

# WINNEBAGO COUNTY

*Facility & Property Management Department*

## **SAFETY MANUAL**

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## **1.0 INTRODUCTION & OBJECTIVES**

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### **1.1 THE SAFETY PROGRAM**

Is designed to assist all departments in developing and maintaining a safe workplace.

The Safety Program provides the following:

***Safety Inspections*** of the workplace, machines, equipment, procedures and work habits.

***First Aid and Emergency Medical Support*** access.

***Lost-Time Accidents Review*** for safety hazards reported by supervisors or employees.

***Incident or Complaint Review*** regarding the workplace, work habits, procedures or suspected health hazards that may lead to injury or illness.

***Safety and Protection Procedure*** training, showing proper protective and emergency procedures, safety rules and requirements.

***Safety Education*** programs which provide safety information through demonstrations as well as verbal and written communications.

***Safety Enforcement and Support*** through managers and supervisors with proper authority who are knowledgeable in safety procedures, rules and regulations, and promote positive safety attitudes.

## **1.2 OBJECTIVES**

1. Reduce direct and indirect Workers' Compensation and other liability costs through accident, illness and injury prevention.
2. Develop and maintain workforce-wide support for the Safety Program.
3. Motivate, educate and train employees to recognize, report and correct hazards and activities which could result in a loss.
4. Engineer and administer safety policies when designing facilities, operations, equipment usage, maintenance and job-task performance.
5. Incorporate safety and loss prevention into training, education and orientation programs, methods and techniques.
6. Comply with federal, state, County and municipal laws, ordinances, regulations and other policies regarding safety-related matters, exceeding requirements when necessary to increase safety and prevent loss.
7. Provide programs for inspection and maintenance of facilities, operations, job-task performance and equipment.
8. Establish and maintain lines of communication for safety and loss prevention between the Department of Human Resources, management, supervisors and employees.

### **1.3 Procedure for Non-Routine Safety Inspections**

Here is what you should do if you are visited by an inspector from an outside agency, such as the Wisconsin Department of Safety and Professional Services or your local fire department.

1. Don't panic. These inspections are supposed to be a surprise.
2. If you don't know the person and his/her purpose, ask him/her to produce government identification.
3. Call the Department of Human Resources **immediately at 920/232-3460**. Tell the inspector that a Human Resources/Safety professional and a management person designated by the department head will accompany him/her during the inspection. If a Human Resources/Safety professional is unavailable to attend the inspection, the designated department management person or head should accompany the inspector and furnish him/her with access, documents, etc.
4. Delegate pending tasks to another appropriate person in your department. The inspection/records examination process can take up to several hours.
5. Get and record the inspector's name and agency. This can be obtained from the inspector's business card.
6. Advise the inspector that correspondence must be directed through the Department of Human Resources, 112 Otter Avenue, PO Box 2808, Oshkosh, WI 54903-2808.
7. Be cooperative, truthful and patient with the inspector. If you cannot immediately produce a requested document or answer a question, make a note of it, assure the inspector that you will fulfill his/her request as soon as possible and take steps to do so quickly.

**Our Goal: Positive Safety Attitude**

## **2.0 STATEMENTS AND RESPONSIBILITIES**

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### **2.1 COUNTY EXECUTIVE**

The Winnebago County Executive has the responsibility and authority to establish, promote and ensure the enforcement of safety rules and regulations throughout the County's workforce. The County Executive may direct modifications to the safety policies, procedures, standards and practices and has the authority to ensure that all departments and employees comply with approved safety policies.

### **2.2 SAFETY PROGRAM COORDINATOR**

A professional member of the Human Resources staff shall be designated as the County's Safety Program Coordinator.

### **RESPONSIBILITIES**

The Safety Coordinator is responsible for the development, implementation and administration of the County Safety Program, and for guiding the activities of the Winnebago County Safety Group.

#### **Specific Duties:**

- Work as liaison with the County's contracted safety consultant.
- Update and revise safety programs as needed.
- Provide technical support to departments and departmental safety committees.
- Review and investigate workplace accidents as warranted.
- Coordinate the activities of the Safety Group.
- Help ensure compliance with safety policies.
- Report on the effectiveness of the Safety Program and efforts to the Director of Human Resources.
- Ensure the maintenance of safety-training records.
- Help coordinate safety training, education and motivation.
- Assist with hazard identification and inspections.

## **2.3 DEPARTMENT OF HUMAN RESOURCES**

### **RESPONSIBILITIES**

The Department of Human Resources is responsible for providing assistance and actively supporting the achievement of the safety program's goals, policies, procedures and directives. The Department will assist with inspections, compliance enforcement and management of the Workers' Compensation program.

#### **Specific Duties**

- Coordinate scheduling and screening of appropriate medical evaluations.
- Incorporate safety responsibilities into relevant Job Descriptions.
- Provide Safety information as part of new-employee orientation.
- Maintain or assist in the maintenance of appropriate employee and activity records.
- Ensure the oversight of the Workers' Compensation program.
- Review employee accidents and injuries and make recommendations or policy changes.
- Enforce compliance with safety expectations and relevant workplace standards, including investigations, counseling and disciplinary action as necessary.
- Assist employees with return-to-work activities.



## **2.4 LOSS CONTROL COMMITTEE**

(Reserved. The Loss Control Committee is not active at this time.)

*Mission Statement:* Identify, eliminate and control hazardous work practices and environments before they result in workplace injury or illness. Outline policies and procedures necessary to promote and achieve Safety Goals.

## **2.5 DEPARTMENT HEADS/MANAGERS/SUPERVISORS/SAFETY COMMITTEES**

Department-level Safety Committees are key units for improving the safety of operations and controlling losses by involving line employees in safety suggestions, recommendations and improvements.

### **RESPONSIBILITIES**

Department heads, managers and supervisors are responsible and accountable for the leadership of the safety and health programs' effectiveness and improvement, and for ensuring safe working conditions. They will provide uniform controls and procedures for employee performance.

#### **Specific Duties:**

- Develop safety policies and procedures in conjunction with the Safety Coordinator and/or Human Resources for special departmental exposures and operations.
- Ensure that all employees are trained in safety procedures and operations related to their specific operations and job tasks.
- Ensure uniform compliance with safety procedures and conduct regular safety inspections.
- Provide guidance to perform duties safely.
- Correct unsafe habits or conditions immediately.
- Budget for safety equipment and protective devices.
- Document all disciplinary action, including counseling sessions.

## **2.6 SAFETY ADVOCATE TEAM MEMBERS/SUPERVISORS**

(Reserved. The Safety Advocate Teams are not active at this time.)

Assist the Safety Coordinator in promoting safety programs and policies in County departments while promoting Positive Safety Attitudes.

### **RESPONSIBILITIES**

Ensure that all operations are performed with utmost regard for the safety of all employees involved. They will set the example of good safety practices in all operations.

#### **Specific Duties:**

- Maintain a comprehensive knowledge of safety policies and make employees aware that violations will be addressed.
- Provide input and feedback regarding safety instruction.
- Remain alert for unsafe practices and conditions; assist in recording incidents/accidents to ensure proper reporting and recommend steps to prevent recurrence.
- Assist in developing and practicing good housekeeping and high standards of cleanliness throughout work areas.
- Encourage employees to offer safety suggestions.
- Give full support to safety procedures, activities and programs.
- Keep minutes or notes of safety meetings within your departments.
- Prepare concerns list; maintain and follow up on progress with your supervisor or the Safety Coordinator.
- Encourage employees to report near-miss incidents/accidents.
- Serve as the link between their departments and the Safety Group working on safety items.
- Contact the Safety Coordinator or the Department of Human Resources with feedback on safety policies or suggestions.
- Safety Advocates will give reports to, and work closely with, the Safety Advocate Team. The Safety Advocate Team will help critique, evaluate, and offer suggestions as appropriate.

## **2.7 ACCIDENT REVIEW**

Accidents, incidents and near misses may be investigated and reviewed for potential corrective action.

## **2.8 EMPLOYEES**

Employees are expected to cooperate and comply with all aspects of the County's safety program, including rules, regulations, practices and investigations. Each employee shall have access to his or her own safety or medical information, subject to usual County procedures. Each employee's safety responsibility includes, but is not limited to the following:

### **Specific Duties:**

- Operate equipment or tools only after you have received proper training from your supervisor, designee or authorized trainer.
- Always use required safety equipment while working.
- Always wear prescribed clothing, safety shoes and protective devices as required.
- Always operate all equipment and tools with supplied safety devices, including guards or barriers.
- Inform supervisory personnel of faulty tools or equipment.
- Advise coworkers of any unsafe practice.
- Report dangerous or unsafe conditions that exist in the workplace other areas where County employees perform work.
- Report all injuries, accidents and near misses regardless of how minor they may be, following the reporting procedures outlined with in this manual.
- Protect the public from any unsafe conditions that result from County operations or that you observe where County work is performed.
- Take care of tools and equipment to ensure that these items are in safe and usable condition for all other employees.

## **2.9 SEASONAL/TEMPORARY/CLIENT EMPLOYEES AND VOLUNTEERS**

The procedures and policies described in this manual shall apply to all employees of Winnebago County regardless of the number of hours worked or pay status. The department head or designated person in each department shall insure that all employees are trained and informed of safety procedures, and provided with protective equipment.

**Our Goal: Positive Safety Attitude**

2-7, 2-8, 2-9

## **3.0 REPORTING PROCEDURES**

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Unsafe conditions, procedures or actions must be identified before they can be corrected. All employees are responsible for immediately reporting such situations when they become aware of them. All accidents should be reported, regardless of whether personal injury or property damage occurs. Remember: "Near misses" are danger signals. The accident you prevent may be the one that could have injured *you*.

### **3.1 UNSAFE CONDITIONS/ACTS**

Any employee who has a complaint or concern about unsafe or potentially unsafe working conditions or fellow employee actions should follow these procedures to seek a remedy:

1. Discuss the safety complaint or concern with your immediate supervisor, department head, Safety Coordinator or other Human Resources professional staff member.
2. If you are not satisfied with the result through the informal process, you may file a formal complaint using the *Report of Unsafe Conditions/Acts*. This form is available in Section 4 of this Manual and in a designated place on the Employees' Intranet.
3. Complete the *Report of Unsafe Conditions/Acts* and forward copies to your department head and supervisor as well as to Human Resources.
4. Upon receipt of the Report of Unsafe Conditions, the department head or Human Resources staff member may investigate your concern. The department head or Human Resources may:
  - a) Issue suggestions or directives to employees to enforce compliance with existing safety procedures, rules and regulations.
  - b) Take other appropriate formal or informal action.
  - c) Inform you of the conclusion that there is no basis for the County to act on your complaint.
5. If you are not satisfied with the complaint resolution at the department head level or with the progress of the complaint process, you may submit the complaint directly to the Department of Human Resources for review.
6. If you are not satisfied with the disposition of the complaint by the Safety Coordinator/Human Resources, you may request a review by the County Executive. The decision of the County Executive shall be final.

### **3.2 MOTOR VEHICLE OR EQUIPMENT DAMAGE REPORTING PROCEDURE**

1. All accidents/damage involving a county-owned motor vehicle, county-owned equipment, or equipment that the County is responsible for, such as lawn mowers and trailers, or a personal vehicle used while conducting County business, must immediately be reported to your supervisor. If it is a motor vehicle accident or theft, contact appropriate law enforcement or call 9-1-1. After you have contacted law enforcement, report the incident as soon as possible to your immediate supervisor.
2. The following reports shall be completed by the appropriate person(s) and submitted to the Finance Department as soon as possible.
  - a) Copy of police report, if applicable
  - b) Copy of one of the below reports:
    1. **County-owned Automobiles:** *Automobile Accident Report*
    2. **County-owned Automobiles/Equipment:** *Loss Report*
    3. **Non-county vehicles:** *Loss Report*

These documents are available in Section 4 of this safety manual.

  - 4. **Personal vehicles used on County business:** Claims must be filed with your personal insurance carrier.

If a member of the public requests to file a claim against Winnebago County, he or she, by statute, must send a claim in writing to the County Clerk's Office. The claim must include the date of the loss, location of the incident, a description of what happened in the complainant's own words, a statement of compensation sought and the complainant's signature. Copies of bills or estimates also may be submitted instead of originals. The County Clerk's address is 415 Jackson St., Oshkosh, WI 54903-2808. A loss report completed by an employee in no way constitutes a claim against the County. It is for the County's internal use only.

3. If the vehicle or equipment requires repair, the Winnebago County purchasing guidelines must be followed. If you have any questions regarding the purchasing procedures, contact the Finance Department at 920/232-3428.

### **3.3 INJURY TO PUBLIC/DAMAGE TO NON-COUNTY PROPERTY**

Notify the Finance Department at 920/232-3428.

1. Call 9-1-1 (9-9-1-1 from a County landline) if necessary. Make sure the injured person knows that the County is not obligated to pay for emergency transportation or assistance.
2. Provide first aid as necessary, to the extent of your training and ability. Seek fellow employees to help you if needed.
3. Make the injured person as comfortable as possible. Explain what is happening.
4. Complete a *Loss Report*. An employee must complete this report. This form is not to be used for the injured to file a claim against Winnebago County (see #9).
5. Provide a copy of the Loss Report to the injured person if he or she asks for one.
6. Send or bring a copy of the Loss Report to the Finance Department, located on the Fourth Floor of 112 Otter Ave. in Oshkosh.
7. **Never** transport an injured member of the public in a County vehicle or in your vehicle while on County business.
8. **Never** express any County liability. If the injured person would like County insurance information, have them call the Finance Department at 920/232-3428.
9. If a member of the public requests to file a claim against Winnebago County, he or she, by statute, must send a claim in writing to the County Clerk's office. The claim must include the date of the loss, location of the incident, a description of what happened in the complainant's own words, a statement of compensation sought and the complainant's signature. Copies of bills or estimates also may be submitted instead of originals. The County Clerk's address is 415 Jackson St., Oshkosh, WI 54903-2808. A loss report completed by an employee in no way constitutes a claim against the County. It is for the County's internal use only.

### **3.4 WORK-RELATED INJURY (EMPLOYEE)**

***\*If you have questions about this process or need help with it, call Human Resources at 920/232-3460.\****

1. The *Employee's Report of Injury* (in Section 4) is to be completed by the employee and supervisor immediately. If the injury is serious enough to require an ambulance or immediate medical treatment, completion of this form may be delayed; however, the report must be completed no later than 48 hours after the incident. *This report should be submitted even if the injury seems insignificant. Failure to report injuries as they occur may result in a claim being denied.* Completed reports must be forwarded immediately to the Human Resources Department.
2. The employee is to continue working unless the injury requires immediate medical attention.
3. If medical attention is needed, transportation will be decided on the following basis.
  - a) If it is a minor injury and the employee is capable of making his or her own decision, that decision should be honored. The transportation choices are as follows. Should the employee exercise one of the options given, such choice shall be at his/her own risk.
    - i) The employee may drive himself or herself.
    - ii) The employee may request a friend/family member be contacted for transportation.
    - iii) The employee may take public transportation (bus, taxi).
  - b) If, in the supervisor's judgment, the injury is life-threatening or renders the employee unable to make a rational decision, 9-1-1 (9-9-1-1 from a County landline) must be called immediately to transport the employee to a medical facility.
  - c) If the employee and supervisor are unable to agree on a means of transportation, 9-1-1 or 9-9-1-1 should be called.
4. If medical treatment is required, the employee will need to provide a *Return to Work Slip*, identifying any restrictions. The employee shall first present this slip to his/her supervisor. The supervisor will forward it to Human Resources. The employee may use the *Employee Status Report* or a form received from his/her medical provider. This document is available in Section 4 or from the medical provider. The completed document must be submitted to Human Resources as soon as practical.
5. Options will be explored to return the employee to limited or full duty as soon as reasonably possible. This may include accommodating limited duty restrictions if at all possible. Flexibility to provide restricted duty varies depending on the department, the nature of the work, and the restrictions on the employee. Therefore, this will be decided on a case by case basis. Restricted duty options may not be available.

6. Any questions or concerns of an administrative nature can be addressed to the Worker's Compensation Program Administrator, Winnebago County Department of Human Resources. The Administrator will be able to provide advice and guidance on how to handle cases and answer questions on the procedure. To contact the Administrator, call the Human Resources Department's main number, 920/232-3460.

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## Section 4 – Reporting Forms



# LOSS REPORT

## WINNEBAGO COUNTY

IF THIS IS AN AUTO ACCIDENT CONTACT APPROPRIATE LAW ENFORCEMENT  
CALL THE FINANCE DEPARTMENT 232-3448  
COMPLETE THIS FORM TO THE BEST OF YOUR ABILITY – Keep a copy for your records

### EMPLOYEES:

**Do not** accept responsibility for ambulance bills.

**Was a County vehicle involved?**

Complete the Accident Report Form that is kept in vehicle.

**Where County employee injured?**

Call Personnel to report any Workers Compensation loss.

\*\*\*\*\*

Date of Loss: \_\_\_\_\_ Location: \_\_\_\_\_

Description Of Loss: \_\_\_\_\_

Possible Contributing Conditions (icy, wet, cracked walkway, etc): \_\_\_\_\_

Injuries: Name: \_\_\_\_\_

Address & Phone: \_\_\_\_\_

Injury: \_\_\_\_\_

Remember to check the appropriate boxes below

Left the scene: ☐ Walking ☐ Ambulance ☐ Other: \_\_\_\_\_

☐ **County** or ☐ **Non-County Property:** Auto or property description: \_\_\_\_\_

**Damages** and estimated repair/replacement (if possible) \_\_\_\_\_

☐ **County** or ☐ **Non-County Property:** Auto or property description: \_\_\_\_\_

**Damages** and estimated repair/replacement (if possible) \_\_\_\_\_

**Witnesses:** (Name, address, phone, dept. if applicable) \_\_\_\_\_

Completed by: \_\_\_\_\_ Phone: \_\_\_\_\_

FOR ADDITIONAL STATEMENTS, INFORMATION AND FACTS USE OTHER SIDE



## Report of Unsafe Conditions/Acts

**INFORM YOUR SUPERVISOR OR DEPARTMENT HEAD OF SITUATION AND  
FOLLOW THE REPORTING PROCEDURES FOUND IN THE SAFETY MANUAL**

Date: \_\_\_\_\_ Time Discovered or Informed: \_\_\_\_\_

Location: \_\_\_\_\_

Describe Condition/Act: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

What immediate action has been taken to prevent accident or injury? \_\_\_\_\_

\_\_\_\_\_

Was the appropriate person or department advised of the concern?

Name of Contact: \_\_\_\_\_ Dept: \_\_\_\_\_

Name of person providing information: \_\_\_\_\_

Department: \_\_\_\_\_ Ext. \_\_\_\_\_

### **ACTION TAKEN**

Action Taken - including date and person spoken to if any. \_\_\_\_\_

\_\_\_\_\_

**Action Follow up:** Date: \_\_\_\_\_

Send copies to:      Department Head or Supervisor  
                             Insurance/Safety Coordinator  
                             Keep one for your records to follow up on action.



## WINNEBAGO COUNTY EMPLOYEE'S REPORT OF INJURY

Today's Date:

Employee's Name:

Department:

Home Address:

Phone:

Job Title When Injured:

Is this your Primary Occupation? YES ☐ NO ☐

How long at this job?

**NATURE OF INJURY:** Describe your injury and part of body affected (be specific): indicate left or right.

**NATURE OF ACCIDENT:** Date of injury:  Time:  AM ☐ PM ☐

Time Shift Began:  AM ☐ PM ☐ Did you have to leave work? Yes ☐ No ☐

Date and Time Last Worked:

List any prior injuries to the affected area/body part:

Describe fully how the injury occurred, including location (building, area, etc.). Note all materials, objects or conditions contributing to the accident. Use terms such as 'struck by', 'caught by', 'burned by' or 'fell'.

Describe any unsafe conditions that existed, including leaving an unsafe situation to exist.

Describe any unsafe activity (i.e. not using safety devices, or obeying rules).

Witnesses:

**PREVENTION:** What immediate actions have you taken to prevent similar accidents?

**MEDICAL:** Did you go to a clinic, doctor or hospital for treatment of this illness? Yes ☐ No ☐

Doctor's Name:

Doctor's Address:

Clinic or Hospital and its address:

Was First Aid applied? Yes ☐ No ☐ What kind, and by whom?

Employee's Signature \_\_\_\_\_ Date \_\_\_\_\_

Supervisor's Signature \_\_\_\_\_ Date \_\_\_\_\_



## WINNEBAGO COUNTY

### SUPERVISOR'S ACCIDENT/INJURY INVESTIGATION REPORT

Name of Injured Employee:

Job/Task/Activity at Time of Accident:

Date of Accident:

Time of Accident:  AM ☐ PM ☐

Exact Location:

Did you visit the site of the injury after the accident? Yes ☐ No ☐ If, no, why not?

**WHAT HAPPENED?** (Tell what the employee was doing, how the accident/injury occurred and what injured the employee.)

**WHY** did it happen?

Describe any unsafe conditions that existed, including leaving an unsafe condition to exist.

If applicable, was employee using any type of safety equipment or Personal Protective Equipment? Yes ☐ No ☐

Specify:

What changes (mechanical/procedural) have been made, if any?

What changes still need to be made?

How has the employee been counseled to avoid further accidents or injuries?

On what date did counseling occur?  By whom?

Supervisor's recommendations for accident prevention.

Send the original report to Peg Raugh in Human Resources. Give/send a copy to your department head or his/her designee.

Supervisor's signature: \_\_\_\_\_ Date: \_\_\_\_\_

**WINNEBAGO COUNTY  
EMPLOYEE STATUS REPORT**

Please fax to 920-232-3461

Time in facility _____	Time out _____	Health Care Facility
County Department _____		
Health Care Provider/Facility, please provide this completed form to our employee after appointment. Please also fax a copy of your records from this visit to Peg Raugh, Winnebago County Worker's Comp. at 920-232-3461.		
Patient's Name (Last)	(First) (Middle Initial)	Date of injury/illness
<b>TO BE COMPLETED BY ATTENDING PHYSICIAN</b>		
Diagnosis/Condition (Brief Explanation)		X-Ray N Y Results
I saw and treated this patient on _____ and based on the above description of the patient's current medical problem:		
1. <input type="checkbox"/> Recommend his/her return to work with no limitations on (Date) _____		
2. <input type="checkbox"/> He/She may return to work on (Date) _____ with the following limitations:		
<b>POST INJURY ACTIVITY RECOMMENDATIONS</b>		
<input type="checkbox"/> <b>Very Light Work.</b> Lifting 10 pounds maximum and occasionally lifting and/or carrying such articles as dockets, ledgers, and small tools. Although many activities can be done sitting, a certain amount of walking and standing is often necessary in carrying out job duties. Provisions to alternate sitting, standing and walking for comfort should be made.  <input type="checkbox"/> <b>Light Work.</b> Lifting 20 pounds maximum with frequent lifting and/or carrying of objects weighing up to 10 pounds. Activities in this category could include sitting most of the time with a degree of pushing and pulling of arm and/or leg controls.  <input type="checkbox"/> <b>Medium Work.</b> Lifting 30-50 pounds maximum with frequent lifting and/or carrying of objects weighing up to 25 pounds.  <input type="checkbox"/> <b>Heavy Work.</b> Lifting of 75 pounds maximum with frequent lifting and/or carrying of objects weighing up to 40 pounds.	1. In an 8 hour work day patient may: a. Stand/Walk <input type="checkbox"/> None <input type="checkbox"/> 4-6 Hours <input type="checkbox"/> 1-4 Hours <input type="checkbox"/> 6-8 Hours b. Sit <input type="checkbox"/> 1-3 Hours <input type="checkbox"/> 3-5 Hours <input type="checkbox"/> 5-8 Hours c. Drive <input type="checkbox"/> 1-3 Hours <input type="checkbox"/> 3-5 Hours <input type="checkbox"/> 5-8 Hours  2. Patient may use hand(s) for repetitive: <input type="checkbox"/> Single Grasping <input type="checkbox"/> Pushing & Pulling <input type="checkbox"/> Fine Manipulation  3. Patient may use foot/feet for repetitive movement as in operating foot controls: <input type="checkbox"/> Yes <input type="checkbox"/> No  4. Patient may:   Not at all           Occasionally           Frequently a. Bend <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> b. Twist <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> c. Squat <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> d. Climb <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> e. Reach <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
<b>Other instructions and/or limitations including prescribed medications</b>		
Medications: _____		
<input type="checkbox"/> Not to lift > _____ lbs. above chest <input type="checkbox"/> _____ hand work with _____ hand assist <input type="checkbox"/> wear splint/braces at work <input type="checkbox"/> _____ Hand work only <input type="checkbox"/> limited bending, squatting, kneeling <input type="checkbox"/> Keep wound area clean and dry <input type="checkbox"/> No repetitive use of _____ <input type="checkbox"/> Other _____ <input type="checkbox"/> These restrictions are in effect from (date) _____ until patient is reevaluated on (date) _____ <input type="checkbox"/> He/She is totally incapacitated at this time. Patient will be reevaluated on (date) _____		
Referred to:		
<input type="checkbox"/> Physician office (Dr., Date, & Time) _____ <input type="checkbox"/> Physical Therapy (may be provided at Park View) - Eval & Treat <input type="checkbox"/> Other _____ <input type="checkbox"/> Other (facility) _____		
Physician's signature		Date
<b>AUTHORIZATION TO RELEASE INFORMATION</b>		
I hereby authorize my attending physician and/or hospital to release any information or copies thereof acquired in the course of my examination or treatment for the injury identified above to my employer or his representative. I understand that I am required to return the yellow copy of this report to my supervisor either on the same day as my medical visit or the next work day.		
Patient's Signature		Date

White - Employer    Yellow - Medical Provider    Pink - Employee/Patient

lb/forms/workcomp/emp stat rpt 3-11

Date: \_\_\_\_\_ Time: \_\_\_\_\_ ☐ AM ☐ PM

Place: \_\_\_\_\_  
\_\_\_\_\_

POLICE REPORT#: \_\_\_\_\_

Officer: \_\_\_\_\_

Municipality: \_\_\_\_\_

Citation Issued? ☐ yes ☐ no

To Whom? \_\_\_\_\_

**COUNTY'S INFORMATION #1**

Driver: \_\_\_\_\_

Department: \_\_\_\_\_

Vehicle: Fleet Number: \_\_\_\_\_ Year: \_\_\_\_\_

Make: \_\_\_\_\_ Model: \_\_\_\_\_

VIN: \_\_\_\_\_

**OTHER VEHICLE (NON-COUNTY) #2**

Driver: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Telephone: \_\_\_\_\_

Owner: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Telephone: \_\_\_\_\_

Year: \_\_\_\_\_ Make: \_\_\_\_\_ Model: \_\_\_\_\_

VIN: \_\_\_\_\_

Insurance Company: \_\_\_\_\_  
\_\_\_\_\_

Policy Number: \_\_\_\_\_

Damages: \_\_\_\_\_

**OTHER VEHICLE (NON-COUNTY) #3**

Driver: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Telephone: \_\_\_\_\_

Owner: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Telephone: \_\_\_\_\_

Year: \_\_\_\_\_ Make: \_\_\_\_\_ Model: \_\_\_\_\_

VIN: \_\_\_\_\_

Insurance Company: \_\_\_\_\_  
\_\_\_\_\_

Policy Number: \_\_\_\_\_

Damages: \_\_\_\_\_

**OTHER VEHICLE (NON-COUNTY) #4**

Driver: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Telephone: \_\_\_\_\_

Owner: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Telephone: \_\_\_\_\_

Year: \_\_\_\_\_ Make: \_\_\_\_\_ Model: \_\_\_\_\_

VIN: \_\_\_\_\_

Insurance Company: \_\_\_\_\_  
\_\_\_\_\_

Policy Number: \_\_\_\_\_

Damages: \_\_\_\_\_

**INJURED:**

#1 Name: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Telephone: \_\_\_\_\_

☐ Driver ☐ Rider (Yours)

☐ Pedestrian ☐ Rider (Other)

#2 Name: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Telephone: \_\_\_\_\_

☐ Driver ☐ Rider (Yours)

☐ Pedestrian ☐ Rider (Other)

**WITNESSES:**

#1 Name: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

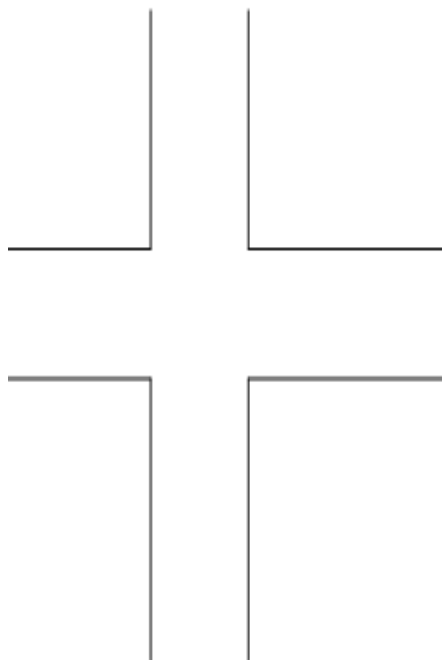
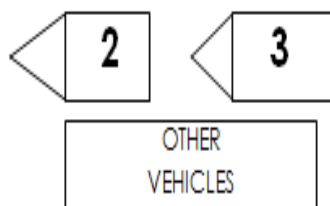
Telephone: \_\_\_\_\_

#2 Name: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Telephone: \_\_\_\_\_

**DESCRIBE HOW THE ACCIDENT OCCURRED AND DRAW DIAGRAM ON OTHER SIDE**

[illegible]

DESCRIPTION OF ACCIDENT:

**WINNEBAGO COUNTY**  
**AUTOMOBILE ACCIDENT REPORT**

KEEP THIS FOLDER IN YOUR CAR'S  
GLOVE COMPARTMENT

**IN CASE OF AN ACCIDENT, FOLLOW  
THESE INSTRUCTIONS:**

STOP

## GET MEDICAL AID FOR INJURIES

NOTIFY POLICE

NAMES & ADDRESSES OF WITNESSES

DO NOT ADMIT LIABILITY

DISCUSS ACCIDENT ONLY WITH POLICE  
OR YOUR INSURANCE CARRIER

DO NOT SIGN ANY STATEMENTS EXCEPT  
FROM YOUR INSURANCE CARRIER OR AT  
THE ADVICE OF YOUR ATTORNEY

### INSURANCE IDENTIFICATION CARD

**Company:** Wisconsin County Mutual Insurance Corporation

Policy Number: 71

Effective: 1/1/97 Expiration: Continuous



## WINNEBAGO COUNTY VEHICLE INSPECTION

PRIOR TO USING ANY COUNTY VEHICLE THIS INSPECTION MUST BE COMPLETED, SIGNED, AND TURNED INTO YOUR SUPERVISOR.

DEPARTMENT: \_\_\_\_\_

VEHICLE # : \_\_\_\_\_ MILEAGE: \_\_\_\_\_

DATE: \_\_\_\_\_ OPERATOR: \_\_\_\_\_

	FUNCTIONING PROPERLY	IF NO, DESCRIBE PROBLEM
OIL LEVEL	YES	NO
WATER LEVEL	YES	NO
HEADLIGHTS	YES	NO
TAIL LIGHTS	YES	NO
BRAKE LIGHTS	YES	NO
HORN	YES	NO
WIPER FLUID	YES	NO
BRAKES	YES	NO
BODY DAMAGE	YES	NO IF YES, SEE BELOW
WINDSHIELD	YES	NO
INTERIOR/CLEAN	YES	NO
FLUID LEAKS (CHECK UNDER VEHICLE)	YES	NO
TIRES		
WORN - DEFECTIVE	YES	NO
BATTERY	YES	NO
TAILPIPE/MUFFLER	YES	NO
HEATER/AIR COND.	YES	NO
SAFETY BELTS		
WORN - DEFECTIVE	YES	NO
ACCIDENT PACKET WITH INSURANCE POLICY INFOR.	YES	NO

NOTE ANY EXISTING DAMAGE? \_\_\_\_\_

\_\_\_\_\_  
SIGNATURE OF EMPLOYEE

\_\_\_\_\_  
SIGNATURE OF SUPERVISOR

\_\_\_\_\_  
DATE:

USE BACK OF THIS FORM FOR ADDITIONAL COMMENTS

## Section 5 – Reserved

## **6.0 BLOODBORNE PATHOGEN EXPOSURE CONTROL PLAN**

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### **Winnebago County Bloodborne Pathogen Exposure Control Plan**

May 23, 2002

Revised: March 3, 2004

Revised April/May 2011

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## **DEFINITIONS**

- A. **Blood** means human blood, human blood components and products made from human blood.
- B. **Bloodborne Pathogens** means pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV) and human immunodeficiency virus (HIV).
- C. **Contaminated** means the presence or the reasonably anticipated presence of blood or other potentially infectious materials on an item or surface.
- D. **Decontamination** means the use of physical or chemical means to remove, inactivate or destroy bloodborne pathogens on a surface or item to the point where they are no longer capable of transmitting infectious particles and the surface or item is rendered safe for handling, use or disposal.
- E. **Engineering Controls** means controls such as sharps disposal containers, self-sheathing needles, safe medical devices, etc., that isolate or remove the bloodborne pathogen hazard from the workplace. With the revision of the Occupational Exposure to Bloodborne Pathogens standard, this definition has been expanded to include control measures that include control measures that isolate or remove a hazard from the workplace, encompassing medical devices designed to reduce the risk of exposure through skin absorption.
- F. **Exposure Incident** means a specific eye, mouth other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious materials that result from the performance of an employee's duties.
- G. **HBV** means hepatitis B virus.
- H. **HCV** means hepatitis C virus
- I. **HIV** means human immunodeficiency virus.
- J. **Occupational Exposure** means reasonably anticipated skin, eye, mucous membrane or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee's duties.
- K. **Other Potentially Infectious Materials (OPIM)** means the following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, peritoneal fluid, amniotic fluid, saliva, any body fluid that is contaminated with blood, all body fluids in situations where it is difficult or impossible to differentiate between body fluids and fluids found around toilet areas.

- L. **Parenteral** means piercing the skin barrier through such as needle sticks, human bites, cuts and abrasions.
- M. **Personal Protective Equipment (PPE)** is specialized clothing or equipment worn for protection against a hazard. General work clothes such as uniforms, pants, shirts, or blouses not intended to function as protection against a hazard are not considered to be Personal Protective Equipment.
- N. **Regulated Waste** means liquid or semi-liquid blood or other potentially infectious materials: contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed; items that are caked with dried blood or other potentially infectious materials and are capable of releasing these materials during handling; contaminated sharps, and pathological and microbiological wastes containing blood or other potentially infectious materials.
- O. **Source Individual** means any person, living or dead, whose blood or other potentially infectious materials may be a source of occupational exposure.
- P. **Universal Precautions** are precautions where all human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, HCV and other bloodborne pathogens.

## **Section I – Purpose and Exposure Determination**

In accordance with the OSHA Bloodborne Pathogens Standard, 29 CFR 1910.1030, the following exposure control plan has been developed for Winnebago County and its employees.

### **A. PURPOSE**

The purpose of this exposure control plan is to:

1. Eliminate or minimize employees' occupational exposure to blood or other body fluids through awareness training and personal protective equipment.
2. Comply with the OSHA Blood borne Pathogens Standard, 29 CFR 1910.1030.

### **B. PROGRAM ADMINISTRATION AND RESPONSIBILITY**

The Department of Human Resources is responsible for the implementation of the Bloodborne Pathogen Exposure Control Plan. Human Resources will maintain, review and update the Plan at least annually. Employees are required to comply with the procedures and work practices detailed in this Policy.

## C. EXPOSURE DETERMINATION

The Wisconsin Department of Safety and Professional Services (DSPS) requires employers to perform an exposure determination concerning which employees may incur occupational exposure to blood or other potentially infectious materials. The exposure determination is made without regard to the use of personal protective equipment (i.e., employees are considered to be exposed even if they wear personal protective equipment). This exposure determination is required to list all job classifications in which all employees may be expected to incur such occupational exposure, regardless of frequency.

Winnebago County has determined that the job classifications that are at risk for exposure include those directly working with needles or performing custodial duties, as well as certain employees of the Public Health, Human Services, Highway, Solid Waste and Sheriff's departments. If your job duties fall into this category check your department's safety manual for department specific policies. Those employees who are determined to have occupational exposure to blood or other potentially infectious materials (OPIM) as identified by each department must comply with the procedures and work practices outlined in this exposure control plan.

## Section II – Implementation and Control

DSPS requires that this plan include a schedule and method of implementation for the various requirements of the standard. The following complies with this requirement:

### A. COMPLIANCE METHODS

Universal precautions will be observed at all facilities in order to eliminate or minimize contact with blood or other potentially infectious materials. All blood or other potentially infectious material will be considered infectious regardless of the perceived status of the source individual. Engineering and work practice controls will be used to eliminate or minimize exposure to employees at the facilities. Where occupational exposure remains after institution of these controls, personal protective equipment shall also be used.

### B. HAND WASHING PROCEDURES

1. Hand washing facilities are available to employees who incur exposure to blood or other potentially infectious materials. These facilities are readily accessible after incurring exposure.
2. After the removal of personal protective gloves, employees shall wash hands and any other potentially contaminated skin area immediately or as soon as possible with soap and water.
3. If employees incur exposure to their skin or mucous membranes, those areas shall be washed or flushed with water as soon as possible following contact.

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## C. PERSONAL PROTECTIVE EQUIPMENT

1. Supervisors are responsible for ensuring that the following provisions are met.
2. All personal protective equipment used on the job will be provided without cost to employees. Personal protective equipment will be chosen based on the anticipated exposure to blood or other potentially infectious materials. The protective equipment will be considered appropriate only if it does not permit blood or other potentially infectious materials to pass through or reach wearers' clothing, skin, eyes, mouth or other mucous membranes under normal conditions of use and for the duration of time which the protective equipment will be used.

### 3. PPE Use

Supervisors shall ensure that affected employees use appropriate PPE.

### 4. PPE Accessibility

Supervisors shall ensure that appropriate PPE in the correct sizes is readily accessible at the work site or is issued without cost to employees. Glove liners shall be readily accessible to those employees who are allergic to direct contact from the gloves normally provided.

### 5. PPE Cleaning, Laundering and Disposal

All personal protective equipment, if appropriate will be cleaned, laundered and/or disposed of by the County at no cost to employee. All repairs and replacements will be made by the County at no cost to employees.

All garments which are penetrated by blood shall be removed immediately or as soon as possible. All PPE will be removed prior to leaving the work area.

When PPE is removed, it shall be placed in an appropriately designated area or container for storage, washing, decontamination or disposal.

### 6. Gloves

Gloves shall be worn where it is reasonably anticipated that employees will have hand contact with blood or other potentially infectious materials and when handling or touching contaminated items or surfaces.

Utility gloves may be decontaminated for reuse provided that the integrity of the gloves is not compromised. Utility gloves will be discarded if they are cracked, peeling, torn, punctured or exhibit other signs of deterioration or when their ability to function as a barrier is compromised.

## 7. Eye and Face Protection

Masks in combination with eye protection devices, such as goggles or glasses with solid side shield, are required to be worn whenever splashes, spray, splatter or droplets of blood or other potentially infectious materials may be generated and eye, nose or mouth contamination can reasonably be anticipated.

## **SECTION III – Housekeeping and Prevention**

Since all blood or other potentially infectious material will be considered infectious regardless of the perceived status of the source individual, the housekeeping and prevention practices shall be used to minimize or eliminate employee exposure:

### A. Needles, Knives, Miscellaneous Sharps

1. All sharp instruments such as knives, razor blades and needles shall be considered contaminated. No attempt should be made to bend, recap or manipulate a needle or sharp by hand. Employees shall not reach by hand into a container where these sharps have been placed. Tongs or forceps shall be used to remove the sharps to a puncture-resistant sharps container.
2. The containers shall be maintained upright throughout use, replaced routinely and not be allowed to overfill.
3. When moving containers of contaminated sharps from the area of use, the containers shall be closed immediately prior to removal or replacement to prevent spillage or protrusion of contents during handling, storage and transport.
4. The container shall be placed in a secondary container if leakage of the primary container is possible. The second container shall be closeable, constructed to contain all contents and prevent leakage during handling, storage and transport. The second container shall be labeled or color coded to identify its contents.
5. After each use, tongs or forceps shall be disinfected in a 1:10 bleach solution

### B. Broken Glass which may be contaminated shall not be picked up by hand. Employees shall use a broom and dustpan, tongs or forceps to remove broken glass to a puncture-resistant container.

### C. Tampons, Sanitary Pads, Band Aids

These items shall be treated as normal garbage and removed to trash receptacles using a dustpan and broom. In special situations, tongs or forceps shall be used to remove the material (if a broom will not dislodge the material because it is stuck to a surface).



- D. Blood/Fluid Spills - Any spill that contains or may contain blood or other potentially infectious fluids from a human source must be treated as if it were infected with HIV and/or HBV and cleaned up accordingly:

**NOTE: If it is not your job duty or you have not been trained to clean a blood/fluid spill, your department should have listed, in the 6A section of the safety manual, the number you should call for emergency BBP spill clean-up. Red biohazard bags and PPE are strategically stored in relevant departments and areas. Be sure you know where the bags and PPE are stored. If you are not certain, ask your supervisor or consult the Facilities Department, by calling 920/236-4788.**

1. Put on protective attire whenever possible; attire should always include gloves as a minimum measure but may also include aprons, shoe protection, eye protection or mask, depending on the amount to be cleaned up and the estimated risk of splashing.
2. Using absorbent materials such as paper towels, cat litter or special absorbents (ideally that may be disposed of rather than cleaned for reuse), cover the blood spill with the absorbent and allow the blood to absorb into the material.
3. Be careful to avoid, as much as possible, direct contact with the blood. Remove the blood-absorbent material from the spill area and place material in a red plastic biohazard bag for disposal. Placing large amounts of paper towels over the towels used for absorbing the spill can prevent you from coming in contact with the spill. Avoid contaminating outside of container.
4. Saturate spill area with disinfectant (bleach 1:10 solution or other approved disinfectant products) and allow the solution to remain in contact with the spill area for about 15 minutes. Avoid any unnecessary contact with disinfectant solution or its fumes.
5. Repeat steps 2 and 3 to remove disinfectant and discard absorbent in the same container as the blood. Thoroughly dry the area and discard drying items in the same bag. If the outside of the bag becomes contaminated, it must be placed inside a second bag.
6. Remove all protective clothing and place it in a red biohazard bag. Be sure to remove gloves last. Seal the bag and place it in a biohazard container to be later picked up by a waste disposal company.
  - a) Regulated waste will be placed in containers that are closable, constructed to restrain all contents and prevent leakage, appropriately labeled or color-coded, and closed prior to removal to prevent spillage or protrusion of contents during handling. This waste will be collected by a contracted service to be disposed of in accordance with regulations.

- b) Blood that is contained, such as on a Band-Aid, tampon or sanitary pad, can be disposed of as any other trash.
- c) Blood spills in carpeted areas may require special care depending on the type of carpet. Bleach would rarely be the disinfectant of choice in this case. Different cleaning agents for such areas as carpet are included with the supplies for biohazard spills. In case of doubt, contact your supervisor.

#### E. First Aid/Personal Injury

Employees who are injured on the job shall try to treat themselves for minor cuts, scrapes, etc. If the injury requires the assistance of another employee, the assisting employee should at a minimum wear disposable gloves while assisting the injured party. Severe injuries should be handled by healthcare professionals. In any event, department procedures for employee injuries shall be followed.

#### F. General Procedures

##### 1. Gloves

- a) At a minimum, utility work gloves are to be worn when performing any cleaning/housekeeping procedure where contaminated material is likely to be encountered.
- b) Disposable gloves shall be removed and discarded immediately after use or if the integrity of the glove is in any way compromised.
- c) Non-disposable gloves shall be disinfected in a 1:10 bleach solution or other approved disinfectant. Non-disposable gloves shall be removed and discarded immediately after use if the integrity of the glove is in any way compromised.
- d) Hands are to be washed immediately after removal of gloves with soap, running water and single use towels or hot air drying machines. When this is not practical, hands will be washed with appropriate antiseptic cleanser. When antiseptic cleanser is used, hands shall be washed with soap and running water as soon as possible.
- e) After removal of gloves but before driving a vehicle or operating other equipment, the driver/operator shall clean both hands with antiseptic cleanser, then with soap and running water as soon as possible.

##### 2. Aprons

- a) Aprons shall be worn if soiling of clothing with blood or body fluids may occur. The protection shall be impervious to blood or body fluids, particularly in the chest and arm areas.

- b) Contaminated employee clothing will be turned in to the County for cleaning by a professional cleaner.

### 3. Masks

Masks shall be worn if aerosolization of blood or body fluids may occur.

### 4. Goggles

Goggles shall be worn when splattering and aerosolization of blood or body fluids may occur.

**REMEMBER: Any disposable PPE worn during cleaning procedures shall be disposed of in red bags with the biohazard label.**

### 5. Regulated Waste

Regulated waste shall be placed in containers which are can be sealed, constructed to restrain all contents and prevent leakage of fluids during handling, storage, transportation or shipping.

The waste must be labeled or color-coded and closed prior to removal to prevent spillage or protrusion of contents during handling, storage, transport or shipping.

### 6. Cleaning/Disinfecting Solutions

The following solutions, or those of similar composition, can be used for cleaning/disinfecting:

1. Household bleach (5.25% Sodium hypochlorite) in a 1:10 dilution. To make a 1:10 dilution use 1 cup of bleach in 10 cups of water. For smaller quantities, use the same ratio. **REMEMBER: Bleach can be corrosive to some metals.**
2. Cavicide by Metrex

**NOTE: Disinfecting requires a wet exposure to the surface for a period of 10-30 minutes, and should be left to air dry.**

### 7. Routine Cleaning (benches, floors, tables, walls, sinks, toilets, etc.),

- a) Buildings, trucks, and equipment shall be cleaned according to existing schedules.

- b) Toilets and sinks shall be cleaned according to existing schedules using high-acid bowl cleaner for the toilets and powered chlorinated cleanser in the sinks. If these areas are contaminated, follow the steps outlined below.
- c) Wash area with a detergent solution to remove soil.
- d) Apply 1:10 bleach solution or other approved solution.
- e) Wipe dry after 10 minutes or allow to air dry.
- f) Items contaminated with blood or body fluids shall be cleaned immediately following the above procedure

(Employees may wish to spray an area with approved disinfectant spray first, allow to remain for 10 minutes, and then follow above procedures. This procedure may be used to remove small amounts of urine, blood, or fecal material on toilet seats).

- g) All bins, pails, cans, and similar receptacles used in cleaning shall be inspected and decontaminated on a regular basis. This means every time one of the above is used, it will be inspected and decontaminated by the individual doing the cleanup.

#### 8. Disinfecting:

The following procedures shall be used for disinfecting non-critical items:

- a) Wash with approved liquid disinfectant according to product directions and leave air dry for 10 minutes, or
- b) Rinse with fresh 5.25% Bleach, 1:10 dilution. Leave air dry for 10 minutes, or
- c) Spray on approved disinfectant and leave air dry for 10 minutes.

**REMEMBER: Disinfecting cannot take place unless the equipment is physically clean.**

#### 9. Unused Items

Unused items and equipment that are not soiled need not be disposed of. They are not contaminated or dirty unless they have been opened, used or soiled with blood or other body fluids.

#### 10. Minimal PPE Recommendations for Various Tasks

- a) Routine Cleaning: utility gloves

- b) Blood/Fluid Spills or Sprays: utility gloves, optional aprons, booties, mask and eyewear, depending on the severity of the spill and cleaning method used.
- c) First Aid (Minor): disposable gloves, optional mask, goggles
- d) Broken glass Clean-up: gloves, optional goggles, tongs, or dust pan and broom
- e) Trash/Garbage Pick-up: heavy duty gloves
- f) Sharps Removal: heavy duty gloves, tongs or forceps

**NOTE: This list is not meant to cover every situation. If you have a question about particular situations ask your supervisor before taking action.**

#### **SECTION IV – Hepatitis B Vaccine, Post Exposure Evaluation and Follow-up**

- A. Winnebago County shall make available the Hepatitis B vaccine and vaccination series to all employees who have occupational exposure, and post exposure follow-up to employees who have had an exposure incident.
  - 1. Vaccinations will be given at a reasonable time and place. Vaccinations will be given by or under the supervision of a licensed physician or under the supervision of a licensed health care professional and according to the recommendations of the U.S. Public Health Service.
  - 2. Hepatitis B vaccinations shall be made available after the employee has received training in occupational exposure and within 10 working days of their initial assignment unless the employee has previously received the complete hepatitis B vaccination series, antibody testing has revealed that they are immune, or the vaccine is contraindicated for medical reasons.
  - 3. No prescreening program shall be required of the employee as a prerequisite for receiving the Hepatitis B vaccination.
  - 4. When an employee initially declines the hepatitis B vaccination, but at a later date, while still covered under the standard, decides to accept the vaccination, the County shall make hepatitis B vaccinations available. Employees who decline to accept hepatitis B vaccinations offered by the department shall sign the statement in Appendix B. The declination statement will be a part of the employee's personnel record. Contact the Department of Human Resources for documentation or for more information.

5. If the U.S. Public Health Service recommends a routine booster in the future, it will be made available to relevant employees at no cost.
- B. All exposure incidents shall be reported, investigated, and documented. When the employee incurs an exposure incident, it shall be reported to their supervisor.
- C. Immediately after an exposure incident, the affected employee will proceed to a medical facility for clinical and serological testing for evidence of infection/non-infection.
  1. The County shall provide continued testing for a minimum of six months for evidence of infection. The County will also provide psychological counseling as determined necessary by health care officials.
  2. The employee's test result will remain confidential, unless the employee authorizes disclosure.
- D. Employees who test positive for a communicable disease may continue working as long as they do not pose a safety and health threat to themselves or others.
  1. Decisions on an employee's work status will be made solely on the medical opinions and advice of health care officials.
  2. All personnel shall treat employees who have contracted a communicable disease fairly, courteously and with dignity.
- E. Appropriate duty injury and medical forms, and a significant exposure to blood/body fluids form shall be completed by the employees at the time of testing and treatment for the purposes of documentation for Workers' Compensation. Contact Human Resources for details about this.

## **SECTION V – Record-keeping**

### **Exposure Incidents**

- A. The County will maintain written records of all employee exposure incidents.
  1. Supervisors are responsible for documenting any exposure.
  2. The *Employee's Report of Injury* and the *Supervisor's Accident/Injury Investigation Report* will be used to document exposure incidents. Both forms are available in Section 4 of the Safety Manual.
- B. The records shall be stored in the Department of Human Resources, with limited access, maintained according to HIPAA and other applicable privacy laws and kept separate from personnel files.

C. Employee records of exposure incidents shall be maintained for thirty years.

#### Training Records

- A. The Department of Human Resources is responsible for overseeing the maintenance of the following training records.
- B. Training records shall be maintained for at least three years from the date of training. The following information shall be documented:
  - 1. The dates of the training sessions
  - 2. Contents or summary of each session
  - 3. Names and titles of trainers and attendees at each session.
- C. Records will be made available to authorized persons.

#### **SECTION VI - Training**

- A. Training for all employees shall be conducted prior to initial assignment to tasks where occupational exposure may occur and repeated at least annually. Additional training will be provided when work tasks, clean-up methods or other significant changes occur.

#### **SECTION VII - Miscellaneous**

##### Evaluation and Review

Department heads and the Department of Human Resources are responsible for annually reviewing this program, and its effectiveness, and for updating this program as needed.

##### Disciplinary Action

Employees who fail to comply with the Bloodborne Pathogen Policy or work rules adopted by the County related to the Policy will be subject to disciplinary action in accordance with the appropriate *Employee Handbook of Employment Policies*.

##### Specific Bloodborne Pathogen Information – Facility and Property Management Department

The information on the following page contains the specific blood borne pathogen information for the Facility and Property Management Department.

**BLOOD BORNE PATHOGEN  
6A Section Requirements**

Department: Facility and Property Management (FPM) Date: 2/11/04

1. List of job classifications that are expected to incur occupational exposure and job duties causing exposure

Job Classification	Duty
Custodial	General Cleaning/Bio-hazard clean-up
Maintenance Workers	General cleaning/Bio-hazard clean-up/sewer related duties

2. Location of bio-hazard kits and PPE:

Both are located custodial rooms in the buildings generally serviced by the FPM department. Re-supply inventory and bulk supplies are located at the FPM main office.

List of bio-hazard kit contents:

Appropriate vendors supply all-inclusive kits.

Considering a supervisor must be informed of any bio-hazard clean up they are responsible for re-supply of the kit. If opened, a new complete kit will replace the used kit.

3. Location of storage container for contaminated items and disposal process:  
Contaminated items will be disposed of immediately by transporting waste to Park View Health Center.

4. Location of sharps disposal container? No containers available at this time. This best way to handle this is being reviewed by the County.

5. Copy of annual questionnaires

**Our Goal: Positive Safety Attitude**

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## **7.0 EMERGENCY GUIDELINES**

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### **7.1 EVACUATION GUIDELINES**

**Adopted 2/98**  
**Revised: 8/23/03**  
**Revised 1/1/11**

**PURPOSE:** The purpose of this policy is to have an established and orderly evacuation procedure for Winnebago County government buildings in case of fire, natural disaster, bomb threat, unauthorized intruder, hazardous fumes or other emergency.

#### **FIRE**

1. If you discover a fire or smoke, call 9-1-1 (9-9-1-1 from a County landline). Activate the nearest fire alarm system. If your building does not have an alarm that you can activate, verbally warn others in the area of the need to evacuate the building. In addition, your department should develop internal procedures and house them in Section 7A of the Safety Manual. Anyone who has **actual** knowledge of the alarm being set off falsely should call the Facilities Department Emergency Pager (920) 703-4856) immediately.
2. In the event of fire, your first priority is to leave the building. Employees may use fire extinguishers in an attempt to put out the fire. However, this is not required. Fire fighting should be attempted only by trained employees and only if it is possible to do so without personal harm or making the problem worse.
3. Once alerted by the fire alarms, all employees are to shut off their lights and leave the door to their office closed but unlocked. **DO NOT SHUT OFF ANY HALLWAY LIGHTS. EMERGENCY PERSONNEL NEED THEM TO SEE.**
4. Employees and visitors shall leave by the quickest exit. (ELEVATORS SHOULD NOT BE USED BY ANYONE). People in wheelchairs should be led to the Shelter in Place area shown on the evacuation maps. Advise rescue personnel of people who are occupying the Shelter in Place area. Treat each alarm as real. Listen to and obey all instructions given.
5. All employees will exit the building and instruct anyone in their path, without exception, to proceed to the exits. If time and safety allow, check all rooms in your path if lights are on, regardless if the door is closed, for occupants; if unoccupied turn the lights off. **Do not risk personal harm by checking out areas or confronting uncooperative people, but note the identity, number and specific locations of people who fail to evacuate.**

6. Once you have left the building, do not attempt to reenter it for any reason until you have been cleared to do so by emergency personnel.
7. Once outside, employees and visitors are to move away from the building and clear all driveways to ensure safe arrival of emergency equipment. Department heads, managers and/or supervisors shall prearrange specific locations for their employees and visitors to meet. A specific, pre-designated person in each department (floor/group/team; whichever is most practical), will count employees and visitors to ensure that everyone is accounted for. The person who performed the head count should immediately advise emergency personnel of missing people.

### **BOMB THREAT**

1. A yellow Bomb Threat Form, available on the back of the multicolored Winnebago County Emergency Guide, shall be **placed in a visible location near each telephone.**

- |   |
|---|
| <ol style="list-style-type: none"><li>2. <b>EMPLOYEE RECEIVING BOMB THREAT CALL:</b><ol style="list-style-type: none"><li><b>A.</b> <i>Listen to the message.</i> If you don't understand it, tell the caller that you did not fully understand the message and ask him/her to repeat it.</li><li><b>B.</b> Pull out the Bomb Threat Phone Call Form, and ask the listed questions in order, if possible. Listen for background sounds and anything you can pick up about the caller such as accent, female/male-sounding, age, etc. Extract all the information from the caller that you can.</li><li><b>C.</b> <b>Dial 9-911</b>, and report the call immediately.</li><li><b>D.</b> The recipient of the call or a written threat shall contact a supervisor/manager immediately. The recipient shall remain with the supervisor/manager and be made available for the arrival of law enforcement. The recipient of the call shall list any additional information remembered from the Call Report. If it is a written threat, the paper should not be handled. If the message arrived in an envelope, save the envelope in case it is needed for investigation.</li></ol></li></ol> |
|---|

3. To avoid panic, it is essential that this information be kept highly confidential. Do not spread it to coworkers (employees are needed to check their own areas and offices and tell police of items that are out of place or foreign). If there is a need to evacuate, everyone affected will be advised by emergency personnel at the scene or by a designated County employee who will identify him/herself as being in charge, and will give instructions.
4. **Do not touch anything unusual. Leave it alone and tell emergency personnel about it and where it can be found.**

5. If maintenance employees are present, they shall remain available to help the emergency responders with information and locations within the building.
6. Once the building evacuation is announced, all employees and visitors shall leave by the quickest exit. Employees are to advise all visitors and clients to proceed out of the building and to follow all the procedures in this policy. Employees shall guide visitors and clients to the exits when possible. Although it is best for everyone to walk down the stairs and toward the nearest exit, *it is permissible to use the elevators to get disabled people to the ground floor.*
7. All employees are to shut off their lights and leave the doors to their office closed but unlocked. Do not shut off any hall lights.
8. All employees will exit the building and instruct anyone in their path, without exception, to proceed to the exits. If time and safety allow, check all rooms in your path if lights are on, regardless if the door is closed, for occupants; if unoccupied turn the lights off. **Do not risk personal harm by checking out areas or confronting uncooperative people, but note the identity, number and specific locations of people who fail to evacuate.**
9. Once outside, employees, clients and visitors are required to leave the building area and get at least one block away. While evacuating, everyone is to avoid using driveways and to leave clear, safe entrances for emergency vehicles. Department heads, managers and supervisors shall select specific locations for their employees and visitors to meet. A specific, pre-designated person in each department (floor/group/team; whichever is most practical), will count employees and visitors to ensure that everyone is accounted for. The person who performed the head count should immediately advise emergency personnel of missing people.
10. All employees and visitors are to remain outside and clear of the building until the emergency personnel at the scene give the all-clear.

### **SEVERE WEATHER**

1. As soon as you hear a severe weather warning, contact the designated person in charge of making announcements on the Public Address system if your facility or area has one. Each employee will immediately exit and proceed to a prearranged shelter area. Advise everyone you encounter, including visitors, of the warning and direct them to the nearest stairwell leading to the basement or other designated shelter. Although it is best for everyone to walk down the stairs and toward the nearest exit, *it is permissible to use the elevators to get disabled people to the shelter area.*
2. Employees and visitors outside near the building or in the parking lot will proceed into the building to the closest shelter.

3. Everyone is to remain in the shelter until the warning time has expired *and the All-Clear is given*. **Remember, time extensions can be added to warnings.**
4. Wherever possible, a weather radio or broadcast radio with backup batteries is to be placed in each shelter location to provide access to emergency broadcasts. The closest department to the shelter shall do this.
5. Winnebago County recommends that all employees, visitors, clients and others remain in the shelter until the All-Clear is given. It is not the intent of the County to pay any employee for time spent in the shelter past regular working hours, nor can the County require or force any person to remain in the shelter. Anyone leaving the shelter does so at his or her own risk.

#### **EXTERNAL HAZARDOUS FUMES**

1. If emergency personnel are on the scene or if they have been contacted by phone or radio, comply with their instructions and ensure that anyone else in the area also complies.
2. If the situation is not an obvious emergency, call the Facilities Department pager at (920) 703-4856.
3. If emergency personnel are not present, call 9-1-1 (9-9-1-1 from a County landline), report the situation and follow instructions given by the Dispatcher or other emergency personnel.
4. Evacuate as instructed by emergency personnel.

#### **7.2 THREATENING BEHAVIOR/VIOLENT SITUATIONS**

1. **DEPENDING ON YOUR BUILDING OR AREA AND YOUR PREARRANGED PLAN:**
  - A. Call the Courthouse Security officer [insert phone number here: (920) \_\_\_\_-\_\_\_\_ and update when it changes]. Describe the situation and people involved, and request assistance. **OR**
  - B. Call 9-1-1 (9-9-1-1 from a County landline), describe the situation and people involved, and request assistance.
2. Proceed to a secure area.

# **Winnebago County**

## **Important Phone Numbers**

# **EMERGENCY: 9-1-1**

## **[9-9-1-1 from a County landline phone)**

Facilities & Property Management  
Emergency Contact

1. Dial **1-855-266-7243**
2. Enter **12234#**
3. Enter **your call back number**

Courthouse & Orrin King Administration  
Building Security Officer  
(920) 420-4921 \* (920) 420-4945

Oshkosh Police  
(non-emergency)  
(920) 236-5700

Winnebago County Sheriff  
(non-emergency)  
(920) 236-7300 [Oshkosh] \* (920) 727-2888

Neenah Police  
(non-emergency)  
(920) 886-6000

**See the electronic or hard copy of your department's internal safety manual for department-specific information.**

**or**

**Visit the file within the on-line manual, Section 7A:  
Department Specific Emergency Guidelines.**

**Our Goal: Positive Safety Attitude**

## **8.0 HEARING CONSERVATION POLICY**

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### **A. PURPOSE**

1. To comply with Occupational Safety and Health Administration (OSHA) regulations.
2. To minimize employees' exposure to occupational noise
3. To reduce the incidence of work-related hearing loss.

### **B. SCOPE**

This policy will be administered to employees with exposure to an 8-hour time weighted average of 85 decibels or more, measured on the A scale without regard to any attenuation provided by the use of personal protective equipment. Departments that have an 8-hour time weighted average of 85 decibels or more have been identified in the following departments: Highway, Parks, Airport, Facilities (Maintenance Personnel), Solid Waste and the Sheriff's Department (Patrol).

### **C. EXPOSURE**

The County shall provide hearing protection for all employees exposed at or above the 85 dBA level during work tasks identified by relevant department heads. Affected employees are required to use such protection when performing work under such conditions.

### **D. ADMINISTRATION**

Responsibility for this policy rests with relevant department heads and the Department of Human Resources. This responsibility includes:

1. Coordination and supervision of noise exposure monitoring where appropriate
2. Identification of employees and/or work areas to be included in the Hearing Conservation Program
3. Coordination of audiometric screening programs
4. Supervision of hearing protector selection
5. Development of policies relating to the use of hearing protectors
6. Coordination and supervision of employee training programs
7. Coordination and supervision of record keeping
8. Participation in program evaluation.

### **E. NOISE SAMPLING (SAMPLING RESULTS ARE ATTACHED TO THIS POLICY)**

1. Initial noise sampling measurements will be conducted to determine the noise level within affected departments.
2. Additional noise exposure measurements will be conducted whenever exposures are expected to change.
3. Monitoring will be conducted by trained personnel, including contractors, using standard and approved measurement equipment.
4. Employees, or their authorized representatives, will have the opportunity to observe the monitoring.

F. AUDIOMETRIC SCREENING PROGRAM

1. Audiometric screening will be available at no cost to affected employees.
2. Screening will be completed at the time of hire into affected positions and on an annual basis. Exit audiograms – When possible, an exit audiogram will be performed when an applicable employee leaves Winnebago County or when the applicable employee transfers to another job which does not involve exposure to high noise levels. An exit audiogram is not required if the outgoing employee had an annual audiogram within 30 days of their last date of employment.
3. If a standard threshold shift (STS) as an average shift in either ear of 10 dB or more at 2000, 3000 or 4000 Hz is identified:
  - a. The employee will be notified of the STS within 21 days. The employee will then be scheduled for a retest within 30 days to determine if the threshold shift is persistent.
  - b. If the re-test indicates that a persistent standard threshold shift exists:
    - i. The employee will be notified of the STS within 21 days.
    - ii. The use of hearing protection will be mandatory, and will be enforced. Hearing protection with great attenuation may be provided, if necessary.
    - iii. The employee will be refitted or retrained in the use of hearing protection.
    - iv. The employee may be referred for a clinical audiological evaluation or an ontological examination, as appropriate, if additional testing is necessary or if the employers suspects that a medical pathology of the ear is caused or aggravated by the wearing of hearing protectors.
  - c. If subsequent audiometric testing of an employee indicates that a standard threshold shift is not persistent, the employer will inform the employee of the new audiometric interpretation.

G. TRAINING (TRAINING DOCUMENTATION RECORDS ARE ATTACHED TO THIS POLICY)

Employee training will be required when an employee is required to use hearing protection. The training will be conducted annually and will include the following:

1. The effects of noise on hearing,
2. The purpose and the use of hearing protectors,
3. The advantages and disadvantages and attenuation (noise reduction rating) of various types of hearing protection,
4. Instruction in the selection, fitting, use and care of hearing protectors, and
5. The purpose of audiometric testing and an explanation of the test procedures.



H. ACCESS TO INFORMATION / RECORD-KEEPING

Audiometric test records will be retained for the duration of the affected worker's employment plus thirty years. All records required by this policy shall be provided upon request to employees, former employees, and representatives designated by the individual employee and the Department of Safety and Professional Services.

I. DISCIPLINARY ACTION

Employees who fail to comply with the Hearing Conservation Policy or work rules adopted by the County related to the Policy will be subject to disciplinary action in accordance with the appropriate *Employee Handbook of Employment Policies*.

**Our Goal: Positive Safety Attitude**

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## **9.0 POWERED INDUSTRIAL TRUCK PROGRAM (PIT) - FORKLIFT**

### **PURPOSE**

The Powered Industrial Truck Program is designed to

1. Comply with Occupational Safety and Health Administration (OSHA) regulations
2. Reduce the incidence or potential of work-related injuries from the unsafe use of such equipment
3. Reduce damage to materials, facilities and equipment.

### **EXPOSURE**

Relevant Winnebago County departments shall provide a list of all equipment meeting the definition given in the OSHA standard:

*Fork trucks, tractors, platform lift trucks, motorized hand trucks and other specialized industrial trucks powered by electric motors or internal combustion engines. This section does not apply to compressed-air or nonflammable compressed gas-operated industrial trucks, farm vehicles or vehicles used primarily for earth moving or over-the-road hauling.*

### **ADMINISTRATION**

Responsibility for this policy rests with relevant department heads and the Department of Human Resources. This responsibility includes:

1. Coordination and supervision of the program
2. Identification of employees and employees to be included in the program
3. Supervision of employee operation of the PITs
4. Development of policies relating to the use of PITs
5. Coordination and supervision of employee training programs
6. Coordination and supervision of record keeping
7. Participation in program evaluation.

### **POLICY**

1. Only authorized/competent employees are allowed to operate a PIT. Employees must successfully complete a written and hands-on operations test on such equipment before they are allowed to operate it.
2. New employees must successfully complete training prior to operating a PIT.
3. Each PIT-using employee will be retested at least once every three years. An employee who is observed using or found to have used a PIT in an unsafe manner may be subject to retesting immediately or soon after the unsafe use.
4. A pre-operational equipment safety inspection must be completed prior to each use. If damages or deficiencies exist, the equipment must be removed immediately from operation. Appropriate lockout/tagout procedures must be followed. The damage or deficiencies must be recorded and reported to the

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appropriate supervisor or manager immediately. Once the equipment has been repaired or has undergone necessary maintenance, the appropriate supervisor must determine if the PIT is safe to operate.

5. Each relevant department shall keep an equipment list which indicates PITs. The list should be included as part of this policy and be kept in the Safety Manual.
6. Accidents, incidents and near-misses must be reported, without exception, to the relevant supervisor immediately; the employee making the report (as well as the employee[s] involved in the accident, incident or near-miss, if different) shall complete the appropriate form. Upon receiving the report, the appropriate supervisor also shall complete the appropriate form. Completed forms are to be submitted to the Department of Human Resources.
7. Horseplay and deliberate equipment misuse is forbidden.
8. No one shall ride on a PIT unless it is designed to accommodate multiple occupants. The number of occupants, including the operator, shall not exceed the number recommended by the manufacturer or specified by regulation or rule.
9. A PIT must be operated at a reasonable, prudent and safe speed at all times.
10. Manufacturers' recommended safety guidelines and maintenance instructions must be followed at all times.
11. If a forklift is equipped with a seatbelt, it must be worn by the operator when the forklift is being used.
12. The proper way to mount and dismount a PIT is to face the unit and use three points of contact. Under no circumstances should an operator jump on or off a PIT.
13. PITs or loads shall not be parked in front of the following: access to stairways, fire extinguishers and emergency exits.
14. Operators shall make sure that loads do not exceed the capacity of the PIT.
15. PITs may be modified only after the following conditions are met: a) An authorized Winnebago County employee shall obtain specific approval to do so from the equipment's manufacturer. B) Such modification may be made only after it is approved by the relevant County department head.

## EMPLOYEE TRAINING

Employees will receive classroom training and will be evaluated on their operational performance of a PIT. The items covered during the classroom training include the following:

- a. Operating instructions, warnings, and precautions for the types of truck the operator will be authorized to operate.
- b. Differences between PIT's and automobiles.
- c. Truck controls and instrumentation: where they are located, what they do, and how they work.
- d. Engine or motor operation.
- e. Steering and maneuvering
- f. Visibility (including restrictions due to loading/counterweight).
- g. Fork and attachment adaptation, rigging operation, and use limitations.
- h. PIT capacity and stability.
- i. Any PIT inspection and maintenance that the operator will be required to perform.
- j. Refueling and/or charging and recharging of batteries.
- k. Operating limitations
- l. Any other operating instructions, warnings, or a precaution listed in the operator's manual for the types of PIT's that the employee is being trained to operate.
- m. Surface conditions where the vehicle will be operated.
- n. Composition of loads to be carried and load stability.
- o. Load manipulation, stacking or unstacking.
- p. Pedestrian traffic in areas where the vehicle will be operated.
- q. Ramps and other sloped surfaces that could affect the vehicle's stability.
- r. Other unique or potentially hazardous environmental conditions in the workplace that could affect safe operation.

Employees will be evaluated on their PIT operational performance. This evaluation criteria includes the following:

- a) Shows familiarity with truck controls.
- b) Slows down at intersections and sounds horn at intersections.
- c) Obeys signs.
- d) Keeps a clear view in direction of travel.
- e) Turns corners correctly.
- f) Is aware of rear end swing.
- g) Yields to pedestrians.
- h) Drives under control and within traffic aisles.
- i) Approaches load properly.
- j) Lifts load properly.
- k) Maneuvers properly.
- l) Travels with load at proper height.
- m) Lowered load smoothly and completely.
- n) Stops smoothly and properly.

- o) Load balanced properly.
- p) Forking under the load all the way.
- q) Shows proper rigging techniques.
- r) Stacked loads within marked area.
- s) Stacked load evenly and neatly.
- t) Drives backwards when required.
- u) Checked load weight.
- v) Placed controls in neutral and the forks on the floor when parking.
- w) Followed proper instructions for maintenance – checked vehicle both before and after.

Once the employee passes the driving evaluation and written test and shows consistent safe operating skills, and has demonstrated the ability to handle the equipment, the PIT trainer certifies the employee to be a PIT driver.

### **DISCIPLINARY ACTION**

Employees who fail to comply with the Powered Industrial Truck Policy or work rules adopted by the County related to the Policy will be subject to disciplinary action in accordance with the appropriate *Employee Handbook of Employment Policies*.

## **Our Goal: Positive Safety Attitude**

## **10.0 Asbestos Assessment / Abatement Program**

### **SCOPE AND APPLICATION**

This policy has been developed to minimize the potential health risk to County employees, contractors and the public resulting from the presence of Asbestos Containing Materials (ACM) or Presumed Asbestos Containing Materials (PACM) in County-owned facilities.

This policy complies with Chapter 332 (Public Employee Safety and Health) of the Wisconsin Administrative code as promulgated by the Wisconsin Department of Safety and Professional Services, 29 CFR Part 1910.1001 (Asbestos) as promulgated by the U.S. Occupational Safety and Health Administration, NR447 (Control of Asbestos Emissions) of the Wisconsin Administrative Code as promulgated by the Wisconsin Department of Natural Resources, HFS159 (Asbestos Certification and Training Accreditation) of the Wisconsin Administrative Code as promulgated by the Wisconsin Department of Health and Family Service and all applicable regulations as promulgated by the U.S. Environmental Protection Agency.

### **RESPONSIBILITIES**

Human Resources Department:	Oversees this program and maintains training records.
Facilities Department or Applicable Department Head:	Implementation of this policy.
Supervisors:	Ensure policy is adhered to by all employees.
Employees:	Follow policy requirements contained in this policy.

### **Departmental Policies and Requirements**

This policy represents the minimum requirements for the identification and control of asbestos containing materials. Facilities that contain asbestos containing materials will be required to conduct an internal asbestos survey and develop and Asbestos Operations and Maintenance Plan (O&M) if asbestos is present.

### **DEFINITIONS**

Asbestos: Generic term describing a family of naturally occurring fibrous silicate materials. As a group, the minerals are non-combustible, do not conduct heat or electricity and are resistant to many chemicals. The most common asbestos found in buildings is chrysotile (white asbestos).

ACM: Asbestos Containing Materials (any material containing asbestos in concentrations > 1%).

PCAM: Presumed Asbestos Containing Materials means thermal system insulation and surfacing material found in buildings constructed before 1980.

O & M: Operations and Maintenance Plan. A plan detailing how identified ACM and PACM will be maintained in a safe condition.

## **TRAINING**

All personnel who may reasonably come into contact, as part of their job, with ACM or PACM will receive annual asbestos awareness training. This training would primarily involve the following employees: custodial and facilities workers. Such training will include information concerning the locations of thermal system insulation and surface ACM/PACM, and asbestos-containing flooring material, or flooring material where the absence of asbestos has not yet been certified, health effects of asbestos exposure, housekeeping requirements, and instruction in recognition of damage or deterioration of asbestos containing building materials.

## **DOCUMENTATION REQUIREMENTS**

A comprehensive internal asbestos assessment shall be performed on County-owned facilities constructed prior to 1980. All work involving asbestos (abatement, assessments, demolition, disposal, etc.) will be documented by the Facilities Department or the appropriate Department Head. Copies of this information should be sent to the Human Resources Department.

## **GENERAL REQUIREMENTS**

- Asbestos assessments will be conducted in County-owned buildings constructed prior to 1980 to identify ACM and PACM.
- A determination will be made as to whether ACM or PACM is capable of releasing fibers into the air.
- A specific Operations and Maintenance (O & M) program will be established for each facility to monitor ACM or PACM over its lifetime to ensure a fiber release episode does not occur.
- Routine maintenance operations will be conducted in a manner that controls damage to ACM/PACM, and prevents employee exposure to asbestos.
- If ACM/PACM poses a reasonable possibility of fiber release, an appropriate method of control will be implemented.
- All work with asbestos containing material or presumed asbestos containing material will be accomplished by an outside certified asbestos abatement contractor. All contractors hired by the County for asbestos related work, will be subject to a thorough selection and performance criteria that meet the requirements of all applicable regulations. At all such projects, the contractor will ensure that cleanup is properly

completed and that all asbestos and asbestos contaminated material is collected, and disposed of in accordance with applicable regulations. The contractor will be required to submit air-testing results to demonstrate that the cleanup has been carried out properly and the area can be re-occupied safely.

- When service contract work (elevators, electrical equipment, telephones, air conditioning, etc.) is performed in areas where asbestos is present or there is a possibility of disrupting friable asbestos, the Facilities Department or appropriate Department Head will provide:
    - Notification of the known locations and types of asbestos present in the area where the contractor will work.
    - Information on Winnebago County's notification (asbestos signage) system.
- If there is a disruption of asbestos containing material, the work will stop immediately and the Facilities Department or appropriate Department Head must be notified. Winnebago County requires that contractors carrying out tasks which could potentially create asbestos-containing dust: follow work practices that reduce to the extent practical the creation of airborne asbestos dust and immediately report to the Facilities Department or appropriate Department Head when damage occurs to asbestos-containing materials.
- No construction, demolition or renovation activity in any County-owned building constructed prior to 1980 may disturb any ACM/PACM without prior approval by the Facilities Department or appropriate Department Head. Strict measures will be taken to comply with the most current regulations.

## **ASBESTOS CONTROL MEASURES**

Asbestos control measures are methods used to prevent the release of fibers in asbestos containing materials. All of the following are types of asbestos control measures:

- Internal asbestos assessments.
- Operations and maintenance (O & M) programs.
- Abatement which many include removal, enclosure or encapsulation.

Although removal of ACM is the only truly permanent solution, the presence of ACM in a building does not mean that the health of the building occupants is endangered. If ACM remains in good condition and is unlikely to be disturbed, exposure is negligible and removal is neither advisable nor recommended. In situations where removal is warranted, work will be done by qualified contractors operating in accordance with all applicable Federal, State and Local regulations and with stringent regard for the health and safety of all persons.



## **ASBESTOS ASSESSMENTS**

The Facilities Department or appropriate Department Head will ensure that County-owned facilities constructed prior to 1980 are internally assessed to identify the location of all ACM/PACM. The following assessment criteria will be used for County-owned facilities:

- Building age and life expectancy.
- Accessibility of suspect materials.
- Previous building data on ACM/PACM.
- Available funding.

These assessments should include a review of building records, physical inspections and sampling of suspect materials as appropriate. Asbestos containing materials (ACM) capable of fiber release will be noted by location, type, condition, and prioritized by areas needing immediate abatement action. All samples will be collected in a manner to avoid fiber release and personal exposure. For the purpose of this program, friable asbestos is defined as, any ACM/PACM of more than 1 percent asbestos by weight, which can be crumpled, pulverized, or reduced to powder by hand pressure. Non-friable ACM may also pose a hazard when special circumstances arise and should also be noted in the survey. Non-friable ACM includes a range of products in which asbestos fiber is effectively bound in a solid matrix from which asbestos fiber cannot normally escape. Non-friable asbestos includes a variety of products including asbestos cement tiles and asbestos reinforced vinyl floor tiles. Cutting, breaking, sanding, drilling or similar activities can release asbestos fibers from non-friable asbestos materials.

The condition of ACM/PACM can deteriorate resulting in the release of fibers. Custodial, maintenance workers and outside contractors should report any observed deterioration of ACM immediately to the Facilities Department or appropriate Department Head. Once verified, a work order will be issued to initiate the proper response whether it is repair, removal, etc. of the ACM.

## **OPERATIONS AND MAINTENANCE (O & M) PROGRAMS**

The Facilities Department or appropriate Department Head will develop or assist in the development of the specific O & M Programs for all County facilities requiring such a plan. The Facilities Department or appropriate Department Head will be the most active department associated with this program through construction, renovation and custodial operations.

## **WINNEBAGO COUNTY'S ASBESTOS NOTIFICATION SYSTEM**

An asbestos notification system shall be used to alert people to the presence of asbestos. This system will either use tags, stickers, pipe labels or some other high visibility means. Where feasible, stickers will be used to indicate the presence of asbestos in thermal insulation, asbestos boards and in other locations. Warnings may also be placed near the entrance to rooms, particularly mechanical rooms where large amounts of asbestos may be present in various areas throughout the mechanical room.

## Section 11 – Reserved

## **12.0 LADDER SAFETY POLICY**

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**PURPOSE:** Winnebago County has adopted the following Ladder Safety Policy to comply with appropriate regulations. Following this policy will help protect County employees when using a ladder in the performance of their jobs.

### **12.1 DEFINITIONS**

**Ladders:** A ladder is an appliance usually consisting of two side rails joined at regular intervals by cross-pieces called steps, rungs or cleats, on which a person may ascend or descend.

**Extension ladder:** An extension ladder is a non-self-supporting, portable, adjustable-length ladder. It consists of two or more sections traveling in guides or brackets so arranged as to permit length adjustment. Its size is designated by the sum of the lengths of the sections measured along the side rails.

**Extension trestle ladder:** An extension trestle ladder is a self-supporting portable, adjustable-length ladder, consisting of a trestle ladder base and a vertically adjustable single ladder, with suitable means for locking the ladders together. The size is designated by the length of the trestle ladder base.

**Platform ladder:** A platform ladder is a self-supporting ladder of fixed size with a platform provided at the working level. The size is determined by the distance along the front rail from the platform to the base of the ladder.

**Sectional ladder:** A sectional ladder is a non-self-supporting portable ladder, nonadjustable in length, consisting of two or more sections of ladder so constructed that the sections may be combined to function as a single ladder. Its size is designated by the overall length of the assembled sections.

**Single ladder:** A single ladder is a non-self-supporting portable ladder, nonadjustable in length, consisting of only one section. Its size is designated by the overall length of the side rails.

**Stepladder:** A stepladder is a self-supporting portable ladder, nonadjustable in length, having flat steps and a hinged back. Its size is designated by the overall length of the ladder measured along the front edge of the side rails.

**Tread:** The tread is the horizontal member of a step.

**Tread run:** The tread run is the horizontal distance from the leading edge of a tread to the leading edge of an adjacent tread.

**Tread width:** The tread width is the horizontal distance from front to back of tread including nosing when used.

**Trestle ladder:** A trestle ladder is a self-supporting portable ladder, nonadjustable in length, consisting of two sections hinged at the top to form equal angles with the base. The size is designated by the length of the side rails measured along the front edge.

## **12.2 WOOD LADDER**

This section is intended to prescribe rules and establish minimum requirements for the construction, care and use of the common types of portable wood ladders, in order to ensure safety under normal conditions of use. Other types of special ladders, fruit-picker's ladders, combination step and extension ladders, stockroom step ladders, aisle-way step ladders, shelf ladders and library ladders are not specifically covered by this section.

### **MATERIALS:**

- All wood parts shall be free from sharp edges and splinters. Ladders shall be periodically inspected. Those that have defects shall be withdrawn from service for repair or destruction and tagged or marked as "DANGEROUS. DO NOT USE"

### **CONSTRUCTION REQUIREMENTS PORTABLE STEPLADDERS:**

Stepladders longer than 20 feet shall not be supplied. Stepladders as hereinafter specified shall be of three types:

- Type I - Industrial stepladder, 3 to 20 feet for heavy duty, such as utilities, contractors and industrial use.
- Type II - Commercial stepladder, 3 to 12 feet for medium duty, such as painters, offices and light industrial use.
- Type III - Household stepladder, 3 to 6 feet for light duty, such as light household use.

### **GENERAL REQUIREMENTS:**

- Uniform step spacing shall be employed and shall be not more than 12 inches. Steps shall be parallel and level when the ladder is in position for use.
- The minimum width between side rails at the top, inside to inside, shall be not less than 11-1/2 inches. From top to bottom, the side rails shall spread at least 1 inch for each foot of length of stepladder.
- A metal spreader or locking device of sufficient size and strength to securely hold the front and back sections in open positions shall be a component of each stepladder. The spreader shall have all sharp points covered or removed to protect the user. For Type III ladder, the pail shelf and spreader may be combined in one unit (the so-called shelf-lock ladder).

#### **Portable rung ladders:**

- Single ladders longer than 30 feet shall not be supplied.
- Two-section extension ladders longer than 60 feet shall not be supplied. All ladders of this type shall consist of two sections, one to fit within the side rails of the other, and arranged in such a manner that the upper section can be raised and lowered.
- Sectional ladder assembled combinations of sectional ladders longer than lengths specified in this subdivision shall not be used.

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**Trestle ladders:**

- Trestle ladders, or extension sections or base sections of extension trestle ladders longer than 20 feet, shall not be supplied.
- Painter's stepladders longer than 12 feet shall not be supplied.

**12.3 METAL LADDERS**

General Specific design and construction requirements are not part of this section because of the wide variety of metals and design possibilities. However, the design shall be such as to produce a ladder without structural defects or accident hazards such as sharp edges, burrs, etc. The metal selected shall be of sufficient strength to meet the test requirements, and shall be protected against corrosion unless inherently corrosion-resistant.

**GENERAL REQUIREMENTS:**

- The spacing of rungs or steps shall be on 12-inch centers.
- Rungs and steps shall be corrugated, knurled, dimpled, coated with skid-resistant material or otherwise treated to minimize the possibility of slipping.

**Straight and extension ladders**

- The minimum width between side rails of a straight ladder or any section of an extension ladder shall be 12 inches.
- The length of single ladders or individual sections of ladders shall not exceed 30 feet. Two-section ladders shall not exceed 48 feet in length and over two-section ladders shall not exceed 60 feet in length.
- Based on the nominal length of the ladder, each section of a multi-section ladder shall overlap the adjacent section by at least the number of feet stated in the following:

<b>Normal length of ladder (feet)</b>	<b>Overlap (feet)</b>
Up to and including 36	3
Over 36, up to and including 48	4
Over 48, up to 60	5

- Extension ladders shall be equipped with positive stops, which will insure the overlap specified in the table above.

**Step ladders**

- The length of the front rail measures the length of a stepladder. To be classified as a standard length ladder, the measured length shall be within plus or minus one-half inch of the specified length. Stepladders shall not exceed 20 feet in length.
- The bottoms of the four rails are to be supplied with insulating non-slip material for the safety of the user.
- A metal spreader or locking device of sufficient size and strength to securely hold the front and back sections in the open position shall be a component of each stepladder. The spreader shall have all sharp points or edges covered or removed to protect the user.

12-2, 12-3

### **Trestles and extension trestle ladders**

- Trestle ladders or extension sections or base sections of extension trestle ladders shall be not more than 20 feet in length.

### **Platform ladders**

- The length of a platform ladder shall not exceed 20 feet. The length of a platform ladder shall be measured along the front rail from the floor to the platform.

## **12.4 FIBERGLASS LADDER**

According to OSHA regulations, Fiberglass ladders do not have a section delegated strictly for this type of ladder. Due to this, they fall under the portable ladder regulation.

Construction should comply with ANSI A14.5.1992 safety requirements. Ladders should be labeled as such. If ladders are not labeled contact Human Resources for a copy of the manufacturer's requirements.

## **12.5 ALL LADDERS CARE, MAINTENANCE, AND USE**

To get maximum serviceability, safety, and to eliminate unnecessary damage of equipment, the users must employ good safety practices in the use and care of ladder equipment. The following rules and regulations are essential to the life of the equipment and the safety of the user. Ladders shall be inspected for defects prior to each use.

- Ladders must be maintained in good usable condition at all times.
- Ladders shall be inspected frequently, and those which have developed defects shall be withdrawn from service for repair or destruction and tagged or marked as "Dangerous, Do Not Use."
- Ladders with the following defects shall not be used
  - Broken, split or missing rungs, cleats or steps;
  - Broken or split side rails;
  - Missing or loose bolts, rivets or fastenings;
  - Defective ropes or any other structural defect.
- Joints between the steps and side rails shall be tight, all hardware and fittings securely attached, and the movable parts shall operate freely without binding or undue play.
- Metal bearings of locks, wheels, pulleys, etc., shall be frequently lubricated.
- Frayed or badly worn rope shall be replaced.
- Safety feet and other auxiliary equipment shall be kept in good condition to ensure proper performance.
- Rungs should be kept free of grease and oil.
- If a ladder is involved in the following, immediate inspection is necessary:
  - If ladders tip over, inspect ladder for side rails dents or bends, or excessively dented rungs; check all rung-to-side-rail connections; check hardware connections; check rivets for shear.
  - If ladders are exposed to oil and grease, equipment should be cleaned of oil, grease or other slippery materials. This can easily be done with a solvent or steam cleaning.

12-3, 12-4, 12-5

### **USE:**

- Setting up: The proper angle is to place the base a distance from the vertical wall equal to one-fourth the working length of the ladder. (4 - 1 rule)
- Portable ladders are designed as a one-person working ladder based on a 200-pound load. This may vary with each ladder. Check ladders prior to use for maximum load capacity. Keep in mind the weight of anything you might be carrying.
- The ladder base section must be placed with a secure footing. Or it shall be lashed, or held in position.
- The top of the ladder must be placed with the two rails supported, unless equipped with a single support attachment. The top rest for portable rung and cleat ladders shall be reasonably rigid and shall have ample strength to support the applied load;
- No ladder should be used to gain access to a roof unless the top of the ladder shall extend at least 3 feet above the point of support, at eave, gutter or roofline;
- Ladders shall not be placed in front of doors opening toward the ladder unless the door is blocked upon, locked or guarded;
- When ascending or descending, the climber must face the ladder.
- Tops of the ordinary types of stepladders shall not be used as steps;
- Ladders shall not be placed on boxes, barrels or other unstable bases to obtain additional height;
- Ladders must not be tied or fastened together to provide longer sections. They must be equipped with the hardware fittings necessary if the manufacturer endorses extended uses.
- Ladders should not be used as a brace, skid, guy or gin pole, gangway, or for uses other than that for which they were intended;
- See OSHA standard 1910.333(c) for work practices to be used when work is performed on or near electric circuits;
- For two-section extension ladders the minimum overlap for the two sections in use shall be as follows:

<b>Normal length of ladder (feet)</b>	<b>Overlap (feet)</b>
Up to and including 36	3
Over 36, up to and including 48	4
Over 48, up to 60	5

- Portable rung ladders with reinforced rails shall be used only with the metal reinforcement on the underside;
- The user should equip all portable rung ladders with non-slip bases when there is a hazard of slipping. Non-slip bases are not intended as a substitute for care in safely placing, lashing or holding a ladder that is being used upon oily, metal, concrete or slippery surfaces;
- The bracing on the back legs of stepladders is designed solely for increasing stability and not for climbing.
- Horseplay is strictly forbidden.

**Our Goal: Positive Safety Attitude**



### **13.0 CONFINED SPACE ENTRY PROGRAM**

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Adopted: 2001; Revised: 2014

**PURPOSE:** Winnebago County has adopted the following Confined Space Entry Plan to comply with the requirements of WI Department of Safety and Professional Services (SPS) and Federal OSHA regulations. This plan will protect County employees from imminent dangers when entering or working in confined spaces.

#### **DEFINITIONS:**

**Attendant** means an individual stationed outside one or more confined spaces who monitors the authorized entrants and who performs all attendant's duties assigned in the employer's entry program.

**Authorized Entrant** means an employee who is authorized by the employer to enter a confined space.

**Confined Space** means a space that:

- ▲ Is large enough and so configured that an employee can enter and perform assigned work;
- ▲ Has limited or restricted means for entry or exit, such as a tank, vessel, silo, storage bin, hopper, vault, and pit; and,
- ▲ Is not designed for continuous employee occupancy.

**Entry** means the action by which a person passes through an opening into a confined space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the entrant's body breaks the plane of the opening into the space.

**Entry Supervisor** means the person, such as the employer, foreperson or crew chief, responsible for determining if acceptable entry conditions are present at the confined space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry. An entry supervisor also may serve as an attendant or as an authorized entrant, as long as that person is trained and equipped as required for each role he or she fills. Also, the duties of entry supervisor may be passed from one individual to another during the course of an entry operation.

**Hazardous Atmosphere** means an atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue, injury, or acute illness from one or more of the following causes:

- ▲ Flammable gas, vapors, or mist in excess of 10% of its lower explosive limit;
- ▲ Airborne combustible dust at a concentration that meets or exceeds its lower explosive limit;
- ▲ Atmospheric oxygen concentrations below 19.5% or above 23.5%;
- ▲ Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in Subpart G, Occupational Health and Environment Control, or in Subpart Z, Toxic and Hazardous Substances, of Titles 29 CFR, Part 1910 and which could result in the employee exposure in excess of its dose or permissible exposure limit;
- ▲ Any other atmospheric condition that is immediately dangerous to life or health.

**Immediately Dangerous to Life or Health** means any condition that possess an immediate or delayed threat to life or that would cause irreversible adverse health effects or that would interfere with an individual's ability to escape unaided from a confined space.

**Lower Explosive Limit** means the lower limit of flammability of gas or vapor at ordinary ambient temperatures expressed as a percentage of the gas or vapor in air by volume.

**Rescue Service** means the personnel designated and trained to rescue employees from confined spaces.

#### **RESPONSIBILITIES:**

Winnebago County will not require any employee to enter or work in a confined space, unless it meets the criteria set forth in this plan.

#### **WORKPLACE EVALUATION:**

- A. The department head, aided by supervisor if necessary, will evaluate the work areas to determine if any confined spaces are present. **See appendix A for this confined space identification/listing.**
- B. If confined spaces exist, the County will inform exposed employees, by posting signs stating, "Danger Confined Space – Do Not Enter."

#### **ALTERNATIVE PROCEDURE:**

- A. Winnebago County may use the following alternative entry procedure for a heating system tunnel or heating system vault, if the County can demonstrate that the only hazard posed by the tunnel or vault is an actual or potential hazardous atmosphere.
- B. The County must also be able to demonstrate that continuous forced air ventilation alone is sufficient to maintain the tunnel or vault safe for entry, and must document all monitoring and inspection data.
- C. The alternative procedure will exempt Winnebago County from continuous monitoring provided that the atmosphere within the heating system tunnel or heating system vault is periodically tested to ensure that the continuous forced air ventilation prevents the accumulation of a hazardous atmosphere.

#### **DETERMINATION OF ENTRY INTO CONFINED SPACES:**

Winnebago County determines that no employees will enter Level 2 confined spaces. The county will label the confined spaces and take effective measures to prevent its employees from entering the confined spaces.

#### **SAMPLING REQUIREMENTS:**

- A. No person may enter a confined space until the atmosphere of the confined space is sampled and air quality is determined for all levels and all areas of the confined space.
- B. The atmosphere of the confined space shall be sampled for:
  - a. Oxygen;
  - b. Hydrogen sulfide or carbon monoxide;
  - c. Combustible gas; and,
  - d. Any hazardous substances which an employee is expected to work with or be exposed to, and which we have reason to believe may be present.

- C. A direct read out sampling device, which can simultaneously test for oxygen, hydrogen sulfide or carbon monoxide, and combustible gas without manual switching, shall be used to sample the atmosphere of a confined space.
- D. The sampling device should be equipped with audible and visual warning devices, which indicate when an atmosphere of a confined space has:
  - a. An oxygen content of less than 19.5% or greater than 23.5%;
  - b. A hydrogen sulfide content of 10 parts per million or more, a carbon monoxide content of 35 parts per million or more; or
  - c. A combustible gas content of 10% or more of the lower explosive limit.
- E. The sampling device shall be calibrated as per instructions of the manufacturer.
- F. Calibration of a sampling device shall be conducted as often as recommended by the manufacturer, but at least once every 6 months, with a standardized combustible gas supply.
- G. The sampling device or non-sparking probe attached to the sampling device shall be used to sample the atmosphere of a confined space. When entry to a confined space is by means of a manhole, a probe shall be inserted through the pick-hole of the manhole cover, or the manhole cover shall be pried open on the downward side to allow just enough room for the insertion of the probe or device.
- H. The sampling of the atmosphere of the confined space for hazardous substances shall be by the use of a testing device capable of detecting and measuring the concentrations of hazardous substances likely to be present.

#### **AIR QUALITY:**

- A. A confined space may not be entered, unless the atmosphere of the confined space has:
  - a. Oxygen content of 19.5% or more, but not more than 23.5%;
  - b. A hydrogen sulfide content of less than 10 parts per million or a carbon monoxide content of less than 35 parts per million;
  - c. A combustible gas content less than 10% of the lower explosive limit; and,
  - d. An explosive level for any hazardous substance determined to be present which is at or below the threshold limit value short term exposure limits found in Section CFR 1910.1000.
- B. A confined space with an atmosphere, which is not within the limits of Air Quality (Section A) may be ventilated and may be entered only when sampling indicates an atmosphere is within the limits of Section A above.
- C. A confined space with an atmosphere which is not within the limits (as specified above in Section A) may not be entered.

#### **CONFINED SPACE CLASSIFICATION:**

- A. To determine the specific entry procedures to be followed, all confined spaces shall be classified as either a level 0, level 1 or level 2 space, based upon the air quality and the sources of possible hazards.
- B. A level 0 space is a confined space that has no actual or potential for atmospheric hazards and you can eliminate all other hazards prior to entry into that space. Documentation is required to show how you eliminated the hazards and certify the space as "hazard free." For example, an employee needs to enter an air handling

unit that has no or potential atmospheric hazards; but has an unguarded rotating belt/pulley system that could start automatically. In order for the space to be considered level 0, employees must properly lock out and/or tag out the rotating belt/pulley system hazard before entry.

- C. A level 1 space is a confined space where there is only the potential for a hazardous atmosphere; however ventilation alone of the space will make it safe for entry. Employers must document their evaluation of the confined space hazards (air quality) and the effectiveness of the ventilation. This level does not require a permit, an attendant/entry supervisor, and rescue services.
- D. A level 2 space is a confined space that has one or more of the following characteristics:
  - a. The space contains or has the potential to contain a hazardous atmosphere;
  - b. The space contains a material that has the potential for engulfment of an authorized entrant;
  - c. The space has an internal configuration such that an authorized entrant could be trapped or asphyxiated by inwardly converging walls, or by a floor which slopes downward and tapers to a smaller cross-section; or
  - d. The space contains any other recognized serious safety or health hazard.

#### **CONFINED SPACE RECLASSIFICATION (this section only applies to HVAC/AHU systems):**

- A. A Heating, Ventilation, and Air Conditioning System and Air Handler Units may be reclassified from a level 2 space to a level 0 space under the following conditions:
  - a. If the space has no actual or potential atmospheric hazards and if all other hazards are eliminated without entry into the space (i.e. locking out/tagging out an electrical breaker to the unit), the level 2 space may be reclassified as level 0.
  - b. If it is necessary to enter the level 2 space to eliminate the hazards, entry is prohibited.

#### **CONFINED SPACE ENTRY PROCEDURES:**

- A. Level 0 Spaces – If there are no actual or potential atmospheric hazards and no other hazards, the space may be entered. If a level 2 space is being re-classified to a level 0 space, documentation is required to show how you eliminated the hazards and certify the space as “hazard free.” **See Appendix B for the for this reclassification documentation form.**
- B. Level 1 Spaces – Entry or work in a level 1 space shall be performed in accordance with the following if the potential for a hazardous atmosphere exists:
  - a. The atmosphere with the authorized entrant’s immediate area shall be continuously monitored for oxygen, hydrogen sulfide, carbon monoxide and combustible gas while in the confined space.
  - b. Signals from the monitoring device shall immediately indicate when the atmosphere falls outside any of the air quality limits specified in Section Air Quality, Part A.
  - c. While in a confined space, if the air quality falls outside any of the limits

specified in Section Air Quality, Part A, the authorized entrant shall exit the confined space and the confined space shall be classified as a level 2 space.

d. Ventilation may not be used in lieu of monitoring devices.

- C. Level 2 Spaces – Entry into or work in a level 2 space is prohibited by County employees. A written permit must be completed when entering Level 2 spaces. **See Appendix C for this permit entry form.**

#### **WORK INVOLVING MULTIPLE EMPLOYERS:**

When two employers arrange to have employees perform work that involves confined space entry, each employer shall:

- A. Apprise the other employer of the elements, including hazards identified and each employer's experience with the space, that makes the space in question a confined space; and,
- B. Coordinate entry operations with the other employer when personnel from both employers will be working in or near confined spaces.

#### **RESCUE REQUIREMENTS:**

- A. Prior to entering a confined space, procedures shall be established for acquiring help in the event of an emergency. Communication shall be made for additional help before a rescue attempt is made into any confined space.
- B. The County will develop and implement procedures for summoning rescue and emergency services, for rescuing entrants from confined spaces, for providing necessary emergency services to rescued employees, and for preventing unauthorized personnel from attempting a rescue.
- C. County employees shall not enter confined space to perform rescue services.

#### **HOST EMPLOYER RESCUE REQUIREMENTS:**

When the County arranges to have persons other than County employees perform confined space rescue, we will:

- A. Inform the rescue service of the hazards they may confront when called on to perform rescue at the host employer's facility; and,
- B. Provide the rescue services with access to all confined spaces from which rescue may be necessary so that rescue service can develop the rescue plans and practice rescue operations.

#### **SUBSTANCE OVEREXPOSURE INFORMATION:**

If an entrant is over exposed to a substance for which a Material Safety Data Sheet (MSDS) or Safety Data Sheet (SDS) is required, the MSDS/SDS must be made available to the medical facility treating the exposed entrant.

## **TRAINING AND EQUIPMENT REQUIREMENTS:**

- A. Authorized entrants will be trained and equipped to recognize, understand, and control the hazards that may be encountered in confined spaces.
- B. The County will provide all authorized entrants with a copy of this Confined Space Entry Program, and the entrants shall be trained according to the established procedures in it.
- C. Training will establish employee proficiency in the duties required by this Confined Space Entry Program and shall introduce new or revised procedures as necessary for compliance with the State of Wisconsin Department of Safety and Professional Services Confined Space Entry Requirements. Training shall be provided to each affected employees:
  - a. Before the employee is first assigned duties regarding confined spaces;
  - b. Before there is a change in assigned duties regarding confined spaces; and,
  - c. Whenever there is a change in confined space operations that presents a hazard(s) in which an employee has not been previously trained on.
- D. The County will provide personal protective equipment required for safe confined space entry to be worn by authorized entrants.
- E. No employee may smoke within 10 feet of a confined space.
- F. No equipment with a combustible gas engine may be operated in such a way as to allow exhaust to accumulate in the confined space.
- G. When entrance covers are removed, the opening shall be promptly guarded by a railing, cover, or other temporary barrier that will prevent an accidental fall through the opening and that will protect each employee working in the space from foreign objects entering the space.
- H. Sampling devices used in confined space shall be intrinsically (electrically) safe for use in combustible atmospheres.
- I. Employees designated as an authorized entrant and attendant will be provided with basic first and cardiopulmonary resuscitation training [as required by WI DSPS 332.28(3)].

## **WORKING IN STREETS:**

If the County works in confined spaces, which are located in streets, the work will be performed following the procedures listed below:

- A. A vehicle's beacon and 4-way flashers shall be activated upon approach to an entrance of a confined space.
- B. A vehicle shall be parked in such a way that traffic flows in an unobstructed manner and, where possible, the vehicle shall provide protection for the employees.
- C. A vehicle shall be parked in such a manner that vehicle exhaust cannot accumulate in the confined space. If this is not possible, the vehicles exhaust pipe shall be extended away from the confined space.

## **DUTIES OF CONFINED SPACE ENTRY EMPLOYEES (FOR LEVEL 2 ENTRIES):**

- A. Authorized Entrants - The County will ensure that authorized entrants:

13-0

- a. Know the hazards that may be faced during entry, including information on the method, signs or symptoms and consequences of exposure.
  - b. Properly use equipment for confined spaces.
  - c. Communicate with the attendant as necessary to enable the attendant to monitor entrant status and to enable the attendant to alert entrants of the need to evacuate the space.
  - d. Alert the attendant whenever the entrant recognizes any warning sign or symptom of exposure to a dangerous situation or when the entrant detects a prohibited condition.
  - e. Exit from the confined space as quickly as possible whenever:
    - i. An order to evacuate is given by the attendant or the entry supervisor;
    - ii. The entrant recognizes any warning sign or symptom of exposure to a dangerous situation;
    - iii. The entrant detects a prohibited condition; or
    - iv. An evacuation alarm is activated.
- B. Attendants - The County will ensure that attendants:
- a. Know the hazards that may be faced during entry including information on the method, signs or symptoms, and consequences of exposure.
  - b. Are aware of possible behavioral effects of hazard exposure in authorized entrants.
  - c. Continuously maintain an accurate count of authorized entrants in the confined space and ensure that the means used to identify authorized entrants accurately identifies who is in the space.
  - d. Remain outside the confined space during entry operations until relieved by another attendant.
  - e. Communicate with authorized entrants as necessary to monitor entrant status and to alert entrants of the need to evacuate the confined space.
  - f. Monitor activities inside and outside the confined space to determine if it is safe for authorized entrants to remain in the space and order the entrants to evacuate the space immediately under any of the following conditions:
    - i. If the attendant detects a prohibited condition,
    - ii. If the attendant detects the behavioral effect of hazard exposure in an entrant;
    - iii. If the attendant detects a situation outside the confined space that could endanger the authorized entrants; or
    - iv. If the attendant cannot effectively and safely perform all the duties required.
  - g. Summon rescue and other emergency services as soon as the attendant determines that authorized entrants need assistance to escape from confined space hazards.
  - h. Take the following action when unauthorized persons approach or enter a confined space while entry is underway:
    - i. Warn the unauthorized persons that they must stay away from the confined space;

- i. Advise the unauthorized persons that they must exit immediately if they have entered the confined space; and
    - ii. Inform the authorized entrants and the entry supervisor if unauthorized persons have entered the confined space.
  - i. Perform no duties that might interfere with the primary duty of monitoring the protection of the authorized entrants.
- C. Entry Supervisors – The County will ensure that entry supervisors:
- a. Know the hazards that may be faced during entry including information on the method, signs or symptoms, and consequences of the exposure.
  - b. Verify that all required tests have been conducted and that all required procedures and equipment are in place before allowing entry to begin.
  - c. Terminate the entry when the entry operations have been completed or when a condition that is not allowed arises in or near the confined space.
  - d. Verify that rescue services are available and that the means of summoning them are operable.
  - e. Remove unauthorized persons who enter or attempt to enter the confined space during entry operations.
  - f. Determine whenever responsibility for entry operation is transferred and at intervals dictated by the hazards and operations performed within the space, that entry operations remain consistent with terms for this Confined Space Entry Program.



**WINNEBAGO COUNTY**

**APPENDIX A – CONFINED SPACE IDENTIFICATION/LISTING**

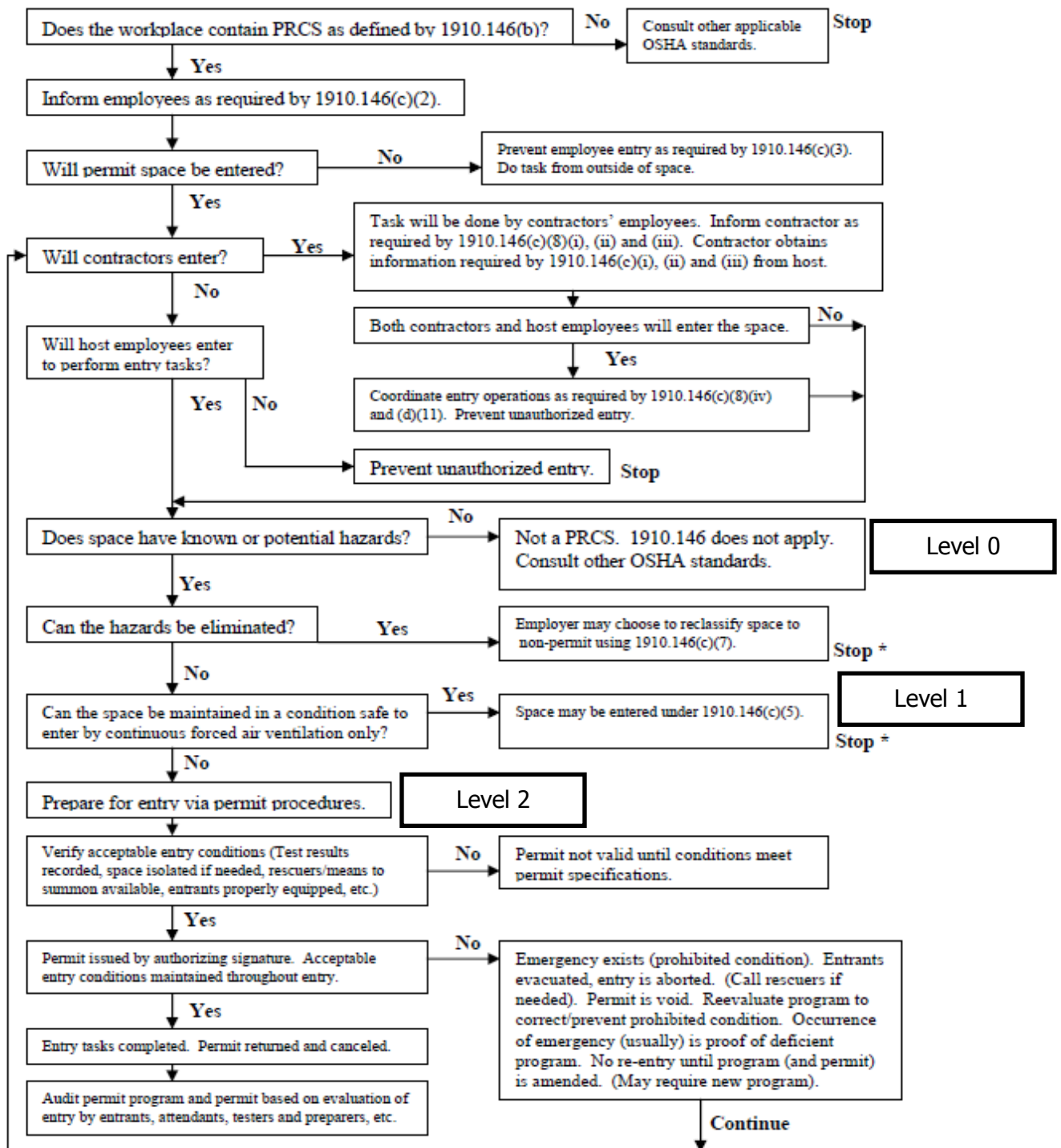
FOR DEPARTMENT: \_\_\_\_\_

I.D. #	SPACE DESCRIPTION	REASON FOR ENTRY	POTENTIAL HAZARDS	SPECIAL INSTRUCTIONS	CONFINED SPACE LEVEL (USE FLOW CHART ON P.13-9)

# WINNEBAGO COUNTY

## APPENDIX A (CONTINUED) – CONFINED SPACE IDENTIFICATION/LISTING

**Permit – Required Confined Space Decision Flow Chart**



\*Spaces may have to be evacuated and re-evaluated if hazards arise during entry.

**WINNEBAGO COUNTY**  
**APPENDIX B – RECLASSIFICATION FORM (FROM LEVEL 2 SPACE TO LEVEL 0 SPACE)**

**INSTRUCTIONS:**

1. This "pre-entry" form shall be used when entering a Permit-Required Confined Space (level 2) that has been reclassified to a Non-Permit Required Confined Space (level 0).
2. This form should be filled out by the entrant prior to entry.
3. This completed form shall be made available to each employee entering this space or to that employee's authorized representative.
4. This completed form shall be filed with the Department Head with 24 hours after entry has been terminated.

Location of Space to be Entered:	
Reason for Entry:	
Date of Entry:	
Name of Entrant:	
Signature of Entrant:	
Start Time of Entry:	
Finish Time of Entry:	

List below the specific procedure that was followed for space reclassification (i.e. Lock Out/ Tag Out):

--

Please note any problems encountered with entry activity (i.e., equipment, atmospheric, other hazards):

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# WINNEBAGO COUNTY

## APPENDIX C – CONFINED SPACE PERMIT ENTRY FORM

<b>Location of Confined Space:</b>	<b>Dept.:</b>
<b>Purpose for Entry:</b>	<b>Date/Time:</b>
<b>Authorized by:</b>	<b>Duration:</b>
<b>Attendant(s):</b>	

<b>Authorized Entrants:</b>	2)
1)	3)

<b><u>Procedures/Equipment:</u></b>	<b><u>Yes</u></b>	<b><u>No</u></b>
Lock Out / Tag Out		
Ventilation		
Secure Area		
Body Harness		
Fire Extinguisher		
Communications Equipment (ex. Two Way Radio)		
Protective Clothing (head/eye/hearing/hands/etc.)		

Tests to be taken:	Yes	No	Acceptable Entry Conditions	Time: : / : AM/PM	Time: : / : AM/PM	Time: : / : AM/PM
			Permissible Exposure Limits*	Level	Level	Level
Oxygen			19.5% to 23.5%			
Combustible Gas			Below 10% LFL			
Carbon Monoxide			Below 35 PPM			
Hydrogen Sulfide			Below 10 PPM			
Hydrogen Cyanide			Below 10 PPM			
Sulfur Dioxide			Below 2 PPM			
Ammonia			Below 35 PPM			

Individual Conducting Air Sampling (Name): \_\_\_\_\_

Instruments Used – Name	Type	Manufacturer

Stand by Person(s): \_\_\_\_\_

**For Rescue and Emergency Services Call:** \_\_\_\_\_

\*Permissible Exposure Limits as listed in OSHA 29 CFR 1910.1000

## **14.0 PERSONAL PROTECTIVE EQUIPMENT (PPE) PROGRAM**

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Key Program Contacts: Ron Montgomery, Chair-Winnebago County Safety Committee

Program Coordinator: Safety Program Coordinator

Date Created: June 26, 2013

Review Frequency: Annually

Last Review Date: January 21, 2016

Last Revision Date: January 21, 2016

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Purpose  
Scope  
PPE Requirements and Availability  
Hazard Assessment  
Personal Protective Equipment Selection  
Inspection, Cleaning and Maintenance  
Training and Information  
Employee Owned Personal Protective Equipment  
Program Audit

### **APPENDICES**

- A Certification of Hazard Assessment
- B Personal Protective Equipment Training Attendance Record

### **Purpose:**

The purpose of this program is to communicate Winnebago County's Personal Protective Equipment Program (hereafter known as PPE) to all of its employees. This program covers the requirements for PPE with the exception of PPE used for hearing conservation, respiratory protection, blood borne pathogens protection, and PPE required for hazardous material response to spills or releases, which are covered under separate written programs.

### **Scope:**

The Occupational Safety and Health Administration (OSHA) and the Wisconsin Department of Safety Professional Services (DSPS) PPE Standards (OSHA 1910.132 and DSPS 332.50) state that engineering controls and administrative controls shall be

the primary method to eliminate or minimize hazard exposure in the workplace. When such controls are not practical, personal protective equipment shall be employed to reduce or eliminate personal exposure to hazards. PPE will be provided, used and maintained when it has been determined that its use is required and that such use will lessen the likelihood of occupational injuries and/or illness.

### **PPE Requirements and Availability**

The Program Coordinator monitors the selection, use, maintenance and replacement of PPE.

This program covers the following types of PPE:

- OSHA Standard 1910.133 - Eye and face protection
- OSHA Standard 1910.135 – Head protection
- OSHA Standard 1910.136 – Foot protection
- OSHA Standard 1910.137 – Insulating equipment for electrical protection
- OSHA Standard 1910.138 – Hand protection

### **Hazard Assessment**

The Program Coordinator shall verify that the required workplace hazard assessment has been performed through a written certification that identifies the workplace evaluated; the person certifying that the evaluation has been performed; the date(s) of the hazard assessment; and, which identifies the document as a certification of hazard assessment. The Certificate Forms and Hazard Assessments from each area/department are provided as Appendix A's.

The purpose of this assessment is to determine the type of workplace exposures that exist within the Organization's operations and subsequently identify the appropriate types of personal protective equipment, if any. If changes in equipment or methods make the previously conducted hazard assessment obsolete, a new hazard assessment shall be conducted.

### **Personal Protective Equipment Selection**

The Program Coordinator is responsible for making sure that each affected employees use the appropriate protective equipment for the hazard(s) identified in the Hazard Assessment.

#### **A. Eye and face protection**

Each affected employee shall use appropriate eye and face protection when exposed to eye or face hazards from flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, or potentially injurious light radiation.

Each affected employee shall use eye protection that provides side protection when there is a hazard from flying objects. Detachable side protectors (e.g. clip-on or slide-on side shields) meeting the pertinent requirements of this section are acceptable.

Each affected employee who wears prescription lenses while engaged in operations that involve eye hazards shall wear eye protection that incorporates the prescription in its design, or wears eye protection that can be worn over the prescription lenses without disturbing the proper position of the prescription lenses or the protective lenses.

Each affected employee shall use equipment with filter lenses that have a shade number appropriate for the work being performed for protection from injurious light radiation. All eye and face protection must meet the requirements of ANSI (American National Safety Institute) Z87.1-1989 or Z87.1-2003.

**B. Head Protection**

Wherever there is a potential for injury to the head from falling objects, each affected employee wears a protective helmet. Employees exposed to electrical hazards, if any, wear a protective helmet that is designed to reduce the electric shock hazard when near an exposed electrical conductor.

All head protection must meet the requirements of ANSI (American National Safety Institute) Z89.1-1997, Z89.1-2003 or Z89.1-2009.

**C. Foot Protection**

Each affected employee shall use protective footwear when working in areas where there is a danger of foot injuries due to falling or rolling objects, or objects piercing the sole, and where such employee's feet are exposed to electrical hazards, if any. All protective toe footwear must meet the requirements of ANSI (American National Safety Institute) Z41-1991, Z41-1999 or ASTM (American Society for Testing and Material)-F2412-2005.

**D. Hand protection**

Employees are required to use appropriate hand protection when their hands are exposed to hazards such as those from skin absorption of harmful substances; severe cuts or lacerations; severe abrasions; punctures; chemical burns; thermal burns; and harmful temperature extremes.

Selection of the appropriate hand protection is based on an evaluation of the performance characteristics of the hand protection relative to the task(s) to be performed, conditions present, duration of use, and the hazards and potential hazards identified.

Employee should review a chemical's specific Material Safety Data Sheet and their department's PPE hazard assessment to determine what type of glove is appropriate. If there still remains a question as to what type of glove to wear, the employee should see their supervisor or their department head.

### **Inspection, Cleaning and Maintenance**

It is the intent of the County that each employee shall receive their own PPE. If this is not possible, the PPE shall not be shared between employees until it has been properly cleaned and sanitized. Employees are responsible for inspecting their PPE prior to use. Employees are also responsible for ensuring that their PPE is cleaned and maintained at regular intervals so that the equipment provides the intended protection.

### **Training and Information**

Employees required to use protective equipment are provided with training. This training includes but is not limited to the following information:

- When protective equipment is necessary
- What protective equipment is necessary
- How to properly don, doff, adjust and wear protective equipment
- The limitations of protective equipment
- The proper care, maintenance, useful life and disposal of protective equipment

As a part of this training, each employee shall demonstrate an understanding of the training and the ability to use protective equipment properly.

This training is repeated under the following circumstances:

- It is believed that a previously trained employee does not have the understanding and skill required.
- Changes in the workplace render previous training obsolete.
- Inadequacies in an affected employee's knowledge or use of assigned protective equipment indicates that the employee's knowledge or use of assigned protective equipment indicate that the employee has not retained the requisite understanding or skill.

A written certificate verifying training will be retained in each department. This certificate indicates that the employee received and understood the training, the employee's name, and the date(s) of training and an identification of the subject of certification.



## **Employee Owned Personal Protective Equipment**

Where employees provide their own protective equipment, the Department is responsible to assure its adequacy, including proper maintenance, and proper sanitation of such equipment. As a result, the Department retains the right to inspect and approve any and all protective equipment provided by employees. If such equipment is found to be inadequate, the employee will be required to repair or replace the protective equipment.

## **Program Audit**

This Personal Protective Program is audited regularly to determine the continued effectiveness of the program. The Program Coordinator, Managers, and Supervisors frequently inspect all areas where protective equipment is used to ensure compliance with the protective equipment program. The program is formally audited annually by the County Safety Committee and revisions are made as necessary.

PPE Worksheet - Facilities Management									
Category		Body Part		Severity		PPE		Mandatory	Notes
<b>Aerosol Spray Painting</b>									
Chemical		Eye		2		Safety Glasses with side sheilds		Yes	
<b>Air pressure/ Compressed air for cleaning</b>									
Impact		eye		3		Safety Glasses with side sheilds		Yes	
<b>Chain saw operation</b>									
Impact		Head		3		Loggers Helmet		Yes	
Impact		Eye		3		Safety Glasses with side sheilds		Yes	
Impact		Foot		3		xxx			
Impact		Face		3		Face Sheild		Yes	
Penetration		Hand		3		Gloves		Yes	
Penetration		Leg		3		Cut resistance chaps		Yes	
Noise		Ear		3		Muffs or plugs		Yes	Recommend both
<b>Change cutting blade on plow</b>									
Compression		Hand		3		Gloves		Yes	When handling blade
Impact		Foot		3		xxx			
<b>Charge batteries</b>									

Impact		Eye		3	Safety Glasses with side sheilds		Yes	
Impact		Face		2	Face sheild			Required when exposed to liquid
<b>Corrosive Chemical handling</b>								
Chemical		Eye		3	Tight fitting goggles		Yes	Follow MSDS Requirements when
Chemical		Face		2	Face Sheild			handling all chemicals
Chemical		Hand		3	Gloves - chemical resistant		Yes	
<b>Driving vehicles</b>								
Impact		Body		2	Seat belt		Yes	Follow Vehicle use policy
<b>Fueling Vehicles</b>								
Chemical		Eye		1	Safety Glasses with side sheilds			
Chemical		Hand		1				
Chemical		Face		1	Face Sheild			
<b>Grass Mowing on riding mower</b>								
Dust		Eye		2	Safety Glasses with side sheilds			
Noise		Ear		2	Muffs or plugs		Yes	
Pentetration		Foot		2	xxx			
<b>Grass mowing with walk behind mower</b>								
Dust		Eye		2	Safety Glasses with side sheilds			
Noise		Ear		2	Muffs or plugs		Yes	
Pentetration		Foot		3	xxx			
<b>Hand Impact tools no power use</b>								
Impact		Eye		2	Safety Glasses with side sheilds		Yes	
Pentetration		Hand		2	Gloves			
<b>Handling/Spreading ice melt salt</b>								
Impact		Body		2	Work Boot			Lug soles
<b>Herbicide application with hand sprayer</b>								
Chemical		Face		1	Face Sheild			Follow MSDS
Chemical		Hand		1	Gloves-Chemical Resistant			
Chemical		Eye		2	Safety Glasses with side sheilds		Yes	
<b>Herbicide mixing</b>								
Chemical		Hand		2	Gloves-Chemical Resistant		Yes	
Chemical		Eye		3	Safety Glasses with side sheilds		Yes	
Chemical		Face		1	Face Sheild			
<b>HVAC Repair</b>								
Impact		Eye		2	Safety Glasses with side sheilds			
Pentetration		hand		1	Gloves			
<b>Hydraulic Repairs</b>								
Chemical		Eye		3	Safety Glasses with side sheilds		Yes	
Chemical		Face		1	Face Sheild			
Chemical		Hand		1	Gloves-Chemical Resistant			
<b>Leaf blower operation</b>								
Noise		Ear		2	Muffs or plugs		Yes	
Impact		Eye		2	Safety Glasses with side sheilds		Yes	
<b>Load/Unload of equipment for transportation</b>								
Compression		Foot		2	xxx			

Abrasion		Hand		1		Gloves			
<b>Minor Electrical Repairs</b>									
Electrical		Body		3		Electrical Protective clothing		Yes	Ensure Arc Flash protection
Impact		Eye		3		Safety Glasses with side sheilds		Yes	Unless energy is isolated and
									verified
<b>Minor Plumbing Repair</b>									
Chemical		Hand		2		Gloves - Cheical Resistant			When chemicals are present in pipes
Chemical		Eye		2		Safety Glasses with side sheilds			
<b>Minor Vehicle repairs</b>									
Impact		Eye		2		Safety Glasses with side sheilds			
Chemical		Hand		1		Gloves			
<b>Oxy-acetylene torch use</b>									
Impact		Foot		1		xxx			When cutting objects that could fall
Optical Radiation		Eye		3		Tight fitting goggles		Yes	Properly shaded for job
Thermal		Hand		2		Gloves		Yes	
<b>Painting</b>									
Chemical		Eyes		2		Safety Glasses with side sheilds			
<b>Pallet Jack operation</b>									
Compression		Foot		2		xxx			
<b>Parts washer use</b>									
Chemical		Eye		2		Safety Glasses with side sheilds		Yes	
Chemical		Hand		2		Gloves - Chemical resistant		Yes	
<b>Pipe threader operation</b>									
Impact		Eye		3		Safety Glasses with side sheilds		Yes	
Abrasion		hand		3		Gloves		Yes	
<b>Plow and Brush attachment</b>									
Impact		Eye		2		Safety Glasses with side sheilds			
<b>Power floor buffer use</b>									
Dust		Eye		1		Safety Glasses with side sheilds			
<b>Power floor scrubber use</b>									
Noise		Ear		2		Muffs or plugs			
Chemical		Eye		2		Safety Glasses with side sheilds		Yes	
<b>Power tool use</b>									
Impact		Eye		3		Safety Glasses with side sheilds		Yes	
Impact		Face		1		Face Sheild			If particles can fly
Penetration		Hand		1		Gloves			If chance of penetration
<b>Power Tool - Grinder</b>									
Impact		Eye		3		Safety Glasses with side sheilds		Yes	
Impact		Face		2		Face Sheild			
Noise		Ear		2		Muffs or plugs		Yes	
Abrasion		Hand		3		Gloves			
<b>Pressure Washer operation</b>									
Impact		Eye		3		Safety Glasses with side sheilds			

Impact		Face		1	Face shield			
<b>Removal/Replacement of plows on trucks</b>								
Compression		Foot		3	xxx			
Penetration		Hand		2	Gloves		Yes	
<b>Roto tiller use</b>								
Compression		Foot		2	xxx			
Dust		Eye		2	Safety Glasses with side shields		Yes	
<b>Snow plowing using trucks</b>								
Impact		Body		3	Seat Belt		Yes	Follow vehicle use policy
<b>Snow removal using vehicle mounted brush/blower</b>								
Compression		Foot			xxx			Not maditory if in cab
<b>Snow Removal using walk behind snow blower</b>								
Compression		Foot		2	xxx			
Blowing Snow		Eye		2	Safety Glasses with side shields			
Thermal		Body		3	Appropriate Clothing		Yes	
<b>Snow Removal with shovels</b>								
Thermal		Body		3	Appropriate Clothing		Yes	
<b>Tire removal/replacement</b>								
Compression		Foot		2	xxx			
Impact		Eye		2	Safety Glasses with side shields			
<b>Traffic Control</b>								
Impact		Body		3	Safety Vest		Yes	
<b>Tree and bush pruning</b>								
Impact		Foot		3	xxx			
Penetration		Eye		3	Safety Glasses with side shields		Yes	
Penetration		Hand		3	gloves			As needed
<b>Tree Planting</b>								
Compression		Foot		2	xxx			
<b>Use of hydraulic press</b>								
Impact		Eye		3	Safety Glasses with side shields		Yes	
<b>Use of overhead crane</b>								
Impact		Foot		3	xxx			
Impact		Head		3	Hard Hat			
<b>Weed eater /brush saw operation</b>								
Impact		Eye		2	Safety Glasses with side shields		Yes	
Impact		Face		1	Face Shield			
Penetration		Foot		2	xxx			
<b>Welding - Arc</b>								
Optical Radiation		Eye		3	Welding helmet with proper shading		Yes	
Thermal		Arm		3	Welding gauntlets		Yes	
Thermal		Hand		3	Gloves-Heat resistant		Yes	
<b>Working beneath vehicles with jack stands</b>								
Impact		Eye		2	Safety Glasses with side shields		Yes	
<b>Work off ladders</b>								
Impact		Hand		1	Gloves			
Impact		head		1	Hard Hat			

<b>Work of scaffold</b>									
Impact		Hand		1		Gloves			
Impact		head		1		Hard Hat			
<b>Working around Construction equipment</b>									
Compression		Foot		3		xxx		Yes	
<b>Working around moving trucks/equipment</b>									
Compression		Foot		3		xxx		Yes	
<b>Working with sharp objects/sheetmetal</b>									
Penetration		Hand		3		Gloves		Yes	

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**WINNEBAGO COUNTY \_\_\_\_\_ DEPARTMENT**

## CERTIFICATION OF HAZARD ASSESSMENT (APPENDIX A)

Date of Assessment \_\_\_\_\_ Conducted By \_\_\_\_\_

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### WINNEBAGO COUNTY

#### Personal Protective Equipment Training Attendance Record

#### Appendix B

Training Date: \_\_\_\_\_

Instructor: \_\_\_\_\_

#### Content of Training Program:

- When protective equipment is necessary
- What protective equipment is necessary
- How to properly don, doff, adjust and wear protective equipment
- The limitations of protective equipment
- The proper care, maintenance, useful life and disposal of protective equipment

Employee Name (Print Name)	Employee Name (Signature)
1)	
2)	
3)	
4)	
5)	
6)	
7)	

8)	
9)	
10)	

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## **15.0 LOCK OUT/TAG OUT PROGRAM**

Adopted: October 4, 2001 (Airport) Adopted: December 13, 2001 (Parks)  
Safety Manual Master Revised: September 2013

### **PURPOSE**

The purpose of this program is to establish the minimum requirement for isolating devices for the protection of Winnebago County employees and others. Lock Out/Tag Out procedures shall be used to ensure that the machine or equipment is isolated from all potentially hazardous energy. This procedure should be followed before employees perform any servicing, testing or maintenance activities where the unexpected energizing, start-up or release of stored energy could cause injury. This policy has been developed and implemented in accordance with 29 CFR 1910.147 of the Occupational Safety and Health Act and Department of Commerce Regulations, as amended.

### **EMPLOYEES INVOLVED**

All employees whose work operations are involved in maintenance activities shall be instructed in the purpose and use of the Lock Out/Tag Out procedures. The Department of Human Resources and relevant department heads/supervisors will be responsible for training employees about this program.

Special lock-out padlocks and multi-lock clips will be available. Ask your supervisor where you can find these devices. The user shall always tag the clip or lock with his/her name when in use. Your supervisor will maintain a control file of all records.

### **TRAINING**

Affected employees will be trained initially and whenever deemed necessary (when there is non-compliance or when there are changes in the procedures/processes), on the lock out/tag out program, including the use of lock-outs and tags. Supervisors are responsible for ensuring compliance with all procedures through observation and regular checks on employees.

### **PROCEDURE**

#### **A. Steps**

1. Fully examine the work area to locate and identify all isolating devices and determine which switch(es), valve(s), or other energy isolation devices apply to the equipment to be locked out/tagged out. The employee must locate and follow the specific Lock-out/Tag-out procedure for a given machine or piece of equipment. More than one

energy source may be involved. A sample lock out / tag out procedure form can be found under Appendix 15A.

2. Notify all affected employees that a lock out/tag out system is going to be used as well as the reason for it. The authorized employees must be told about the type and magnitude of energy that the machine or equipment uses and should understand the hazards.

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3. If the machine or equipment is operating, shut it down by normal stopping procedure (press stop button, open, toggle switch, etc.).
4. Operate the switch, valve or other energy isolating devices(s) so the equipment is isolated from its energy source(s). Stored energy (such as that in springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure, etc.) must be dissipated or restrained by methods such as repositioning, blocking, bleeding down, etc.
5. Lock Out/Tag Out the energy isolating devices with assigned individual lock(s)/tag(s).
6. After ensuring that no personnel are exposed, and as a check on having disconnected the energy sources, operate the push button or other normal operating controls to make certain the equipment will not operate. **CAUTION: MAKE SURE YOU RETURN OPERATING CONTROL(S) TO "NEUTRAL" OR "OFF" POSITION AFTER THE TEST.**
7. The equipment is now locked out/tagged out.

**B. Restoring machines or equipment to normal operations.**

1. After the servicing, testing and maintenance are completed and the equipment is ready for normal operations, check the area around the machine or equipment to ensure that no one is exposed.
2. Lock and tag shall be removed only by the employee applying them to a lock out device. However, should supervision determine that it is necessary to operate a piece of equipment which is locked out; every effort will be made by the supervisor to locate the employee whose lock is on the equipment. If that employee cannot be located or is unavailable, the supervisor along with a second supervisor or lead worker may remove the lock and tag. The supervisor must personally ensure that it is safe to remove the lock. The lock should then be returned to the proper employee.
3. After all tools have been removed from the machine or equipment, guards have been reinstalled and employees are clear, remove all lock out devices. Operate the energy isolating devices to restore energy to the machine or equipment. Then after testing equipment de-energize all systems and reapply energy control measures if more work is needed. If you have completed the work then remove tags.



### C. Procedure involving multiple personnel

In the preceding steps, if more than one individual is required to complete maintenance on the equipment, each person will place his/her personal lock out/tag out device on the energy isolating device(s). When an energy isolating device cannot accept multiple lock/tags, a multiple lock out/tag out device (hasp) will be used.

15-0

### D. Basic rules for using Lock Out/Tag Out Procedures

1. Lock Out/Tag Out all equipment is to be used to protect against accidental or inadvertent operation when such operations could cause injury to personnel.
2. Do not attempt to operate any switch, valve or other isolating device where it is locked out/tagged out.
3. Lock Out/Tag Out when one or more of the following are present:
  - a) When safety guards are removed.
  - b) When interlock switches are bypassed.
  - c) When air pressure is applied to a part of the machine which could cause injury due to inadvertent activation during repair or disassembly activities.
  - d) When liquids are present, whether or not under pressure, which may be hazardous or which may spray into the work area or into electrical control circuits in the immediate area.
  - e) When motors are left running which drive or cause the machinery being worked upon to operate.
  - f) When work is being performed at the point of operation.
  - g) If you leave an area where you have locked out/tagged out a machine, be sure to recheck the lock(s) upon returning to make sure that the machine is still locked out. While the supervisor will make every attempt to avoid removal of locks, there may be situations when it must be done. This recheck is for your safety.

### **ADMINISTRATIVE CONTROLS**

The department head/supervisor shall keep master records, along with each supervisor's record, of each padlock issued and the date they are returned. Lock out padlocks shall not be used for securing lockers or for other non-safety purposes.

### **DISCIPLINARY ACTION**

Employees who fail to comply with the Lock-Out/Tag-Out policy may be subject to disciplinary action in accordance with County policy.

### **EVALUATION AND PROGRAM MAINTENANCE**

The Department of Human Resources and department heads/supervisor in affected departments are responsible for program evaluation and maintenance. Energy control procedures will be reviewed at least annually (see review form Appendix 15B). The individual responsible for the items identified for improvement from this review will be

notified in writing. It is expected that action will be taken to correct the identified problem within three working days.

**See the hard copy of your department's safety manual for department-specific information.**

## **Our Goal: Positive Safety Attitude**

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### **Appendix 15A**

#### **Sample Lock Out / Tag Out (Hazardous Energy Control) Procedure**

Equipment Name (ex. bench grinder)			
Manufacturer:	Model:	Serial #:	
Date Created:	Latest Revision Date:	Revision Number:	

This procedure establishes the minimum requirements for the lockout of energy whenever maintenance or servicing is done on machines or equipment. It shall be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury.

**A) To lockout the machine:**

- a. Notify all affected employees that servicing or maintenance is required on a machine or equipment and that the machine or equipment must be shut down and locked out to perform the servicing or maintenance.
- b. If the machine or equipment is operating, shut it down by the normal stopping procedure (depress the stop button, turn key to stop position, open switch, close valve, etc.).
- c. All energy control devices that are needed to control energy to the machine or equipment will be physically located and operated in such a manner as to isolate the machine or equipment from an energy source.
- d. Lock out the energy control device(s) with assigned individual lock(s).
- e. Dissipate or restrain stored or residual energy as presented below.
- f. Ensure that the equipment is disconnected from the energy source(s):
  - i. Check that no personnel are exposed;
  - ii. Verify the isolation of the equipment by operating the push button or other normal operating control(s) or by testing to make certain the equipment will not operate; and
  - iii. Return operating control(s) to neutral or "off" position after verifying the isolation of the equipment.

**B) If the lockout device must be removed for testing or positioning:**

- a. Clear the machine.
- b. Remove the workers from the area.
- c. Remove the lockout devices.
- d. Energize and proceed with testing and positioning.
- e. De-energize and follow steps A)a through A)f iii above.

**C) Restoring Equipment to Service**

- a. Check the machine or equipment and the immediate area around the machine to ensure that nonessential items have been removed and that the machine or equipment components are operationally intact.
- b. Check the work area to ensure that all employees have been safely positioned or removed from the area.
- c. Verify that the controls are in neutral.
- d. Remove the lockout device(s) and re-energize the machine or equipment. Note: The removal of some forms of blocking may require re-energization of the machine before safe removal.
- e. Notify affected employees that the servicing or maintenance is completed and the machine or equipment is ready for use.

<b>Hazardous Energy Sources*</b>
----------------------------------

Type	Magnitude	Stored Energy?	De-Energization Method	Location

\* Authorized employee will need to determine which energy sources need to be controlled based on the work to be completed.

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## Appendix 15B Periodic Inspection Certification Form

Facility / Location: \_\_\_\_\_

Date of Inspection: \_\_\_\_\_

Inspector: \_\_\_\_\_

Signature of Inspector: \_\_\_\_\_

Machine or equipment on which lock out / tag out procedures were performed:  
\_\_\_\_\_

Employee(s) performing the lock out / tag out procedures:  
\_\_\_\_\_

Were all the lock out / tag out procedures performed correctly?      Yes      No

Issues identified during inspection (example: list of improper procedures being used which require employee re-training or revision of the specific lock out procedures):

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

Date(s) identified issues above were completed and by whom:

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

15-B

## **16.0 HAZARD COMMUNICATION PROGRAM**

The following Hazard Communication Program has been designed to ensure that:

1. Hazardous substances present in the workplace are identified and labeled.
2. Employees have ready access to information on the hazards of these substances.
3. Employees are given information on how to prevent injury and illness due to chemical exposure.

The program will be available to all employees for review, and a copy will be located in copies of the Safety Manual in each department and in Human Resources.

### **A. HAZARD DETERMINATION**

Manufacturers, importers and distributors will be relied upon to perform the appropriate hazard determination for the substances they produce or sell. If substances are manufactured which, during normal use by customers or employees, may lead to exposure to hazardous conditions, a Material Safety Data Sheet (MSDS) must be developed. If the product is chemically the same as the raw materials, the MSDSs received for them may simply be applied to the product.

### **B. HAZARDOUS SUBSTANCE INVENTORY**

1. An inventory of hazardous chemicals has been compiled. The inventory will be kept in an easily accessed area, and employees must be told where that area is.
2. Each relevant department is responsible for maintaining a master list of hazardous substances used at its facilities or while completing job duties. The substance inventory will include the common identity and trade name of each product, and the name and address of the manufacturer. As new products are added to the list, they will be inserted and all lists will be updated.

### **C. LABELING**

1. Each relevant department is responsible for evaluating labels on incoming containers. Each label will be checked for a) Identity of the substance;

b) Appropriate hazard warning and c) Name and address of the manufacturer.

2. If the label is not appropriate, the affected department will notify the manufacturer that the label is not appropriate.

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3. The affected department will send a second request to the manufacturer if the label is not received within 30 days.
4. The affected department will prepare an appropriate label if one is not supplied by the manufacturer within 30 days.
5. A container shall not be released for use until an appropriate label is affixed to it.
6. Affected departments are responsible for updating labels when new information is received.
7. Labels shall be removed if they are incorrect and when the container is empty – if it will be used for other material.
8. Relevant department heads and supervisors are responsible for ensuring that all containers used in their departments or areas are properly labeled and that the labels remain legible. Defacement or improper use of labels is prohibited.
9. Unlabeled transfer containers, such as pails and buckets, will be used by only one employee and will be emptied at the end of each shift.

#### **D. MATERIAL SAFETY DATA SHEETS (MSDS)**

1. An MSDS will be available on all hazardous substances to which there is potential or actual exposure. Relevant department heads and supervisors are responsible for assuring that an MSDS is available on all incoming products. A product will not be released for use until a completed MSDS is on file.
2. If an MSDS is not available, the relevant department head or supervisor is responsible for notifying the manufacturer that an MSDS is needed.
3. If an MSDS is not received from the manufacturer within 30 days, the relevant department head or supervisor will send a second request and notify Human Resources, which will work with the County's safety contractor to help resolve the matter.
4. Relevant department heads and supervisors are responsible for review of all incoming data sheets. If the MSDS is not complete, it is to be returned to the manufacturer with a request for the missing information.

5. Human Resources and/or the County's safety contractor will send a third request for the missing information if necessary.

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6. Relevant departments will request an MSDS on the purchase orders of all new products.
7. Relevant department heads and supervisors are responsible for compiling and updating the master MSDS file. This file will be kept in a designated area.
8. Copies of the MSDSs will be kept in an area that is accessible by employees at all times.
9. Relevant department heads and supervisors are responsible for updating the data sheets to include new information as it is received. A notice shall be posted to inform employees which information has been revised.

#### **E. EMPLOYEE TRAINING**

1. Before starting work with hazardous substances, each employee will attend a Hazard Communication Training Session to receive information on
  - Policies and procedures related to the Hazard Communication Standard
  - How to read and interpret an MSDS
  - Physical and health hazards of hazardous substances in their work area
  - Work practices that may result in exposure
  - Procedures to follow if exposure occurs
2. The Department of Human Resources and the County's contract safety coordinator are responsible for coordinating or conducting training sessions.
3. Each employee will sign a form or attendance sheet documenting attendance at the training.
4. Each relevant department will be responsible for identifying and listing non-routine hazardous tasks. Human Resources and the County's contract safety coordinator will be responsible for training on specific job hazards as well as protective measures.

#### **F. INFORMATION FOR NON-EMPLOYEES**

1. Relevant department heads and supervisors are responsible for providing outside contractors with the following information:

- Hazardous chemicals to which they may be exposed as a result of working on County property
  - Suggestions for appropriate protective measures
2. Contractors will not be allowed to begin working in an area until they have been given this safety information.

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3. Relevant department heads and supervisors are responsible for obtaining information from contractors on all hazardous substances to which County employees may be exposed as a result of those contractors' work in County property.
4. MSDSs will be made available to job applicants who have been offered a position, as well as to former employees, on request. Human Resources will coordinate the provision of this information.

#### **G. DISCIPLINARY ACTION**

Employees who fail to comply with the Hazard Communication Policy or work rules adopted by the County related to the Policy will be subject to disciplinary action in accordance with the appropriate *Employee Handbook of Employment Policies*.

#### **H. RECORD KEEPING**

1. Each MSDS will be kept for 30 years after the use of the substance described on it is no longer used.
2. Inventory lists will be kept for 30 years. The OSHA Standard 1910.20, Access to Employee Exposure and Medical Records, requires that an exposure record on an employee be kept for 30 years beyond the end of employment. If the MSDS is the only exposure information available, it becomes the exposure record. At a minimum, a record of the identity of the manufacturer – enough information to locate an MSDS – must be kept.

#### **I. PROGRAM EVALUATION AND MAINTENANCE**

Human Resources, the County's contract safety coordinator and relevant department heads/supervisors are responsible for program evaluation and maintenance. The Hazard Communication program will be evaluated annually. The person responsible for items found of improvement will be notified. It is expected that correction will be taken within three working days.

# Our Goal: Positive Safety Attitude

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## **17.0 RESPIRATORY PROTECTION (VOLUNTARY USAGE)**

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### **A. INTRODUCTION**

The respiratory protection program at Winnebago County is intended to protect employees against recognized health hazards. However, some employees may be irritated by the presence of non-hazardous air contaminants. When use of a respirator will help to alleviate irritation and when the respirator itself is judged to pose no additional risk to the wearer, Winnebago County employees will be allowed to voluntarily use respirators for comfort reasons. This section describes responsibilities and procedures for obtaining approval and medical clearance (where necessary) for voluntary respirator use.

### **B. RESPONSIBILITIES**

Departments with employees who desire to use respiratory protection for comfort reasons shall:

- Ensure that respirators / dust masks are not dirty or contaminated.
- Ensure that use of respirators does not interfere with employee's ability to work safely.
- Provide information contained in Appendix A of this section to all employees who voluntarily use respirators.
- Report any problems to the County Safety Program Coordinator.

Employees who choose to use respiratory protection shall:

- Obtain permission from their department head or their designee before wearing a respirator.
- Read and understand the information contained in Appendix A of this section.
- Inspect respirators before each use, and properly clean and store them after use.
- Report any problems to their direct supervisor.

### **C. PROCEDURES - GENERAL**



In their jobs at Winnebago County, some employees may perform tasks which cause respiratory discomfort but which do not pose a health risk. In these cases, employees may request that their departments provide respirators or they may purchase their own respirators. Individual employees who choose to use respiratory protection for comfort must obtain permission first from their department head or their designee.

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#### **D. PROCEDURES – HEALTH EVALUATION**

The use of some respirators (for example, half mask cartridge respirator or a full face mask cartridge respirator) may impose an additional stress on the worker. Voluntary use of respirators (except filtering face piece respirators) requires medical clearance. Employees who voluntarily wear respirators (other than filtering face piece respirators) must complete a medical clearance questionnaire (Appendix B) and send this to an Occupational Health Physician designated by the county who will determine if the respirator poses a risk to the employee, and whether or not the employee is physically able to perform assigned tasks while wearing the respirator.

#### **E. PROCEDURES – FIT TESTING**

Fit-testing is not required for voluntary respirator wearers. However, individuals wearing tight-fitting respirators (for example, a half mask cartridge respirator or a full face mask cartridge respirator) may request a fit test to ensure that the respirator achieves a mask-to-face seal. Fit tests can be completed, upon request, by the Human Resources Manager or designee.

#### **F. PROCEDURES – MAINTENANCE**

Each respirator user will have the responsibility for maintaining his/her own respirator. Parts should be replaced when needed. Respirators provided by departments for non-routine, general use will be maintained by the supervisor or a competent designated person.

#### **G. PROCEDURES – INSPECTION**

All respirators will be inspected regularly (at a minimum, before and after each day's use) by the respirator wearer.

#### **H. PROCEDURES – CLEANING, DISINFECTING AND STORAGE**

Respirators will be cleaned and disinfected after each use (and as needed) according to the respirator manufacturer's specific procedures. Respirators must be stored away from any contamination in a clean, sanitary place, and in a sealed container. Respirators must not be exposed to extreme temperatures. It is not acceptable to hang a respirator by its straps.

#### **I. TRAINING**

Employees who choose to use respiratory protection must be familiar with the information contained in Appendix A to this section, found on the following page.

## **J. REFERENCES**

Code of Federal Regulations, Title 29, Part 1910.134 (OSHA), Respiratory Protection and American National Standards Institute (ANSI), Z88.2, Practices for Respiratory Protection

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### **Appendix A Voluntary Use - Filtering Facepiece Respirator Form**

*The language in this form comes from OSHA Section 1910.134, Appendix D - Mandatory Information for Employees Using Respirators When Not Required Under the Standard.*

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You (employee) should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirator's limitations.
2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.
3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.
4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.

**I have read and fully understand the provisions stated above for Voluntary Use of a Filtering Face Piece Respirator.**

\_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_  
Employee Name (Printed) Employee Name (Signature) Date

Please return a copy of this completed form to your direct supervisor.

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## Appendix B

### OSHA Respirator Medical Evaluation Questionnaire (1910.134 Appendix C)

To the employer: Answers to questions in Section 1, and to question 9 in Section 2 of Part A, do not require a medical examination.

To the employee: Can you read (circle one): Yes No

Your employer must allow you to answer this questionnaire during normal working hours, or at a time and place that is convenient to you. To maintain your confidentiality, your employer or supervisor must not look at or review your answers, and your employer must tell you how to deliver or send this questionnaire to the health care professional who will review it.

**Part A. Section 1. (Mandatory)** – The following information must be provided by every employee who has been selected to use any type of respirator (please print):

Your Name: \_\_\_\_\_ Today's Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

Your Age (to the nearest year): \_\_\_\_\_ Sex (check one): ☐ Male ☐ Female

Your Height: \_\_\_\_\_ ft. \_\_\_\_\_ in. Your Weight: \_\_\_\_\_ lbs.

Your Job Title: \_\_\_\_\_

A phone number where you can be reached by the health care professional who reviews this questionnaire (include the area code): \_\_\_\_\_. The best time to phone you at this number: \_\_\_\_\_.

Has your employer told you how to contact the health care professional who will review this questionnaire (circle one): Yes No

Check the type of respirator you will be use (you can check more than one category):

N, R or P disposable respirator (filter-mask, non-cartridge type only)

Other type (for example: half or full face piece type, powered air purifying, supplied air, self-contained breathing apparatus)

Have you worn a respirator before: ☐ Yes ☐ No If yes, what type (s) \_\_\_\_\_

**Part A. Section 2. (Mandatory)** – Questions 1 through 9 below must be answered by every employee who has been selected to use any type of respirator (please circle “yes” or “no”).

- 1) Do you **currently** smoke tobacco, or you have you smoked tobacco in the last month: Yes No
- 2) Have you **ever had** any of the following conditions? 17-0
- a. Seizures (fits): Yes No
  - b. Diabetes (sugar disease): Yes No
  - c. Allergic reactions that interfere with your breathing: Yes No
  - d. Claustrophobia (fear of closed-in places): Yes No
  - e. Trouble smelling odors: Yes No
- 3) Have you **ever had** any of the following pulmonary or lung problems?
- a. Asbestosis: Yes No
  - b. Asthma: Yes No
  - c. Chronic bronchitis: Yes No
  - d. Emphysema: Yes No
  - e. Pneumonia: Yes No
  - f. Tuberculosis: Yes No
  - g. Silicosis: Yes No
  - h. Pneumothorax (collapsed lung): Yes No
  - i. Lung cancer: Yes No
  - j. Broken ribs: Yes No
  - k. Any chest injuries or surgeries: Yes No
  - l. Any other lung problem that you’ve been told about: Yes No
- 4) Do you **currently** have any of the following symptoms of pulmonary or lung illness?
- a. Shortness of breath: Yes No
  - b. Shortness of breath when walking fast on level ground or walking up a slight hill or incline: Yes No
  - c. Shortness of breath when walking with other people at an ordinary pace on level ground: Yes No
  - d. Have to stop for breath when walking at your own pace on level ground: Yes No
  - e. Shortness of breath when washing or dressing yourself: Yes No
  - f. Shortness of breath that interferes with your job: Yes No
  - g. Coughing that produces phlegm (thick sputum): Yes No
  - h. Coughing that wakes you early in the morning: Yes No
  - i. Coughing that occurs mostly when you are lying down: Yes No
  - j. Coughing up blood in the last month: Yes No
  - k. Wheezing: Yes No
  - l. Wheezing that interferes with your job: Yes No
  - m. Chest pain when you breathe deeply: Yes No
  - n. Any other symptoms that you think may be related to lung problems: Yes No
- 5) Have you **ever had** any of the following cardiovascular or heart problems?

- a. Heart attack: Yes No
- b. Stroke: Yes No
- c. Angina: Yes No
- d. Heart failure: Yes No
- e. Swelling in your legs or feet (not caused by walking): Yes No

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- f. Heart arrhythmia (heart beat irregularly): Yes No
- g. High blood pressure: Yes No
- h. Any other heart problem that you've been told about: Yes No

6) Have you **ever had** any of the following cardiovascular or heart symptoms?

- a. Frequent pain or tightness in your chest: Yes No
- b. Pain or tightness in your chest during physical activity: Yes No
- c. Pain or tightness in your chest that interferes with your job: Yes No
- d. In the past two years, have you noticed your heart skipping or missing a beat: Yes No
- e. Heartburn or indigestion that is not related to eating: Yes No
- f. Any other symptoms that you think may be related to heart or circulation problems: Yes No

7) Do you **currently** take medication for any of the following problems?

- a. Breathing or lung problems: Yes No
- b. Heart trouble: Yes No
- c. Blood pressure: Yes No
- d. Seizures (fits): Yes No

8) If you've used a respirator, have you **ever had** any of the following problems (If you've never used a respirator, check the following space \_\_\_\_\_ and go to question 9)?

- a. Eye irritation: Yes No
- b. Skin allergies or rashes: Yes No
- c. Anxiety: Yes No
- d. General weakness or fatigue: Yes No
- e. Any other problem that interferes with your use of a respirator: Yes No

9) Would you like to talk to the health care professional who will review this questionnaire about your answers to this questionnaire: Yes No

**Questions 10 to 15 below must be answered by every employee who has been selected to use either a full-face piece respirator or a self-contained breathing apparatus (SCBA). For employees who have been selected to use other types of respirators, answering these questions is voluntary.**

10) Have you **ever** lost vision in either eye (permanent or temporary): Yes No

11) Do you **currently** have any of the following vision problems?

- a. Wear contact lenses: Yes No

- b. Wear glasses: Yes No
  - c. Color blind: Yes No
  - d. Any other eye or vision problem: Yes No
- 12) Have you **ever had** an injury to your ears, including a broken ear drum: Yes No
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- 13) Do you **currently** have any of the following hearing problems?
- a. Difficulty hearing: Yes No
  - b. Wearing a hearing aid: Yes No
  - c. Any other hearing or ear problem: Yes No
- 14) Have you **ever had** a back injury: Yes No
- 15) Do you **currently** have any of the following musculoskeletal problems?
- a. Weakness in any of your arms, hands, legs, or feet: Yes No
  - b. Back pain: Yes No
  - c. Difficulty fully moving your arms and legs: Yes No
  - d. Pain or stiffness when you lean forward or backward at the waist: Yes No
  - e. Difficulty fully moving your head up or down: Yes No
  - f. Difficulty fully moving your head side to side: Yes No
  - g. Difficulty bending at your knees: Yes No
  - h. Difficulty squatting to the ground: Yes No
  - i. Climbing a flight of stairs or a ladder carrying more than 25 lbs.: Yes No
  - j. Any other muscle or skeletal problem that interferes with using a respirator: Yes No

**Part B** – Any of the following questions, and other questions not listed, may be added to the questionnaire at the discretion of the health care professional who will review the questionnaire.

- 1) In your present job, are you working at high altitudes (over 5,000 feet) or in a place that has lower than normal amounts of oxygen: Yes No
- If “yes,” do you have feelings of dizziness, shortness of breath, pounding in your chest or other symptoms when you’re working under these conditions: Yes No
- 2) At work or home, have you ever been exposed to hazardous solvents, hazardous airborne chemicals (e.g., gases, fumes or dust), or have you come into skin contact with hazardous chemicals: Yes No

If “yes,” name the chemicals if you know them:

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- 3) Have you ever worked with any of the materials, or under any of the conditions, listed below:
- a. Asbestos: Yes No
  - b. Silica (e.g., in sandblasting): Yes No
  - c. Tungsten/cobalt (e.g., grinding or welding this material): Yes No
  - d. Beryllium: Yes No

- e. Aluminum: Yes No
- f. Coal (for example, mining): Yes No
- g. Iron: Yes No
- h. Tin: Yes No
- i. Dusty environments: Yes No
- j. Any other hazardous exposure: Yes No

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If "yes," describe these exposures

- 
- 
- 4) List any second jobs or side businesses you have: \_\_\_\_\_
  - 5) List your previous occupations: \_\_\_\_\_
  - 6) List your current and previous hobbies: \_\_\_\_\_
  - 7) Have you been in the military services? Yes No
    - a. If "yes" were you exposed to biological or chemical agents (either in training or combat): Yes No
  - 8) Have you ever worked on a HAZMAT team before? Yes No
  - 9) Other than medications for breathing and lung problems, heart trouble, blood pressure, and seizures mentioned earlier in this questionnaire, are you taking any other medications for any reason (including over-the-counter medications): Yes No

If "yes," name the medications if you know them: \_\_\_\_\_

- 10) Will you be using any of the following items with your respirator(s)?
  - a. HEPA filters: Yes No
  - b. Canisters (for example, gas masks): Yes No
  - c. Cartridges: Yes No
- 11) How often are you expected to use the respirator(s) (circle "yes" or "no" for all answers that apply to you)?
  - a. Escape only (no rescue): Yes No
  - b. Emergency rescue only: Yes No
  - c. Less than 5 hours **per week**: Yes No
  - d. Less than 2 hours **per day**: Yes No
  - e. 2 to 4 hours **per day**: Yes No
  - f. Over 4 hours **per day**: Yes No
- 12) During the period you are using the respirator(s), is your work effort:
  - a. **Light** (less than 200 kcal per hour): Yes No

If "yes," how long does this period last during the average shift: \_\_\_\_\_ hrs.  
 \_\_\_\_\_ mins. Examples of a light work effort are **sitting** while writing, typing, drafting,

or performing light assembly work; or **standing** while operating a drill press (1-3 lbs) or controlling machines.

- b. **Moderate** (200 to 350 kcal per hour): Yes    No

If "yes," how long does this period last during the average shift: \_\_\_\_\_ hrs.  
\_\_\_\_\_ mins. Examples of moderate work effort are **sitting** while nailing or filing,

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**driving** a truck or bus in urban traffic, **standing** while drilling, nailing, performing assembly work, or transferring a moderate load (about 35 lbs) at trunk level; **walking** on a level surface about 2 mph or down a 5-degree grade about 3 mph; or **pushing** a wheelbarrow with a heavy load (about 100 lbs.) on a level surface.

- c. **Heavy** (above 350 kcal per hour): Yes    No

If "yes," how long does this period last during the average shift: \_\_\_\_\_ hrs.  
\_\_\_\_\_ mins. Examples of heavy work are **lifting** a heavy load (about 50 lbs.) from the floor to your waist or shoulder; working on a loading dock, **shoveling**, **standing** while bricklaying or chipping castings; **walking** up an 8-degree grade about 2 mph; climbing stairs with a heavy load (about 50 lbs.)

- 13) Will you be wearing protective clothing and/or equipment (other than the respirator) when you're using your respirator: Yes    No

If "yes," describe this protective clothing and/ or equipment: \_\_\_\_\_

- 14) Will you be working with a respirator under hot conditions (exceeding 77 deg. F): Yes    No

- 15) Will you be working with a respirator under humid conditions: Yes    No

- 16) Describe the work you'll be doing while you're using your respirator(s):  
\_\_\_\_\_

- 17) Describe any special or hazardous conditions you might encounter when you're using your respirator(s) (for example, confined spaces, life threatening gases):  
\_\_\_\_\_

- 18) Provide the following information, if you know it, for each toxic substance that you'll be exposed to when you're using your respirator(s):

- a. Name of the first toxic substance: \_\_\_\_\_
- b. Estimated maximum exposure level per shift: \_\_\_\_\_
- c. Duration of exposure per shift: \_\_\_\_\_
- d. Name of the second toxic substance: \_\_\_\_\_
- e. Estimated maximum exposure level per shift: \_\_\_\_\_
- f. Duration of exposure per shift: \_\_\_\_\_
- g. Name of the third toxic substance: \_\_\_\_\_
- h. Estimated maximum exposure level per shift: \_\_\_\_\_
- i. Duration of exposure per shift: \_\_\_\_\_



- j. The name of any other toxic substances that you'll be exposed to while using your respirator: \_\_\_\_\_
- 19) Describe any special responsibilities you'll have while using your respirator(s) that may affect the safety and well-being of others (for example, rescue, security):  
\_\_\_\_\_

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## **18.0 Electrical Safety**

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### **A. Introduction**

This program establishes minimum standards to prevent hazardous electrical exposures to personnel and ensure compliance with regulatory requirements applicable to electrical systems. Working on equipment in a de-energized state is required unless de-energizing introduces an increased hazard or is infeasible. This program is designed to help ensure that energized electrical work at County facilities is performed safely by qualified electrical workers, who are trained and provided with the appropriate safe work procedures, protective equipment and other controls. This program is intended to protect employees against electrical shock, burns and other potential electrical safety hazards as well as comply with regulatory requirements.

#### Disciplinary Policy

Failure to comply with electrical safe work practices will endanger lives and jeopardize the safety and health of employees at the County, as well as the general public. Each employee is responsible to report non-compliance with procedures specified by this program. The Program Coordinator, with the assistance of the Electrical Safety Manager, will investigate all observed or reported cases of program violations, and when warranted, will administer appropriate disciplinary action, up to and including termination of employment.

### **B. Electrical Hazards**

Electricity-related hazards include electric shock and burns, arc-flash burns, arc-blast impacts, and falls.

- Electric shock and burns – An electric shock occurs when electric current passes through the body. This can happen when touching an energized part. If the electric current passes across the chest or head, death can result. At high voltages, severe burns can result.
- Arc-flash burns – An electric arc flash can occur if a conductive object gets too close to a high-amp current source or by equipment failure (for instance, while opening or closing disconnects). The arc can heat the air to temperatures as high as 35,000 degrees Fahrenheit, and vaporize metal in the equipment. The arc flash can cause severe skin burns by direct heat exposure and by igniting clothing.
- Arc-blast impacts – The heating of air and vaporization of metal creates a pressure wave that can damage hearing and cause memory loss (from concussion) and other injuries. Flying metal parts are also a hazard.

- Falls – Electric shocks and arc blasts can cause falls, especially from ladders or unguarded scaffolding.

### **C. Purpose**

This program has been established in order to:

- Ensure the safety of employees who may work on or near electrical equipment.
- Ensure that employees understand and comply with safety standards related to electrical work.
- Ensure that employees follow uniform practices during the progress of electrical work.
- Comply with OSHA standards adopted by the Wisconsin Department of Safety and Professional Services (DSPS) according to the following six points:
  - Provide and demonstrate a safety program with defined responsibilities.
  - Determine the degree of arc flash hazard by qualified personnel.
  - Affix proper warning labels on equipment.
  - Provide the proper personal protective equipment for electrical workers.
  - Provide documented training to workers on Lock Out / Tag Out procedures and the hazards of arc flash.
  - Provide appropriate tools for safe work.

### **D. Scope**

This program applies to all Winnebago County, Wisconsin properties and work performed by its employees.

### **E. Electric Safety Principles – Energized Condition**

- De-energize whenever possible.
- Plan every job and identify the hazards.
- Minimize the hazards. De-energize any equipment, and insulate, or isolate exposed energized parts so contact cannot be made. If this is impossible, obtain and wear the proper personal protective equipment (PPE) and use electrically-rated tools.
- Obtain training. Make sure all involved employees are a qualified electrical worker with appropriate training for the job.

### **F. Controls**

All electrical work will be carried out under the following conditions established to ensure the Utilities objective of safe work performance:

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- All conductors and equipment are considered energized until verified otherwise.
- De-energizing an electrical conductor or circuit and making it safe to work on it in itself a potentially hazardous task.
- Voltage testing of conductors or circuit parts necessary to establish an electrically safe condition in conjunction with equipment lockout or tagout is essentially considered as working on energized parts.
- A circuit or part is considered energized until the diagnostic equipment used for verification testing is confirmed to be operational prior to and following the test.
- Electrical conductors or parts of electrical equipment that have been de-energized but have not been verified as de-energized are treated as energized parts.
- Electrical conductors or parts of electrical equipment that have been de-energized but have not been locked out are treated as energized parts.
- Tools are designed, rated and serviceable for the work being performed.
- Tools, test equipment protective equipment are inspected before and after use.
- Electrical panels and equipment are labeled, and where the incident energy exceeds 1.2 cal/cm<sup>2</sup> are field marked with available incident energy or required Personal Protective Equipment.
- Electrical panels are kept closed, and are maintained accessible and clear of obstructions.
- Electrical panels and equipment are cleaned and inspected annually.
- Exposed electrical hazards are physically guarded, marked or barricaded to provide hazard notification.
- Bare hand contact with electrical conductors or circuit parts while energized at or above 50 volts is not authorized under any circumstances.
- Work on exposed conductors or parts energized at fifty (50) volts or greater is authorized by issue of a written Energized Work Permit issued in advance, under the guidelines established by this program.

## **G. References**

- NFPA 70E, "Standard for Electrical Safety in the Workplace"
- OSHA 29 CFR 1910.331 through 1910.335, "Electrical Safety-Related Work Practices"
- OSHA 29 CFR 1910.147, "The Control of Hazardous Energy (Lock Out / Tag Out)"

## **H. Responsibilities**

### Applicable Department Heads / Supervisors:

- Provide or coordinate general training for applicable employees on the content of this program.

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- Periodically review and update this written program.
- Ensure that arc flash analyses required by this program are completed as needed and during equipment replacement and upgrading.
- Ensure that the necessary training, electrically-rated tools and electrically-rated personal protective equipment have been provided for any applicable electrical worker.
- Promote electrical safety awareness to all employees.
- Ensure employees comply with ALL provisions of this electrical safety program.
- Ensure employees receive training appropriate to their assigned electrical tasks.
- Ensure employees are provided with and use electrically-rated tools and electrically-rated personal protective equipment.

#### Employees:

- Follow the work practices described in this document, including the use of appropriate protective equipment and tools.
- Attend all training required relative to this program.
- Immediately report any concerns related to electrical safety to supervision.

### **I. Definitions**

- **Authorized Lock Out / Tag Out Employee** – A person who has completed the required hazardous energy control training and is authorized to lock out or tag out a specific machine or equipment to perform service or maintenance. A person must be certified as an authorized lock out / tag out employee in order to apply a lock or tag to control hazardous energy. All of these employees must be trained in: electrical safety and lock out / tag out.
- **Confined Space** – A space that is:
  - Large enough and so configured that an employee can bodily enter and perform assigned work; and
  - Has limited or restricted means for entry or exit (for example: tanks, vessels, silos, storage bins, hoppers, underground vaults, and manholes are spaces that may have limited means of entry); and
  - Is not designed for continuous employee occupancy.
- **Damp Location** - Partially protected locations subject to moderate degrees of moisture, such as some basements.
- **De-energized Electrical Work** – Electrical work that is performed on equipment that has been previously energized and is now free from any electrical connection.
- **Disconnecting (or Isolating) Switch** – A device designed to close and/or open an electrical circuit.

- **Dry location** – Locations not normally subject to dampness or wetness.
- **Energized Electrical Work** – Any electrical work (repair, maintenance, troubleshooting, or testing of electrical circuits, components or systems) that is not performed de-energized.
- **Energy Source** – Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.
- **Exposed Electrical Parts** – Energized parts that can be inadvertently touched or approached nearer than a safe distance by a person. Parts not suitably guarded, isolated, or insulated. Examples include terminal contacts or lugs, and bare wiring.
- **Flash Protection Boundary** – An approach limit distance from exposed energized parts within which a person could receive a second degree burn if an electrical arc flash were to occur.
- **Ground Fault Circuit Interrupt (GFCI)** – A device whose function is to interrupt the electric circuit to the load when a fault current to ground exceeds a predetermined value that is less than that required to operate the over-current protective device of the supply circuit.
- **Ground** – A conducting connection, whether intentional or accidental, between an electrical circuit or equipment and the earth or to some conducting body that serves in place of the earth.
- **Hazardous Location** – An area in which an airborne flammable dust, vapor or gas may be present and would represent a hazard if a source of ignition were present (see NFPA Class I & II and Division 1 & 2).
- **Interlock** – An electrical, mechanical, or key-locked device intended to prevent an undesired sequence of operations.
- **Life Safety Equipment** – Equipment that provides critical protection for safety in the event of an emergency or other serious hazard. Life safety equipment, which is electrically energized, should be worked on using Energized Electrical Equipment (EEW) procedures to ensure that the protection provided by the equipment is not lost (e.g., fire alarm and evacuation).
- **Limited Approach Boundary** – An approach limit is a distance from an exposed energized part within which a shock hazard exists.
- **Lock Out** – The placement of a lock on an energy-isolating device according to procedure, ensuring that the energy isolation device and the equipment being controlled cannot be operated until the lock out device is removed.
- **Lock Out / Tag Out** – A standard that covers the servicing and maintenance of machines and equipment in which the unexpected re-energization of the equipment or release of stored energy could cause injury to employees. It establishes performance requirements for the control of such hazardous energy.

- **Permit-Required Confined Space** – a confined space that has one or more of the following characteristics:
  - Contains or has a potential to contain a hazardous atmosphere;
  - Contains a material that has the potential for engulfing an entrant;
  - Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or
  - Contains any other recognized serious safety or health hazard.
- **Prohibited Approach Boundary** – An approach limit distance from an exposed energized part within which work is considered the same as making contact with the energized part.
- **Qualified Electrical Worker** – A qualified person trained and knowledgeable of construction and operation of equipment or a specific work method and is trained to recognize and avoid the electrical hazards that might be present with respect to that equipment or work method. A qualified electrical worker must be able to distinguish between energized and de-energized parts.
  - Qualified electrical workers shall be familiar with the proper use of the special precautionary techniques, personal protective equipment (PPE), including arc-flash, insulating and shielding materials, and insulated tools and test equipment. A person can be considered qualified with respect to certain equipment and methods but is unqualified for others.
  - An employee who is undergoing on-the-job training and who, in the course of such training, has performed duties safely at his or her level of training and who is under the direct supervision of a qualified person shall be considered to be qualified.
  - Only a Qualified Electrical Worker is allowed to work on energized circuits.
  - Qualified electrical workers shall not be assigned to work alone, except for replacing fuses, operating switches, or other operations that do not require the employee to contact energized high voltage conductors or energized parts of equipment.
- **Restricted Approach Boundary** – An approach limit distance from an exposed energized part within which there is an increased risk of shock, due to electrical arc-over combined with inadvertent movement, for personnel working in close proximity to the energized part.
- **Remote-control Circuit** – Any electric circuit that controls any other circuit through a relay or an equivalent device.
- **Service** – The conductors and equipment for delivering energy from the electricity supply system to the wiring system of the premises served.
- **Service Equipment** – The necessary equipment, usually consisting of a circuit

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breaker or switch and fuses, and their accessories, located near the entrance of supply conductors to the building and intended to constitute the main control and means of cutoff of the supply.

- **Setting Up** – Any work performed to prepare a machine or equipment to perform its normal production operation.
- **Switching Devices** – Devices designed to close and/or open one or more electric circuits. Included in this category are circuit breakers, cutouts, disconnecting (or isolating) switches, disconnecting means, interrupter switches, and oil (filled) cutouts.
- **Tag Out** – The placement of a tag out device on an energy-isolating device according to procedures to indicate that the equipment may not be operated until the tag out device is removed.
- **Voltage (of a circuit)** – The greatest root-mean-square (effective) difference of potential between any two conductors of the circuit concerned.
- **Voltage, high** - Circuits with a nominal voltage more than or equal to 600 volts.
- **Voltage, low** – Circuits with a nominal voltage less than or equal to 50 volts.
- **Voltage, nominal** – An approximate value assigned to a circuit or system for the purpose of conveniently designating its voltage class (e.g., 120/240, 480/277, and 600).
- **Wet location** – Installations subject to saturation with water or other liquids.

## J. Training

### Requirements

Workers near energized, or potentially energized electrical circuitry of fifty (50) volts to ground or greater, shall be trained in energized electrical safe work practices and procedures and retrained as necessary.

**Qualified Electrical Workers** – Employees must receive training in avoiding the electrical hazards associated with working on or near exposed energized parts prior to performing energized electrical work. Such training will be provided when the employee is initially assigned to the job and refresher training will be provided as needed. The following items are to be included in the training of Qualified Electrical Workers:

- Have a working knowledge of the National Electric Code.
- The lock out / tag out training program including safe work practices (such as verification testing of circuits) required to safely de-energize electrical equipment.
- Universal electrical safety procedures.
- Skills and techniques necessary to distinguish exposed energized parts from other parts of electric equipment.

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- Perform on-the-job training with a qualified electrical worker.
- Skills and techniques necessary to determine the nominal voltage of exposed energized parts.
- The approach distances specified in Table 130.4 (B) and (C) and the corresponding voltages to which the qualified electrical worker will be exposed.
- How to perform a hazard/risk evaluation before work is performed (See Appendix C).
- Selection and use of proper work practices, personal protective equipment, tools, insulating and shielding materials and equipment for working on or near energized parts.
- Qualified Electrical Workers must also be trained in recognizing signs and symptoms of electric shock, heart fibrillation, electric burns, and proper first aid protocols for these conditions. They must have the following training:
  - Basic Cardio Pulmonary Resuscitation (CPR); and
  - Contacting emergency personnel and first aid; and
  - Automated External Defibrillator (AED) training, if one is available in the workplace.

**Unqualified Electrical Workers** – Employees who are not Qualified Electrical Workers, but are designated to perform work on, near or with installations where electrical exposures may occur, have fulfilled the training requirements of this program, and have demonstrated an understanding of electrical safety related work practices necessary for their safety.

Retraining may be needed when deficiencies are noted in the employee's compliance safety-related work practices, when new technology is introduced, when determined necessary due to new types of equipment, or when changes are recommended in the practices an employee would normally use. As a minimum, retraining will be performed at the following intervals:

Qualified employees: annually.

Unqualified employees: every 3 years.

**Documentation** – Documentation of training will be kept by the Risk Administrator. Documentation is necessary to demonstrate that individuals have met the training requirements for the types of work being performed.

Appendix D contains a list of Winnebago County designated employees – Qualified and Unqualified

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## **K. Portable Electrical Equipment and Extension Cords**

The following requirements apply to the use of cord-and-plug connected equipment and flexible cord sets (extension cords):

- Extension cords may only be used to provide temporary power.
- Extension cords shall not be fastened with staples, hung from nails or suspended by wire.
- Portable cord-and-plug connected equipment and extension cords must be visually inspected before use on any shift for external defects such as loose parts, deformed or missing prongs, or damage to outer jacket or insulation, and for possible internal damage such as pinched or crushed outer insulation jacket. Any defective cord or cord-and-plug-connected equipment must be removed from service and no person may use it until it is repaired and tested to ensure it is safe for use.
- Extension cords must be of the three-wire type (with ground prong). Extension cords and flexible cords must be designed for hard or extra hard usage (for example, type S, ST, and SO). The rating or approval must be visible.
- Job-made extension cords are forbidden per the electrical code.
- Personnel performing work on renovation or construction sites using extension cords or where work is performed in damp or wet locations must be provided, and must use, a ground-fault circuit interrupter (GFCI).
- Portable equipment must be handled in a manner that will not cause damage. Flexible electric cords connected to equipment may not be used for raising or lowering the equipment.
- Extension cords must be protected from damage. Sharp corners and projects must be avoided. Flexible cords may pass through doorways or other pinch points, if protection is provided to avoid damage and then only on a temporary basis. Cords passing through walls shall be properly protected (e.g., sleeved).
- Cords must be covered by a cord protector or tape when they extend into a walkway or other path of travel to avoid creating a trip hazard.
- Attachment plugs and receptacles may not be connected or altered in any way that would interrupt the continuity of the equipment grounding conductor. Clipping the grounding plug from an electrical plug is prohibited.
- Flexible cords may only be plugged into grounded receptacles. The continuity of the ground in a two-prong outlet must be verified before use. It is recommended that the receptacle be replaced with a three-prong outlet. Adapters that interrupt the continuity of the equipment grounding connection may not be used.
- All portable electric equipment and flexible cords used in highly conductive work locations, such as those with water or other conductive liquids, or in places where employees are likely to contact water or conductive liquids, must be approved for those locations.

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- Employee's hands must be dry when plugging and unplugging flexible cords and cord-and-plug connected equipment if energized equipment is involved.
- If the connection could provide a conducting path to employees hands (for example, if a cord connector is wet from being immersed in water), the energized plug and receptacle connections must be handled only with insulating personal protective equipment.
- Lamps for general illumination shall be protected from accidental contact or breakage. Metal-case sockets shall be grounded.
- Temporary lights must not be suspended by their cords unless they have been designed for this purpose.
- Portable lighting used in wet and/or other conductive locations, as for example, drums, tanks and vessels, shall be operated at 12 volts or less. However, 120-volt lights may be used if protected by a ground-fault circuit interrupter.
- Extension cords are considered to be temporary wiring, and must also comply with the section on "Requirements for Temporary Wiring" in this program.

#### **L. Requirements for Temporary Wiring**

Temporary electrical power and lighting installations 600 volts or less, including flexible cords, cables and extension cords, may only be used during and for renovation, maintenance, or repair work. The duration for temporary wiring used for decorative lighting for special events (such as holiday lighting) and similar purposes, if allowed at all, may not exceed 90 days. The following additional requirements apply:

- Ground-fault protection (e.g., ground-fault circuit interrupters, GFCI) must be provided on all temporary-wiring circuits, including extension cords, used on construction sites.
- In general, all equipment and tools connected by cord and plug must be grounded. Listed or labeled double insulated tools and appliances need not be grounded.
- Feeders must originate in an approved distribution center, such as a panel board, that is rated for the voltages and currents the system is expected to carry.
- Branch circuits must originate in an approved power outlet or panel board. Conductors shall be run as multi-conductor cord or cable assemblies, or shall be run in raceways. All conductors shall be protected by over current devices at their ampacity.
- Receptacles must be of the grounding type. Unless installed in a complete metallic raceway, each branch circuit must contain a separate equipment-grounding conductor, and all receptacles must be electrically connected to the grounding conductor. Receptacles shall not be connected to the same ungrounded conductor of multi-wire circuits that supply temporary lighting.

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- Flexible cords and cables must be of an approved type and suitable for the location and intended use. They may only be used for pendants, wiring of fixtures, connection of portable lamps or appliances, elevators, hoists, connection of stationary equipment where frequently interchanged, prevention of transmission of noise or vibration, data processing cables, or where needed to permit maintenance or repair. They may not be used as a substitute for flexible wiring, where run through holes in walls, ceilings or floors, where run through doorways, windows or similar openings, where attached to building surfaces, or where concealed behind building walls, ceilings or floors.
- Suitable disconnecting switches or plug connects must be installed to permit the disconnection of all ungrounded conductors of each temporary circuit.
- Lamps for general illumination must be protected from accidental contact or damage, either by elevating the fixture or by providing a suitable guard. Hand lamps supplied by flexible cord must be equipped with a handle or molded composition or other approved material and must be equipped with a substantial bulb guard.
- Flexible cords and cables must be protected from accidental damage. Sharp corners and projections are to be avoided. Flexible cords and cables must be protected from damage when they pass through doorways or other pinch points.

#### **M. Wet or Damp Locations**

Work in wet or damp work locations (i.e., areas surrounded or near water or other liquids) should not be performed unless it is absolutely crucial. Electrical work should be postponed until the liquid can be cleaned up. The following special precautions must be incorporated while performing work in damp locations:

- Only use electrical cords that have ground fault circuit interrupters (GFCI's);
- Place a dry barrier over any wet or damp surface;
- Remove standing water before beginning work. Work is prohibited in areas where there is standing water;
- Do not use electrical extension cords in wet or damp locations; and
- Keep electrical cords away from standing water.

#### **N. Batteries**

Batteries of the unsealed type shall be located in enclosures with outside vents or in well ventilated rooms and shall be arranged so as to prevent the escape of fumes, gases, or electrolyte spray into other areas. Ventilation shall be provided to ensure diffusion of the gases from the battery and to prevent the accumulation of an explosive

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mixture. Appropriate face shields, aprons, goggles and rubber gloves shall be provided for workers handling acids or batteries. Contact lenses are prohibited while working with batteries, unless using a type of goggle that will not allow the transference of gases. Where the eyes or body of any person may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use. Battery charging installations shall be located in areas designated for the purpose. When batteries are being charged, the vent caps shall be kept in place to avoid electrolyte spray. Vent caps shall be maintained in a functioning condition. Smoking, eating or drinking in areas where batteries are being stored, charged or worked with is prohibited. As a best practice, exposed battery connections should be equipped with insulation covers to prevent inadvertent contact with energized terminals by tools, etc.

#### Handling and Transportation

Packaging, markings and transportation of batteries shall be in accordance with Federal, State and local laws, regulations and standards. After the packaging is removed, batteries shall be inspected for defect, including, but not limited to:

- Bulging
- Cracking
- Leaking

#### Storage

Batteries shall be kept in their original packaging until they are ready to be used. Where feasible, old and new batteries shall not be inter-mixed. All batteries should be stored separate from combustibles and flammables and protected from being crushed, punctured or exposed to incompatible environmental conditions.

#### Disposal

All batteries being disposed of shall be done so in accordance with all Federal, State and local laws, regulations and standards.

### **O. Fuses**

Installing or removing fuses shall be considered energized work. Persons who perform work on fuses shall wear appropriate head, face, body flash suits, protective footwear and insulated gloves.

## **P. Working on De-Energized Equipment**

Electrically Safe Condition – The most important principle of electrical safety is to assume all electric circuits are energized unless each involved worker ensures they are not. Every circuit and conductor must be tested every time work is done on them by a qualified electrical worker. Proper PPE must be worn until the equipment is proven to be de-energized.

The National Fire Protection Association (NFPA) lists six steps to ensure conditions for electrically safe work:

- 1) Identify all sources of power to the equipment. Check applicable up-to-date drawings, diagrams, and identification tags.
- 2) Remove the current load, and then while utilizing the appropriate personal protective equipment and electrical tools, open the disconnect devices for each power source. Control circuit devices, such as push buttons, selector switches, and interlocks, shall not be used as the sole means for de-energizing circuits or equipment.
- 3) Where it is possible, visually verify that all blades of the disconnecting devices are fully opened or that drawout-type circuit breakers are fully withdrawn.
- 4) Apply lock out / tag out devices in accordance with the county's written lock out / tag out program.
- 5) Use an adequately rated voltage detector to test each phase conductor or circuit part to verify they are de-energized. Before and after each test, determine that the voltage detector is operating satisfactorily.
- 6) Where the possibility of induced voltages or stored electrical energy exists (such as capacitors), ground the phase conductor or circuit parts before touching them. Where it could be reasonably anticipated that the conductors or circuit parts being de-energized could contact other exposed energized conductors or circuit parts, apply ground connecting devices rated for the available fault current.

When capacitors or associated equipment are handled, they shall be treated as energized. Stored non-energized energy in devices that could re-energize electrical parts shall be blocked or relieved to the extent that the parts could not be accidentally energized by the device.

The process of de-energizing is energized work and can result in an arc flash due to equipment failure. When de-energizing, follow the procedures described in "Working on or Near Energized Equipment"

## **Q. Lock Out / Tag Out Program**

Winnebago County's separate Lock Out / Tag Out Program is available upon request from the facilities department supervisor.

## **R. Working on or Near Energized Equipment**

Working on energized circuits means actually touching energized parts. Working near energized circuits means working close enough to energized parts to pose a risk even though work is on de-energized parts. Common tasks where there may be a need to work on or near energized circuits include:

- Taking voltage measurements
- Opening and closing disconnects and breakers
- Racking breakers on and off the bus
- Removing panels and de-energized fronts
- Opening electric equipment doors for inspection

Departments should adopt written standard operating procedures and training for these common tasks. For instance, when opening and closing disconnects, use the "left-hand rule" when possible (stand to the right side of the equipment and operate the disconnect switch with the left hand). Energized parts to which an employee may be exposed shall be de-energized before the employee works on or near them, unless it can be demonstrated that de-energizing introduces additional or increased hazards or is infeasible due to equipment design or operational limitations. Energized parts that operate at less than 50 volts to ground need not be de-energized if there will be no increased exposure to electrical burns or to explosion due to electric arcs. If the exposed energized parts are not de-energized following the six step procedure in the previous section of this program (Working on De-Energized Equipment), other safety-related work practices shall be used to protect employees who may be exposed to the electrical hazards involved. Such work practices shall protect employees against contact with energized circuit parts directly with any part of their body or indirectly through some other conductive object. The work practices that are used shall be suitable for the conditions under which the work is to be performed and for the voltage level of the exposed electric conductors or circuit parts. The safety of all personnel shall be the number one priority of everyone involved and around the work site. Electrical safety shall be thoroughly understood by anyone involved with working on energized and non-energized equipment. Each employee shall have a firm understanding of the potential hazards when working on energized and non-energized equipment.

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### Energized Electrical Work Permit

- A copy of the County's **Energized Electrical Work Permit (Appendix A)** can be found at the back of this document. The intent of this permit is to ensure that all appropriate safety precautions are taken prior to starting energized electrical work. This appendix includes a flowchart to determine if and when an energized electrical work permit is needed.
- Work related to testing, troubleshooting, and voltage measuring may be completed **without** a permit provided appropriate safe work practices and PPE are used. In addition, visual inspections are permitted **without** the completion of an energized electrical permit provided the restricted approach boundary is not crossed.
- The permit must be originated by the qualified electrical worker.
- Energized Work Permits shall be submitted to the appropriate supervisor.
- The approved permit must be posted in an appropriate location where the energized work is taking place for the duration of the task.

#### Approach Distances to Exposed Energized Parts

The National Fire Protection Association (NFPA) defines 4 approach distances for shock hazard and one for arc flash. These specific approach distances can be seen in the table on page 14 and 15 of this program.

- The flash protection boundary is the approach limit at a distance from exposed energized parts within which a person could receive a second degree burn if an electrical arc flash were to occur.
  - 1) Use personal protective equipment appropriate for working near exposed energized parts and rated for the voltage and energy level involved.
  - 2) For systems of 600 volts and less, the flash protection boundary is 4 feet, based on an available bolted fault current of 50 kA and a clearing time of 6 cycles for the circuit breaker to act, or any combination of fault currents and clearing time not exceeding 300 kA cycles.
  - 3) When working on de-energized parts and inside the flash protection boundary for nearby energized exposed parts:
    - a) If the parts cannot be de-energized, use barriers such as insulated blankets to protect against accidental contact or wear proper personal protective equipment.
- The limited approach boundary is the distance from an exposed energized part within which a shock hazard exists.



- The restricted approach boundary is the closest distance to exposed energized parts a qualified person can approach without proper personal protective equipment and insulated tools. Inside this boundary, accidental movement can put a part of the body or conductive tools in contact with energized parts or inside the prohibited approach boundary. To cross the restricted approach boundary, the qualified person must:
  - 1) Have an energized work permit that is approved by the appropriate supervisor or manager.
  - 2) Use personal protective equipment for working near exposed energized parts and rated for the voltage and energy level involved.
  - 3) Be certain that no part of the body enters the prohibited space.
  - 4) Minimize the risk from unintended movement, by keeping as much of the body as possible out of the restricted space, body parts in the restricted space should be protected.
- The prohibited approach boundary is the minimum approach distance to exposed energized parts to prevent flashover or arcing. Approaching any closer is comparable to making direct contact with an energized part. To cross the prohibited approach boundary, the qualified person must:
  - 1) Have specified training to work on exposed energized parts.
  - 2) Have a permit with proper written work procedures and justifying the need to work that close.
  - 3) Do a hazard risk analysis (Appendix C).
  - 4) Have (2) and (3) above approved by the appropriate supervisor.
  - 5) Use personal protective equipment appropriate for working near exposed energized parts and rated for the voltage and energy level involved.

Approach Boundaries to Energized Electrical Conductors or Circuit Parts for Shock Protection for Alternating Current Systems (all dimensions are distances from energized electrical conductor or circuit parts to worker):

Nominal system voltage range, phase to phase	Limited Approach Boundary		Restricted Approach Boundary (allowing for accidental	Prohibited Approach Boundary
	Exposed movable conductor	Exposed fixed-circuit part		
0 to 50 volts	Not specified	Not specified	Not specified	Not specified
51 to 300 volts	10 ft. 0 in.	3 ft. 6 in.	Avoid contact	Avoid contact
301 to 750 volts	10 ft. 0 in.	3 ft. 6 in.	1 ft. 0 in.	0 ft. 1 in.
751 to 15 kV	10 ft. 0 in.	5 ft. 0 in.	2 ft. 2 in.	0 ft. 7 in.
15.1 kV to 36 kV	10 ft. 0 in.	6 ft. 0 in.	2 ft. 7 in.	0 ft. 10 in.

Source: From a portion of table 130.4(C)(a) “Approach Boundaries to Energized Electrical Conductors or Circuit Parts for Alternating Current Systems” (NFPA 70E Standard for Electrical Safety Requirements for Employee Workplaces, 2012 Edition)

Approach Boundaries to Energized Electrical Conductors or Circuit Parts for Shock Protection for Direct Current Voltage Systems (all dimensions are distances from energized electrical conductor or circuit parts to worker):

Nominal system voltage range, phase to phase	Limited Approach Boundary		Restricted Approach Boundary (allowing for accidental	Prohibited Approach Boundary
	Exposed movable conductor	Exposed fixed-circuit part		
< 100 V	Not specified	Not specified	Not specified	Not specified
100 V – 300 V	10 ft. 0 in.	3 ft. 6 in.	Avoid contact	Avoid contact
301 V – 1 kV	10 ft. 0 in.	3 ft. 6 in.	1 ft. 0 in.	0 ft. 1 in.
1.1 kV – 5 kV	10 ft. 0 in.	5 ft. 0 in.	1 ft. 5 in.	0 ft. 4 in.
5.1 kV – 15kV	10 ft. 0 in.	5 ft. 0 in.	2 ft. 2 in.	0 ft. 7 in.

Source: From a portion of table 130.4(C)(a) “Approach Boundaries to Energized Electrical Conductors or Circuit Parts for Direct Current Systems” (NFPA 70E Standard for Electrical Safety Requirements for Employee Workplaces, 2012 Edition)

#### Other Precautions:

When working on de-energized parts, but still inside the flash protection boundary for nearby energized exposed parts:

- If the parts cannot be de-energized, barriers such as insulated blankets must be used to protect against accidental contact or personal protective equipment must be worn.
- Employees shall not enter spaces containing energized parts unless illumination is provided that allows the work to be performed safely. Where lack of illumination or an obstruction precludes observation of the work to be performed, employees shall not perform tasks near exposed energized parts. Employees shall not reach blindly into areas that might contain exposed energized parts.
- Conductive articles of jewelry and clothing (such as watchbands, bracelets, rings, key chains, necklaces, metalized aprons, cloth with conductive thread, metal headgear, or metal frame glasses) shall not be worn where the present an electrical contact hazard with exposed energized parts.
- Conductive materials, tools, and equipment that are in contact with any part of an employee’s body shall be handled in a manner that prevents accidental contact with

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energized parts. Such materials and equipment include, but are not limited to long conductive objects such as ducts, pipes, tubes, conductive hose and rope, metal-lined rules and scales, steel tapes, pulling lines, metal scaffold parts, structural members and chains.

- When an employee works in a confined space or enclosed spaces (such as a manhole or vault) that contains exposed energized parts, the employee shall use protective shields, barriers or insulating materials as necessary to avoid contact with these parts. Doors, hinged panels, and the like shall be secured to prevent them from swinging into employees. See Winnebago County's separate Confined Space Entry Program.

## **S. Energized Electrical Equipment Safety Program Implementation**

### Equipment Labeling

Article 110.16 of the NEC-2008 code requires switchboards, panel boards, industrial control panels, and motor control centers to be field marked to warn workers of potential electric arc flash hazards. The term industrial control panels cover every enclosure that may contain exposed energized conductors or components. Marking is intended to reduce the occurrence of serious injury or death due to arcing faults to workers working on our near energized electrical equipment. Markings (labels) shall be located so they are visible to the personnel before examination, adjustment, servicing, or maintenance of the equipment. The label at the top of the next page (or another label with equivalent content) shall be used when after a qualified electrical worker or electrical engineer determines the values of the shock and flash protection information.

Article 130.5 of NFPA 70E-12 requires that such electrical equipment identified above located in areas other than dwelling units that is likely to require examination, adjustment, servicing or maintenance while energized is to be marked with a label containing the following information:


#### 1. One of the following:

- Available incident energy and corresponding working distance
- Minimum arc rating of clothing
- Required level of PPE
- Highest Hazard/Risk Category (HRC) for the equipment

#### 2. Nominal System Voltage

#### 3. Arc Flash Boundary

Exception: Labels applied prior to September 30, 2011 are acceptable if they contain the available incident energy or required level of PPE. The method for calculating the information for the label shall be documented.

 <b>DANGER</b>	
<b>Arc Flash and Shock Hazard</b> <b>Appropriate PPE Required</b>	
<b>Arc Flash Protection</b> • Flash Protection Boundary: _____ • Hazard Risk Category: _____ • Incident Energy at 18" (cal/cm <sup>2</sup> ): _____	<b>Required PPE</b> <div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> Hard Hat  <input type="checkbox"/> Safety Glasses  <input type="checkbox"/> Safety Goggles  <input type="checkbox"/> Face Shield  <input type="checkbox"/> Flash Hood  <input type="checkbox"/> Ear Protection  <input type="checkbox"/> Long Pants  <input type="checkbox"/> Long Sleeve Shirt  <input type="checkbox"/> Cotton Underwear  <input type="checkbox"/> Voltage Rated Gloves           </div> <div> <input type="checkbox"/> T-shirt  <input type="checkbox"/> FR Shirt  <input type="checkbox"/> FR Pants  <input type="checkbox"/> FR Coverall  <input type="checkbox"/> Flash Suite  <input type="checkbox"/> Leather Shoes  <input type="checkbox"/> Leather Gloves           </div> </div>
<b>Shock Protection</b> Shock Hazard when cover is OPENED or REMOVED: _____ • Limited Approach: _____ • Restricted Approach: _____ • Prohibited Approach: _____	
<b>Equipment ID:</b> _____	<b>Date:</b> _____

The label below (or another label with the equivalent content) shall be used when arc flash and shock data is not presently available. This is the minimum NEC 110.16 requirement. The label should remind a qualified work who intends to open the equipment for analysis or work that: electric arc flash hazards exist, turn off all power before opening, follow all requirements of NFPA 70E for safe work practices and wear appropriate personal protective equipment (PPE) for the specific hazard.



### Implementation Procedures

- 1) Immediately place danger labels on equipment required to be labeled by NEC 110.16.
- 2) Until an arc flash hazard analysis can be made, a qualified electrical worker must use **Appendix B – Electrical Safety Matrix**, for each situation, to determine: the

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hazard/risk category, the required personal protective equipment and the use of V-rated tools (V-rated tools are tools rated and tested for the maximum line-to-line voltage upon work that will be done).

- 3) Each affected department shall complete an arc flash hazard analysis as required by NFPA 70E. The arc flash hazard analysis shall only be completed by a licensed electrical engineer. The arc flash hazard analysis shall be completed on all major electrical system upgrades or renovations. The arc flash analysis shall be done for all new electrical system installations. Departments should evaluate the condition of their electrical equipment and determine if they should have an arc flash analysis conducted. Reasons for conducting the analysis include the following: some equipment may be old, possibly in poor condition creating a greater potential for flashover, equipment is requiring greater than average maintenance, and frequent use of high hazard/risk category personal protective equipment during the conduct of maintenance.

## **T. Personal Protective Equipment**

### **General Requirements**

Employees working in areas where there are potential electrical hazards must be provided with and use personal protective equipment (PPE) that is appropriate for the specific work to be performed. The electrical tools and protective equipment must be specifically approved, rated and tested for the levels of voltage of which an employee may be exposed. Each department shall provide electrical protective equipment (Arc Flash Gear) required by this program. Such equipment shall include 11 calorie, and 40 calorie rated Arc Flash apparel (until a full arc flash hazard analysis is made), eye protection, head protection, hand protection, insulated footwear, and face shields where necessary.

- Employees shall wear arc-rated, nonconductive head protection whenever there is a danger of head injury from electric shock or burns due to contact with energized parts or from flying objects resulting from an electrical explosion.
- Employees shall wear personal protective equipment for the eyes whenever there is a danger of injury from electric arcs, flashes, or from flying objects resulting from an electrical explosion.
- Employees shall wear appropriately rated rubber insulating gloves where there is a danger of hand or arm contact with energized parts or possible exposure to arc flash burn.
- Where insulated footwear is used as protection against step and touch potential, dielectric overshoes shall be required. Insulated shoes shall not be used as primary electrical protection.

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- Face shields without arc rating shall not be used for electric work. Safety glasses or goggles must always be worn underneath face shields.
- Additional illumination may be needed when using tinted face shields as protection during electrical work.
- Electrical protective equipment must be selected to meet the criteria established by the American Society of Testing and Materials (ASTM) and by the American National Standards Institute (ANSI).
- Insulating equipment made of material other than rubber shall provide electrical and mechanical protection at least equal to that of rubber equipment.
- PPE must be maintained in a safe, reliable condition and be inspected for damage before each day's use and immediately following any incident that can reasonably be suspected of having caused damage.
- Employees must use insulated tools and handling equipment that are rated for the voltages to be encountered when working near exposed energized conductors or circuits. Tools and handling equipment should be replaced if the insulating capability is decreased due to damage.
- Fuse handling equipment (insulated for circuit voltage) must be used to remove or install fuses when the fuse terminals are energized. Ropes and hand lines used near exposed energized parts must be non-conductive.
- Protective shields, barriers or insulating materials must be used to protect each employee from shock, burns, or other electrical injuries while that person is working near exposed energized parts that might be accidentally contacted or where dangerous electric heating or arcing might occur.

#### Arc Rated Flame Resistant Apparel and Under Layers

- Arc rated flame resistant apparel shall be visually inspected before each use. Such apparel that is contaminated or damaged shall not be used. Protective items that become contaminated with grease, oil, flammable liquids or combustible liquids shall not be used.
- The garment manufacturer's instructions for care and maintenance of flame resistant apparel shall be followed.
- When the apparel is worn to protect and employee, it shall cover all ignitable clothing and allow for movement and visibility.
- The apparel must cover potentially exposed areas as completely as possible. Shirt sleeves must be fastened and shirts/jackets must be closed at the neck.
- Non-melting flammable garments (i.e., cotton, wool, rayon, silk, or blends of these materials) may be used as underlayers beneath flame resistant apparel.

- Melttable fibers such as acetate, nylon, polyester, polypropylene, and spandex shall not be permitted in fabric underlayers next to skin. An incidental amount of elastic used on non-melting fabric underwear or socks shall be permitted.
- Garments worn as outer layers over arc rated, flame resistant apparel (i.e., jackets) must also be made from arc rated, flame resistant material.
- Arc flash suits must permit easy and rapid removal by the user.

#### Rubber Insulating Equipment

- Rubber insulating equipment includes protective devices such as gloves, sleeves, blankets, and matting.
- Insulating equipment must be inspected for damage before each day's use and immediately following any incident that could have caused damage.
- An air test must be performed on rubber insulating gloves before each use.
- Insulating equipment found to have defects that might affect its insulating properties must be removed from service until testing indicates that it is acceptable for continued use.
- Where the insulating capability of protective equipment is subject to damage during use, the insulating material shall be protected by an outer covering of leather or other appropriate materials.
- Rubber insulating equipment must be tested according to the schedule supplied by the manufacturer.
- Rubber insulating equipment must be stored in an area protected from sunlight, temperature extremes, excessive humidity, and other substances and conditions that may cause damage.
- No repairs to rubber insulating equipment shall be attempted without the approval of the manufacturer.

### **U. Electrical Tools and Equipment**

#### Insulated Tools and Materials

- Only insulated tools and equipment shall be used within the Limited Approach Boundary of exposed energized parts.
- Electrical test meters and leads must be rated as CAT III or higher.
- Insulated tools shall be rated for the voltages on which they are used.
- Insulated tools shall be designed and constructed for the environment to which they are exposed and the manner in which they are used.

- Fuse or fuse holder handling equipment, insulation for circuit voltage, shall be used to remove or install a fuse if the fuse terminals are energized.
- Ropes and hand-lines, including confined space retrieval lines used near exposed energized parts shall be nonconductive.
- Portable ladders used for electrical work shall have nonconductive side rails.

#### Access Limiting Equipment

- Barricades shall be used in conjunction with safety signs to prevent or limit access to work areas containing energized parts. Conductive barricades shall not be used where they might cause an electrical hazard. Barricades shall normally be placed at the Flash Protection Boundary, but no closer than the Limited Approach Boundary.
- If signs and barricades do not provide sufficient protection, an attendant will be assigned to warn and protect pedestrians. The primary duty of the attendant shall be to keep an unqualified person out of the work area where an electrical hazard exists. The attendant shall remain in the area as long as there is a potential exposure to electrical hazards. The attendant may be an unqualified electrical worker, but must understand the procedures for calling for help (i.e. dial 911).

### **V. Working Space About Electrical Equipment (600 Volts, nominal, or less)**

- Sufficient access and working space shall be provided and maintained about all electric equipment to permit ready and safe operation and maintenance of such equipment.
- Working Clearances – Except as required or permitted elsewhere in this section, the dimension of the working space in the direction of access to energized parts operating at 600 volts or less and likely to require examination, adjustment and servicing, or maintenance while energized shall not be less than indicated in the table below. In addition to the dimensions shown in the following table, workspace shall not be less than 36 inches wide in front of the electric equipment. Distances shall be measured from the energized parts if they are exposed or from the enclosure front or opening if the energized parts are enclosed. Walls constructed of concrete, brick or tiles are considered to be grounded. Working space is not required in back of assemblies such as dead-front switchboards or motor control centers where there are not renewable or adjustable parts such as fuses or switches on the back and where all connections are accessible from locations other than the back.



Minimum Depth of Clear Working Space in Front of Electric Equipment (feet)			
Nominal Voltage to Ground Conditions*	(a)*	(b)*	(c)*
0 – 150	3	3	3
151 – 600	3	3 ½	4
<p>*Conditions (a), (b), and (c) are as follows: (a) Exposed energized parts on one side and no energized or grounded parts on the other side of the working space, or exposed energized parts on both sides effectively guarded by insulating material. Insulated wire or insulated bus bars operating at not over 300 volts are not considered energized parts. (b) Exposed energized parts on one side and grounded parts on the other side. (c) Exposed energized parts on both sides of the workspace {not guarded as provided in condition (a)} with the operator between.</p>			

- Working space required in this section shall not be used for storage. When normally enclosed energized parts are exposed for inspection or servicing, the work space, if in a passageway or general open space, shall be guarded.
- At least one entrance shall be provided to give access to the working space about electric equipment.
- Where there are energized parts normally exposed on the front of switchboards or motor control centers, the working space in front of such equipment shall not be less than 3 feet.
- The minimum headroom of working spaces about service equipment, switchboards, panel boards, or motor control centers shall be 6 feet, 3 inches.

#### Guarding of Energized Parts

Except as required or permitted, energized parts of electrical equipment operating at 50 volts or more shall be guarded against accidental contact by cabinets or other forms of enclosures, or by any of the following means:

- By location in a room, vault, or similar enclosure that is accessible only to qualified persons.
- By partitions or screens so arranged that only qualified persons will have access to the space within reach of the energized parts. Any openings in such partitions or screens shall be so sized and located that persons are not likely to come into accidental contact with the energized parts or to bring conducting objects into contact with them.

- By location on a balcony, gallery, or platform so elevated and arranged as to exclude unqualified persons.
- In locations where electric equipment could be exposed to physical damage, enclosures or guards shall be so arranged and of such strength to prevent damage.
- Entrances to rooms and other guarded locations containing exposed energized parts shall be marked with conspicuous warning signs forbidding unqualified persons to enter.

#### **W. Work Space Clearances (over 600 volts, nominal)**

Conductors and equipment used on circuits exceeding 600 volts, nominal, shall comply with all applicable provisions of this section and with the following provisions that supplement or modify these requirements.

- Enclosures of electrical installations – Electrical installations in a vault, room, closet or in an area surrounded by a wall, screen, or fence, access to which is controlled by lock and key or other equivalent means, are considered to be accessible to qualified persons only. A wall, screen, or fence less than 8 feet in height is not considered adequate to prevent access unless it has other features that provide a degree of isolation equivalent to an 8-foot fence. The entrances to all buildings, rooms or enclosures containing exposed energized parts or exposed conductors operating at over 600 volts, nominal, shall be kept locked or shall be under the observation of a qualified person at all times.
- Installations accessible to qualified persons only – Electrical installations having exposed energized parts shall be accessible to qualified person only and shall comply with requirements of this standard and applicable regulatory standards.
- Installations accessible to unqualified person(s) – Electrical installations that are open to unqualified persons shall be made with metal-enclosed equipment or shall be enclosed in a vault or in an area, access to which is controlled by a lock. Metal-enclosed switchgear, unit substations, transformers, pull boxes, connection boxes, and other similar associated equipment shall be marked with appropriate caution signs. If equipment is exposed to physical damage from vehicular traffic, guards shall be provided to prevent such damage. Ventilating or similar openings in metal-enclosed equipment shall be designed so that foreign objects inserted through these openings will be deflected from energized parts.
- Workspace about equipment – Sufficient space shall be provided and maintained about electric equipment to permit ready and safe operation and maintenance of such equipment. Where energized parts are exposed, the minimum clear workspace shall not be less than 6 feet, 6 inches high (measured vertically from the floor or platform) or less than 3 feet wide (measured parallel to the equipment). The depth shall be as

required in the table below. The workspace shall be adequate to permit at least a 90-degree opening of doors or hinged panels. The minimum clear working space in front of electric equipment such as switchboards, control panels, switches, circuit breakers, motor controllers, relays, and similar equipment shall not be less than specified in the following table, unless otherwise specified. Distances shall be measured from the energized parts if they are exposed or from the enclosure front of opening if the energized parts are enclosed. However, working space is not required in the back of equipment such as dead front switchboards or control assemblies where there are no renewable or adjustable parts (such as fuses or switches) on the back and where all connections are accessible from locations other than the back. Where rear access is required to work on de-energized parts on the back of enclosed equipment, a minimum working space of thirty (30) inches horizontally shall be provided.

<b>Minimum Depth of Clear Working Space in Front of Electric Equipment (feet)</b>			
<b>Nominal voltage to ground conditions*</b>	<b>(a)*</b>	<b>(b)*</b>	<b>(c)*</b>
601 – 2,500	3	4	5
2,501 – 9,000	4	5	6
9,001 – 25,000	5	6	9
<p>*Conditions (a), (b), and (c) are as follows: (a) Exposed energized parts on one side and no energized or grounded parts on the other side of the working space, or exposed energized parts on both sides effectively guarded by insulating materials. Insulated wire or insulated bus bars operating at not over 300 volts are not considered energized parts. (b) Exposed energized parts on one side and grounded parts on the other side. Walls constructed of concrete, brick, or tiles are considered to be grounded surfaces. (c) Exposed energized parts on both sides of the workspace {not guarded as provided in Condition (a)} with the operator between.</p>			

- Lighting outlets and points of control – The lighting outlets shall be so arranged that persons changing lamps or making repairs on the lighting system will not be endangered by energized parts or other equipment. The points of control shall be so located that persons are not likely to come into contact with any energized part or moving part of the equipment while turning on the lights.
- Elevation of unguarded energized parts – Unguarded energized parts above working spaces shall be maintained at elevations not less than specified in the following table (found at the top of the next page).

<b>Elevation of Unguarded Energized Parts Above Working Spaces</b>	
<b>Nominal voltage between phases</b>	<b>Minimum elevation</b>
601 – 7,500	8 feet, 6 inches
7,501 – 35,000	9 feet

- Entrance and access to workspace – At least one entrance not less than 24 inches wide and 6 feet 6 inches high shall be provided to give access to the working space above electric equipment. On switchboard and control panels exceeding 48 inches in width, there shall be one entrance at each end of such board where practicable. Where bare energized parts at any voltage or insulated energized parts above 600 volts are located adjacent to such entrance, they shall be guarded.

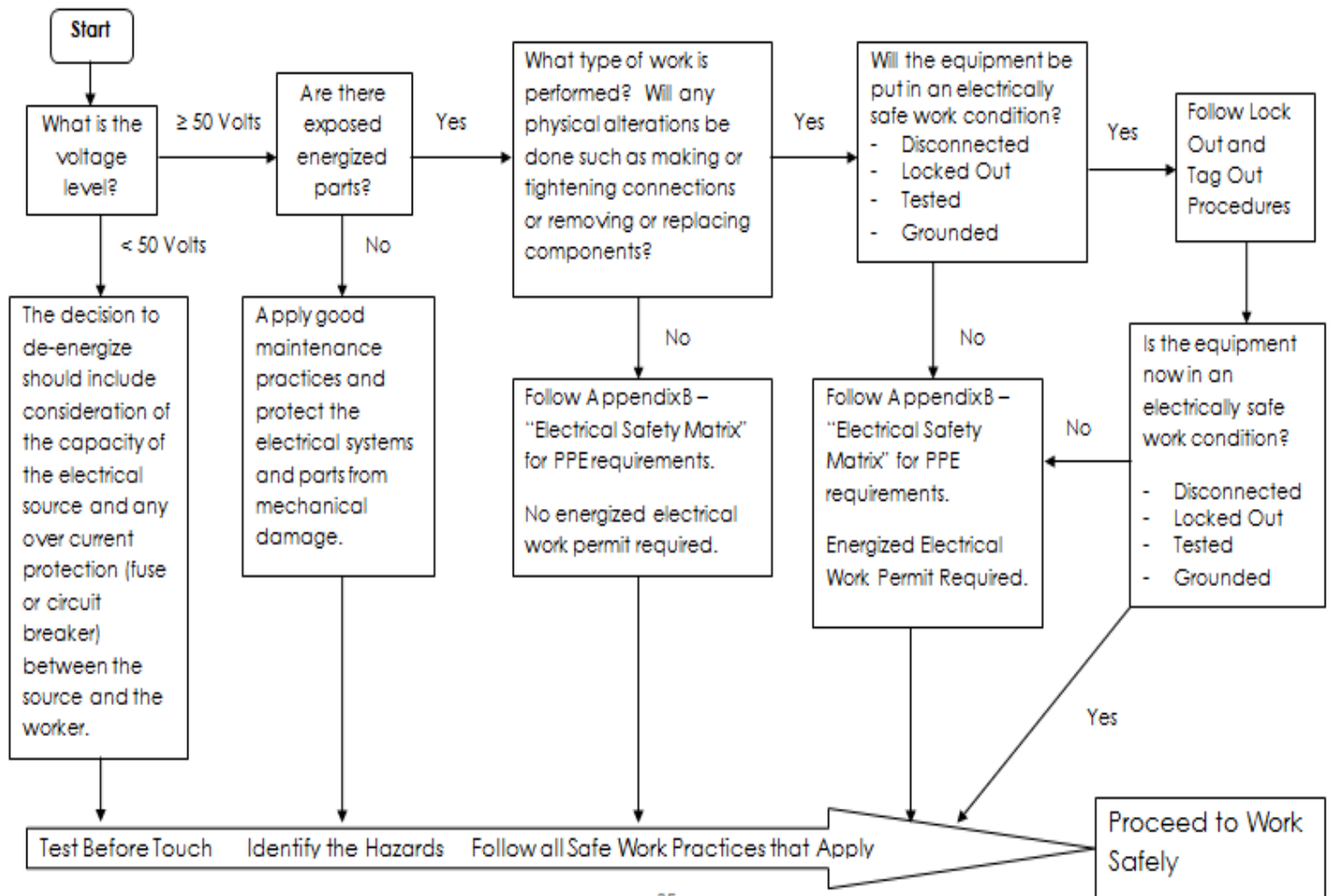
#### **X. Contractor Employees**

- Contractors are required to comply with applicable Safety and Health regulations such as OSHA, NFPA, and EPA. This includes the use of required arc flash personal protective equipment, insulated tools and safe work practices/procedures.

## Energized Electrical Work Permit

### Appendix A

(Use this flow chart to determine if an energized electrical work permit is required.)



## Energized Electrical Work Permit

### Appendix A (Continued)

1. Work Location: \_\_\_\_\_
2. Work order / project #: \_\_\_\_\_
3. Description of the work to be done (use back if necessary): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
4. Justification of why the circuit/equipment cannot be de-energized or the work deferred until the next scheduled outage: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
5. Check the following considerations when they apply:  
\_\_\_\_ Work is within the restricted approach boundary and there is a work plan.  
\_\_\_\_ Work is within the prohibited approach boundary, it is very hazardous and there is a work plan.  
\_\_\_\_ Request to shut down equipment was made.  
\_\_\_\_ Conducted a shock hazard analysis.  
\_\_\_\_ Shock protection boundaries have been determined.  
\_\_\_\_ Arc flash hazard analysis has been made and the results are known.  
\_\_\_\_ Arc flash protection boundary has been determined.  
\_\_\_\_ Personal protective equipment including tools needed for the job have been determined and are available.  
\_\_\_\_ Unqualified persons are restricted from the work area.  
\_\_\_\_ Safe work practices that need to be employed have been considered.  
\_\_\_\_ Job can be done safely.

Signature (Electrically Qualified Employee): \_\_\_\_\_

Date: \_\_\_\_\_

Signature (Immediate Supervisor): \_\_\_\_\_

Date: \_\_\_\_\_

Note: Retain this completed form within the appropriate department.

<b>Electrical Safety Matrix</b> <b>Appendix B</b> (Task Assumes Equipment is Energized, and Work is Done Within the Flash Boundary)  Ref: NFPA 70 Table 130.7(c)(15)(a) and (b)  Note: Heavy Leather Gloves are not an option when insulated gloves are required.	Hazard Risk Category	V-Rated Tools	V-Rated Gloves w/Leather Protectors	Natural Fiber Clothing./Undergarment	Long Sleeve Shirt and Pants	Arc-rated clothing system	Heavy Duty Leather Gloves (AN)	Hard Hat	Safety Glasses	Hearing Protection (canal inserts)	Arc-rated ____ cal/cm2 Face Shield
<b>Panelboards or Other Equip. Rated 240 V and Below - Note 1</b>											
Perform infrared thermography and other non-contact inspections outside the restricted approach boundary.	0	N	N	Y	Y	N	Y	N	Y	Y	N
Circuit Breaker or Fused Switch operation with cover ON.	0	N	N	Y	Y	N	Y	N	Y	Y	N
Circuit Breaker or Fused Switch operation with cover OFF.	0	N	N	Y	Y	N	Y	N	Y	Y	N
Work on energized electrical conductors and circuit parts, including voltage testing.	1	Y	Y	Y	Y	4	Y	Y	Y	Y	4
Remove / install circuit breakers or fused switches.	1	Y	Y	Y	Y	4	Y	Y	Y	Y	4
Removal of bolted covers (to expose bare, energized electrical conductors and circuit parts).	1	N	N	Y	Y	4	Y	Y	Y	Y	4
Opening hinged covers (to expose bare, energized electrical conductors and circuit parts).	0	N	N	Y	Y	N	Y	N	Y	Y	N
Work on energized electrical conductors and circuit parts of utilization equipment fed directly by a brach circuit of the panelboard.	1	Y	Y	Y	Y	4	Y	Y	Y	Y	4
<b>Panelboards or Switchboards Rated &gt; 240 V and up to 600 V (with molded case or insulated case circuit breakers) – Note 1</b>											
Perform infrared thermography and other non-contact inspections outside the restricted approach boundary.	1	N	N	Y	Y	4	Y	Y	Y	Y	4
Circuit Breaker or Fused Switch operation with cover ON.	0	N	N	Y	Y	N	Y	N	Y	Y	N
Circuit Breaker or Fused Switch operation with cover OFF.	1	N	Y	Y	Y	4	Y	Y	Y	Y	4
Work on energized electrical conductors and circuit parts, including voltage testing.	2	Y	Y	Y	Y	8	Y	Y	Y	Y	8
Work on energized electrical conductors and circuit parts of utilization equipment fed directly by a branch circuit of the panel board.	2	Y	Y	Y	Y	8	Y	Y	Y	Y	8
<b>600 V Class Motor Control Centers (MCC's) - Note 2 (except as indicated)</b>											
Perform infrared thermography and other non-contact inspections outside the restricted approach boundary.	1	N	N	Y	Y	4	Y	Y	Y	Y	4
Circuit breaker or fused switch or starter operation with enclosure doors closed.	0	N	N	Y	Y	N	Y	N	Y	Y	N
Reading a panel meter while operating a meter switch.	0	N	N	Y	Y	N	Y	N	Y	Y	N
Circuit breaker or fused switch or starter operation w/ enclosure doors open.	1	N	N	Y	Y	4	Y	Y	Y	Y	4
Work on energized electrical conductors and circuit parts, including voltage testing.	2	Y	Y	Y	Y	8	Y	Y	Y	Y	8
Work on control circuits with energized electrical conductors and circuit parts 120 V or below, exposed.	0	Y	Y	Y	Y	N	Y	N	Y	Y	N

<b>Electrical Safety Matrix</b> <b>Appendix B (continued)</b> (Task Assumes Equipment is Energized, and Work is Done Within the Flash Boundary)											
	Hazard Risk Category	V-Rated Tools	V-Rated Gloves w/Leather Protectors	Natural Fiber Clothing./Undergarment	Long Sleeve Shirt and Pants	Arc-rated clothing system	Heavy Duty Leather Gloves (AN)	Hard Hat	Safety Glasses	Hearing Protection (canal inserts)	Arc-rated ____ cal/cm2 Face Shield
<b>600 V Class Motor Control Centers (MCC's) - Note 2 (except as indicated), continued</b>											
Work on control circuits with energized electrical conductors and circuit parts > 120 V, exposed.	2	Y	Y	Y	Y	8	Y	Y	Y	Y	8
Application of temporary protective grounding equipment, after voltage test.	2	N	Y	Y	Y	8	Y	Y	Y	Y	8
Work on energized electrical conductors and circuit parts of utilization equipment fed directly by a branch circuit of the motor control center.	2	Y	Y	Y	Y	8	Y	Y	Y	Y	8
<b>600 V Class Motor Control Centers (MCC's) – Note 3. continued</b>											
Insertion or removal of individual starter “buckets” from MCC – Note 3	4	N	Y	Y	Y	40	N	Y	Y	Y	40
Removal of bolted covers (to expose bare, energized electrical conductors and circuit parts) – Note 3	4	N	N	Y	Y	40	N	Y	Y	Y	40
Opening hinged covers (to expose bare, energized electrical conductors and circuit parts) – Note 3	1	N	N	Y	Y	4	Y	Y	Y	Y	4
<b>600 V Class Switchgear (with power circuit breakers for fused switches) - Note 4</b>											
Perform infrared thermography and other non-contact inspections outside the restricted approach boundary.	2	N	N	Y	Y	8	Y	Y	Y	Y	8
Circuit breaker or fused switch operation with enclosure doors closed.	0	N	N	Y	Y	N	Y	N	Y	Y	N
Reading a panel meter while operating a meter switch.	0	N	N	Y	Y	N	Y	N	Y	Y	N
Circuit breaker or fused switch operation with enclosure doors open.	1	N	N	Y	Y	4	Y	Y	Y	Y	4
Work on energized elec. conductors and circuit parts, including voltage testing.	2	Y	Y	Y	Y	8	Y	Y	Y	Y	8
Work on control circuits with energized electrical conductors and circuit parts 120 V or below, exposed.	0	Y	Y	Y	Y	N	Y	N	Y	Y	N
Work on control circuits with energized electrical conductors and circuit parts > 120 V, exposed.	2	Y	Y	Y	Y	8	Y	Y	Y	Y	8
Insertion or removal (racking) of CB's from cubicles, doors open or closed	4	N	N	Y	Y	40	N	Y	Y	Y	40
Application of temporary protective grounding equipment, after voltage test.	2	N	Y	Y	Y	8	Y	Y	Y	Y	8
Removal of bolted covers (to expose bare, energized electrical conductors and circuit parts)	4	N	N	Y	Y	40	N	Y	Y	Y	40
Opening hinged covers (to exposed bare energized elec. conductors and circuit parts)	2	N	N	Y	Y	8	Y	Y	Y	Y	8



<b>Electrical Safety Matrix</b> <b>Appendix B (continued)</b> (Task Assumes Equipment is Energized, and Work is Done Within the Flash Boundary)											
	Hazard Risk Category	V-Rated Tools	V-Rated Gloves w/Leather Protectors	Natural Fiber Clothing./Undergarment	Long Sleeve Shirt and Pants	Arc-rated clothing system	Heavy Duty Leather Gloves (AN)	Hard Hat	Safety Glasses	Hearing Protection (canal inserts)	Arc-rated ____ cal/cm2 Face Shield
<b>Other 600 V Class (277 through 600 V, nominal) Equip. - Note 2, except as indicated (includes lighting or small power transformers).</b>											
Removal of bolted covers (to expose bare, energized elec. conductors and circuit parts)	2	N	N	Y	Y	8	Y	Y	Y	Y	8
Opening hinged covers (expose bare, energized elec. conductors / circuit parts)	1	N	N	Y	Y	4	Y	Y	Y	Y	4
Work on energized elec. conductors and circuit parts, including voltage testing.	2	Y	Y	Y	Y	8	Y	Y	Y	Y	8
Application of temporary protective grounding equipment, after voltage test.	2	N	Y	Y	Y	8	Y	Y	Y	Y	8
Revenue meters (kw-hour, at primary voltage and current) - insertion or removal.	2	N	Y	Y	Y	8	Y	Y	Y	Y	8
Cable trough or tray cover removal or installation.	1	N	N	Y	Y	4	Y	Y	Y	Y	4
Miscellaneous equipment cover removal or installation.	1	N	N	Y	Y	4	Y	Y	Y	Y	4
Insertion or removal of plug-in devices into or from busways.	2	N	Y	Y	Y	8	Y	Y	Y	Y	8
<b>Metal Clad Switchgear, 1 kV through 38 kV</b>											
Perform infrared thermography and other non-contact inspections outside the restricted approach boundary.	3	N	N	Y	Y	25	N	Y	Y	Y	25
Circuit breaker operation with enclosure doors closed	2	N	N	Y	Y	8	Y	Y	Y	Y	8
Reading a panel meter while operating a meter switch.	0	N	N	Y	Y	N	Y	N	Y	Y	N
Circuit breaker operation with enclosure doors open	4	N	N	Y	Y	40	N	Y	Y	Y	40
Work on energized electrical conductors and circuit parts, including testing	4	Y	Y	Y	Y	40	N	Y	Y	Y	40
Work on control circuits with energized electrical conductors and circuit parts 120 V or below, exposed	2	Y	Y	Y	Y	8	Y	Y	Y	Y	8
Work on control circuits with energized elec. conductors and circuit parts >120 V, exposed	4	Y	Y	Y	Y	40	N	Y	Y	Y	40
Insertion or removal (racking) of CB's from cubicles, doors open/closed	4	N	N	Y	Y	40	N	Y	Y	Y	40
Application of temporary protective grounding equipment, after voltage test.	4	N	Y	Y	Y	40	N	Y	Y	Y	40
Remove bolted covers (expose bare, energized elec. conductors / circuit parts).	4	N	N	Y	Y	40	N	Y	Y	Y	40
Opening hinged covers (expose bare, energized elec. conductors / circuit parts)	3	N	N	Y	Y	25	N	Y	Y	Y	25
Opening voltage transformer or control power transformer compartments	4	N	N	Y	Y	40	N	Y	Y	Y	40

<b>Electrical Safety Matrix</b> <b>Appendix B (continued)</b> (Task Assumes Equipment is Energized, and Work is Done Within the Flash Boundary)											
	Hazard Risk Category	V-Rated Tools	V-Rated Gloves w/Leather Protectors	Natural Fiber Clothing./Undergarment	Long Sleeve Shirt and Pants	Arc-rated clothing system	Heavy Duty Leather Gloves (AN)	Hard Hat	Safety Glasses	Hearing Protection (canal inserts)	Arc-rated ____ cal/cm2 Face Shield
<b>Arc-Resistant Switchgear Type 1 or 2 (for clearing times of &lt;0.5 sec with a perspective fault current not to exceed the arc resistant rating of the equipment).</b>											
Circuit breaker operation with enclosure door closed	0	N	N	Y	Y	N	Y	N	Y	Y	N
Insertion or removal (racking) of CB's from cubicles, doors closed	0	N	N	Y	Y	N	Y	N	Y	Y	N
Insertion or removal of CB's from cubicles with door open	4	N	N	Y	Y	40	N	Y	Y	Y	40
Work on control circuits with energized electrical conductors and circuit parts 120 V or below, exposed	2	Y	Y	Y	Y	8	Y	Y	Y	Y	8
Insertion or removal (racking) of ground and test device w/ door closed.	0	N	N	Y	Y	N	Y	N	Y	Y	N
Insertion or removal (racking) of voltage transformers on or off the bus door, closed.	0	N	N	Y	Y	N	Y	N	Y	Y	N
<b>Other Equipment 1 kV through 38 kV; Metal-enclosed interrupter switchgear, fused or unfused.</b>											
Switch operation of arc-resistant-type construction, tested in accordance with IEEE C.37.20.7, doors closed only.	0	N	N	Y	Y	N	Y	N	Y	Y	N
Switch operation, doors closed.	2	N	N	Y	Y	8	Y	Y	Y	Y	8
Work on energized electrical conductors and circuit parts, including voltage testing	4	N	N	Y	Y	40	N	Y	Y	Y	40
Removal of bolted covers (to expose bare, energized electrical conductors and circuit parts).	4	N	N	Y	Y	40	N	Y	Y	Y	40
Opening hinged covers (to expose bare, energized electrical conductors and circuit parts).	3	N	N	Y	Y	25	Y	Y	Y	Y	25
Outdoor disconnect switch operation (hookstick operated).	3	Y	Y	Y	Y	25	N	Y	Y	Y	25
Outdoor disconnect switch operation (gang-operated, from grade).	2	N	Y	Y	Y	8	Y	Y	Y	Y	8
Insulated cable examination, in manhole or other confined space.	4	N	Y	Y	Y	40	N	Y	Y	Y	40
Insulated cable examination, in open area.	2	N	Y	Y	Y	8	Y	Y	Y	Y	8
<b>"Y" = Yes (Required). "N" = No (Not Required).</b>											
General Notes (applicable to the entire table):											
a) Rubber insulating gloves are gloves rated for the maximum line-to-line voltage upon which work will be done. Rubber gloves will always be used with leather over-protectors.											
b) Insulated and insulating hand tools are tools rated and tested for the maximum line-to-line voltage upon which work will be done and are manufactured and tested in accordance with ASTM 1505, <i>Standard for Specification for Insulated and Insulating Hand Tools</i> .											
c) The use of "N" does not indicate that rubber insulating gloves and insulated hand tools are not required in all cases. Rubber insulating gloves and insulated hand tools may be required by NFPA 70E tables 130.4, 130.8(C)(7), and 130.8(D).											
d) For equipment protected by upstream current limiting fuses with arcing fault current in their current limiting range (1/2 cycle fault clearing time or less), the hazard/risk category required may be reduced by one number.											

- e) For Power systems up to 600V, the arc flash boundary was determined by using the following information: When 0.03 seconds trip time was used, that indicated MCC or panelboard equipment protected by a molded case circuit breaker. Working distance used was 18 inches. Arc gap used was 32mm for switchgear and 25 mm for MCC and protective device type 0 for all. When 0.33 or 0.5 second trip time was used, that indicated a LVPCB (drawout circuit breaker) in switchgear. Working distance was 24 inches. Arc gap used was .32 mm and protective device type 0 for all. All numbers were rounded up or down depending on closest multiple of 5.
- f) For Power Systems 1 kV to 38 kV, the arc flash boundary was determined by using the following information: no maximum values were given in the 2009 edition of the NFPA 70E for short-circuit current or operating time. Two sets of equations were performed. 35kA AIC and 0.2 seconds operating time and 26 kA AIC and 0.2 seconds operating time. 0.2 seconds was used by adding the typical maximum total clearing time of the circuit breaker to an estimated value for relay operation. This coincides with IEEE 1584 values of 0.18 second operating time and 0.08 tripping time rounded off. A short-circuit current of 25 kA was used as a maximum (HRC-4@~30 cal/cm2) and 26kA was used to compare the effects of lowering the short circuit current (HRC-4@~30 cal/cm2). Working distance used was 36 in. arc gap was 6 inches and protective device type 0 for all.
- g) Heavy duty work gloves are not a substitute for insulated gloves when listed as required.

Specific notes (as referenced in the table):

- 1. Maximum of 25kA short circuit current available, maximum of 0.03 sec (2 cycle) fault clearing time.
- 2. Maximum of 65kA short circuit current available, maximum of 0.03 sec (2 cycle) fault clearing time.
- 3. Maximum of 42 kA short circuit current available, maximum of 0.33 sec (20 cycle) fault clearing time.
- 4. Maximum of 35 kA short circuit current available, maximum of up to 0.5 sec (30 cycle) fault clearing time.
- 5. Maximum of 35 kA short circuit current available, maximum of up to 0.2 sec (12 cycle) fault clearing time.

Appendix B (continued)  
NFPA 70E – Table 130.7 (C)(16)

**Table 130.7 (C)(10) Protective Clothing and Personal Protective Equipment (PPE)**

**Hazard / Risk Category – 0**

**Protective Clothing**

Non-melting or Untreated Natural Fiber (i.e. untreated cotton, wool, rayon, or silk or blends of these materials) with a Fabric Weight of at least 4.5 oz/yd. Shirt (long sleeves) and Pants (long)

**Protective Equipment**

Safety glasses or safety goggles (SR), hearing protection (ear canal inserts) and leather gloves (AN) (See note 1).

**Hazard / Risk Category – 1**

**Arc-Rated Clothing, Minimum Arc Rating of 4 cal/cm<sup>2</sup> (See Note 3)**

Arc-rated long sleeve shirt and pants or arc-rated coverall

Arc-rated face shield (See Note 2) or arc flash suit hood (Note 7)

Arc-rated jacket, parka rainwear, or hard hat liner, (AN)

**Protective Equipment**

Hard hat, safety glasses or goggles (SR), hearing protection (ear canal inserts), heavy duty leather gloves (see note 1) and leather work shoes.

**Hazard / Risk Category – 2**

**Arc-Rated Clothing, Minimum Arc Rating of 8 cal/cm<sup>2</sup> (See Note 3)**

Arc-rated long sleeve shirt and pants or arc-rated coverall

Arc-rated flash suit hood, or arc-rated face shield and arc-rated balaclava

Arc-rated jacket, parka rainwear, or hard hat liner, (AN)

**Protective Equipment**

Hard hat, safety glasses or goggles (SR), hearing protection (ear canal inserts), heavy duty leather gloves (see note 1) and leather work shoes.

**Hazard / Risk Category – 3**

**Arc-Rated Clothing Selected so that the System Arc Rating Meets the Required Minimum Arc Rating of 25 cal/cm<sup>2</sup>. (See Note 3)**

Arc-rated long sleeve shirt (AN), arc-rated pants (AR), arc-rated coverall (AR), arc-rated arc flash suit jacket (AR), arc-rated arc flash suit pants (AR), arc-rated arc flash suit hood, arc-rated gloves (See Note 1), arc-rated jacket, parka, rainwear or hardhat liner (AN)

**Protective Equipment**

Hard hat, safety glasses or safety goggles (SR), hearing protection (ear canal inserts), heavy duty leather gloves (See Note 1), and leather work shoes.

**Table 130.7 (C)(10) Protective Clothing and Personal Protective Equipment (PPE)**

**Hazard / Risk Category – 4**

**Arc-Rated Clothing Selected so that the System Arc Rating Meets the Required Minimum Arc Rating of 40 cal/cm<sup>2</sup>. (See Note 3)**

Arc-rated long sleeve shirt (AR), arc-rated pants (AR), arc-rated coverall (AR), arc-rated arc flash suit jacket (AR), arc-rated arc flash suit pant (AR), arc-rated arc flash suit hood, arc-rated gloves (See Note 1), arc-rated jacket, parka, rainwear, or hard hat liner (AN)

**Protective Equipment**

Hard hat, safety glasses or goggles (SR), hearing protection (ear canal inserts), and leather work shoes.

**AN = As Needed (optional), AR = As Required, SR = Selection Required**

**Notes:**

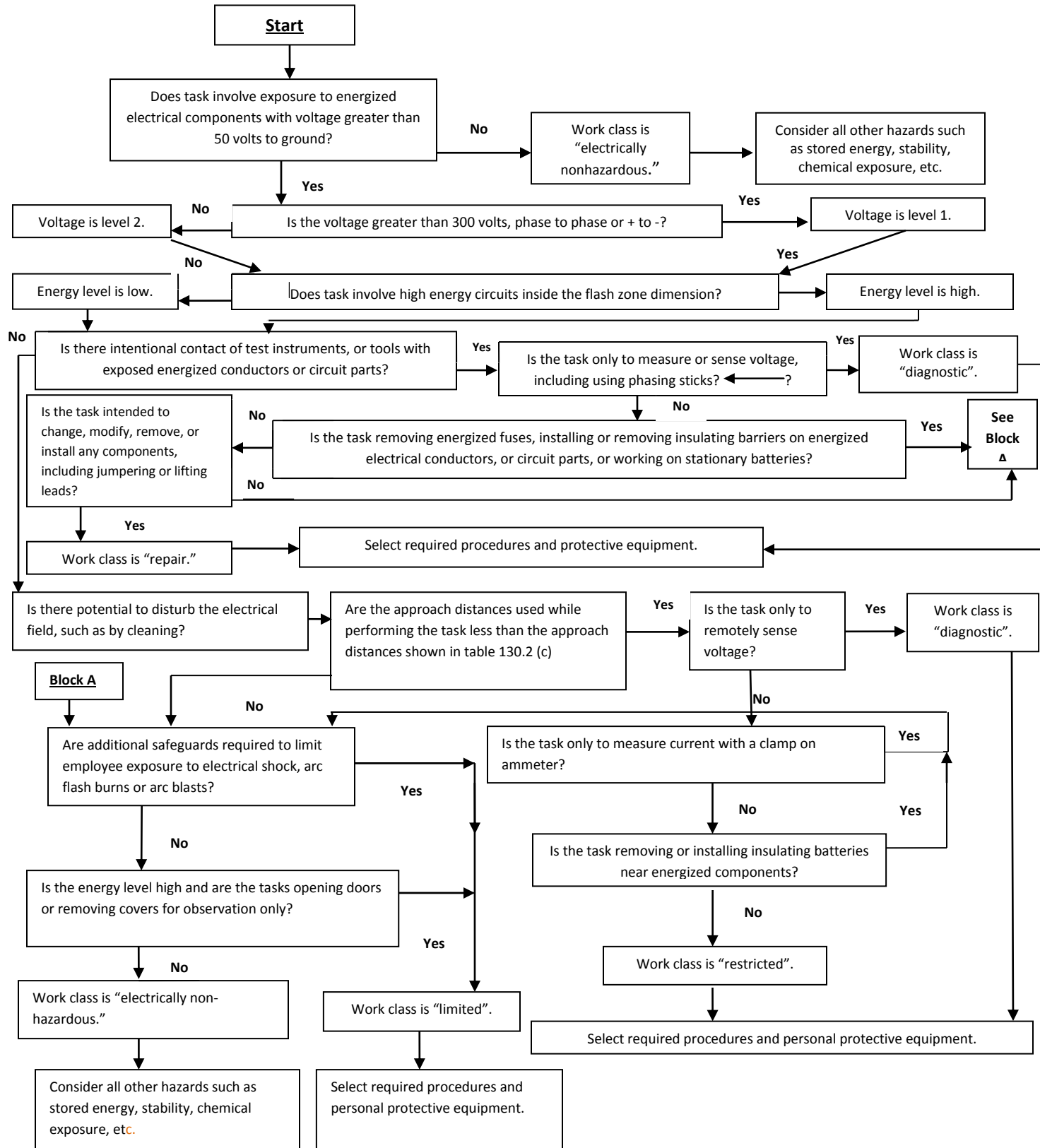
1. If rubber insulating gloves with leather protectors are required by Table 130.7(C)(9), additional leather or arc-related gloves are not required. The combination of rubber insulating gloves with leather protectors satisfies the arc flash requirement.
2. Face shields are to have wrap-around guarding to protect not only the face, but also the forehead, ears, and neck, or alternately and arc-rated arc flash suite hood is required to be worn.

Arc rating is defined in Article 100 and can be either the arc thermal performance value (ATPV) or energy of break open threshold (EBT). ATPV is defined in ASTM F 1959. The FR shirt and FR pants used for hazard/risk category 1 shall have a minimum arc rating of 4.

## Hazard / Risk Evaluation Procedure

### Appendix C

A Hazard/Risk Evaluation is an analytical tool consisting of a number of discrete steps intended to ensure that hazards are properly identified and evaluated, and that appropriate measures are taken to reduce those hazards to a tolerable level. Below are the steps of a hazard/risk evaluation assessment procedure:



**Designated Employees**  
Appendix D

Name	Position	Qualified	Unqualified	Arc Rated Clothing Available

**Test Equipment**  
Appendix E

Type of Equipment					
Manufacturer					
Model					
Rating/Cat/Class					
Serial Number					
Issued To					
Maintained By					
Frequency of Inspections					
Calibrated					
Address					
Phone					
Daily Care					
Cleaning					



**Protective Clothing and Equipment**  
Appendix F

Specific FR Item	ATPV Rating (cal/cm <sup>2</sup> )	Care, Cleaning, Storage and Disposal
<b>Hood</b>		
<b>Leggings</b>		
<b>Coveralls</b>		
<b>Gloves</b>		
<b>Other Arc-Rated/Insulated – e.g. tools, hearing protection, blankets, covers, sleeves, gloves, fall harnesses, etc.)</b>		

## **19.0 SAFETY EDUCATION & TRAINING**

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### **A. General**

Winnebago County is committed to instructing all employees in safe work practices. Winnebago County will provide training to each employee with regard to general, acceptable, safety procedures and to any hazards or safety procedures that are specific to that employee's work situation.

### **B. Training Could Occur When:**

- A new employee is hired
- The Department believes additional training is warranted
- An employee is given a new job assignment
- New substances, equipment, or new procedures are introduced which represent a new hazard
- The Department is made aware of a new hazard
- As required – See Appendix A of this section for more information

### **C. Training Documentation:**

Employee safety training will be documented through an appropriate attendance record. Copies of these training records will be maintained in the department as well as in the County Human Resources Department.

**Our Goal: Positive Safety Attitude**

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## Section 19 (Appendix A) - Safety and Health Training Frequency

Training Topic	Required ^^ Recommended ^					
	Initial Training	Annual Training	Every 2 Years	Every 3 Years	Every 5 Years	Other
Hazard Communication (1910.1200)	^^ Affected Employees			^ Affected Employees Refresher		^^ Non-compliance or when changes occur
Blood Borne Pathogens (1910.1030)	^^ Employees w/ Occupational Exposure	^^ Employees w/ Occupational Exposure				^^ Non-compliance
Personal Protective Equipment (PPE) (1910.134)	^^ Affected Employees					^^ Non-compliance or changes in PPE or workplace
Respiratory Protection (1910.134)	^^ Affected Employees (After Medical Review)	^^ Affected Employees + Annual Fit Testing Required				^^ Non-compliance
Hearing Conservation (1910.95)	^^ Affected Employees	^^ Affected Employees + Annual Audiogram Required				^^ Non-compliance
Fall Protection Systems (1926.503)	^^ Affected Employees		^ Affected Employees			^^ Non-compliance or when changes occur
Lockout / Tagout (1910.147)	^^ Affected and Authorized Employees			^ Affected Employees		^^ Non-compliance or changes in procedures/processes
Powered Industrial Trucks (1910.178)	^^ Affected Employees			^^ Affected Employees		^^ Non-compliance
Ergonomics	^ Affected Employees				^ All Employees (Refresher)	
Confined Space Entry (1910.146)	^^ Affected Employees	^^ Affected Employees - Rescue Procedures				^^ Non-compliance or changes in the workplace
Emergency Action and Fire Prevention Plan(1910.38/1910.39)	^^ All Employees					^^ Policy revision or if drills show non-compliance
Asbestos Safety	^^ Affected	^^ Affected				^^ Non-

(1910.1001)	Employees	Employees				compliance
Electrical Safety (1910.332)	^^ Affected Employees			^^ Affected Employees		^^ Non-compliance
Excavation/Trenching Safety (1926 Subpart P)	^^ Affected Employees		^ Affected Employees			^^ Non-compliance
Safe Chainsaw Operation (1910.266)	^^ Affected Employees					^^ Non-compliance
Portable Fire Extinguishers (1910.157)	^^ Authorized Employees	^^ Authorized Employees				
Servicing Multi and Single Piece Rim Wheels (1910.177)	^^ Affected Employees					^^ Non-compliance
Accident Prevention Signs and Tags (1910.145)	^^ Affected Employees					^^ Non-compliance
Hand and Power Tool Safety	^ Affected Employees				^ All Employees (Refresher)	
Walking and Working Surfaces - Ladders (1926.1060)	^^ Affected Employees					^^ Non-compliance
Auto Accident Reporting Procedures	^ Affected Employees			^ Affected Employees		^ Non-compliance
Defensive Driving Information	^ Affected Employees			^ Affected Employees		^ Non-compliance
First Aid (Red Cross) (1910.151)	^^ Designated First Responders		^^ Designated First Responders			
Adult CPR (Red Cross) (1910.151)	^^ Designated First Responders		^^ Designated First Responders			
Lifting Safety	^ Affected			^ Affected		

	Employees			Employees		
Injury/Illness Reporting Procedures (1904)	^^ All Employees			^ All Employees		^^ Non-compliance
Injury/Illness Investigation Proced. (Supervisors)	^ Affected Employees			^ Affected Employees		^ Non-compliance
Work Zone Safety (General Duty Clause Section 5a)	^^ Affected Employees			^ Affected Employees		
Slips, Trips & Falls Prevention	^ All Employees			^ All Employees		
Office Safety	^ Affected Employees			^ Affected Employees		
General Safety Rules (General Duty Clause Section 5a)	^^ All Employees					^^ When there is a change made to these rules
Safe Operation - Skid Steer Loader 1926.21(b)(2)	^^ Affected Employees			^ Affected Employees		
Powered Platforms (1910.66)	^^ Affected Employees			^ Affected Employees		
Exposure and Medical Records 1910.1020(g)	^^ All Employees					Existence, location and availability of all medical records
Welding Cutting and Brazing (1910.252 to 1910.255)	^^ Affected Employees					Fire watchers, cutters, welders and supervisors.

## **20.0 FIRE SAFETY**

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### **A. Purpose**

The purpose of this Fire Safety Plan is to prevent potential injuries and deaths, and to protect Winnebago County's property from damage or loss due to fire. This plan includes fire prevention, building exits, fire extinguishing, emergency evacuation, and employee training.

This plan will be reviewed with all new employees when they begin their job and with all employees when the plan is changed.

### **B. Fire Prevention**

Our first line of defense against fire is to prevent them in the first place. It is the responsibility of all employees to prevent fires. All employees will be apprised of the potential fire hazards in their work area and will be trained in safe work procedures and practices. Employees are expected to follow proper procedures to prevent fires and to notify their Supervisor or Department Head if they observe any condition that could lead to the ignition of or increase the spread of a fire.

The following are some general fire prevention practices and procedures that will be followed:

1. All ignition sources (i.e., open flames, cutting torches, spark producing equipment, electric motors, heating equipment, etc.) will be controlled. All contact of ignition sources with combustible and flammable materials will be avoided. All employees will keep all combustible materials at least five feet from such ignition sources and all flammable liquids at least twenty feet away.
2. Extensive use of electrical extension cords should be avoided. Any damaged or frayed electrical wiring, equipment cords, extension cords, etc. will be removed from service immediately and replaced or repaired.
3. Any use of flammable liquids will be done in a manner that prevents spills, and prevents the flammable liquid or its vapor or spray from coming into contact with any ignition source. All flammable liquids will be stored in proper flammable liquid storage containers and kept in the proper storage cabinets (when not in use).
4. Housekeeping and storage practices are critical to preventing fires. Any combustible materials will be stored in neat stacks with adequate aisle space provided to prevent the easy spread of fire and to allow for access to extinguish any fire that may start. Trash, scrap, and other unnecessary combustibles must be cleaned up immediately and placed in proper disposal containers.

5. Smoking is restricted to designated areas.

**C. Fire Exits**

1. Each area of the building/work site has at least two means of escape and are to be used in a fire emergency. The location of exits and the path of egress (escape) will be shown on maps (and posted throughout the building as necessary).
2. Fire exit doors will not be blocked or locked during business hours in order to prevent their emergency use (when employees are within the building).
3. Exit routes from the work site will be clear and free of obstructions. All exits are marked with signs designating exits from the premises.

**D. Fire Extinguishers**

1. Each area will have a full complement of the proper type of fire extinguisher for the fire hazards present. All fire extinguishers will be inspected annually by a fire protection equipment company and tagged with the date of inspection. If a fire extinguisher is used or discharged for any reason, it will be removed from service and replaced with another properly charged fire extinguisher while it is being recharged.
2. Employees who are expected or anticipated to use fire extinguishers will be instructed on the hazards of fighting fires, how to properly operate the fire extinguishers available, and what procedures to follow in alerting others to the fire emergency. These employees will only attempt to extinguish small incipient fires. If a fire cannot be easily and immediately extinguished with a fire extinguisher, the employees will evacuate the building. They will not try to fight the fire! All employees who are not trained and designated to fight fires are to immediately evacuate the premises at the first sign of fire or initiation of the fire alarm and are prohibited from using an extinguisher and re-entering the premises.

**E. Fire Evacuation – See Section 7 of this Manual (Emergency Guidelines)**

**F. Employee Training**

All new employees will receive fire prevention and emergency evacuation training when they are hired. All employees will also receive refresher training and a review of this plan on an annual basis.

Winnebago County will hold fire drills and will include a practice evacuation of the building at least annually. These drills will be used to evaluate employee response and behavior and will help us determine where more training is needed.

Those employees who are designated and authorized to use fire extinguishers to fight small fires will receive training in the proper use of extinguishers, how to extinguish a fire, the hazards involved in fighting fires, when not to fight a fire, and when to evacuate the area.

The following fire prevention measures propose to reduce the incidence of fires by eliminating opportunities for ignition of flammable materials.

## **G. Flammable and Combustible Materials**

1. Substitution - Flammable liquids sometimes may be substituted by relatively safe materials in order to reduce the risk of fires. Any substituted material should be stable and nontoxic and should either be nonflammable or have a high flashpoint.
2. Storage - Flammable and combustible liquids require careful handling at all times. The proper storage of flammable liquids within a work area is very important in order to protect personnel from fire and other safety and health hazards.
  - a. Cabinets - Not more than 120 gallons of Class I, Class II, and Class IIIA liquids may be stored in a storage cabinet. Of this total, not more than 60 gallons may be Class I and II liquids. Not more than three such cabinets (120 gallons each) may be located in a single fire area except in an industrial area.
  - b. Storage Inside Buildings - Where approved storage cabinets or rooms are not provided, inside storage will comply with the following basic conditions:
    - 1) The storage of any flammable or combustible liquid shall not physically obstruct a means of egress from the building or area.
    - 2) Containers of flammable or combustible liquids will remain tightly sealed except when transferred, poured or applied. Remove only that portion of liquid in the storage container required to accomplish a particular job.
    - 3) If a flammable and combustible liquid storage building is used, it will be a one-story building devoted principally to the handling and storing of flammable or combustible liquids. The building will have 2-hour fire-rated exterior walls having no opening within 10 feet of such storage.
    - 4) Flammable paints, oils, and varnishes in 1 or 5 gallon containers, used for building maintenance purposes, may be stored temporarily in closed containers outside approved storage cabinets or room if kept at the job site for less than 10 calendar days.

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3. Ventilation - Every inside storage room will be provided with a continuous mechanical exhaust ventilation system. To prevent the accumulation of vapors, the location of both the makeup and exhaust air openings will be arranged to provide, as far as practical, air movement directly to the exterior of the building and if ducts are used, they will not be used for any other purpose.
4. Elimination of Ignition Sources - All nonessential ignition sources must be eliminated where flammable liquids are used or stored. The following is a list some of the more common potential ignition sources:
  - a. Open flames, such as cutting and welding torches, furnaces, matches, and heaters-these sources should be kept away from flammable liquids operations. Cutting or welding on flammable liquids equipment should not be performed unless the equipment has been properly emptied and purged with a neutral gas such as nitrogen.
  - b. Chemical sources of ignition such as D.C. motors, switched, and circuit breakers-these sources should be eliminated where flammable liquids are handled or stored. Only approved explosion-proof devices should be used in these areas.
  - c. Mechanical sparks-these sparks can be produced as a result of friction. Only non-sparking tools should be used in areas where flammable liquids are stored or handled.
  - d. Static sparks-these sparks can be generated as a result of electron transfer between two contacting surfaces. The electrons can discharge in a small volume, raising the temperature to above the ignition temperature. Every effort should be made to eliminate the possibility of static sparks. Also proper bonding and grounding procedures must be followed when flammable liquids are transferred or transported.
5. Removal of Incompatibles - Materials that can contribute to a flammable liquid fire should not be stored with flammable liquids. Examples are oxidizers and organic peroxides, which, on decomposition, can generate large amounts of oxygen.
6. Flammable Gases - Generally, flammable gases pose the same type of fire hazards as flammable liquids and their vapors. Many of the safeguards for flammable liquids also apply to flammable gases. Other properties such as toxicity, reactivity, and corrosiveness must also be taken into account. In addition, a gas that is flammable could produce toxic combustion products.

## H. Fire Extinguishers

A portable fire extinguisher is a “first aid” device and is very effective when used while the fire is small. The use of fire extinguisher that matches the class of fire, by a person who is well trained, can save both lives and property. Portable fire extinguishers must be installed in workplaces regardless of other firefighting measures. The successful performance of a fire extinguisher in a fire situation largely depends on its proper selection, inspection, maintenance, and distribution.

1. Classification of Fires and Selection of Extinguishers - Fires are classified into four general categories depending on the type of material or fuel involved. The type of fire determines the type of extinguisher that should be used to extinguish it.
  - a. Class A fires involve materials such as wood, paper, and cloth that produce glowing embers or char.
  - b. Class B fires involve flammable gases, liquids, and greases, including gasoline and most hydrocarbon liquids that must be vaporized for combustion to occur.
  - c. Class C fires involve fires in live electrical equipment or in materials near electrically powered equipment.
  - d. Class D fires involve combustible metals, such as magnesium, zirconium, potassium, and sodium.

Extinguishers will be selected according to the potential fire hazard, the construction and occupancy of facilities, hazard to be protected, and other factors pertinent to the situation.

2. Location and Marking of Extinguishers - Extinguishers will be conspicuously located and readily accessible for immediate use in the event of fire. They will be located along normal paths of travel and egress. Wall recesses and/or flush-mounted cabinets will be used as extinguisher locations whenever possible.

Extinguishers will be clearly visible. In locations where visual obstruction cannot be completely avoided, directional arrows will be provided to indicate the location of extinguishers and the arrows will be marked with the extinguisher classification.

If extinguishers intended for different classes of fire are located together, they will be conspicuously marked to ensure that the proper class extinguisher selection is made at the time of a fire. Extinguisher classification markings will be located on the front of the shell above or below the extinguisher nameplate. Markings will be of a size and form to be legible from a distance of 3 feet.

3. Condition of Fire Extinguishers - Portable extinguishers will be maintained in a fully charged and operable condition. When not in use, they will be kept in their designated locations at all times. When extinguishers are removed for maintenance or testing, a fully charged and operable replacement unit will be provided.
4. Mounting and Distribution of Extinguishers - Extinguishers will be installed on hangers, brackets, in cabinets, or on shelves. Extinguishers having a gross weight not exceeding 40 pounds will be so installed that the top of the extinguisher is not more than 3-1/2 feet above the floor.

Extinguishers mounted in cabinets or wall recesses or set on shelves will be placed so that the extinguisher operating instructions face outward. The location of such extinguishers will be made conspicuous by marking the cabinet or wall recess in a contrasting color that will distinguish it from the normal décor.

Extinguishers must be distributed in such a way that the amount of time needed to travel to their location and back to the fire does not allow the fire to get out of control. OSHA requires that the travel distance for Class A, Class C and Class D extinguishers not exceed 75 feet. The maximum travel distance for Class B extinguishers is 50 feet because flammable liquid fires can get out of control faster than Class A fires.

5. Inspection and Maintenance of Extinguishers - Once an extinguisher is selected, purchased, and installed, it is the responsibility of the Maintenance Supervisor to oversee the inspection, maintenance, and testing of fire extinguishers to ensure that they are in proper working condition and have not been tampered with or physically damaged.

## **I. Fire Safety Inspections and Housekeeping**

A member of the Facilities Department Management and the local fire department are responsible for conducting work site surveys at least annually. These surveys should include observations of work site safety and housekeeping issues and should specifically address proper storage of chemicals and supplies, unobstructed access to fire extinguishers, and emergency evacuation routes. Also, they should determine if an emergency evacuation plan is present in work areas and that personnel are familiar with the plan.

1. Emergency Egress - Every exit will be clearly visible, or the route to it conspicuously identified in such a manner that every occupant of the building will readily know the direction of escape from any point. At no time will exits be blocked.

Any doorway or passageway that is not an exit or access to an exit but may be mistaken for an exit, will be identified by a sign reading "Not An Exit" or a sign indicating its actual use (i.e., "Storeroom"). A readily visible sign will mark exits and accesses to exits. Each exit sign (other than internally illuminated signs) will be illuminated by a reliable light source providing not less than 5 foot-candles on the illuminated surface.

## **21.0 GENERAL SHOP AND WORK AREA SAFETY**

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### **A. Policy**

Accepted safety and health precautions will be practiced in the use of general shop machines, fixed and portable power tools, and other hand held equipment so that all employees using such equipment will be protected against personal injury. It is also the County's policy to institute practices that will minimize the danger of injury to non-operators or user personnel who may be in the area and to minimize the risk to visitors.

### **B. Responsibilities**

The Department Head and Supervisors must recognize those factors in the workplace with accident potential. Supervisors shall provide frequent inspections of work methods and materials/equipment used. Any unsafe equipment/material shall be tagged and rendered inoperative or physically removed from its place of operation. The Department Head and Supervisors shall permit only qualified personnel to operate equipment and machinery according to following safe work practices:

1. Department Heads and Supervisors in cooperation with Winnebago County employees:
  - a. Ensure safe working conditions.
  - b. Provide necessary personal protective equipment.
  - c. Ensure that required guards and protective equipment is provided, used, and properly maintained.
  - d. Ensure that tools and equipment are properly used and maintained.
  - e. Planning the workload and assigning employees to jobs which they are qualified to perform. Ensure that the employees understand the work to be done, the hazards that may be encountered, and the proper procedure for doing the work safely.
  - f. Take immediate action to correct any violation of safety rules observed or reported to them.
  - g. Ensure workers exposed or potentially exposed to hazardous chemicals/materials have access to appropriate Material Safety Data Sheets (MSDS) or Safety Data Sheets (SDS).
  - h. Of a shop or any area where fixed or portable powered or unpowered machines and tools are located, are responsible for being familiar with all procedures for safe use and guarding of machines, personal protective equipment required, shielding against possible injury to other employees or visitors.
  - i. Enforce safe practices.
  - j. Assist in training new employees by providing and requiring manuals to be studied, personally instructing and requesting the assistance of veteran employees already familiar with required safety precautions.

- k. Designate a person to be responsible for general safety and care of a specific shop area and notify the Department Head of the person selected.
- l. Coordinate with the Safety Program Coordinator to plan and conduct safety meetings with employees as often as needed and warranted. Topics to be discussed at each session will be selected to fit current operations and any unsafe trends. Lead the discussion and encourage each employee to participate. May assign one employee on a rotating basis to make a short presentation of the topic to get discussion started.
- m. Provide appropriate marking of shop floor areas to identify restricted work areas or "approved operator only" yellow floor lines.
- n. Make periodic inspections of shop areas and other company areas. Notes all deficiencies and initiates corrective actions.

## 2. Employees:

Employees shall be thoroughly trained in the use of protective equipment, guards, and safeguards for chemicals and safe operation of equipment, machines, and tools they use or operate. Training will be conducted by Department Head, Supervisors, Safety Coordinator and/or Safety Consultant. Only employees who have been trained and those undergoing supervised on-the-job training (OJT) shall be allowed to use shop equipment, machines, and tools. In addition, employees must:

- a. Comply with OSHA standards, Company policies and good safe practices when using fixed and portable power tools, equipment and hand held equipment.
- b. Clean up when finished using equipment.
- c. Maintain tools, equipment and work area in an orderly and safe manner.
- d. Properly train new users of equipment for which he/she is responsible.
- e. Share responsibility with the Supervisor for identifying and correcting hazards.
- f. Not use or permit use of defective equipment or tools in disrepair. Malfunctioning equipment and damaged hand tools will be reported and repair made before using the equipment or tools. If repairs are not possible, the equipment or tools will be reported and taken out of service.

## 3. Visitors

All visitors must report to one of the following: Department Head or Supervisor. Visitors could be vendors, customers or government compliance officers and their reason for entering the shop or work areas must be verified. All visitors must be treated with the utmost respect and given the proper personal protective equipment if entering the shop area.

## C. Procedures

### 1. Shop

- a. All portable and fixed powered shop machines and tools will be equipped with approved guarding devices. Guards are to be in place while using the machines and equipment. Equipment must be properly electrically grounded before use. GFCI's shall be in the shop area where wet areas have been identified.
- b. Proper personal protective equipment will be provided (safety glasses, goggles, face shields) and used during other work tasks that may produce flying particles.
- c. No flammable materials (paints, solvents, chemicals, etc.) will be stored within the immediate area of any burning, welding or grinding operation. Flammable materials must be stored in OSHA and Company approved cabinets.
- d. Any employee using fixed tools (drill press, jig or band saw, etc.) must not wear loose clothing. Anyone with long hair must tie back the hair or wear acceptable hair protection while operating equipment. All stock must be clamped down (attempting to hold stock with hands will not be permitted).
- e. Before any employee performs service or maintenance on a machine or equipment where the unexpected energizing, start up or release of stored energy could occur and cause injury, the machine or equipment shall be made safe. This will be accomplished by locking out and tagging out energy isolating devices, and otherwise disabling the machines or equipment. (see Lockout/Tagout Program, Section 15).
- f. Clean-up after using powered equipment or hand tools must be done immediately following use of the power tool.
- g. Good housekeeping will be maintained in the shop area. Material will be stored in such a manner that there is no danger from sliding, falling or presenting a hazard by striking against or cutting. Scrap stock must be cleaned from the floor and workbenches following each job or at the end of each day.

### 2. Exits and Exit Markings

- a. Every exit shall have "EXIT" in plain legible letters not less than 6 inches high with the strokes of the letters not less than three-quarters of an inch wide.
- b. When the direction to the nearest exit may not be apparent to an occupant, an exit sign with an arrow indicating direction shall be used.
- c. Exit access shall be arranged so it is unnecessary to travel toward any area of high hazard potential in order to reach the nearest exit (unless suitable partitions or other physical barriers effectively shield the path of travel).

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- d. Exit signs shall be clearly visible from all directions of egress and shall not be obstructed at any time. If occupancy is permitted at night, or if normal lighting levels are reduced at times during working hours, exit signs shall be suitably illuminated by a reliable light source.
  - e. Areas around exit doors and passageways shall be free of obstructions. No lock-fastening device shall be used to prevent escape from inside the building.
  - f. Where the blocking of any single exit due to fire or smoke may endanger occupants, there shall be at least two means of exit remote from each other.
3. Housekeeping - Good housekeeping shall be maintained in all shops, yards, buildings, and mobile equipment. Supervisors are responsible for good housekeeping in or around the work they are supervising. As a minimum, the following requirements shall be adhered to:
- a. Material shall not be placed where anyone might stumble over it, where it might fall on someone, or on or against any support unless the support can withstand the additional weight.
  - b. Aisles and passageways shall be kept clear of tripping hazards.
  - c. Nails shall be removed from loose lumber or the points turned down.
  - d. Ice shall be removed from all walkways and work areas where it may create a hazard or interfere with work to be done. If ice cannot be removed readily, sand or other approved materials shall be applied.
  - e. Trash and other waste materials shall be kept in approved receptacles. Trash shall not be allowed to accumulate and shall be removed and disposed of as soon as practicable, at least once per shift (or more often if needed).
  - f. Disconnect switches, distribution panels, or alarm supply boxes shall not be blocked by any obstruction that may prevent ready access.
  - g. Machinery and equipment shall be kept clean (operating conditions permitting) of excess grease and oil and free of excessive dust. Pressure gauges and visual displays shall be kept clean, visible, and serviceable at all times. Drip pans and wheeled or stationary containers shall be cleaned and emptied at the end of each shift.
4. Material Storage - All unnecessary accumulation of materials and supplies in the shop area shall be avoided. The presence of unnecessary material in the shop could cause such incidents as tripping, falling, or slipping. This could be especially hazardous around equipment that is in operation. The only material in the shop area shall be that actually in work. The only place that materials should accumulate in quantity is in storerooms and material holding areas.
- a. The storage of materials shall not, of itself, create a hazard. Materials stored in tiers shall be stacked, strapped, blocked or interlocked, and



limited in height so they are stable and secure against sliding or collapse. Storage racks shall have sufficient capacity to bear the loads imposed on them.

- b. Stored materials shall not obstruct fire extinguishers, alarm boxes, sprinkler system controls, electrical switch boxes, machine operations, emergency lighting, first aid or emergency equipment, or exits.
- c. Heavy materials and equipment should be stored low and close to the ground or floor to reduce the possibility of injury during handling.
- d. All passageways and storerooms shall be maintained clean, unobstructed, dry, and in sanitary condition. Spills will be promptly removed.
- e. Where mechanical handling equipment, such as lift trucks are used, safety clearance shall be provided for aisles at loading docks, through doorways, and wherever turns or passages must be made. No obstructions that could create a hazard are permitted in aisles.

## 5. Use of Tools

### a. Hand Tools

- 1) Incidents at the shop involving hand tools are usually the result of misuse. Hand tools are precision tools capable of performing many jobs when used properly. Prevention of incidents involving hand tools on the job site becomes a matter of good instruction, adequate training, and proper use.
- 2) Hand tool safety requires that the tools be of good quality and adequate for the job. All tools shall be maintained and kept in good repair by qualified personnel.
- 3) Racks, shelves, or toolboxes shall be provided for storing tools that are not in use.
- 4) When personnel use hand tools while they are working on ladders, scaffolds, platforms, or work stands, they shall use carrying bags for tools that are not in use. Workers shall not drop tools.

### b. Supervisors shall frequently inspect all hand tools used in the operation under their supervision. Defective tools shall be immediately removed from service. Some common tool defects are:

- 1) Handles - When handles of hammers, axes, picks, or sledges become cracked, split, broken, or splintered, they shall be immediately replaced. Tool handles shall be well-fitted and securely fastened by wedges or other acceptable means. Wedges, always used in pairs, shall be driven into the handle when repairing a sledgehammer or maul, to prevent the head from accidentally flying off if the handle shrinks.
- 2) Shanks/Tangs - Files, wood chisels, and other tools with shanks

shall be fitted and used with suitable handles covering the end of the shank. Ends of the handles shall not be used for pounding or tapping.

- 3) Mushroom Heads - Cold chisels, punches, hammers, drift pins, and other similar tools have a tendency to mushroom from repeated poundings. When the heads mushroom, the material is highly crystallized, and with each blow of the hammer, fragments are likely to break off. They shall be dressed down as soon as they begin to crack and curl.

- a) When dressing tools, a slight bevel of about three-sixteenths of an inch shall be grounded around the head. This will help prevent the heads from mushrooming.

- b) When tool heads mushroom, the material is highly crystallized and, with each blow of the hammer, fragments are likely to break off.

- c. Portable Power Tools - Portable power tools increase mobility and convenience but are frequently more hazardous to use than their stationary counterparts. Personnel who are required to use portable power tools in their work shall be thoroughly trained in safe operating practices. Safe operating procedures shall be set up for each type of tool consistent with the manufacturer's instructions.

## 6. Use of Compressed Air Sources

- a. Compressed air has the appearance of a relatively harmless gas. However, to avoid accidents, compressed air must be used correctly. The improper or inadvertent connection of items not designed for shop air pressure, i.e., equipment, storage vessels, or containers, to a shop air supply may cause serious personal injury and more than likely will damage the item being connected.

- b. The maximum air pressure approved for general use in the shops and laboratories is 30 psi (pounds per square inch). This pressure is sufficient for most shop and laboratory operations and is not significantly hazardous. Use discretion and good judgment when using compressed air, even at this low pressure.

- c. The following rules and practices are suggested to avoid personal injury, equipment damage, and potential environmental impact:

- 1) All personnel assigned to shops with air compressors shall be familiar with compressor operating and maintenance instructions.
- 2) Compressed air is not to be used to blow dirt, chips, or dust from clothing.
- 3) Air compressors shall be maintained strictly in accordance with the manufacturer's instructions.

- 4) Do not use compressed air to transfer materials from containers when there is a possibility of exceeding the safe maximum allowable working pressure of the container.
- 5) The maximum working pressure of compressed air lines shall be identified in psi. Pipeline outlets shall be tagged or marked showing maximum working pressure immediately adjacent to the outlet.
- 6) Do not use compressed air to transfer materials from standard 55-gallon drums. Use a siphon with a bulk aspirator on a pump.

### **WARNING**

**It is dangerous to pressurize any container not designed for that purpose.**

- 7) Never use compressed air where particles can be accelerated by the air stream.
- 8) Do not use compressed air to clean machinery or parts unless absolutely necessary. Where possible, use a brush. If necessary, use a minimum pressure and provide barriers or clean the area of personnel. Wear goggles to protect your eyes.
- 9) Never apply compressed air to any part of a person's body.
- 10) Do not use a compressed air line that does not have a pressure regulator for reducing the line pressure.
- 11) Keep the hose length between the tool housing and the air source as short as possible.
- 12) Where possible, attach a short length of light chain between the hose and the housing on air-operated tools. This keeps the hose from whipping should the hose-tool coupling separate.
- 13) Inspect air supply and tool hoses before using. Discard and label unfit hoses. Repair hoses where applicable.
- 14) Turn valve off and vent pressure from a line before connecting or disconnecting it. Never work on a pressurized line.
- 15) Do not connect air supply respirators or supplied-air suits to the compressed air supply system of any building. Such compressed air is unsafe to breathe.
- 16) Do not attach pneumatic tools, process, or control instruments to breathing air lines. The potential contamination to personnel and systems is hazardous.

## **7. Working Safely at Elevations**

These procedures are designed to prevent the injury of County personnel due to falls or slips any time personnel are working on portable stairs, ladders, or scaffolding, or at elevations or more than four (4) feet above grade. Applicable OSHA standards include 29 CFR 1910.21-.68.

a. Ladders:

- 1) Hazards - Falls are the primary hazard associated with the use of ladders. Falls result from a number of unsafe acts and conditions such as:

- Ladders being set on unstable surfaces.
- Personnel reaching too far out to the sides.
- Personnel standing too high to maintain balance.
- Personnel using defective ladders (e.g., broken rails, rungs, missing hardware).

These hazards are minimized if workers adhere to proper ladder safety practices and if First Line Supervisors ensure equipment is used, inspected, and maintained in good condition. Workers capable of the physical exertion required under these conditions must accomplish those tasks that require frequent use of ladders and involve significant climbing effort.

2) Ladder Requirements

- a) Procurement - Portable ladders procured for the County shall meet the design and construction specification of OSHA 29 CFR 1910.25 for wood ladders and 29 CFR 1910.26 for metal ladders. Portable ladders constructed of reinforced plastic shall meet the specifications of ANSI A14.5-1974.
- b) Allowable Lengths - The maximum allowable lengths of portable ladders are:
- Stepladders – 12 feet
  - Platform stepladders - 12 feet
  - Straight ladders - 20 feet
  - Extension ladders - 36 feet –minimum overlap of 3 feet
- c) Wooden Ladders - Wooden parts used in construction of ladders should be straight-grained; thoroughly seasoned; smoothly dressed; and free of sharp edges, splinters, checks, decay and other defects. Rungs must be parallel, level and uniformly spaced. The spacing shall not be more than 12 inches. Wooden ladders will be coated with a suitable protective coating such as boiled linseed oil, clear varnish or clear lacquer. Wood ladders shall not be painted with an opaque coating, since possible defects may be covered up.
- d) Nonslip Bases - Portable ladders shall be equipped with nonslip bases such as safety feet or spikes, depending upon the type of usage.
- e) Electrical - Personnel shall not use portable metal ladders when performing work on or near electrical equipment. The side rails of metal ladders will be stenciled in 2-inch (or smaller is necessary to fit on the side rails) red letters:

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"DANGER - DO NOT USE AROUND ELECTRICAL EQUIPMENT." Wood or reinforced plastic ladders shall be used for work on or near electrical equipment. They will be kept clean. Remove all surface buildup or dirt, grease, or oils to avoid creating a ready path for electrical current.

f) Care of Ladders

- Handle ladders with care. Do not drop, jar or misuse them.
- Ladders shall be stored in a manner that will provide easy access for inspection and will permit safe withdrawal for use. They shall not be stored in a manner that presents a tripping hazard not where they can fall on someone. They should be stored in a manner that will prevent sagging.
- Lubricate metal bearings of locks, wheels, pulleys, etc., as required to keep them working.
- Replace frayed or badly worn rope.
- Keep safety feet and other parts in good condition to ensure they work.
- Maintain ladders in good usable condition. Inspect ladders before use.
- Ladders with defects that cannot be immediately repaired, shall be removed from service for repair or destruction, and shall be tagged with a danger tag. Do not attempt to straighten or use a bent ladder made of reinforced plastic.
- Rungs or steps on metal ladders that are not corrugated, knurled, or dimpled will have skid-resistant materials applied.

3) Proper Use of Ladders - The correct procedures for using ladders are as follows:

- a) Where possible, portable non-self-supporting ladders will be used at such a pitch that the base of the ladder is placed a distance from the vertical wall that is one-fourth of the working length of the ladder. The ladder shall be placed to prevent slipping, or it will be lashed or manually held in position.

## 22.0 MACHINE GUARDING

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### A. Introduction

Crushed hands and arms, severed fingers, blindness—the list of possible machinery-related injuries is as long as it is horrifying. There seem to be as many hazards created by moving machine parts as there are types of machines. Safeguards are essential for protecting workers from needless and preventable injuries.

This manual describes the various hazards of mechanical motion and presents some techniques for protecting workers from these hazards.

### B. Where Mechanical Hazards Occur

1. **Point of Operation** - That point where work is performed on the material, such as cutting, shaping, boring, or forming of stock.
2. **Power Transmission Apparatus** - All components of the mechanical system that transmit energy to the part of the machine performing the work. These components include flywheels, pulleys, belts, connecting rods, couplings, cams, spindles, chains, cranks, and gears.
3. **Other Moving Parts** - All parts of the machine that move while the machine is working. These can include reciprocating, rotating, and transverse moving parts, as well as feed mechanisms and auxiliary parts of the machine.

### C. Hazardous Mechanical Motions and Actions

1. **Motions**
  - a. Rotating (including in-running nip points)
  - b. Reciprocating
  - c. Transversing
2. **Actions**
  - a. Cutting
  - b. Punching
  - c. Shearing
  - d. Bending

### D. Requirements for Safeguarding

1. **Prevent Contact** - The safeguard must prevent hands, arms, and any other part of a worker's body from making contact with dangerous moving

parts. A good safeguarding system eliminates the possibility of the operator or another worker placing parts of their bodies near hazardous moving parts.

2. **Secure** - Workers should not be able to easily remove or tamper with the safeguard, because a safeguard that can easily be made ineffective is no safeguard at all. Guards and safety devices should be made of durable material that will withstand the conditions of normal use. They must be firmly secured to the machine.
3. **Protect From Falling Object** - The safeguard should ensure that no objects can fall into moving parts. A small tool that drops into a cycling machine could easily become a projectile that could strike and injure someone.
4. **Create No New Hazards** - A safeguard defeats its own purpose if it creates a hazard of its own such as a shear point, a jagged edge, or an unfinished surface that can cause a laceration. For instance, the edges of guards should be rolled or bolted in such a way that they eliminate sharp edges.
5. **Create No Interference** - Any safeguard that impedes a worker from performing the job quickly and comfortably might soon be overridden or disregarded. Proper safeguarding can actually enhance efficiency since it can relieve the worker's apprehensions about injury.
6. **Allow Safe Lubrication** - If possible, one should be able to lubricate the machine without removing the safeguards. Locating oil reservoirs outside the guard, with a line leading to the lubrication point, will reduce the need for the operator or maintenance worker to enter the hazardous area.

#### **E. Types of Machine Guards**

1. **Fixed** - This type of guard is a permanent part of the machine.
2. **Interlocked** - When this type is opened or removed, the machine shuts off. The machine will not cycle until guard has been replaced.
3. **Adjustable** - This type of guard allows for flexibility for various sizes of stock.
4. **Self-Adjusting** - The guard opens as stock is fed through the machine. It allows an opening large enough for stock, then returns to the rest position as stock is removed.

## **F. Safeguarding Devices**

### **1. Presence Sensing**

- a. Photoelectrical - This device uses light beam to interrupt the machine cycle.
- b. Radiofrequency - The radio beam stops the capacitance field and shuts the machine off.
- c. Electromechanical - A probe or contact bar descends to a predetermined distance. Obstructions prevent contact to actuate machine cycle.

### **2. Pullback**

- a. Cables are attached to operator's hands, wrists, and/or arms.
- b. Will not allow access unless machine is ready.
- c. Automatically assures withdrawal of hands from point of contact.

### **3. Restraint**

- a. Uses cables or straps to limit operator's access to a safe predetermined point of contact area.

### **4. Safety Trip Controls**

- a. Pressure sensitive bars deactivate machines.
- b. The operator must be able to reach the cable with either hand to stop the machine.
- c. The control must be reset manually.

### **5. Two-Hand Control**

- a. Requires constant pressure by operator's hands to activate the machine.

### **6. Two-Hand Trip**

- a. Requires concurrent pressure of both control buttons to activate machine cycle.
- b. When hands are removed from controls, machine will deactivate.

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**7. Gate**

- a. The machine will not cycle until gate is fully closed.

**G. Safeguarding by Location/Distance**

- 1. Locate machines and dangerous parts by placing against wall or barrier to protect workers.
- 2. Locate dangerous parts at high locations to be out of normal reach.

**H. Potential Feeding and Ejection Methods**

**1. Automatic Feed**

- a. Reduces exposures to operators during the work process.

**2. Semi-Automatic Feed**

- a. The operator uses a mechanism to place material in feed. The danger area shall be completely enclosed.

**3. Automatic Ejection**

- a. Uses air pressure or mechanical apparatus to remove completed parts from machine.

**4. Semi-Automatic Ejection**

- a. Requires mechanical ejectors to kick materials out of work area.

**5. Robots**

- a. Machines that load and unload stock, assemble parts, transfer objects, or perform other tasks.
- b. May create hazards themselves and sometimes require appropriate guards.

**I. Miscellaneous Aids**

**1. Awareness Barriers**

- a. Remind workers of approach to danger area.

## **2. Shields**

- a. Protect workers from flying particles, splashing cutting oils, or coolants.

## **3. Holding Tools**

- a. Can place or remove stock and supplement existing guards.

## **4. Push Stick or Block**

- a. Used when feeding stock into a saw blade.

## **J. Training**

Thorough operator training should involve instruction or hands-on training in the following:

1. A description and Identification of the hazards associated with particular machines.
2. The safeguards themselves, how they provide protection, and the hazards for which they are intended.
3. How to use the safeguards and why.
4. How and under what circumstances safeguards can be removed, and by whom (in most cases, repair or maintenance personnel only).
5. What to do (e.g. contact the supervisor) if a safeguard is damaged, missing, or unable to provide adequate protection.

## **23.0 FALL PROTECTION**

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### **A. Purpose**

Slips, trips and falls constitute the majority of general industry accidents, and over 13% of falls are fatal. Active participation by the department head, supervisors and employees is necessary to prevent hazardous conditions that could result in slips, trips or falls.

### **B. Responsibilities**

#### **1. Department Heads**

- Provide adequate fall prevention measures and fall arrest equipment, as needed.
- Ensure proper ladders/scaffolds are available and used for specific tasks.
- Ensure affected employees receive fall prevention/protection training.

#### **2. Supervisors**

- Conduct routine inspections to ensure all walking and working surfaces are free from slip, trip and fall hazards.
- Ensure all employees are properly utilizing all necessary fall prevention measures.

#### **3. Safety Program Coordinator (or Designee)**

- Conduct routine inspections to ensure all walking and working surfaces are free from slip, trip and fall hazards.
- Conduct training for employees who use ladders, scaffolds or other elevated platforms.
- Conduct training in use and inspection of fall prevention and arrest equipment.
- Evaluate Winnebago County Facilities for fall hazards.

#### **4. Employees**

- Maintain work areas free from slip, trip and fall hazards (ex: proper housekeeping).
- Immediately correct or report slip, trip and fall hazards.
- Properly utilize fall prevention measures (i.e. fall arrest equipment, hole covers, etc.).

## C. Hazard Control

### *Examples of Engineering Controls*

Personal Fall Protection	Warning Line Systems	Adequate Lighting	Properly designed fixed ladders and stairs
Guard Rail Systems	Positioning Devices	Floor Opening Covers	

### *Examples of Administrative Controls*

Signs	Immediate Cleanup of Spills	Routine inspection of ladders, stairs and walking/working surfaces
Supervision	General Housekeeping	Training for all employees who work at any elevated location(s)

## D. General Requirements

1. Housekeeping – Simple housekeeping methods can prevent slip-trip-fall hazards:
  - All work areas, passageways, storerooms, and service rooms shall be kept clean and orderly and in sanitary condition. [1910.22(a)(1)]
  - The floor of every area shall be maintained in a clean and, as much as possible, a dry condition. Where wet processes are used, drainage shall be maintained and gratings, mats, or raised platforms shall be provided. [1910.22(a)(2)]
  - Every floor, work area and passageway shall be kept free from protruding nails, splinters, holes, or loose boards. [1910.22(a)(3)]
2. Aisles and Passageways
  - Aisles and passageways shall be kept clear and in good repair with no obstruction across or in aisles that could create a hazard.
  - Permanent aisles and passageways shall be appropriately marked as necessary.
  - Where mechanical handling equipment is used, aisles shall be sufficiently wide. Improper aisle widths coupled with poor housekeeping and vehicle traffic can cause injury to employees, damage the equipment and material, and can limit egress in emergencies.[1910.22(b)(1)]
3. Floor Loading Protection (Mezzanines)

In every building or other structure, or part thereof, used for mercantile, business, industrial, or storage purposes, the loads approved by the

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building official shall be marked on plates of approved design which shall be supplied and securely affixed by the owner of the building, or his duly authorized agent, in a conspicuous place in each space to which they relate. Such plates shall not be removed or defaced but, if lost, removed, or defaced, shall be replaced by the owner or his agent [1910.22(d)(1)]. It shall be unlawful to place, or cause, or permit to be placed, on any floor or roof of a building or other structure a load greater than that for which such floor or roof is approved by the building official [1910.22(d)(2)].

4. Guarding Floor and Wall Openings

Floor openings and holes, wall openings and holes, and the open sides of platforms may create hazards. People may fall through the openings or over the sides to the level below. Objects, such as tools or parts, may fall through the holes and strike people or damage machinery on lower levels. Each employee working on, at or above, or near wall openings (including those with chutes attached) where the outside bottom edge of the wall opening is 4 feet or more above lower levels must be protected from falling by the use of a guardrail system, a safety net system, or a personal fall arrest system.

5. Protection for Floor Openings

Floor openings may be covered rather than guarded with rails. When the floor opening cover is removed, a temporary guardrail shall be in place, or an attendant shall be stationed at the opening to warn personnel.

Every floor hole that is 4 feet above lower levels, into which persons can accidentally walk, shall be guarded by either:

- A standard railing with toeboard, or
- A floor hole cover of standard strength and construction.

While the cover is not in place, the floor hole shall be constantly attended by someone or shall be protected by a removable standard railing.

Standard railings shall be provided on all exposed sides of a stairway opening, except at the stairway entrance. For infrequently used stairways, where traffic across the opening prevents the use of a fixed standard railing, the guard shall consist of a removable standard railing on all exposed sides (except at the stairway entrance) of standard strength and construction.

A “standard guardrail” consists of top rail, mid rail, and posts, and shall have a vertical height of 42 inches nominal from the upper surface of top rail to floor, platform, runway, or ramp level. Nominal height of mid rail is 21 inches. Top-rails and mid-rails of guardrail systems must be at least

¼ inch nominal distance of thickness to prevent cuts or lacerations.

- **Guardrail System Specifications** – The guardrail system must be capable of withstanding a force of at least 200 pounds applied with 21 inches of the top edge in any outward or downward direction. When the 200 pound test is applied in a downward direction, the top edge of the guardrail must not deflect to a height less than 39 inches above the walking/working level. Guardrail systems shall also be surfaced to protect workers from punctures or lacerations and to prevent clothing from snagging.
- **Midrail Specifications** – Midrails shall be capable of withstanding a force of at least 150 pounds applied in any downward or outward direction at any point along the midrail.

#### 6. Rail Material

- If wire rope is used for top-rails, it must be flagged at not more than 6-foot intervals with high-visibility material. Steel and plastic banding cannot be used as top-rails or mid-rails.
- Manila, plastic, or synthetic rope used for top-rails or mid-rails must be inspected as frequently as necessary to ensure strength and stability.

#### 7. Wall Mounted Handrails

- A handrail shall consist of a lengthwise member mounted directly on a wall or partition by means of brackets attached to the lower side of the handrail so as to offer no obstruction to a smooth surface along the top and both sides of the handrail. The handrail shall be of rounded or other section that will furnish an adequate handhold for anyone grasping it to avoid falling. The ends of the handrail should be turned in to the supporting wall or otherwise arranged so as not to constitute a projection hazard.
- The height of handrails shall be not more than 34 inches nor less than 30 inches from upper surface of handrail to surface of tread in line with face of riser or to surface of ramp.
- The size of handrails shall be: When of hardwood, at least 2 inches in diameter; when of metal pipe, at least 1 1/2 inches in diameter. The length of brackets shall be such as will give a clearance between handrail and wall or any projection thereon of at least 3 inches. The spacing of brackets shall not exceed 8 feet.
- The mounting of handrails shall be such that the completed structure is capable of withstanding a load of at least 200 pounds applied in any direction at any point on the rail.
- All handrails and railings shall be provided with a clearance of not less than 3 inches between the handrail or railing and any other object.

8. Toe boards

- A “standard toe-board” is 4 inches nominal in vertical height, with not more than ¼ inch clearance above floor level.
- When guardrail systems are used at hoisting areas, a chain, gate or removable guardrail section must be placed across the access opening between the guardrail sections when hoisting operations are not taking place.

9. Ramps, Runways and Other Walkways

Each employee using ramps, runways, and other walkways shall be protected from falling 6 feet or more by guardrails.

10. Low-Slope Roofs

- Each employee engaged in roofing activities on low-slope roofs (i.e. roof pitch not steeper than 4 feet vertical to 12 feet horizontal) with unprotected sides and edges 6 feet or more above lower levels shall be protected from falling by guardrail systems, safety net systems, personal fall arrest systems or a combination of a warning line system and guardrail system, warning line system and safety net system, warning line system and personal fall arrest system, or warning line system and safety monitoring system.
- On roofs 50 feet or less in width the use of a safety monitoring system without a warning line system is permitted. A safety monitor is a competent person who monitors other employees on the roofing crew and warns them when it appears they are unaware of a fall hazard. Employers are not required to hire an extra person to perform the task of a safety monitor; one of the roofing crew could be assigned this function. OSHA does require, however, that the monitor be able to see and communicate with the person(s) being monitored. Therefore, the safety monitor must not be given other duties that prevent him or her from fulfilling the monitor function.

11. Steep Roofs

Each employee on a steep roof (i.e., roof pitch steeper than 4 feet vertical to 12 feet horizontal) with unprotected sides and edges 6 feet or more above lower levels shall be protected by guardrail systems with toeboards, safety net systems, personal fall arrest systems or a warning line system.

12. Protection of Open-Sided Floors, Platforms and Runways

Every open-sided floor or platform 4 feet or more above an adjacent floor or ground level shall be guarded by a standard railing on all open sides, except where there is an entrance to a ramp, stairway, or fixed ladder. The railing shall be provided with a toeboard whenever the following can occur, beneath the open sides:

- Persons can pass,
- There is moving machinery, or
- There is equipment with which falling materials could create a hazard.

Every runway shall be guarded by a standard railing, or the equivalent, on all sides 4 feet or more above floor or ground level. Wherever tools, machine parts, or materials are likely to be used on the runway, a toeboard shall also be provided on each exposed side.

### 13. Stairway Railings and Guards

Every flight of stairs with four or more risers shall have a standard stair railing or standard handrails as specified below. Stair width is measured clear of all obstructions except handrails:

- On stairways less than 44 inches wide having both sides enclosed at least one handrail shall be affixed, preferably on the right side descending.
- On stairways less than 44 inches wide with one open side, at least one stair rail shall be affixed on the open side.
- On stairways less than 44 inches wide having both sides open, two stair rails shall be provided, one for each side.
- On stairways more than 44 inches wide, but less than 88 inches, one handrail shall be provided on each enclosed side and one stair rail on each open side.
- On stairways 88 inches or more in width, one handrail shall be provided on each enclosed side, one stair rail on each open side, and one intermediate stair rail placed approximately in the middle of the stairs.

### 14. Fixed Industrial Stairs (1910.24)

Fixed Industrial Stairs shall be provided for access to and from places of work where operations necessitate regular travel between levels. Requirements include:

- Fixed industrial stairs shall be strong enough to carry 5 times the normal anticipated load.
- At the very minimum, any fixed stairway shall be able to carry safely a moving concentrated load of 1000 pounds.
- All fixed stairways shall have a minimum width of 22 inches.
- Fixed stairs shall be installed at angles to the horizontal of between 30 degrees and 50 degrees.
- Vertical clearance above any stair tread to an overhead obstruction shall be at least 7 feet measured from the leading edge of the tread.



## 15. Portable Ladders (1910.25 and 1910.26)

The chief hazard when using a ladder is falling. A poorly designed, maintained, or improperly used ladder may collapse under the load placed upon it and cause the employee to fall. Proper use of ladders is essential in preventing accidents. Even a good ladder can be a serious safety hazard when used by workers in a dangerous way.

A ladder is an appliance consisting of two side rails joined at regular intervals by cross pieces on which a person may step to ascend or descend.

The various types of portable ladders include:

- Type I - (Industrial stepladder)-3 to 20 feet for heavy duty such as; utilities, contractors, and industrial use.
- Type II – (Commercial stepladder) - 3 to 12 feet for medium duty such as; painters, offices, and light industrial use.
- Type III – (Household stepladder) - 3 to 6 feet for light duty such as; light household use.
- Stepladder – A self-supporting portable ladder, non-adjustable in length, having flat steps and hinged back.
- Single Ladder - A non-self-supporting portable ladder, nonadjustable in length, consisting of but one section. Its size is designed by the overall length of the side rail.
- Extension Ladder – A non-self-supporting portable ladder adjustable in length.

## 16. Portable Ladder Requirements

- Portable stepladders longer than 20 feet shall not be used.
- Stepladders shall be equipped with a metal spreader or locking device of sufficient size and strength to securely hold the front and back sections in the open position.
- Single ladders longer than 30 feet shall not be used.
- Extension ladders longer than 60 feet shall not be used.
- Ladders shall be maintained in good condition at all times.
- Ladders shall be periodically inspected and those that have developed defects shall be withdrawn from service for repair or destruction and tagged or marked as: “Dangerous, Do Not Use.”
- Workers should use the four-to-one rule when using an extension ladder (for every foot up, the base of the extension ladder should be pulled 3” outwards).
- Workers should not overreach while on a ladder; instead the ladder should be adjusted accordingly.
- Ladders shall be placed with a secure footing, or they shall be lashed, or held in position.

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- Ladders used to gain access to a roof or other area shall extend at least 3 feet above the point of support.
- The worker shall always face the ladder when climbing up or down.
- Short ladders shall not be spliced together to make long ladders.
- Ladders shall never be used in the horizontal position as scaffolds or work platforms.
- The top of a regular stepladder shall not be used as a step.
- Worker should use three points of contact (one hand/two feet or two hands/one foot) when climbing or descending ladders.
- Metal ladders shall never be used near electrical equipment.
- Ladders should be used only for the purpose of which they were designed (not used as scaffolding).
- Ladders should not be loaded beyond the maximum intended load for which they were built or beyond their manufacturer's rated capacity.
- Workers should not use makeshift ladders (piling up boxes, standing on chairs or benches, etc.)

#### 17. Fixed Ladders (1910.27)

- A fixed ladder is a ladder permanently attached to a structure, building or equipment. A point to remember is that fixed ladders, with a length of more than 20 feet to a maximum unbroken length of 30 feet shall be equipped with cages or a ladder safety device.
- A "cage" is a guard that is fastened to the side rails of the fixed ladder or to the structure to encircle the climbing space of the ladder for the safety of the person who must climb the ladder. Cages shall extend a minimum of 42 inches above the top or a landing, unless other acceptable protection is provided. Cages shall extend down the ladder to a point not less than 7 feet or more than 8 feet above the base of the ladder. The side rails of through or side-step ladder extensions shall extend 3 1/2 feet above parapets and landings.

#### 18. Scaffolding Safety

Scaffolds shall be furnished and erected in accordance with this standard for persons engaged in work that cannot be done safely from the ground or from solid construction, except that ladders used for such work shall conform to (1910.25 and 1910.26.)

- The footing or anchorage for scaffolds shall be sound, rigid and capable of carrying the maximum intended load without settling or displacement. Unstable objects, such as barrels, boxes, loose brick, or concrete blocks shall not be used to support scaffolds or planks.
- Scaffolds and their components shall be capable of supporting at least 4 times the maximum intended load.

- Scaffolds shall be maintained in a safe condition and shall not be altered or moved horizontally while they are in use or occupied.
- Damaged or weakened scaffolds shall be immediately repaired and shall not be used until repairs have been completed.
- A safe means must be provided to gain access to the working platform level through the use of a ladder, ramp, etc.
- Overhead protection must be provided for personnel on a scaffold exposed to overhead hazards.
- Guardrails, midrails, and toe-boards must be installed on all open sides and ends of platforms more than 10 feet above the ground or floor. Wire mesh must be installed between the toe-board and the guardrail along the entire opening, where persons are required to work or pass under the scaffolds.
- Employees shall not work on scaffolds during storms or high winds or when covered with ice or snow.
- There are a number of scaffold types, and OSHA 1910.28 should be reviewed carefully for special requirements that apply to each type.

#### 19. Scaffolding Planks

Allowable spans shall be determined in compliance with the National Design Specification for Wood Construction published by the National Forest Products Association; paragraph 5 of ANSI A10.8-1988 Scaffolding-Safety Requirements published by the American National Standards Institute; or for 2 x 10 inch (nominal) or 2 x 9 inch (rough) solid sawn wood planks, as shown in the following table:

Maximum Intended Nominal Load (lb/ft <sup>2</sup> )	Maximum Permissible Span Using Full (Actual) Thickness Undressed Lumber (ft)	Maximum Permissible Span Using Nominal Thickness Lumber (ft)
25	10	8
50	8	6
75	6	—

The maximum permissible span for 1-1/4 x 9-inch or wider wood plank of full thickness with a maximum intended load of 50 lb/ft<sup>2</sup> shall be 4 feet.

- All planking or platforms shall be overlapped (minimum 12 inches) or secured from movement.
- Scaffold planks shall extend over their end supports not less than 6 inches or more than 18 inches.
- Planking shall be laid tight and shall extend to within 3 inches of the building wall.
- Planking shall be nailed or bolted to outriggers.

## 20. Protection from Falling Objects

When guardrail systems are used to prevent materials from falling from one level to another, any openings must be small enough to prevent passage of potential falling objects. No material or equipment shall be stored within 4 feet of working edges, unless the guardrail has an appropriate toeboard.

During roofing work, materials and equipment shall not be stored within 6 feet of a roof edge unless guardrails are erected at the edge, and materials piled, grouped, or stacked near a roof edge must be stable and self-supporting.

## E. Other Working Surfaces

### 1. Docks

Portable dock boards (bridge plates) shall be secured in position, either by being anchored or equipped with devices, which will prevent their slipping. Movement of the dock board during material handling operations has resulted in forklifts overturning, or falling off the dock, often with serious injury or death to the driver and damage to equipment and material.

- Handholds shall be provided on portable dock boards to permits safe handling when the dock board must be repositioned or relocated.
- Portable dock boards shall be inspected prior to use.
- When not in use, portable dock boards will be stored in a manner to prevent damage.
- Portable and powered dockboards shall be strong enough to carry the load imposed on them.

### 2. Dock Locks

Dock locks vehicle restraint systems should always be used, if available, before loading a trailer. This system helps to prevent accidents due to the unexpected trailer separation from a dock.

Operating the dock lock system:

- When the trailer is in position against the dock bumpers, a worker pushes the “lock” button.
- The dock lock hook comes up to grab the ICC bar and secures the trailer to the dock.
- The lights of the communication system change to indicate engagement and loading and unloading can proceed.
- When operations are complete, a worker pushes the unlock button, the restraint is released, the lights change and the truck may depart.

### 3. Scissor Lifts (1926.451 and 1926.452)

Generally, OSHA treats scissor lifts as mobile scaffolds. When working from an elevated scissors list (working 4 feet or more above the ground), a worker need only be protected from falling by a properly designed and maintained guardrail system. However, if the guardrail system is less than adequate, or the worker leaves the safety of the work platform, an additional fall protection device is required. In most cases, the lift is equipped with standard guardrails, and personal fall protection is not required. However, there may be cases where employees leave the confines of the guardrail (to access another working area or when a section of guardrail is not in place on the platform). In cases where the employee is not properly protected by the guardrails, other fall protection measures must be used.

The following are common hazards associated with scissor lifts and how to alleviate them:

#### a. Improper Lift Operation

- All lift operators' manuals must be read and understood before use.
- Only authorized and properly trained individuals may operate scissors lift.
- All lifts must be inspected before use.
- Operators must know and understand the load capacity of the lift and never exceed it.

#### b. Tipping the Lift Over

- Lifts may not be traveled unless the basket is in the lowered position.
- Floors must be inspected for holes or objects that could upset the lift.
- Never lean out to the side of a scissors lift. Reset its position if necessary.

#### c. Falling Out of the Platform

- All guardrails must be in place, including entrance mid-rails and chains.
- Operators shall not sit, stand, or climb on the platform guardrails or edge of the basket. Maintain firm footing on the platform at all times. Employees should not use planks, ladders or other devices for work positioning.
- Never stand on the toe board or guardrails of a scissors lift.

#### d. Overhead Hazards

- Always look up when raising a scissors lift.

e. Running the Lift off an Edge

- Lifts must always be operated parallel to edges and holes even when guarded.
- Lifts must always be operated perpendicular to stairways.

f. Damaging Electrical Cords

- Be sure that cords tied to lifts have enough slack during travel.
- Avoid running over cords during travel.

4. Safety Platforms Attached to Forks on a Forklift

The guidelines specified under the scissor lifts section should be followed with respects to fall protection. The safety platform must be properly secured to the forklift prior to use.

5. Aerial Lifts

Aerial lifts are vehicle-mounted devices, telescoping or articulating, or both, which are used to position personnel such as: extensible boom platforms, aerial ladders, articulating boom platforms, vertical towers or a combination of these.

Aerial devices must be designed and constructed in conformance of the American National Standard for "Vehicle Mounted Elevated and Rotating Work Platforms," ANSI A92.2 – 1969, including the appendix.

Aerial Lift Hazards - If overhead electrical lines carry 50 kV or less, operators must maintain a clearance of 10 feet. If the lines carry more than 50 kV, clearance must be 10 feet plus 0.4 inches for every extra kV.

6. Aerial Lift Precautions

- Operators should test the lift controls every day before using the lift, to ensure that they working properly (no sticky or unusual jerky motions).
- Only authorized and trained operators are allowed to operate an aerial lift.
- Employees are not permitted to belt-off to an adjacent pole, structure or other piece of equipment while working from an aerial lift.
- Employees should stand firmly on the floor of the basket, not sit or climb on the edge of the basket or use planks, ladders or other devices to achieve a higher work position.
- Employees must wear a harness and lanyard attached to the boom or basket (restraint-type system) when working from an aerial lift.
- The boom and basket load limits (specified by the manufacturer) must never be exceeded.
- Operators should set the brakes and position outriggers, when used, on pads or a solid surface. Chock wheels when on an incline.

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- Aerial lift controls must be plainly marked.
- Areas around aerial lift operations and scissors lift operations shall be barricaded to prevent injury to pedestrians and other workers. When other moving equipment is present, precautions such as warnings, barriers, or flashing lights shall be used as appropriate.

## F. Fall Protection Systems

### 1. Personal Fall Arrest Systems (Full Body Harness, etc.) Include:

- Anchorage – A secure point of attachment for lifelines, lanyards or deceleration devices
- Connectors- A device used to connect the system together (buckle or dee-ring sewn into a body harness)
- Body belt or harness – An arrangement of straps fastened such that the torso is supported during a fall.
- And may include: a deceleration device, lifeline, or suitable combinations.

If a personal fall arrest system is used for fall protection, it must do the following:

- Limit maximum arresting force on an employee to 1,500 pounds when used with a body harness.
- The harness must be rigged so that employees can neither free fall more than 6 feet or contact any lower level.
- Have sufficient strength to withstand twice the potential impact energy of an employee free falling to a distance of 6 feet or the free fall distance permitted by the system, whichever is less.

***The use of body belts for fall arrest is prohibited and a full body harness is required.***

- Body belts may be used for worker restraint only (a system that prevents the worker from being exposed to a fall).
- Positioning devices are a body belt or body harness system rigged to allow an employee to be supported on an elevated vertical surface, such as a wall, and work with both hands free while leaning. These devices are designed specifically to stop a worker from falling from a static, head-up position (positioning devices must limit the fall to 2 feet).
- Fall protection equipment should be inspected prior to each use, according to 1926.502(d)(21). That regulation requires that equipment be inspected for wear, mildew, wear, damage and other deterioration. Defective components must be removed from service if their strength or function is adversely affected. Personal fall arrest systems and components subjected to impact loading shall be immediately removed from service and shall not be used again for employee protection until inspected and determined by a competent person to be undamaged and suitable for reuse.

## 2. Safety Monitoring Systems

When no other alternative fall protection has been implemented, Winnebago County shall implement a Safety Monitoring System. Winnebago County must appoint a competent person to monitor the safety of workers and the employer shall ensure that the safety monitors:

- Is competent in the recognition of fall hazards.
- Is capable of warning workers of fall hazard dangers and in detecting unsafe work practices.
- Is operating on the same walking/working surfaces of the workers and can see them.
- Is close enough to work operations to communicate orally with workers and has no other duties to distract from the monitoring function.

Mechanical equipment shall not be used or stored in areas where safety monitoring systems are being used to monitor employees engaged in roofing operations on low-sloped roofs.

No worker, other than one engaged in roofing work (on low-sloped roofs) or one covered by a fall protection plan, shall be allowed in an area where an employee is being protected by a safety monitoring system.

## 3. Warning Line Systems

Warning line systems consist of ropes, wires, or chains, and supporting stanchions and are set up as follows:

- Flagged at not more than 6-foot intervals with high-visibility material.
- Rigged and supported so that the lowest point is no less than 34 inches from the walking/working surface and its high point is no more than 39 inches from the walking/working surface.
- Stanchions, after being rigged with warning lines, shall be capable of resisting, without tipping over, a force of at least 16 pounds applied horizontally against the stanchion, 30 inches above the walking/working surface, perpendicular to the warning surface, perpendicular to the warning line and in the direction of the floor, roof, or platform edge.
- The rope, wire, or chain shall have a minimum tensile strength of 500 pounds and after being attached to the stanchions, must support without breaking the load applied to the stanchions as prescribed above.
- Shall be attached to each stanchion in such a way that pulling on one section of the line between stanchions will not result in slack being taken up in the adjacent section before the stanchions tip over.

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Warning lines shall be erected around all sides of roof work areas. When mechanical equipment is being used, the warning line shall be erected parallel to the direction of mechanical equipment operation, and not less than 10 feet from the roof edge perpendicular to the direction of mechanical equipment operation.

When mechanical equipment is not being used, the warning line must be erected not less than 6 feet from the roof's edge.

## **G. Working Over Water**

What are the requirements for employees working over water (1926.106)?

Option 1:

Employees working over or near water, where the danger of drowning exists, shall be provided with U.S. Coast Guard-approved life jacket or buoyant work vests. Prior to and after each use, the buoyant work vests or life preservers shall be inspected for defects which would alter their strength or buoyancy. Defective units shall not be used. Ring buoys with at least 90 feet of line shall be provided and readily available for emergency rescue operations. Distance between ring buoys shall not exceed 200 feet. At least one lifesaving skiff shall be immediately available at locations where employees are working over or adjacent to water.

Option 2:

When continuous fall protection is used (without exception) to prevent employees from falling into the water, the employer has effectively removed the drowning hazard, and life jackets or buoyant work vests are not needed. A lifesaving skiff is still required (as specified in option 1) when relying on continuous fall protection for employees that are working over or adjacent to water that poses a drowning danger.

### **1. Safety Nets**

The use of safety nets as fall protection during marine construction activities usually will not eliminate the drowning hazard. In many cases (such as bridge construction) there is a risk that materials heavy enough to damage the nets may fall. In such cases, the items listed in option 1 still apply.

## **H. Training**

Employees will be trained in the following areas:

1. General Training (Office Personnel Only) – This specific training will be documented by using Appendix A or a similar form. Items covered include:
  - a. Causes of slips
  - b. Preventing slips
  - c. Preventing slips – wintertime
  - d. How to prevent a significant injury if you do slip and fall
  - e. Causes of trips
  - f. Preventing trips
  - g. Causes of falls
  - h. Preventing falls
  - i. Preventing injury/fall on stairs
  - j. Ladder safety
2. General Training (General Industry and Construction) – This specific training will be documented by using Appendix B or a similar form. Items covered include:
  - a. Applicable heights – action levels
  - b. Causes of slips
  - c. Preventing slips
  - d. Preventing slips – wintertime
  - e. How to prevent a significant injury if you do slip and fall
  - f. Causes of trips
  - g. Preventing trips
  - h. Causes of falls
  - i. Preventing falls
  - j. Preventing injury/fall on stairs
  - k. Ladder safety (portable and fixed)
  - l. Working on low-sloped and steep-sloped roofs
  - m. Scaffolding safety
  - n. Loading dock safety
  - o. Scissors lift safety
  - p. Safety platforms attached to forklift
  - q. Aerial lift safety
  - r. Precautions when working over water
  - s. Fall protection systems
    - Personal Fall Arrest Systems
    - Safety Monitoring Systems
    - Warning Line Systems

# APPENDIX A

## Fall Protection

## Fall Prevention/Protection (General Training – Office Personnel)

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## APPENDIX B

Fall Protection

### General Fall Prevention/Protection Training (General Industry & Construction)

Content of Training Program		
a. Applicable Heights – Action Levels	l. Working on low-sloped and steep-sloped roofs	
b. Causes of slips	m. Scaffolding safety	
c. Preventing slips	n. Loading dock safety	
d. Preventing slips – wintertime	o. Scissors lift safety	
e. How to prevent a significant injury if you do slip and fall	p. Safety platforms attached to forklift	
f. Causes of trips	q. Aerial lift safety	
g. Preventing trips	r. Precautions when working over water	
h. Causes of falls	s. Fall protection systems	
i. Preventing falls	• Personal Fall Arrest Systems	
j. Preventing injury/fall on stairs	• Safety Monitoring Systems	
k. Ladder safety (portable and fixed)	• Warning Line Systems	
I have received instruction and understand the issues outlined above.		
Print Name	Signature	Date