police and Security Dispatcher. (It may take up to 15 seconds for the call to go through, due to the switching processes.) When the dispatcher answers, he or she will attempt to speak to the person in possession of the two-way radio. *(When the dispatcher answers, be certain to always tell him or her that your call is an emergency, if you are able! In the event that you may activate the emergency system accidentally, please stay on the line and tell the dispatcher that this was an error!)* To talk to the dispatcher, the radio user must push the transmit button on the two-way radio. To listen, the transmit button must be released. If the person using the two-way radio fails to respond, the dispatcher will immediately notify the local emergency response agency.

Also, outside of normal hours, all personnel working in the SRC lower level or the balcony/air handling room must sign-in on a sign-in sheet located at user badge distribution desk, which is located at the bottom of the main stairway of the SRC building. When signing-in, staff and/or users must state the location within the SRC lower level or balcony/air handling room where they intend to be working, and then sign-out when they leave these areas. A zone map listing the areas of the SRC lower level and the balcony/air handling room will be available at the sign-in sheet. When signing-out, please be aware of how many others are still signed-in. If there is only one person that remains signed-in, your leaving means this person will now be working alone. When this

occurs, please locate or page that person before you leave and notify them that they will now be working alone.

If there is someone already signed in when you enter the vault and there is a two-way radio missing from its charger cradle, it is likely that you are not alone in the area that requires signing-in. However, if you are working in a zone distant from the zone that the person designated or if you do not see them present, it would be prudent to take one of the extra two-way radios for added safety. If you are leaving the area that requires sign-in for a brief period of time, please return the two-way radio to its charger cradle until you return. It is not necessary to sign-out (and then sign back in) when leaving for a brief period of time.

Administrative work conducted in the offices located on the upper floor of the SRC building, and in the trailers located on the KRC Campus, is exempt from the two-way radio requirement and the two-person rule.

2. Overhead Crane Lifting Operations (*KRC Safety and Procedures Manual* page 24-5):

a. An experienced overhead crane operator may perform lifts which are less than or equal to five feet six inches high (the 4 meter NIM platform height) and/or less than 300 pounds (the weight of a turbo pump). Overhead crane operations which require lifts to exceed these heights and/or weights require two persons.

b. Two persons shall be required to perform high consequence lifts, defined as lifts which create or present a risk to personnel and/or create or present the risk of collateral damage.

c. For inexperienced overhead crane operators, two persons shall be required to perform all lifts.

3. Entering Confined Spaces (*KRC Safety and Procedures Manual* page 36-1):

Confined Spaces and Permit-Required Confined Spaces rules shall apply to all confined space entries. An authorized permit system exists at KRC in order to minimize the risk of accidental injury or death associated with entry or work in confined spaces. A minimum of three persons are required for any confined spaces work.

A confined space is a space that:

- a. Is large enough and so configured that an employee can bodily enter and perform assigned work, and
- b. Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry), and
- c. Is not designed for continuous employee occupancy.

A permit-required confined space means a confined space that has one or more of the following characteristics:

- a. Contains or has a potential to contain a hazardous atmosphere.
- b. Contains a material that has the potential for engulfing an entrant.
- c. Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section. Or,
- d. Contains any other recognized serious safety or health hazard.

4. Electrical Work (*KRC Safety and Procedures Manual* pages 23-3 and 17-4):

Lockout / Tagout rules shall apply to all electrical work. With the exception of item b listed below, only one person is required to perform electrical work when lockout/tagout rules are followed.

a. Lockout/Tagout is implemented to safeguard personnel while performing servicing or maintenance on machines and equipment where unexpected start-up or release of stored energy could cause injury or death. When working on any electrical equipment presenting these dangers, the Lockout/Tagout rule must be followed. This includes: servicing and/or maintenance, constructing, installing, setting up, adjusting, inspecting, modifying, lubricating, cleaning and “unjamming.” Exceptions: performing the above tasks on equipment with power cords. However, cord and plug equipment shall be unplugged, and all hardwired equipment is to have the breakers turned off, with locks or tags attached to the breaker or equipment to prevent personnel from re-energizing the equipment. This Lockout/Tagout policy covers electrical equipment as well as pressure and vacuum systems, water systems, and gas systems.

b. At least two employees shall be present when performing work involving the use of mechanical equipment, other than insulated aerial lifts, near parts energized at more than 600 volts, and/or when performing any other work that exposes an employee to electrical hazards greater than or equal to this example.

5. Working With Hazardous Chemicals:

a. In uncontrolled (open) areas: Two persons shall be required at all times when working with chemicals that have a National Fire Protection Association (NFPA) or Hazardous Materials Information System (HMIS) rating above (greater than) 1-Health; 3-Flammability; 1-Reactivity.

b. In controlled areas (within a fume hood that has current certification by the UW Safety Department and wearing the appropriate personal protective equipment, if applicable): A person may work alone using chemicals with a hazard rating no greater than 3-Health; 3-Flammability; 1-Reactivity.

c. Cryogenic liquids with an NFPA hazard rating of 3-Health; 0-Flammability; 0-Reactivity or less may be used in the vault and experiment preparation area with only one person present, provided the proper personal protective equipment (face shield and gloves) is worn.

d. NALCO or equivalent water system treatment tablets (NFPA hazard 3-1-1 or less) may be used, with only one person present, in the water treatment system located in the Heat Transfer Equipment Room (room # 105) by a qualified person*, provided the proper personal protective equipment is worn.

6. Machine Shop (*KRC Safety and Procedures Manual* page 29-1):

The following provisions shall apply to work conducted in the SRC Machine Shop, in addition to all general and after normal hours' rules:

Only certified individuals* shall be allowed to work in the machine shop and use the tools and equipment. Certification shall be determined according to the SRC Machine Shop Policy, which also identifies required training. The SRC Machine Shop Policy also specifies which machines certified individuals will be allowed to operate, as some shop machines are off limits to all except for the SRC machine shop personnel. Two persons are required to be present anytime work in the machine shop is performed after normal business hours.

7. Ladders and Scaffolds (*KRC Safety and Procedures Manual* pages 37-1 to 37-5):

Two persons shall be required when working from step ladders greater than 6 feet high, extension ladders, scaffolds, or elevated areas above four feet which are unguarded. Where applicable, fall protection rules must also be followed.

8. Set up of Equipment:

The following shall apply to the setup of equipment:

a. Overhead crane lifting operations shall be followed when the overhead crane is being used, and two persons shall be required when the overhead crane provisions are exceeded; and/or

b. When needed, SRC will have appropriate staff personnel on duty on "change over" Saturdays (day shift only), to ensure a second person is available for equipment set up.

c. Lockout / Tagout procedures shall also be performed where applicable.

9. Working in a Vault Cleanroom or Isolated Area:

The following cleanroom usage policy shall be employed which involves use of the cleanrooms located within the SRC vault. A light shall be mounted on the external wall

of the Vault Cleanroom, near the entrance. This light shall be wired to the light switch in the cleanroom changing area, so it comes on with the cleanroom changing area light. A sign stating "Cleanroom In Use When Lit" shall be fabricated and hung directly below this light. The first person entering the cleanroom shall turn the light switch on, and the last person exiting the cleanroom shall turn off the light. (All staff using the vault cleanrooms shall be instructed on this new procedure.) This will assist the SRC Operators in verifying that the cleanrooms are not occupied when they are conducting their physical sweep (lockout procedures) of the vault prior to injections, and will assist in personnel location in the event of a fire or chemical emergency, or other emergency which would require the building to be evacuated.

10. Aerial Lift Operation:

All usage of KRC's aerial lift, other than moving the unit from one point to another, shall require two persons.

11. Water on the Floor (electrocution, shock, slip, and fall hazards):

Anytime there is water on the floor, the person finding the water must immediately call the appropriate on-call staff member for instructions prior to taking any action, unless previously instructed on actions to take when water is found.

12. Requesting Other Assistance:

Employees should always assess the task they are about to undertake for hazards. If the employee determines that it is unsafe to perform the task as expected, the employee shall contact their supervisor during the normal shift. At all other times, the employee shall call the appropriate person identified on the emergency call list to discuss the options. If the employee is unable to reach these personnel, they should then call the on-call staff member.

* Certified individual: a person that has been authorized, based upon training and/or experience, to operate the specific equipment or perform the specific task being described.