

**Nebraska Public Power District  
Cooper Nuclear Station**

**STUDENT-TEXT**

**Lesson/Business Event Type**

**Title/Number/Abbreviation: Site-Specific Plant  
Access Training/GEN001-02-04/ILT - 3191, EXM –  
35114, EXM Sup – 35321, Nan Acc – 36328, NAN –  
35116, PAD – 35115, PLT – 35385 and WBT –  
35113.**

**Revision Number: 29**

**Associated Lesson/Business Event Type Plans:  
GEN001-02-04L**

## STATION ORGANIZATION

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### Operations (Order 4317450 @ 3)

The control room shall be promptly (before generating a condition report) provided with detailed and accurate information describing any condition that has a potential of affecting an operability decision.

Detailed, accurate, and timely information communicated to the control room by the person or persons that found the condition could prevent decisions made by the control room which result in unacceptable levels of safety or loss of power generation.

All issues with a direct or indirect effect on equipment, programs and process issues which may impact equipment are to be dispositioned through the Corrective Action Program (CAP) or Work Control process for Operations review. Issues, which on the surface do not appear to affect equipment (such as a training deficiency) may have implications for equipment (qualification of craft workers) and are to be processed through the CAP or Work Control process. If in doubt, ASK the Work Control Center (WCC) or Control Room.

Each operational decision takes into account the current and future level of safety to ensure the specified limits are maintained to protect the health and safety of plant personnel and the general public. Without current knowledge of plant equipment status the control room could make non-conservative operational decisions, such as to perform a surveillance that would make an emergency core cooling subsystem inoperable, which could lower safety limits to unacceptable levels. The longer the plant is in this unacceptable level of safety, the higher the risk to plant personnel and the general public.

The risk to plant personnel and the general public is related to the span of time degraded or nonconforming conditions are not identified and communicated to the control room. Therefore, it may be necessary to inform the control room before documenting a condition on a condition report.

If the degraded or nonconforming condition were not corrected at the first available opportunity, without good cause, the NRC would conclude that corrective actions are not prompt and the Code of Federal Regulations (federal law) was violated.

Reliance on compensatory actions to restore operability or to enhance the capability of a System, Structure or Component until final corrective action is complete should be an important consideration for establishing a reasonable time frame to complete the corrective action process. (P 3)

## STATION ADMINISTRATION

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### Station Administration Objectives

Upon completion of this section, students should be able to comply with company policies when working in the station.

1. State individual responsibilities regarding the site-specific policies: use of portable radios, non-technical reading materials, AM/FM radio and/or CD use, smoking, overtime rules, and sexual harassment.

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#### Obj. 1

- Smoking is prohibited in all District buildings, facilities, vehicles, and aircraft. Smoking is permitted on District property out doors. Local management has the authority to designate areas for smoking out-of-doors.
- Reading materials such as newspapers, novels, and magazines, excluding professional publications pertaining to the nuclear industry, are not to be stored or read in the work areas of Cooper Nuclear Station. Materials of this nature may only be read in designated break areas during established break or lunch periods.
  - Professional publications pertaining to the nuclear industry are limited in the Control Room to the Control Room break area only.
- Entertainment radios, such as AM or FM radios, tape players, etc., are not to be utilized within the Radiologically Controlled Area (RCA) (with the exception of the Multi-Purpose Facility Tool Crib and the Machine Shop area) or areas of the plant identified as Electromagnetic Interference (EMI) restricted areas. These areas contain sensitive electronic equipment that may cause a reactor scram if welders, 2-way radios, or personal entertainment devices are used.
  - Personnel shall keep cellular phones more than 12 inches away from this equipment to prevent Electro-Magnetic Interference (EMI) problems if the equipment is undergoing testing or maintenance and has exposed unprotected wiring (test leads, jumpers, circuit boards, etc.). The on site cell phones are the only cellular phone evaluated for use in all areas of the plant.
  - Other model cellular phones must be treated as 2-way radios in relation to EMI Controlled areas. They must be turned off before entering an EMI Controlled area because cellular phones transmit at times other than when you are talking on them.

- Personal entertainment equipment, radios, tape players or CD players, etc., may be used in the work place outside these areas, provided the professional atmosphere of the work place is not degraded and headphones are not used. Personnel shall operate entertainment devices at appropriate volume levels that will not adversely affect adjacent personnel or prevent the user from hearing Gaitronics announcements or the telephone. Use of designated tape or CD players for approved training applications is authorized.
- It is Nebraska Public Power District company policy that discrimination and/or sexual harassment of any kind will not be tolerated at Cooper Nuclear Station or anywhere else within the company. Discrimination and/or sexual harassment because of race, color, religion, sex, age, physical handicap, marital status or national origin will be dealt with promptly and severely.
  - Personnel who experience or witness discrimination or sexual harassment should report it to their supervisor, to the Human Resources Department, to the Employee Concerns Program, or initiate a Condition Report (CR).

4385191 © 5

- Proprietary information describes the level of confidentiality given to a document or information by the owner. Generally, if the owner has classified a document or information as "proprietary", it limits who can view, know about, or utilize its contents. Some examples of proprietary information in use at Cooper Nuclear Station include design drawings, test reports, material or equipment specifications, limited distribution publications, Vendor procedures, etc. Nebraska Public Power District (NPPD) and its employees have a degree of liability, dependent on applicable laws and the contractual agreement with the specific Vendor, to protect proprietary information received from the Vendor. (Order 4385191 © 5)

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## Procedural Compliance (©18)

Procedures have been divided into three types to ensure that personnel use them appropriately:

- **Continuous use** procedures are required to be at the work location and to be in the worker's possession unless another individual has a copy of the procedure and is directing the work.
- **Reference use** procedures are required to be in possession of performer or in possession of second individual directing performance of steps.
- **Information use** procedures may be performed from memory and do not have to be at the work location.

It is always your responsibility to:

- Verify that all tools and parts are available.
- ©18 If you must open/close panel covers or control cabinet doors, remove/install relay covers, or perform any other actions that may disturb sensitive plant equipment (any active component that could cause a reactor trip signal, emergency equipment actuation, or a significant plant transient) for non-procedure governed activities, **THEN YOU MUST OBTAIN CONTROL ROOM PERMISSION TO PERFORM THE ACTIVITY BEFORE STARTING WORK** and use necessary safety precautions.

CR-CNS-2007-04173-CA-12 (©14 ©18)

"Plant cabinets" is a generic term that encompasses many different type of components. Included in this definition, but not limited to, are the following: MCC buckets, DC starters, lighting panels, control panels, electrical enclosures, etc.

Access inside plant cabinets will only be executed if there is a need to enter. If entry is required as part of an approved Work Order, Clearance Order activity, an issued surveillance, or issued testing procedure, access should be considered granted and further authorization is not required. Access to cabinets for other activities requires permission from the WCC SRO or Control Room. If denied access, coordinate and schedule access, as necessary, via the Work Control Process. Entrant will inform the Control Room or WCC SRO when the cabinet is entered and after the cabinet has been exited and restored to normal conditions.  
CR-CNS-2007-04173-CA-12©14

Commitment  
CNSS941564-43  
IR 93-202-08  
#2 (© 2)

There are several types of procedures, directives, etc. that have been established to guide/control the functions performed by ALL PERSONNEL performing work at/for Cooper Nuclear Station. A partial list of these documents includes: all types of procedures that have been written by the various Nuclear Power Group departments, administrative procedures, guidelines, policies, directives, recommended work practices, etc. It is MANAGEMENT'S HIGHEST EXPECTATION that all controlling documents will be adhered to by ALL PERSONS performing functions at or for Cooper Nuclear Station.

©18 It is **extremely important to maintain configuration control to ensure that the plant is operated safely within design limits.** It may seem appropriate to the radiation worker to modify or deviate from the scope of the work control process document (i.e., Maintenance Work Request (MWR), procedure, etc.) such as adding extra insulation, extra fasteners, etc., but this may initiate an adverse impact to the system, plant, or personnel safety, and without the proper review and documentation, is a violation of 10 CFR 50, Appendix B.

To ensure that Cooper Nuclear Station is operated in a safe and reliable manner, the following principles must become part of our culture:

- With the following exceptions or as provided in approved procedures, **only Operators can manipulate plant components:**
  - I&C have ownership of components in instrument component checklists.
  - Chemistry Department has ownership of components in Chemistry checklist.
  - Engineering Department has ownership in station ventilation systems.
- Changes to the plant equipment or documents, no matter how small, can impact design requirements, plant documents and databases, and/or other equipment. Therefore they must be properly controlled, evaluated, approved, and incorporated according to the latest procedures.
- Only personnel qualified to “Tagging Preparer” may hang and remove Tagging Orders.
- All personnel on site are required to follow procedures step-by-step. If a procedure cannot be performed as written, then the job shall be stopped and placed in a safe condition and the procedure corrected by the appropriate change mechanism.

These standards not only ensure that plant equipment is being operated safely as designed, but that the health and safety of plant personnel and the general public is being protected. Compliance with these expectations may result in perceived time delays, but it is more important that individual jobs be done correctly, rather than quickly. **Attention to detail is of the utmost importance.** If you are unsure whether you are conforming to these expectations, see your supervisor before proceeding. (© 2)

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## Self-Checking (P18)

### Commitment #4 (C 4)

#### (Commitment # NLS990006-02)

**Note:** On December 18, 1998, during plant start up from the refueling outage, Operations started the High Pressure Coolant Injection System (HPCI) to perform a surveillance procedure. Personnel in the HPCI room reported to the Control Room that they saw a small steam leak on the downstream flange of the steam supply valve to the HPCI turbine. After several minutes, the steam leak had gotten worse so the HPCI room was evacuated and the steam supply to the HPCI turbine isolated. This valve had just been replaced during the plant outage. During the valve replacement, the flange had to be taken apart and put back together again.

**SCR 98-1217** was written to determine the cause of the steam leak. The investigation determined that when the personnel re-assembling the flange were putting it back together, they did not get the two halves of the flange aligned properly. This did not allow the flange halves to tighten down on the gaskets properly as the personnel tightened the flange bolts. Thus, the flange leaked when high-pressure steam was applied. Inattention to detail and lack of supervisory oversight were determined to be the cause. (C 4)

#### RCR2001-1586, Action #4 (P11 P18)

Supplemental Personnel signed off for the wrong weld and it was not identified which weld had been performed in the turnover. Ensure you understand all the requirements of the work package prior to commencing work. (P11 P18)

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## Cyber Security

The Cyber Security program for Cooper Nuclear Station is in CNS Procedure 11.Cyber-Security. The Software Quality Assurance program is listed in the 11.SQA procedures.

All software/hardware purchased for Cooper Nuclear Station, must be authorized and purchased by Information Technology. All hardware assets are tracked in an inventory database maintained by Information Technology.

Non-NPPD PCs and laptops which are brought to Cooper Nuclear Station must be scanned and authorized by Information Technology Help Desk prior to being allowed to connect to the network. Authorization is in the form of a sticker which must be applied to the device at all times while at Cooper Nuclear Station.

# NUCLEAR POWER PLANT OVERVIEW

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## Nuclear Power Plant Overview Objectives

Upon completion of this section, students should be familiar with the layout of the major plant buildings and how the plant basically operates.

2. Given a drawing of the site, identify locations of major plant buildings, including: turbine building, reactor building, security building, radiologically controlled area, multi-purpose facility, and drug screening reporting site. (Not Testable)
  3. Identify the appropriate communication system to be used for reporting emergencies and locating an individual in plant.
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## Site Layout

### Turbine Building

Houses the main turbine, generator, and much of the supporting equipment such as the main condenser and condensate pumps.

### Reactor Building

Houses the reactor, important isolation valves, reactor instrumentation, and other safety-related equipment.

### Security Access Control Building

The point where you may enter the protected area of the site. To do this, you must first pass through the Security Access Control Building.

### Radiologically Controlled Area (RCA)

Parts of the plant that contains radiological areas. Access is not allowed to personnel who have NOT received Basic Radiation Worker Training.

### Multi-Purpose Facility (MPF)

This portion of the plant is where all the machining is completed. Also, houses the tool crib.

### Drug Screening Location

If you are ever directed to go to Nuclear Security Services for drug screening, the west end of the Security Access Control Building is where you report.

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## Communications

Obj. 3 Several types of communication systems are used. The following guidelines should be followed:

- The preferred method to **REPORT AN EMERGENCY** is to call the Control Room by dialing **911** on a house phone. You may also page the “Control Room” on the Gaitronics system if necessary.
- If you dial 911 to report an emergency, you will first receive a recording telling you that if you have a true emergency, stay on the line. This recording and 5 second delay prevents unintended distractions to the Control Room personnel if you have misdialled the phone. It will allow you the option to hang up the phone before the Control Room answers. After approximately 5 seconds, a Control Room operator will answer.
- The Plant Gaitronics System is an important communication source for station operation, announcements, maintenance evolutions, and emergency conditions. Generally, abnormal or emergency conditions are announced over the Gaitronics. It is everyone’s responsibility to strictly limit the use of the Gaitronics to information pertinent to these events.
- Use the house phones, “pagers,” cellular phones, or E-mail, etc. to find and communicate with other personnel to conduct normal plant business.

There are five-channel Gaitronics stations and one-channel stations. The one-channel stations are heard on channel one on the five-channel stations.

- Depress and hold paging push button while making the announcement.
- Release paging push button to carry on a party line conversation.
- Gaitronics are for Operation Department use and emergencies.

# INDUSTRIAL SAFETY

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## Industrial Safety Objectives

Upon completion of this section, students should be able to comply with basic station industrial safety policies, including identifying and reporting workplace hazards.

4. Describe individual industrial safety responsibilities regarding the site equipment tagging system.
5. Discuss individual responsibilities regarding site-specific use of personal protective equipment to include: hardhat, safety glasses, hearing protection, protective footwear, and hand protection.
6. State the site-specific requirements and purpose regarding chemical control.
28. Differentiate between the different section and numbering scale of the National Fire Protection Association (NFPA) and Hazardous Material Identification System (HMS) label (flammability, reactivity, etc.) (Ⓢ 2)

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Your well being and that of your coworkers depend on your ability to recognize and resolve hazards. Each employee is obligated to stop any unsafe work practices or at-risk behaviors they observe. The situation may be one that you can correct yourself simply by bringing the condition to the attention of the employees involved (the employees may not be aware of the situation). Other situations may require the involvement of your supervisor to find the right resolution. If you see an activity or work practice that appears unsafe, do not hesitate to stop the activity. Being concerned about the safety of coworkers should out weigh any concerns about a short delay in completion of work.

Rules and guidelines cannot be written to address every specific situation the employee may face. For those specific situations the following steps should be taken:

- Look for the appropriate industrial safety rule
- Look for the appropriate industrial safety procedure
- Talk to your supervisor about the situation and ask for guidance
- Lastly, you and your supervisor should contact Industrial Safety

The Industrial safety policy of Nebraska Public Power District is based on the firm conviction that ALL accidents can be prevented. Safety will always be the first consideration in company activities, and no phase of company business is of greater importance than the safety and occupational health of our employees. The company will provide and maintain a safe and healthy working environment at all work locations and will establish and enforce operating practices and training designed to assure the safety and occupational health of ALL employees.

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## **Personnel Injuries**

### **Reporting Medical Injuries**

Upon discovering an injured or suddenly ill person, immediately render First-Aid for life threatening emergencies (i.e., stop severe bleeding, restore breathing, or provide CPR) and call for help.

Notify the Control Room by dialing 911 or through the gaitronics and give the following information:

- Location
- Number of persons involved and names, if known
- A description of the injury or illness
- Radiological conditions

Remain with the patient until assistance arrives unless hazardous conditions exist.

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## **Non-Emergency Injuries**

You are required to immediately report work-related injuries to your Supervisor. The injured employee or his/her supervisor shall complete the appropriate S-10 forms required per Industrial Safety procedure. Corporate Policy provides the policy guidelines and requirements for reporting occupational accidents, injuries, illnesses, property damage accidents, property losses, or near miss accidents.

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## Tags and Postings (©18)

Obj. 4

### Tags

Area barriers, tags and signs are used throughout Cooper Nuclear Station to identify special work and/or entry requirements. For example:

- **Clearance Orders - "Danger Tags"** (red and white) - are placed on a component to prevent operation of that component. Operation of a Danger tagged component is NOT allowed. Danger Tags are used with Clearance Orders and Test Orders.
- **Caution Tags** (yellow) - are placed on a component to provide amplifying instructions for the operation of that component. A Caution tagged component may only be operated in accordance with the instructions written on the tag. Caution Tags are used with Caution Orders only.
- **Test Tags** (blue) - A tag placed on a component, which allows non-Operations personnel to operate the component. A Test tagged component may only be operated in accordance with an approved station document. Test Tags are used with Test Orders only.

**No one** may OPERATE or WORK ON any components which have been tagged with a Danger Tag.

You must never change the configuration of a Danger tagged component/system. The following are some examples of changes to a Danger tagged system that could put personnel in danger or damage equipment:

- Changing the position of a Danger tagged component (opening a Danger tagged closed valve or changing the position of a Danger tagged switch, etc.)
- Removing a Danger Tag from a component/system (except "Operator" or "Non-Operations" Tagging Preparer" qualified personnel properly authorized with Clearance Order release instructions).
- Performing work on a Danger Tagged Component (except as provided by procedure 0.9).
  - Removing or adding hoses or pipe caps to drains or vents.
- Adding energy to a component/system through operations like meggering (placing a high voltage on a component/system to check the insulation) or hydroing (pressurizing a component/system to test it).

Compliance with the Clearance Order procedure is a condition of employment. Failure to comply with requirements of the Clearance Order process and procedure shall result in disciplinary action up to and including termination.

You should NEVER hang, remove, or clear a Danger or Caution tag; only personnel qualified and authorized may do this. If a tag is found that is not attached to a component, or is attached to the wrong component, NOTIFY the Control Room IMMEDIATELY. This could be a life-threatening situation.

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### **Protected Equipment (Ⓟ 4 Ⓟ18)**

Order 4353129

Protected Equipment Program identifies and communicates equipment and systems required to minimize core damage.

To enter a posted protected equipment area you should refer to CNS Procedure 0-PROTECT-EQP. Procedure shall be implemented during outages and when scheduled risk status is YELLOW for > 12 hours, ORANGE or RED. Operations may elect to implement program for other reasons. Procedure applies to all station personnel. (Ⓟ 4 Ⓟ18)

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### **Cooper Nuclear Station Configuration Control (Ⓟ18)**

CR-CNS-2005-4799(Ⓟ9)

Control of configuration is required at Cooper Nuclear Station.

Procedure 0.31, Equipment Status Control is used to:

- Maintain system and equipment operation within design requirements.
- Ensure Operations knows status for decision making during routine and abnormal or emergency conditions.
- Operations can control configuration using Procedure 0.9 (Tagout) or an allowed administrative method (including maintaining log entry records).
- The key point for non-Operations personnel to REMEMBER is to not operate switches, controls, breakers (including those on lighting panels), valves, etc. unless you are specifically authorized. Don't Assume!

### Operating Experience:

- On 7/3/2005, 3 Spare breakers on a 120v panel were found ON while performing surveillance, then another was found ON for the same panel on 7/28/2005. [CR-CNS-2005-4799] There were 5 CRs for Spare breakers being out of position alone in 2005.
- On 10/23/2004, Reactor Core Isolation Cooling manual valve RCIC-V-79 was found partially open. [CR-CNS-2004-6840]
- On 8/26/2004, a Supplemental Employee working in the Intake Structure promptly contacted the Control Room that a switch had been bumped and may have changed position, which it had. Operations responded and promptly restored plant configuration. This was excellent behavior by the Supplemental Employee. (CR-CNS-2004-6014)

Common Tie: Work was going on in the area for these and other similar configuration control problems. If you know or suspect that your work activity caused a change in configuration, call the Control Room immediately. (P9)

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## Personal Protective Equipment

### Obj. 5

Industrial safety experience has shown that the INDIVIDUAL has the most control over reducing on-the-job injuries. This experience also shows that most injuries will involve the head, feet, eyes, and hands. For this reason, the company will issue Cooper Nuclear Station personnel personal safety equipment and expects you to use it as discussed in the following material.

### **Hard Hats and Safety Glasses**

With few exceptions (entering/exiting plant along designated paths; in offices and designated paths between offices, locker rooms, control rooms, lunch rooms, rest rooms, or by an approved safety request form on a case-by-case basis), hard hats and safety glasses are to be worn at all times within the plant. If you are not certain whether a hard hat is required, check with your supervisor. Safety glasses must conform to ANSI and Company standards. If you are not sure if your glasses meet these standards, check with your supervisor.

### **Footwear**

Safety toes shoes shall be worn in the power block, posted areas, and whenever physical work is performed where there is a danger of foot injuries due to falling or rolling objects, objects piercing the sole, and where electrical hazards are present, regardless of location.

In all areas that require safety toed shoes, the safety toed shoes shall meet the requirements of ANSI Z41, Personal Protection - Protective Footwear standards or ASTM V-2412. Look for the appropriate logo that indicates compliance with ANSI or ASTM.

## **Hearing Conservation Program**

29. Identify the purpose of the Hearing Conservation Program including the effect of noise on hearing, use of protective equipment and audiometric testing.

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Obj. 29 **The Purpose of Hearing Protection**

The purpose of the hearing protection program is to reduce your exposure to noise. The intensity of a particular sound wave is measured in decibels. Any sound that creates a decibel level of 85 or more can result in permanent hearing loss, over a period of time, if some sort of protection is not used.

### **Advantages and Disadvantages of Hearing Protection Equipment**

There are two basic types of hearing protection available; the earplug and the ear muff. For maximum protection, the device must make a tight seal with the ear canal or side of the head. However, not all devices are equally suited for all ear canals and head shapes. Earplugs are easier with hard hats, glasses and protective equipment. Be aware of the hearing requirements in your work area.

### **Use and Care of Hearing Protection Equipment**

#### **Reusable Ear Plug**

With the reusable type earplugs, first be sure your hands, ears and plugs are clean. Pull outward and upward on your outer ear and insert the plug into the ear canal. Repeat these steps for the other ear. Since these protectors are reusable, they should be routinely washed with mild soap and warm water.

#### **Muff Type**

With the muff type hearing protection, the soft edges of the muff must completely seal around the ear. Adjust the head band for a snug comfortable fit. Do not reshape the headband or poke holes into the muff for ventilation or the effectiveness of the device is lost.

You must wear hearing protection (earplugs or earmuffs) when working in a designated high-noise area. Dual hearing protection (plugs and muffs) is required when a single level of protection does not reduce the noise exposure to 90 decibels or less. Being exposed to excessive noise without protection can result in an immediate or a gradual hearing loss. Since the effects of not using hearing protection may not be immediately observable, don't assume that hearing protection is not needed because you don't feel like your ability to hear is being reduced. Some employees may be required to take periodic hearing tests.

## Gloves

Employees who may encounter hazards to the hands and fingers shall have the appropriate gloves in their possession and wear gloves whenever the nature of the work requires extra protection for their hands. Activities that require gloves are, but not limited to, the following:

- Climbing (ladders, plant equipment).
- Material handling activities that have a potential to cause hand injury.
- General work activities with hazards such as those from skin absorption of harmful substances, cuts or lacerations, abrasions, punctures, chemical burns, and harmful temperature extremes.
- Welding, cutting or other hot work.
- Cutting, such as using razor knives or other activities that may cause cuts to the hand or fingers.
- Handling of chemicals and/or corrosives.
- Other tasks as deemed appropriate from a Job Safety Hazards Analysis (JSHA), Supervision, or Industrial Safety.
- Electrical high and low voltage gloves and rubber gear requirements are detailed in Procedure 0.36.8, Electrical Safety Rule Book.

The use of a personal knife or the knife in a company supplied Leatherman tool to perform work is strictly prohibited. Tools permitted for cutting TyRaps, rope, wire ties, etc. are hinged type cutters similar to cutting pliers and scissors, otherwise safety knives are permitted for unconditional use. There is a specialty tool available for cutting TyRaps and this tool is available in the tool crib.

Employees shall use the safest tool for the job. In most cases, an open blade knife is not the correct tool for the job. Open blade knives such as insulator knives, razor scrapers, and box knives are permitted for use in the specialty type work, for which they are designed, provided they have been evaluated as the best tool for the job, a Job Safety Hazards Analysis (JSHA) is performed. Kevlar gloves or gloves providing equivalent protection shall be worn.

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## Lead

At Cooper Nuclear Station we utilize multiple forms of lead; from lead paint, lead bricks and lead blankets, to lead batteries. As general employees you need to recognize the various forms to help you avoid any unforeseen exposure, which could be adverse to your health. There are only two ways for lead to enter your system, ingestion and inhalation.

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## Confined Spaces

30. Define the terms “Confined Space” and “Entry.”
  31. Differentiate between “Non-Permit” and “Permit Required” confined spaces.
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Confined spaces will be posted with a caution or danger sign. Procedure 0.36.3 “Confined Space Procedure” is used to determine if the space is non-permit or permit required.

- Obj. 30 An area is referred to as a confined space if it meets the following criteria:
- any space large enough and designed so that a worker can actually enter the space
  - any space not intended for continuous human occupancy
  - any space having a limited means of access or egress

There are two types of confined space defined at Cooper Nuclear Station, the Non-Permit Required Confined Space and the Permit Required Confined Space.

### **Examples**

Some examples of a potential confined space are:

- storage tanks, drums, bins, boilers
- ventilation or exhaust ducts, sumps or sewers, underground utility vaults
- manholes, tunnels, pipelines, and open top spaces more than 4' in depth such as pits, tubs, vaults, valves, and vessels)

Obj. 31

### **Permit Required Confined Space**

A Permit Required Confined Space meets the above criteria along with any of these additional criteria:

- any space which contains or is subject to accumulations of flammable or toxic contaminants or has an oxygen deficient or excessive amount of oxygen atmosphere
- any space containing materials that have the potential for engulfment/flooding

- any space which has an internal configuration such that a person could be trapped or asphyxiated by inwardly converging walls or by a floor, which slopes downward and tapers to a smaller cross section
- any space, which contains recognized serious safety or health hazards

A Permit Required Confined Space will be posted with a red and black DANGER sign reading: “DANGER - CONFINED SPACE, ENTER BY PERMIT ONLY.”

Continuous monitoring is required in a Permit Required Confined Space.

A permit required confined space may be downgraded to “non-permit” only after it has been determined no hazard exists. Should conditions change, then the space will return to “permit required.”

### **Warning**

Entry into a permit required confined space is not permitted unless a Confined Space Entry Permit has been initiated and the requirements of the permit are met.

Remember!!!

Workers die in confined spaces because they:

- Do not recognize the hazards
- Do not follow the safety rules
- Try to make unauthorized rescues of other workers.

### **The Attendant**

The attendant is stationed outside the permit required confined space that monitors the entrant(s) and conditions in the space. Responsibilities of the Attendant(s) are:

- ALWAYS remaining outside of the confined space until relieved and may never attempt to rescue inside the confined space.
- Communicate with entrant(s) as necessary.
- Monitor activities inside and outside and order exit if necessary.
- Summon rescuers when needed.
- Prevent any unauthorized entry.

- May not perform other duties that would interfere with or distract from duties as an attendant.

### **The Job or Entry Supervisor**

The responsibilities of the Job/Entry Supervisor are:

- Must identify any potential hazards
- Must verify all equipment and procedures are ready
- Verify there are rescue services available and there is a means to summon them.
- Ensure continuous monitoring or initial monitoring and continuous ventilation is established in all non-permit confined spaces.
- Remove any unauthorized entrants
- Authorize entry and oversee entry operations
- Sign permits, terminate an entry, and cancel any permits.
- Ensure all personnel are out of the confined space after completion of work.

### **Authorized Entrants**

Obj. 30

Only authorized entrants may enter a confined space and shall comply with all requirements of the permit. Entry is considered to have occurred as soon as any part of entrant's body breaks the plane of an opening into the space. Personnel shall know the actual or potential hazards that may be encountered during entry, including information on the mode, signs or symptoms, and consequences of an exposure and their possible adverse effects (read any Material Safety Data Sheet).

Alert the attendant(s) when a warning symptom or other hazardous condition exists. Personnel shall not enter a Permit Required Confined Spaces unless authorized by the Job or Entry Supervisor and signed in on the Confined Space Permit. Entrants shall ensure they are in possession of and use Personal Protective Equipment (PPE) and any other safety equipment required on the Confined Space Permit.

Personnel shall communicate with attendant, as necessary, to enable attendant to monitor entrant's status in the event the space needs to be evacuated. Personnel shall exit from Permit Required Confined Space, as quickly as possible, whenever:

- An order to evacuate is given by attendant or Job or Entry Supervisor.
- Entrants recognize any warning signs or symptoms of exposure to hazardous materials or dangerous situations.
- Entrants detect a prohibited condition.
- An evacuation alarm is activated.

**NOTE:** Calvert Cliff's nuclear plant, September 15, 1988: Two divers entered a nitrogen blanketed condensate storage tank without wearing SCUBA gear. The first diver lost consciousness and fell into the water. The second diver attempted to rescue the first diver and drowned. The divers failed to follow WORK PRACTICES and controls for confined space work and failed to make adequate rescue preparations.

Obj. 31

### **Non-Permit Required Confined Space**

Spaces previously identified as Non-Permit Required Confined Spaces are posted with a CAUTION or WARNING sign.

For work in Non-Permit Confined spaces, the Job or Entry Supervisor shall initiate a Confined Space Permit, review initial monitoring data, and determine safe entry requirements. Danger signs, attendants, and Confined Space Permit Supplementary Time Record Forms are ***not*** required for Non-Permit Confined Space entries.

If continuous ventilation is not present, continuous monitoring should be used to ensure the area is maintained free of atmospheric hazards. No hazardous atmospheres or other potential hazards shall be permitted within a Non-Permit Confined Space.

The completed Confined Space Permit should be posted near the entrance to the confined space. The Confined Space Permit shall remain in effect as long as the confined space work is in progress. These spaces shall pose no actual or potential atmospheric hazard and all other hazards within the space shall have been eliminated.

---

**CAUTION – Non-Permit Confined Spaces may become Permit Required Confined Spaces if conditions change or if work activities introduce contaminants.**

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## Fall Protection

32. Describe the proper use, maintenance, and inspection of fall protection equipment.
33. Describe the risks and the prevention of suspension trauma.
- 

### Protection for Unprotected Sides and Edges

When walking or working on surfaces 6 feet or more above a lower level, the surface must be protected by a:

1. Guardrail system
  - Must be capable of with standing 200 pound force in outward or downward direction at any point along the top edge.
  - Mid rails must be able to withstand a force of 150 pounds applied in outward or downward direction at any point.
  - Surfaces should be smooth to prevent:
    - Snagging of clothing
    - Punctures and/or lacerations
  - Ends of rails should not overhang end posts
2. Safety net system
  - Provide safety nets when work places are more than 25 feet above a lower surface where:
    - Ladders
    - Scaffolds
    - Catch platform
    - Temporary floors
    - Safety lines
    - Or safety harnesses are impractical
3. Personal fall arrest system

### **Situations that require fall protection:**

1. Leading Edges - is considered to be an unprotected side or edge of a floor or roof that is 6 feet or more above lower level. To protect the employee a guardrail, safety net, or fall arrest system must be in place.
2. Hoist Areas – is an area where a hoist is being loaded and/or unloaded on an elevated platform. Guardrails are to be in place except when actual hoisting operations are underway. Employees must wear personal fall arrest systems, when guardrails are removed.
3. Holes, Ramps, Runways, etc.
  - a. Holes – must be either covered or barricaded with a guardrail system on all sides.
    - Covers for holes must be:
      - Capable of supporting twice the maximum axle load for any vehicle
      - Capable of supporting twice the weight of employee, materials, or equipment imposed on the cover at the time
      - Secure against accidental displacement
      - Color code or mark with the word “hole” or “cover” to provide warning of the hazard
    - b. Ramps, Runways, etc must have a guardrail system for the potential falls of 6 feet or more.
4. Roofing – must have guardrails, safety net, personal fall arrest systems or may use a designated, competent person to provide warning to workers that are approaching danger.
  - o Low slope roofs – can combine a warning line system with the other systems.
    - Warning line on lower slope roofs allows greater freedom of movement.

5. Wall Openings (windows, doors, etc.) with a drop of more than 6 feet must have:

- Guardrail system
- Fence
- Half door
- Equivalent barrier
- Personal fall arrest system

### **Ladders**

Fall protection is not required when working from portable step ladders. Properly secure ladders and use fall protection if the hazards so dictates. Do not use metal ladders near energized lines or equipment.

### **Personal Fall Arrest Systems**

#### **Obj. 32**

1. Inspect safety straps, harnesses, lanyards, lifelines, connectors, anchors, and mounting before each use.
  - a. Visually inspect for:
    - Cuts, loose stitching, knots, kinks, etc.
    - Loose rivets or hardware, burnt threads
    - Nicks, cracks, corrosion or distortion in hardware
    - Shock absorbing lanyards intact with no sign of impact load
    - No mold, damage wear, mildew or distortion
  - b. Remove immediately from service for inspection if subjected to impact load.
2. Use if above 4 feet while climbing on poles, towers, etc.
3. Use if 6 feet above another surface and not protected by guardrails.
4. Do not attach more than one employee to vertical lifelines.
5. Personal fall arrest systems shall have a shock absorbing mechanism, or a deceleration device, to limit the stopping forces on a falling employee.

6. Snap hooks shall be the double locking type correctly sized for the application.
7. Snap hooks shall not be hooked to loops made in lanyards.
8. Protect lifelines and lanyards from being abraded.
9. All ropes and straps used in lanyards, lifelines, and body harnesses shall be synthetic.
10. Anchorages for personal fall protection shall be:
  - Used only for personal fall protection
  - Able to support 5000 pounds per employee
11. Rigged to ensure the employee free falls no more than 6 feet and does not contact any lower level.

<b>EXAMPLES OF ACCEPTABLE ANCHORAGES</b>	<b>EXAMPLES OF UNACCEPTABLE ANCHORAGES</b>
<ol style="list-style-type: none"> <li>1. Structural steel members including: <ul style="list-style-type: none"> <li>• Platform members – wide flange, tube steel, channel, angle, etc.</li> <li>• Permanent ladder members</li> </ul> </li> <li>2. Piping – large bore piping ~3in. or larger.</li> <li>3. Piping supports – except for snubbers, struts, and spring can hangers</li> <li>4. Monorail beams and support steel rated at &gt;5000 lbs.</li> <li>5. Pad-eyes, eyebolts, rigging brackets, permanent scaffold supports</li> <li>6. Non-energized cranes</li> <li>7. Engineered anchorages</li> </ol>	<ol style="list-style-type: none"> <li>1. Snubbers</li> <li>2. Struts</li> <li>3. Spring can hangers</li> <li>4. Tubing and tubing supports</li> <li>5. Equipment</li> <li>6. Valves and actuators</li> <li>7. Cable trays, conduits, wireway and their supports</li> <li>8. HVAC and HVAC supports</li> <li>9. Small instrument lines</li> <li>10. PVC piping</li> <li>11. Energized cranes</li> </ol>
<p><b>NOTES:</b></p> <ol style="list-style-type: none"> <li>1. The above list are examples and do not contain all possible members that exist in the plant. Contact your Supervisor, Civil Engineering, or Industrial Safety if you have questions.</li> <li>2. Use common sense in making a selection between available points.</li> </ol>	

Attachment point of the body harness shall be located in the center of the wearer's back, near the shoulder level. Immediately remove items from service that has been subjected to impact loading. The employer shall provide prompt rescue of employees in the event of a fall.

Impact forces can be very large. For example:

- If a 220 pound worker free falls 6 feet and lands without shock absorption, the impact force will be 3970 pounds. That is more force than if an automobile were placed on top of a person. Even a fall from a short distance can have serious consequences.

Obj. 33 A **WARNING** about body Harnesses!

A worker suspended in a body harness can die from suspension trauma.

- The body in a resting vertical position can pool blood in the legs. With out movement and use of leg muscles the blood will not get back to the heart therefore; the heart can not pump blood. Unconsciousness can occur and even death can result.

#### How to prevent Suspension Trauma

- Workers should not work alone when self-rescue will not be an option
- Harnesses and lanyards should be selected for specific applications
- The harness needs to be adjusted to fit the individual user correctly
- Tie-off lanyards should be anchored as high and tight as work permits
- If you find yourself hanging
  - Keep moving – moving your legs will help move blood
  - Try to get your legs closer to level with your body
    - If you can, hold yourself off horizontally from a wall, boom, or column with your legs to tighten your muscles and get your legs closer to body elevation.

---

#### **Scaffolding**

Scaffolds must be designed by a qualified person.

#### **Scaffold Tags**

- Red Danger Tag – shall **NOT** be accessed or utilized, except for personnel involved in construction, removal and examination of the scaffold.

- Yellow Tag – Scaffold complete use with caution. It dictates whether fall protection is required for employees working on the scaffold and provides the load rating.

### **Basic Elements of a Safe Scaffold**

- Stability
- Foundation
- Bracing
- Access

Other important safety elements are:

- Planks
- Guard rails
- Ties and standoffs
- Toe boards

### **Fall Hazards and Fall Protection**

#### **Guardrail Systems**

The primary means of fall protection on supported scaffolds is the guardrail system. OSHA requires guardrails and mid rails to be installed on all platforms over 10 feet in height. This is measured from the ground to the platform deck.

Guardrails have one major advantage over personal fall arrest systems. Guardrails prevent accidents from occurring. Personal fall arrest system only minimizes the impact force after the fall.

#### **Guardrail Load Limitations**

1. Top Rail – For all supported scaffolds, each top rail must be able to withstand a downward or horizontal force at any point along its top edge of at least 200 pounds without failure. When loads are applied in a downward direction to the top rail, the top edge must remain above the minimum height requirement of 36 inches. The reason for the downward or outward directions is that some guardrail panels drop into place and may be lifted vertically to be removed by manufacturer's design.

2. Mid Rail – must be able to withstand a downward or horizontal force at any point along the mid rail or other member of at least 150 pounds without failure.

When guardrails cannot be installed because of obstructions, personal fall arrest systems should be used.

### **Falling Object Hazards**

Falling objects are one of the most serious hazards on the work site. There are many sources for falling object hazards.

Some examples are:

- Tools
- Welding sparks and rods
- Rivets, nuts, and bolts
- Overhead iron or concrete forming work
- Cranes hoisting load

To protect workers on the ground from falling objects, the area can be blocked off using barricades to prevent employees from entering. If it is not possible to prevent employees from working in the same area, then another protection method must be provided. A canopy type tunnel is an example of the protection that may be constructed for workers to pass through the area safely. To protect scaffold workers from falling objects that may come from above them, **safety nets** may be erected above the scaffold job to extend out past the edge of the scaffold. **Toe boards**, guardrails and panels must be used to prevent items from falling off of the scaffold on to workers below. Toe boards prevent debris and small objects from falling. When the height of the object is above the toe board, the use of screens, panels or guardrails is required. Openings in the guard rails must be small enough to prevent the objects from falling through.

## **Electrical Hazards**

Electricity is present every where on the work site. Workers use electrically powered tools to perform many of their duties while working on scaffolds. Power cables must sometime be run long distances from the power sources to where the work is being performed.

It is important that all extension cords are used correctly. Power strips are designed for multiple devices to be plugged in and are NOT to be used as extension cords. Daisy chaining of pig tails and power strips is not allowed.

The work site is often surrounded by high voltage electric power lines. Any time electricity is present, so is a potential hazard. Following the regulations and other electrical safety codes is an important part of preventing electrical hazards and accidents at the work site. Always be alert for electrical hazards and follow safe work practices and procedures. The employer must train personnel in safe electrical work practices and provide hazard-free equipment and a safe work environment. Each individual is responsible for complying with the standards.

### **NOTE:**

At Crystal River, a worker raised a metal pole making electrical contact with a 230 kV feeder to a transformer. This worker was severely burned and eventually died from the injuries. This clearly demonstrates the need to exercise EXTREME CAUTION when working on or near energized high voltage components.

## **Material Handling Hazard**

When working with materials, it is important to consider the different factors that affect your ability to safely move the materials:

- Basic Safety
- Manual Material Handling
- Mechanical Material Handling
- Stacking and Storing

Failure to use proper material handling guidelines results in:

- Lost man hours
- Lost productivity
- Pain and discomfort for the employee

- Disability or even death

### **Overloading Hazards**

Remember these guidelines:

- Do not overload any individual plank unless you have documentation that it is rated for more weight.
    - Scaffold load rating is documented on the YELLOW TAG.
  - As a rule, limit point loads to 250 pounds per plank unless rated for more weight.
  - Do not overload the platform as a whole.
- 

### **Industrial Equipment Awareness**

SER 1-06

On October 1, 2005, at Browns Ferry Nuclear Plant Unit 1, two contract employees were injured, one fatally, when a gamma-sensitive tool monitor overturned while it was being moved.

The monitor that was bolted to its cart overturned while the workers were moving it down a ramp. A rope used to control the descent of the monitor failed. The monitor rolled down the ramp and tipped over when it reached the bottom. One worker sustained a severely strained leg and a fractured ankle as the monitor overturned. The second worker sustained more severe injuries and later died from those injuries.

RCR2001-1212, Action #5 (Order 4261044) ©12

Three craft personnel were using a torquing device on scaffolding in the turbine building. The scaffolding was experiencing obvious, visual structural overloading. The work was stopped by engineering and the scaffold was modified to accommodate the loading. CNS Procedure 7.0.7 states that scaffolds and their components shall be capable of supporting at least four times the maximum intended load. The scaffold load rating should be checked prior to taking/placing equipment on scaffolding. The load rating is specified on the scaffold tag. ©12

© 7 **SOER 06-01 (CR-CNS-2006-07510 CA5)**

Lifting, Rigging and Material Handling:

If you will be directly involved in Lifting, Rigging and Material Handling there are specific training courses you will need. If you encounter workgroups involved in Lifting, Rigging and Material Handling you should stay clear.

- Do NOT walk under suspended loads
- Do NOT get between moving loads and immovable structures, like walls or plant equipment.
- Look for and obey any safety postings, even if they are temporary.
- Not all situations require safety postings, be aware of work going on around you at all times.

Moving material from one place to another requires the proper equipment and good planning. Stand clear of any work evolutions you are not directly involved with. © 7

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## Storm Water Management Plan

Cooper Nuclear Station has a Storm Water Management Plan (SWMP) in accordance with state and federal statutes. The objective of the SWMP is to minimize the discharge of pollutants in storm water that runs off the Cooper Nuclear Station plant site and surrounding facilities, parking lots, and grounds. The storm water runoff ends up in the Missouri River along with any pollutants that it carries.

Pollutants can get into runoff water from many sources. Spills/leaks from storage containers, vehicles and vehicle repair areas, and material storage areas can be prime problem areas, among others. Good housekeeping, preventive maintenance of equipment, spill prevention techniques and a vigilant workforce are the best ways to prevent a pollution problem from occurring.

If you see a possible pollution-causing problem, contact your supervisor immediately. If you discover a leak/spill or other pollution problem, in progress or already happened, contact the Control Room immediately.

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## Material Safety Data Sheets (MSDS)

Obj. 6

Material Safety Data Sheets (MSDS) is a document provided by the manufacturer, which contains the chemical material product information. Material Safety Data Sheets (MSDS) are available on the Cooper Nuclear Station LAN driven desktop PC, in the Chemistry office, or contact your supervisor, to review a Material Safety Data Sheets (MSDS).

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## Cooper Nuclear Station Program (© 2)

RCR2003-1458 #6/Order4353863

Obj. 28

A chemical material is any liquid, solid, or gas that through general or special use, handling, storage or disposal, has the potential to impact the health and safety of plant personnel or the environment, or cause materials degradation. Chemical materials include, but are not limited to the following: acids, adhesives, biocides, caustics, cleaners and disinfectants, coatings, compressed gases, corrosion inhibitors, dyes, fuels, herbicides, laboratory reagents, lubricants, marking materials, pesticides, sealants, solvents, surfactants, and welding fluxes.

Procedure 0.7, "Chemical Material Control," provides for control of chemical materials used at Cooper Nuclear Station and applies to all personnel who issue, use or dispose of chemical materials on this site.

Controlling how we use chemicals at Cooper Nuclear Station is very important because many chemicals can cause serious damage to the reactor systems and other plant equipment. Chemical control helps to ensure the correct chemical material is used in the correct application. In addition, chemical control helps to protect you the worker, public, and the environment.

Procedure 0.7.1 provides general information on the use, transportation, and storage of transient combustible materials at Cooper Nuclear Station. Combustible materials are any materials, which will burn, or smolder and may serve as a fuel for a fire such as paper, plastic, rubber hose, oil, paint, wood, etc. This procedure outlines the transient combustible material limitations for the varying Combustible Control Zone Levels of the plant.

Procedure 0.7.1.1 provides general information on the use and approval of Flammable Materials Storage Lockers. They are intended for temporary storage of flammable and combustible materials.

Most should have a hazards label either featuring the NFPA “Diamond” or a list of the NFPA hazard categories by their color code. In addition, these labels indicate whether or not materials are approved for critical use as an “X” will appear on the line next to the term “Critical use Approved”.

Procedure 0.7.2 outlines the methods and procedures to be used for handling and controlling hazardous material/waste at Cooper Nuclear Station. Hazardous Materials is defined as a substance or material, which has been determined to be capable of posing an unreasonable risk to health, safety, and property; a substance which by its nature, containment, and reactivity has the capability to inflict harm. By looking at the NFPA rating anything with a 3 or higher rating in any category is considered a Hazardous Material.

Procedure 0.7.3 provides general guidance for proper storage of chemical materials used at Cooper Nuclear Station. The Material Safety Data Sheet (MSDS) is an important tool that provides information on storage of chemical materials. There is a restriction for hazardous material storage of a “raw chemical” within containers. Unless specifically exempted the quantity must be less than 100 pounds. (Limited by USAR)

Some chemical materials have been determined to be safe to use at Cooper Nuclear Station. They normally have no detrimental effect on the reactor systems or other plant equipment. These materials are called “Critical Use Chemicals.” They should be your first choice for use, if they will do the job.

To use a chemical material other than a Critical Use Chemical on a job, you must get special permission, called a Chemical Permit, from the Chemistry Department. Talk with your supervisor and refer to Procedure 0.7 for details on this process. The chemical material may only be used for the job specified by the Chemical Permit. Contact Chemistry about how you dispose of any left over material. Never let the material enter a plant drain or sump.

When there is a need for a specific chemical material, neither used nor stored on-site and there is no viable substitute already on “Approved Chemical List,” then obtain a Material Safety Data Sheet (MSDS) for the desired chemical and complete Attachment in procedure 0.7. This attachment requires the appropriate approval signatures before the material may be acquired.

All chemical materials arriving on site shall be receipt inspected by the warehouse and must be accompanied by a Material Safety Data Sheet (MSDS). This includes all chemical materials being brought on site with/for Supplemental personnel. Under no circumstance is a chemical material to be stored, transferred, or used in such a condition that the contents of a container cannot be positively identified.

Cooper Nuclear Station uses the National Fire Protection Association (NFPA) labeling system. The NFPA system uses a diamond-shaped color diagram of symbols and numbers to indicate the degree of hazard associated with a particular chemical or material. These diamond shaped symbols are placed on containers of chemicals or materials to identify the degree of hazard associated with the chemical or material. The diamond-shaped symbol is broken into three color coded categories of hazard for each material: BLUE section for health hazard, RED section for flammability, YELLOW section for reactivity, and a fourth WHITE section for other hazard information. Each category will have a number ranging from 0 to 4. Zero (0) used to indicate no special hazards and four (4) for severe or extreme hazard potential. Some Material Safety Data Sheets will also use a similar HMIG (Hazardous Material Identification Guide—or also known as HMIS Hazardous Material Identification System).

This labeling system uses the same color hazard sections and rating scale except it is arranged in a column format not a diamond-shaped. The main difference between these labeling systems is the NFPA system is based on assuming a fire is present. (©2)

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## In-house Hazardous Container Labeling System

### Obj. 6

Manufacturers are required to attach warning labels to all containers of potentially hazardous substances. When these hazardous substances are transferred from the original labeled container to a receiving container, workers must ensure the receiving container is PROPERLY LABELED!

The label consists of the following:

- an information section containing the chemical name, stock #, MSDS number, and specific health/safety warning
- to dispose of chemicals, contact Chemistry personnel.

Contact Chemistry about how you will dispose of any left over material. If the material is rated as “hazardous” (3 or higher in any NFPA hazards category) or if the material would constitute hazardous waste upon disposal, contact the “Hazardous Waste Coordinator”.

**NEVER** allow any material to enter a plant drain or sump.

---

## Hydrogen

Injection of Hydrogen into the feedwater system is an established technique for preventing and reducing the growth rates of Intergranular Stress corrosion Cracking (IGSCC) in recirc and vessel internals. The Electrolytic Generation System located in the Hydrogen Generation Building provides the source of hydrogen and oxygen. It’s important to recognize a few basic safety precautions associated with this system.

Hydrogen is a flammable, colorless, odorless, gas that is much lighter than air. At certain concentrations it will pose an immediate fire and explosive hazards and may cause unconsciousness. Oxygen is an odorless, colorless but nonflammable gas; however, at above normal concentration levels, it accelerates combustion of other materials. An Oxygen enriched atmosphere may cause such things as oily rags, greases, and hydrocarbons to form explosive compounds. A strong caustic, Potassium Hydroxide (KOH), is used in the Hydrogen Generation Building. This caustic is very harmful to skin, eyes, and internal organs. Be sure to wear appropriate personal protective equipment (PPE).

When working in the Hydrogen Generation Building, intrinsically safe tools and equipment should be used. Proper PPE, special equipment, and other requirements may be necessary. During certain process conditions, pagers and cell phones may need to be removed or turned off before entry for work is allowed. Contact system engineer, project manager, job supervisor, or safety department for requirements when working in this building. Also, locate all safety equipment within the building before working.

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## **Industrial Safety Policies**

We discussed personal protective equipment and when it must be worn earlier in this lesson, but it's also important to wear this equipment properly.

A hard hat should be worn with the sides parallel to the ground and the bill in front except for limited applications where the bill of the hat interferes with the task. In such a case, the hat suspension may be reversed and the helmet portion worn with the bill at the back of the head, just for the duration of the task. It should not have holes or cracks or any conductive material on the outside. The suspension and hardhat should be periodically checked for fraying, tears, cracks, deep gouges and other damage.

Eye protection must meet American National Standards Institute (ANSI) requirements to protect from flying particles/debris and be shatterproof. Safety glasses with side shields, safety goggles, or face shields may be needed to meet these requirements. Your eye protection should be inspected periodically for scratches and cracks that may obscure vision or lessen protection. Additionally, you should clean your eye protection to prevent obscured vision.

Safety shoes in good condition SHOULD NOT have any of the following:

- crushed toe guard
- cracked, split, or cut outer covering
- cracks or holes in the soles
- slick heels or soles

They should fit comfortably to ensure proper support and protection.

Any safety incidents, injuries, or violations of industrial safety policies will be evaluated and discussed with the individual's supervisor. Disciplinary actions for blatant safety violations may include suspension or possible TERMINATION.

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## FIRE PROTECTION

### Fire Protection Objectives

Upon completion of this section, students should be able to properly respond to a fire should one occur.

7. State the actions an individual is required to take upon discovery of a fire, including the response to a plant fire alarm.
  
34. Recognize the importance of Combustible Control Zone Level (CCZL) 1 areas at Cooper Nuclear Station and why they exist.

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### Compensatory Fire Watches

NAIT 4-09217

(© 16)

Compensatory Fire Watches are trained - how to report a fire, how to recognize the classes of fire, and how a fire extinguisher functions. These watches are NOT expected to fight a fire unless it is clearly within their ability to extinguish. Most personnel who are badged can perform the function of compensatory fire watch. The supervisor must ensure you meet all your badging requirements.

Compensatory Fire Watches shall not perform Hot Work Fire Watch duties!

(©15)

Compensatory Fire Watches are established when fire suppression or detection systems, fire barriers (including fire doors, dampers, and penetration seals) are taken out of service.

A fire door is considered operable if it closes and latches properly, is physically undamaged (has no unfilled holes, etc.) and has no cables, hoses, or tubing, etc. routed under the door or through the opening.

---

### Discovering a Fire

Obj. 7

If you discover a fire, report it to the Control Room by dialing **911** or contacting them by the Gaitronics. Make sure you stay on the line until the Control Room acknowledges the information has been received.

- INFORM the Control Room of the location, magnitude and source of the fire, if you know.
  
- Upon notification, the Control Room will activate the SITE FIRE ALARM and announce the location of the fire. The station fire brigade will respond to the alarm. The fire brigade is responsible for providing quick assessment and suppression of fires.

- After reporting a fire, **STANDBY IN A SAFE LOCATION** and be prepared to provide information to the fire brigade. Information that would be needed would be: any personnel still in the area, work evolution in progress, hazards that may be in the area and possible source of the fire. If others are in the area, warn them of the fire. If no further assistance is needed, you should leave the area.
- **DO NOT** attempt to fight the fire unless it is clearly within your ability to extinguish. Wait for the fire brigade to arrive to put the fire out. Fighting a fire in the plant may not be as easy as it appears due to the electrical hazards, nuclear safety concerns, and chemicals that can be involved.

Fire-suppression systems may use agents such as carbon dioxide and halon in several areas of the station where there is the potential for serious fires. Gaseous fire-suppression agents or their by-products can cause suffocation if you remain in the area. Should you be in an area when one of these systems activates, **LEAVE** the area immediately and **REPORT IT** to the Control Room. Before you begin work in these areas assure you understand the audible and visual alarms denoting a pending discharge and know the location of your exits.

---

### Using Portable Fire Extinguisher

Report the fire first and then attempt to fight the fire if it is clearly within your ability to extinguish. However, if the fire appears too large to handle or is spreading quickly, evacuate the area and wait in a safe location for help to arrive.

---

### Classes of Fires

You need to know what type of fire is burning in order to choose the proper **FIRE EXTINGUISHER**. Fires are classified according to the substances burning:

**CLASS "A"** - Involves ordinary combustible material such as wood, paper, plastic, or trash. A multi-purpose type A-B-C dry chemical extinguisher or a pressurized water fire extinguisher can be used to fight a small class "A" fire.

**CLASS "B"** - Involves flammable or combustible liquids or gases (gasoline, grease, solvents, etc.). Can be extinguished using a type A-B-C dry chemical extinguisher, carbon dioxide extinguisher, or halon fire extinguisher.

**CLASS "C"** - Involves energized electrical equipment. When fighting a class "C" fire it is important to de-energize the electrical equipment. Once de-energized, the remaining fire is either class "A" or "B".

Energized electrical fires can be extinguished by using a type A-B-C dry chemical extinguisher, carbon dioxide, or halon extinguisher. Carbon dioxide or halon is the preferred extinguishing agent when fighting a class "C" fire.

---

## Use of Portable Fire Extinguisher

The following are some helpful tips when using a portable extinguisher:

- Prior to using ANY fire extinguisher read the label and ensure you are using the properly rated extinguisher for the type fire AND you are the correct distance from the fire to effectively put it out (usually 8-12 feet).
- Remember the word PASS:
  - P - pull pin and test extinguisher
  - A - aim discharge horn at base of flames
  - S - squeeze the discharge handle
  - S - sweep fire with a side-to-side motion
- Do not let the fire get between you and your means of escape. Never turn your back on a fire - **always back away.**

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## Combustible Zone Levels and Areas

Ⓔ 8 (CR-CNS-2007-03571 CA11)Ⓔ 19 (CR-CNS-2008-05767 CA165)

Combustible Control Zones are defined plant areas established to indicate levels of controls required based on potential fire related damage to plant components. Combustible Control Zone Levels (CCZL) are listed for various plant areas/fire zones in Attachment 2 of 0.7.1 Control of Combustibles. The flowchart in Attachment 1 of 0.7.1 indicates when a Transient Combustible Evaluation is required.

Obj. 34

Combustible Control Zones Levels are defined as:

- Level 1 Area is a fire sensitive area of the plant where Transient Combustible loading is prohibited unless evaluated and approved.
- Level 2 Area is a plant area where combustibles are permitted, but only with strict combustible controls
- Level 3 Area is a plant area where formal combustible controls are in place, but to a lesser extent than a Level 2 area.
- Level 4 Area is an area where there are no formal combustible controls. Standard industrial housekeeping practices are sufficient to control fire hazards due to combustible materials. Ⓔ 8

Ⓟ 19

A Transient Combustible Evaluation is required for any transient materials that will be left unattended in a Combustible Control Zone Level (CCZL) 1. Most CCZL level 1 Areas are areas where exemptions from 10 CFR50 Appendix R have been granted by the NRC. These exemptions were approved based on various defense in depth, methods of preventing and/or rapidly detecting fires, including the limited use of combustible materials in the areas. The use of Transient Combustible Evaluations ensures the proper tracking of transient combustibles in these combustible sensitive areas.

While a Transient Combustible Evaluation is not always required in Level 2 and 3 areas, an evaluation may be required, dependant upon the quantity of materials being introduced into the area. These quantify limits are documented in 0.7.1 and Fire Protection may be contacted for assistance in determining if an evaluation is needed. Ⓟ 19

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## **Fire Alarms**

Obj. 7

Various types of audible alarms (horns, buzzers, and bells) are located throughout the station.

These are warning alarms for the various local fire and detection systems. If you should hear any of these LOCAL (alarms in the building) fire alarms, LEAVE the area immediately and NOTIFY the Control Room. Do not use an elevator in the same building as the fire.

The fire brigade will respond to the fire. All other personnel should stay out of the fire area in a safe location.

Should you hear the STATION (alarm over the gaitronics) fire alarm, LISTEN to the instructions and FOLLOW them.

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## **QUALITY PROGRAM**

### **Quality Program Objectives**

Upon completion of this section, students should be familiar with the purpose of the quality program, how the program is accomplished, and how to report quality-related problems.

8. Identify potential items of noncompliance and state how to report items of noncompliance.

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## Reporting Potential Items of Nuclear Safety Noncompliance

### Obj. 8

A nuclear safety noncompliance item is any item that does not meet regulatory requirements. Examples of reportable items include:

- an incorrect part installed
- a safety-related valve out of position
- use of an outdated procedure
- a fire barrier that has been left out of position

A specific list of nuclear safety noncompliance items can be found in the plant administrative procedures that govern this program.

### **Identification**

Plant management encourages you to report any potential problem or concern that you may find. Identifying and resolving problems are key ingredients for a successful plant. If you discover a problem in the plant, you should:

- DISCUSS the problem or concern with your immediate supervision, management or Vice President Nuclear
- if desired/required, DOCUMENT the problem with a Condition Report (CR).
- if the employee feels uncomfortable with the above avenues, the employee may contact any of the following at any time (not listed in any order or preference): Quality Assurance, Human Resources, Security, Industrial Safety, Radiological Protection, Purchasing, Employee Concerns Program, or the Nuclear Regulatory Commission.

### **Quality Control (QC)**

With the exception of some staff augmentation, typically during outages, Cooper Nuclear Station employs a Peer QC Program whereby certified staff personnel (mostly craftsman) are assigned to independently conduct Quality Control inspections of tasks performed by their peers. Cooper Nuclear Station Management endorses independence of Quality Control Inspectors, and expects them to have and exhibit the necessary authority and organizational freedom to assure tasks are performed to the appropriate quality standards.

Personnel assigned QC Functions shall not perform, or be in direct supervision of, the activity being inspected. ANY ACTIVE PARTICIPATION IN THE STEP(S) REQUIRING INSPECTION SHALL BE AVOIDED. Involvements that may affect the performer's responsibility to read, understand, and act upon the instructions (i.e., reading instructions to the performer) would not allow the QC Inspector to maintain the require independence.

Within the context of work instructions, specified tasks have been identified as requiring application of Quality Control. The following terms are commonly used to implement Quality Control Inspections.

### **QC Validation**

QC Validation does not require the presence of the certified QC Inspector, and work does not have to stop at the validation step. Satisfactory inspection can be accomplished at any convenient time after work completion, provided it is accomplished prior to a specified step or section of the work document.

**IF YOU ARE NOT CERTIFIED AS A QC INSPECTOR, DO NOT SIGN QC SIGNATURE BLANKS!**

If questions arise regarding application of Quality Control, contact your supervisor. If your supervisor is unable to answer your questions for which you still require response, contact the Cooper Nuclear Station Quality Control Coordinator.

### **QC Coordinator**

Reviews records of qualifications of individuals and prepares and maintains documents necessary for certification.

Provides independent assistance to a QC Inspector to resolve matters of concern to the Inspector if the QC Inspector has been unable to resolve a matter of concern to his satisfaction.

The QC Coordinator does not act as the Supervisor to the QC Inspectors. However, an exception occurs during outages, when the QC Coordinator may administratively supervise Supplemental QC personnel.

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## PLANT SECURITY

### Plant Security Objectives

Upon completion of this section, students should be able to enter and exit the plant and comply with plant security requirements.

9. Recognize the types and purpose of each photo identification badge in use at the plant.
10. Describe the procedure for entering and exiting the protected area including the use of security portals such as those found in vital areas.

---

### Isolation Zone

This is an area on each side of the Protected Area fence. It is kept clear of all objects to permit security an unobstructed view. Employees are to stay out of the Isolation Zone. If your work requires entry, notify Security first.

Certain entrances to buildings at the station are now secured with gates equipped with two-handed mechanisms. The gates are not locked, but you will need two hands to open them. That means it will take a little extra time to enter the building. That's the whole purpose of the mechanism. To operate the mechanism, grasp the top lever, and push down until the lever reaches the end of its travel. While holding the top lever down, grasp the bottom lever and push it all the way down to the end of its travel. If you try to operate both levers at the same time, the gate will not open. While holding both levers down, pull the gate open, and enter the building.

Certain gates will have keypad locks on them. If you are going away from the power block, you will just turn the knob and the gates will open. But if you are going toward the power block, you will need to enter the code combination before the latch will release.

For example, if you are walking from the Admin building to the Craft Change building, you will be able to get there without having to unlock any gates. But if you want to go from the Craft Change to the Admin building, you will have to enter a five-digit code to open the gate. **Remember: you must close all gates behind you!** Other gates will have padlocks and chains. There will be signs on all the gates reminding you what the combination is. The objective of the gates and floppy fence is to slow the flow of traffic in toward the power block.

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## Badges

### Obj. 9

The station uses security badges for access and identification purposes. The types of security badges:

**Green Badge** - A visitor badge. The visitor badge does not require any background investigation. However, an authorized individual with proper communications while inside the protected area and vital areas must escort anyone wearing a visitor badge. Every escort must have an approved cell phone/radio before they will be allowed to enter the protected area with visitors or tour guests.

**Red and Yellow Badge** - Badges that allow unescorted access to the plant. The specific areas of the plant that may be entered are based on the need of the individual and entry into the protected area of the plant requires completion of this Training lesson.

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## Code Red and Code Black

When you hear the terms **CODE RED** or **CODE BLACK** on Gaitronics, these are security terms meaning a security threat to the plant exist, which requires an immediate security response. Seek cover immediately in office areas or rooms with locking doors. If you are in a vital area stay there and seek shelter away from vital area doors, stay out of open areas and listen for further announcements. Security personnel will be running in the plant. If you find yourself in a hallway or outside area go to the nearest building or room and listen for instructions, **DO NOT MOVE ABOUT IN THE PLANT.**

If the plant is in a situation that includes a “Credible Insider” threat the “Line of Site Rule” will be implemented. This rule requires two-person access to all vital areas. Those two persons must remain in sight of each other while inside the vital area and be cognizant of tasks(s) being performed. Security personnel will be near the entrances to vital areas to brief personnel of “Line of Sight Rule” requirements.

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## Searches

If an alarm is received in an explosive detector you will be given a pat-down search. For alarms received from the metal detector you will be asked repeatedly to step back and attempt to clear the detector until you successfully pass the detector. Exemptions to the metal detector processing include medical metallic implants and approval from the on-duty Security Shift Supervisor.

A security officer can search any individual that appears to be acting in a suspicious manner or appears to be trying to introduce unauthorized material into the area. Any individual refusing to be searched will be denied access and Cooper Nuclear Station Security Management will be notified.

If no officer of the same gender is available and person to be searched gives permission, an officer of opposite gender may give patdown if monitored by a Supervisor. Security will ask permission before giving a pat down. If you refuse, access will be denied.

In order to ensure Cooper Nuclear Station operations are conducted in a secure and safe manner, and to control, protect, and conserve District property, all employees with access to the Cooper Nuclear Station Protected Area and their personal belongings, are subject to search by Security Personnel upon entrance to or egress from the Protected Area. The primary reasons for these searches are:

- Enforcement of the District's Fitness For Duty Policy of maintaining a safe and drug free environment.
- Enforcement of the District's procedures for controlling contaminated materials.
- Control, protection, and conservation of District property.

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## **Entering the Protected Area**

Obj. 10

You must use the following procedure for entering the protected area:

- Enter the Security Access Control building at the designated entrance.
- Before entering the explosive detector, be certain an officer is present in the access area and is watching you enter. If you attempt to enter without an officer observing you, you will have to go back and start over again.
- Place coats, jackets, sweaters, sweatshirts, etc., all hand-carried items, all headgear, and metal objects in a container and place the container on the conveyer belt of the X-ray monitor.
- Step into the explosive detector and you will hear verbal as well as visual cues advising you to enter. You will step into the detector and remain for 13-15 seconds until a verbal as well as visual cue will ask you to exit. Failure to clear this detector requires the individual to be subject to a hands-on search prior to entry.

- Walk through the metal detector. If a metal alarm is received, the individual shall be instructed to remove all metal objects (including shoes, if applicable) and process through a metal detector again.
  - You will be required to pass the metal detector unless you have declared that you have undergone a medical implant procedure that will not allow you to pass the detector. Upon determination by the Security Shift Supervisor that a metallic implant exists or for other unforeseeable reasons, the individual will be searched with a hand held metal detector to verify that the individual has no further metal objects on their person.
  - Log in on the card reader at the entry turnstile by inserting the security badge with the photo facing UP.
  - Remove the badge and watch the LED readout on the Hand Geometry Unit. When it reads "Place Hand," place your hand in the Hand Geometry Unit the same way you did when your hand was first scanned.
  - When the Hand Geometry Unit/computer determines that you are the person identified by your badge, it will unlock the turnstile. When you hear the turnstile unlock (click) you may proceed into the Protected Area.
  - If the turnstile does not unlock, observe the Hand Geometry Unit LED readout and do what it instructs you to do. It may instruct you to place your hand in the Unit again or it may display some other message. If you continue to experience a problem, speak with the security officer.
- 

### **Exiting the Protected Area**

Exit through the Security Access Control building. Personnel exiting the protected area are required to clear the portal monitors at the security building. Step into the portal monitor, with both feet on the platform. If the portal alarms, attempt a second passage. If the monitor alarms a second time, contact Radiation Protection. If the monitor does not alarm, the individual may proceed.

At the exit turnstile, insert your badge into the card reader with the photo facing up and remove. If you receive a red light, you must contact security prior to exiting. When the turnstile unlocks (clicks), pass through.

## Entering Vital Areas

Personnel requiring unescorted entry to vital areas must possess a security badge and be properly zoned for that area. An authorized individual must escort visitors needing to enter a vital area. If you are not certain if you have authorization for unescorted entry into a vital area, check with security before attempting to enter.

Log in on the card reader at a vital area by inserting the security badge with the photo facing UP. Insert your badge into the card reader. Once you get the signal (green light on the card reader), you may enter. ENSURE all doors are closed and latched after you pass through.

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## Exiting Vital Areas

Press the palm switch, push the door open and exit. Card out of the vital area by inserting your badge into the card reader and removing it. Do not turn the doorknob, as it will cause an alarm.

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## Reactor Building

Entering and exiting the Reactor Building requires more care than other vital doors since the entire Reactor Building is both a vital area and serves as a second barrier to contain the escape of radiation in the event of an emergency (referred to as Secondary Containment). There is an inner and outer door, with a room in between that makes up the airlock entrance. Only one door can be opened at a time; this ensures the building remains sealed and leak tight at all times. This applies to ANY set of double doors you encounter in the reactor building or that are posted as Secondary Containment boundaries. Never push, pull, or try to force the airlock doors as this can damage the door seals or the door interlock mechanisms.

The Reactor building outer and inner doors have a door with a window for you to look through to the second door to assure that it is closed before you open your door to enter or exit the Reactor Building. To enter the building, check that the inner door is closed and place your hand on the window of the outer door; this alerts others that you are about to open your door. Proceed to card into the vital area as described earlier. Ensure that the outer door is closed (do NOT pull it shut) before opening the inner door.

To exit the Reactor Building, ensure that the outer door is closed before opening the inner door, place your hand on the window, and then enter the airlock. Ensure the inner door closes (do NOT pull it shut), press the palm switch and push the crash bar on the outer door with the window to open it. Pushing the crash bar on the doors without pushing the palm switch defeats the interlock system, which stops the doors from opening when they are not supposed to. Now card out as described earlier.

If moving equipment through the Reactor Building airlock room, care must be used to make sure that the seals on the doors and/or the door threshold are not damaged. Damage to either of these could result in increase secondary containment leakage to the point of secondary containment failing a leak test. A metal ramp is located inside the airlock. Place this ramp over the door's threshold to ensure that dragging carts or equipment over them does not damage the seals. Carts or equipment with pneumatic tires can enter the reactor building without use of the ramp and will not result in damage to the door thresholds. Proceed as described earlier.

**CR-CNS-2008-08695, Action #14 (© 17)**

It is the responsibility of all station personnel to ensure that doors close as designed whenever traversing through a door that is required to be closed. To ensure a door closes as designed and not damage the door closure, never push/pull on the door when the door is trying to close. Once the door closes, self-check by gently pushing or pulling to ensure it is latched. Do not turn the door knob when checking to see if the door is latched as Security may receive an unexpected alarm on security doors.

**RCR2002-0058, Action #1 (© 10)**

The inner railroad airlock door was being left open for long durations while no work was being performed. Do NOT open both airlock doors at the same time. In the event that it is necessary to make multiple entries into the airlock for the same job, it will not be necessary to fill out a separate attachment from Procedure 7.0.10 for each entry. Should the same job continue for more than 24 hours, it will be required that a new attachment be filled out for each day's work. Placards have been installed on the inner door of the railroad door of the railroad airlock doors that identifies the door to be closed at the end of each shift, unless work is on going into the next shift and the door is required to be open. © 10

**Visitors**

**Commitment #1**

**(© 1) CNSS933505**

**IR 50-298/92-22**

- If you need to escort visitors into the Radiologically Controlled Area (RCA) or Satellite Area, the Visitor Access Request form is required. You may also be escorting tour groups into the RCA or Satellite Areas. In either case, the escort shall take the visitors/Tour members to Dosimetry for appropriate dosimetry.
- When entering/exiting the protected area or a vital area, the escort enters first and exits last.

**NOTE:** In October 1992, at Cooper Nuclear Station, an individual with escort responsibility did not exercise and maintain control of a visitor while the visitor was working within the protected area in that the escort did not keep the visitor in sight while the visitor was in a room with multiple exits.

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### **Camera and Photography Requirements**

Cameras (aside from the fixed Security cameras **or camera cell phones**) are not allowed inside the Protected Area without a camera pass which is acquired by completing a form and submitting it to Security so they can issue a pass (if the request is authorized/approved). **While camera cell phones are allowed on site, it is strictly prohibited to use the camera cell phone for picture taking on site.**

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### **Personal Defense Spray**

Personal defense products such as OC (pepper spray), Mace (tear gas) and other similar chemical products used for self defense are not allowed in the Protected Area.

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## EMERGENCY RESPONSE/PREPAREDNESS

### Emergency Response/Preparedness Objectives

Upon completion of this section, students should be able to respond to Emergency Plan activation.

11. Recognize the site emergency alarms and state the proper response for each.
12. State the actions which non-ERO personnel may be directed to take in the event of an Alert or higher emergency.
13. State the location of the plant's Emergency Response Facilities (TSC, OSC, EOF, CR and JIC).
14. State where non-ERO personnel will be re-assembled if evacuated from Cooper Nuclear Station.

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### Employee Response

#### Obj. 11

The Control Room will make a Gaitronics announcement anytime an emergency has been declared. At the Alert classification or higher the station is required to activate the Emergency Response Organization (ERO) and non-ERO will be assembled outside the Protected Area. Additional training is given to individuals serving on the Emergency Response Organization. The Emergency Director also has the option to direct Assembly and Accountability at a Notification of Unusual Event classification.

An emergency alarm is sounded at all classifications to inform personnel that an emergency exists. The emergency alarm consists of a distinct steady-tone sounded over the Gaitronics system. The alarm will be sounded followed by an announcement. The alarm will be sounded again and the announcement repeated. Follow all instructions included in the announcement.

The fire alarm is a pulsed tone. The all clear is an up-and-down tone. Follow instructions in the announcements for these alarms also.

Certain high-noise areas may have amber strobe lights to augment the audible alarms. If you see a strobe light flashing, immediately move to an area where you can hear the announcements. Follow all instructions in the announcement.

Obj. 12

In the event of an Alert or higher classification, all non-ERO personnel will be assembled in the West Warehouse Addition and then may be either dismissed to go home, or be evacuated to an off-site re-assembly area.

If you are working inside the Protected Area when an announcement is made to assemble, and you are not a member of the Emergency Response Organization, do the following:

- listen to the announcement and follow all instructions
- place any equipment you may be using or task you are involved in, into a safe condition
- if you are working in the Radiologically Controlled Area (RCA), exit using normal procedures
- if you are escorting visitors, escort them to security

OLCR 2004-007 © 8

- assemble in the West Warehouse Addition. (©8)
- if directed to **dismiss**, proceed immediately and go directly to your home
- call the number provided prior to your next work shift.

OR

- if directed to **evacuate**, proceed immediately, by the route designated, to the off-site assembly area in Auburn. Park in the lot and **REMAIN IN YOUR VEHICLE** until released.

RCR2002 2419

(#10) (© 7)

- the off-site assembly area is located at the Nemaha County Maintenance facility on 27<sup>th</sup> street in Auburn. Maps will be provided as you leave. (©7)

Obj. 13      **Emergency Response Facilities (ERF)**

The Control Room (CR), Technical Support Center (TSC), Operations Support Center (OSC), Joint Information Center (JIC) and the Emergency Operations Facility (EOF), are the plant's Emergency Response Facilities and are the Designated Assembly Areas for Emergency Response Organization members. The Control Room is located in the Control Building, 932' elevation and is the Designated Assembly Area for "qualified" Operations personnel within the Protected Area. The TSC and OSC are located on the 903' elevation of the Administration building. The EOF and JIC are located in Auburn at 902 Central Avenue.

Obj. 14

- Non-Emergency Response Organization (ERO) personnel evacuated from the site will be re-assembled at an off-site location for monitoring prior to release. The primary re-assembly area for evacuees is the Nemaha County Maintenance facility on 27<sup>th</sup> street in Auburn. (©7)

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## **RADIOLOGICAL ORIENTATION**

### **Required Notifications**

Doctors in medical centers use radioactive materials routinely. Most nuclear medicine procedures are diagnostic; they attempt to determine the nature and extent of a medical problem in a patient. Typical examples would be a thyroid scan or a lung function test. If your doctor uses this type of procedure you are required to notify your supervisor and Radiological Protection Supervision prior to reporting to Cooper Nuclear Station for work.

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### **Declared Pregnant Woman**

Cooper Nuclear Station will, upon receiving a declaration of pregnancy in writing, provide work options to the pregnant woman (or the woman intending to become pregnant) or to assure that her dose complies with this limit.

Pregnancy Term (TEDE) - declared pregnant 0.450 Rem woman (Term of the pregnancy)

A Declared Pregnant Worker is a woman who has voluntarily informed Nebraska Public Power District, in writing, of her pregnancy and estimated date of conception.

Documented medical proof of pregnancy is not required.

When a woman determines that she is pregnant, she may immediately declare in writing, on a Declaration of Pregnancy Form (available from Radiological Protection) to her supervisor and Radiological Protection (RP), that she is pregnant. In this way, additional measures may be taken or considered to further minimize dose to the embryo/fetus. Federal regulations also prohibit discrimination on the basis of sex at any Nuclear Regulatory Commission (NRC) licensed facility.

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## **FITNESS FOR DUTY**

### Fitness for Duty Policy

The Cooper Nuclear Station Procedure 0-FFD-01, Nuclear Power Group (NPG) Fitness for Duty Program objectives is:

To assure the detection of alcohol and drug abuse, and other behavior that may be a potential threat to interrupt the normal operation of the utility. This program is designed with the objective of assuring that Supervisors and Management personnel perform behavior observations designed to detect individual behavioral changes, traits and patterns that, if left unattended, could reflect adversely on their trustworthiness or reliability and lead to acts detrimental to the public health and safety.

If you do not feel that supervision/security is giving the situation sufficient attention, go to higher levels of management until the response is appropriate.

Sleeping during working hours is strictly prohibited at Cooper Nuclear Station:

Sleeping during working hours is strictly prohibited at Cooper Nuclear Station and includes all areas of the Owner Controlled Area and Protected Area. This includes lunch and any other allowable break periods. Any individual who violates this requirement may be required to submit to a medical evaluation to determine whether the individual has medical condition causing or contributing to the individual's inability to comply with this requirement. Additionally, violation of this requirement may result in disciplinary action up to and including discharge from employment.

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## Sleep Disorder Drugs

2007-8439 Action #2 © 13

On March 14, 2007, the FDA requested that manufactures of sleep disorder, or “sedative-hypnotic” drugs strengthen their product labeling to include stronger language concerning potential risks. These risks included “complex sleep-related behaviors, which may include sleep-driving.”

In addition to the complex sleep-related behaviors noted above, there are other potential side-effects. For example, one drug had the following side effects: more outgoing or aggressive behavior than normal, confusion, strange behavior, agitation, and hallucinations.

Below are the drugs listed in the NRC Information Notice 2007-31:

Ambien/Ambien CR  
Butisol Sodium  
Carbrital  
Dalmane  
Doral  
Halcion  
Lunesta  
Placidyl  
Prosom  
Restoril  
Rozerem  
Seconal  
Sonata

There is no regulatory requirement that prohibits personnel Unescorted Access Authorization from taking the properly prescribed sleep disorder drugs listed above.

The Behavior Observation Program (BOP) plays an important part in satisfying the FFD requirements of 10 CFR Part 26 by looking for behavior that would indicate impairment by any cause that would adversely affect an individual’s ability to safely and competently perform his or her duties.

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## **CORRECTIVE ACTION PROGRAM (CAP)**

### **Corrective Action Program Objectives**

Upon completion of this section, students should be aware of the importance of the Corrective Action Program at Cooper Nuclear Station.

15. Identify the purpose of the Corrective Action Program.
16. Identify when a problem should be immediately reported to the Shift Manager.
17. Identify the individual who may originate a Condition Report (CR). [CAP related Notification].
18. Identify the importance of evidence preservation.
19. Identify key points of writing an accurate Condition Report (CR).

The Corrective Action Program (CAP) is designed to provide a means of problem identification and resolution at Cooper Nuclear Station. Key aspects of this program and management's expectations of all employees includes:

1. Employee problem reporting - the attitude of every individual to report any condition(s) that are adverse to quality. It is important to plant and personnel safety that each employee recognizes the importance of identification and resolution of any condition(s) that may be adverse to quality and, furthermore, that timely resolution requires prompt condition reporting.
2. Positive aspects of the Corrective Action Program (CAP) - the attitude of every individual that prompt problem reporting followed by timely resolution will result in an increase in plant and personnel safety.

The Operating Experience Review (OER) Program strives to capture and implement improvement from lessons learned both at Cooper Nuclear Station and at other utilities in the industry. Further, the program serves as the primary vehicle for notifying other utilities of conditions or events that occur at Cooper Nuclear Station that may have generic implications to others in the industry. Routinely asking the question "What can we learn from this industry event or condition" and implementing effective barriers to prevent similar occurrences at Cooper Nuclear Station can only assure the long-term effectiveness of the Operating Experience Review (OER) Program.

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## Purpose of the Corrective Action Program

Obj. 15

The purpose of the Corrective Action Program is to provide a method to ensure that significant conditions adverse to quality, as defined in 10CFR50 Appendix B, are identified, evaluated for cause, and corrected to prevent recurrence. The program also provides a method to ensure that conditions adverse to quality, as defined in 10CFR50 Appendix B, are identified and corrected.

The 0.5 series procedures define specifically what type of issues the Corrective Action Program (CAP) should address by the CAP. It further includes site issues in procedures, processes, human performance and equipment issues.

The Corrective Action Program provides a means to correct problems at Cooper Nuclear Station through **IDENTIFICATION** ("Condition Report/Notification"), **CLASSIFICATION** (Condition Review Group "CRG"), **EVALUATION** and **IMPLEMENTATION** (Condition Report), and **REVIEW** (Corrective Action Review Board "CARB", and Responsible manager and Trending (CAP Trending)).

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## CORRECTIVE ACTION PROGRAM ADMINISTRATION/OPERATION

### Identification

Problem Identification and Resolution, Administrative Procedure 0.5.

The Corrective Action Program provides a method to ensure that significant conditions adverse to quality, as defined in 10CFR50, Appendix B, are identified, evaluated for cause, and corrected to prevent recurrence. The program also provides a method to ensure that conditions adverse to quality, as defined in 10CFR50 Appendix B, are identified and corrected.

Degraded or nonconforming conditions discovered during plant operation must be assessed for impact to operability and safety.

**EVERY EMPLOYEE IS RESPONSIBLE FOR THE SUCCESS OF THE CORRECTIVE ACTION PROGRAM.**

**IN THE INTEREST AND SUPPORT OF OPERATIONAL SAFETY, IT IS INCUMBENT UPON EVERY EMPLOYEE TO HAVE A QUESTIONING ATTITUDE, MAINTAIN AN ACUTE ATTENTION TO DETAIL, AND REPORT CONCERNS TO SUPERVISION OR MANAGEMENT AS APPROPRIATE.**

The Condition Report (CR) may be generated via Paperless Condition Reporting System (PCRS) Database or manually. If generated manually, a form can be used to document the issue. The Condition Report is used to:

Identify any undesirable or questionable conditions at Cooper Nuclear Station.

Equipment related issues would be addressed via a condition report in the PCRS database.

### **Condition Report Initiation**

#### **Obj. 16**

Conditions requiring immediate action or affecting plant equipment shall be promptly reported to the Shift Manager. Examples of these types of conditions would be an inoperable fire door, a steam leak, missing fire protection equipment, water leaking from a radiologically contaminated system, or a system operability concern exists. For issues that are determined to affect or potentially affect equipment operability, the originator's supervisor or manager should review the issue with the Plant Engineering Department and Operations managers.

#### **Obj. 17**

**Any permanent or temporary Nuclear Power Group employee or Supplemental personnel working in direct support of Cooper Nuclear Station may originate a Condition Report.**

#### **Obj. 18**

The first step in Root Cause analysis is documentation and collection of evidence. As soon as possible following an event, steps must be taken to provide for evidence preservation, such as placing the area of the event in quarantine. Additionally documentation and evidence must be collected as soon as possible after the event to reduce the opportunity for unauthorized or unintended removal or alteration of the evidence/documentation.

If assistance is needed in completing a Condition Report, the originator should contact his/her Supervisor.

Remember, the program is designed to be an aid to the safe operation of Cooper Nuclear Station; therefore it is important that each individual accepts the responsibility of generating a Condition Report. Do not assume that someone else will complete the report or that some other department has the responsibility for that particular item or area.

If you are unsure whether the condition has been reported, contact the Control Room or Corrective Action Program personnel.

## **PREVENT A SIGNIFICANT PROBLEM FROM PROGRESSING FURTHER!**

When initiating a Condition Report, the Originator shall provide as much information that is as complete and clear as practical.

Pertinent documents should be attached as warranted for clarity.

Obj. 19

Four good attributes of a Condition Report.

1. Clear - Clearly states the problem so that anyone could understand the issue.
2. Concise – Problem should be explained in a few sentences or less.
3. Who, What, How, & When
  - Who have you notified? (not by name but by position)
  - What immediate actions have been taken?
  - How did you find it?
  - When did you find it?
4. Corrective Action - Recommend a fix for the problem identified.

To ensure proper categorization and resolution of the problem the following sections should contain the following information:

- **CONDITION DESCRIPTION** - The problem needs to be clearly stated. It should be concise and only as long as necessary. This section should contain facts describing the problem or questionable attributes. The problem should be written so that someone unfamiliar with the situation can understand the problem that needs addressed. Assumptions and speculations should not be entered.
  - The requirement not met needs to be very clear. Classification is dependent on this section. Some examples would be:
    - Technical Specifications violation
    - failure to meet a Nuclear Regulatory Commission commitment
    - failure to follow procedure
    - Updated Safety Analysis Report violation
    - Personnel Safety requirements
    - equipment not performing as expected, etc.

If the item is being identified as an improvement, enhancement, or to initiate another process, you should

enter “None” and enter the reason for initiation, enhancement or improvement item.

- The discovery method tells us if each department is finding their own problem. Describe how the problem was identified (e.g. event: during a procedure, plant walk down, and preventive maintenance).
- IMMEDIATE ACTION DESCRIPTION - It is important to document any actions that were taken to mitigate the consequences or to prevent recurrence until final resolution of the problem. State if evidence was preserved or quarantined. There are also many items that are resolved prior to the generation of the Condition Report. If they are documented in this section, these items can be closed based on actions taken and the item can be trended for future occurrences.
- SUGGESTED ACTION DESCRIPTION - Based on your knowledge and research, what do you feel are the appropriate actions to be taken. Examples would be: Perform Cause Analysis; Generate a Work Item for repair or replacement; Re-design; Close based on actions taken; review for previous occurrences; Raise Knowledge levels of performers; Revise documents such as procedures or drawings; etc.

## **Classification**

### Condition Review Group (CRG)

- The CRG is responsible for classifying Condition Reports according to their degree of significance.
- The Condition Review Group (CRG) will assign the Responsible Manager, and other actions that may be required to disposition Condition Report (CR).
- The Condition Review Group (CRG) is initially responsible for identifying operational constraints.

## **Evaluation and Implementation**

### The Responsible Manager

- Has overall responsibility for the disposition and closure of a Condition Report.

## **Review**

### Corrective Action Review Board (CARB)

- The CARB is responsible for assessing the adequacy of the cause evaluation, and the corrective action plan for Category “A” Condition Report.
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## Working Hours Limitations and Personnel Fatigue Management

Upon completion of this section, students should be aware of the working hour's limitations at Cooper Nuclear Station.

20. Identify to whom the Cooper Nuclear Station working hours limitations and Personnel Fatigue Management apply to.
21. Identify the consecutive hours worked limitations outlined in Cooper Nuclear Station Procedure 0.12, "Working Hours Limitations and Personnel Fatigue Management".
22. Identify the break limitations outlined in Cooper Nuclear Station Procedure 0.12, "Working Hours Limitations and Personnel Fatigue Management".
23. Describe **the weekly average of 54 hours, calculated using an averaging period of up to six (6) weeks (during online)** and minimum days off limitations **(during Outage)** as outlined in Cooper Nuclear Station procedure 0.12, "Working Hours Limitations and Personnel Fatigue Management".
24. Identify who, by position, can authorize a waiver to exceed the working hours limitations.
25. Identify the preferred method for documenting waivers to exceed the procedural hours worked limitations.

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## WORKING HOUR - USE AND LIMITATIONS

Procedure 0.12, "Working Hours Limitations and Personnel Fatigue Management", describes Cooper Nuclear Station requirements related to working hours and provides the method to approve waivers from the requirements.

The objective at Cooper Nuclear Station is to have a majority of the plant personnel work a normal 40-hour week while the plant is operating. However, in the event that unforeseen problems requiring substantial amounts of overtime, or during extended periods of shutdown for refueling, major maintenance or major plant modifications, on a temporary basis, the following guidelines shall be followed:

Use of overtime should be minimized; however, there will be cases such as relief for sickness, vacation, outage coverage, etc., where overtime is justified.

Nuclear Regulatory Commission guidance on working hours is provided in 10 CFR Part 26, Subpart I, "Managing Fatigue". The primary purpose of this guidance is to prevent situations where fatigue could reduce the ability of personnel to perform their duties.

Obj. 20

The Fatigue Management Program applies to all workers who are granted unescorted access or who are required to physically report to the Technical Support Center (TSC) or Emergency Operations Facility (EOF) in accordance with Emergency plans and procedures.

Working Hour Limitations apply to:

- Operating or onsite directing the operation of systems and components that are classified as Maintenance Rule Risk Significant (MRRS).
- Performing maintenance or onsite directing of the maintenance of systems and components that are classified as Maintenance Rule Risk Significant (MRRS).
- Performing the duties of a Radiation Protection or Chemistry Technician required as part of the minimum shift complement for the on-site Emergency Response Organization.
- Performing the duties of a Fire Brigade Leader.
- All supplemental employees who meet the definition of one or more of the above categories.
- Armed members of the Security Force, CAS/SAS Specialist, Security Shift Supervisors, and Watch persons (i.e., Watchman).

Procedure 0.12 establishes strict overtime limitations for all Nuclear Power Group personnel and supplemental personnel and specifies definitive personnel responsibilities when the procedural limitations are to be exceeded.

These limitations occur in three basic categories - hours worked, break and **weekly average of 54 hours (Online)** and minimum days off **(during Outage)**.

Obj. 21

**Hours Worked**

An individual shall not work:

- no more than 16 hours in any 24-hour period;
- no more than 26 hours in any 48-hour period;
- no more than 72 hours in any 7 day period

(All within shift break times, including lunch shall be included when calculating work hours).

Obj. 22

**Breaks**

- A break of at least 10 hours shall be allowed between work periods
- A rest break of at least 34 hours in any 9 day period.

(One period of shift turnover, either at the end or the beginning of shift, may be included in the break, but not both.)

Obj. 23

**Weekly average of 54 hours (Online) and Minimum Days Off (during Outage)**

During unit online- Individual may not work more than a weekly average of 54 hours, calculated using an averaging period of up to six (6) weeks, which advances by 7 consecutive calendar days at the finish of every averaging period.

- CNS established period for all covered groups is Sunday 0000 to Sunday 0000. When an individual's work shift starts at the end of a calendar day (e.g., Saturday 1800hrs) and concludes during the next calendar day (e.g., Sunday 0600am), CNS shall attribute the hours to the calendar days on which the hours are actually worked.

**Example:** A worker works a rotating shift that repeats after 5 weeks. The worker is just starting covered work while unit online so the first maximum averages work hour calculation would occur Sunday at 0000 at the end of his 5th week. The next Sunday at 0000 the next calculation would be performed that would encompass weeks 2 through 6. This calculation would continue to be performed each Sunday at 0000 covering the previous 5 weeks.

## Outage MDO

GROUP	8 HOUR SHIFT	10 HOUR SHIFT	12 HOUR SHIFT
Maintenance	1 day off/7 day period	1 day off/7day period	1 day off/7 day period
Operations, Radiation Protection Chemistry, Fire Brigade Leader/Advisor	3 days off/successive (i.e., non-rolling) 15 day period	3 days off/successive (i.e., non-rolling) 15 day period	3 days off/successive (i.e., non-rolling) 15 day period
Security	4 days off/successive (i.e., non-rolling) 15 day period	4 days off/successive (i.e., non-rolling) 15 day period	4 days off/successive (i.e., non-rolling) 15 day period

### Obj. 24

Waivers to the working hour's limitations can only be approved by the Operations Shift Manager for issues affecting safety or the Security Shift Supervisor for issues affecting security.

### Obj. 25

The preferred method for documenting and approving waivers is the electronic working hours tracking system, TimeWay™. If TimeWay™ is not available; the "Working Hour Waiver Request" in procedure 0.12 may be used.

All badged individuals have the right to self-declare that they are not fit-for-duty due to fatigue.

The process is:

Inform your supervisor that "I'm unable to perform my duties due to the effects of fatigue and I wish to self declare" or words to that effect. Just saying "I'm tired" is not sufficient. Your supervisor must be clear that you are self-declaring.

Your supervisor will follow the guidance in Procedure 0.12 for self-declarations.

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## PRECONDITIONING

### Preconditioning Objectives

Upon completion of this section, students should be aware of the preconditioning at Cooper Nuclear Station.

26. Identify example of preconditioning and non-preconditioning.
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Preconditioning is any activity performed on a structure, system, or component that affects the ability to obtain accurate as-found surveillance data used to meet acceptance criteria that demonstrate equipment operability.

Our philosophy on preconditioning is that we cannot take **ANY** actions that could invalidate "as-found" test data, thereby impacting a system or component's ability to function, as designed, during a design basis accident. We must ensure that acceptance criteria are met without any "help" from us. Lubricating, exercising, cycling, or conditioning a system or component before the test is conducted will always bring into question the results of the test data, because the system or component was "helped" to pass. As we conduct or observe testing, we always need to ask ourselves the preconditioning questions. If we don't, we can never be completely assured that the system or component will perform, as designed, in an accident situation. **If you find examples of preconditioning, promptly identify the problem to your Supervisor and generate a Condition Report to capture the problem.**

Obj. 26 Possible examples of Preconditioning

1. Manually cycling a circuit breaker prior to electrically trip testing the breaker.
2. Electrical or mechanical grooming activities such as tightening connectors or burnishing contacts prior to performing surveillance testing of the system.

Examples that are not preconditioning

1. A Preventative Maintenance (PM) activity done on a regular schedule to maintain equipment condition and operability is not preconditioning because the equipment is normally maintained to the level supported by the PM task.

2. Pre- and post-lubrication of diesel generators and venting of systems prior to starting them are not considered to be preconditioning because the system would perform its design function without pre-lubrication or venting.

These activities are performed because they contribute to equipment reliability by reducing wear and transients on the system.

3. Overhauling the diesel generators before sequential load testing is not considered preconditioning because diesel generator operability was previously demonstrated during the last monthly surveillance test.

An as-found load test prior to overhaul is not required. Overhauling the diesel generators before the sequential load test is a common industry practice.

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## QUALIFICATION

An individual is “qualified” to perform a job when he/she completes all the requirements specified in the program’s Training Program Procedure (TPP), and any other actions or requirements necessary for the person to perform the job independently.

It is important that each individual knows and understands what training requirements are necessary to be “qualified” to perform their job. The individual should talk with their supervision to learn about their Training Qualification Descriptions (TQDs) and any other actions/requirements necessary to become “qualified” for their job.

It is management’s expectation that each individual and his/her immediate supervision assure that the individual is “qualified” to perform a job before it is assigned.

Qualification status must be verified via the Web-based Qualification Matrix (located on most computer desktops) or through the use of SAP System using ZQUALS.

If you cannot access the Qualification Matrix or SAP, contact your supervisor or Supplemental Manager to verify your qualification for the specific task you are assigned to complete.

CR-CNS-2006-08444 and CR-CNS-2006-09253: (© 6)  
Operating Experiences (OEs)

Two employees entered the contaminated area on 1001” refuel floor on multiple occasions without having attended Radiation Protection Practical training. Two employees entered the Torus without qualification for Confined Space and FME Worker training.

The apparent cause was not verifying the qualification of individual workers prior to assigning them work. Site Administrative procedure states, “It is the responsibility of the requesting Supervisor/Superintendent to assure the individual is qualified prior to assigning the individual to independently perform the functions, duties or tasks related to Training Qualification Description (TQD).”(Ⓔ 6)

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## **FOREIGN MATERIAL EXCLUSION PROGRAM (FME) (Ⓔ18)**

Cooper Nuclear Station has implemented an Foreign Material Exclusion (FME) program to prevent the introduction of foreign material into system/components that could result in costly and preventable expenses, degradation or in- operability of systems, fuel damage, corrosion, increased radiation levels, and extended plant outages.

Foreign material is defined as any material that is not part of any system or component as designed. This includes, but is not limited to, dirt and debris, tools, equipment, paint chips, unapproved chemicals, or any other item or residue, which could affect the operation of the plant systems and components.

Signs placed around the boundaries of an Foreign Material Exclusion Zone (FMEZ) warn personnel that no one may enter the Foreign Material Exclusion Zone (FMEZ) unless they have proper authorization.

Foreign Material Exclusion (FME) procedures and guidelines apply to all personnel assigned to Cooper Nuclear Station, including Supplemental personnel performing work on plant systems, equipment, or components.

A Foreign Material Exclusion Zone (FMEZ), having physical boundaries with signs, may be set up around a work area that requires specific controls to prevent the introduction of foreign material into a system/component.

## **OE20324 - Steam Generator Tube Leak Due to Foreign Material Intrusion (Arkansas Nuclear One)**

Arkansas Nuclear One, Unit 2 shutdown earlier than planned for a refueling outage due to a tube leak in the "A" steam generator. A small piece of material approximately one inch long and less than an inch wide was found to have caused the leak.

### **CAUSES:**

Inspections of the steam generator revealed a piece of slate-looking metal shaped much like an arrowhead that had lodged tightly between the tubes. It was just over one inch long and less than an inch. The material created a small hole in a single perimeter tube. The piece of material was shipped off-site to be analyzed. The results are being reviewed by engineering personnel. The source of the foreign material has not yet been determined.

The steam generators had been replaced in a refueling outage that ended in December of 2000. The steam generators are manufactured by Westinghouse and have re-circulating tubes. The tubes are made from Alloy 690 material. There is no evidence to suggest that any corrosion processes had caused or contributed to the leak.

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### **Safety Conscious Work Environment (SCWE)**

SCWE is defined as:

"a work environment where employees are encouraged to raise safety concerns and where concerns are promptly reviewed, given the proper priority based on their potential safety significance, and appropriately resolved with timely feedback to the originator of the concern."

A SCWE is a subset of the CNS overall safety culture which is defined as:

"that assembly of characteristics and attitudes in organizations and individuals which establishes that, as an overriding priority, nuclear plant safety issues receives the attention warranted by their significance."

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## EMPLOYEE CONCERNS PROGRAM

### Employee Concerns Objectives

Upon completion of this section, students should be aware of the Employee Concerns Program at Cooper Nuclear Station.

27. Identify the program employees and supplemental personnel may utilize to confidentially or anonymously raise concerns about the operation of Cooper Nuclear Station.

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### Obj. 27

The Employee Concerns Program has been established to provide an alternate path for raising concerns where personnel may confidentially and anonymously raise issues that may affect safety, quality, or plant performance at Cooper Nuclear Station.

CNS Procedure 0.48 provides guidance for the implementation and use of the Employee Concerns Program. Posters at various locations in the Learning Center provide guidance on how to contact Employee Concerns.

Every worker is required by procedure to raise concerns at Cooper Nuclear Station through their chain-of-command, Corrective Action Program, Quality Assurance, Security, Safety, or any other available means. Alternatively, personnel may identify concerns through the Employee Concerns Program or directly with the Nuclear Regulatory Commission.

It is a top priority of CNS management to maintain an atmosphere that encourages all personnel to bring nuclear safety issues, quality issues, or any other issues that affect the performance of Cooper Nuclear Station to the attention of management.

Any form of retaliation against or harassment of employees for raising issues is strictly prohibited.

### Maintaining a Safety Conscious Work Environment (SCWE)

Feeling free to communicate your concerns is an important part of the Cooper SCWE. To strengthen our SCWE, each of us needs to ensure an atmosphere where everyone feels free to raise safety concerns by encouraging a questioning attitude.

As supervisors and points of contact, listen to and understand the nature of the concern, evaluate it and provide feedback. As managers, provide timely, effective support and resolutions.

In summary, there are various avenues available for employees and supplemental personnel to raise concerns, including raising an issue through Employee Concerns or directly with the Nuclear Regulatory Commission.

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CR-CNS-2011-04124 #2

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### **Nuclear Regulatory Commission (NRC)**

Nuclear regulations require that nuclear power plant workers shall ensure that the arrival and presence of a Nuclear Regulatory Commission (NRC) inspector, is not announced or otherwise communicated by its employees or contractors to other persons at the facility unless specifically requested by the Nuclear Regulatory Commission (NRC) inspector.

For example, if a Nuclear Regulatory Commission (NRC) inspector arrives on-site or enters the drywell, workers cannot inform others of the Nuclear Regulatory Commissions (NRCs) presence or whereabouts. © 20

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