County College of Morris

PERSONAL PROTECTIVE EQUIPMENT PLAN

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The Personal Protective Equipment Plan is a CCM-specific version of the County of Morris Policy & Procedure originally prepared by Garden State Environmental, Inc.

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1.0 PURPOSE

The County College of Morris (CCM) intends to provide a hazard free environment for all of its employees. The purpose of this program is to protect employees against potential hazards which may be present at the workplace, by establishing protocols for the proper selection, use, and care of Personal Protective Equipment (PPE) by workers during CCM operations.

PPE) includes all clothing and accessories such as respirators, aprons, shoes, gloves, eye protection, etc., designed to create a barrier against workplace hazards. PPE does not eliminate the workplace hazard. If the equipment fails, exposure will occur. To reduce the possibility of failure, equipment must be properly fitted and maintained in a clean and serviceable condition. Additionally, proper PPE needs to be selected for the work at hand, and employees and management personnel must understand the equipment's purpose and its limitations.

2.0 SCOPE

CCM has adopted the procedures identified in this program. Approved PPE shall be utilized by all CCM employees engaged in operations during which the employee may be exposed to: hazardous processes, chemical hazards, environmental concerns or mechanical irritants which are likely to cause injury or impairment to any part of the body through absorption, inhalation or physical contact. These procedures also apply to all management, supervisory, clerical personnel and visitors overseeing such operations.

3.0 RESPONSIBILITIES

3.1 PROGRAM ADMINISTRATOR

CCM's Environmental Safety Coordinator oversees the PPE Plan described in this document and approves any revision.

3.2 DEPARTMENT DEAN/DIRECTOR

The Dean/Director shall implement and enforce the procedures described in this Plan. The Dean/Director shall ensure that a Job Hazard Analysis (JHA) is completed and maintained for department tasks, and that documentation is available to employees for review in the office of the Environmental Safety Coordinator.

3.3 DEPARTMENT SUPERVISORS

Department Supervisors are responsible for implementing this program with guidance from the Program Administrator and the Dean/Director. The Department Supervisor shall ensure employees attend training as scheduled, that personnel utilize the proper PPE for their specific operation, and PPE is available to personnel when needed. Department Supervisors shall assist

the Dean/Director and Program Administrator in the development and maintenance of hazard analyses for department tasks.

3.4 COUNTY COLLEGE OF MORRIS EMPLOYEES

CCM employees shall receive training prior to performing work involving the use of PPE. CCM employees are expected to maintain and use their PPE in accordance with the training received. CCM employees shall assist the Department Supervisors in the development and maintenance of hazard analyses for department tasks.

3.5 CONTRACTORS

Any contractor conducting work at CCM shall be required to follow the procedures identified in this program when necessary.

4.0 JOB HAZARD ANALYSIS

The most important factor concerning the selection of PPE is identifying the hazards present and the proper characterization of the hazards. Hazards include chemical, physical, and biological as well as radiological hazards. Once the type of hazard has been identified then consideration should be given to the type of work that is to be performed.

A Job Hazard Analysis (JHA) shall be conducted for the job functions at CCM. JHA records shall be maintained by the Environmental Safety Coordinator.

5.0 SELECTION OF PERSONAL PROTECTIVE EQUIPMENT

The following procedures will provide guidelines in the selection, use, and maintenance of PPE. PPE shall be used to protect employees from safety and health hazards when engineering or administrative controls are not feasible, or are ineffective in reducing exposures to acceptable levels. The type of personal protective equipment selected shall be based upon the completed JHA for a specific operation.

Selection of appropriate PPE shall be approved by the Program Administrator. It will be the responsibility of the Dean/Director with assistance from the Department Supervisors, as well as input from employees required to wear PPE, to select appropriate and adequate personal protective equipment for specific operations. Department Supervisors shall consult Safety Data Sheets (SDS) in order to determine the hazards associated with specific chemical(s) being handled/used and the recommended type of PPE.

Human Factors in the Selection of PPE

Wearing PPE can place a worker at considerable risk. Workers may experience loss of dexterity, peripheral vision or heat stress, all of which can burden the worker. Therefore, considerable

thought must be given to the selection of PPE and operation processes. Wherever necessary, adequate rest breaks shall be arranged to provide relief for the worker.

5.1 HEAD PROTECTION

5.1.1 SELECTION OF HEAD PROTECTION

Use of a hard-hat is a basic requirement in operations with known or potential head contact hazards at CCM. For this purpose, all safety hats (hard hats) shall meet American National Standard Institute (ANSI) Z89.1 Standards. Protective hats may be used to protect against electric shock where required. In addition, the brim of the safety hat provides a level of protection for the eyes and forehead. The types and classes of hard hats are listed below.

Type 1 Safety Hat - Helmets that provide protection from blows to the top of the head only.

Type 2 Safety Hat - Helmets that provide protection from blows to both the top and sides of the head.

Class C Safety Hat - This provides no electrical protection.

Class G Safety Hat - This helmet provides general protection and electrical protection to 2,200 volts.

Class E Safety Hat - This provides extended electrical protection to 20,000 volts.

All employees will be given awareness training to achieve a proper fit including donning/doffing and adjusting the safety-hat, as well as training in maintaining the safety hat, replacement of headband suspension, and identifying damage or wear which may reduce the structural integrity of the shell and/or require the replacement of the safety-hat.

5.1.2 INSPECTION AND MAINTENANCE OF HEAD PROTECTION

Each CCM employee required to wear a safety hat shall be assigned an approved safety hat. It will be the responsibility of the individual to maintain his/her safety hat, and to notify the supervisor when the safety hat or the suspension and headband need to be replaced.

All components of the safety hat (shell, suspension, headbands, sweatbands, and any other accessories), will be visually checked daily for signs of dents, cracks, penetration, or any other damage that might reduce the degree of safety originally afforded. The worker shall immediately notify the supervisor if damage is found and a replacement safety hat will be issued upon confirmation of damage.

The safety hat shall be stored in the bag or locker assigned to each worker, in a location away from extreme temperatures, sunlight, and the possibility of accidental damage. As some paints and thinners can damage the shell and reduce protection by physically weakening it or negating electrical resistance, the safety hats should be washed in hot water using a good detergent. The shell should be scrubbed and rinsed in clear hot water. After rinsing, the shell will be carefully inspected for signs of damage.

Visitors will be issued a temporary safety hat during any visit to a CCM where the risk of head injury exists.

Safety hats are prohibited from being worn backwards by any CCM employees unless specifically allowed by the hat manufacturer. The eye and forehead protection afforded by the design of the safety hat is negated when the safety hat is worn backwards and, unless specifically allowed by the manufacturer; do not offer the same impact resistance when reversed.

5.2 EYE AND FACE PROTECTION

5.2.1 SELECTION OF EYE AND FACE PROTECTION

OSHA requires the use of eye and face protective equipment where there is a reasonable probability of preventable injury when such equipment is used. CCM will provide the type of eye and face protection suitable for work to be performed, and employees shall be required to use such protectors for CCM operations. Use of eye protection (safety glasses or goggles) is required by all supervisory, management, visitor and worker personnel and contractors. Safety glasses or goggles must meet ANSI Z87.1 Standards.

Suitable eye protection will be provided to all workers, supervisory, management and visitors conducting operations where eye protection is required at CCM. All personnel working and/or passing through operations where eye protection is required shall use eye protection. Certain operations, such as use of compressed air, may require the use of a face shield in addition to eye protection. Face shields will be provided by CCM and shall be used by the worker(s) when required by the nature of the operation.

Personnel whose vision requires the use of corrective lenses, and who are required to wear eye protection, will wear either safety glasses designed to fit over prescription lenses or safety goggles. Workers may obtain prescription safety glasses with side shields, but these will not be provided by CCM. If an employee elects to obtain prescription safety glasses with shields at his/her own expense, the prescription safety glasses must meet the required safety standards and be approved by the college.

Additionally, eye washes and emergency showers shall be strategically placed in all hazardous locations, and shall be easily accessible and remain unobstructed at all times.

5.2.2 INSPECTION AND MAINTENANCE OF EYE PROTECTION

All CCM employees engaged in CCM operations shall properly store their safety glasses/goggles. Face shields shall be provided to those workers involved in operations that require their use. Each individual will be responsible for the maintenance of his/her protective eye equipment. Request for replacement of damaged glasses shall be made to the respective supervisor. Visitors will be issued temporary safety glasses during any CCM visit where eye protection is required.

It is essential to keep the lenses of protective eyewear clean. The employee shall conduct daily inspection and cleaning of the eye protection with soap and hot water, or with cleaning solution and tissue. Cleaning stations will be provided at selected locations.

Pitted and scratched lenses should be replaced promptly. Anyone experiencing problems with protective eyewear should bring it to the attention of their supervisor, who will provide replacement eyewear.

A general guideline for the selection of proper eye protection follows:

APPROPRIATE EYE WEAR	
HAZARD	**ACCEPTABLE EYE WEAR**
Spray or application of corrosive or irritant chemicals	• Chemically resistant goggles, • Splash proof hooded ventilation • Plastic face shield for severe exposure (used in conjunction with goggles, only)
Operations producing dust of flying particles	• Safety glasses, • Plastic face shield for severe exposure (used in conjunction with safety glasses, only)
Operation involving pressurized fluids	• Chemically resistant goggles • Plastic face shield
Other activities that are potentially hazardous to the eye	• Consult the Environmental Safety Coordinator for guidance

5.3 FOOT AND LEG PROTECTION

5.3.1 SELECTION OF FOOT AND LEG PROTECTION

In order to protect CCM employees from foot injuries against falling, rolling or sharp objects, workers shall be provided with safety footwear. Safety footwear shall meet the requirements of the current ASTM F-2413 Standard Specification for Performance Requirements for Protective Footwear. Workers shall be required to change into their respective safety shoes prior to beginning daily work activities.

Foot and leg protection shall be provided by CCM as necessary for specific operations. The

Department Supervisor shall evaluate each operation and determine the need for additional protection. The selection process for foot and leg protection shall be within the same guidelines provided for the selection of personal protective clothing above. Department Supervisors shall then be responsible for implementation of the use of any such equipment.

A basic guide for choosing foot and leg protection is presented below. However, safety data sheets, and other relevant information such as the type of job task, manufacturers' and American Conference of Governmental Industrial Hygienists (ACGIH) guidelines should be consulted for specific operations

HAZARD	PROTECTIVE FOOTWEAR
Impact or compression hazard	Steel-toed shoes (I/C 75) or Metatarsal (Mt 75)
Puncture hazard	Puncture Resistant (PR)
Physical and minor chemical hazard	Steel-toed chemical protective boots or steel-toed boots with chemical protective boot covers or overboots
Physical and severe chemical hazard	Steel-toed boots with chemical protective boot covers or over boots, taped to protective clothing
Electrical Hazard	Electric Shock Resistive Shoes (EH)

5.3.2 INSPECTION AND MAINTENANCE OF FOOT PROTECTION

All CCM employees engaged in CCM operations shall properly store their footwear. Each CCM employee will be responsible for the maintenance and replacement of his/her protective footwear. A reimbursement for the cost of footwear is made based on collective bargaining agreements.

5.4 HAND/ARM PROTECTION

5.4.1 SELECTION OF HAND/ARM PROTECTION

Hand protection will consist of protective gloves or glove systems which provide protection hazards including: severe cuts or lacerations, severe abrasions, punctures, chemical burns, thermal burns, and heat and cold hazards. CCM will base the selection of hand protection on the hazards present. Adequate protective material, which may include a combination of different types of protection, shall be provided to protect against the most hazardous situation for the specific operation.

Chemical resistant gloves must be selected based on the type of chemical exposure. In the presence of multiple chemicals, chemical protection must be based on the manufacturer's suggested breakthrough time. The Department Supervisor may require that a combination of multiple gloves be used to provide sufficient protection. CCM shall supply the appropriate hand protection for specific operations. The Department Dean/Director, in conjunction with the Program Administrator, shall evaluate each operation and determine the need for additional protection. Department Supervisors shall then be responsible for implementation of hand

protection.

Use the reference guide presented below for selecting appropriate hand protection. safety data sheets (SDS), and other relevant information, such as the type of operation, manufacturers' guidelines and American Conference of Governmental Industrial Hygienists (ACGIH) guidelines should be consulted for specific operations. The following is a chart showing general guidelines for proper glove selection based on the hazard.

GENERAL GUIDELINES FOR GLOVE SELECTION		
Hazard	**Degree of Hazard**	**Protective Material**
Abrasion	Severe	Reinforced heavy rubber, staple reinforced heavy leather
	Less Severe	Rubber, plastic, leather, polyester, nylon, cotton
Sharp Edges	Severe	Metal mesh, staple-reinforced heavy leather, Kevlar™, Aramid™ fiber, Steel mesh
	Less Severe	Leather, terry cloth, Aramid™ fiber
	Mild with delicate work	Lightweight leather, polyester, nylon, cotton
Chemicals and fluids	Risk varies according to the chemical, its concentration, and time of contact among other factors. Refer to the manufacturer or product MSDS.	**Dependant on chemical**. Examples include: Natural rubber, neoprene, nitrile rubber, butyl rubber, PTFE (polytetrafluoroethylene), Teflon™, Viton™, polyvinyl chloride, polyvinyl alcohol, Saranex™, 4H™, Barricade™, Chemrel™, Responder™, Trellchem™
Cold		Leather, insulated plastic or rubber, wool, cotton
Electricity		Rubber-insulated gloves tested to appropriate voltage (CSA Standard Z259.4-M1979) with leather outerglove
Heat	High temperatures (over 350 deg C)	Asbestos, Zetex™
	Medium high (up to 350 deg C)	Nomex™, Kevlar™, neoprene-coated asbestos, heat resistant leather with linings
	Warm (up to 200 deg C)	Nomex™, Kevlar™, heat-resistant leather, terry cloth, Aramid™ fiber
	Less warm (up to 100 deg C)	Chrome-tanned leather, terry cloth
General Duty		Cotton, terry cloth, leather
Product Contamination		Thin-film plastic, lightweight leather, cotton, polyester, nylon
Radiation		Lead-lined rubber, plastic or leather

5.4.2 INSPECTION AND MAINTENANCE OF HAND/ARM PROTECTION

All CCM employees engaged in CCM operations shall properly store their gloves. CCM employees shall be responsible for the inspection of gloves prior to use.

Gloves shall be visually inspected for rips, tears, discoloration, and delamination or other abnormalities that could affect the protective capabilities of the glove. Electrical gloves shall pass an expansion test prior to use where the gloves are inspected for leaks by rolling the glove upon itself from the open end to the fingers.

5.5 CHEMICAL PROTECTIVE CLOTHING

CCM will provide protective clothing for employees who may be exposed to skin or body related hazards.

Certain CCM operations have a potential exposure to hazardous chemicals. The personal protective clothing selected shall provide adequate protection against the hazards of the operation for which the clothing is to be used. Among operations which require use of protective clothing are working with pesticides, trash sorting, and handling of hazardous chemicals. Protective clothing may be used during operations with potential nuisance dust, and as a general hygiene issue (mechanics preventing contact with grease).

Chemical protective clothing is available in a variety of materials which offer a range of protection against various chemicals. The appropriate clothing material will depend on:

- The chemicals or hazards in the operation
- The physical state of the hazard (solid, liquid, gas)
- Protection properties of the PPE material
- Ability to allow completion of the required task

Permeation is the process by which a chemical dissolves in, and/or moves through a protective clothing material on a molecular level.

Degradation is the loss of or change in the fabric's chemical resistance or physical properties due to exposure to chemicals, use, and/or ambient conditions.

Penetration is the movement of chemicals through zippers, stitched seams or imperfections in protective clothing.

Breakthrough time - The length of time from initial exposure until the hazardous chemical is detectable on the inside of the chemical protective clothing.

5.5.1 SELECTION OF CHEMICAL PROTECTIVE CLOTHING

Chemical protective clothing (CPC) for CCM's operations shall be selected in such a manner that materials selected offer the widest range of protection against the chemicals used, and/or likely to be encountered for the various operations.

Employees are at risk for heat related injuries due to the heat retention proprieties inherent in protective clothing. Protective clothing limits the ability of the employees' body to regulate heat through evaporative cooling. All protective clothing shall be evaluated for heat transfer characteristics prior to selection. Wherever clo value (The "clo" or thermal insulation value is a measure of the capacity of the chemical protective clothing to dissipate heat loss through means other than evaporation. The higher the clo value, the greater the insulating properties of the garment and, consequently, the lower the heat transfer) is provided, given other protective properties are equivalent; clothing with the lowest clo value should be selected in hot environments or for high work rates.

A basic selection criterion for protective clothing is provided below:

HAZARD	PROTECTIVE CLOTHING
Low light or heavily traffic areas	High Visibility Vests
Dry or wet, no dermal or respiratory hazard	Work clothes or coveralls
Dry dust, minimal dermal	Cotton or Tyvek™ type coveralls
Dry or moist low dermal	Cotton and coated Tyvek™ coveralls
Wet materials, mists or fumes, high dermal	Cotton coveralls and laminated coated Tyvek™ or appropriate polymer rain suit or coverall

Heat transfer characteristics of the materials shall also be evaluated in selecting the proper chemical protective clothing. As most chemical clothing is virtually impermeable to moisture, evaporative cooling is limited. Wherever clo values are provided, given other protective properties are equivalent, clothing with the lowest clo value should be selected in hot environments or for high work rates.

CCM shall provide employees with the necessary protective equipment adequate for the operations to be conducted.

5.5.2 INSPECTION, MAINTENANCE AND DISPOSAL OF CPC

All chemical protective clothing shall be inspected prior to use for rips, tears, cuts, discoloration, degradation, or delamination of surfaces, or pulls in stitching of seams. Contaminated PPE shall be disposed of in designated containers placed at designated areas within CCM. No person shall be allowed to wear contaminated clothing outside the work area.

5.6 SELECTION OF HEARING PROTECTION

Exposure to high noise levels can cause hearing loss or impairment. It can cause physical and psychological stress. There is no cure for noise-induced hearing loss, so the prevention of excessive noise exposure is the only way to avoid hearing damage.

CCM will provide all employees who work in affected areas (where noise levels exceed an average of 85 dBA over an eight-hour period or where the noise level is sufficiently high to be damaging or disturbing to the individuals), as well as any visitors overseeing such operations with hearing protection, such as earmuffs or earplugs. Earplugs fit in the ear canal, and are made of waxed cotton or acoustical fiber. There are many different styles of earplugs, so the manufacturer's specific directions for earplug insertion should always be followed. Employees should always clean their hands before inserting earplugs to prevent dirt and debris from entering the ear canal.

Earmuffs fit over the whole ear to seal out noise, so the cups on the earmuffs must form a good seal around the ear. Earmuffs with cracked, cut or missing gaskets reduce the protection afforded. Facial hair, earrings and eyeglasses also decrease the protection by breaking the seal around them. To ensure the proper degree of protection, earplugs and earmuffs may have to be used together for certain operations. This is especially true in extremely noisy work environments.

Because of the specialized nature of occupational noise and hearing protection, this is covered under a separate document: CCM Hearing Conservation Program.

5.7 BACK PROTECTION

Improper lifting of moderate to heavy objects can injure the back. Lifting improperly is the largest single cause of back injury. Everyone can prevent back strain by knowing and using proper lifting techniques. It is important to note that back braces are not considered PPE, and may present a false sense of security by causing the worker to believe they can pick up larger or heavier loads.

The following guidelines will assist CCM employees understand the proper ways to lift to prevent back injury:

1. **Size up the load before trying to lift it.** Test the weight by lifting one of the corners. If the load is too heavy, or of an awkward shape, the best thing to do is get help from a fellow employee, or if possible, use a mechanical lifting device. Never lift objects heavier than 50 lbs. unassisted.

2. **Bend the knees,** the single most important rule when lifting any object. When lifting an object, crate or box, the feet should be placed close to the object. Center yourself over the load, then bend the knees and get a good handhold. Lift straight up, smoothly. Allow the legs, **not** the back, to do the work.

3. **Do not twist or turn your body while lifting.** Keep the load close to the body, and keep it steady. Sudden twisting or turning could result in a back injury.

4. **Make sure the load can be carried to its destination.** Also make certain the path is clear of obstacles, and there are no hazards, such as spilled grease or oil.

5. **Set the load down properly.** It is just as important setting the load down as in lifting it. Lower the load slowly by bending the knees, letting the legs do the work. Don't let go of the load until it is secure on the floor.

6. **Repetitive motion jobs.** Alternate one foot on a small stool or other object if standing for prolonged periods. Stand straight and keep your head aligned with your back and hips. Shift positions or walk around frequently. Turn your body as a unit.

Back Belts
Back belts are not recognized by OSHA as an effective engineering control to prevent back injury. OSHA does not endorse, nor forbid the use of back belts or similar devices for back safety prevention. CCM's policy is not to supply back belts for personal protection.

5.8 RESPIRATORY PROTECTION

Inhalation is the quickest and most common route of exposure to hazardous materials. The respiratory tract can be affected by:

- Dusts
- Fumes
- Vapors
- Mists and sprays
- Gases
- Smoke, and
- Biological hazards

Once these materials enter the lungs, they can damage and/or cross the cell membrane into the blood system, and affect other parts of the body.

Because of the specialized nature of respiratory protection, this is covered under a separate document: The County of Morris Respiratory Protection Plan.

All CCM employees required to wear a tight fitting respirator must be medically cleared and fit tested as part of the Respiratory Protection Plan.

5.9 SPECIAL SITUATIONS

Fire, heat and explosion hazards require the use of special protective equipment. Only trained and qualified personnel can respond to the needs of such situations. CCM employees shall not fight fires beyond incipient stages.

Radiation presents unique problems, and a qualified health physicist needs to be consulted for such purposes. Protective equipment for operation of CCM's x-ray equipment will be outlined in the Engineering and Radiography Department Job Hazard Analyses.

Tree trimming operations may require the use of specialized climbing and fall protection, including the use of gaffs, chain saw chaps, and/or arborist saddles. These protective equipment devices shall only be used by personnel with completion of equipment-specific training prior to use.

Traffic operations may require the use of high visibility vests by personnel engaged in operations in proximity to vehicular traffic. ANSI/SEA 107-2015 *Standard for High Visibility Clothing* outlines levels or classes of equipment required based on traffic speed and conditions. All CCM employees shall wear a minimum of a Class 2 vest when operating in proximity to traffic. Class 3 materials may be required based on speed or low visibility conditions.

6.0 TRAINING

CCM employees shall be trained in the type of PPE needed for the various tasks assigned. This training shall be provided initially at the time of hire and then annually thereafter. It is the responsibility of every CCM employee to properly wear, maintain, care for and store their PPE.

Training shall include the following:

- When PPE is necessary;
- What PPE is necessary;
- How to properly inspect, don, doff, adjust and wear PPE;
- The limitations of PPE;
- The proper care, storage, useful life, and disposal of PPE

7.0 ABILITY TO DECONTAMINATE

If disposable PPE cannot be used, then the ability to decontaminate the PPE needs to be taken into consideration. Once the material absorbs a chemical, it must be cleaned thoroughly before it can be reused. If the chemical has completely permeated the material, it is unlikely that the protective equipment can be adequately decontaminated.

8.0 PROGRAM EVALUATION

This program shall be evaluated periodically to ensure its proper implementation. Department Supervisors shall be responsible for conducting periodic inspections to ensure the proper selection, use, storage, and care of PPE.

The Environmental Safety Coordinator and/or the County of Morris Department of Risk Management, or their designee, shall conduct periodic inspections to ensure this program is fully implemented at the Department level. All findings shall be documented along with any corrective actions implemented. Results of the evaluation shall be used to modify/update this program as necessary. All modifications made to this program shall be approved by the Program Administrator.