RESOLUTION - ACTION REQUESTED 2017-521

MEETING: August 1, 2017

TO: The Board of Supervisors

FROM: Steve Johnson, Human Resources Director - Risk Manager

RE: Approve a Mariposa County Respiratory Protection Program

RECOMMENDATION AND JUSTIFICATION:
Approve a Mariposa County Respiratory Protection Program, Effective Immediately.

The guidelines in this program are designed to help reduce employee exposure against occupational dusts, fogs, fumes, mists, gases, smokes, sprays or vapors. The primary objective will be to prevent atmospheric contamination and to prevent employee exposure to airborne contaminants. This is accomplished as far as feasible by accepted engineering and work practice control measures. When effective engineering controls are not feasible, or while they are being implemented or evaluated, respiratory protection may be required to achieve this goal. In these situations, respiratory protection, training and medical evaluations are provided at no cost to the employees.

Every California employer that requires employees to wear respirators must have a written Respiratory Protection Program. In general, respiratory protection equipment is to be used only when it is impractical to use engineering and administrative controls to reduce employee exposure to acceptable levels, during installation of engineering controls, or in emergencies. All employees who wear respiratory protection equipment will comply with the requirements of this program.

The Cal/OSHA standard for respiratory protection is identified in Section 5144, of Title 8 of the California Code of Regulations, and requires that a respiratory protection program be established to effectively control employee exposures to respiratory hazards. The following procedures are based on the requirements established by the Cal/OSHA regulations and the American National Standards Institute for Respiratory Protection, ANSI Z88.2.

Staff worked closely with consultant Pamela Murcell, CIH, in developing this program, and shared it with the County’s Safety Committee and Department Heads for review.

In reviewing this draft, the County Health Officer asked that the extra workload not currently being done by having an active RPP program be considered by the Board in adopting this Program. It is recommended that, with the Board’s concurrence, staff would meet with the County Health Officer and his Board of Supervisor Liaison member
group, along with other impacted County Department Heads, to initiate this discussion.

BACKGROUND AND HISTORY OF BOARD ACTIONS:
Prior safety program items approved by the Board dealt with County safety, including respiratory protection. This is the first formal Respiratory Protection Program that the Board will have adopted.

ALTERNATIVES AND CONSEQUENCES OF NEGATIVE ACTION:
The Board may decide not to adopt the proposed Mariposa County Respiratory Protection Program, but a negative vote would mean that the County would not be in compliance with current State and Federal Regulations.

ATTACHMENTS:
Mariposa County Respiratory Protection Program June 2017  (DOCX)

CAO RECOMMENDATION
Requested Action Recommended

Dallin Kimble  
Dallin Kimble, County Administrative Officer  7/25/2017

RESULT:  ADOPTED [UNANIMOUS]  
MOVER:  Merlin Jones, District II Supervisor  
SECONDER:  Kevin Cann, District IV Supervisor  
AYES: Smallcombe, Jones, Long, Cann, Menetrey
RESPIRATORY PROTECTION PROGRAM

MARIPOSA COUNTY

INTRODUCTION

This program specifies the standard operating procedures used to act in accordance with the Cal/OSHA respiratory protection standard, Title 8 California Code Regulation, Section 5144 (8 CCR 5144). The basic purpose of a respirator is to protect the user from inhalation of hazardous atmospheres. Mariposa County (County) operations do not always lend themselves to use of engineering or administrative controls. Therefore, respirators will be used to protect employees from inhalation hazards.

There are many variables that affect the degree of protection provided by respirators, and the misuse of respirators can be hazardous to employee safety and health. Selection of the wrong equipment can result in employee exposure to inhalation hazards. Respirators that are not maintained and inspected can be less effective at reducing exposure to harmful contaminants, and can place a greater physical burden on the respiratory system. Respirators that are not clean can cause skin irritation or dermatitis. This program establishes standard operating procedures to ensure that respirators are selected, used, and maintained properly.

A current and electronic copy of the Respiratory Protection Plan (RPP) is located on the County’s website, under the Human Resources Department section. For further information regarding this RPP, contact your Department Safety Coordinator for further information.

POLICY

It is the policy of Mariposa County (County) to provide employees with a safe and healthful work environment. The primary goal of this written program is to limit exposure to inhalation hazards. When other control measures are not feasible or are inadequate, respirators may be required to achieve this goal. When employees are required to use respirators, they will do so in accordance with the provisions of this RPP.

PURPOSE

The potential for employee exposure to inhalation hazards exists during the performance of specific job duties. The purpose of this program is to ensure that employees are protected from exposure to inhalation hazards.

The County has developed and implemented this Respiratory Protection Program to:

1. Guide the selection, use and care of respirators
2. Establish the requirements for employee medical evaluations
3. Establish the requirements for respirator fit testing

June, 2017
4. Notifying employees when they are due for a medical evaluation
5. Ensuring that appropriate respirators are available for the identified hazards
6. Ensuring that only qualified personnel use respirators
7. Ensuring that respirators are used correctly when necessary to protect against potential respiratory hazards

**Employees**

All employees who use respirators shall adhere to this Program. Specific responsibilities include:

1. Correctly using respiratory protective equipment when in hazardous atmospheres
2. Inspecting their respirator prior to every use to ensure proper working condition
3. Maintaining, cleaning, and storing respirators according to the requirements of this program
4. Only using a respirator for which they have been successfully fit tested
5. Reporting to their supervisor any respirator that needs repair or replacement
6. Reporting to their supervisor if there is a need for respiratory protection during a particular work activity

**RESPIRATOR USE**

When effective engineering controls and work practices are not feasible, and exposure to airborne contaminants is associated with the work activities, respirators must be used in accordance with this program. The following practices must be followed:

1. All respirator users must be medically qualified and properly trained prior to using any respirator.
2. All users of tight-fitting respirators must be currently fit tested for the respirator being used.
3. All users of disposable single-use dust masks must understand the correct use and limitations of the dust mask being used.
4. All respirators, including dust masks, used at the County sites must have National Institute for Occupational Safety and Health (NIOSH) certification.
5. County employees will use only those respirators and dust masks provided by the County and approved by the RPP Administrator.
6. No tight-fitting respirator may be worn by any employee if there are any conditions that interfere with the face piece-to-face seal. These conditions include, but are not limited to:
   a. Facial hair that comes between the sealing surface of the face piece and the skin
   b. Facial hair that interferes with valve function
   c. Glasses that interfere with respirator seal
   d. Head coverings that interfere with respirator seal
7. When a dust mask or half-mask is required and the user wears contact lenses, non-prescription safety eyewear or other protective eyewear must be used also.
8. The respirator user must conduct a positive pressure seal check and a negative pressure seal check (user seal checks) each time a respirator is donned. The positive pressure seal check is accomplished by covering the exhalation valve and breathing out gently to create

June, 2017
Respiratory hazards have been identified through workplace evaluations, job safety analysis, and exposure monitoring.

**Welding/Cutting**
Dilution ventilation or natural ventilation will be used for indoor or outdoor welding operations. If ventilation is inadequate to prevent exposure above the applicable permissible exposure limits (PELs) for the various air contaminants, respiratory protection will be provided and used. Employees may use appropriate respiratory protection at any time during welding/cutting tasks.

**Asbestos-Cement Pipe**
Natural ventilation will be used for AC pipe tasks. If natural ventilation is inadequate to prevent exposure above the applicable permissible exposure limits (PELs) for asbestos, respiratory protection will be provided and used. Employees may use appropriate respiratory protection at any time while working with AC pipe.

**Painting**
Dilution ventilation or natural ventilation will be used for indoor or outdoor painting tasks. If ventilation is inadequate to prevent exposure above the applicable permissible exposure limits (PELs) for the various air contaminants, respiratory protection will be provided and used. Employees may use appropriate respiratory protection at any time during painting tasks.

**Biohazards**
Natural ventilation will be used for all outdoor operations involving biohazards. If natural ventilation is inadequate to prevent adverse employee exposure, respiratory protection will be provided and used. Employees may use appropriate respiratory protection at any time during operations involving biohazards.

**Entry into Unknown Levels of Chemical Contamination**
Entry into unknown levels of chemical contamination may only be performed by qualified personnel. If unknown chemical contamination is a concern, County personnel are to isolate and deny entry into the area until the level of hazard can be identified, and contact the RPP Administrator for assistance and further direction.

**RESPIRATOR USE CONDITIONS**

Respirators may be used year round at the County sites in both indoor and outdoor environments. Ambient temperatures can range from below 0°F to approximately 85°F. Relative humidity is typically less than 50%. Work rates during respirator use may range from light to heavy.

**AIR QUALITY FOR SUPPLIED-AIR RESPIRATOR**

Supplied-air respirators must be provided with compressed breathing air that meets at least the requirements for Grade D breathing air described in ANSI/Compressed Gas Association Commodity Specification for Air, G-7.1-1989. Grade D breathing air is described as:

- Oxygen content (v/v) of 19.5-23.5%.

June, 2017
Respirator users will be fit tested at least annually for each type of tight-fitting respirator they use, using qualitative fit testing (QLFT) procedures that meet the requirements specified in 8 CCR 5144 Appendix A.

A respirator must also be fit tested whenever the employee reports, or the supervisor or medical professional notes changes in, the employee's physical condition (such as weight gain or loss) that could affect respirator fit.

CHEMICAL CARTRIDGE END-OF-SERVICE LIFE (ESL)

Chemical cartridges not equipped with ESL indicators will have a maximum use time limit imposed. For the County, the online Service Life Estimation Program software was used to determine these limits.

See Appendix C for guidelines on use limits for chemical cartridges for air-purifying respirators.

PARTICULATE FILTERS (DUST MASKS)

Particulate respirators (dust masks) and filters for reusable air-purifying respirator face pieces do not require an ESL or have a specific time limit. Rather particulate filters should be changed when the user notices an increased resistance to breathing, indicating the filter is getting plugged. Filters should also be changed any time the user suspects they may be damaged or may have gotten wet.

When single-use disposable dust masks (for example, N-95) are used, they should be disposed of at the end of the period of time for which they are used. For example, if a dust mask is worn for two hours and then the employee leaves the work area, the dust mask will be disposed and a new one donned when work is resumed.

RESPIRATOR MAINTENANCE AND INSPECTION

All reusable respirator face pieces shall be properly cleaned, disinfected, stored, inspected and otherwise maintained in accordance with the instructions in Appendix D of this program, and as required by Cal/OSHA regulations.

Each employee who uses respiratory protective equipment is responsible for the proper maintenance, storage and use of their respirators and accessories.

Each employee is also responsible for inspecting any reusable respirator prior to and after each use. In addition, the County implements a monthly schedule for inspection of the airline units.

TRAINING

Only employees who have been trained in accordance with this procedure are allowed to wear a respirator, or to work in a situation in which respirators may be required.

June, 2017
RECORDKEEPING

Records of respirator fit testing and employee training records will be maintained for the term of employment by Human Resources/Risk Management Department. For employees who work for the County for less than one year, the employee’s records will be provided to the employee upon termination of employment. Employee fit testing and training records will be maintained by the applicable Department for at least three years.

Medical evaluation clearance letters are received and maintained in the employee’s file. These letters will be maintained for the duration of employment plus 5 years.

The RPP Administrator will ensure that medical records are maintained as required by 8 CCR 3204 on behalf of the County by the County Health Officer.

The annual Respiratory Protection Program procedure review will be documented on the Respiratory Protection Program Evaluation Checklist. Each completed checklist will be maintained with the written RPP by the RPP Administrator.

Signed by,

__________________________
Chairperson, Mariposa County Board of Supervisors

June, 2017
APPENDIX A – Approved Respiratory Protection Equipment for Mariposa County Employees

All respirators listed here are NIOSH-approved as required by 8 CCR 5144. This is the only equipment currently approved and provided by the County. Each respirator user must be medically cleared (approved), trained and fit tested prior to using any respiratory protective equipment. Respirators are listed in the order of least protection to highest protection.

1. Sperian Saf-T-Fit Plus Dust Masks, disposable particulate respirators, N95 respirators.

2. North 7700 Half-mask Air Purifying Respirator (half-mask APR) – to be used with P100 filters, organic vapor (OV) cartridges, multi-gas/OV cartridges, N95 filter pads, OV cartridges with N95 filter pads, or combination multi-gas/OV cartridges/P100 filters.

3. North 76008 Full face piece Air Purifying Respirator (full-face APR) – to be used with P100 filters, organic vapor (OV) cartridges, multi-gas/OV cartridges, N95 filter pads, OV cartridges with N95 filter pads, or combination multi-gas/OV cartridges/P100 filters.

4. North 8404 Welding Full face piece Air Purifying Respirator (full-face APR) – to be used with P100 filters.

5. MSA PremAire® airline respirator with 5-minute self-contained breathing air escape bottle – to be used with 1-hour external compressed breathing air bottles and manifold.

APPENDIX C – Chemical Cartridge Use Time Limits

AIR-PRUIFYING RESPIRATOR (APR) CARTRIDGE USE TIME LIMITS

These guidelines are based on the following parameters:

- Moderate work load and breathing rate of about 50 liters/minute (lpm)
- New cartridges and single use (cartridges are not stored for future use)

<table>
<thead>
<tr>
<th>Cartridge Type</th>
<th>Contaminant Type</th>
<th>Contaminant Concentration</th>
<th>Use Guidelines</th>
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</thead>
<tbody>
<tr>
<td>Multi-gas/organic vapor cartridge (olive green color code) with or without P100 filter (magenta color code)</td>
<td>All dusts, fumes, and mists including oil based (P100 filter use)</td>
<td>Any concentration where APR is allowed</td>
<td>Replace filter when breathing resistance increases, or at the end of the shift.</td>
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<tr>
<td>Organic vapors, acid gases such as chlorine or hydrogen sulfide, ammonia and related compounds (multi-gas/organic vapor cartridge use)</td>
<td>Representative example: Hydrogen sulfide at 20 ppm, &lt;65% RH, 70°F, moderate work, Cal/OSHA PEL = 10 ppm</td>
<td>Estimated breakthrough time to 10% of PEL is 119.5 hours; however, North recommends no more than 8 hours of use due to the physical and chemical properties of H₂S.</td>
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<td>Representative example: Methyl ethyl ketone (MEK) at 300 ppm, &lt;65% RH, 70°F, moderate work, Cal/OSHA PEL = 200 ppm</td>
<td>Estimated breakthrough time to 10% of PEL is 3.3 hours.</td>
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<td>Representative example: Toluene at 20 ppm, &lt;65% RH, 70°F, moderate work, Cal/OSHA PEL = 10 ppm</td>
<td>Estimated breakthrough time to 10% of PEL is 37.75 hours.</td>
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NOTE: The information provided above provides some general guidelines. For specific applications, users should consult with the RPP Administrator.
Appendix E – Information for Employees Using Respirators When Not Required Under the Standard (Ref: 8 CCR 5144, Appendix D)

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 should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirators 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 approved 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.

Employee Name (Printed)       Respirator Type

Employee Signature             Work Tasks

Supervisor                      Date

June, 2017
RESPIRATORY PROTECTION PROGRAM

ANNUAL EVALUATION

Employer: ___________________________  Date: ________________

Address: ___________________________

______________________________

Manager: _________________________  Evaluator: _______________________

Document findings and planned corrections on continuation sheets, number items and sign.

<table>
<thead>
<tr>
<th>A. Program Administration</th>
<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
<td>1. Is there a written policy which acknowledges employer responsibility for providing a safe and healthful workplace, and assigns program responsibility, accountability, and authority?</td>
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<td>2. Is program responsibility vested in one individual who is knowledgeable and who can coordinate all aspects of the program at the jobsite?</td>
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<td>3. Can feasible engineering controls or work practices eliminate the need for respirators?</td>
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<td>4. Are there written procedures/statements covering the various aspects of the respirator program, including: Designation of an administrator; Name ____________________ Respirator selection; Purchase of NIOSH certified equipment; Medical aspects of respirator usage; Issuance of equipment; Fitting; Maintenance, storage, and repair; Inspection; Use under special condition; and Work area surveillance (IH Monitoring).</td>
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### B. Program Operation - continued

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<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
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<tr>
<td>7.b. Maintenance of respiratory protective equipment: Storage</td>
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<td>Are respirators stored in a manner so as to protect them from dust, sunlight, heat, excessive cold or moisture, or damaging chemicals?</td>
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<td>Are respirators stored properly in a storage facility so as to prevent them from deforming?</td>
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<td>7.c. Maintenance of respiratory protective equipment: Inspection</td>
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<td>Are respirators in a well-maintained condition?</td>
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<tr>
<td>Are qualified individuals/users instructed in inspection techniques?</td>
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<tr>
<td>7.d. Maintenance of respiratory protective equipment: Repair</td>
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<td>Are replacement parts available to the user?</td>
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<td>8. Training</td>
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<tr>
<td>Are users and supervisors trained in this Program?</td>
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<tr>
<td>Are users and supervisors trained in proper respirator use, cleaning, and inspection?</td>
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<tr>
<td>Are users evaluated, using competency-based evaluation, before and after training?</td>
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<td>9. Recordkeeping</td>
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<td>Are records maintained in accordance with the Program?</td>
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<td>Are medical records maintained by contract physician?</td>
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<td>Are backup records secured?</td>
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Signature ________________________ Date: ____________
Evaluator (Program Administrator)

Signature ________________________ Date: ____________
Manager