

Chapter 07 Safety and Risk Management

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Introduction

The primary means by which we prevent accidents in wildland fire operations is through aggressive risk management. Our safety philosophy acknowledges that while the ideal level of risk may be zero, a hazard free work environment is not a reasonable or achievable goal in fire operations. Through organized, comprehensive, and systematic risk management, we will determine the acceptable level of risk that allows us to provide for safety yet still achieve fire operations objectives. Risk management is intended to minimize the number of injuries or fatalities experienced by wildland firefighters.

Definitions

Safety - may be defined as a measure of the degree of freedom from risk or conditions that can cause death, physical harm, or equipment or property damage.

Risk Management - is defined as a continuous, five-step process that provides a systematic method for identifying and managing the risks associated with any operation.

Policy

Firefighter and public safety is our first priority. All Fire Management Plans and activities must reflect this commitment. The commitment to and accountability for safety is a joint responsibility of all firefighters, managers, and administrators. Individuals must be responsible for their own performance and accountability.

Every supervisor, employee, and volunteer is responsible for following safe work practices and procedures, as well as identifying and reporting unsafe conditions.

All firefighters, fireline supervisors, fire managers, and agency administrators have the responsibility to ensure compliance with established safe firefighting practices and principles.

Agency Specific Safety Policy Documents

- **BLM** - *BLM Handbook 1112-1, 1112-2*
- **FWS** - *Service Manual 241 FW7, Firefighting*
- **NPS** - *DO-50 and RM-50 Loss Control Management Guideline*
- **FS** - *FSH-6709.11 Health and Safety Code Handbook*

Guiding Principles

The primary means by which we implement command decisions and maintain unity of action is through the use of common principles of operations. These

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1 principles guide our fundamental wildland fire management practices,
2 behaviors, and customs, and are mutually understood at every level of
3 command. They include Risk Management, Standard Firefighting Orders and
4 Watch Out Situations, LCES and the Downhill Line Construction Checklist.
5 These principles are fundamental to how we perform fire operations, and are
6 intended to improve decision making and firefighter safety. They are not
7 absolute rules. They require judgment in application.

9 **Goal**

10 The goal of the fire safety program is to provide direction and guidance for safe
11 and effective management in all activities. Safety is the responsibility of
12 everyone assigned to wildland fire, and must be practiced at all operational
13 levels from the national fire director, state/regional director, and unit manager - to
14 employees in the field. Agency administrators need to stress that firefighter and
15 public safety always takes precedence over property and resource loss.
16 Coordination between the fire management staff and unit safety officer(s) is
17 essential in achieving this objective. For additional safety guidance and
18 reference refer to:

- 19 • *Fireline Handbook (PMS 410-1, NFES 0065).*
- 20 • *Incident Response Pocket Guide (IRPG) (PMS 461, NFES 1077).*
- 21 • *Wildland Firefighter Health & Safety Report (Annual MTDC Publication).*
- 22 • *National Interagency Mobilization Guide (NFES 2092).*

24 **Risk Management Process**

25 The Risk Management Process identified in the *NWCG Incident Response*
26 *Pocket Guide (IRPG)* helps ensure that critical factors and risks associated with
27 fireline operations are considered during decision making. This process
28 enhances safety practices when applied to fire operations prior to taking action.
29 The Risk Management Process is found on the inside of the back cover of
30 *Interagency Standards for Fire and Fire Aviation Operations*.

32 **Job Hazard Analysis (JHA)**

33 A completed Job Hazard Analysis is required for:

- 34 • Jobs or work practices that have potential hazards.
- 35 • New, non-routine, or hazardous tasks to be performed where potential
36 hazards exist.
- 37 • Jobs that may require the employee to use non-standard personal protective
38 equipment (PPE).
- 39 • Changes in equipment, work environment, conditions, policies, or
40 materials.
- 41 • Supervisors and appropriate line managers must ensure that established
42 JHAs are reviewed and signed prior to any non-routine task or at the
43 beginning of the fire season. Additional JHA information can also be
44 obtained at: http://www.fs.fed.us/r1/people/jha/jha_index_www.html.

- 1 • **BLM** - A risk assessment (in lieu of JHA) must be completed for all non-
2 suppression work practices/projects that have potential hazards.

3

4 **Work/Rest**

5 To assist in mitigating fatigue, days off are allowed during and after
6 assignments. If necessary to reduce fatigue, the Type 1 or 2 Incident
7 Commander (IC) or agency administrator (AA) (incident host or home unit) may
8 provide time off supplementary to mandatory days off requirements. For Type
9 3-5 incidents, paid days off should be rare exceptions. However, if necessary,
10 the agency administrator (incident host or home unit) may authorize day(s) off
11 with pay.

12

13 The IC or AA authority to grant a day off with pay lies within 5 U.S.C. 6104, 5
14 CFR 610.301-306, and 56 Comp. Gen. Decision 393 (1977).

- 15 • Plan for and ensure that all personnel are provided a minimum 2:1 work to
16 rest ratio (for every 2 hours of work or travel, provide 1 hour of sleep
17 and/or rest).
- 18 • Work shifts that exceed 16 hours and/or consecutive days that do not meet
19 the 2:1 work/rest ratio should be the exception, and no work shift should
20 exceed 24 hours. However, in situations where this does occur (for
21 example, initial attack), incident management personnel will resume 2:1
22 work/rest ratio as quickly as possible.
- 23 • The Incident Commander or agency administrator must justify work shifts
24 that exceed 16 hours and those that do not meet 2:1 work to rest ratio.
25 Justification will be documented in the daily incident records.
26 Documentation shall include mitigation measures used to reduce fatigue.
- 27 • The Time Officer's/Unit Leader's approval of the Emergency Firefighter
28 Time Report (OF-288), or other agency pay document, certifies that the
29 required documentation is on file and no further documentation is required
30 for pay purposes.

31

32 The work/rest guidelines do not apply to aircraft pilots assigned to an incident.
33 Pilots must abide by applicable Federal Aviation Administration (FAA)
34 guidelines, or agency policy if more restrictive.

35

36 **Length of Assignment**

37

38 **Assignment Definition**

39 An assignment is defined as the time period (days) between the first full
40 operational period at the first incident or reporting location on the original
41 resource order and commencement of return travel to the home unit.

42

43 **Length of Assignment**

44 Standard assignment length is 14 days, exclusive of travel from and to home
45 unit, with possible extensions identified below. Time spent in staging and

1 preposition status counts toward the 14-day limit, regardless of pay status, for all
2 personnel, including Incident Management Teams.

3

4 **Days Off**

5 After completion of a 14 day assignment and return to the home unit, two
6 mandatory days off will be provided (2 after 14). Days off must occur on the
7 calendar days immediately following the return travel in order to be charged to
8 the incident. (See Section 12.1-2) (5 U.S.C. 6104, 5 CFR 610.301-306, and 56
9 Comp. Gen. Decision 393 (1977). If the next day(s) upon return from an
10 incident is/are a regular work day(s), a paid day(s) off will be authorized.
11 Regulations may preclude authorizing this for non-NWCG and state/local
12 employees.

13

14 Pay entitlement, including administrative leave, for a paid day(s) off cannot be
15 authorized on the individual's regular day(s) off at their home unit. Agencies
16 will apply holiday pay regulations, as appropriate. A paid day off is recorded on
17 home unit time records according to agency requirements. Casuals (AD) are not
18 entitled to paid day(s) off upon release from the incident or at their point of hire.

19

20 Contract resources are not entitled to paid day(s) off upon release from the
21 incident or at their point of hire.

22

23 Home unit agency administrators may authorize additional day(s) off with
24 compensation to further mitigate fatigue. If authorized, home unit program
25 funds will be used. All length of assignment rules apply to aviation resources,
26 including aircraft pilots, notwithstanding the FAA and Agency day off
27 regulations.

28

29 **Assignment Extension**

30 Prior to assigning incident personnel to back-to-back assignments, their health,
31 readiness, and capability must be considered. The health and safety of incident
32 personnel and resources will not be compromised under any circumstance.

- 33 • Assignments may be extended when:
 - 34 ➤ life and property are imminently threatened,
 - 35 ➤ suppression objectives are close to being met,
 - 36 ➤ a military battalion is assigned,
 - 37 ➤ replacement resources are unavailable, or have not yet arrived.

38

39 Upon completion of the standard 14 day assignment, an extension of up to an
40 additional 14 days may be allowed (for a total of up to 30 days, inclusive of
41 mandatory days off, and exclusive of travel). Regardless of extension duration,
42 two mandatory days off will be provided prior to the 22nd day of the assignment.

43

44 Contracts and Emergency Equipment Rental Agreements (EERA) should be
45 reviewed for appropriate pay requirements and length of assignment. If the
46 contract or EERA do not address this, the incident Finance/Administration

1 Section Chief or the procurement official should be consulted as to whether
2 compensation for a day off is appropriate.

3

4 **Single Resource/Kind Extensions**

5 The Section Chief or Incident Commander will identify the need for assignment
6 extension and will obtain the affected resource's concurrence. The Section
7 Chief and affected resource will acquire and document the home unit
8 supervisor's approval.

9

10 The Incident Commander approves the extension. If a convened geographic or
11 national multi-agency coordinating group (GMAC/NMAC) directs, the Incident
12 Commander approves only after GMAC/NMAC concurrence.

13

14 If the potential exists for reassignment to another incident during the extension,
15 the home unit supervisor and affected resource will be advised and must concur
16 prior to reassignment.

17

18 **Incident Management Team Extensions**

19 Incident management team extensions are to be negotiated between the incident
20 agency administrator, the Incident Commander, and the GMAC/NMAC (if
21 directed).

22

23 Upon release from the assignment, regardless of extension duration, two
24 mandatory days off will be provided immediately following the return to the
25 home unit, and are chargeable to the incident. (See above for compensation and
26 days off guidelines).

27

28 **Management Directed Days Off at Home Unit**

29 Supervisors must manage work schedules for initial attack, dispatch and incident
30 support personnel during extended incident situations. During periods of non-
31 routine or extended activity, these employees will have a minimum of 1 day off
32 in any 21-day period.

33

34 **Driving Standard**

35 All employees driving motor vehicles are responsible for the proper care,
36 operation, maintenance and protection of the vehicle. The use of government-
37 owned, rented, or leased motor vehicles is for official business only.
38 Unauthorized use is prohibited.

39

40 **General Driving Policy**

- 41 • Employees must have a valid state driver's license in their possession for
42 the appropriate vehicle class before operating the vehicle. Operating a
43 government-owned or rental vehicle without a valid state driver's license is
44 prohibited.

- 1 • All drivers whose job duties require the use of a motor vehicle will receive
2 initial defensive driver training within three months of entering on duty
3 and refresher driver training every three years thereafter.
- 4 • The operator and all passengers are required to wear seat belts and obey all
5 federal and state laws.
- 6 • All traffic violations or parking tickets will be the operator's responsibility.
- 7 • All driving requiring a CDL will be performed in accordance with
8 applicable Department of Transportation regulations.
- 9 • Seat belts must be available and used in agency motor vehicles. Without
10 exception, seat belts must be worn at all times by motor vehicle operators
11 and passengers, regardless of the distance to be traveled or the time
12 involved. If any employee fails to fasten their seat belt while riding in a
13 vehicle on official business, they are subject to disciplinary action as
14 determined by local management.
- 15 • Employees operating any motor vehicle with a GVWR of 26,000 pounds
16 or more, towing a vehicle 10,000 pounds GVWR or more, hauling
17 hazardous material requiring the vehicle to be placarded, or transporting,
18 16 or more persons, including the driver, must possess a valid Commercial
19 Drivers License (CDL) with all applicable endorsements.
- 20 • **BLM** - *All employees operating a Government motor vehicle will be*
21 *required to submit Form DI-131 (Application for U.S. Government Motor*
22 *Vehicle Operator's Identification Card) and OF-345 (Physical Fitness*
23 *Inquiry for Motor Vehicle Operators). When the supervisor signs the DI-*
24 *131, the employee is authorized to operate Government-owned or leased*
25 *vehicles, or privately-owned vehicles on official business. Individual office*
26 *forms equivalent to the OF-345 and DI-131 are acceptable.*
- 27 • **FS** - *Policy requires all operators of government owned, or leased vehicles*
28 *to have a Forest Service issued identification card indicating the type of*
29 *vehicles or equipment the holder is authorized and qualified to operate.*
- 30 • **BLM/FWS/NPS** - *The DOI has granted wildland fire agencies a waiver to*
31 *allow employees between the ages of 18 and 21 to operate agency*
32 *commercial fire vehicles using a state issued CDL under the specific*
33 *conditions as stated below:*
 - 34 ➤ *Drivers with a CDL may only drive within the state that has issued*
35 *the CDL and must comply with the state's special requirements and*
36 *endorsements.*
 - 37 ➤ *These drivers must only drive vehicles that are equipped with visible*
38 *and audible signals, and are easily recognized as fire fighting*
39 *equipment. This excludes, but is not limited to, school buses used for*
40 *crew transport and "low-boy" tractor trailers used for construction*
41 *equipment transport.*
 - 42 ➤ *Supervisors must annually establish and document that these drivers*
43 *have a valid license (i.e. that the license has not been suspended,*
44 *revoked, canceled, or that the employee has not been otherwise*
45 *unqualified from holding a license - 485 DM 16.3.B (1), ensure that*

1 *the employee has the ability to operate the vehicle(s) safely in the*
2 *operational environment assigned (485 DM 16.3.B (2), and review*
3 *and validate the employee's driving record (485 DM 16.3.B(4)).*
4

5 **Non-Incident Operations Driving**

6 Refer to the current Driving Standards for each individual agency.
7

8 **Incident Operations Driving**

9 This policy addresses driving by personnel actively engaged in wildland fire
10 suppression or all-risk activities; including driving while assigned to a specific
11 incident (check-in to check-out) or during initial attack fire response (includes
12 time required to control the fire and travel to a rest location).

- 13 • Agency resources assigned to an incident or engaged in initial attack fire
14 response will adhere to the current agency work/rest policy for determining
15 length of duty day.
- 16 • No driver will drive more than 10 hours (behind the wheel) within any
17 duty-day.
- 18 • Multiple drivers in a single vehicle may drive up to the duty-day limitation
19 provided no driver exceeds the individual driving (behind the wheel) time
20 limitation of 10 hours.
- 21 • A driver shall drive only if they have had at least 8 consecutive hours off
22 duty before beginning a shift. Exception to the minimum off-duty hour
23 requirement is allowed when essential to:
 - 24 ➤ Accomplish immediate and critical suppression objectives.
 - 25 ➤ Address immediate and critical firefighter or public safety issues.
- 26 • As stated in the current agency work/rest policy, documentation of
27 mitigation measures used to reduce fatigue is required for drivers who
28 exceed 16 hour work shifts. This is required regardless of whether the
29 driver was still compliant with the 10 hour individual (behind the wheel)
30 driving time limitations.
- 31 • To manage fatigue, every effort should be made to conduct off unit
32 (excluding IA response) mobilization and demobilization travel between
33 0500 hrs and 2200 hrs.
- 34 • *FWS/NPS - Program funds are authorized to pay for the cost of CDL*
35 *licensing fees and exams, necessary for employees to operate fire*
36 *equipment, with one exception. That exception involves those cases where*
37 *a test has been failed and must be retaken, in which case the employee will*
38 *be responsible for costs associated with additional testing.*
39

40 **Fire Vehicle Operation Standards**

41 Operators of all vehicles must abide by state traffic regulations. Operation of all
42 vehicles will be conducted within the limits specified by the manufacturer.
43 Limitations based on tire maximum speed ratings and Gross Vehicle Weight
44 restrictions must be followed. It is the vehicle operator's responsibility to
45 ensure vehicles abide by these and any other limitations specified by agency or
46 state regulations.

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1 **Personal Protective Equipment (PPE)**

2 All personnel are required to use Personal Protective Equipment (PPE)
3 appropriate for their duties and/or as identified in JHAs. Employees must be
4 trained to use safety equipment effectively. PPE devices will be used only when
5 equipment guards, engineering controls, or management control do not
6 adequately protect employees.

- 7 • *NPS - No required personal protective equipment will be purchased that*
8 *does not meet or exceed USDA-Forest Service or National Fire Protection*
9 *Association Standards.*

10
11 **Required Fireline PPE includes:**

- 12 • 8-inch high, lace-type exterior leather work boots with non-slip, Vibram-
13 type, melt-resistant soles. The 8-inch height requirement is measured from
14 the bottom of the heel to the top of the boot. Alaska is exempt from the
15 Vibram-type sole requirement. All boots that meet the footwear standard
16 as described above are authorized for firefighting.
- 17 • fire shelter
 - 18 • hard hat with chinstrap
 - 19 • goggles/safety glasses
 - 20 • ear plugs/hearing protection
 - 21 • yellow aramid shirts
 - 22 • aramid trousers
 - 23 • leather gloves
 - 24 • Wear additional PPE as identified by local conditions, material safety data
25 sheet (MSDS), or JHA.

26
27 Polyester, polypropylene, nylon, and silk materials are not to be worn, as they
28 melt and stick to the skin when exposed to flame or heat. Because most
29 synthetic fibers melt when exposed to flame or extreme radiant heat, personnel
30 should wear only undergarments made of 100 percent cotton or wool, aramid, or
31 other fire resistant materials.

32
33 Aramid clothing should be cleaned or replaced whenever soiled, especially
34 when soiled with petroleum products. Aramid clothing will be replaced when
35 the fabric is so worn as to reduce the protection capability of the garment or is so
36 faded as to significantly reduce the desired visibility qualities. Any modification
37 to personal protective equipment that reduces the fire protection capability such
38 as iron-on logos, and snagging of pants, is an unacceptable practice and will not
39 be allowed on fires.

40
41 **Head Protection**

42 Personnel must be equipped with hard hats and wear them at all times while on
43 the fireline. Hard hats must be equipped with a chinstrap, which must be
44 fastened while riding in, or in the vicinity of, helicopters.

45

1 Acceptable helmets for fireline use are “Helmet, Safety, Plastic” (NFES #0109,
2 NSN 8415-01-055-2265) listed in NWCG *National Fire Equipment System*
3 *Catalog: Fire Supplies and Equipment*, or equivalent helmets meeting the
4 *National Fire Protection Association (NFPA) Standard 1977, Standard on*
5 *Protective Clothing and Equipment for use in Wildland Firefighting and*
6 *American National Standards Institute (ANSI) Z89.1-1986.*

7
8 Hard hats consist of two components - the shell and the suspension - which work
9 together as a system. Both components require periodic inspection and
10 maintenance. Specific inspection and maintenance instructions are found in
11 Missoula Technology and Development Center (MTDC) Tech Tip publication,
12 *Your Hardhat: Inspection and Maintenance* (0267-2331-MTDC).

13 **Eye and Face Protection**

14 The following positions require the wearing of eye protection:

- 15 • nozzle operator
- 16 • chainsaw operator/faller
- 17 • helibase and ramp personnel
- 18 • retardant mixing crews
- 19 • other duties may require eye protection as identified in a specific JHA.

20
21
22 In addition to goggles full face protection in the form of a face shield in
23 compliance with ANSI Z87.1 shall be worn when working in any position where
24 face protection has been identified as required in the job specific JHA/risk
25 assessment: Terra-Torch®, power sharpener operators, etc.

26 **Hearing Protection**

27 Personnel who are exposed to a noise level in excess of 85db must be provided
28 with, and wear, hearing protection. This includes, but is not limited to:

- 29 • chainsaw operators/fallers
- 30 • pump operators
- 31 • helibase and aircraft ramp personnel
- 32 • retardant mixing personnel
- 33 • any other personnel exposed on a regular basis to damaging noise levels.

34
35
36 Other duties may require hearing protection as identified in a specific JHA /Risk
37 Assessment.

38
39 Employees may be required to be placed under a hearing conservation program
40 as required by *29 CFR 1910.95*. Employees may also be required to be placed
41 under a hearing conservation program as identified in approved Medical
42 Standards Program waivers with restrictions. Consult with local safety & health
43 personnel for specifics regarding unit hearing conservation program.

1 Neck Protection

2 Face and neck shrouds are not required PPE. However, if used, face and neck
3 shrouds shall meet the requirements of FS specification 5100-601 or *NFPA 1977*
4 *Standard on Protective Clothing and Equipment for Wildland Fire Fighting*.

5
6 Shrouds should be positioned in a manner that allows for immediate use. For
7 additional information see MTDC Tech Tip *Improved Face and Neck Shroud*
8 *for Wildland Firefighters, 2004* (0451-2323-MTDC).

9
10 Shrouds should not be routinely worn throughout the operational period, due to
11 increases in physiological heat stress.

12 Leg Protection

13 All chainsaw operators will wear chainsaw chaps meeting the NFPA 1977
14 *Standards Protective Clothing and Equipment for Wildland Firefighting*, or the
15 FS 6170-4 specification. Chainsaw chaps shall be maintained in accordance
16 with MTDC Publication, *Inspecting and Repairing Your Chainsaw Chaps User*
17 *Instructions* (0567-2816-MTDC).

18 Foot Protection

19
20 Personnel assigned to fires must wear 8-inch high, lace-type exterior leather
21 work boots with non-slip, Vibram-type, melt-resistant soles. The 8-inch height
22 requirement is measured from the bottom of the heel to the top of the boot.
23 Alaska is exempt from the Vibram-type sole requirement. All boots that meet
24 the footwear standard as described above are authorized for firefighting.

25
26
27 The boots are a condition of employment for firefighting positions and are
28 purchased by the employee prior to employment.

- 29 • **FWS** - *Red carded fireline permanent, temporary and seasonal Fish and*
30 *Wildlife personnel will be provided with these boots from station funds not*
31 *more often than every three years. Emergency or casual firefighters will*
32 *provide their own boots. Some refuge situations may require special*
33 *footwear such as waders, hip boots, snake boots, etc.*
- 34 • **NPS** - *Government funds will be utilized for purchase of wildland fire*
35 *boots for those employees currently red carded/certified in positions which*
36 *require wildland and prescribed fireline duties. The individual employee*
37 *must be available to perform those duties when assigned; if not routinely*
38 *available for park fire assignments, FIREPRO funds should not be used to*
39 *purchase boots for that employee.*
- 40 • **NPS** - *FIREPRO funds, not to exceed \$100 a pair, may be used to*
41 *purchase or repair boots. Other government funds, such as from safety,*
42 *protection or maintenance accounts, may also be used for purchase or to*
43 *augment FIREPRO funds, dependent on local management direction.*
44 *Costs to repair boots not damaged on fire should be charged to other*
45 *appropriate accounts.*

- 1 • *NPS - It is the responsibility of the local FMO to determine those*
2 *employees requiring boots as personal protective equipment, and the*
3 *frequency of necessary replacement or repair. Boots will be considered*
4 *similar to uniform items and will not be subject to cache item return, due*
5 *to health, sanitation, and individual sizing considerations.*

6 7 **Respiratory Protection**

8 The use of respiratory protection (e.g., dust masks, half-mask respirators) must
9 be in compliance with agency safety and health regulations and OSHA's
10 *Respiratory Protection Standard 29 CFR 1910.134.*

- 11 • *BLM/FWS/NPS - Managers and supervisors will not knowingly place*
12 *wildland firefighters in positions where exposure to noxious gases or*
13 *chemicals would require the use of self-contained breathing apparatus.*
- 14 • *FS - FSM - 5135.3 - Self-Contained Breathing Apparatus - Wildland*
15 *firefighters may use only an open-circuit, self-contained breathing*
16 *apparatus (SCBA) of the positive pressure type when smoke from vehicle,*
17 *dump, structure, or other non-wildland fuel fire cannot be avoided while*
18 *meeting wildland fire suppression objectives (29 CFR 1910.134,*
19 *Respiratory Protection). If such an apparatus is not available, avoid*
20 *exposure to smoke from these sources.*
- 21 • *FS - The acquisition, training, proper use, employee health surveillance*
22 *programs, inspection, storage, and maintenance of an SCBA must comply*
23 *with the National Fire Protection Association Standard, NFPA-1981 and*
24 *29 CFR 1910.134I, and be justified by a Job Hazard Analysis. Where an*
25 *SCBA is approved, it may be carried only on a fire engine and its use must*
26 *be consistent with FSM 5130.2 and FSM 5130.3.*

27 28 **Fire Shelters**

29 Fire shelters will be issued and carried in a readily accessible manner by all line
30 personnel. Firefighters will inspect their fire shelters at the beginning of each
31 fire season and periodically throughout the year, to ensure they are serviceable.
32 New Generation fire shelters will replace existing stock of old fire shelters by
33 the end of calendar year 2008 for all federal wildland firefighters and by the end
34 of calendar year 2009 for all other firefighters. Training in the deployment of
35 new generation fire shelters will be provided prior to issuance.

36
37 Training Shelters will be deployed at required Annual Fireline Safety Refresher
38 Training. No live fire exercises for the purpose of fire shelter deployment
39 training will be conducted.

40
41 The deployment of shelters is to be viewed as a last resort, and will not be used
42 as a tactical tool. Supervisors and firefighters must never rely on fire shelters
43 instead of using well-defined escape routes and safety zones. When deployed
44 on a fire, fire shelters will be left in place and not be removed pending approval
45 of authorized investigators.

1 Specialized or Non Standard PPE

2 Specialized Personal Protective Equipment not routinely supplied by the agency
3 required to perform a task safely must be ordered in accordance with agency
4 direction.

5
6 A JHA/risk assessment must be completed and reviewed by the Unit Safety
7 Officer and the supervisor's approval is required. Items must meet agency and
8 industry standards for specific intended use. Cold weather flame resistant outer
9 wear shall be in compliance with NFPA 1977, *Standard on Protective Clothing*
10 *and Equipment for Wildland Firefighting*. All cold weather inner wear should
11 be composed of 100% cotton/wool, or of aramid and other flame resistant
12 materials.

13 Fireline Safety**14 Incident Briefings**

15
16 Fire managers must ensure that safety briefings are occurring throughout the fire
17 organization, and that safety factors are addressed through the IC and
18 communicated to all incident personnel at operational briefings. The
19 identification and location of escape routes and safety zones must be stressed. A
20 briefing checklist can be found in the *Incident Response Pocket Guide (IRPG)*.
21

22 LCES - A System for Operational Safety

23 LCES will be used in all operational briefings and tactical operations as per the
24 *Incident Response Pocket Guide (IRPG)*.

- 25 • L - Lookout(s)
- 26 • C - Communication(s)
- 27 • E - Escape Route(s)
- 28 • S - Safety Zone(s)

29 Incident Safety Oversight

30
31 Agency administrators must be actively involved in the management of wildland
32 fires, and personally visit an appropriate number of escaped fires each year.

33
34 Agency Administrators and/or Fire Managers may request additional safety
35 oversight may be requested when:

- 36 • A fire escapes initial attack or when extended attack is probable.
- 37 • There is complex or critical fire behavior.
- 38 • There is a complex air operation.
- 39 • The fire is in an urban intermix/interface.

40
41
42 Every individual has the right to turn down unsafe assignments. When an
43 individual feels an assignment is unsafe they also have the obligation to identify,
44 to the degree possible, safety alternatives for completing that assignment. The
45 *IRPG* contains process for *How to Properly Refuse Risk*.

- 1 • **FS - Location of Fire Camps and Sheltering in Place**
2 *Fire camps should be located in areas that will service the incident for the*
3 *long term without having to relocate. It is recognized that such factors as*
4 *accessibility to the incident, size of the area required and cost efficiency*
5 *play key roles in determining locations.*
6
7 *Due to such factors as extreme fire behaviors, fire camp locations maybe*
8 *compromised. Incident Commanders are to be especially vigilant to*
9 *quickly identify situations that may put their fire camp(s) or any other*
10 *adjacent fire camps in jeopardy. As such, planning for evacuation and/or*
11 *shelter in place actions should be considered. Evacuation plans at a*
12 *minimum shall include:*
13 ➤ *Trigger points*
14 ➤ *Egress routes*
15 ➤ *Transportation for all personnel*
16 ➤ *Accountability for all personnel*
17 • **FS - Shelter in Place plans, at a minimum shall include:**
18 ➤ *Trigger points*
19 ➤ *ICP protection strategy and commensurate IAP*
20 ➤ *Live-ability standards including air quality, functionality of location*
21 *and facilities, and safety considerations for post burn conditions.*
22 ➤ *Monitoring plan for carbon monoxide levels before, during and after*
23 *the fire moves through the camp. (Plan to adhere to OSHA standard*
24 *of 50ppm per 8hr period.)*
25 ➤ *Conditions that exceed OSHA standards must be mitigated (ie:*
26 *moving to a location that meets the standards for CO*
27 ➤ *Only those individuals who meet 310-1 fireline qualifications will*
28 *remain in place during the time the fire moves through the camp area*
29

30 **Unit/Area Closures**

31 Threats to public safety may require temporary closure of a unit/area, or a
32 portion of it. When a fire threatens escape from the unit/area, adjacent
33 authorities must be given as much advance notice as possible in order to achieve
34 orderly evacuation.
35

36 **Standard Safety Flagging**

37 The NWCG recommends the following Safety Zone/Escape Route flagging for
38 wildland fire activities:

- 39 • Hot-pink flagging marked "Escape Route" (NFES 0566). Crews with
40 colorblind members may wish to carry and utilize fluorescent chartreuse
41 flagging (NFES #2396).
42 • Hazards. Yellow with black diagonal stripes, 1 inch wide (NFES 0267).
43 If the above recommendation is not utilized on an incident, the incident
44 will need to identify the selected color and it make known to all
45 firefighters.
46

1 **Unexploded Ordnance (UXO)**

2 General guidance is as follows: If UXO is suspected, do not enter the area.
3 Small arms (rifle and shotgun) munitions areas should be flagged and avoided
4 by fire personnel. For suspected larger munitions, the area must be avoided by
5 fire personnel and contact local law enforcement bomb squad or nearest
6 Department of Defense agency. Each unit will determine which employees are
7 authorized to enter known or potential hazardous substance release sites, and the
8 responsibility for these determinations remains with each agency administrator.
9 For additional UXO safety information, see current IRPG.

10

11 **Hazardous Materials**

12 Employees that discover any unauthorized waste dump or spill site that contains
13 indicators of potential hazardous substances (e.g, containers of unknown
14 substances, pools of unidentifiable liquids, piles of unknown solid materials,
15 unusual odors, or any materials out of place or not associated with an authorized
16 activity) should take the following precautions:

- 17 • Follow the procedures in the IRPG.
- 18 • Treat each site as if it contains harmful materials.
- 19 • Do not handle, move, or open any container, breathe vapors, or make
20 contact with the material.
- 21 • Move a safe distance upwind from the site.
- 22 • Contact appropriate personnel. Generally, this is the Hazardous Materials
23 Coordinator for the local office.
- 24 • *BLM/FWS/NPS - Agencies require that all field personnel complete a*
25 *First Responder Awareness training. Firefighters are required to take an*
26 *annual refresher for Hazardous Material protocol.*

27

28 The following general safety rules shall be observed when working with
29 chemicals:

- 30 • Read and understand the Material Safety Data Sheets.
- 31 • Keep the work area clean and orderly.
- 32 • Use the necessary safety equipment.
- 33 • Label every container with the identity of its contents and appropriate
34 hazard warnings.
- 35 • Store incompatible chemicals in separate areas.
- 36 • Substitute less toxic materials whenever possible.
- 37 • Limit the volume of volatile or flammable material to the minimum needed
38 for short operation periods.
- 39 • Provide means of containing the material if equipment or containers should
40 break or spill their contents.

41

42 **Heat Stress**

43 There are three forms of heat stress. The mildest is heat cramps. Heat stress can
44 progress to heat exhaustion and eventually heat stroke. Heat stroke is a medical
45 emergency. Delayed treatment can result in brain damage and even death. At

1 the first sign of heat stress, stop work, get into the shade, and begin drinking
2 fluid. See *Chapter 05 of Fitness and Work Capacity, 2nd ed. (1997)*.

3

4 **Smoke and Carbon Monoxide**

5 For information of this subject call USDA Forest Service, Technology and
6 Development Program, Publications, (406) 329-3978, and ask for *Health*
7 *Hazards of Smoke, Recommendations of the Consensus Conference, April 1997*
8 *(item Number 97512836)*. Copies are available free of charge in limited
9 numbers.

10

11 **Six Minutes for Safety Training**

12 It is recommended that daily “Six Minutes for Safety” training be conducted that
13 focuses on high-risk, low frequency activities that fire personnel may encounter
14 during a fire season. A daily national “Six Minutes for Safety” briefing can be
15 found at:

16 http://www.nifc.gov/sixminutes/dsp_sixminutes.php and in the National
17 Situation Report.

18

19 **Safety for Non-Operational Personnel Visiting Fires**

20 A wide variety of personnel such as agency administrators, other agency
21 personnel, dignitaries, members of the news media, etc may visit incidents. The
22 following standards apply to all visitors.

23

24 **Visits to an Incident Base**

25 The minimum recommendation for PPE at an incident base is the same as all
26 field locations.

- 27 • Lace-up shoes with non-slip soles and heels
- 28 • Long trousers
- 29 • Long-sleeve shirt
- 30 • For agency personnel, the field uniform is appropriate; however for more
31 flexibility the aramid fire shirts and trousers or flight suit may be worn.

32

33 **Visits to the Fireline**

34 Visits to the fireline must have the approval of the IC.

- 35 • Visitors must maintain communications with the DIVS or appropriate
36 fireline supervisor of the area they are visiting.
- 37 • Required PPE:
 - 38 ➤ 8-inch high, lace-type exterior leather work boots with non-slip,
39 Vibram-type, melt-resistant soles. The 8-inch height requirement is
40 measured from the bottom of the heel to the top of the boot. Alaska
41 is exempt from the Vibram-type sole requirement. All boots that
42 meet the footwear standard as described above are authorized for
43 firefighting.
 - 44 ➤ Yellow aramid shirts
 - 45 ➤ aramid trousers
 - 46 ➤ hard hat with chinstrap

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- 1 ➤ leather gloves
- 2 ➤ fire shelter
- 3 • Required equipment/supplies:
- 4 ➤ hand tool
- 5 ➤ water canteen

6
7 Visitors to the Fireline may be “Escorted” or “Non-Escorted” depending on the
8 following requirements:

9 10 **Non-Escorted Visits**

11 Visitors must have a minimum physical fitness level of “light”.

- 12 • Must have adequate communications and radio training.
- 13 • Completed the following training:
 - 14 ➤ Introduction to Fire Behavior (S-190)
 - 15 ➤ Firefighter Training (S-130)
 - 16 ➤ Annual Fireline Safety Refresher Training.
- 17 • Deviation from this requirement must be approved by the IC for other non-
18 escorted support personnel involved in vehicle operations or other support
19 functions on established roadways and working in areas which pose no fire
20 behavior threat.
- 21 • *BLM/FWS - Law Enforcement physical fitness standard is accepted as*
22 *equivalent to a “light” WCT work category.*

23 24 **Escorted Visits**

25 All non-incident, non-agency, visitors lacking the above training and physical
26 requirements must be escorted while on the fireline.

- 27 • Visitors must receive training in the proper use of PPE.
- 28 • Requirement for handtool and water to be determined by escort.
- 29 • Visitors must be able to walk in mountainous terrain and be in good
30 physical condition with no known limiting conditions.
- 31 • Escorts must be minimally qualified at the Single Resource Boss. Any
32 deviation from this requirement must be approved by the IC.

33 34 **Helicopter Observation Flights**

35 Visitors who take helicopter flights to observe fires must receive a passenger
36 briefing and meet the following requirements:

- 37 • **Required PPE:**
 - 38 ➤ Flight helmet
 - 39 ➤ Leather boots
 - 40 ➤ Fire-resistant clothing
 - 41 ➤ All leather or leather and aramid gloves

42
43 Occasional passengers/visitors have no training requirement, but a qualified
44 flight manager must supervise loading and unloading of passengers.

45

1 **Fixed-Wing Observation Flights**

2 • **Required PPE**

- 3 ➤ No PPE is required for visitors and agency personnel who take fixed-
4 wing flights to observe fires. However, a passenger briefing is
5 required, and the flight level must not drop below 500 feet AGL.
6

7 **SAFENET**

8 SAFENET is a form, process, and method for reporting and resolving safety
9 concerns encountered in any aspect (e.g., preparedness, training, etc.) of
10 wildland fire or all risk incident management. The information provided on the
11 form will provide important, safety-related data to the National Interagency Fire
12 Center, and determine long-term trends and problem areas.

13 The objectives of the form and process are:

- 14 • To provide immediate reporting and correction of unsafe situations or close
15 calls in wildland fire.
16 • To provide a means of sharing safety information throughout the fire
17 community.
18 • To provide long-term data that will assist in identifying trends.
19 • Primarily intended for wildland and prescribed fire situations, however,
20 SAFENET can be used for training and all-risk events.
21

22 Individuals who observe or who are involved in an unsafe situation shall initiate
23 corrective actions if possible, and then report the occurrence using SAFENET.

24 You are encouraged, but not required, to put your name on the report.

25 Prompt replies to the originator (if name provided), timely action to correct the
26 problem, and discussion of filed SAFENETs at local level meetings encourage
27 program participation and active reporting.
28

29 SAFENET is not the only way to correct a safety-related concern and it does not
30 replace accident reporting or any other valid agency reporting method. It is an
31 efficient way to report a safety concern. It is also a way for front line
32 firefighters to be involved in the daily job of being safe and keeping others safe,
33 by documenting and helping to resolve safety issues. SAFENETs may be filed:

- 34 • electronically at <http://safenet.nifc.gov>
35 • postage paid mail-in form (PMS 405-2, NFES 2633)
36 • verbally by telephone at 1-888-670-3938.
37

38 **Accident/Injury Reporting**

39 The Occupational Safety and Health Administration (OSHA) mandate that all
40 accidents and injuries be reported in a timely manner. This is important for the
41 following reasons:

- 42 • To protect and compensate employees for incidents that occur on-the-job.
43 • To assist supervisors and safety managers in taking corrective actions and
44 establish safer work procedures.

- 1 • To determine if administrative controls or personal protective equipment
- 2 are needed to prevent a future incident of the same or similar type.
- 3 • To provide a means for trend analysis.
- 4
- 5 Employees are required to immediately report to their supervisor every job-
- 6 related accident. Managers and supervisors shall ensure that an appropriate
- 7 level of investigation is conducted for each accident and record all personal
- 8 injuries and property damage. Coordinate with your human resources office or
- 9 administrative personnel to complete appropriate Officer of Worker's
- 10 Compensation (OWCP) forms.
- 11 • Reporting is the responsibility of the injured employee's home unit
- 12 regardless of where the accident or injury occurred.
- 13 • DOI employees will report accidents using the Safety Management
- 14 Information System (SMIS) at <https://www.smis.doi.gov/>. Supervisors
- 15 shall complete SMIS report within six working days after the accident.
- 16 • Forest Service employees will use the Safety and Health Information Portal
- 17 System (SHIPS) through the Forest Service Dashboard.
- 18

19 **DOI Required Treatment for Burn Injuries**

20 The following procedures will be used when DOI employees sustain burn
21 injuries, regardless of agency jurisdiction. These procedures will also apply to
22 federal employees, casuals, and other personnel covered by the Federal
23 Employee's Compensation Act who are burned during a wildland fire operation
24 within DOI jurisdiction.

25
26 After on-site medical response, initial medical stabilization, and evaluation are
27 completed, agency administrator will coordinate with the attending physician to
28 ensure that an employee whose injuries meet any of the following burn injury
29 criteria (identified by the American Burn Association as warranting immediate
30 referral to an accredited burn center) is immediately referred to the nearest
31 regional burn center. A list of possible burn care facilities can be found at:
32 <http://www.blm.gov/nifc/st/en/prog/fire/im.html>.

33
34 The decision to refer the employee to a regional burn center will be made
35 directly by the attending physician or may be requested of the physician by the
36 agency administrator.

37 **Burn Injury Criteria**

- 39 • Partial thickness burns (second degree) involving greater than 5% Total
- 40 Body Surface Area (TBSA).
- 41 • Burns involving the face, hands, feet, genitalia, perineum, or major joints.
- 42 • Third-degree burns of any size are present.
- 43 • Electrical burns, including lightning injury are present.
- 44 • Inhalation injury is suspected.
- 45 • Burns are accompanied by traumatic injury (such as fractures).

- 1 • Individuals are unable to immediately return to full duty.

2

3 It is imperative that action is expeditious, as burn injuries are often difficult to
4 evaluate and may take 72 hours to manifest themselves. When there is any
5 doubt as to the severity of the injury, the required action is to immediately refer
6 and transport the employee to a regional burn center.

7

8 **Critical Incident Management**

9 The National Wildfire Coordinating Group has published the *Agency*
10 *Administrator's Guide to Critical Incident Management* (PMS 926, NFES
11 1356). The guide is a series of subject-area checklists designed to be reviewed in
12 detail before a critical incident occurs, during the actual management of the
13 incident, and after the incident has taken place. It is a compilation of lessons
14 learned and suggestions that are designed to assist an agency administrator in the
15 management of a critical incident. The guide is not intended to replace local
16 emergency plans or other specific guidance that may be available, but should be
17 used in conjunction with existing SOPs. It is available through the Publications
18 Management System website [http://www.nwccg.gov/pms/pubs/PMS926-](http://www.nwccg.gov/pms/pubs/PMS926-DRAFT.pdf)
19 [DRAFT.pdf](http://www.nwccg.gov/pms/pubs/PMS926-DRAFT.pdf)

20

21 Human Resource Specialist (HRSP) are trained to provide Critical Incident
22 Stress Management (CISM) support. The HRSP may provide defusing for
23 affected incident personnel. A defusing is an informal, initial debriefing which
24 can provide initial intervention and assist in determining whether or not a formal
25 debriefing, other CISM or counseling services are appropriate.

26

27 Once the decision is made by the local Management in conjunction with the
28 IMT to order CISM, the HRSP assists with resource ordering, logistical support,
29 coordinating CISM needs, and liaison between CISM and the IMT. The CISM
30 process should not circumvent or be separate from the Incident Command
31 system.