FOREST SERVICE HANDBOOK
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FSH 6709.12 - SAFETY AND HEALTH PROGRAM HANDBOOK

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Approved: IRVING W. THOMAS
Associate Deputy Chief

Date Approved: 08/12/2005

Posting Instructions: Amendments are numbered consecutively by Handbook number and calendar year. Post by document; remove the entire document and replace it with this amendment. Retain this transmittal as the first page(s) of this document. The last amendment to this Handbook was 6709.12-2005-1 to 6709.12_40.

New Document	6709.12_contents	2 Pages
Superseded Document(s) by Issuance Number and Effective Date	00--1 (Amendment 2, 08/10/1990)	1 Page

Digest:

40 - Revises chapter title from “Appendix” to “References.”

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CHAPTER 10 - SAFETY AND HEALTH PROGRAM ADMINISTRATION

This handbook provides detailed instructions on the administration of the Forest Service safety and occupational health program.

11 - INSPECTIONS. Inspections identify and eliminate unsafe acts or conditions before accidents or injuries occur. Two types of planned inspections are made: facility safety and health inspections and workplace and project inspections. Facility safety and health inspections are defined in FSH 7309.11.

Workplace and project inspections incorporate standards established in FSH 6709.11, Health and Safety Code Handbook.

11.04 – Responsibility.

1. The Director of Engineering is responsible for facility safety and health inspections. See FSH 7309.11.

2. Unit manager shall ensure that workplace and project inspections are done by persons knowledgeable of the work activity and who have had training in FSH 6709.11, Health and Safety Code Handbook standards, Occupational Safety and Health Administration (OSHA) standards, the inspection process, and use of inspection report forms.

11.1 - Frequency of Workplace and Project Inspections. All regularly used Forest Service-owned and -leased facilities shall be inspected at least annually. Workplace and project inspections shall be done at least annually. Inspect high-risk workplaces more frequently.

11.11 - High-Risk Workplaces. Any facility or operation that offers a high potential for injury, illness, or death due to the activity conducted at the location is a high-risk workplace. Examples are:

1. Storage areas of:

a. All types of flammables, including paint.

b. Explosives, chemicals, toxicants, or radioactive materials.

c. Materials stacked in such manner that they could overload structural systems or fall upon employees working in the area.

2. Vehicle and equipment maintenance, carpentry, and other shops.

3. Any location housing an activity involving powered machinery, equipment, electrical devices, and other mechanical apparatus.

4. Loading operations or operations involving frequent backing or overhead handling of material; for example, ware-housing and zone fire caches.

5. Operations involving chemical storage or usage.

6. All facilities used for housing personnel.

11.2 - Inspection Content. Compare actual situations and conditions to accepted standards. Variations of actual conditions from these standards are deficiencies. These may be classified as either unsafe conditions or unsafe acts. These may be imminently dangerous, serious, or non-serious (sec. 11.4). FSH 6709.11, Health and Safety Code Handbook, serves as the basic source of standards for workplace and project inspections.

11.21 - Critical Inspection Items. Certain parts of equipment and some operations are critical to safe use or safe completion of a job. When a critical part fails or is absent, the machine, equipment, or operation will fail with a high likelihood of losses. Inspect for the presence and safe operation of these critical items. Some examples are:

1. Pop-off valve on hot water heater.

2. Anti-flashback couplings on oxygen-acetylene torches.

3. Proper storage of flammable liquids.

4. Eyewash stations in chemical use areas.

11.22 - Inspection Checklists. Several types of checklists and inspection forms are available from commercial sources. These can be customized to meet local conditions and improve the quality of inspections.

11.23 - Inspection Forms. Form FS-6700-1, Safety and Health Inspection, Form FS-6700-2, Compliance Worksheet, and Form FS-6700-3, Report Narrative, are suggested for documenting the inspections. These are designed to assist in the completion of Form FS-6700-4, Notice of Unsafe or Unhealthful Working Conditions, when required (sec. 11.54). Computerized or electronically reproduced forms containing similar information may also be used.

11.24 - Form FS-6700-4, Notice of Unsafe or Unhealthful Working Conditions.

1. Use to inform the unit manager officially of hazards noted during the inspection.

2. The inspector shall prepare this form for hazards that the unit manager did not remedy during the inspection. Forms shall be transmitted to the unit manager within 15 days, or left with the unit manager during the closeout review (sec. 11.6).

The unit manager completes the correction date and estimated cost columns, signs the form, and returns it to the inspector, with a copy to the next higher organizational level.

3. As corrections are made, the unit manager signs across the face of the form, dates it, and sends to the inspector and the next higher organizational level.

11.3 - Preparation. Inspectors shall prepare for inspections as follows:

1. If the unit is covered by a bargaining agreement, arrange for a union representative to accompany you on the inspection.

2. Review previous inspection reports, reports of unsafe conditions, accident reports, and the unit's program of work to become familiar with the operations of the site to be inspected.

3. Arrange for the unit manager or designee to accompany you.

4. Prepare inspection equipment.

5. Review applicable safety and health standards.

6. Review inspection checklists and other material.

7. Review material to be covered in the opening conference.

11.4 - Hazard Classification. Hazards found during an inspection shall be classified so that managers can allocate time and dollars for their correction in order of priority based on the degree of danger present. Hazards shall be classified as: imminent danger, serious, and non-serious based on the following criteria.

1. Imminent danger hazards would likely cause death, severe injury or high property losses immediately, or before the hazard can be eliminated through normal procedures. Immediate employee protection and abatement is required. An example is a leaking propane gas cylinder in crew quarters.

2. Serious hazards are those in which there is high probability that serious injury, illness, or extensive property damage would result unless corrective action is taken. Abatement shall be accomplished within 14 days. An example is a broken stair tread.

3. Non-serious hazards are those that could cause injury, illness, or property damage. Abatement shall be accomplished in 30 days. An example is a broken window in a workshop.

11.5 - Inspection Equipment. Inspectors shall use test or sampling equipment when required to evaluate workplace conditions. Some basic types are shown in exhibit 1. Some situations and conditions require sophisticated equipment that may not be readily available. Contact the Regional Office or Station headquarters for assistance.

Exhibit 1

Basic Sampling Equipment

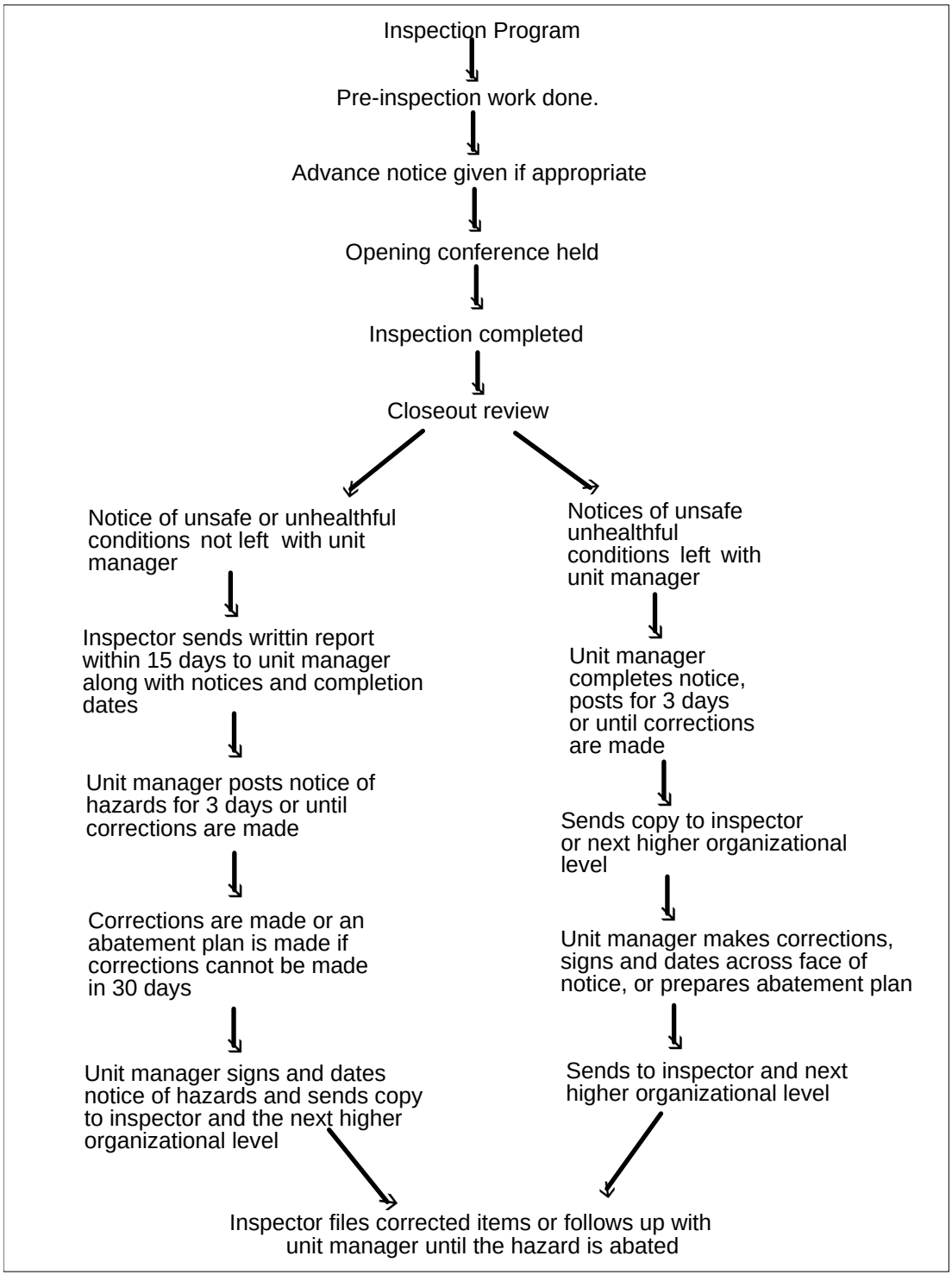
Type or Name	Application
Noise Meter	To measure noise levels of equipment or processes.
Detector Tube Pump with appropriate tubes	To measure levels of airborne contaminants.
Smoke Tubes	To identify air flow currents.
Velometer	To measure air flow such as in laboratory hoods.

Basic Inspection Equipment

Receptacle Tester	Indicates if an electrical receptacle box of 110 voltage is correctly wired.
Tape Measure	
Flashlight	
Clipboard	
Camera with Flash	

11.6 - Inspection Process for Workplace and Project Inspections. The inspection process shall be a closed loop system to ensure correction of hazards. See exhibit 1 for a graphic display of a closed loop inspection program.

Exhibit 1


Inspection Program
Pre-inspection work done.
Advance notice given if appropriate
Opening conference held
Inspection completed
Closeout review
Notice of unsafe or unhealthful conditions not left with unit manager
Inspector sends writtin report within 15 days to unit manager along with notices and completion dates
Unit manager posts notice of hazards for 3 days or until corrections are made
Corrections are made or an abatement plan is made if corrections cannot be made in 30 days
Unit manager signs and dates notice of hazards and sends copy to inspector and the next higher organizational level
Notices of unsafe unhealthful conditions left with unit manager
Unit manager completes notice, posts for 3 days or until corrections are made
Sends copy to inspector or next higher organizational level
Unit manager makes corrections, signs and dates across face of notice, or prepares abatement plan
Sends to inspector and next higher organizational level
Inspector files corrected items or follows up with unit manager until the hazard is abated

11.7 - Conducting the Inspection.

11.71 - Opening Conference. Discuss the following:

1. Purpose of the inspection.

2. Items or areas of special interest.

3. Involvement of employees or employee representatives.

4. Inspection standards to be applied.

5. Time and place for a closing conference.

11.72 - Inspection Procedure. Inspection of a workplace or project must be planned to ensure that all situations and conditions are observed.

1. Plan the route of inspection within a workplace inspecting high hazard areas first. Develop an inspection pattern. Complete the inspection of each area before going on. A random pattern is not effective.

2. Wear required protective equipment.

3. Look for imminent danger and serious hazards, then non-serious hazards.

4. Note unsafe acts of employees, or indicators of unsafe acts, and point these out to the manager's representative.

5. Look for good things as well as deficiencies. Note well-organized areas or unique ways of accomplishing work safely.

6. Look for safety and health program promotional items, such as an active poster program, current safety plans, current bulletin boards, and awards.

7. Search for patterns of deficiencies that affect the entire worksite. An example would be water in all the air compressors. This is a strong indicator that no compressor drain program exists.

8. Don't make assumptions. Ask questions, try it, turn it on, shake it, open it up, look at it. Take your time. Be systematic.

9. Remove equipment and tools that are deficient or suspected of being deficient from service. Use Form FS-6400-17, Ground Equipment Warning Tag, to mark them.

10. Photograph conditions that would be difficult to describe or that rapidly change.

11.73 - Closeout Review. At the conclusion of the inspection, meet with the unit manager or representative. Inform the person of unsafe or unhealthful working conditions found during the inspection. Include other topics such as:

1. Positive things found.

2. The extent of deficiences found, such as no air compressor drain program or no fire extinguisher inspection program.

3. The list of red-tagged and removed-from-service tools and equipment.

4. Noise readings on measured equipment.

5. The unit manager's responsibilities to correct the hazards and the hazard classification ratings.

6. Period of time for the abatement of the unsafe and unhealthful conditions.

11.74 - Abatement Plans. If correction of the noted deficiency cannot be accomplished within 30 days of the inspection, the unit manager shall prepare an abatement plan and submit it to the next higher organizational level. See 29 CFR 1960.30.

12 - SAFETY AND HEALTH COMMITTEES

12.1 - Function. Each Forest Service unit manager shall analyze the unit's operations to determine if a safety and health committee would be effective. Committees should report directly to the unit manager.

Committees can provide insight into management of the safety and health program, and can:

1. Prepare safety plans.

2. Review accidents to determine adequacy of the investigation process.

3. Advise the manager on accident trends, program areas needing emphasis, and recommend unit policies.

4. Sponsor training.

5. Conduct safety and health hazard hunts.

12.2 - Membership. Safety and health committees should represent field work crews, clerical or office staff, first line supervisors, line officers, staff specialists, and employee union representatives. Rotating the membership permits more employee involvement.

Committees should meet at least quarterly.

13 - TRAINING. This section provides training requirements necessary to ensure an aggressive safety and health program. Additional requirements are established in FSH 6109.41, DPM 791; FSH 6709.11; and 29 CFR 1960.54. Line officers are responsible for ensuring necessary training is accomplished within their unit.

13.1 - Basic Requirements.

1. Line Managers. Training shall consist of an orientation to enable them to manage the safety and health program. Orientation shall include section 19 of the Occupational Safety and Health Act; Executive Order 12196; 29 CFR 1960; FSH 6109.41, FPM 791; and FSM 6700.

2. Work Supervisors. Train supervisors to recognize occupational hazards in their areas. Supervisors shall be knowledgeable of FSH 6709.11 and FSM 6700, and 29 CFR 1960.

3. Safety and Health Manager/Specialists. Training shall include section 19 of the Occupational Safety and Health Act, Executive Order 12196, 29 CFR 1960, FSH 6709.11,FSH 6709.12, and FSM 6700. Training shall be accomplished within 6 months of assignment to a full-time or collateral duty position.

4. Workplace and Project Safety and Health Inspectors. Training shall include appropriate standards, use of monitoring equipment and test procedures, general abatement procedures, and inspection reports and other documentation to support the inspection findings. Facility inspector qualifications are listed in FSH 7309.11.

5. Employees and Employee Representatives. Employees shall receive specialized job safety and health training appropriate to the work being performed, and emphasizing their rights and responsibilities.

Representatives of employee groups, such as recognized labor organizations, shall receive training as specified by current labor relation agreements or as agreed to by the local parties.

13.2 - Mandatory Training.

1. Forest Service drivers are required to take the National Safety Council or Forest Service Defensive Driving Course, and a refresher every 3 years.

2. Chainsaw operators must demonstrate that they can safely operate a chainsaw. Each Region, Station, and Area shall establish demonstration criteria. Employees not demonstrating adequate skill shall take chainsaw use training through the National Wildlife Coordinating Group Course, "Power Saws, S-212," or a locally designed course. Emphasize practical exercises involving tree felling, limbing, and bucking (FSH 6709.11).

3. Each field-going supervisor or work group leader must hold a valid first-aid card. Line managers shall consider requiring advanced first-aid training on projects with high risk or in isolated locations.

13.3 - Recommended Training.

1. Safety and Health Program Personnel. Collateral duty and full-time safety and health personnel should receive training structured to meet the scope of the assignment. Use the following guide:

a. District. Basic training that will enable the employee to carry out the safety and health program at the field level. Suggested training includes courses in safety supervision, orientation to the Forest Service safety and health program, hazard identification, basic accident prevention techniques, accident reporting and investigation, and use of FSH 6709.11, Health and Safety Code Handbook.

b. Forest and Laboratory. Training which will provide a working knowledge of:

(1) Forest Service safety and health program administration.

(2) Section 19 of the Occupational Safety and Health Act.

(3) Executive Order 12196, Occupational Safety and Health Programs for Federal Employees, February 27, 1980.

(4) 29 CFR 1960.

(5) Safety and health workplace inspection techniques.

(6) Use of sampling equipment.

(7) Accident investigation.

Consider other training when assignments warrant.

c. Regions, Stations, and Area. Training which is directed toward incumbents meeting the Office of Personnel Management standards for GS-018, Safety and Health Specialists/Managers. Training will provide a working knowledge of:

(1) Advanced safety management.

(2) Accident investigations, including aircraft accidents.

(3) Safety and health program evaluation techniques.

(4) Hearing conservation.

(5) Respiratory protection.

(6) Hazardous materials storage and disposal.

(7) Environmental testing and monitoring techniques.

(8) Applicable laws, rules, and regulations regarding safety and health.

(9) Behavioral sciences.

(10) Industrial hygiene.

2. Stock Handlers. Train employees who frequently work with livestock in basic safety procedures. Cover all phases of working with livestock. See FSH 6709.11.

14 - JOB HAZARD ANALYSIS. A job hazard analysis must accompany all project and research study workplans.

14.02 - Objective. A job hazard analysis identifies hazards associated with work projects and worksites, and identifies protective equipment or modified work procedures needed.

Line officers and staff shall use the job hazard analysis to monitor the safety performance of work supervisors or crews. It serves as the standard against which actual safety performance is measured.

14.04 - Responsibility. The person responsible for preparing project work plans and/or research study work plans shall complete Form FS-6700-7, Job Hazard Analysis. A line officer shall approve the job hazard analysis.

Work supervisors shall discuss the job hazards with crew members prior to beginning new projects or changing work sites. Identify any hazards not noted on the job hazard analysis. Discuss ways to reduce these hazards, including the use of protective equipment. Document these meetings. File documentation with other project work documents when the project is completed. Exhibit 1 is a suggested format for a work supervisor's tailgate safety meeting.

Exhibit 1

WORK SUPERVISORS TAILGATE MEETINGS

Instructions

To be completed by first line supervisor or work leader at the worksite prior to beginning job and when the hazards change due to a change in worksite location or other condition. Add any hazards that do not appear on the 6700-7. Reference Health and Safety Code Handbook (FSH 6709.11) to help identify recommended work procedures and protective equipment.

Study/Project/Job _____ Work Leader/Supervisor _____

Describe Work: _____

_____

_____

IDENTIFY & LIST HAZARDS; HAZARD REDUCING WORK PROCEDURES DISCUSSED WITH CREW:

_____

_____

_____

Protective Equipment
Required by
JHA: _____

_____

Additional protective
Equipment Needed: _____

_____

Start of Project (date) _____ Discussed with Crew (date) _____

To be filed at end of project with other project documents.

Signature of Work Supervisor: _____

Date: _____

14.1 - Process. Hazard analysis for accident prevention consists of three steps:

1. Describe the work to be done and the work location.

2. Identify the hazards associated with the work and location.

3. Develop protective measures to reduce or eliminate the hazards.

Use Form FS-6700-7, Job Hazard Analysis, to document this process. Prepare the job hazard analysis at the same time as the annual work plans and attach it to Form FS-1900-4, Project Work Plan, or the research study plan.

14.2 - Repetitive, New, or Unusual Jobs and Equipment.

1. Previously prepared job hazard analyses may be used for repetitive jobs, provided the analysis reflects current worksite conditions and is frequently discussed with the employees who will be doing the work.

2. New or unusual jobs or equipment require a new job hazard analysis before the work begins.

15 - PERSONAL PROTECTIVE EQUIPMENT. The use of personal protective equipment is the least desirable method of protecting employees from hazards. However, it is the simplest method of protecting employees and sometimes may be the only preventive measure available. Preferable methods are:

1. Eliminate the hazard at the source by using engineering controls. A blade guard over a saw blade is a simple engineering control.

2. Design or modify work processes to limit employee exposure to hazards. Adjusting outside work to early morning hours on hot humid days is an example of this type of administrative control.

16 - PROMOTIONAL ACTIVITIES. Promotional activities promote awareness of the safety and health program. They also recognize individuals, groups, and units having outstanding results in reducing accidents or having made significant contribution to the safety and health program. Examples are newsletters, posters, films, and awards.

16.1 - Minimum Requirements.

1. Unit managers shall maintain on file at every field office copies of the Occupational Safety and Health Act, Executive Order 12196, and 29 CFR 1960 (FSH 6709.12, ch. 40). Make these available upon request to employees or employee representatives.

2. All employees and employee representatives shall have access to FSM 6700, and FSH 6709.11, Health and Safety Code Handbook.

3. Post the USDA safety and health poster in a conspicuous location at each administrative unit. The name and title of the Forest Service Designated Safety and Health Official, as well as the name, title, location, and telephone number of the workplace safety and health contact, shall be shown on each poster.

16.2 – Awards.

1. Chief's Safety and Health Award. The Chief may present this award to any unit, individual, or group to recognize significant achievement in safety or health. Nomination shall be made through the Washington Office, Personnel Management Staff, Employee Development Group. Nominations should clearly identify the basis for the award and may be made at any time during the year.

2. Unit Awards. Unit managers and supervisors may also present awards to recognize significant achievements.

All awards must meet criteria established in FSM 6140.

14.04 - Exhibit 1

WORK SUPERVISORS TAILGATE MEETINGS

Instructions

To be completed by first line supervisor or work leader at the worksite prior to beginning job and when the hazards change due to a change in worksite location or other condition. Add any hazards that do not appear on the 6700-7. Reference Health and Safety Code Handbook (FSH 6709.11) to help identify recommended work procedures and protective equipment.

Study/Project/Job _____ Work Leader/Supervisor _____

Describe Work: _____

_____

_____

IDENTIFY & LIST HAZARDS; HAZARD REDUCING WORK PROCEDURES DISCUSSED WITH CREW:

_____

_____

Protective Equipment
Required by JHA:

_____

_____

Additional protective
Equipment Needed: _____

_____

Start of Project (date) _____ Discussed with Crew (date) _____

To be filed at end of project with other project documents.

Signature of Work Supervisor: _____

Date: _____

FOREST SERVICE HANDBOOK
WASHINGTON

FSH 6709.12 - SAFETY AND HEALTH PROGRAM HANDBOOK

Amendment No. 6709.12-96-1

Effective May 15, 1996

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Digest:

20 Contents - Adds codes for section 25 through 25.6 for issuance of an interim directive concerning the Forest Service Bloodborne Pathogens Program.

JACK WARD THOMAS
Chief

FSH 6709.12 - SAFETY AND HEALTH PROGRAM HANDBOOK
WO AMENDMENT 6709.12-96-1
EFFECTIVE 5/15/96

CHAPTER 20 - OCCUPATIONAL HEALTH PROGRAM

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CHAPTER 20 - OCCUPATIONAL HEALTH PROGRAM

This chapter describes a Forest Service occupational health program to protect employees who may be exposed to hazards with adverse health effects. Elements of this program include medical surveillance, environmental sampling, laboratory hood evaluation, hearing conservation, and respiratory protection.

21 - MEDICAL SURVEILLANCE PROGRAM. Employees who will use or come into contact with certain chemicals and substances must have a medical examination prior to beginning work, and annual medical examinations as long as such use or contact continues. This is to detect any adverse effects on the employee. Continuing records of an employee's exposure to toxic materials or harmful agents shall be maintained in the employee's medical folder.

21.1 - Chemicals Having No Safe Exposure Levels. The following chemicals, which may be carcinogens, have no safe level of exposure. Any degree of exposure, except as noted, requires medical surveillance (sec. 21).

1. 4-NITROBIPHENYL (29 CFR l910.1003). The requirement does not apply to mixtures containing less than 0.1 percent of 4-Nitrobiphenyl. Effects of the chemical: Bladder cancer.

2. Alpha-Naphthylamine (29 CFR 1910.1004). The requirement does not apply to mixtures containing less than 1.0 percent of Alpha-Naphthylamine. Effects of the chemical: Bladder cancer.

3. Bis-Chloromethyl Ether (29 CFR 1910.1008). The requirement does not apply to mixtures containing less than 0.1 percent of Bis-Chloromethyl Ether. The chemical can be formed from a combination of formaldehyde and hydrogen chloride in warm moist air. Effects of the chemical: Lung cancer.

4. Beta-Naphthylamine (29 CFR 1910.1009). The requirement does not apply to mixtures containing less than 0.1 percent of Beta-Naphthylamine. Effects of the chemical: Bladder cancer.

5. Benzidine (29 CFR 1910.1010). The requirement does not apply to mixtures containing less than 0.1 percent of Benzidine. Effects of the chemical: Bladder cancer.

6. 4-Aminodiphenyl (29 CFR 1910.1011). The requirement does not apply to mixtures containing less than 0.1 percent of 4-Aminodiphenyl. Effects of the chemical: Bladder cancer.

7. Beta-Propiolactone (29 CFR 1910.1013). The requirement does not apply to mixtures containing less than 1.0 percent of Beta-Propiolactone. Effects of the chemical: Liver and/or kidney damage; skin, stomach, liver cancers.

8. 4-Dimethylaminoazaobenzene (29 CFR 1910.1015). The requirement does not apply to mixtures containing less than 1.0 percent of 4-Dimethylaminoazobenzene. Effects of the chemical: Liver cancer.

9. N-Nitrosodimethylamine (29 CFR 1910.1016). The requirement does not apply to mixtures containing less than 1.0 percent of N-Nitrosodimethylamine. Effects of the chemical: Liver damage and cancer.

21.2 - Chemicals and Substances With Permissible Exposure Levels (PELS). Employees exposed above action levels for these chemicals and substances require medical surveillance:

1. Asbestos (29 CFR l910.1001).

a. PEL: See current OSHA standard.

b. Effects of the Chemical: Lung damage and cancer.

c. Required medical examinations: Chest x-ray; history to determine respiratory symptoms; pulmonary function test, to include forced vital capacity (FVC) and forced expiratory volume (FEV1).

d. Frequency of examinations: Preplacement examinations within 30 days of employment; annual examinations during exposure periods; termination examination within 30 calendar days before or after end of employment.

2. Lead (29 CFR 1910.1025).

a. PEL: 50 micrograms/cubic meter air (8-hour time-weighted average). The action level is 30 micrograms/cubic meter air (8-hour time-weighted average). Begin medical surveillance at this level. The employer must provide a medical surveillance program for employees who are, or may be, exposed above the action level for more than 30 days per year.

b. Required medical examinations: An examination consisting of a work history and medical history of past lead exposure, and personal habits such as smoking. The physician must record past medical problems, such as gastrointestinal, blood, kidney, heart, vascular, reproductive, and neurological problems. The physician shall test and order routine urinalysis, blood lead level, hemoglobin, hematocrit, red cell indices, cell morphology, zinc protoporphyrin, blood urea nitrogen, and serum creatinine.

c. Frequency of examinations:

(1) At least annually for each employee for whom a blood sampling test conducted at any time during the preceding 12 months indicated a blood lead level at or above 40 micrograms/100 gram blood.

(2) Before an employee's first assignment to an area in which airborne concentrations of lead are at or above the action level.

(3) As soon as possible upon notification by an employee either that the employee has developed signs or symptoms commonly associated with lead intoxication, or that the employee desires medical advice concerning the effects of current or past exposure to lead on the employee's ability to procreate a healthy child. Also provide a medical examination when the employee has demonstrated difficulty in breathing during a respirator fitting test or during use.

(4) As appropriate for any employee who has been removed from exposure to lead because of risk of impairment to health.

d. Effects of the chemical: Lead can cause anemia, abdominal cramps, insomnia, and neurological problems.

The chemicals listed in exhibit 1 also have permissible exposure limits. Employees exposed above these levels must have medical examinations.

EXHIBIT 1 IS A SEPARATE DOCUMENT

21.3 - Pesticides. The toxicity of pesticides range from mild irritant causing skin rash to highly toxic compounds that may cause physiological or neurological damage. Baseline, annual, or more often, medical tests may be required for individuals exposed on a regular basis to certain pesticides; that is organophosphates. On a regular basis means three or more 8 hour shifts weekly during the field season.

Organophosphates: Organophosphates are the more toxic pesticides. Forest Service employees who mix or apply organophosphates such as Guthion (Azinphos-methyl) on a regular basis shall be provided a baseline medical examination, including a cholinesterase test. In addition, the physician shall repeat the cholinesterase test every 60 days and at the end of the season. When less toxic pesticides such a Malathion are used, cholinesterase tests are required after the baseline test only if an employee complains of symptoms or if the supervisor suspects that the employee has been overexposed to the pesticide. If the cholinesterase test results are depressed to 75 percent or less below the baseline level, remove the employee from the exposure. The employee may resume work with the pesticide when the cholinesterase test is within 80 percent of the baseline level.

22 - ENVIRONMENTAL SAMPLING. Often, the only way to determine whether the levels of chemicals or dusts exceed permissible exposure limits is to sample the air in the employee's work

environment. Sampling can help to determine how much of a substance an employee is inhaling, whether medical surveillance is required, whether protective equipment is necessary, and whether engineering controls, such as laboratory hoods, are working properly.

Because air sampling sometimes requires expensive equipment and some knowledge of sampling strategies for obtaining statistically valid samples, the program manager should consult with the Washington Office, Personnel Management Staff, Safety and Health Group. A trained employee, private contractor, or a representative of another Government agency, such as OSHA or the National Institute for Occupational Safety and Health (NIOSH), may perform the actual sampling. The program manager must keep records of the results and plan corrective actions based on these results. The results of air sampling must be below the Occupational Safety and Health Administration permissible exposure limits for an 8-hour time-weighted average, or below the 15-minute ceiling limit, if applicable. The degree of exposure will determine if medical surveillance and/or respiratory protection is required (sec. 21).

22.1 - When To Perform Environmental Sampling. Some work areas require environmental sampling because overexposure to the chemicals and dusts present may seriously affect employees' health. Sampling may also save money by eliminating the need for expensive control measures when employee exposure levels are determined to be within acceptable ranges. Environmental sampling should be conducted whenever air contaminants are suspected.

22.2 - Sampling Equipment. This section lists equipment that may be needed for environmental sampling. Some items are available for use from the Washington Office, Personnel Management Staff, Safety and Health Group. Items 6-8 are expendable and must be purchased as needed.

1. Air Sampling Pumps. High-flow air pumps with appropriate filters sample air in welding shops, asbestos contaminated areas, and other hazardous dust areas. A certified laboratory must analyze the filters. These pumps require specialized knowledge for operation. It is best to borrow these pumps along with their operating instructions from the Washington Office. A private firm or another government agency can also provide the pumps and proper instruction for their operations.

When used with charcoal tubes, low-flow pumps can collect chemical vapors. A certified laboratory must analyze the charcoal tubes to determine the level of air contamination.

2. Hand-Operated Detector Pumps. Hand-operated detector pumps, used with detector tubes for specific chemicals, are a quick means for determining toxic vapor levels in laboratories. The detector tubes can be utilized to determine vapor levels of chemicals in case of spills or leaks or to calculate an employee's daily exposure level to chemical vapors by taking several samples throughout the work day.

3. Anemometers. Anemometers measure air flow and can determine whether laboratory hoods are functioning properly.

4. Sound level meters. Utilized to spot check for possible hazardous noise levels.

5. Personal noise dosimeters. Utilized to measure average level of noise exposure to an individual throughout work day.

6. Detector tubes for various chemicals.

7. Smoke generator tubes. Used with anemometers, smoke generator tubes allow the person checking a hood to visualize air flow. Each laboratory facility should maintain a stock.

8. Passive dosimeters (gas badges) for various chemicals. Passive dosimeters are available for certain chemicals. They are expendable and do not need expensive pumps to operate. They can be used to determine daily exposure levels to a variety of chemicals, including formaldehyde, carbon monoxide, and organic solvents.

These badges use air diffusion to capture chemical vapors in the work environment. Some badges indicate the results of exposure immediately; others require laboratory analysis by the manufacturer.

22.3 - Evaluating Laboratory Hoods. Each laboratory shall have a laboratory hood evaluation program. Evaluate and record flow rate of the hoods every 12 months. Hoods used for radioactive materials must be evaluated quarterly. For all hoods ensure that:

1. Air flow is 80 to 100 feet per minute at the hood face with the hood sash no lower than 18 inches from the bottom of the hood. Measure air flow with an anemometer.

2. Air flow is not turbulent.

23 - HEARING CONSERVATION PROGRAM. The Forest Service hearing conservation program is designed to protect employees from noise exposure that cannot be diminished or eliminated through engineering or administrative controls. The program consists of noise hazard evaluation, training, hearing tests, hearing protection, and recordkeeping. Employees exposed to hazardous levels of workplace noise, including those in noise hazardous occupations (sec. 23.12), must be included in a hearing conservation program. They shall receive baseline audiograms, annual audiograms, and be trained to wear hearing protection.

23.05 – Definitions.

1. Administrative Control. A method for protecting employees by limiting work exposure time or changing work practices.

2. Baseline Audiogram. The results of a hearing test for comparison with future tests.

3. Engineering Control. A method for protecting employees by modifying equipment or isolating noise.

4. Hertz. Unit of measurement of noise frequency equal to cycles per second.

5. Permissible Exposure Limits. The noise levels and exposure time combinations above which employers must provide hearing protection, enforce its use, and administer hearing tests.

6. Standard Threshold Shift. Change in hearing threshold in either ear, relative to the baseline audiogram, of 10 decibels or more at 2,000, 3,000, and 4,000 hertz.

7. Temporary Threshold Shift. Temporary change in hearing threshold relative to the baseline audiogram.

8. Time-Weighted Average. Noise levels averaged over an 8-hour day.

23.1 - Evaluating Noise Hazards.

23.11 - Monitoring the Workplace. Noise levels suspected to equal or exceed an 8-hour noise exposure of 85 dBA require measurement. If it is difficult to carry on a conversation without shouting, the noise levels are probably close to 85 dBA. Use Form FS-6700-5, Equipment-Noise Survey Form, to record noise levels.

Measure noise levels with a sound-level meter or a dosimeter. If employees move around a great deal or are exposed to varying noise levels, use a dosimeter. Any sound-level meter or noise dosimeter that meets the American National Standards Institute (ANSI) specifications may be used. Calibrate noise-level meters and noise dosimeters before use each day. The following chart shows exposures that require employees to be included in a hearing conservation program:

Noise Level (dBA)	Exposure Time Above Which Hearing Conservation Program Is Required (PEL's) (Hours)
85	8 (Action level)
90	8
95	4
100	2
105	1
110	0.5
115	0.25

See exhibit 1 for noise levels of some Forest Service equipment.

Exhibit 1

NOISE LEVELS OF SOME FOREST SERVICE EQUIPMENT

Equipment	Sound Level (dBA) Idle/Working RPM	Average Exposure in Hours
Crawler Tractors	82/96	6-8
Road Grader (John Deere)	80/106	6-8
Road Grader (Champion)	80/106	6-8
Road Grader (Gallon)	82/84	6-8
Loader 1-1/2 Cu. Yd. Bucket (Case)	80/86	6-8
Backhoe (JCB)	86/92	6-8
Forklift (Clark)	82/84	Time exposure varies from 5 mins. To 8 hrs., intermittently.
Arc Welder	106/108	"
Air Grinder (Electric)	114/120	"
Power Generator (Onan)	84/86	"
Water Boost Pump	92/98	"
Chain Saws (Homelite)	93/112	"
Chain Saws (Stihl)	90/110	"

23.12 - Noise Hazardous Occupations. The following personnel shall be included in a hearing conservation program:

1. Heavy equipment operators.
2. Tractor operators.
3. Welding instructors.
4. Intermittent heavy equipment operators.
5. Pilots.
6. Aerial observers.
7. Aerial photographers.
8. Law enforcement officers who must qualify with firearms.

23.13 - Human Resource Programs. Include Human Resource Program enrollees and Job Corps enrollees who are exposed to noise levels loud enough to damage their hearing in a hearing conservation program.

23.2 - Hearing Tests (Audiometry). Give hearing tests to employees exposed to noise levels higher than the permissible exposure limit (sec. 23.11). Unless the person administering the hearing test provides a form, use Form FS-6700-6, Hearing Conservation Data Form, to record hearing test results. Only an audiologist, a physician, or a qualified technician shall perform the tests. To qualify, a technician must have certification from the Council of Accreditation in Occupational Hearing Conservation or be able to demonstrate competence in all phases of hearing tests. However, a technician using a microprocessor audiometer does not need certification. The technician must be responsible to an audiologist or a physician, who reviews problem audiograms to determine whether there is a need for further evaluation.

Employees must take baseline hearing tests within 6 months of beginning jobs that expose them to hazardous noise levels. Accept as baseline any previously administered tests. Employees who have been working in noisy environments, but who have not had baseline hearing tests must receive them. Give baseline tests after the employee has had 14 hours without exposure to workplace noise. If employees must work in a noisy environment before taking the baseline hearing test, ensure that they wear hearing protection. The supervisor shall direct employees to avoid all high noise levels during this 14-hour period.

As long as employees are exposed to noisy jobs they must be tested annually.

If the comparison of a baseline test to an annual test demonstrates a significant threshold shift, notify the employee within 2l days of the discovery. Fit the employee with hearing protectors, provide instruction on their use, and require the employee to wear them. If the employee retakes

the hearing test within 30 days, consider the last test as the annual examination. If the employee's hearing ability returns to the baseline level on the later test, no further action is required.

A threshold shift of 10 decibels or more at 2,000, 3,000, or 4,000 hertz is enough of a loss in hearing ability to warrant the actions mentioned here. See 29 CFR 1910.95 for technical details about hearing tests.

The baseline and annual hearing tests do not establish fitness-for-duty nor are they a substitute for preemployment physical examinations. The intent of these tests is to protect an employee's hearing while employed with the Forest Service.

23.3 - Hearing Protectors.

1. Availability of Hearing Protection. Provide hearing protection at no cost to all employees who work in environments that exceed the permissible noise exposure limits set by the Occupational Safety and Health Administration. Train supervisors and employees who use hearing protectors to fit and use them properly. Ill-fitting or unused equipment does not properly block noise.

At 85 dBA for an 8-hour time-weighted average (TWA), employees must have hearing protection available. This is the action level for hearing conservation programs. A work area that is so noisy that conversation is difficult probably has a noise level near 85 dBA. Employees exposed to more than 85 dBA (action level), but less than 90 dBA, are not required to wear hearing protection except in the following circumstances:

a. Employees who have not taken a baseline audiogram must wear hearing protection when exposed to this noise level until they take the baseline tests.

b. Employees who have experienced a hearing loss, as demonstrated by annual audiograms, must always wear hearing protection when exposed to this level.

Hearing protectors must reduce the noise level to at least 90 dBA for an 8-hour TWA. Protectors must reduce the noise to 85 dBA, 8-hour TWA for employees who have a hearing loss.

2. Types of Hearing Protection. Depending upon the environmental conditions and employee preference, employees may use either earplugs or earmuffs.

Earplugs fit into the ear canal to block noise. Preformed earplugs must be fitted by a trained person to each of the employee's ear canals. A different size or type of ear plugs may be necessary for each ear. Handformed earplugs conform to the ear canal each time the employee inserts them. Earplugs often do not provide the anticipated noise reduction because employees fit or insert them improperly. A good training and emphasis program ensures proper use of the earplugs.

Earmuffs fit over an employee's ears and are sealed to the sides of the head with cushions. Their proper use does not depend as much on fit or proper wear. However, glasses will break the seal

and decrease noise reduction. Earmuffs usually are hotter and heavier than earplugs and therefore are not as comfortable.

Ear-canal caps seal the external opening of the ear canal. They do not fit into the ear and do not reduce noise as well as earplugs.

23.4 - Recordkeeping. Keep hearing tests in the medical packet that accompanies the employee's official personnel folder. The records must include:

1. Employee's name and job classification.

2. Date of audiogram.

3. Date of audiometer (hearing test equipment) calibration.

4. Noise levels of employee's work area or operation.

24 - RESPIRATORY PROTECTION. The Forest Service respiratory protection program is designed to protect employees against workplace contaminants where engineering or administrative controls are not practical.

24.03 - Policy. Require use of respirators under the following conditions:

1. During routine operations that release contaminants into the air in excess of the permissible exposure limits (PEL's) listed in 29 CFR 1910.1000 and engineering or administrative controls are not technically feasible. An example is application of pesticides outdoors or in a greenhouse or other enclosed structure. Section 22 describes environmental sampling to determine exposure levels.

2. During nonroutine operations that release chemical vapors and dust into the air above the PEL's in 29 CFR 1910.1000, but that are not performed frequently enough to make engineering controls feasible.

3. As an interim measure while waiting for the implementation of engineering or administrative controls.

4. When employees work in areas that have oxygen levels below 19.5 percent, as stated in 29 CFR 1910.94. In this case, air supplied respirators are required.

5. During emergencies that release chemical vapors or dusts above the PEL's or decrease oxygen levels below the standard oxygen level of 19.5 percent.

24.04 - Responsibility. The program manager shall:

1. Evaluate respiratory hazards to employees in the workplace and enforce standards in sec. 24.03.

2. Recommend engineering and administrative controls to eliminate hazards.

3. Select specific types of respirators appropriate to the need.

4. Coordinate acquisition of respirators and other protective equipment.

5. Establish procedures for cleaning and maintaining equipment.

6. Train those who use, test, and clean respirators. Maintain records of this training.

24.05 – Definitions.

1. Administrative Control. A method for protecting workers by limiting exposure time or changing work practices.

2. Engineering Control. A method for protecting employees through equipment changes or equipment isolation.

3. Negative Pressure Respirator. A respirator that allows the wearer to draw air into the facepiece when inhaling.

4. Permissible Exposure Limits (PEL). Airborne concentrations of substances above which employees shall not be exposed. The PEL's are listed in 29 CFR 1910.1000. Exposure levels usually pertain to an 8-hour workday, but may be for 15 minutes at a ceiling level.

5. Powered Air-Purifying Respirator. A particulate-filtering respirator with a small blower to pass air through the cartridges. Although it does not provide clean air from an outside source, it does provide positive pressure to the facepiece.

6. Positive Pressure Respirator. A respirator that prevents outside air from leaking into the facepiece. Air supplied to the respirator from a compressor or cylinder prevents inward leakage of air from outside the facepiece.

7. Self-Contained Breathing Apparatus (SCBA). A respirator with a cylinder of air worn on the user's back connected to the respirator by a hose. SCUBA gear is an example of a specialized SCBA unit.

24.1 - Types of Respirators. There are two basic types of respirators: (1) supplies air to the user from an uncontaminated source, (2) purifies air passing through filters.

24.11 - Air-Supplying Respirators. Air-supplying respirators provide respirable air from a source other than the contaminated atmosphere. These respirators provide protection against air contaminants in an oxygen-deficient atmosphere (less than 19.5 percent oxygen). Air-supplying respirators are either positive- or negative-pressure systems. Negative-pressure respirators provide significantly less protection because they may allow contaminated air to leak into the facepiece. Three types of air-supplying respirators are:

1. Self-Contained Breathing Apparatus (SCBA). Workers who use a SCBA carry their air supply in a canister, which supplies only as much air as its size allows.

2. Airline Respirator. An airline respirator obtains the air supply through a hose connected to a compressor located outside the contaminated area.

3. Combination of Positive-Pressure Self-Contained and Airline Positive-Pressure Respirator. This respirator offers the most protection because it provides a backup air source in case the airline source fails.

24.12 - Air-Purifying Respirators. Air-purifying respirators remove contaminants from the air but do not provide oxygen. These respirators are not effective in oxygen-deficient atmosphere. All but one of the four types of air-purifying respirators are negative-pressure respirators, and the lack of an air supply can draw contaminated air into the facepiece. The four types of air-purifying respirators are:

1. Gas and vapor.

2. Particulate.

3. Combination of gas, vapor, and particulate.

4. Powered air-purifying respirator that removes particles and has a small blower attached. Although it does not provide air from an uncontaminated source, it does provide positive pressure.

24.2 - Evaluating Hazards. Before selecting respirators, the program manager shall identify all occupational health hazards, evaluating chemicals and other toxic materials used in the workplace. An air sampling program and/or evaluation of employees' work practices can determine the extent of hazards present and can be the basis for selecting a respirator.

24.3 - Selecting Respirators.

1. Select respirators according to the type and level of contaminants.

a. Select air-supplied respirators if the oxygen level drops below 19.5 percent.
b. The physical state of the contaminant determines the type of air-purifying respirator to select. This could be:

(1) Gas or vapor.

(2) Particulate.

(3) Combination of gas, vapor, and/or particulate.

c. The toxicity of the contaminant is also a factor in selection of the respirator. Some vapors and dusts are present in such high levels, or are so dangerous, the only effective respirators are air-supplied respirators.

d. Another factor is whether the contaminant has warning properties such as odor or nasal irritation that allow wearers to detect breakthrough of the contaminant in air-purifying respirators. A warning signal is particularly important to employees who work with gases and vapors because vapors can enter the employee's lungs unnoticed.

e. Stress factors in the working environment (for example, heat, humidity, or abnormal air pressures) can affect the choice of respirator.

f. Worker exposure time to a contaminant determines the need for respirators, and how much protection the respirators must provide.

g. Eye irritation and potential skin absorption may require full-face air-supplied or air-purifying respirators.

2. The program manager shall select respirators in accordance with 29 CFR 1910.134, The American National Standards Institute Z88.2 "Standard for Respiratory Protection," and "A Guide to Industrial Respiratory Protection," by the National Institute of Occupation Safety and Health (NIOSH).

3. Select only those respirators that have the approval of NIOSH or the Mine Safety and Health Administration.

4. When purchasing self-contained breathing apparatus, consider units that can provide positive-pressure to the face mask.

24.31 - Employee Medical Considerations. Potential respirator users shall not use equipment until the program manager or designated employee determines that the individual is able to wear the respirator. If an employee has a history of pulmonary or cardiovascular impairment, a physician must make the determination. Most healthy workers can wear respirators, but a pulmonary function test is recommended.

A physician must determine whether an employee with perforated eardrums may wear a respirator. If the physician permits its use in such a case, the respirator must have a full head covering. A normal eardrum blocks the entrance of contaminants, but perforated eardrums can allow vapors and dusts to enter an employee's system.

A physician must determine, on a case-by-case basis, workers who have special health problems and are unable to wear respirators. Those individuals are not to be assigned tasks that require respirator use.

Medical tests can determine overexposure to some chemicals. For example, workers exposed to organophosphate pesticides must have periodic cholinesterase tests to determine effectiveness of the respirators, other personal protective equipment, and proper work practices. Forest Service requires these tests for the use of certain chemicals, even if employees use respirators for protection. See FSM 6720 and section 21, Medical Surveillance Program, for more information about medical tests.

24.4 – Training.

1. The program manager or a designated employee must familiarize all employees who wear respirators with every aspect of their use.

2. Training must include:

a. Demonstration and practice on wearing, adjusting, and fitting the respirator. The potential user must wear the respirator for a few minutes to determine whether the respirator may cause a feeling of claustrophobia or panic.

b. Instruction on potential hazards and appraisal of the consequences of not using the respirator or using it improperly.

c. Explanation for using respirators instead of engineering and administrative controls.

d. Explanation for using a specific type of respirator.

24.5 - Face Fit and Leak Testing. Air leaking into an illfitting respirator can carry dusts and vapors into the respiratory system of unsuspecting employees. Leakage usually occurs around the facepiece. The types of fit testing are quantitative, qualitative, and pressure tests.

Dentures or glasses may prevent proper fit and tight seal. Bearded workers cannot be properly protected and must not work where operations require respirators except in nuisance dust situations.

1. Quantitative Tests. Quantitative fit tests indicate respirator fit numerically by measuring the penetration of a nontoxic contaminant into the respirator. Purchase test equipment from appropriate manufacturers.

a. Quantitative fit tests are acceptable for any respirator except disposable respirators. Presently, the only substance for which the OSHA requires quantitative fit testing is lead.

b. Trained individuals must perform quantitative test.

c. Retain records of tests in personnel or employee medical files (sec. 25.6).

2. Qualitative Tests. Qualitative fit tests use the respirator wearer's subjective response to exposure. A noxious chemical or smoke is used to determine the seal.

A trained person releases the chemical or smoke near the respirator. If the wearer detects the odor, a leak exists.

Use this test on all respirators except those fitted by a quantitative method or those designed for single use.

3. Positive and Negative Pressure Tests.

a. During positive and negative pressure tests, the wearer closes off the exhalation or inhalation valves and either exhales or inhales air to determine if the respirator is leaking. The wearer must take care not to disrupt the facepiece-to-face seal.

b. Use positive and negative pressure tests before qualitative and quantitative tests to provide a fast approximation of fit. The wearer should also perform the pressure tests before each use.

24.6 - Maintenance. When practical, workers should have personally assigned respiratory protection equipment. Each location using respirators must have procedures for cleaning and maintaining them, including disinfecting, inspection for defects, repair, and storage. The program manager or designated employee must train those who clean and maintain the equipment.

Change cartridges and canisters for air-purifying respirators periodically, according to manufacturer's directions.

Check tightness of connections and the condition of the facepiece, headbands, valves, connecting tubes, rubber parts, and canisters. Inspect all routinely used respirators before and after each use. Inspect all other respirators, such as those kept for emergency use, once each month and after each use. Keep a record of inspections and maintenance. Follow the manufacturer's directions or information provided by the National Institute for Occupational Safety and Health or American National Standards Institute guidelines to maintain self-contained breath apparatus.

2. Cleaning and Disinfecting. Thoroughly clean and disinfect respirators issued for the exclusive use of one worker after each day's use or more often if necessary. Thoroughly clean and disinfect respirators used by more than one worker after each person's use.

a. Choose a cleaner and disinfectant that cleans adequately without irritating the skin. Several respirator manufacturers sell special cleaners for use with the equipment.

b. Remove cartridges and canisters before washing the respirator.

c. Rinse respirators in water after cleaning to prevent skin irritation.

3. Repairing Respirators. Only trained individuals shall repair the equipment using replacement parts approved by the manufacturer. Substitution of parts from a different manufacturer invalidates NIOSH approval and may result in malfunction. Use only replacement components, adjustments, or repairs the manufacturer recommends.

24.7 - Storage. Store respirators in a clean, convenient, and sanitary location and protect them against adverse physical and chemical conditions, including dust, heat and sunlight, extreme cold, and excess moisture.

Protect respirators from mechanical damage and store them with the facepiece and valves in a normal position to prevent malformation.

Store respirators away from the contaminated environment. For example, do not store respirators for pesticide protection in the pesticide-mixing area. Store all self-contained breathing apparatus in their original containers.

24.8 - Recordkeeping. Document the program. Required records include:

1. Records of respirator protection program evaluations.

2. Procurement information to order respirator components.

3. Training and fitting records to determine needs for refresher courses and the refitting of respirators.

24.9 – Bibliography.

1. Occupational Safety and Health Act, 29 CFR 1910.134.31.

2. National Institute of Occupational Safety and Health, A Guide to Industrial Respiratory Protection, NIOSH#76-189, GPO #017-033-00153-7. Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

3. American National Standards Institute, Practices for Respiratory Protection, ANSI Z88.2-1980. American National Standards Institute, Inc., 1430 Broadway, New York, NY 10018.

Sec. 21.2-Exhibit 1

CHEMICALS WITH MEDICAL TESTS REQUIRED

	Name of Chemical	Permissible Exposure Level	Systemic Effects	Medical Surveillance
1.	ARSINE (CAS No. 7784-42-1)	.05 ppm	Overexposure can cause breakup of red blood cells, anemia, jaundice, kidney, heart, and liver damage.	Provide urinary arsenic levels at least annually. A level above 0.1 mg/liter urine indicates overexposure. If overexposure is suspected, or urine arsenic levels indicate overexposure, perform medical tests to evaluate damage to the blood.
2.	ACETONITRILE (CAS No. 75-05-8)	40 ppm	Acetonitrile changes to cyanide, then to thiocyanate. It can produce shortness of breath, diarrhea, chest and abdominal pain, gray color, and bleeding from mucous membranes. Liver and kidney damage also may occur.	Perform baseline and annual kidney and liver function tests. Test urine for thiocyanate in cases of suspected overexposure.
3.	ANILINE (CAS No. 62-53-3)	5 ppm	Aniline affects the ability of the blood to carry oxygen. The symptoms are a bluish color of the skin, irritability, sleepiness, shortness of breath, and eventual unconsciousness.	Provide baseline and annual medical tests to determine effects on blood system.
4.	ANISIDINE (CAS No. 71-43-2)	5 mg/m^3	Anisidine affects the ability of the blood to carry oxygen. The symptoms are a bluish color of the skin, irritability, sleepiness,	Provide baseline and annual medical tests to determine effects on blood system.

	Name of Chemical	Permissible Exposure Level	Systemic Effects	Medical Surveillance
			shortness of breath, vomiting, and eventual unconsciousness.	
5.	BENZENE (CAS No. 71-43-2)	10 ppm, 25 ppm ceiling level	Benzene may affect the bone marrow, causing anemia and decreased white-cell count. Note: It is a suspected carcinogen, causing leukemia.	Provide baseline and semiannual medical tests to determine the effects on the blood system. Urinary tests for phenol and urinary sulfate ratios can determine overexposure to benzene.
6.	BERYLLIUM (CAS No. 7440-41-7)	.002 mg/m^3, 005 mg/m^3 ceiling level	Exposure can cause a nonproductive cough, progressive difficulty in breathing, anorexia, and weight loss. Acute symptoms appear several hours to several weeks after the initial exposure. Chronic symptoms appear in a much more delayed time frame. Note: It is a suspected carcinogen.	Provide baseline and annual pulmonary function test and weight measurement. Also administer a medical history questionnaire with attention to presence and degree of respiratory symptoms. A urinary beryllium test can determine suspected overexposure.
7.	p-tert-BUTYLTOLUENE (CAS No. 98-51-1)	10 ppm	This compound can cause bone marrow depression resulting in decreased blood cells.	Provide baseline and annual medical tests to determine the effects on the blood system.
8.	CADMIUM OXIDE (FUME) (CAS No. 1306-19-0)	.1 mg/m^3,. mg/m^3 ceiling level	Lung damage can result from overexposure, including bronchitis, pneumonitis, and pulmonary edema. Overexposure also can cause liver, kidney, and bone marrow damage.	Provide baseline and annual blood, kidney and liver function tests. Also provide a baseline and annual pulmonary function test.

	Name of Chemical	Permissible Exposure Level	Systemic Effects	Medical Surveillance
9.	CARBON DISULFIDE (CAS 75-15-0)	20 ppm, 30 ppm ceiling level	Exposure can cause neurological damage with mental disturbances. Symptoms are numbness and weakness in the arms and legs, unsteady gait, and difficulty in swallowing. Heart, liver, and kidney damage may also occur, as well as eye damage.	Provide baseline and annual liver and kidney function tests. Also provide a baseline and annual eye examination, with emphasis on retinal and corneal damage. In suspected acute exposure, perform urine and/or blood tests for carbon disulfide.
10.	CARBON TETRACHLORIDE (CAS No. 56-23-4)	10 ppm, 25 ppm ceiling level	Carbon tetrachloride can cause liver and kidney damage. Note: It is a suspected liver carcinogen.	Provide baseline and annual liver and kidney function tests.
11.	CHLOROFORM (CAS No. 67-66-3)	50 ppm	Chloroform can cause liver and kidney damage. Note: It is a suspected liver carcinogen.	Provide baseline and annual liver and kidney function tests.
12.	CRESOL (CAS No. 1319-77-3)	5 ppm	Inhalation can cause pulmonary edema. Liver and kidney damage may follow nonfatal poisoning.	Provide baseline and annual liver and kidney function tests.
13.	p-DICHLOROBENZENE (CAS No. 106-46-7)	75 ppm	The chemical can cause liver damage.	Provide baseline and annual liver function tests. A urine test for 2,5-dichlorophenol can serve as a test for acute overexposure.
14.	DIMETHYL FORMAMIDE (CAS No. 68-12-2)	10 ppm	The chemical can cause liver damage.	Provide a baseline and annual liver function tests.
15.	DIMETHYSULFATE (CAS No. 77-78-1)	1 ppm	Dimethysulfate can cause liver and kidney damage.	Provide a baseline and annual liver and kidney function tests.

	Name of Chemical	Permissible Exposure Level	Systemic Effects	Medical Surveillance
16.	DINITROPHENOL (CAS No: None provided)	Not established	Stimulation of basal metabolism results in anorexia, lack of appetite, nausea, vomiting, sweating, thirst, difficulty in breathing, tachycardia, and fever. Kidney and/or liver damage may result. Cataracts may form.	Provide a baseline and annual eye examination, and liver and kidney function tests.
17.	DIOXANE (CAS No. 123-91-1)	100 ppm	Overexposure causes severe gastric symptoms and liver, kidney, and lung damage.	Provide baseline and annual liver and kidney function tests. Also provide a baseline and annual pulmonary function test (FEV_1 and FVC).
18.	ETHYLENE DIBROMIDE (CAS No. 106-93-4)	200 ppm	Ethylene dibromide can cause liver and kidney damage.	Provide baseline and annual liver and kidney function tests.
19.	ETHYL BROMIDE (CAS No. 74-96-4)	20 ppm, 30 ppm ceiling level	Ethyl bromide can cause liver, kidney, and lung damage. Note: It is considered a carcinogen, causing stomach and liver cancer.	Provide baseline and annual liver and kidney function tests. Also provide a baseline and annual pulmonary function test.
20.	MERCURY AND COMPOUNDS (CAS No. 7439-96-6)	.1 mg/m^3 for	Inorganic mercury compounds cause gum inflammation, tremor, and emotional instability. Insomnia, digestive disturbances, renal damage, hearing impairment, and eye damage also may result. Organic mercury compounds, such as diethyl mercury and methyl mercury iodide, can	Analyze urine for mercury annually. If elevated, remove employee from exposure and test monthly until mercury level is down.

	Name of Chemical	Permissible Exposure Level	Systemic Effects	Medical Surveillance
			cause tremor, muscular incoordination, difficulty in moving joints, impaired hearing, emotional instability, and eye damage.	
21.	METHYL CELLOSOLVE (CAS No. 109-86-4) (2-METHOXYETHANOL)	25 ppm	Methyl cellosolve can cause blood changes, including anemia. It also can cause kidney damage.	Provide baseline and annual medical tests to determine effects on the blood system and kidneys.
22.	METHYL CHLOROFORM (CAS No. 71-55-6)	350 ppm	The chemical can cause liver and lung damage.	Provide baseline and annual liver function tests.
23.	METHYLENE CHLORIDE (CAS No. 75-09-2)	500 ppm, 1000 ppm ceiling level	Methylene chloride at levels near 500 ppm can create carbon monoxide in exposed workers. Liver and lung damage may result from exposure to high concentrations.	Provide carboxyhemoglobin tests at regular intervals to employees exposed near the PEL.
24.	NAPHTHALENE (CAS No. 91-20-3)	10 ppm	Napthalene may destroy blood cells and cause liver and kidney damage.	Provide baseline and annual blood system and liver and kidney function tests.
25.	NITROBENZENE (CAS No. 0098-95-3)	1 ppm	Nitrobenzene reduces the ability of blood to carry oxygen. Symptoms are a bluish color of the skin, dizziness, nausea, vomiting, shortness of breath, drowsiness, and eventual unconsciousness.	Provide baseline and annual medical tests to determine effects on blood system. A urine test for p-nitrophenol and p-aminophenol can demonstrate overexposure.
26.	OZONE (CAS No. 10028-15-6)	.1 ppm	Ozone can cause lung damage.	Provide a baseline and annual pulmonary function test (FEV_1 & FVC).
27.	PERCHLOROETHYLENE	100 ppm, 200 ppm	Repeated exposures can cause	Provide baseline and annual liver

	Name of Chemical	Permissible Exposure Level	Systemic Effects	Medical Surveillance
	(CAS No. 127-18-4) (TETRACHLOROETHYLENE)	ceiling level	liver and kidney damage.	and kidney function tests.
28.	PHENOL (CAS No. 108-95-2)	5 ppm	Acute poisoning can cause nervous system damage, with tinnitus (ringing in the ears), vertigo, tremor, excitement, and convulsions. Pneumonia also may develop. Chronic poisoning causes cough, loss of appetite, insomnia, nervousness, numbness or tingling sensations, and general state of ill health, malnutrition, and weight loss. Kidney and liver damage also may occur.	Provide baseline and annual liver and kidney function tests. Perform urinary phenol tests when acute overexposure is suspected.
29.	PHOSPHOROUS (YELLOW) (CAS No. 7723-14-0)	.1 mg/m^3	Can cause liver damage and anemia. It also can cause severe dental problems, including pain and swelling of the jaw and deterioration of the teeth.	Provide baseline and annual liver function tests. Also provide dental examinations, paying particular attention to the jaw.
30.	PROPYLENE DICHLORIDE (CAS No. 78-87-5)	75 ppm	Can cause liver and kidney damage.	Provide baseline and annual kidney function tests.
31.	SILICA (Quartz) (CAS No. 1480-60-7)	[room for equations]	Long-term exposure from sandblasting can cause a lung disease known as silicosis. Exposure also can make employees more susceptible to tuberculosis.	Provide baseline and annual pulmonary function tests, including FVC and FEV_1..Also provide tests for tuberculosis every 2 years, or more often if employee has worked with silica for 10 years or more.
32.	SODIUM FLUROACETATE (CAS No. 62-74-8)	.05 mg/m^3	Can cause heart, liver, and kidney damage.	Provide baseline and annual liver and kidney function tests. Also

	Name of Chemical	Permissible Exposure Level	Systemic Effects	Medical Surveillance
				provide electrocardiograms to determine heart function.
33.	STODDARD SOLVENT S (CAS No. 8052-41-3)	500 ppm	Can damage the liver, kidneys, and bone marrow.	Provide baseline and annual blood system and liver and kidney function tests.
34.	TETRACHLOROETHANE (CAS No. 79-34-5)	5 ppm	Exposure can cause liver, kidney, and heart damage.	Perform baseline and annual liver and kidney function tests.
35.	THALLIUM (CAS No. 7440-28-0)	.1 mg/m^3	Thallium is a cumulative poison, and small doses may be stored in the body until a harmful dose accumulates. Acute exposure creates gastroenteritis, abdominal pain, and collapse. Chronic exposure causes nausea, vomiting, leg and abdominal cramping, tingling or numbness of lower limbs, irritability, loss of appetite, inflammation of the mouth, dry scaly skin, metallic taste in the mouth, garlic-like breath, visual disturbances, convulsions, and kidney damage.	Provide baseline and annual kidney function test and urinary test for thallium.
36.	O-TOLUIDINE (CAS No. 95-53-4)	5 ppm	O-Toluidine decreases the ability of the blood to carry oxygen. Symptoms are drowsiness, headache, nausea, vomiting, and eventual unconsciousness. It also can cause kidney damage.	Provide baseline and annual medical tests to determine effect on blood system.

	Name of Chemical	Permissible Exposure Level	Systemic Effects	Medical Surveillance
37.	TRICHLOROETHYLENE (CAS No. 79-01-6)	100 ppm, 200 ppm ceiling level	Chronic exposure can cause kidney and liver damage.	Provide baseline and annual kidney and liver function tests.
38.	XYLENE (CAS No. 1330-20-7)	100 ppm	Chronic exposure can cause liver, kidney, lung, and bone marrow damage.	Provide baseline and annual liver and kidney function tests.

FOREST SERVICE HANDBOOK
NATIONAL HEADQUARTERS (WO)
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FSH 6709.12 – SAFETY AND HEALTH PROGRAM HANDBOOK

CHAPTER 30 – ACCIDENT INVESTIGATION AND REPORTING

Interim Directive No.: 6709.12-2005-1

Effective Date: August 11, 2005

Duration: This interim directive expires on February 11, 2007.

Approved: IRVING THOMAS
Associate Deputy Chief

Date Approved: 07/29/2005

Posting Instructions: Interim directives are numbered consecutively by Handbook number and calendar year. Post by document at the end of the chapter. Retain this transmittal as the first page(s) of this document. The last interim directive was 6709.11-2001-2 to chapter 10.

New Document	id_6709.12-2005-1	3 Pages
Superseded Document(s) (Interim Directive Number and Effective Date)	None	

Digest:

30.5 - Revises the definition of the term "Chargeable Motor Vehicle Accident" (para. 8) by raising the motor vehicle accident damage limit from $350 to $500. This change ensures consistency with the damage cost threshold dollar value set forth in Standard Form 91, Motor Vehicle Accident Report. This form is completed by an accident investigator for bodily injury, fatality, and/or damage exceeding $500.

32.1 - Revises direction in exhibit 02 by: (1) raising the motor vehicle accident damage limit from a total damage amount of "$350 to $1,000" to "$500 to $1,000" and (2) adding that the Institute Safety and Health Manager be initially notified of any total damage in excess of $1,000 as a result of a motor vehicle accident involving a Government-owned, -leased, or -rented motor

vehicle (includes private vehicle on official use). Previously, only the Regional, Station, and Area Safety and Health Managers were identified.

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30. 5 - Definitions

8. Chargeable Motor Vehicle Accident. Any occurrence involving the use of Government-owned or -leased motor vehicles (automobiles, trucks, and buses) that results in a total combined damage exceeding $500. This definition also applies to privately owned vehicles when used for official government business.

Exceptions are as follows:

a. Damage to motor vehicles that are properly and legally parked.

b. Damage to motor vehicles caused by natural events with no human intervention.

c. Damage to motor vehicles resulting from a collision where it is determined that the Forest Service driver was not at fault.

32 - ACCIDENT NOTIFICATION

Use Form AD-112, Report of Unserviceable, Lost, Stolen, Damaged or Destroyed Property, when reporting government property (vehicle) damage.

32.1 - Notification Criteria and Process

32.1 -Exhibit 02

MOTOR VEHICLE ACCIDENT

EVENT	INITIAL NOTIFICATION REQUIRED
Total damage of $500 to $1,000 as a result of a motor vehicle accident involving a Government-owned, -leased, or -rented motor vehicle (includes private vehicle on official use).	District Ranger, Center Director, or Research Project Leader
Total damage in excess of $1,000 as a result of a motor vehicle accident involving a Government-owned, -leased, or -rented motor vehicle (includes private vehicle on official use).	Regional, Station, Area, or Institute Safety and Health Manager

CHAPTER 30 - ACCIDENT INVESTIGATION AND REPORTING

30.5 - Definitions. All accidents are reportable; some accidents are chargeable.

1. Chargeable Accident. A chargeable accident is one that is required to be reported through the Incident Reporting System (IRS) (sec. 43). A chargeable accident is included in the unit's frequency rates.

2. Occupational Fatality. Death resulting from a job-related injury or illness.

3. Traumatic Injury. A job-related wound or other condition of the body caused by external force, including stress and strain. The injury must be identifiable as to time and place of occurrence and member or function of the body affected, and be caused by a specific event or incident or series of events or incidents within a single day or workshift.

4. Chargeable Traumatic Injury. A traumatic injury that:

a. Causes disability for work beyond the day or shift when it occurred, or

b. Appears likely to result in prolonged treatment or in permanent disability or serious disfigurement of the head, face, or neck, or

c. Has resulted, or is likely to result, in a charge for medical or other related expenses.

5. Occupational Illness or Disease. Illnesses or diseases produced by systemic infections; by continued or repeated stress; by exposure to toxins, poisons, fumes, and so forth; or by other continued and repeated exposure to conditions of the work environment. These conditions must occur over a period of time longer than 1 day or 1 work shift.

6. Chargeable Occupational Illness or Disease. An occupational disease or illness that:

a. Causes disability for work beyond the day or shift during which it was reported, or

b. Appears likely to result in prolonged treatment, permanent disability, or serious disfigurement of the head, face, or neck, or

c. Has resulted, or is likely to result, in a charge for medical or other related expenses.

7. Property Damage Accident. An accident that occurs in the course of a Forest Service activity and results in a combined total of $350 or more damage to Government or private property.

8. Chargeable Motor Vehicle Accident. Any occurrence involving the use of a Government-owned, -leased, or -rented automobile, truck or bus that results in death, injury, illness, or total combined damage of $350 or more, regardless of whose property was damaged or who was injured. This definition also applies to private vehicles when used on official duty. Exceptions are as follows:

a. Accidents to properly and legally parked, Government-owned, -leased, or -rented motor vehicles, and accidents caused by natural events with no human intervention, such as earthquakes and volcanic eruptions, are reportable as property damage accidents.

b. Vehicle accidents in which it is clear that the Forest Service is not at fault, such as when the other driver is cited for a violation and the Forest Service driver is not, are reportable as property damage accidents.

9. Forest Service Aircraft Accident and Incident. For aircraft accident and incident definitions, see FSM 5720.

31 - ACCOUNTABILITY

31.1 - Chargeable Injuries, Illnesses, and Fatalities. Charge to the employee's home unit per Department of Labor, Office of Workers' Compensation, chargeback procedures.

31.2 - Aircraft Accidents. Charge Forest Service aircraft accidents to the benefiting unit. This unit is responsible from the time the aircraft is ordered to the unit until it is released.

31.3 - Frequency Rates. Frequency rates indicate the rate of occurrence of injuries, illnesses, and accidents. They are indicators of program effectiveness. They are computed based on the Office of Workers' Compensation Programs (OWCP) billing period of 1 July - 30 June. See FSM 6711.

1. Injury and Illness Frequency Rate

$$= \frac{\text{Number of chargeable injuries and illnesses x 200,000}}{\text{Number of hours worked}}$$

2. Motor Vehicle Accident (MVA) Frequency Rate

= Number of chargeable MVA's x 1,000,000
Number of miles driven

3. Fixed-Wing Aircraft Accident Frequency Rate

= Number of fixed-wing aircraft accidents x 100,000
Number of fixed-wing hours flown

4. Rotary-Wing Aircraft Accident Frequency Rate

= Number of rotary-wing aircraft accidents x 100,000
Number of rotary-wing hours flown

32 - ACCIDENT NOTIFICATION

32.1 - Notification Criteria and Process. Required notifications, based on event severity, are set forth in exhibits 1-5.

Exhibit 1

OCCUPATIONAL INJURY/ILLNESS

EVENT	INITIAL NOTIFICATION REQUIRED
Minor injury or illness.	Subunit head, through the work supervisor.
Serious injury or illness, including broken bones, eye injuries, poisoning, burns, or chemical contamination.	Forest Supervisor or Director's Representative.
Severe injury or illness, requiring hospitalization.	Regional, Station, or Area Safety and Health Manager.
Occupational fatality (or likely death) to Forest Service employee or enrollee. OR One or more private citizens dies (or death likely) as result of Forest Service activity. OR Five or more employees, enrollees, and/or private citizens are hospitalized.	Immediate notification of the Chief's Office, through Regional, Station, or Area Safety and Health Manager. The Chief's Office shall notify the USDA Safety and Health Management Division, who shall in turn notify Department of Labor (DOL) OSHA.
Fatality of Job Corps member	Immediately notify the Department of Labor Regional Safety and Health Manager, and the Chief's Office through the Region, Station, or Area Safety and Health Manager. The Chief's Office shall notify USDA, Safety and Health Management Division.

Exhibit 2

MOTOR VEHICLE ACCIDENT

EVENT	INITIAL NOTIFICATION REQUIRED
Total damage of $350 to $1,000 as a result of a motor vehicle accident involving a Government-owned, -leased, or -rented motor vehicle (includes private vehicle on official use).	District Ranger, Center Director, or Research Project Leader.
Total damage in excess of $1,000 as a result of a motor vehicle accident involving a Government-owned, -leased, or -rented motor vehicle (includes private vehicle on official use).	Regional, Station, or Area Safety and Health Manager.

Exhibit 3

ACCIDENTAL PROPERTY DAMAGE

EVENT	INITIAL NOTIFICATION REQUIRED
Damage of $350 to $1,000 to Government property.	District Ranger, Center Director, or Research Project Leader.
Damage in excess of $1,000 to Government property.	Regional, Station, or Area Safety and Health Manager.
Property damage, excluding forest fires, of $100,000 of more.	Washington Office Personnel Management Staff Safety and Health Group through Regional Safety and Health Manager.
Aircraft accident or incident with serious potential (see FSM 5720 for definitions).	Washington Office, Personnel Management Staff, Safety and Health Manager, National Aviation Safety Officer through the Regional Air Officer.

Exhibit 4

HAZARDOUS MATERIALS ACCIDENT

EVENT	NOTIFICATION REQUIRED
Release of a reportable quantity of a hazardous substance into the environment. Fire, breakage, spillage, or suspected contamination from a shipment of radioactive material. Fire, breakage, spillage, or suspected contamination from a shipment of etiological agents.	Washington Office Personnel and Civil Rights Staff, Safety and Health Group, the Washington Office, Engineering Staff, and the National Response Center (800) 424-8802.

Exhibit 5

INCIDENTS RESULTING FROM PESTICIDE USE

EVENT	NOTIFICATION REQUIRED
1. Injury or death of person working with pesticides or on any project involving pesticides. 2. Crashes of aircraft carrying pesticides. 3. Accidental dumping or spilling of pesticides. 4. Adverse effects of pesticide use on humans, fish, birds, wildlife, farm animals, trees and crops, homes and other components of the environment.	Washington Office Personnel and Civil Rights Staff, Safety and Health Group. Also notify Coast Guard, State and local governments, or the Environmental Protection Agency as required. See FSH 2109.12 for the required followup written reports.
The Safety and Health Group will in turn notify the Director, Forest Pest Management and the Deputy Chief, State and Private Forestry (S&PF). Deputy Chief, S&PF, will keep the Chief, the Secretary of Agriculture, and the Administrator of the Environmental Protection Agency informed on significant incidents.	

32.2 - Content of Notification. When Chief's Office notification is required, include the following information:

1. Date and time of accident.

2. Name and age of deceased or seriously injured person.

3. Working title.

4. Home address for Forest Service employees only.

5. Name and address of Forest and District involved.

6. Location of the injured person.

7. Location of the accident.

8. Brief description of the injuries or property damage.

9. Brief description of how the accident occurred.

10. Name of next of kin notified, name of person making notification.

11. Name and address of the next of kin for Forest Service employees only.

12. Marital status of Forest Service employees only.

13. Spouse's name for Forest Service employees only.

14. Number and age of children for Forest Service employees only.

15. Names and titles of unit's investigating team members.

16. If hazardous materials or pesticides are involved, include nature of the involvement, classification, name, and quantity of materials involved, medium into which substance was released, precautions taken, person(s) to contact for further information, and names and telephone number of local or State emergency coordinator.

33 - ACCIDENT REPORTING

33.02 - Objective. Accident reporting provides:

1. The documentation necessary to analyze the unit's accident experience.

2. The basis for initiating corrective action.

3. A means of monitoring and evaluating managerial success in carrying out the safety and health program.

33.1 - Types of Reports. Documentation requirements vary depending on the severity of the accident and implications for potential claims. There are three basic types of accident reports:

1. Those required by the Incident Reporting System.

2. The Forest Service Formal Accident Investigation Report.

3. Report FS-5700-G, Aviation Accident Investigation Report (FSM 5720).

33.2 - Incident Reporting System. As a minimum, all chargeable accidents shall be reported through the Incident Reporting System (IRS). See section 30.5 for definitions of chargeable accidents. Detailed instructions on use of the IRS are contained in chapter 40.

1. Coverage. Accidents to all employees and enrollees, except Job Corps members, are reported through the IRS. See FSM 6732.23 for reporting injuries, illnesses and fatalities to Job Corpsmembers. Do not include in the IRS injuries to employees of other agencies working under the jurisdiction of the Forest Service. See FSM 6732.26 for reporting injuries to other agency personnel.

2. Reporting Locations. Regions, Stations, and the Area Safety and Health Managers shall determine the level within their organization for inputting data to the IRS.

3. User's Guide. Provide each unit responsible for inputting accident data with a current edition of the IRS User's Guide. Additional copies may be obtained from the Washington Office, Personnel Management Staff, Safety and Health Group.

4. Timeframes for Entering Data. Enter accident data into the IRS within 12 working days following the accident. Quarterly hours and mileage must be entered by the close of each quarter. Submit hours for all employee groups including volunteers. Do not submit hours for Job Corps enrollees.

5. IRS Reporting Required. Use the forms in exhibit 1 for submitting reports under the IRS.

6. Precautionary Form CA-1 and Form CA-2. Do not enter into the IRS form CA-1 and form CA-2 completed only to document a minor injury or exposure and not submitted to OWCP.

Exhibit 1

TYPE OF ACCIDENT	IRS FORM(S) REQUIRED
Occupational Injury	CA-1* (USDA)
Occupational Illness	CA-2* (USDA)
Motor Vehicle	SF-91A* (USDA) CA-1**
Motorcycles, all terrain vehicles, snow mobiles, roadgraders, etc.	AD-872
Government Motor Vehicle or Private Vehicle Used for Government Use	SF-91A* (USDA) CA-1** (USDA)
Motor Vehicle--Total damage does not exceed $350, but a private citizen is injured.	SF-91A* CA-1**
Property Damage	AD-872 CA-1**
Aircraft Accident	AD-872 CA-1**

*USDA modified forms including reporting data on back.
**If personal injury involved.

33.3 - Form FS-6700-8, Report of Incident to Other Than Employees. Use form 6700-8 to report accidents occurring on Forest Service property to private citizens, contractors, cooperators, and permittees. Report only fatalities to the Washington Office. Report serious injuries and significant private property damage to the Region, Station, or Area Safety and Health Program Manager.

33.4 - Form FS-2100-D, Pesticide Incident and Accident Report. Initial telephone notification of a pesticide incident or accident must be followed by a written report. See FSH 2109.12.

34 - ACCIDENT INVESTIGATIONS. All accidents, regardless of severity, require some degree of investigation. Investigations done for a minor injury do not require the same effort as that for an accident involving hospitalization of several employees. Every accident shall be investigated to the extent necessary to determine the facts, conditions, and background factors present to determine appropriate preventative measures.

The unit on which the accident occurs begins the investigation immediately, regardless of what organizational level ultimately is charged with the investigation responsibility (sec. 35.2).

34.1 - Chief's Office Investigations. A Chief's Office team may investigate any incident or accident. Accidents involving multiple employee fatalities shall be investigated by the Chief's Office. Injury requiring hospitalization of five or more employees or enrollees, aircraft accidents, aircraft incidents with serious potential, and accidents in which there may be unusual public concern may be appropriate for a Chief's Office investigation.

34.2 - Region, Station, and Area Investigations. Regional Foresters, Station and Area Directors shall conduct investigations of serious accidents. This includes single fatalities, serious injuries or illnesses, major property damage, aircraft accidents, and incidents with serious potential not investigated by the Chief's Office or a Washington Office-appointed team (FSM 6704).

34.3 - National Transportation Safety Board Investigations (NTSB). See FSM 6731.4.

34.4 - Multiagency Investigations. Conduct joint investigations of accidents involving the Forest Service and other Federal or State agencies. The degree of Forest Service participation shall depend on the circumstances of the accident. Regional, Station, or Area personnel shall coordinate with the involved Forest Service unit, the appropriate Washington Office staffs, and the other agency headquarters (FSM 6731.5).

35 - INVESTIGATION PROCEDURES

35.1 - Investigation Kit. Each Forest Service unit should maintain an accident investigation kit. Such kits normally include the following items:

1. Camera (35mm) and color print film, flash, and extra batteries.

2. Note paper.

3. Clip board.

4. Pencils, pens, felt tip markers.

5. Blank tags.

6. Flagging tape.

7. Small tape recorder, batteries, and extra blank cassettes.

8. Copies of FSM 6700, FSH 6709.11, and FSH 6709.12.

9. Accident reporting forms.

10. Tape measure.

35.2 - Initial Procedures. Regardless of who ultimately completes the investigation, the unit on which the accident occurs shall initiate the investigation process.

The local unit manager shall immediately:

1. Notify appropriate officials within the organization (sec. 32.1).

2. Assign person(s) to begin the accident investigation.

3. Secure the accident site to preserve evidence to the extent possible.

4. Photograph the accident scene.

5. Obtain witness statements.

35.3 - Team Composition. All units should develop and maintain a written investigation assignment roster which specifies who will investigate various types of accidents. Standing investigation teams, with alternates, reduce confusion at the time of an accident and provide for the fast action imperative for good accident investigations.

Minor injury, illness, or property damage accidents normally require only a single investigator, often the first line supervisor. A line officer or designee should lead investigations of more serious accidents. See FSM 5720 for air craft accident investigation team requirements.

35.4 - Role of the Chief Investigator. The Chief Investigator is responsible for completing the investigation, preparing the report, and transmitting the report to the review board chairman (FSM 6732.3). Chief Investigators are delegated line authority to make critical decisions in imminent danger situations (FSM 6730.43).
Chief Investigators shall:

1. Organize, conduct, and control the investigation.

2. Select or approve selection of team members with skills and knowledge appropriate for the type of accident.

3. Assign tasks to team members. Ensure tasks are completed.

4. Coordinate with appropriate Region, Station, Forest, or Laboratory.

5. Ensure that initial investigation has begun.

6. Secure and control site subject to other agency jurisdiction.

7. Issue brief with any recommended immediate actions.

8. Take possession of all relevant Forest Service and contractor documents.

9. Arrange for team comfort and safety.

10. Arrange for clerical support, as necessary.

11. Make all media contacts and statements.

12. Authorize or request authorization of all expenditures. Keep expense record.

13. Conduct regular team meetings to exchange information and assess progress.

14. Release wreckage and documents to appropriate line officer or contracting officer when investigation is completed.

15. Ensure a draft of the report is completed before the team disperses.

16. Present the team's findings at the review board.

35.5 - Accident Brief. The Chief Investigator shall prepare an accident brief within 24 hours after beginning the investigation of a serious accident. The brief is submitted to the line officer responsible for the investigation. The brief is used to determine if immediate action to prevent additional accidents is needed prior to development of the final report and the report review (sec. 37).

35.6 - Notification of Next of Kin. Notify next of kin as soon as the victim is positively identified. A Forest or Station officer who has been briefed on the facts of the accident should make the notification. If possible, the person making the notification should know the victim's family.

35.7 - Legal Advice. Seek the advice of the Office of the General Counsel, through the Fiscal and Accounting Management Staff, if there is likelihood of a claim for or against the Government.

35.8 - Autopsies. The Forest Service does not have authority to order an autopsy. Make requests to local authorities. Normally the local civil authorities shall authorize payment for this service. In cases where the civil authority is willing to authorize the autopsy, but is unable or unwilling to pay for this service, the matter of payment shall be referred to the local fiscal agent for resolution.

35.9 - Post-Investigation. The Chief Investigator should hold the team together until all material is collected and evaluated and they reach some basic conclusions. A rough draft or outline of their report must be prepared before team members leave.

36 - FOREST SERVICE ACCIDENT INVESTIGATION REPORTS. Certain accidents require Forest Service accident investigation reports in addition to being reported via the Incident Reporting System (IRS). These are normally prepared in the following accident circumstances:

1. Serious personal injury.

2. Property damage exceeding $1,000.

3. Accidents in which private property is damaged or private citizens injured or killed.

4. Accident in which there existed a high potential for serious consequences.

5. Accident which may have a high degree of public interest.

6. Any accident in which the possibility exists for claims either by or against the Forest Service.

36.1 - Content. These accidents require additional documentation to describe the event completely. Additional documentation should include the following:

1. Accident case identification (who, what, where).

2. Investigators identified--include outside experts used.

3. When investigation started and how conducted.

4. Investigation results.

5. Sequence of events leading to accident.

6. Findings.

a. Management factors.

b. Physical factors.

7. Supporting documents, exhibits, photographs.

The report shall contain only facts and other supportable information. Do not include suppositions or conclusions. No recommendations for corrective action are to be included in the report itself.

36.2 - Letter of Transmittal. Forest Service accident investigation reports shall be sent via a letter of transmittal from the Chief Investigator to the unit manager who will review the accident. This letter may contain general comments by the investigation team, opinions regarding probable cause(s) and causative factors, and recommended corrective actions.

36.3 - Official Case File. The case folder shall contain the accident brief, analysis, appendix material, the accident report, and all correspondence relating to the case.

37 - REVIEW AND ANALYSIS. A thorough review of factors involved in an accident can identify true cause(s) of the accident. This provides managers with information necessary to prevent similar accidents.

Analysis of a unit's accident history helps managers identify trends. Special emphasis can then be directed toward those areas of the unit's safety and health program requiring added attention.

37.1 - Accident Report Review. Intensity of review will vary, depending on the result or potential result of the accident. As a minimum, the first-and second-line supervisor shall review and discuss each accident to identify causes. More serious accidents shall be reviewed by higher organizational levels.

37.2 - Conduct of Formal Accident Review. When required, an accident report review team shall be formed within 45 days after the accident. The team shall review the accident report and, based on the facts, determine what the organization should do to reduce future accidents of this nature. Line, staff, and first-line supervisory performance must be evaluated. The staff work necessary for assembling and supporting the accident report review team shall be performed by the appropriate safety and health manager. The review team should be chaired by the unit manager, or designee, and shall include, as a minimum, (1) the Chief Investigator who prepared the report, (2) the safety and health manager, (3) the staff officer in whose function the accident occurred, (4) a Forest representative in the case of Regional investigations, and (5) a Regional, Station, or Area representative, in the case of a Chief's Office-investigated accident. The following are some of the factors that should be appraised:

1. Was the employee's action caused by the lack of knowledge or skill?

2. Is there documentation describing production expectations, and methods and materials to be used for the work performed?

3. Were there previous accidents on the project and was action taken to prevent recurrences?

4. Was an adequate hazard analysis made by the work supervisor and crew before the project was started?

5. Were equipment, space, materials, funds, and personnel adequate for the job?

6. Does the local line officer have direct involvement in the accident prevention program?

7. What degree of communication, up and down the line, occurred regarding safety and health problems? Were managers informed of problems on the job?

8. Were the supervisor's knowledge and skills adequate?

9. Was inspection and maintenance of equipment adequate?

10. Was there lack of instructions or were they faulty?

11. Were there deficiencies in:

a. Inspecting work and correcting work errors and/or unsafe conditions?

b. Implementing existing policies and procedures?

c. Adequacy of required inspections, resulting abatement plans, and corrective actions?

Using the information in the report, the conclusions and suggested recommendations of the investigating team, the review team shall develop its recommendations and proposed implementing action for approval. Recommendations are statements of action which will prevent or mitigate the damage or injury which occurred. Recommendations should identify responsibilities and timeframes for carrying out the action. Recommendations must be feasible and consistent with the findings and causes.

The chairperson of the accident report review team will submit to the Forest Supervisor, Regional Forester, Station Director, Area Director or Chief the accident report, recommendations of the review team, and suggested implementing letters for signature. If the Forest Supervisor, Regional Forester, Station Director, Area Director or Chief does not concur, a meeting will be held with the review team chairperson and others as necessary to resolve the differences. Copies of the final recommendations and action plan will be distributed as determined appropriate. The

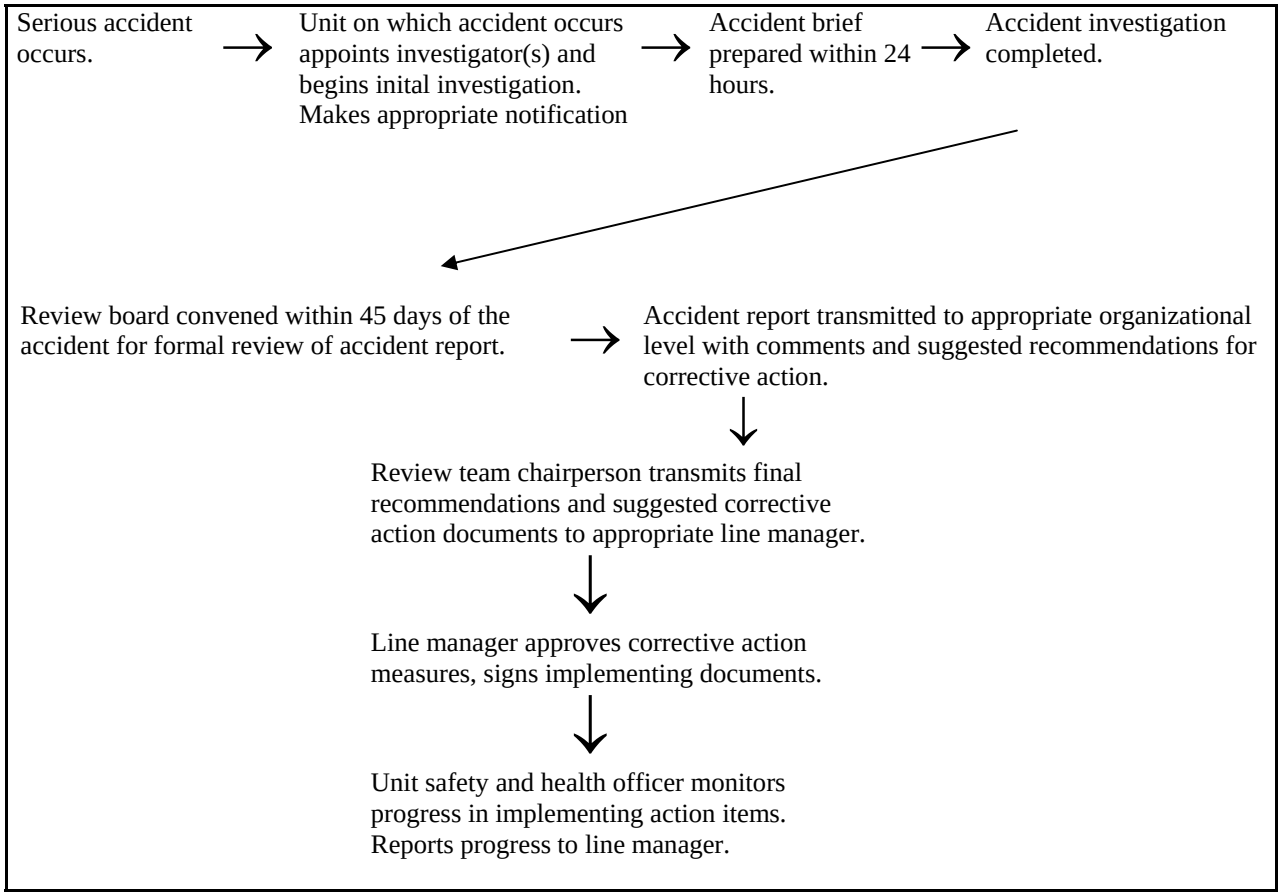
involved safety and health program manager shall establish a control mechanism to check on periodic progress in implementing approved action items and shall report such progress to the Forest Supervisor, Regional Forester, Station Director, Area Director or Chief.

37.3 - Flow Chart for Accident Investigation and Review. Exhibit 1 demonstrates the steps in an accident investigation and review.

EXHIBIT 1 IS A SEPARATE DOCUMENT

SEC. 37.3 - Exhibit 1

FLOW CHART FOR ACCIDENT INVESTIGATION AND REVIEW



FOREST SERVICE HANDBOOK
NATIONAL HEADQUARTERS (WO)
WASHINGTON, DC

FSH 6709.12- SAFETY AND HEALTH PROGRAM HANDBOOK

CHAPTER 40 - REFERENCES

Amendment No.: 6709.12-2005-1

Effective Date: August 24, 2005

Duration: This amendment is effective until superseded or removed.

Approved: IRVING W. THOMAS
Associate Deputy Chief

Date Approved: 08/12/2005

Posting Instructions: Amendments are numbered consecutively by Handbook number and calendar year. Post by document; remove the entire document and replace it with this amendment. Retain this transmittal as the first page(s) of this document. The last amendment to this Handbook was 6709.12-96-1 to 6709.12_20_contents.

New Document	6709.12_40	3 Pages
Superseded Document(s) by Issuance Number and Effective Date	40 thru 43--9 (FSH 12/85)	31 Pages

Digest:

40 - Revises chapter title from “Appendix” to “References.”

41 - Provides the web address for Title 29, Code of Federal Regulations, Part 1960--Basic Program Elements for Federal Employee Occupational Safety and Health Programs and Related Matters (29 CFR Part 1960). Previously, the text of this section was set forth in its entirety.

42 - Provides the web address for DR 4410-1, OCCUPATIONAL SAFETY AND HEALTH STANDARDS AND PROGRAM ELEMENTS. Previously, the text of this section was set forth in its entirety.

43 - Removes this code and all references to obsolete DR 4450-1, INCIDENT REPORTING SYSTEM.

Table of Contents

41 - TITLE 29, CODE OF FEDERAL REGULATIONS, PART 1960--BASIC PROGRAM ELEMENTS FOR FEDERAL EMPLOYEE OCCUPATIONAL SAFETY AND HEALTH PROGRAMS AND RELATED MATTERS (29 CFR PART 1960)..... 69
42 - DR 4410-1, OCCUPATIONAL SAFETY AND HEALTH STANDARDS AND PROGRAM ELEMENTS 69

41 - TITLE 29, CODE OF FEDERAL REGULATIONS, PART 1960--BASIC PROGRAM ELEMENTS FOR FEDERAL EMPLOYEE OCCUPATIONAL SAFETY AND HEALTH PROGRAMS AND RELATED MATTERS (29 CFR PART 1960)

Title 29, Code of Federal Regulations, Part 1960--Basic Program Elements for Federal Employee Occupational Safety and Health Programs and Related Matters, is available from the Government Printing Office (GPO) (*http://www.gpoaccess.gov/cfr/index.html*) at the following web address: *http://www.access.gpo.gov/nara/cfr/waisidx_04/29cfr1960_04.html*.

42 - DR 4410-1, OCCUPATIONAL SAFETY AND HEALTH STANDARDS AND PROGRAM ELEMENTS

DR 4410-1, OCCUPATIONAL SAFETY AND HEALTH STANDARDS AND PROGRAM ELEMENTS is available from the Government Printing Office (GPO) (*http://www.gpoaccess.gov/cfr/index.html*) at the following web address: *http://www.usda.gov/agency/da/shmd/saf5.htm*.