Subcontractor Safety *Handbook*

a reference to basic safety rules at the savannah river site

at the

savannah river site,

safety

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life

life
life
life

srs emergency numbers

3-3911

for any emergency

725-1911

on cellular phones

for fire, medical, ambulance

and security notifications

The success of the Savannah River Site depends on the safety of all our employees and the protection of the public and the environment.

To achieve this success, SRS uses its Worker Protection Policy to ensure a safe and clean working environment for employees, visitors, subcontractors and the public.

Our policy recognizes a variety of safety and health resources, such as trained safety and health professionals, safety and health procedures and personal protective equipment, to ensure all workers have appropriate protection from job-related hazards. Work will stop rather than continue unsafely. This policy is never compromised.

Every employee has the responsibility to correct any unsafe act or condition, and/or notify their supervision.

All SRS employees are expected to accept responsibility for personal safety, safe job performance and the safety of others.

Robert Pedde, President
Westinghouse
Savannah River Company

The prime imperatives for working safely include defining the work, analyzing the hazards, developing and implementing hazard controls, performing work safety, providing feedback to continually improve the job, and teamwork. These imperatives have played a key role in maintaining our track record of safety excellence at SRS.

At SRS, nothing has higher priority than the safety of our people.

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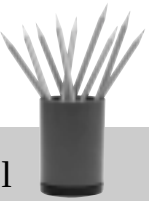
In this book, you'll find general safety rules that apply to all workers at SRS. Please keep your copy available at all times as a ready reference to our basic rules of safety.

These rules are condensed from federal, state, and SRS regulations and/or procedures. This handbook is not intended to replace SRS procedures nor change the intent or content of any subcontract provisions.

This book often refers to specific SRS requirements and procedures. These are available upon request by contacting your Subcontract Technical Representative (STR).

Subcontractors and their employees who have questions concerning any safety issues should refer to their company's Worker Protection Plan and applicable OSHA regulations, and/or contact their STR or the Industrial Safety Department.



general *information*

Introduction

The SRS management team firmly believes that sound safety practices are essential to our everyday working environment.

As evidence of that belief, WSRC pursued and achieved the DOE Voluntary Protection Program (VPP) Star status; a designation reserved for facilities that have excellent safety and health programs. As a subcontract employee at SRS, your active role significantly contributes to our safe workplace.

This book will help you understand and comply with some of the basic safety rules at SRS. It is not the purpose of this book to provide comprehensive and complete details of all safe work practices and procedures that you may need to do your work at SRS. This book is general in nature, and will be reviewed and revised when necessary.

It is important that all workers perform their jobs safely so that accidents, injuries and damage to company property are avoided. If you don't know the safety requirements of a job, STOP and ASK before you begin work. Your safety, and your coworkers' safety, is ensured by recognizing and correcting any unsafe acts and conditions you may observe. Merely talking about safety will not ensure a safe workplace.

Please read this book carefully and become familiar with your safety responsibilities. If you have any questions, contact your supervisor or STR.

DOE's Occupational Safety and Health Protection Policy

The Department of Energy's (DOE) Occupational Safety and Health Protection Policy is contained on DOE Poster "Worker Protection for DOE Contractor Employees" which is posted on all main service area bulletin boards. Any questions should be addressed to the contractor or the local DOE office as indicated on the poster

Policy

U.S. DOE contractor employees shall be provided with safe and healthful working conditions in accordance with the standards prescribed pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 and the Department of Energy Organization Act of 1977.

DOE Contractors

Per DOE Order 440.1A, the DOE contractor and its subcontractors are required to:

- Furnish to employees employment and a place of employment which is as free from occupational safety and health hazards as possible.
- Establish and implement programs and procedures to comply with DOE Order 440.1A. These shall include programs and procedures to monitor the workplace for known toxic materials and harmful physical agents which are used or produced at the

facility, and maintain records of the data. As part of these programs and procedures:

- Advise employees or their representatives that they are to be provided with an opportunity to observe monitoring or measuring for toxic materials or harmful physical agents, and have access to the results thereof.
- Provide to each employee, former employee or designated representative, within 15 days of the receipt of a written request, access to, or copies of, any monitoring or bioassay records relevant to the employee's potential exposure to toxic materials or harmful physical agents during employment.
- Notify employees promptly of any information indicating that an exposure to toxic materials or harmful physical agents may have exceeded the limits specified by the DOE-prescribed Occupational Safety and Health Administration (OSHA) standards.
- Provide to each employee, former employee or designated representative, within 15 days of the receipt of a written request, access to, or copies of, the employee's cumulative recorded occupational radiation dose during employment.
- Notify employees promptly of any information indicating that a radiation dose may have exceeded the limits specified by the DOE-prescribed OSHA standards.

- For purposes of access to an employee's monitoring, bioassay or radiation exposure records, if the representative is not the recognized/certified collective bargaining agent, then he or she must have the employee's written authorization for such access.

Employees

All employees are required to:

- Observe the DOE-prescribed OSHA standards applicable to their work.
- Report promptly to the contractor any condition which may lead to a violation of these standards.
- Respond to warning signals which may be activated in the event of fire, radiation, or other possible emergencies.
- Report emergencies using established procedures.

Inspections

All activities under this contract are subject to inspection by DOE. When an inspection under the DOE Order 440.1A is conducted, a contractor management representative and a representative authorized by the employees will be given an opportunity to accompany the DOE inspector.

Where there is no representative authorized by the employees, the DOE inspector will consult with a reasonable number of employees concerning safety and health conditions in the workplace.

Concerns

Employees, or former employees, may file a concern with the contractor management or with the local DOE office using the DOE Form 5480.29 to request an inspection of the workplace. Complaints also may be filed by letter, telegram or oral means. DOE Form 5480.29 is available from the contractor. When an employee requests anonymity from the contractor, DOE shall honor this request.

Imminent Danger

For any condition or practice which presents an immediate hazard that could reasonably be expected to cause death or serious physical harm (permanent or prolonged impairment of the body or temporary disablement requiring hospitalization), the contractor and/or DOE shall take immediate and effective remedial actions to remove employees from the hazard and/or eliminate the hazard. As soon as possible, an inspection shall be conducted by the contractor and/or DOE to assure that appropriate actions have been taken to preclude recurrence of the hazard.

Nondiscrimination

No contractor shall discharge or in any manner discriminate against any employee by virtue of the filing of a complaint or in any other fashion exercising on behalf of himself or herself or others any action set forth in DOE Order 440.1A or DOE Form 5480.29.

All SRS operations activities are subject to inspection by DOE and review by the U.S. Department of Labor. When an inspection under DOE Order 440.1A is conducted, the DOE inspector will consult with a reasonable number of employees concerning safety and health conditions in the workplace.

All DOE contractor employees or former employees are provided access to their personal safety, health and medical records consistent with the provisions of the Freedom of Information Act and the Privacy Act.

Subcontractor Management Responsibilities

- Conduct and document daily safety surveys of all work activities.
- Conduct, document and require attendance at regularly scheduled safety meetings.
- Take progressive disciplinary action involving safety violations.
- Investigate all accidents and unusual occurrences regardless of injury or property damage.
- Investigate all injuries and illnesses, no matter how slight. Do not neglect minor injuries. Complete a DOE Form 5484.3, "Individual Accident/Incident Report," for all recordable injuries (all entries on the OSHA 300 log). This form is not required on first aid cases. Contact your STR for assistance.
- Maintain the current and previous year's OSHA 300 "Log and Summary of Occupational Injuries and Illnesses" at the project.

- Maintain a log of first aid cases for each of your contracts at SRS.
- Correct substandard safety conditions or acts immediately.
- Comply with applicable contract DOE orders and OSHA regulations.
- Maintain all equipment in a serviceable condition and according to the manufacturer's recommendations.
- Ensure that housekeeping standards are maintained daily, and materials are properly stored and secured from accidental movement.
- Ensure employees are trained concerning the chemical hazards of their jobs and the protective measures to prevent and reduce an exposure to hazardous chemicals. Ensure material safety data sheets (MSDS) are readily available to the workers.
- Ensure that lower-tier subcontractors, visitors and vendors receive appropriate training, and are properly protected with required personal protective equipment (PPE).

Personal Responsibility

- Employees shall be responsible for their work habits as follows:
  - Be alert and attentive to your work activities and those of your coworker.

- Do only the specific work you have received instructions to do.
- Correct safety hazards when observed. Contact supervision, if necessary.
- Be alert to changing work conditions and notify supervision.

- Ask if any special training is required for your current job assignment.
- Know the emergency alarms, evacuation routes and assembly points for the specific work area.
- Read, understand and comply with all requirements specified on each work permit.
- Verify that system(s), circuit(s) or equipment are safe to work on before the job begins.
- Report any unexpected or unusual liquids, gases or vapors that may be present.
- Be familiar with emergency safety equipment that may be required to evacuate the area. Make sure you are adequately trained to use the equipment.

general *safety rules*

Minimum Safe Work Requirements

- Contact your STR for verification of appropriate permits before beginning work on or within 20 feet of permanent plant facilities, railroads, roadways, utilities or process piping.
- Contact your STR before operating any mobile equipment within three feet of a power pole or guy wires supporting the pole.
- Promptly correct unsafe conditions, or report them to your supervisor. If a situation is observed that could cause death or serious injury, stop the work, and contact your supervisor.
- Keep walkways and stairways clear, ladders unblocked and emergency exits identified.
- Make sure that work and walk areas are properly illuminated.
- Walk with care on uneven terrain or walkways.
- Do not engage in horseplay or fighting.
- Do not pull sharp items, such as knives, screwdrivers, etc., toward your body.
- Possession or use of alcohol or unauthorized drugs is prohibited.
- Smoking is prohibited in all site facilities and government vehicles.

Reporting Injuries and Illnesses

- Report all injuries and illnesses, no matter how slight, immediately to your supervisor and First Aid designee. Do not neglect reporting minor injuries.

Housekeeping

Keeping your area neat encourages safe work habits. The following are important housekeeping considerations:

- Properly store tools and work materials.
- Place extension cords to prevent a tripping hazard.
- Discard trash and scrap in approved containers.
- Discard cigarette stubs in butt cans.
- Keep the ground or floor clear of tools, welding rods, tie wires, banding materials and metal shavings.
- Do not store or leave items on stairways or steps.
- Clean up spilled liquids immediately, and properly dispose of them.
- Protect or remove protruding nails, screws, staples and similar objects to prevent a hazard.

Sanitation

- Discard food scraps, soft drink containers, drinking cups, sandwich wrappings, paper bags, newspapers/magazines and other trash in approved trash or recycling receptacles.
- Use only potable water to wash hands and eating utensils.
- Make sure potable water containers are sealed.
- Never store items inside container.
- Properly clean and maintain toilet facilities.

- Do not store or consume food or beverages in toilet facilities or any area exposed to toxic material.
- Personal hygiene showers and change rooms are required for asbestos, lead work and other specific operations. Contact your STR for guidance.

Pedestrian Safety

- Use sidewalks, where provided. Do not take shortcuts across uneven ground or where conditions are unknown.
- Cross roadways at designated crosswalks or the most direct route if crosswalks are not provided.

Radiological Safety

- Observe posted, written and oral radiological control instructions and procedures, including instructions on Radiological Work Permits (RWP).
- Keep clear of all radiological areas where work is being done with radioactive material, unless authorized. These areas will be barricaded and posted with radiation hazard signs.
- Do not enter Radiological Buffer Areas (RBA), unless you have received Radiological Worker Training (RWT).
- Contact your STR and ensure compliance with the 5Q Radiological Control Manual and OSHA's 10 CFR 835 standard if your job involves work in radiologically controlled areas.

Fire Protection

Alarms

- Know where the nearest fire alarm box is located.
- Know how to turn in an alarm.
- Know the alarm, evacuation and disaster signals for your area.
- Know the proper exit route and the evacuation rally point in the event of an emergency. A Job Performance Aid (JPA) containing facility-specific information is located at entry barricades.
- Remember to report any emergency by dialing 3-3911 on site, or 725-1911 on a cellular phone.

Fire Extinguishers

- Know the location of the nearest fire extinguisher, how it operates and the type of fire it extinguishes. Be aware that a fire can produce toxic fumes.
- Keep the proper type and size of fire extinguisher immediately available for each open-flame operation performed.
- Inspect all fire extinguishers monthly and annually.
- Keep machine and equipment areas clean. Oil, rags and hot slag may present the potential for a fire.

Hot Work

- Obtain a "Hot Work Permit" and fire watch requirements from your STR before beginning any

hot work.

- Your fire watch plan must include a check 30 minutes after work stops to check for any fire potential and to implement corrections, as needed.

Safety Showers and Eyewash Facilities

Safety showers and eyewash facilities will be provided for employees who are potentially exposed to radioactive, corrosive, toxic or flammable materials. Permanent and/or portable safety showers and eyewash facilities will be provided/installed and inspected in accordance with the American National Standards Institute (ANSI) Z358.1 requirement.

- Know the purpose and location of the safety shower and eyewash facility. Maintain safety showers and eyewash facilities in accordance with the manufacturer's recommendations.

Barricades

- Do not violate barricades. You must have authorization from the barricade installer to enter a barricaded area.
- Erect an appropriate barricade and attach an identification tag before work is started.
- You must obtain your STR's approval before blocking roadways or an access to a building.
- Install barricades so they are 42 inches in height, square, level and properly maintained.
- Place barricades at least three feet from the dan-

ger point of a hazard.

- Use blinking lights on barricades near roadways to warn vehicle and equipment operators and pedestrians after dark.
- Barricades will be removed when no longer required.

Permits

Contact your supervisor or STR for clarification on the appropriate permit. All permits must be maintained at a designated location at the work site. Read the applicable permit(s), and follow all instructions.

The following permits may be required BEFORE you begin work. Check with your supervisor for verification.

- Confined Space Entry Permit
- Radiological Work Permit (RWP)
- Asbestos Work Permit
- Hot Work Permit

Danger, Caution and Warning Tags

- "Danger - Hazardous Energy Control - Do Not Operate" (DNO) tags are used for the protection of personnel, to prevent damage to equipment and to prevent unauthorized releases to the environment.
- "Warning - Grounding" tags are used for tagging grounding cables or shorting devices when haz-

ardous energy control (lockout/tagout) is in effect.

- "Caution" tags are used in situations where a component or system is functional, but some precaution or pertinent information is necessary before operation.
- "Danger - Unsafe Condition - Do Not Use" tags are used to prevent use, entry or other specified conditions for protection of personnel against a hazard.
- "Warning - No Entry Without Permission" tags are used when erecting barricades.

Office Safety Rules

- Open and close doors cautiously.
- Do not tilt back in a straight chair, and do not lean back in a swivel chair.
- Open only one file drawer at a time.
- Load file drawers from the bottom up with the heaviest load in the lower drawer.
- Anchor or weight file cabinets to maintain stability.
- Inspect electrical cords for damage and remove from service if defective.
- Do not remove guards or safety devices from office equipment.
- Check office furniture regularly for sharp edges, splinters and loose casters or bolts.
- Do not adjust or clean power-driven office machines when they are in operation.

personal *protective equipment*

Personal Protective Equipment

- Modification or alteration of any personal protective equipment is strictly prohibited. Defective or damaged personal protective equipment must be replaced.
- Refer to ANSI C2-1981 and NFPA 70E for PPE requirements applicable to installing electrical wiring or working on electrical circuits or equipment.

Protective Clothing

- Protect your skin from chemicals and extreme heat or cold conditions by wearing appropriate clothing, such as long-sleeve shirts, gloves, chemical resistant coveralls and welding leathers.
- Employee work clothes will consist of full-length pants or trousers and a shirt or blouse with sleeves that extend at least three inches below the shoulder and does not expose any portion of the torso from the neck to the waist.
- When performing open flame welding work in radiologically controlled areas, you must wear yellow “Nomex III” (or equivalent) flame retardant coveralls to minimize the potential fire hazard associated with clothing containing polyester. Open flame activities include: oxyacetylene welding, burning and heating, metal-arc welding and arcair or plasma-arc cutting.

Head Protection

- All employees, visitors and vendors must wear approved hard hats that meet ANSI standards when there is a potential for injury to the head. “Bump” caps and metal hard hats are not permitted.
- Wear hard hats when operating manlifts and all earth-moving equipment.
- Do not alter suspension or punch holes in hard hats.

Eye and Face Protection

- Wear industrial prescription and non-prescription safety glasses with side shields in all construction and shop areas, posted areas and anytime you may be exposed to a potential eye injury.
- Employees and visitors must wear safety goggles over their glasses, if the glasses do not meet ANSI standards.
- Do not wear tinted eye glasses inside buildings or when working at night.
- Wear goggles and/or face shields when there is a potential for a chemical splash.

Hearing Protection

- Wear ear plugs or muffs in posted operating areas and when using tools and equipment that produce noise greater than 85 dBA.
- If a noisy work area or operation is not identified for hearing protection and you must shout to be

heard, contact your supervisor to have the noise level evaluated before starting work.

- Keep hearing protectors in a sanitary condition.

Hand Protection

- Wear gloves when handling objects or substances that could cut, tear, burn or otherwise injure your hands.
- Inspect all types of gloves before use.
- Wear appropriate gloves when handling solvents, acids or chemically-treated material.
- Wear di-electrically-tested rubber gloves when working on all power lines and when there may be a potential for contact with energized circuits. Visually inspect the gloves before use. Ensure that the gloves have been semi-annually inspected. Check with your supervisor for proper storage requirements and verification of inspection.
- Consult the operating instructions and your supervisor before using gloves around operating tools and machinery.
- Protect your hands and fingers from pinch or nip points.
- Use a tool holder when driving stakes, spikes and wedges, or holding star drills, bushing tools, etc.

Foot Protection

- Wear serviceable, sturdy work shoes at all times. Steel-toe safety shoes or toe protection must be

worn to prevent or reduce the potential for a severe injury to the toes.

- Wear metatarsal guards when using compactors or jackhammers, or when there is a potential for injury to the upper foot from handling heavy materials or working in a shop.
- Wear rubber boots when working in chemically hazardous conditions, such as concrete work, or when required by operations process area activities.
- Lightweight street shoes and sandals will not be allowed in construction or laydown areas, or where toes or feet may be exposed to a potential injury.

Respiratory Protection

- Wear National Institute for Occupational Safety and Health (NIOSH) or DOE-approved respirators, as directed by your supervisor. When working in an airborne radioactivity area, Radiological Control Operations (RCO) personnel will specify the type of respirator.
- Compressors supplying air to respirators must produce Grade D air.
- You must be trained and qualified to use respirators. Contact your supervisor for respirator qualification information.
- Use and handle respirators according to OSHA and ANSI Z88.2 standards.

tools & *equipment*

General Safety Guidelines

- Inspect each tool before use. Use tools only for their intended purpose.
- Keep your tools in serviceable condition—sharp, clean, oiled, dressed and not abused.
- Do not carry pointed tools in your pockets. A canvas or leather tool sheath hung from the belt, with all points down, is required.
- Remove a damaged or defective tool from service by placing a "Danger - Unsafe Condition" tag on it. Repair damaged tools or remove them from the jobsite.
- Do not remove tools used in Radiological Buffer Areas (RBAs) without clearance from RCO. Do not take tools into an RBA if they are available in that area.
- Do not wear loose clothing, gloves, rings and other jewelry around operating machines. Keep sleeves buttoned or rolled up.
- Make sure a machine's safety interlocking device operates properly. Never bypass an interlocking device.
- Make sure proper guards or shields are installed on all power tools before use. Do not use improper tools or tools without guards in place. "Homemade" handles or extensions ("cheaters") are prohibited.
- Do not store, raise or lower electrical tools by their power cord.

Portable Power Tools

- Know the manufacturer's safe use requirements before operating any power tool.
- Keep moving parts, such as drills, chucks, blades and bits, directed away from your body.
- Examine each power tool for damaged parts, loose fittings and frayed or cut electrical cords before use. Tag defective tools and remove them from service.
- Unplug electrical and pneumatic tools before performing maintenance or blade/bit changes. The air pressure must be depressurized before disconnecting air-powered tools.
- Ground portable electrical equipment and tools with a three-prong plug, unless they are clearly marked "double insulated".
- Use permanent or portable ground-fault circuit-interrupter (GFCI) protection or an assured grounding program.
- Shut down all fuel-powered tools and use a funnel, if appropriate, while refueling.
- Do not use fuel-powered tools inside a building or excavation without adequate ventilation or a vented exhaust.
- Properly secure material when using power tools.
- Do not use a control lock on a hand-held power tool.

Powder-Actuated Tools

- You must have a valid qualification card in your possession when operating a powder-actuated tool.
- Post appropriate warning signs for noise, face or eye protection when using powder-actuated tools.
- Follow the manufacturer's instructions concerning service, inspection and the safe operation of powder-actuated tools.
- Lock tools and powderloads in a container and store them in a safe place when not in use.
- Never leave a loaded powder-actuated tool unattended.
- Segregate misfired cartridges from fired cartridges and dispose of them according to the manufacturer's recommendations. Do not allow fired cartridges to accumulate on the floor or in the work area.

Fall Protection

- Wear and properly secure fall protection equipment when working on any elevation where a potential fall of six feet or more exists without the protection of a completely enclosed scaffold or platform with approved guardrails and midrails.
- Visually inspect fall protection equipment for defects daily and before each use. Immediately return defective equipment to your supervisor.
- Safety harnesses must be used for fall protection. Safety belts may be used only for positioning.

Never modify fall protection equipment.

- Ensure each lanyard snap hook is equipped with a "double lock" that requires a double action to open the snap, preventing "roll out."
- Certain work may require a documented fall protection plan. Check with your supervisor for clarification.

Ladders

General Information

- Inspect ladders before each use.
- Job-made ladders must be constructed to conform with established OSHA standards.
- Manufactured ladders must be rated for industrial or heavy-duty work.
- All types of portable ladders over eight feet in height must be tied off or held by another person while in use. Ladders must be held in place by another person while being tied or untied.
- Do not use ladders for skids, braces, workbenches or any purpose other than climbing.
- Do not carry anything in your hands while ascending or descending a ladder. Use a handline to raise or lower materials or tools.
- Keep the top, base and steps of a ladder free of tripping hazards, such as loose materials, trash, cords, etc.
- Keep both feet on the ladder rungs. Change the position of the ladder as often as necessary.

- Face a ladder when working from it.
- Only one person is allowed on a ladder, unless "two-man" stepladders are in use.
- Do not use metal ladders for electric welding or near any electrical lines or services.
- Do not place ladders against movable objects.
- Do not use broken or damaged ladders. Defective ladders must be reported to your supervisor, tagged out and removed from service.

Straight and Extension Ladders

- Keep the base of a straight or extension ladder one-fourth of the ladder's length out from its upper point of support when in use.
- Keep the top of the ladder extended at least three feet beyond the supporting object or make sure a grab rail is provided.
- Make sure safety dogs or latches are engaged and extension rope is secured to a rung on the base section of the ladder after the extension section has been raised to the desired height.
- Extension ladders must overlap a minimum of three rungs.

Stepladders

- Make sure stepladders are open, leveled on all four feet and spreaders locked in place before use.
- Do not use a stepladder as a substitute for a straight ladder.

- Never stand on the platform or top step of a step-ladder.

Scaffolding

General Information

- The erection, moving, dismantling or alteration of a scaffold must be performed by a "competent person.".
- Your STR and a Fire Protection Coordinator must approve all non-fire retardant scaffolding material before placing it in a facility.
- A scaffold's footing or anchorage must be sound, rigid and capable of carrying the maximum intended load. Scaffolds must be able to support at least four times the maximum intended load.
- Install approximately 42-inch high guardrails and 21-inch high midrails and toeboards on all open sides and ends of platforms where fall exposure is six feet or greater. Scaffolds four feet or more in height, with the narrowest base dimensions of 45 inches or less, must be equipped with standard guardrails, midrails and toeboards.
- Use appropriate fall protection on any scaffold platform not equipped with standard guardrails, midrails or complete decking.
- Do not climb on, or work from, scaffold guardrails, midrails or x-brace members.

- Do not use a scaffold unless it has a status tag indicating the unit is complete. If the scaffold is incomplete, user safety precautions must be identified.
- Never alter scaffold members by welding, burning, cutting, drilling or bending.
- Keep scaffold platforms clear of accumulations of material, debris and excess tools.
- Erect tube and coupler scaffolds in accordance with the manufacturer's and engineering guidelines. Check with your supervisor for more information.

Aerial Work Platform Operation

- Aerial work platform operators must be trained and qualified to the manufacturer's requirements before operating the equipment.
- Check the tires, hydraulic system, booms, baskets, upper and lower controls, brakes, drive chain and safety equipment daily before use.
- Post warning signs or barricades at the work area. A counterweight swing radius must be barricaded.
- A maximum of two people are permitted in the basket at one time. At least one person must be a qualified operator. The total weight of personnel, material and tools in aerial platforms must not exceed the load limit specified by the manufacturer.
- The aerial lift operator and passenger must wear a full body harness and lanyard attached to the bas-

ket or platform, stand on the floor of the basket or platform and are prohibited from sitting or climbing on the guardrail or enclosure. Do not use planks, ladders or other devices for work platforms.

- Do not use an aerial lift as a substitute for a material hoist.
- Do not rig from the boom or platform of an aerial lift.
- Do not use aerial work platforms in high winds.

operation of *mobile equipment*

Motor Vehicles

- Make sure your motor vehicle is in safe operating condition before use.
- Comply with all South Carolina vehicle operating regulations, including wearing a seat belt at all times.
- You must have a valid state driver's license as required by your state of residence for the specific class of vehicle you are operating at SRS.
- Look to the rear and sound the horn twice before backing a government or company vehicle. Be alert to other vehicles pulling out or backing.
- Watch and yield for pedestrians.
- Drivers are responsible for the safety of all passengers and the stability of materials being transported.
- Keep arms, feet and bodies inside your vehicle. All passengers must be seated and wearing seatbelts.
- Limit speed to 10 miles per hour in parking lots, unless otherwise posted.
- Park in designated parking spaces only.
- Enter or exit your vehicle only when it is stopped.
- Shut off the engine, place the gear shift in park and set the brakes before leaving your vehicle (except when the vehicle is required to support self-contained equipment. In this case, the operator must set the parking brake, chock the wheels and attach a "Danger—Unsafe Condition" tag to the steering wheel. Exceptions must be approved by

your STR and subcontractor management).

- Report, investigate and document government-owned vehicle and equipment accidents and incidents to your STR. Accidents involving government-owned vehicles (GOV) must be reported immediately and appropriate forms submitted within 24 hours of the occurrence.

Power Equipment

- Only authorized personnel are permitted to operate vehicles and mobile equipment.
- Truck drivers shall dismount from the cab and remain clear while the truck is being loaded by power equipment, unless the vehicle is equipped with an approved cab shield.
- Lower equipment blades, buckets, forks or like parts to the ground before leaving the equipment.
- Contact your STR before operating any mobile equipment within 20 feet of an overhead power line or process piping.
- Chock the wheels of one and one-half ton capacity or larger trucks when parked.
- Secure materials on trucks and trailers to prevent movement, and when appropriate, cover the load to prevent the material from becoming airborne.
- Position operating generators and mobile equipment in a location that will prevent exhaust vapors from entering facility HVAC systems, excavations, confined spaces, building openings or any

location that may present a hazard.

- Know the weight of the object to be handled by power equipment.
- Know the capacity of the handling device, such as a crane, fork lift, chain fall, come-along, etc., you intend to use.
- Use tag lines to control loads.
- Decide on accepted rigging methods before beginning work.

Refueling

- Do not refuel equipment while the engine is running.
- Do not smoke during the refueling of any fuel-operated or fuel-driven vehicle or equipment.
- Keep all nearby sources of ignition, such as burning or welding equipment, at least 75 feet from any refueling operations, or shut the equipment off during refueling.

Crane and Derrick Operation

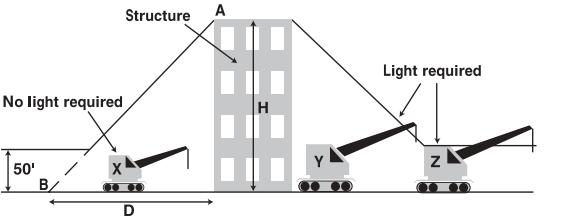
Operator Pre-Lift Safety Requirements

- Only qualified personnel are permitted to operate cranes.
- Check machinery and equipment before each use to make sure it is in safe operating condition. Make repairs before use and according to the manufacturer's recommendations.
- Fully extend and set outriggers on cranes before

all lifts. Follow the manufacturer's recommendations for any exceptions.

- The crane operator must be in constant visual or dedicated radio channel contact with a qualified signal person before and during every lift. If visual or radio contact is interrupted for any reason, the operator must stop the lift until full contact is restored.
- Barricade the swing radius of the rotating counterweight of motor and crawler cranes.
- Contact your STR before operating any mobile equipment within 20 feet of an overhead power line or process piping.
- Lower booms on cranes after completing the work day. Cranes whose highest portion remains 50 feet or more above ground level must be provided with obstruction lighting during the hours of darkness. Cranes in the vicinity of tall structures may be excluded from the obstruction lighting requirement under the following conditions:
  - The crane is located within a distance from the structure equal to the height of the structure, and the highest portion of the crane does not break the plane of an imaginary line from the top of the structure to the ground at a distance equal to the height of the structure.
  - The crane is less than 50 feet in height above the ground.
- In the illustration below, if a crane is located at a distance of "d" or less from the structure ("h" equals

the height of the structure; therefore, h=d), and the boom/jib does not break the plane (line drawn from "a" to "b"), the crane is not required to have obstruction lighting.



In the illustration, cranes X and Y are within a distance from the structure equal to its height. Crane X is not required to have obstruction lighting because it is lower than the plane, but crane Y is required to have the lighting because its boom/jib is higher than the plane. Crane Z is required to have obstruction lighting because the boom/jib exceeds 50 feet above the ground, and the crane is located at a distance farther than the height of the structure.

- Existing structures (including antennae or other protrusions) taller than 150 feet above the ground must be provided with obstruction lighting if the existing structures intrude into a twelve degree or steeper glide path approach to a helicopter landing zone. Existing structures do not need flashing lights if they have general area lighting at their top and it lights the structure during darkness. The lo-

cation of landing zones may be coordinated with the WSI Site Aviation Manager or the WSI Aviation Safety Officer.

- Obstruction lighting must be red, white or yellow in color and visible for at least one-half mile. The light must be attached to the top of the crane and flash a minimum of forty times per minute.
- Report aircraft obstructions to the SRS Operations Center. The report should include the obstruction's location, estimated height, how long it will remain in place and the color of the obstruction light.

Crane Suspended Personnel Platforms

- Suspended personnel platforms should be used only when they are the least hazardous way to perform the work.
- Suspended personnel platforms must be designed, and any repairs or alterations approved, by a professional or registered engineer.
- Check the platform before each use.
- Check the platform rigging before each use.
- Check the crane or derrick before each use.
- Perform a platform trial lift at each new set-up location.
- Use safe operating practices when the platform is in use.
- Refer to your company's Worker Protection Plan and applicable OSHA standards for additional information.

Hoisting and Rigging

Hooks, Shackles, and Beam Clamps

- Visually inspect all rigging equipment before use, and make sure the capacity is marked on the equipment.
- Use only one eye in a hook. Use a shackle to hold two or more eyes.
- All hooks must have a safety latch or be temporarily moused until the latch can be replaced. (Shake out hooks are exceptions and must be used only for unloading materials from a vehicle to ground level.)
- Never rig from any structural member until the rated capacity is verified and you are sure it will support the load being raised.
- Do not load rigging systems or components beyond their rated capacity.
- Christmas tree rigging is prohibited.

Chain Falls and Hoists

- Visually inspect every chain hoist before performing a lift.
- Use a chain hoist within its rated capacity.
- Do not leave an unsecured and unattended load hanging on a hoist or chain fall.
- Do not stand or have any part of the body under a load suspended on a chain hoist.
- Do not wrap the load chain around the load to be lifted.

- Do not wrap a material hoist tag line around your hands or body.
- Check for current equipment inspections in accordance with your safety program and the manufacturer's inspection requirements.

Wire Rope

- Inspect wire rope and slings before use and take them out of service if damaged.
- Never exceed the safe working capacity of wire rope.

Nylon Slings

- Inspect slings for any damage before use.
- Store and protect nylon slings when not in use.
- Use nylon slings where a smooth surface requires protection or a slippage problem exists.
- Do not knot or connect nylon slings together through the eyes. Knotting reduces the strength of a sling by over 50 percent.
- The sling identification/load rating tag must be legible and attached to the sling before use. If the tag is illegible or missing, do not use the sling and return it to your supervisor.

material *handling*

General Safe Practices

- Immediately report all chemical spills to your supervisor and STR for appropriate cleanup and disposal.
- Chock all material and equipment, including pipe, drums, tanks, reels, trailers and wagons, as necessary, to prevent rolling.
- Tie down all light, large surface-area material that can be moved by the wind.
- Secure tools, equipment and wrenches against falling when working at heights.
- Do not store materials or tools on wall girts, ducts, lighting fixtures, beam flanges, false ceilings or similar elevated locations.
- File jagged metal edges, and pull all protruding nails and wires (or bend them flush) to prevent a potential injury.
- Use material storage dunnage for ease of handling, if feasible.
- Do not block any emergency equipment or electrical disconnect switches.
- Stack or store material so it can be easily reached by employees and material handling equipment.

Manual Lifting

Use the following guidelines to perform a safe lift:

- Stand close to the load with your feet spread.
- Squat with your head and back in line.
- Grip with your whole hand, not just your fingers.

- Lift with your legs — don't jerk.
- Hold the load centered and close to your body.
- Turn with your feet; don't twist your body.

hazardous *materials*

Hazard Communication (HazCom)

- All chemicals brought on SRS must be approved for use and have a MSDS on file.
- Attend and successfully complete your company's hazard communication training program before working with hazardous chemicals.
- Obey all warning signs when hazardous chemicals are in use or storage.
- Limit the amount of combustibles brought into buildings temporarily.
- Read product labels and follow the manufacturer's instructions when handling chemicals.
- Properly store and label all chemicals. Limit the amount of chemicals in the work area.
- Label secondary containers of chemicals.
- Review the product's MSDS before starting work.

Flammables and Combustibles

- Before bringing any flammable, combustible liquids or compressed gases on site, you must advise your STR of the quantity and their primary use.
- Keep flammable and combustible materials away from steam lines, radiators, heaters and hot process and service lines.
- Make sure flammable and combustible materials under or near welding and burning operations are moved to a safe distance or are protected with a fire retardant material.
- Open fires are prohibited.

- Consult your supervisor and STR regarding the proper location, storage and handling of flammable and combustible liquids.
- Ensure bonding and grounding to eliminate static discharge when transferring flammable/combustible liquids.
- Use proper respiratory, ventilation and skin protection when spraying any flammable or combustible liquids to reduce the vapor potential and fire and explosion hazard.
- Do not use highly flammable substances, such as gasoline, for cleaning purposes.

Gases, Vapors, Fumes, Dusts and Mists

Take the necessary precautions to prevent inhalation, ingestion or contact with any chemicals. Contact your supervisor for OSHA and American Conference of Governmental Industrial Hygienists (ACGIH) requirements.

special work activities

Floor and Wall Openings

- All holes or openings through temporary or permanent secured floors, decking or roofs must be provided with covers or barricades. Do not store material or equipment on a hole or opening cover.
- Floor holes must be posted with a "Warning—Floor Hole Cover—Do Not Remove Unless Authorized" sign.
- Cleat, wire, or otherwise secure floor hole covers so they cannot slip sideways or horizontally beyond the hole or opening.
- Floor hole covers must extend adequately beyond the edge of the hole or opening.
- Floor hole covers must be constructed from 3/4-inch plywood, if one dimension of the opening is less than 18 inches; otherwise, 2-inch lumber or doubled 3/4-inch plywood is required.

Excavations

- Barricade excavations to alert pedestrians and vehicles to the opening and to control access.
- Check with your supervisor for a safe access and egress route into and out of excavations.
- Keep excavation spoil, other materials or equipment at least two feet from the edge of the excavation.
- Excavations must be sloped or shored as directed by the "competent person," or as indicated on the work permit.

- Make sure a "competent person" thoroughly inspects the excavation after a heavy rain or thaw.
- Ladders must be used for access and spaced within 25 feet of any worker in excavations four feet and deeper.

Confined Space Entry

A confined or enclosed space is any space that meets the following three conditions:

- The space is large enough and so configured that an employee can bodily enter and perform work,
- The space has limited or restricted means for entry or exit and
- The space is not designed for continuous employee occupancy.

Confined spaces include, but are not limited to, storage tanks, process vessels, bins, boilers, ventilation or exhaust ducts, sewers, underground utility vaults, tunnels, pipelines and open-top spaces more than four feet in depth, such as pits, tubs, vaults and vessels. A confined space may be a permit-required confined space or may be worked as a nonpermitted confined space, depending on the hazards within.

- All entrants, supervisors, attendants, and rescue and monitoring personnel must be properly trained on confined space procedures.
- Do not enter a confined space until a valid "Confined Space Entry Permit" is posted at the work site and all permit requirements are met.

- Make sure atmospheric testing is completed before entering a confined space.
- Use safety harnesses and retrieval devices when working in a vertical access confined space.
- Refer to your employer's Worker Protection Plan and applicable OSHA standards for additional information.

Note: The SRS Confined Space Entry Program (refer to the 8Q Employee Safety Manual, Procedure 33) applies to all work in existing operational site facilities and new facilities (after turnover to Operations). Check with your supervisor and/or STR for appropriate training and compliance requirements.

Welding and Burning

- Check with your supervisor before striking an arc or lighting a torch.
- Keep welding leads and hoses clear of walkways, floors and stairways.
- Inspect all leads, grounds, clamps, welding machines, hoses, gauges, torches and cylinders daily before use.
- Make sure all fittings, couplings and connections are tight.
- Use the shop exhaust system, a blower or a respirator to avoid breathing fumes. Contact your STR for welding and burning requirements in operations areas.
- Do not weld or burn on a closed vessel or tank or on any vessel or tank that has not been decon-

taminated (cleaned). Check with your supervisor and STR for requirements.

- Wear yellow "Nomex III" (or equivalent) flame retardant coveralls when welding in radiologically controlled areas.
- Contain sparks and slag and/or remove combustibles to prevent a potential fire.
- Make sure a dry chemical fire extinguisher is immediately available for any welding, burning or open-flame work.
- Disconnect hoses and leads at the end of each shift.
- Protect your coworkers from a potential eye injury by setting up fireproof screens or noncombustible partitions.
- Take special precautions during TIG or MIG welding operations to ensure inert gases do not collect in adjacent low areas or confined spaces.
- Do not lubricate caps, valves or gauges on oxygen and gas bottles.
- Use hearing protection for air arcing.
- Make sure a fire watch monitors all open flame work.
- Welder attendants/assistants must wear equivalent eye protection, goggles or a welding hood.

Compressed Air

- Check hoses and couplings daily before use. Use only hoses designed to handle compressed air. All hose couplings must be provided with a positive

locking device.

- Never crimp, couple or uncouple a pressurized hose. Shut off the valve and bleed down the hose after use.
- Do not exceed 30 psi of compressed air for cleaning purposes. Never use compressed air for cleaning your clothing or skin.
- Never use compressed air to clean in asbestos- or lead-contaminated workplaces.
- Keep hoses off the ground or floor and protected from damage when extended over walkways, roads, etc.
- Use a safety device at the source of supply or branch line to reduce pressure in all hoses exceeding 1/2-inch inside diameter.

Heat Stress

- Know the signs and symptoms and steps to prevent heat-related illnesses.
  - Heat Rash: Symptoms of heat rash include a red, itching area on the skin that can be treated by washing the affected area and drying it thoroughly. Loose clothing should be worn to prevent heat rash.
  - Heat Cramps: Symptoms of heat cramps include painful spasms of muscles, such as arms, legs and abdomen, during work activities. Treatment methods include drinking lightly salted fluids and resting in a cool area.
  - Heat Exhaustion: Symptoms of heat exhaustion

include fatigue, nausea, headache, pale complexion and clammy, moist skin. Treatment methods include promptly moving the victim to a cooler area and administering water, if the victim is conscious.

- Heat Syncope: Symptoms of heat syncope include fainting while standing immobile in the heat. Treatment methods include immediately moving the victim to a cooler area and administering water.
- Heat Stroke: Heat stroke is considered a medical emergency requiring immediate attention. It is a catastrophic illness and has a high death rate. Symptoms of a heat stroke include hot, dry skin; confusion; convulsions and coma. Treatment methods include moving the victim to a cooler area and contacting medical personnel immediately. Don't leave the victim alone.

• Take the following precautions to prevent a heat-related illness.

- Drink water every 15-20 minutes, even if you don't feel thirsty. You can lose as much as 1.6 quarts of fluid hourly by sweating.
- Allow time to acclimatize, especially if you are returning from vacation, changing job duties, or have been in an air-conditioned environment for more than 3-4 days.
- Perform work as early in the day as possible, and take frequent breaks in a shaded or air-con-

ditioned environment.

- Be aware of early signs and symptoms of a heat illness.
- Use the buddy system to keep a close watch on each other for signs and symptoms of a heat-related illness.
- Inform your supervisor or any illness or medications you are taking. Both can affect the body's tolerance of heat stress.
- Be sure you get plenty of rest at night, and make sure your noon meal is light and cool (fruit, salad, etc.).

• If you have access to a site computer, you can obtain the Wet Bulb Globe Temperature (WBGT) through ShRINE by clicking on "Weather," "Current Conditions at SRS" and "Current Conditions," or contact your STR to obtain the information.

Asbestos, Lead and Other OSHA Health Standards

Special precautions are required when working with asbestos, lead and other materials identified in OSHA health standards. Refer to your employer's Worker Protection Plan and applicable OSHA standards for additional information.

Lasers

• Install, adjust and operate laser equipment only if you have received appropriate training and qualification. Training and qualification must be docu-

mented.

- Post laser warning signs when a laser is in use.
- Operate, inspect and maintain laser equipment according to the manufacturer's recommendations.

Bloodborne Pathogens

Employees who are likely to have contact with blood or other potentially infectious materials (OPIM) as part of their job duties must be trained concerning bloodborne pathogens and methods to control contact. These employees must be provided protective clothing and equipment to reduce exposure to blood or OPIM.

Occupational Noise

- Engineeringly control (preferred method), or administratively control all noise levels to below 85 dBA.
- Post or label areas and equipment when noise levels exceed 85 dBA..
- Attend hearing protection training and wear the appropriate personal protective equipment when using tools and equipment that produce noise greater than 85 dBA

Hazardous Energy Control (Lockout/Tagout)

- Attend and successfully complete hazardous energy control training if you will be working under a lockout. Check with your supervisor or STR for

clarification.

- To prevent potential injuries, do not:
  - Remove a coworker's tag, or operate a valve, switch or device that has another worker's "Danger - Hazardous Energy Control - Do Not Operate" tag attached without authorization.
  - Lock and tag a device unless specifically instructed to do so.
  - Place "Danger - Hazardous Energy Control - Do Not Operate" tags on defective tools or equipment, gang box doors or any similar places.
  - Remove pieces of equipment with tags attached.
- Refer to your employer's Worker Protection Plan and applicable OSHA standards for additional information.

Note: 8Q, Procedure 32, "Hazardous Energy Control", requirements apply when it is necessary to establish isolation points that will be required to protect exposed subcontract employees from hazardous energy sources from existing site facilities, site utilities, or new facilities after turn over to operations.

off-the-job *safety*

The Savannah River Site is equally concerned with the off-the-job safety of our workers. More injuries and fatalities happen off the job than at work. Please take home the rules of safety you have learned while working in our facilities.

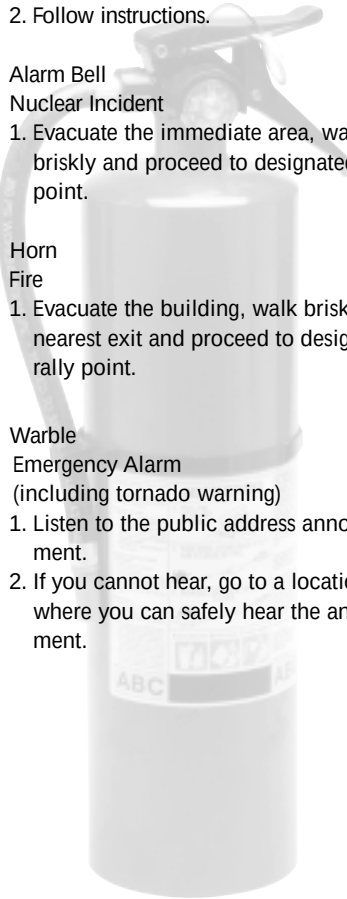
Emergency Signals and Actions

Signal: Voice (only)
Meaning: Important Bulletin
Action: 1. Listen for essential information.
2. Follow instructions.

Signal: Alarm Bell
Meaning: Nuclear Incident
Action: 1. Evacuate the immediate area, walk briskly and proceed to designated rally point.

Signal: Horn
Meaning: Fire
Action: 1. Evacuate the building, walk briskly to nearest exit and proceed to designated rally point.

Signal: Warble
Meaning: Emergency Alarm (including tornado warning)
Action: 1. Listen to the public address announcement.
2. If you cannot hear, go to a location where you can safely hear the announcement.



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t h e s a v a n n a h r i v e r s i t e

a i k e n , s o u t h c a r o l i n a

august 2003

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