

Chapter – 9 Safety and Risk Management

A. Introduction

The primary means by which we prevent accidents in wildland fire operations is through aggressive Risk Management. The Bureau of Indian Affairs (BIA) safety philosophy acknowledges that while the ideal level of risk may be zero, a hazard free work environment is not a reasonable or an 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.

B. Policy

The commitment to and accountability for safety is a joint responsibility of all firefighters, managers, and administrators. All Land Management Plans (LMP), Fire Management Plans (FMP), and all suppression plans and actions must reflect this commitment. Individuals must be personally committed and responsible for their own performance, accountability, and safety.

Specific Safety Policy Documents:

- ***IAM 25 – Safety and Occupational Health***
- ***IAM 90 – Wildland Fire Management***
- ***BIA Safety and Health Handbook***

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

D. Goal

The goal of the fire safety program is to provide direction and guidance for safe and effective management in all activities. Safety is the responsibility of everyone assigned to wildland fire, and must be practiced at all operational levels from the National Fire Director, Regional Directors, Agency Superintendents, unit managers and employees in the field.

Agency Administrators need to stress that firefighter and public safety always takes precedence over property and resource loss. Coordination between the Fire Management staff and Unit Safety Officer(s) is essential in achieving this objective. For additional safety guidance and reference refer to:

- *Fireline Handbook* (PMS 410-1, NFES 0065).
- *2010 Incident Response Pocket Guide* (IRPG) (PMS 461, NFES 1077).
- *Wildland Firefighter Health & Safety Report* (Annual MTDC Publication).
- *National Interagency Mobilization Guide* (NFES 2092).

Definitions

- **Safety:** A measure of the degree of freedom from risk or conditions that can cause death, physical harm, or equipment or property damage.
- **Hazard:** A condition or situation that exists within the working environment capable of causing physical harm, injury, or damage.
- **Risk:** The likelihood or possibility of hazard consequences in terms of severity or probability.
- **Risk Management:** The process whereby management decisions are made and actions taken concerning control and of hazards and acceptance of remaining risk.

E. Risk Management Process

Fire operations risk management is outlined in the NWCG *Incident Response Pocket Guide*, page 1. The five step process provides firefighters and fire managers a simple, universal, and consistent way to practice risk management by:

- Establishing Situation Awareness
- Identifying hazards and assessing the risk they pose
- Controlling, mitigating, or eliminating hazards

- Making go/no-go decisions based on acceptability of remaining risk
- Evaluating effectiveness of hazard controls and continuously re-evaluating situation

F. Job Hazard Analysis (JHA)

A completed JHA is required for:

- Jobs or work practices that have potential hazards.
- New, non-routine, or hazardous tasks to be performed where potential hazards exist.
- Jobs that may require the employee to use non-standard Personal Protective Equipment (PPE).
- Changes in equipment, work environment, conditions, policies, or materials.
- Supervisors and appropriate line managers must ensure that established JHAs are reviewed and signed by all participants prior to any non-routine task or at the beginning of the fire season.

G. Work/Rest

To assist in mitigating fatigue, days off are allowed during and after assignments. Agency Administrators such as Superintendents, or Regional Directors may authorize time off supplementary to mandatory days off requirements.

The authority to grant a day off with pay lies with 5 U.S.C. 6104, 5 CFR 610.301, and 56 Comp. Gen. Decision 393 (1977). Guidelines include:

- Plan for and ensure that all personnel are provided a minimum 2:1 work to rest ratio (for every 2 hours of work or travel, provide 1 hour of sleep and/or rest).
- Work shifts that exceed 16 hours and/or consecutive days that do not meet the 2:1 work/rest ratio should be the exception, and no work shift should exceed 24 hours. However, in situations where this does occur (for example initial attack), incident management personnel will resume 2:1 work/rest ratio as quickly as possible.

- The Incident Commander (IC) or Agency Administrator must justify work shifts that exceed 16 hours and those that do not meet 2:1 work/rest ratio. Justification will be documented in the daily incident records such as Crew Time Reports (SF-261).
- The Time Officer's/Unit Leader's approval of the Emergency Firefighter Time Report (OF-288), or other agency pay document, certifies that the required documentation is on file and no further documentation is required for pay purposes.

1. Assignment Definition

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

2. Length of Assignment

Standard assignment length is 14 days, exclusive of travel from and to home unit, with possible extensions identified below. Time spent in staging and preposition status counts toward the 14-day limit, regardless of pay status, for all personnel, including Incident Management Teams.

3. Days Off

After completion of a 14 day assignment and return to the home unit, two mandatory days off will be provided (2 after 14). Days off must occur on the calendar days immediately following the return travel in order to be charged to the incident. (See Section 12.1-2) (5 U.S.C. 6104, 5 CFR 610.301-306, and 56 Comp. Gen. Decision 393 (1977)). If the next day(s) upon return from an incident is/are a regular work day(s), a paid day(s) off will be authorized.

Regulations may preclude authorizing this for non-NWCG and state/local employees.

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

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

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

4. Assignment Extension

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

Assignments may be extended when:

- Life and property are imminently threatened.
- Suppression objectives are close to being met.
- A military battalion is assigned.
- Replacement resources are unavailable, or have not yet arrived.

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

Contracts, Incident Blanket Purchase Agreements (I-BPA), and Emergency Equipment Rental Agreements (EERA) should be reviewed for appropriate pay requirements and length of assignment. If the contract, (I-BPA) or EERA do not address this, the incident Finance/Administration Section Chief or the procurement official should be consulted as to whether compensation for a day off is appropriate.

5. Single Resource/Kind Extensions

The section chief or Incident Commander will identify the need for assignment extension and will obtain the affected resource's concurrence. The section chief and affected resource will acquire and document the home unit supervisor's approval.

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

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

6. Incident Management Team Extensions

Incident Management Team extensions are to be negotiated between the incident Agency Administrator, the Incident Commander, and the GMAC/NMAC (if directed).

7. Management Directed Days Off at Home Unit

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

H. Motor Vehicle Operation Policy

1. Policy

All individuals operating a motor vehicle in performance of duties in support of the BIA, must comply with the requirement of the BIA Motor Vehicle policy requirements 5 CFR 930, and 485 DM 16. Regional Directors, Agency Superintendents, and FMO's will be responsible for ensuring full compliance, including safe operation of motor vehicles as well as immediate response to issues of non-compliance.

All motor vehicle operators will be required to possess a current Government Motor Vehicle Operators Identification Card. Potential drivers annually must complete GSA form 3607

Motor Vehicle Operator's License and Driving Record. Completed forms will be submitted, and processed by the Division of Safety and Risk Management for authorization.

2. Driver Qualifications

- 18 years of age or older.
- Possess a valid State driver's license, and requisite experience needed to drive type of vehicle assigned.

- Have no convictions or uncontested citations within the three-year period preceding the submittal of GSA Form 3607 for Reckless Driving, Driving While Intoxicated (DWI), Driving Under the Influence (DUI), or Leaving the Scene of an Accident.

3. Roles & Responsibilities of Supervisors

- Ensure that each Motor Vehicle Operator under their supervision possesses a valid driver's license that indicates State authorization to operate the class of vehicle required in the performance of duties.
- Based on available information, ensure no authorization is given to individuals with restricted driving privileges (i.e., home to work licenses).

4. Terminate driving privileges for a Motor Vehicle Operator who is:

- Arrested for, charged with, or convicted of Reckless Driving, Driving While Intoxicated (DWI), or driving Under the Influence (DUI).
- Arrested for, charged with, or convicted of a criminal offense related to a traffic incident involving alcohol or drugs, including but not limited to vehicular homicide, vehicular manslaughter, or endangerment.
- Disqualified from holding a State driver's license, including restriction, suspension, revocation, or cancellation of a State driver's license for the type and class of vehicle operated.
- Upon request, fails to provide a valid CDL medical certificate; Not in possession of a current Motor Vehicle Operator Authorization Card.
- Is convicted for operating a motor vehicle under the intoxicating influence of alcohol, narcotics, or pathogenic drugs.
- Is not qualified to operate a Government owned or leased vehicle safely because of a physical or medical condition.
- No longer possesses a State license by revocation or suspension.

5. Motor Vehicle Operator Requirements

- Comply with State, local and tribal traffic laws and the lawful instruction of emergency and law enforcement personnel.
- Abstain from ingesting controlled substances, intoxicating beverages, prescription drugs or other medications that caution against operating a motor vehicle when taken, to avoid being impaired.
- Not transport intoxicating beverages, controlled substances, or any passenger who is in possession of intoxicating beverages or controlled substances.
- Not transport unauthorized passengers in a Government owned or leased motor vehicle.
- Report to his/her supervisor any medical or physical condition, including the use of controlled substances, prescription or over-the-counter drugs, which may impair the driver from the safe operation of a motor vehicle.
- Successfully complete motor vehicle safety training at least every three years.
- Notify their supervisor if their State driving privileges are restricted, suspended, revoked, or canceled, or if they have been otherwise disqualified from holding a license. Employees are also responsible for reporting any situation that may alter their authorization or ability to operate a motor vehicle, such as any legal or court ordered suspension of driving privileges or any limiting medical condition.
- Report all incidents involving a Government owned or leased motor vehicle, commercial motor vehicle, rental motor vehicle, or a privately owned or leased motor vehicle that occur during the performance of their official duties.
- Report all on-duty incidents involving a Government owned or leased motor vehicle, commercial motor vehicle, rental motor vehicle, or a privately owned or leased motor vehicle that could result in a violation, citation, charge, arrest, warrant, or civil action.

- Report all incidents involving a Government owned or leased motor vehicle, Commercial motor vehicle, rental motor vehicle, or privately owned or leased motor vehicle and the use of controlled substances or intoxicating beverages; impairment resulting from prescription or over-the-counter drugs, illness, or medical condition; or other factors that impair concentration, motor skills or reaction time.
- Report any restriction, suspension, revocation, or cancellation of their driver's license, for any length of time, or any disqualification from holding a State, commercial or international operator's license.
- Notify supervisors of these incidents no later than the following business day after their occurrence. Failure to inform the supervisor of any such situation may subject employees to disciplinary action.

6. Incident Driving Operations

This policy addresses driving by operations personnel, support personnel such as bus drivers, Liaisons, IMT personnel actively engaged in wildland fire or all-risk activities; including driving while assigned to a specific incident (check-in to check-out) or during initial attack fire response (includes time required to control the fire and travel to a rest location).

Agency resources assigned to an incident or engaged in initial attack fire response will adhere to the current BIA work/rest policy for determining length of duty day. For more information refer to: <http://www.nwccg.gov/teams/shwt/DrivingStandards2004.pdf>

- No driver will drive more than 10 hours (behind the wheel) within any duty-day.
- Multiple drivers in a single vehicle may drive up to the duty-day limitation provided no driver exceeds the individual driving (behind the wheel) time limitation of 10 hours.
- A driver shall drive only if they have had at least 8 consecutive hours off duty before beginning a new operational period.

- To manage fatigue, no travel will be authorized off unit (excluding IA response) during mobilization and demobilization travel between 2200 hours and 0500 hours.

Exception to the minimum off-duty hour requirement is allowed when essential to 1) accomplish immediate and critical suppression objectives, or 2) address immediate and critical firefighter or public safety issues.

- Documentation of mitigation measures implemented to manage fatigue, as provided by the existing work rest guidelines, is also required for drivers who exceed 16 hour work shifts. This is required regardless of whether the driver is still compliant with the 10 hour individual (behind the wheel) driving time limitations.

7. Casuals hired as drivers when employed by BIA

For more information refer to Chapter 10

I. Wildland Fire Field Attire

Polyester, polypropylene, and nylon materials are not to be worn, because most synthetic fibers melt when exposed to flame or extreme radiant heat. Personnel should wear only undergarments made of the highest possible content of natural fibers, aramid, or other flame-resistant materials.

Aramid clothing should be cleaned or replaced whenever soiled, especially when soiled with petroleum products. Aramid clothing will be replaced when the fabric is so worn as to reduce the protection capability of the garment or is so faded as to significantly reduce the desired visibility qualities.

Any modification to Personal Protective Equipment that reduces its protection capability such as iron-on logos, and sagging of pants, is an unacceptable practice and will not be allowed on fires.

Wildland Fire Boot Standard

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

Boots are a condition of employment for firefighting positions and are purchased by the employee prior to employment.

J. Personal Protective Equipment (PPE)

1. Policy

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

2. Required PPE

Required Fireline PPE includes:

- Fire shelter
- Hard hat with chinstrap
- Goggles/safety glasses as identified by JHAs
- Ear plugs/hearing protection
- Yellow long-sleeved aramid shirt
 - *Shirt must meet Forest Service specification 5100-91 or be certified to National Fire Protection Association (NFPA) 1977, Standard on Protective Clothing and Equipment for Wildland Fire Fighting.*
- Aramid trousers
 - *Trousers must meet Forest Service specification 5100-92 or be certified to National Fire Protection Association (NFPA) 1977, Standard on Protective Clothing and Equipment for Wildland Fire Fighting.*
- Leather/Fire Resistant gloves
 - *Gloves must meet Forest Service specification 6170-5 or be certified to National Fire Protection Association (NFPA) 1977, Standard on Protective Clothing and Equipment for Wildland Fire Fighting.*
- Additional PPE as identified by local conditions, material safety data sheet (MSDS), or JHA.

3. Fire Shelters

New Generation Fire Shelters (M-2002, Forest Service Specification 5100-606) are required for all wildland firefighters as of January 1, 2010. For more information refer to http://www.nifc.gov/fire_equipment/fire_shelter.htm

Training in inspection and deployment of new generation fire shelters will be provided prior to issuance. Firefighters will inspect their fire shelters at the beginning of each fire season and periodically throughout the year, to ensure they are serviceable.

Training shelters will be deployed at required Annual Fireline Safety Refresher Training. No live fire exercises for the purpose of fire shelter deployment training will be conducted.

Fire shelters will be carried in a readily accessible manner by all line personnel. The deployment of shelters will not be used as a tactical tool. Supervisors and firefighters must never rely on fire shelters instead of using well-defined escape routes and safety zones. When deployed on a fire, fire shelters will be left in place if it is safe to do so and not be removed pending approval of authorized investigators. Firefighters must report the shelter deployment incident to their supervisor as soon as possible.

4. Head Protection

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

Acceptable hardhats for fireline use are:

- "Helmet, Safety, Plastic" (NFES #0109, NSN 8415-01-055-2265) listed in NWCG *National Fire Equipment System Catalog: Part 1, Fire Supplies and Equipment*, or
- Equivalent hardhat meeting the (NFPA) *1977 Standard on Protective Clothing and Equipment for Wildland Fire Fighting* requirements, or
- Equivalent hardhat meeting ANSI Z89.1-2003.

Hard hats consist of two components - the shell and the suspension - which work together as a system. Alteration of either of these components compromises the effectiveness of the system (e.g. wearing hardhat backwards) and is not allowed. Both components require periodic inspection and maintenance. Specific inspection and maintenance instructions are found in Missoula Technology and Development Center (MTDC) Tech Tip publication, *Your Hardhat: Inspection and Maintenance* (0267-2331-MTDC).
<http://www.fs.fed.us/t-d/pubs/htmlpubs/htm02672331/index.htm>

5. Eye and Face Protection

The following positions require the wearing of eye protection (meets ANSI Z87.1 Standards):

- Nozzle operator
- Chainsaw operator/faller
- Helibase and ramp personnel
- Wildland fire chemical mixing personnel
- Other duties may require eye protection as identified in a specific JHA

Full face protection in the form of a face shield in compliance with ANSI Z87.1 shall be worn when working in any position where face protection has been identified as required in the job specific JHA: Batch Mixing for Terra-Torch®, power sharpener operators, etc.

6. Hearing Protection

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

- Chainsaw operators/fallers.
- Pump operators.
- Helibase and aircraft ramp personnel.
- Wildland fire chemical mixing personnel.
- Any other personnel exposed on a regular basis to damaging noise levels.

Other duties may require hearing protection as identified in a specific JHA.

Employees may be required to be placed under a hearing conservation program as required by 29 CFR 1910.95. Consult with local safety & health personnel for specifics regarding unit hearing conservation program.

- *Employees may be placed under a hearing conservation program as identified in approved Medical Standards Program waivers or risk mitigation decision memorandum.*

7. Neck Protection

Face and neck shrouds are not required PPE. The use of shrouds is not required and should be as a result of onsite risk analysis. If used, face and neck shrouds shall meet the requirements of FS specification 5100-601 or *NFPA 1977 Standard on Protective Clothing and Equipment for Wildland Fire Fighting*.

Shrouds should be positioned in a manner that allows for immediate use. For additional information see MTDC Tech Tip *Improved Face and Neck Shroud for Wildland Firefighters*, 2004 (0451-2323-MTDC). <http://fsweb.mtdc.wo.fs.fed.us/pubs/htmlpubs/htm04512323/index.htm>

8. Leg Protection

All chainsaw operators will wear chainsaw chaps meeting the United States Forest Service Specification 6170-4F or 4G. All previous Forest Service specification chainsaw chaps must be removed from service. Chainsaw chaps shall be maintained in accordance with MTDC Publication, *Inspecting and Repairing Your Chainsaw Chaps - User Instructions* (0567-2816-MTDC) <http://www.fs.fed.us/t-d/pubs/htmlpubs/htm05672816/page01.htm>

9. Respiratory Protection

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

10. Specialized or Non Standard Personal Protective Equipment (PPE)

A JHA must be completed and reviewed by the Unit Safety Officer or FMO and supervisor's approval is required. Items must meet agency and industry standards for specific intended use. Cold weather flame resistant outer wear shall be in compliance with NFPA 1977, *Standard on Protective Clothing and Equipment for Wildland Fire Fighting*. All cold weather inner wear should be composed of the highest possible content of natural fibers (cotton, wool or silk) or other flame resistant material such as aramid.

11. High Visibility Vests

To meet 23 CFR 655, high visibility apparel should be worn whenever a firefighter is working on or in the right of way of a public roadway. The high visibility safety apparel should not be worn if:

- There is a reasonable chance that the employee may be exposed to flames, high heat or hazardous materials.
- The high visibility garment hinders an employee's ability to do their job because it prevents necessary motion or because it limits access to necessary equipment such as radios or fire shelters.

Employees must wear high visibility safety apparel that meets ANSI/ISEA 107 -2004, Class 2 or 3, or ANSI/ISEA 207-2006.

Apparel, including vests, that meets ANSI/ISEA 107-2004 and ANSI/ISEA 207-2006 currently does not meet the flame resistance requirements of the NFPA Standard on Protective Clothing and Equipment for Wildland Fire Fighting.

K. Fireline Safety

1. Incident Briefings

The Incident Commander (IC) must ensure that safety briefings are occurring throughout the fire organization, and that safety factors are covered with incident personnel at all operational briefings.

The IC, Safety Officer, Fire Behavior Analyst, and remainder of the Command and General staff will use the 10 Standard Fire Orders, 18 Watch Out Situations, and the LCES Analysis of Tactical Applications on the Incident Action Plan Safety Analysis (ICS 215-A) for guidance at strategy meetings, during briefings, and when developing the incident action plan, safety message, and medical plan.

A web site has been established that incorporates a daily safety message called "Six Minutes for Safety". The web site address is: http://www.nifc.gov/sixminutes/dsp_sixminutes.php

2. Incident Safety Oversight

Agency Administrators are responsible for the overall safety on the fireline and may request additional safety oversight as needed.

Examples may include:

- A fire escapes initial attack or when extended attack is probable.
- There is complex or critical fire behavior.
- There is a complex air operation.
- The fire is in an urban intermix/interface.
- Other extraordinary circumstances.

Every individual has the right to turn down unsafe assignments. When an individual feels an assignment is unsafe they also have the obligation to identify, to the degree possible, safety alternatives for completing that assignment. The IRPG contains a process for How to Properly Refuse Risk on page 17.

3. Incident Emergency Management Planning

To achieve successful medical responses within incident management, agency home units will take the necessary steps to ensure incidents of all complexity levels have an Incident Emergency Plan, standardized communication center protocols, and an incident medical plan that satisfies the requirements found in NWCG memo number 025-2010 <http://www.nwcg.gov/general/memos/nwcg-025-2010.html>

4. Air Ambulance Services

Agency/Regional level fire program managers should ensure that procedures and processes for use of local and regional air ambulance services are stated in writing and effectively coordinated between the fire programs, the dispatch/logistics centers, and service providers.

5. Location of Fire Camps and Plans to Remain in Place

Fire camps should be located in areas that will service the incident for the long term without having to relocate. Due to such factors as extreme fire behavior, fire camp locations might be compromised. Incident Commanders are to be especially vigilant to quickly identify situations that may put their fire camp or any other adjacent fire camps in jeopardy. As such, planning for evacuation and/or remain in place actions should be considered. Evacuation plans at a minimum shall include:

- Documented risk assessment
- Trigger points
- Egress routes
- Transportation for all personnel
- Accountability for all personnel
- Individuals not meeting 310-1 qualifications will be considered escorted visitors as addressed elsewhere in this chapter.

6. Incident Communications Frequency Management

Frequency Management must be part of incident safety oversight regardless of incident complexity. Frequencies are a national resource and are reused throughout the US and MUST be approved and coordinated. Only using authorized frequencies protects assigned frequencies against outside interference which could disrupt communication placing firefighters in jeopardy. The Communication Unit Leader in coordination with the National Interagency Incident Communication Division (NIICD) has the authority to assign approved frequencies for an incident. If the incident does not have a Communications Unit Leader, NIICD at the National Interagency Fire Center (NIFC) will be designated as the frequency Manager. All requests for additional frequencies will be made via a Resource Order through the Dispatch organization.

7. LCES—A System for Operational Safety

LCES is a safety procedure put in place before fighting the fire. It is a self-triggering mechanism that functions sequentially: lookouts assess—and reassess—the fire environment; lookouts communicate to each firefighter threats to safety; firefighters use escape routes and move to safety zones. For more information refer to page 6 in the IRPG.

L - Lookout(s)
C - Communication(s)
E - Escape Route(s)
S - Safety Zone(s)

8. Standard Safety Flagging

The NWCG has established the following standard for wildland fire activities:

- Safety Zones/Escape Routes- Hot-Pink flagging marked ESCAPE ROUTE (NFES 0566). When flagging no longer shows valid escape routes/safety zones, remove it immediately. Crews with colorblind members may wish to carry and utilize fluorescent chartreuse flagging (NFES 2396).
- Hazards- yellow w/black diagonal stripes, fluorescent, biodegradable 1" wide (NFES 0267). If the above recommendation is not utilized on an incident, the incident will need to identify the selected color and make it known to all firefighters.

9. Six Minutes for Safety

Six Minutes for Safety is an interagency safety initiative that, on a daily basis, addresses the high risk situations that historically get firefighters in trouble. The intent of the program is to give firefighters six minutes of training every day on high risk low frequency fire activities.

All BIA fire programs are encouraged to participate in daily 6 Minutes for Safety training. The program can be accessed at the following web site: <http://www.wildfirelessons.net/uploads/6mfs/home.html>

10. Unexploded Ordnance (UXO)

General guidance is as follows: If UXO is suspected, do not enter the area. Small arms (rifle and shotgun) munitions areas should be flagged and avoided by fire personnel. For suspected larger munitions, the area must be avoided by fire personnel and contact local law enforcement bomb squad or nearest Department of Defense agency. Each unit will determine which employees are authorized to enter known or potential hazardous substance release sites, and the responsibility for these determinations remains with each agency administrator. For additional UXO safety information, review the 2010 IRPG, page 25.

11. Hazardous Materials

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

Follow procedures in the 2010 IRPG, pages 31-37.

- Treat each site as if it contains harmful materials.
- Do not handle, move, or open any container, breathe vapors, or make contact with the material.
- Move a safe distance upwind from the site.
- Contact appropriate personnel. Generally, this is the Hazardous Materials Coordinator for the Agency.

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

- Read and understand the Material Safety Data Sheets.
- Keep the work area clean and orderly.
- Use the necessary safety equipment.
- Label every container with the identity of its contents and appropriate hazard warnings.
- Store incompatible chemicals in separate areas.

- Substitute less toxic materials whenever possible.
- Limit the volume of volatile or flammable material to the minimum needed for short operation periods.
- Provide means of containing the material if equipment or containers should break or spill their contents.

12. Emergency Non-Wildland Fire Response- Hazardous Materials:

Wildland firefighters have the potential to be exposed to hazardous materials releases while performing their jobs. Hazardous material or waste may be found on public and tribal lands in a variety of forms (e.g. clandestine drug lab waste, mining waste, and illegal dumping).

In order to meet 29 CFR 1910.120 and to ensure familiarity with hazardous materials releases all wildland firefighters will complete a one-time, two hour First Responder awareness training course and an annual refresher.

13. Emergency Non-Wildland Fire Response- Emergency Medical Response:

Medical emergency response is not a function of wildland fire suppression resources. Wildland firefighters are not trained and equipped to perform emergency medical response duties and should not be a part of a pre-planned response that requires these duties. When wildland firefighters encounter emergency medical response situations, their effort should be limited to immediate care (e.g. first aid, first responder actions they are trained and qualified to perform).

14. Roadside Response:

Positioning of vehicles and employee awareness is paramount when responding to incident in close proximity to roadways. Refer to 2010 IRPG, page 24 "Roadside Incident Response" which highlights tactical considerations for roadway responses.

15. Responding to Wildland Fires in or near Oil and Gas Operations:

Oil and gas production across the United States has increased dramatically and has an impact on wildland fire suppression operations and can expose firefighters to safety and health hazards. For lands that have oil and gas operations within their fire suppression jurisdiction, the following is the minimum standard operating procedures to help ensure the health and safety of wildland firefighters:

- Firefighters receive annual oil and gas hazard recognition and mitigation training.
- Local units shall complete a JHA for wildland fire suppression activities in oil and gas areas and provide firefighter a copy with a briefing.
- Establish notification procedures and protocols to contact gas and oil companies.
- Assign gas and oil Resource Advisors (RA) to each incident.
- Ensure at least one member of each squad, engine crew, misc overhead, etc are assigned a Hydrogen Sulfide (H²S) gas monitors.
- Provide training to firefighters assigned monitors on use, maintenance, and threshold data (10PPM) for H²S for gases.
- If H²S gas is encountered, immediately disengage and leave affected area.
- Report all exposure incidents to appropriate individuals.
- Refer to page 26 in the 2010 IRPG for more information

For more information, and training refer to the following websites:

- http://www.nifc.gov/wfstar/oil_gas.htm
- <http://iirdb.wildfirelessons.net/main/Reviews.aspx>

16. Responding to Wildland Fires in or Near Radioactive Locations

Abandoned uranium mines exist in many areas of public land. When these areas are identified, local management should provide information and direction on operations to be used. General knowledge and understanding of potential radiation exposure is necessary for wildland fire program management to make valid risk management decisions in these areas.

For more information, and training refer to the following websites:

- http://www.nifc.gov/policies/red_book/doc/RadiationDocument.pdf
- http://www.nifc.gov/policies/red_book/doc/RadiationGuidance.pdf

17. Hydrogen Cyanide (HCN)

Extensive use of synthetic materials such as plastics, nylon, Styrofoam, and polyurethane have had a significant impact on the type of smoke produced during wildland suppression and prescribed fire activities. These synthetic substances can produce HCN which can disrupt the body's ability to use oxygen, can cause asphyxia, and carbon monoxide poisoning. Common items such as sofas, carpeting, vehicles, and other products routinely found at dump sites can have HCN in smoke produced at sites with above mentioned materials.

a. Precautions

Follow instructions on page 32 of the 2010 IRPG for protocol in dealing with hazardous materials.

b. Symptoms of HCN Poisoning

- Bitter almond odor on breath
- Burning taste in mouth
- Stiffness of lower jaw
- Feeling of numbness or constriction in throat
- Weakness and headache

c. Treatment

Any possible exposures to HCN should be sent to a local immediate care facility. If health care facility is not capable of performing toxicology testing, the individual should be referred to a facility capable of performing testing, and treatment.

18. Smoke and Carbon Monoxide

Site specific hazards and mitigations need to be identified to reduce firefighter exposure to smoke and potential carbon monoxide.

Management Controls to Mitigate Exposure

Agency safety and health policy states that Personal Protective Equipment (PPE) devices will be used only when equipment guards, engineering controls, or management control does not adequately protect employees. To meet this requirement:

- Managers and supervisors will not knowingly place wildland firefighters in positions where exposure to toxic gases or chemicals that cannot be mitigated and would require the use of self-contained breathing apparatus.
- Managers will not sign cooperative fire protection agreements that would commit wildland firefighters to situations where exposure to toxic gases or chemicals would require the use of self-contained breathing apparatus.
- Managers will avoid giving the appearance that their wildland fire suppression resources are trained and equipped to perform structure, vehicle, and dump fire suppression, to respond to hazardous materials releases, or to perform emergency medical response.

19. Safety for Non-Operational Personnel Visiting Fires

The BIA recognizes the need for Agency Administrators, other agency personnel, dignitaries, and members of the new media, etc. to visit incidents. The following standards apply to all visitors.

a. Visit to Incident Base

The minimum requirements for field attire at incident base camps and other non-fireline locations.

- Lace-up closed toe shoes/boots with traction soles and ankle support.
- Full length trousers
- Long-sleeve shirt

- b. Visits to the Fireline/RX Burns
 - Visits to the fireline must have the approval of the IC/Burn Boss.
 - Visitors must maintain communications with the DIVS or appropriate fireline supervisor of the area they are visiting.
- c. Required PPE
 - Yellow long-sleeved aramid shirts.
 - Aramid trousers.
 - Hard hat with chinstrap.
 - Leather/Fire Resistant gloves.
 - Fire shelter.
- d. Required field attire
 - Boots that meet the wildland fire boot standard
 - Undergarments made of the highest possible content of natural fibers, aramid, or other flame-resistant materials.
- e. Required equipment/supplies
 - Hand tool.
 - Water canteen.

20. Visits to the Fireline

Visitors to the Fireline/RX Burns may be “Non-Escorted” or “Escorted” depending on the following requirements:

a. Non-Escorted Visits

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

- Must have adequate communications and radio training.
- Completed the following training:
 - Introduction to Fire Behavior (S-190).
 - Firefighter Training (S-130).
 - Annual Fireline Safety Refresher Training.

- Deviation from this requirement must be approved by the IC for other non-escorted support personnel involved in vehicle operations or other support functions on established roadways and working in areas which pose no fire behavior threat.

b. Escorted Visits

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

- Visitors must receive training in the proper use of PPE.
- Requirement for hand tool and water to be determined by escort.
- Visitors must be able to walk in mountainous terrain and be in good physical condition with no known limiting conditions.
- Escorts must be minimally qualified as Single Resource Boss.
- Any deviation from this requirement must be approved by the IC.

21. Helicopter Observation Flights

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

Required PPE

- Flight helmet
- Leather boots
- Flame-resistant clothing
- All leather or leather and aramid gloves

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

22. Fixed-Wing Observation Flights

Required PPE

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

L. SAFENET

Reporting Unsafe Situations in Wildland Fire Operations

- The DOI bureaus and the USDA Forest Service have created and adopted a common reporting system to report unsafe situations or close calls in wildland and prescribed fire operations, all-risk incidents, and training events. SAFENET denotes "safety and health network in fire operations."
- The objectives of the form and process are:
- To provide immediate reporting and correction of unsafe situations or close calls in wildland fire.
- To provide a means of sharing safety information throughout the fire community.
- To provide long-term data that will assist in identifying trends.
- Primarily intended for wildland and prescribed fire situations; however, SAFENET can be used for training and all-hazard events.
- Individuals who observe or who are involved in an unsafe situation should initiate corrective action, if possible, and then report the occurrence using SAFENET. You are encouraged, but not required, to put your name on the report.
- There is no punishment or penalty for filing a SAFENET. SAFENET submissions may be done anonymously.
- Prompt replies to the originator (if name provided), timely action to correct problems, and discussion of filed SAFENETs at local level meetings encourage program participation and active reporting.
- SAFENET does not replace agency accident reporting criteria.
- SAFENETS may be filed electronically at: <http://safenet.nifc.gov/> or verbally by telephone @ 1-888-670-3938.

M. Required Treatment for Burn Injuries

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

After on-site medical response, initial medical stabilization, and evaluation are completed; the Agency Administrator or designee having jurisdiction for the incident and/or firefighter representative (e.g., Crew Boss, Medical Unit Leader, Compensations for Injury Specialist, etc.) should coordinate with the attending physician to ensure that a firefighter whose injuries meet any of the following burn injury criteria is immediately referred to the nearest regional burn center. It is imperative that action is expeditious, as burn injuries are often difficult to evaluate and may take 72 hours to manifest themselves. These criteria are based upon American Burn Association criteria as warranting immediate referral to an accredited burn center.

The decision to refer the firefighter to a regional burn center is made directly by the attending physician or may be requested of the physician by the agency administrator or designee having jurisdiction and/or firefighter representative.

The Agency Administrator or designee for the incident will coordinate with the employee's home unit to identify a Workers Compensation liaison to assist the injured employee with workers compensation claims and procedures.

Workers Compensation benefits may be denied in the event that the attending physician does not agree to refer the firefighter to a regional burn center. During these rare events, close consultation must occur between the attending physician, the firefighter, Agency Administrator or designee and/or firefighter representative, and the firefighter's physician to assure that the best possible care for the burn injuries is provided.

1. Burn Injury Criteria

- Partial thickness burns (second degree) involving greater than 5% Total Body Surface Area (TBSA).
- Burns (second degree) involving the face, hands, feet, genitalia, perineum, or major joints.
- Third-degree burns of any size are present.

- Electrical burns, including lightning injury are present.
- Inhalation injury is suspected.
- Burns are accompanied by traumatic injury (such as fractures).
- Individuals are unable to immediately return to full duty.
- When there is any doubt as to the severity of the burn injury, the recommended action should be to facilitate the immediate referral and transport of the firefighter to the nearest burn center.

A list of possible burn care facilities can be found at:

<http://www.blm.gov/nifc/st/en/prog/fire/im.html>

For additional NWCG incident emergency medical information see:

<http://www.nwcg.gov/branches/pre/rmc/iems/index.html>

2. Accident/Injury Reporting

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

- To protect and compensate employees for incidents that occur on-the-job.
- To assist supervisors and safety managers in taking corrective actions and establish safer work procedures.
- To determine if administrative controls or personal protective equipment are needed to prevent a future incident of the same or similar type.
- To provide a means for trend analysis.

Employees are required to immediately report to their supervisor every job-related accident. Managers and supervisors shall ensure that an appropriate level of investigation is conducted for each accident and record all personal injuries and property damage. Coordinate with your human resources office or administrative personnel to complete appropriate Officer of Worker's Compensation (OWCP) forms. Reporting is the responsibility of the injured employee's home unit regardless of where the accident or injury occurred.

Employees will report accidents using the Safety Management Information System (SMIS) at <https://www.smis.doi.gov/> Supervisors shall complete SMIS report within six working days after the accident/injury.

N. Critical Incident Management

The National Wildfire Coordinating Group has published the *Agency Administrator's Guide to Critical Incident Management* (PMS 926, NFES 1356). The guide is designed as a working tool to assist Agency Administrators with the chronological steps in managing a critical incident. This document includes a series of checklists which outlines Agency Administrator's and other functional area's oversight and responsibilities. The guide is not intended to replace local emergency plans or other specific guidance that may be available, but should be used in conjunction with existing SOPs. Local units should complete the guide and review and update at least annually. This guide is only available electronically at: <http://www.nwccg.gov/pms/pubs/pms926.doc>

Critical Incident Stress Management (CISM)

A critical incident may be defined as a fatality or other event that can have serious long term affects on the agency, its employees and their families or the community. Such an event may warrant stress management assistance. The local Agency Administrator may choose to provide CISM for personnel having been exposed to a traumatic event.

The availability of CISM teams and related resources (e.g. defusing teams) varies constantly – it is imperative that local units pre-identify CISM resources that can support local unit needs.

Some incident management teams have Human resource Specialists (HRSP) on their teams who may be able to assist local units with CISM needs.

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