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Safety Management Program: RESPIRATORY PROTECTION

General Information:	Distribution: All Employees	Effective Date:
	Developed By: H&S	Review Date:

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Program Scope:

At AV Terrace Bay we are committed to protecting the health and safety of our employees, contractors, and visitors. The following program provides the framework to ensure that High Potential Exposures (HPE) are recognized and that employees understand the requirements for respiratory safety including the proper selection, care, use and maintenance of respiratory protective equipment. *High Potential Exposure occurs when the nature of work being conducted has a high potential for causing serious harm to the employee or someone else resulting from an unplanned event taking place during that work.*

This program applies mill wide to all employees, contractors and visitors.



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General Requirements:

1. System and equipment design, selection, installation and maintenance will be evaluated for potential respiratory impact and the necessary steps where practical, must be considered to manage the potential for exposure to harmful respirable substances. *A Respirable Substance is a substance in the form of a gas, vapor, mist or particulates such as dust or smoke that can enter the body through inhalation.*
2. Wherever practical, hazardous materials or substances must be substituted with a material or substance that is less harmful.
3. Ventilation systems must be utilized where practical to minimize exposures to respiratory hazards.
4. As a minimum standard, employees, and contractors will be required to wear respiratory protective equipment to protect against harmful or irritable respiratory exposures when:
 - a. Engineering or administrative controls are not adequate or practical;
 - b. The atmosphere becomes “immediately dangerous to life and health” (IDLH); or
 - c. The contaminant or its concentration is unknown or the Threshold Limit Values (TLV) have exceeded the protection values on the respiratory protective equipment, in which case a self-contained breathing apparatus (SCBA) will be required. *The Threshold Limit Value (TLV) is the concentration of a vapor, gas or dust that is between the short term exposure value and the time weighted average.*
 - d. *A Self-Contained Breathing Apparatus (SCBA) is a device that is typically worn by emergency personnel or workers performing emergency work, which provides breathable air when working in IDLH atmospheres.*
5. All employees must be trained to recognize the potential hazards that could lead to a respiratory illness. If work involves exposure to respiratory hazards, including respirable, nuisance dusts where respiratory protection is required, then the employee must receive training in respiratory safety and the proper care, use and maintenance of respiratory protective equipment before any respiratory protective equipment may be used.
 - a. Training must conform to the requirements of this program and all other requirements of applicable regulations.
 - b. Training must be provided by a *Qualified, Competent Person. This is a person who, because of their knowledge, training and experience, is familiar with legislative requirements, respiratory protection selection criteria and respiratory hazards, and is authorized to provide training and fit testing.* Consult with H&S for further guidance
 - c. Contractors and service providers whose work requires the use of respiratory protective equipment are responsible to ensure and be able to demonstrate that their workers have been trained in Respiratory Safety.
 - d. Respiratory Fit Testing is required for all employees required to wear respirators every two years.



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Responsibilities:

Health and Safety (H&S)

- Direct the implementation of the Respiratory Protection Program.
- In conjunction with the Joint Health and Safety Committee, ensure periodic reviews are conducted in response to process, system or regulatory change or, at a minimum annually.
- Ensure that program training is provided to all supervisors, managers and employees as applicable.
- Provide support and guidance to all business units as appropriate.
- Participate in respiratory hazard assessments as appropriate.

Managers

- Support the Respiratory Protection Program.
- Ensure that appropriate training is provided for supervisors and employees.
- Ensure respirators are made available as appropriate.
- Monitor and ensure program compliance as appropriate.

Supervisors


- Support the Respiratory Protection Program.
- Participate in applicable training.
- Participate in the respiratory hazard assessment as appropriate.
- Ensure immediate reporting to next-in-line manager for all incidents involving an immediate response to a respiratory hazard or non-compliance.
- Ensure that appropriate respiratory hazard awareness training has been provided to employees as part of their area specific orientation process.
- Ensure that appropriate training is provided to all employees whose work involves exposure to respirable hazards.
- Ensure program review with all employees and documented
- Monitor and ensure program compliance as appropriate.

Nurse/ Trained Fit Tester

- Fit tests employees and trains them in the care and use of their respirator
- Maintains record of Respirator Use Pre-Screening Questionnaires for 30 years

Employees

- Comply with all requirements of the Respiratory Protection Program.
- Ensure that all concerns relating to respiratory hazards, incident occurrence involving response to respiratory hazards or program non-compliance are reported to their supervisors without delay.
- Participate in the respiratory hazard assessment as appropriate.

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- Conduct their work safely and responsibly to minimize the risk of incidents potentially resulting in exposures to harmful substances or materials.

Process:

Planning

1. The Supervisor or designate (qualified, competent person) conducts a respiratory hazard assessment and records the assessment on the Job Hazard Assessment form (JHA) utilizing the assessment guide in Appendix B.
 - Identify key steps within the work activity.
 - Verify if there any potential respiratory hazards or exposures associated with each of those steps.
 - Determine what controls are necessary to ensuring the protection from respiratory hazards or exposures. Respiratory Protection is best determined by implementing the **Hierarchy of Respiratory Hazard Control** below:

Most Preferred



Least Preferred

- Elimination
- Substitution (to a less harmful product)
- Engineering (design to control or manage risk)
- Administrative (procedures, policies, programs)
- Respiratory Protection (PPE)

2. The supervisor or designate then reviews the respiratory hazard assessment with the employees involved and verifies that all steps are understood. If the work being conducted is a frequent activity then the supervisor or designate will develop a “safe operating procedure” (SOP) to specifically address the steps, hazards and controls associated with the task and provide formal review of the procedure with all employees associated with the task.
3. The supervisor or designate will conduct documented, periodic reviews of all respiratory hazard assessments, and SOP’s each time there is a change in condition or a change in the steps in the work or activity being performed and review any changes with the employee as appropriate.

Selection

All respiratory protective equipment must be NIOSH-approved and appropriate for the work being performed, the hazard and level of exposure. *The National Institute of Occupational Safety and Health (NIOSH) is authorized under the Occupational Health and Safety Act to develop recommendations for health and safety standards for respiratory equipment as in the context of this program.*

1. For work requiring protection from airborne mists, dusts and particulates above their TLV, a NIOSH-certified respirator with a P100 particulate cartridge or disposable filtering face piece (dust mask) N95 (where appropriate) must be supplied.
2. For atmospheres requiring protection from organic compounds, gasses and vapors (gasoline, solvents, aerosols) above the established TLV, a NIOSH-approved negative pressure air purifying



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half mask or full face respirator with an organic vapor cartridge must be supplied. *An Air Purifying Respirator (APR) filters air through a canister or cartridge via negative pressure, meaning that when you breathe in the respirator (half mask or full face), negative pressure is applied to the face.*

3. For work requiring protection from poisonous or toxic gases or vapors, a full face respirator and appropriate cartridge/canister (refer to the product MSDS) must be provided or a powered air purifying respirator or self-contained breathing apparatus (SCBA) must be provided. *A Powered Air Purifying Respirator (PAPR) is a battery operated piece of equipment that has a fan providing clean breathable air through the filters and supply hoses connected to half- or full-face masks.*

Requirements

1. An employee must inform the plant nurse if they have a medical condition that would prevent them from being able to use a respirator.
2. The employee must meet the clean shaven requirement of CSA Z94.4-11 at all times.

Respirator Use

The supervisor or designate must ensure that employees comply with the Respiratory Protection Program, that they are suitably trained and have access to appropriate respiratory protection equipment.

1. Employees who require the use of respiratory protective equipment (dust masks, air purifying respirators, powered air purifying respirators and SCBA's) must be shaven in accordance to CSA Z94.4-11.
2. Employees must conduct a pre-use inspection prior to each time the respirator is used. The inspection must be documented on the **Job Safety Analysis Card**.
3. Prior to use, a respirator must be inspected for:
 - a. Condition of component parts (gaskets, inhalation valves, exhalation valves, straps)
 - b. Correct cartridge/filter installation
 - c. Condition of face mask
 - d. Cleanliness, excess dirt, soil, odors

Remove the mask from service if damage or missing parts have been noted.

4. Employees must check the seal and that the respirator is functioning properly immediately after donning the respirator and prior to entering the work area. The seal test must be conducted as per the following:
 - a. Connect the lower strap around the back of the neck.
 - b. Place the top straps over the head making sure that the respirator fits over the bridge of the nose.
 - c. Adjust for tightness as required. **Do not** synch the mask or over-tighten to discomfort. Conduct a positive and negative seal test as shown below.

Positive Seal

Negative Seal



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Cover exhalation
valve and try to
exhale



Cover inlets
and try to inhale



- d. Respirators are not to be worn if a proper seal cannot be achieved. If this is the case, the work cannot be completed by the employee.
- e. SCBA must be inspected prior to use and monthly as per the requirements in the prescribed standards (NFPA 1852).
 - The functionality of the SCBA must be tested, at a minimum, annually.
 - Breathing air quality must conform to the CSA Standard Z180.1-00.
5. The air in the cylinder for SCBA must be replaced at, a minimum, every six months.

Equipment Maintenance

Respiratory protective equipment must be kept clean at all times. Soil, excess dust, chemical residue and other contaminants can result in potential illnesses from bacterial contamination and harmful residues.

Equipment in poor condition can also result in equipment failure.

1. Respiratory Protective equipment must be cleaned as per manufacturer instructions.
2. After each use remove all cartridges and components from the respirator and rinse clean.
3. Wash respirator and parts with warm soapy water and avoid scrubbing with an abrasive brush. Do not use corrosive detergents or alcohol based wipes to clean respiratory protective equipment.
4. Allow equipment to air dry on a paper towel, avoid direct sunlight.
5. Respirators and cartridges should be stored in a sealed plastic container or bag after each use.

Generally chemical cartridges should be changed after:

- Being used in a high-level chemical release (above the TLV)
- Eight hours of use in chemical spill situations
- The contaminant can be smelled or tasted while wearing a respirator.
- The user feels dizzy or nauseous
- Breathing becomes difficult



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Appendix A

Respiratory Equipment Selection Guide (examples of typical work in a mill environment) <i>Always consult with the Product Label and Material Safety Data Sheet.</i>		
Respiratory Hazard	Associated Activity/Process	Respiratory Protective Equipment
Dust exposure / nuisance dust	Housekeeping work	NIOSH-approved N95, 99 Dust Mask
Dust exposure/ heavy dust	Work in/on filter units, work being conducted in confined spaces.	NIOSH-approved Half Mask (alternative eye protection required) or Full Face Respirator, P100 cartridge (particulates)
Oxygen deficient atmosphere or presence of fugitive gases.	Work being conducted in confined spaces	Entry of the confined space is prohibited where oxygen deficient atmospheres exist.
Organic vapors	Use of solvent, gasoline, petroleum degreasers, paints, aerosols, etc.	NIOSH-approved Half Mask (alternative eye protection required) or Full Face Respirator, OV cartridge (organic vapor). Consult label requirements for the specific product being used and recommended protection.

Appendix B

Respiratory Protection Hazard Assessment Guide <i>Consult this list when completing a Job Safety Analysis involving respiratory hazards.</i>	
<ul style="list-style-type: none"> Identify key steps within the work activity. Verify if there any potential respiratory hazards or exposures associated with each of those steps. Determine what controls are necessary to ensuring the protection from respiratory hazards or exposures. Respiratory Protection is best determined by implementing the Hierarchy of Respiratory Hazard Control: <div style="display: flex; align-items: center; margin-top: 10px;"> <div style="text-align: center; margin-right: 20px;"> <p>Most Preferred</p> <p>Least Preferred</p> </div> <ul style="list-style-type: none"> • Elimination • Substitution (to a less harmful product) • Engineering (design to control or manage risk) • Administrative (procedures, policies, programs) • Respiratory Protection (PPE) </div> 	
Questions to consider	Answers/Solutions
Determine the frequency of the work being performed and if the potential respiratory hazard(s) can be eliminated by alternative work methods or engineering controls.	
Determine the number of workers exposed to the respiratory hazard.	



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Where practical, use appropriate test method or seek technical guidance to determine the levels of exposure.	
Where hazardous materials are involved, consult with the Material Safety Data Sheet (MSDS) to determine threshold limit values (TLV) as applicable.	
Determine if employees could be exposed to other types of health and safety hazards in addition to the respiratory hazards, such as fires or explosions due to flammable vapors or combustible dusts.	
Specify what controls or specific type of respiratory equipment will be needed (refer to the Appendix A).	
WHEN ENTERING A CONFINED SPACE, REGARDLESS OF THE WORK OR INTENDED ACTIVITY, THE QUALITY OF AIR MUST BE ASSUMED HAZARDOUS UNTIL TESTED AND VERIFIED TO BE SAFE BY A TRAINED AND QUALIFIED PERSON.	

Human Rights

The company recognizes that certain individuals may seek an accommodation for Religious Observance under the Ontario Human Rights Act. To that end, the company will meet with the individual and deal on a case to case basis with such requests in order to comply with the respiratory program, the Occupational Health and Safety Act as well as the Ontario Human Rights Commission.





Annex M (informative)

Illustrations of acceptable and unacceptable facial hair for tight-fitting respirators

Notes:

- (1) This Annex is not a mandatory part of this Standard.
- (2) This Annex is to be used in conjunction with [Clause 9.2.2](#) and [10](#).
- (3) The examples provided in this Annex are illustrations of the application of the criteria specified in the Standard. These examples are limited, not comprehensive, and are provided only as guidance for program administrators, fit testers, supervisors, and users. Variations not illustrated in this Annex do not necessarily meet the criteria for acceptable facial hair.
- (4) Acceptable facial hair for respirator fit testing and use does not interfere with
 - (a) the respirator sealing surface; or
 - (b) valve or respirator function.

Acceptable

<p>A. Clean-shaven, ideal for a good seal</p>	
<p>B. Amount of facial hair that will typically allow a good seal</p>	
<p>C. Moustache that does not interfere with the sealing surface, valves, or respirator function</p>	
<p>D. Soul patch that does not interfere with the sealing surface, valves, or respirator function</p>	

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Authorizers



CEO



V.P. of Manufacturing



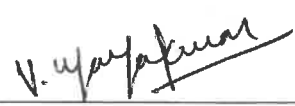
Health and Safety Manager



Steam Plant Manager



Pulp Mill/Wood Handling Manager



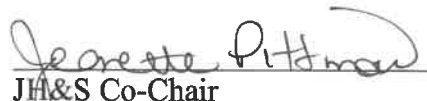
G.M. of Maintenance & Engineering



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Production Manager



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