

The Arizona Division of Occupational Safety and Health



Worksheet

Wed Nov 27, 2013 12:15pm

				Inspection Number	317242683
				Opt. Insp. Number	0618
Establishment Name	Arizona State Forestry Division				
Type of Violation	SW Serious Willful	Citation Number	01	Item/Group	001
Number Exposed	81	No. Instances	4	REC	A Accident
Std. Alleged Vio.	23.0403(A)				

Abatement Period	MultiStep Abatements			Final Abatement	Action Type/Dates
	PPE Period	Plan	Report		
3					
Abatement Documentation Required			Y	Date Verified	

Substance Codes	
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AVD/Variable Information:

A.R.S. Section 23-403(A): The employer did not furnish to each of his employees employment and a place of employment which were free from recognized hazards that were causing or likely to cause death or serious physical harm to their employees, in that the employer implemented suppression strategies that prioritized protection of non-defensible structures and pastureland over firefighter safety, and failed to prioritize strategies consistent with Arizona State Forestry Division - Standard Operational Guideline 701 Fire Suppression and Prescribed Fire Policy (2008). When the employer knew that suppression of extremely active chaparral fuels was ineffective and that wind would push active fire towards non-defensible structures, firefighters working downwind were not promptly removed from exposure to smoke inhalation, burns, and death:

- Yarnell Hill Fire, Yarnell, Arizona: On June 30, 2013, between 1230 and 1430, and after the general public had been evacuated, thirty-one members of Structure Protection Group 2, charged with protecting non-defensible structures in the vicinity of the Double Bar A Ranch, were exposed to smoke inhalation, burns, and death by wind driven wildland fire.
- Yarnell Hill Fire, Yarnell, Arizona: On June 30, 2013, from and after 1530, one member of the Granite Mountain Interagency Hotshot Crew that continued to serve as a lookout was exposed to smoke inhalation, burns, and death by a rapidly progressing wind driven wildland fire.
- Yarnell Hill Fire, Yarnell, Arizona: On June 30, 2013, from and after 1530, approximately thirty firefighters continued indirect attack activities in Division Z (Zulu) and were exposed to smoke inhalation, burns, and death by a rapidly progressing wind driven wildland fire.
- Yarnell Hill Fire, Yarnell, Arizona: On June 30, 2013, from and after 1530, 19 members of the Granite Mountain Interagency Hotshot Crew continued in suppression activities, until 1642 when they were entrapped by a rapidly progressing wind driven wildland fire.

Penalty Calculations				Adjustment Factors			Proposed Adjusted Penalty
Severity	Probability	Gravity	GBP	Size	Good Faith	History	
H High	G Greater	10	70000.00	0	0	0	70000.00
Repeat Factor		0					

Employee Exposure:						
Occupation	Wildland Firefighters			Employer	ASFD	
Nr of Employees	31	Duration	8+ hours	Frequency	daily	

Employee Name	Structure Protection Group 2				
Address			Phone	() -	
Occupation	Wildland Firefighter	Employer	ASFD		
Nr of Employees	1	Duration	3+ hours	Frequency	Daily
Employee Name	Brendan McDonough				
Address			Phone	() -	
Occupation	Wildland Firefighters	Employer	ASFD		
Nr of Employees	30	Duration	8+ hours	Frequency	Daily
Employee Name	Division Z				
Address			Phone	() -	
Occupation	Wildland Firefighters	Employer	ASFD		
Nr of Employees	19	Duration	6+ hours	Frequency	Daily
Employee Name	Granite Mountain IHC				
Address			Phone	() -	

Instance Description:	A. Hazard	B. Equipment	C. Location	D. Injury/Illness	E. Measurements
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Date/time condition observed by CSHO:

CSHO did not observe any of the cited instances. Details of exposure/violation were obtained through witness interviews, review of documents, and review of video and photographs taken by witnesses and other fire personnel working at the Yarnell Hill Fire.

Instance description: Describe the hazardous condition. Include make, model/serial numbers and measurements where applicable.

Instance a:

Hazard: Employees assigned to Structure Protection Group 2 were exposed to smoke inhalation, burns, and death by a rapidly progressing wind driven wildland fire. On the morning and early afternoon of June 30, 2013, fire management assigned thirty-one firefighters of Structure Protection Group 2 to provide point protection and structure protection at Double Bar A Ranch. Fire management previously identified structures at the Ranch as non-defensible. A tennis court designated as a safety zone was known to be too small for the approaching 40 foot long flames. Fire management observed air tanker retardant drops to be ineffective at suppressing fire progression. Despite fire management's knowledge of existing conditions, the impending hazard, failure to control or suppress active fire, and the known futility of attempting to protect non-defensible structures, management assigned employees to protect the Double Bar A Ranch, and permitted employees to remain at the Ranch conducting burnout operations until the last moments before escape. Although escape was successful, fire management's decision-making incorrectly prioritized the value of non-defensible structures ahead of firefighter safety which violated both State and Interagency wildland fire policy and procedures.

As the day progressed, fire management continued to fail to re-evaluate, re-prioritize or update suppression efforts based on existing and expected conditions which resulted in additional exposures described below.

Instance b:

Hazard: Granite Mountain Interagency Hotshot Crew lookout Brendan McDonough was exposed to smoke inhalation, burns, and death by a rapidly progressing wind driven wildland fire. McDonough, serving as lookout for the Granite Mountain IHC crew, stood on a small hill in the valley below his crew. He continued to serve as a lookout in the face of a rapidly progressing fire driven by the outflow boundary of an advancing thunderstorm with wind speed estimated to be between 10-20 mph with gusts up to 40 mph. McDonough's pre-established escape plan was to radio the Blue Ridge IHC for pick-up. At or around 1550, when fire began threatening his position, McDonough retreated to the predetermined pick-up location. Blue Ridge IHC Superintendent Brian Frisby was driving up the dozer line to meet with Eric Marsh when he saw McDonough at the pick-up spot. Due to increased fire activity, Frisby changed his plan to meet with Marsh and took on McDonough [on his ATV or in his truck], turned around, and he and McDonough escaped east down the dozer line towards the east side of

Division Z. Given the conditions, McDonough should have been evacuated on or about 1530. What should have been a planned retreat ended up being an emergency escape resulting from a fortuitous drive-by. It should also be noted that had McDonough's pick-up been delayed, McDonough would have faced shelter deployment and burnover. Had the Blue Ridge IHC vehicle experienced any problems, both McDonough and Frisby may have faced shelter deployment and burnover. Fire management's failure to re-evaluate, re-prioritize, and update fire suppression activities based on observed and expected fire behavior and fire weather resulted in a complete failure to protect employees working downwind of the fire from exposure to smoke, burns, and death.

Instance c:

Hazard: Approximately thirty employees assigned to Division Z were exposed to smoke inhalation, burns, and death by a rapidly progressing wind driven wildland fire. On the morning of June 30, 2013, fire management selected evacuation trigger points for citizens and employees assigned to Structure Protection Group 1 at Yarnell and Glen Ilah, as well as for employees working at Division Z. When expected thunderstorms approached the fire, and the rate of fire spread substantially increased, the previously established trigger points did not provide adequate time to avoid exposure to smoke and fire. By 1530 the weather conditions had dramatically changed and the employer choose to evacuate the incident command post but allowed Division Z to continue working downwind of a rapidly progressing wind driven fire past 1530. Division Z should have been evacuated on or about 1530. What should have been a planned retreat became an emergency evacuation at 1630. Although all employees assigned to Division Z escaped without injury or death, failure to re-evaluate trigger points based on existing and expected fire behavior resulted in a near-miss emergency escape. In addition, fire management's failure to re-evaluate firefighter safety based on continuously observed extreme fire behavior and expected and observed thunderstorm activity resulted in a complete failure to protect employees working downwind of the fire from exposure to smoke, burns, and death.

Instance d:

Hazard: Granite Mountain IHC exposure to entrapment hazard by a rapidly approaching wildfire. On the morning of June 30, 2013, Granite Mountain IHC crew began their work at the heel of the fire atop the Weaver Mountains. Their task was to establish an anchor point and connect to a dozer line in the valley below (about 1000 feet of steep elevation change). By late afternoon, Granite Mountain IHC had stopped to rest near the top of the mountain and observed the fire and approaching thunderstorm. Expected thunderstorm activity increased and winds pushed the fire southward towards their position. By 1530 the weather conditions had dramatically changed, and the employer choose to evacuate the incident command post but allowed the Granite Mountain IHC to work downwind of a rapidly progressing wind driven fire past 1530. Granite Mountain IHC should have been evacuated on or about 1530. What should have been a planned retreat became entrapment at 1642 in which all nineteen members died of exposure to inhaled smoke and burns. Fire management's failure to re-evaluate firefighter safety based on continuously observed extreme fire behavior and expected and observed thunderstorm activity resulted in a complete failure to protect employees working downwind of the fire from exposure to smoke, burns, and death.

Describe employee exposure to the condition, including the relationship to this cited employer.

Over 300 firefighters were employed directly by or under cooperative agreements with the Arizona State Forestry Division (ASFD) and were exposed to smoke inhalation, burns, and death by rapidly progressing wildland fire, by implemented suppression strategies that prioritized protection of non-defensible homes and pastureland over firefighter safety.

There is no specific OSHA standard that addresses this hazard and a general duty citation is therefore recommended based on the following information:

A: Recognition of the Hazard:

A.1 Employer Recognition:

Evidence the Arizona State Forester recognized the hazard includes documents the ASFD provided ADOSH that it uses in wildland fire operations and safety in Arizona.

A.R.S. Section 37-623 Suppression of wildfires; powers and duties of state forester; entry on private lands.

Arizona State Forestry Division, Standard Operational Guideline 701, Fire Suppression and Prescribed Fire Policy (2008).

NWCG Wildland Fire Incident Management Field Guide (2013)

NWCG Interagency Standards for Fire and Fire Aviation Operations (2013)

NWCG Incident Response Pocket Guide (2010)

Relevant excerpts from the SOG-701 are described below. Relevant excerpts from the NWCG documents, which apply to both employer and industry hazard recognition is described in the following section titled "Industry Recognition."

Arizona State Forestry Division, Standard Operational Guideline 701, Fire Suppression and Prescribed Fire Policy (2008)

Policy, Page 2

1. Safety: Firefighter and public safety is the first priority. All fire management activities must reflect this commitment.
2. Fire Management: The full range of fire management activities will be used to hold wildfire losses on state lands to a level consistent with resource values at risk while providing adequate health and safety protection to the public and firefighters and with a minimum expenditure of state funds.
3. Response to Wildfire: Appropriate response to wildfires is based on environmental, social and legal considerations, and the likely consequences on firefighter and public safety and welfare, natural and cultural resources and the values to be protected, and the economic interests of the Land Trust and State Treasury.
4. Use of Wildfire: Wildfires will not be used to enhance natural resources. Wildfires will be controlled, contained, or confined at the least cost to the State, consistent with firefighter and public safety and welfare.
5. Protection Priorities: The protection of human life is the single, overriding suppression priority. Setting priorities among protecting human communities and community infrastructure, other property and improvements, and natural and cultural resources will be done based on the values to be protected, human health and safety, and the costs of protection. Once people have been committed to an incident, these human resources become the highest value to be protected.
7. Suppression: Wildfires are suppressed at minimum cost, considering firefighter and public safety, and all values to be protected, consistent with management objectives.
9. Standardization: The State will implement training and qualification requirements, operational procedures and methodologies, and public education programs for all fire management activities that are compatible with the federal wildland agencies.
10. Interagency Cooperation: Fire management planning, preparedness, prevention, suppression, fire use, restoration and rehabilitation, monitoring, research, and education will be conducted on an interagency basis with the involved of cooperators and partners. (emphasis added)

Wildfire Suppression Strategies, paragraph 1, page 4

The primary criteria for choosing fire suppression strategies and tactics are to ensure the safety of the public and firefighting resources while minimizing suppression costs, resource loss, environmental damage, and the threat of wildland fire escaping onto non-state lands.

There is no specific OSHA standard that addresses this hazard. However, this hazard is recognized by the employer, his industry, or both, in the following manner:

A.2 Industry Recognition:

The Arizona State Forester provided ADOSH with the following documents that it uses in wildland fire operations and safety in Arizona:

NWCG Wildland Fire Incident Management Field Guide (2013)

NWCG Interagency Standards for Fire and Fire Aviation Operations (2013)

NWCG Incident Response Pocket Guide (2010)

Arizona State Forestry Division, Standard Operational Guideline 701, Fire Suppression and Prescribed Fire Policy (2008)

Policy, Page 3

1. Safety: Firefighter and public safety is the first priority. All fire management activities must reflect this commitment.

2. **Fire Management:** *The full range of fire management activities will be used to hold wildfire losses on state lands to a level consistent with resource values at risk while providing adequate health and safety protection to the public and firefighters and with a minimum expenditure of state funds.*
3. **Response to Wildfire:** *Appropriate response to wildfires is based on environmental, social and legal considerations, and the likely consequences on firefighter and public safety and welfare, natural and cultural resources and the values to be protected, and the economic interests of the Land Trust and State Treasury.*
4. **Use of Wildfire:** *Wildfires will not be used to enhance natural resources. Wildfires will be controlled, contained, or confined at the least cost to the State, consistent with firefighter and public safety and welfare.*
5. **Protection Priorities:** *The protection of human life is the single, overriding suppression priority. Setting priorities among protecting human communities and community infrastructure, other property and improvements, and natural and cultural resources will be done based on the values to be protected, human health and safety, and the cost of protection. Once people have been committed to an incident, these human resources become the highest value to be protected.*
6. **Wildland Urban Interface:** *The operational roles of the State as partners in the wildland urban interface are wildland firefighting, hazard reduction, cooperative prevention and education, and technical assistance. Structural fire suppression is the responsibility of federal, tribal, or local governments. The State may assist with exterior structural fire protection activities under formal fire protection agreements that specify the mutual responsibilities of the partners.*
7. **Suppression:** *Wildfires are suppressed at minimum cost, considering firefighter and public safety, and all values to be protected, consistent with management objectives.*
8. **Prevention:** *The State will work with the federal wildland agencies and with local governments and partners and other affected groups and individuals to prevent unauthorized ignition of wildland fires.*
9. **Standardization:** *The State will implement training and qualification requirements, operational procedures and methodologies, and public education programs for all fire management activities that are compatible with the federal wildland agencies.*
10. **Interagency Cooperation:** *Fire management planning, preparedness, prevention, suppression, fire use, restoration and rehabilitation, monitoring, research, and education will be conducted on an interagency basis with the involvement of cooperators and partners. (emphasis added)*

National Wildfire Coordinating Group (NWCG) Wildland Fire Incident Management Field Guide (2013)

Chapter 1, Firefighting Safety, Risk Management, Page 1

The wildland fire environment possesses inherent hazards that can result in harm to firefighters engaged in fire operations. Therefore, sound risk management is the foundation for all fire management activities. Risk management is defined as the process whereby management decisions are made and actions taken concerning the control of hazards and acceptance of remaining risk. The risks involved with any fire activity must be identified, assessed, and mitigated (or eliminated) when possible and practicable. The remaining risk must be considered acceptable to everyone involved and be weighed against the potential benefit during the management decision of continuing or discontinuing the activity. We practice risk management to minimize firefighters' exposure to inherent hazards in fire operations while still accomplishing management objectives.

The five-step risk management process is outlined in the IRPG.

Step 1 - Establish situational awareness.

Step 2 - Identify hazards and benefits and assess the risk.

Step 3 - Control, mitigate, or eliminate hazard.

Step 4 - Make go/no-go decision based on acceptability of remaining risk.

Step 5 - Evaluate effectiveness of hazard controls and continuously reevaluate.

Wildland Fire Safety Principles, Page 3

Most of the common fire safety principles for wildland fire operations are found in the Incident Response Pocket Guide (IRPG) which should be carried by all operational firefighters on the fireline. The safety principles should be understood at all levels of command. They include but are not limited to:

- * Risk Management Process
- * Look Up, Look Down, Look Around
- * Standard Firefighting Orders
- * Watch Out Situations
- * Lookout(s), Communication(s), Escape(s), and Safety Zone(s) (LCES)
- * Safety Zone Guidelines
- * Downhill Line Construction Checklist
- * Communication Responsibilities
- * First Aid Guidelines

Safety Responsibilities of Wildland Fire Supervisors, General Responsibilities, Page 15

Supervision of other firefighters includes the following tasks:

- * *Maintain accountability of assigned personnel's exact location and general welfare at all times, especially during incident operations.*
- * *Set a personal example of safe behavior and enforce safe practices.*
- * *Assign fireline assignments only to people who are properly qualified and physically fit for the job.*
- * *Evaluate firefighters' physical and mental condition.*
- * *Analyze work situations to eliminate or avoid hazards. Discuss safety at the beginning of each shift or new work assignment.*
- * *Become immediately involved whenever an injury occurs, and ensure that medical treatment is provided in a timely manner.*
- * *Monitor work to be sure it is done safely and efficiently.*
- * *Monitor and enforce work/rest guidelines.*
- * *Provide leadership in applying corrective action aimed at eliminating accidents and instilling a safe work attitude.*
- * *Protect employees from reprisal for reporting unsafe conditions.*

REMEMBER: EACH INDIVIDUAL, AND ESPECIALLY SUPERVISORS, HAVE AND MUST RECOGNIZE THEIR SAFETY RESPONSIBILITIES.
(emphasis added)

NWCG Interagency Standards for Fire and Fire Aviation Operations (2013)

Chapter 01, Federal Wildland Fire Management Policy Overview, Principles of Suppression Operations, Page 01-9

The primary means by which we implement command decisions and maintain unity of action is through the use of common principles of suppression operations. These principles guide our fundamental fire suppression 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 suppression operations and are intended to improve decision making and firefighter safety. They are not absolute rules. They require judgment in application.

Chapter 07, Safety and Risk Management, Policy, Page 07-1

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

Chapter 07, Safety and Risk Management, Definitions, Page 07-2

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 hazardous consequences in terms of severity or probability.

Risk Management: The process whereby management decisions are made and actions taken concerning control of hazards and acceptance of remaining risk.

Chapter 07, Safety and Risk Management, Risk Management Process, Page 07-2

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

- * Establishing situational awareness.*
- * Identifying hazards and assessing the risk.*
- * Controlling or eliminating hazards.*
- * Making decisions based on acceptability of remaining risk.*
- * Evaluating effectiveness of hazard controls and continuously re-evaluating the situation.*

Chapter 07, Safety and Risk Management, Fireline Safety, Page 07-2

Incident Briefings

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

LCES - A System for Operational Safety

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

L - Lookout(s)

C - Communication(s)

E - Escape Route(s)

S - Safety Zone(s)

NWCG Incident Response Pocket Guide (2010)

Risk Management, Page 1

Situation Awareness

Gather Information

Objective(s)

Communication

Who's in Charge

Previous Fire Behavior

Weather Forecast

Local Factors

Scout the Fire

Hazard Assessment

Estimate Potential Fire Behavior Hazards

Look Up/Down/Around Indicators

Identify Tactical Hazards

Watch Outs

What other safety hazards exist?

Consider severity vs. probability?

Hazard Control

Firefighting Orders - LCES

Anchor Point

Downhill Checklist (if applicable)

What other controls are necessary?

Decision Point

Are controls in place for identified hazards?

NO - Reassess situation YES - Next question

Are selected tactics based on expected fire behavior?

NO - Reassess situation YES - Next question

Have instructions been given and understood?

NO - Reassess situation YES - Initiate action

Evaluate

Human Factors: *Low experience level?*
 Distracted from primary tasks?
 Fatigue or stress reaction?
 Hazardous attitude?

The Situation: *What is changing?*
 Are strategy and tactics working?

Common Denominators of Fire Behavior on Tragedy Fires, Page 4

There are four major common denominators of fire behavior on fatal and near-fatal fires. Such fires often occur:

- 1. On relatively small fires or deceptively quiet areas of large fires.*
- 2. In relatively light fuels, such as grass, herbs, and light brush.*
- 3. With unexpected shifts in wind direction or wind speed.*
- 4. When fire responds to topographic conditions and runs uphill.*

Common Tactical Hazards, Page 5

Position

- o Building fireline downhill.*
- o Building underslung or mid-slope fireline.*
- o Building indirect fireline, or unburned fuel remains between you and the fire.*
- o Attempting frontal assault on the fire, or you are delivered by aircraft to the top of the fire.*
- o Depending on escape routes that are uphill or difficult to travel.*

Situation

- o Poor communication due to a rapidly emerging small fire or an isolated area of a large fire.*
- o Suppression resources are fatigued or inadequate.*
- o Assignment or escape route depends on aircraft support.*
- o Nighttime operations.*
- o Wildland/urban interface operations.*

When selected tactics put firefighters in these positions or situations, a higher level of risk is involved. Consider additional hazard controls that may be needed.

LCES, Page 6

LCES must be established and known to ALL firefighters BEFORE it is needed.

Lookout(s)

- o Experienced, competent, trusted*
- o Enough lookouts at good vantage points*
- o Knowledge of crew locations*
- o Knowledge of escape and safety locations*
- o Knowledge of trigger points*
- o Map, Weather Kit, Watch, IAP*

Communication(s)

- o Radio frequencies confirmed*
- o Backup procedures and check-in times established*
- o Provide updates on any situation change*
- o Sound alarm early, not late*

Escape Route(s)

- o More than one escape route*
- o Avoid steep uphill escape routes*
- o Scouted for loose soils, rocks, vegetation*
- o Timed considering slowest person, fatigue, and temperature factors*
- o Marked for day or night*
- o Evaluate escape time vs. rate of spread*

o Vehicles parked for escape

Safety Zone(s)

- o Survivable without a fire shelter*
- o Back into clean burn*
- o Natural features (rock areas, water, meadows)*
- o Constructed sites (clearcuts, roads, helispots)*
- o Scouted for size and hazards*
- o Upslope?*
- o Downwind? - More heat impact - Larger safety zone*
- o Heavy Fuels?*

Escape time and safety zone size requirements will change as fire behavior changes.

Safety Zones, Page 7

A safety zone is an area where a firefighter can survive without a fire shelter. Considerations for effective safety zones:

- o Take advantage of heat barriers such as lee side of ridges, large rocks, or solid structures.*
- o When possible, burn out safety zones prior to arrival of fire front.*
- o Avoid locations upslope or downwind from the fire; chimneys, saddles, or narrow canyons; and steep uphill escape routes.*
- o Not intended for structure protection.*

Separation distance between the firefighter and the flames should be at least four times the maximum continuous flame height. Distance separation is the radius from the center of the safety zone to the nearest fuels.

Flame Height	Separation Distance (firefighters to flames)	Area in acres*
10 ft	40 ft	1/10 acre
20 ft	80 ft	1/2 acre
50 ft	200 ft	3 acres
100 ft	400 ft	12 acres
200 ft	800 ft	46 acres

**Area in acres is calculated to allow for distance separation on all sides for a 3-person engine crew (1 acre is approximately the size of a football field, or 208 feet by 208 feet).*

Calculations are based on radiant heat only and do not account for convective heat from wind and/or terrain influences. Since calculations assume no wind and no slope, safety zones downwind or upslope from the fire may require larger separation distances.

Wildland/Urban Interface Firefighting, Page 10

Structure protection is inherently dangerous because it involves indirect firefighting.

Do not commit to stay and protect a structure unless a safety zone for firefighters and equipment has been identified at the structure during sizeup and triage. Move to the nearest safety zone, let the fire front pass, and return as soon as conditions allow.

Fire Behavior Prediction

- * Base all actions on current and expected fire behavior - do this first!*
- * An estimate must be made of the approaching fire intensity to determine if there is an adequate safety zone and time available before the fire arrives.*
- * Due to the dynamic nature of fire behavior, intensity estimates are difficult to make with absolute certainty. It is imperative that firefighters consider the worst case and build contingency actions into their plan to compensate for the unexpected.*

Structure Sizeup, Page 11

Site considerations

- o Adequate safety zone based on fire behavior prediction.*
- o Adequate lookout and communication capability.*
- o Adequate defensible space based on surrounding wildland vegetation.*
- o Avoid narrow canyon bottoms, mid-slope with fire below, and narrow ridges near chimneys and saddles.*

Tactical challenges and hazards

(Firefighters with a safety zone can safely defend structures with some challenges)

- o Narrow roads, unknown bridge limits, and septic tank locations.*
- o Ornamental plants and combustible debris next to structure.*
- o Wooden siding and/or wooden roof materials.*
- o Open vents, eaves, decks, and other ember traps.*
- o Fuel tanks and hazardous materials.*
- o Power lines*
- o Limited water sources.*
- o Property owners remaining onsite.*

Structure Triage, Page 12

Defensible - Prep and Hold

- o Determining factor: Safety zone present.*
- o Sizeup: Structure has some tactical challenges.*
- o Tactics: Firefighters needed onsite to implement structure protection tactics during fire front contact.*

Defensible - Standalone

- o Determining factor: Safety zone present.*
- o Sizeup: Structure has very few tactical challenges.*
- o Tactics: Firefighters may not need to be directly assigned to protect structure as it is not likely to ignite during initial fire front contact. However, no structure in the path of a wildfire is completely without need of protection. Patrol following the passage of the fire front will be needed to protect the structure.*

Structure Triage, Page 13

Non-Defensible - Prep and Leave

- o Determining factor: NO safety zone present.*
- o Sizeup: Structure has some tactical challenges.*
- o Tactics: Firefighters not able to commit to stay and protect structure. If time allows, rapid mitigation measures may be performed. Set trigger point for safe retreat. Remember, preincident preparation is the responsibility of the homeowner. Patrol following the passage of the fire front will be needed to protect the structure.*

Non-Defensible - Rescue Drive-by

- o Determining factor: NO safety zone present.*
- o Sizeup: Structure has significant tactical challenges.*
- o Tactics: Firefighters not able to commit to stay and protect structure. If time allows, ensure people are not present in the threatened structure (especially children, elderly, and invalid). Set trigger point for safe retreat. Patrol following the passage of the fire front will be needed to protect the structure.*

Structure Protection Tactics, Page 14

Rapid mitigation measures

- o Remove small combustibles immediately next to structure.*
- o Close windows and doors, including garage (leave unlocked).*
- o Clean area around fuel tank and shut off tank.*
- o Charge garden hoses.*
- o Apply CAF, foam, or gel retardants if available.*

Equipment and water use

- o Mark entrance to indicate a staffed location if it is not obvious.*
- o Charge hose lines.*
- o Long hose lays are not recommended.*

- o Keep 100 gallons of water in reserve.*
- o Identify a backup water source.*
- o Identify power lines for aerial resources.*
- o Never rely on water for firefighter safety.*

Patrol following the fire front

- o Most structures do not burn until after the fire front has passed.*
- o Move to closest safety zone and let fire front go through.*
- o Return as soon as conditions allow safe access to structures.*
- o Secondary ignition is usually due to residual spot fires or creeping ground fire.*
- o Take suppression actions within your capability.*
- o Call for assistance if needed.*

(emphasis added)

STANDARD FIREFIGHTING ORDERS

1. *Keep informed on fire weather conditions and forecasts.*
2. *Know what your fire is doing at all times.*
3. *Base all actions on current and expected behavior of the fire.*
4. *Identify escape routes and safety zones, and make them known.*
5. *Post lookouts when there is possible danger.*
6. *Be alert. Keep calm. Think clearly. Act decisively.*
7. *Maintain prompt communications with your forces, your supervisor, and adjoining forces.*
8. *Give clear instructions and be sure they are understood.*
9. *Maintain control of your forces at all times.*
10. *Fight fire aggressively, having provided for safety first.*

WATCH OUT SITUATIONS

1. *Fire not scouted and sized up.*
2. *In country not seen in daylight.*
3. *Safety zones and escape routes not identified.*
4. *Unfamiliar with weather and local factors influencing fire behavior.*
5. *Uninformed on strategy, tactics, and hazards.*
6. *Instructions and assignments not clear.*
7. *No communication link with crewmembers or supervisor.*
8. *Constructing line without safe anchor point.*
9. *Building fireline downhill with fire below.*
10. *Attempting frontal assault on fire.*
11. *Unburned fuel between you and fire.*
12. *Cannot see main fire; not in contact with someone who can.*
13. *On a hillside where rolling material can ignite fuel below.*
14. *Weather becoming hotter and drier.*
15. *Wind increases and/or changes direction.*
16. *Getting frequent spot fires across line.*
17. *Terrain and fuels make escape to safety zones difficult.*
18. *Taking a nap near fireline.*

A.3: Arizona Industry Common Practice, pursuant to A.R.S. Section 23-403(C):

Notwithstanding subsection A of this section, a condition or practice which is common within an industry is not deemed a recognized hazard unless a standard or regulation concerning the condition or practice has been developed pursuant to section 23-410 or 23-414.

The condition or practice of implemented suppression strategies that prioritized protection of non-defensible structures and pastureland over firefighter safety exposing firefighters to smoke inhalation, burns, and death is a recognized hazard within the industry of wildland firefighting and it is not a common practice in the industry to prioritize protection of non-defensible structures or pastureland over safety of employees.

B: Probability of death or serious physical harm:

The probability of employee exposure to serious physical harm and death is directly related to fire behavior, weather, and distance employees work from fire and smoke. Should wind driven wildland fire or smoke overtake an employee the probability of serious physical harm or death is extremely high due to exposure to toxic gases and extreme high temperature.

C: What feasible abatement methods are available to address this hazard?

Feasible abatement includes:

ASFD could abate the hazard by following their guidelines as well as adopted interagency guidelines that prioritize the safety of wildland firefighters and by ensuring that these guidelines are followed by staff and cooperators assigned to fire management positions.

ASFD should ensure that firefighter safety is the highest priority when making risk based decisions regarding suppression strategies and tactics.

ASFD should re-evaluate fire conditions and re-prioritize suppression strategies and tactics promptly when conditions threaten firefighter safety.

D: Appropriateness of the penalty amount:

An employee exposure value of 10 was selected as more than 10 employees were exposed to wildland fire.

Frequency of exposure was estimated to be a value of 10 (16 hour workday and up to 14 consecutive days).

Proximity was estimated to be a value of 10 (at the point, high risk hazards).

Stress was estimated to be a value of 10 (high management stress, very poor conditions).

A severity factor of 10 was selected as employee exposure to smoke inhalation or burns would likely result in serious debilitating injuries or death.

Describe whether the employer knew, or with the exercise of reasonable diligence, could have known of the presence of the hazardous condition and of employee exposure to the condition.

Pursuant to Arizona Revised Statutes, A.R.S. Section 37-623, The Arizona State Forestry Division has jurisdictional responsibility for management of fires on State lands and private property outside of incorporated areas. The Yarnell Hill Fire initially started on State trust land yet mostly burned private lands outside of incorporated areas.

On the evening of Friday, June 28, 2013, a lightning strike ignited a small fire on the west side of the Weaver Mountains (State Trust Land) northwest of Yarnell, Arizona. Due to the location of the fire the Arizona State Forestry Division (ASFD) took control of the fire. ASFD District Forester Jim Downey was assigned as the person in charge of the entire fire suppression effort. ASFD employee Russ Shumate was the initial attack Incident Commander. On June 30, 2013, ASFD employee Roy Hall was the extended attack Incident Commander.

Between June 28, 2013 and July 1, 2013, ASFD personnel operating in the capacity of Fire Management Officer, District Forester, Incident Commanders (IC4 and IC2) and support staff managed Yarnell Hill Fire suppression operations. Incident Command positions as well as ground and aviation operations were managed and conducted by ASFD staff or by staff from other agencies working under cooperative agreements with ASFD.

Interviews of fire management and employees uniformly demonstrated knowledge of expected extreme fire behavior based on extended drought conditions, high fuel loading, excessive heat, and forecasted afternoon thunderstorms. Incident command reported this information to fire crews during morning briefings and throughout the day as new information became available. One week earlier some of the same management and employees worked the Doce Fire, near Prescott, Arizona, and experienced similar fire conditions.

On Sunday, June 30, 2013, extreme fire behavior combined with strong thunderstorms caused the fire to become a more active fire that burned relatively uninhibited by suppression resources. Wind direction changed multiple times and wind intensity picked-up substantially ahead of forecasted thunderstorms. The employer knew that suppression of extremely active chaparral fuels was ineffective, knew that the active fire was pushing towards non-defensible structures, and knew that employees were working downwind of a rapidly progressing wind driven wildland fire in furtherance of suppression strategies that were

implemented to protect structures (known to be non-defensible). Notwithstanding this knowledge, throughout the afternoon, and in disregard of its own requirement to prioritize firefighter safety, fire management failed to re-evaluate, re-prioritize and update suppression efforts and failed to promptly remove employees working downwind of the fire resulting in multiple incidences of employee exposure to smoke, burns, and death.

Instance a:
June 30, 2013

Early in the morning, resources assigned to Structure Protection Group 2 by Incident Command personnel began to prepare for point protection of structures located north of the existing fire.

At mid-morning, 5-10 mph winds pushed the fire along the east ridge of the Weaver Mountains towards Peeples Valley. The southern-most collection of structures, Double Bar A Ranch, was directly in the fire's path. The approaching fire split into two separate heads with one head threatening Double Bar A Ranch and the other head threatening the assigned crew's escape route. Fire behavior was observed and described by Willis as extreme with flame lengths in excess of 40 feet. Conditions were so extreme that he took a number of photos and forwarded them to the Southwest Coordinating Group for evaluation.

Crews remained at the Ranch conducting burn-out operations while the fire closed in on their position. Fortunately, all personnel escaped without incident.

ASFD incident management (Willis, Abel, Musser, Hall, and others): observed extreme fire behavior conditions; observed retardant fail to suppress the progressing fire; knew if the wind continued to blow northward, structures of Double Bar A Ranch, Model Creek, and Peeples Valley would burn; knew that the fire had recently transitioned to an extended attack potentially "life-threatening" condition; knew that structures of Double Bar A Ranch were non-defensible; knew that the safety zone (a tennis court) at the Double Bar A Ranch was too small for the approaching 40 foot flames; and, knew that active fire would overtake the crew. Despite this knowledge, fire management failed to re-evaluate, re-prioritize and update suppression efforts and they made risk management decisions and planned operations based on the value of structures to be protected ahead of firefighter safety even when conditions demonstrated that structure protection efforts would fail. These decisions needlessly exposed firefighters to impending hazards and associated life threatening exposure to smoke, burns, and death.

Structure Protection Group 2 Supervisor (Willis) confirmed that none of the suppression efforts employed at the fire made any difference on that day.

Instance b:

On or about 1955 on Saturday, June 29, 2013, fire management received the following weather spot forecast for Yarnell.

.DISCUSSION...STRONG HIGH PRESSURE OVER THE SOUTHWEST WILL MAINTAIN THE HEAT SPELL THROUGH THE WEEKEND. LIMITED MOISTURE WILL RESULT IN ISOLATED THUNDERSTORM ACTIVITY SUNDAY AFTERNOON AND EARLY EVENING. THESE STORMS WILL PRODUCE LIGHTNING AND GUSTY WINDS...BUT LITTLE OR NO MEASURABLE PRECIPITATION.

SUNDAY NIGHT WEATHER WILL BE VERY SIMILAR TO TONIGHT'S CONDITIONS.

On or about 0845 on June 30, 2013, fire management received the following weather spot forecast for Yarnell.

.DISCUSSION...STRONG HIGH PRESSURE OVER THE SOUTHWEST WILL MAINTAIN THE HEAT SPELL FOR THE NEXT SEVERAL DAYS. LIMITED MOISTURE WILL RESULT IN ISOLATED THUNDERSTORM ACTIVITY TODAY AND MONDAY. THESE STORMS WILL PRODUCE LIGHTNING AND STRONG AND GUSTY WINDS...BUT LITTLE OR NO MEASURABLE PRECIPITATION. TEMPERATURES WILL DECREASE SLIGHTLY AND MINIMUM RELATIVE HUMIDITY WILL SLOWLY INCREASE OVER THE NEXT FEW DAYS.

During the morning of June 30, 2013, winds from the south blew the fire north towards Double Bar A Ranch, Model Creek, and Peeples Valley. By 1200 thunderstorms could be seen building to the north.

At approximately 1500, the wind shifted from blowing north to east towards the incident command post and Highway 89A. The employer evacuated the incident command post shortly after the wind shifted.

At approximately 1530, the wind shifted to blowing south and what had been two fire flanks became a three mile long fire head. Wind speed was estimated to be between 10-20 mph with gust up to 40 mph.

A Granite Mountain IHC lookout (Brendan McDonough) observed the fire approaching from the north from his position on a small hill at the base of the Weaver Mountains. The advancing fire reached his trigger point and he retreated. He began exploring a location to deploy. As it turned out, he was able to escape when he was picked up by another employee using an off-road vehicle and driven to safety. Had he not been discovered, his only other option was to deploy in a small clearing that was too small to protect from the 30 to 40 foot flames. Fortunately, McDonough and the driver of the off-road vehicle were able to escape.

ASFD incident management (Marsh, Abel, Musser, Hall, and others) knew: that the fire had recently transitioned to an extended attack potentially "life-threatening" condition and observed extreme fire behavior conditions; knew of forecasted afternoon thunderstorms and strong winds; observed approaching thunderstorms; observed thunderstorm outflow winds push the fire rapidly south; knew that firefighters were positioned downwind of the rapidly progressing wind driven fire; and knew that suppression strategies continued to focus on protection of non-defensible structures and pastureland. Despite this knowledge, ASFD incident management failed to re-evaluate, re-prioritize and update suppression efforts and they made risk management decisions and planned operations based on values to be protected ahead of firefighter safety. The resulting failure to adequately plan for a timely retreat of firefighters when conditions changed unnecessarily exposed firefighters working in the path of the active fire to impending hazards and associated life threatening exposure to smoke, burns, and death.

Instance c:

At or around 0100 on Sunday, June 30, 2013, Structure Protection Specialist 1 Gary Cordes met with Incident Commander Russ Shumate and BLM Representative Dean Fernandez. The fire was estimated to be between 120 and 300 acres. Cordes drove the area to size-up conditions and hiked to the fire. Cordes determined that structures in Yarnell and Glen Ilah were non-defensible.

At or around 0700, Cordes met with Shumate, Abel, Musser, and Marsh. They discussed expected winds and the formulating plan. They decided that Marsh would be assigned responsibility for Division A and create an anchor point at the south heel of the fire and tie into Division Z's dozer line that would extend across the valley floor. They determined that with favorable winds they could burn-out from the dozer line thereby stopping the fire from spreading south into Yarnell and Glen Ilah.

Structure Protection Group 1 included four type 6 engines, 2 tenders, and one taskforce leader (TFLD) Tyson Esquibel. Approximately 12 to 20 firefighters were assigned to Esquibel in Glen Ilah. Based on initial size-up it was determined that insufficient resources were available to perform structure protection.

By 0930, the dozer line was approximately three quarters of the way to the east side of Division A. Two engines worked with Cordes, Blue Ridge IHC, and a dozer at Division Z improving the indirect line.

At or around 1400, the Yavapai County Sheriff began pre-evacuation notice for Yarnell and Glen Ilah.

As previously described, weather conditions dramatically changed throughout the afternoon. By 1530, the employer had evacuated the ICP and the outflow boundary of an advancing thunderstorm approached from the north bringing strong gusty winds blowing southward towards Yarnell and Glen Ilah.

At or around 1530, Cordes placed an evacuation order for citizens of Yarnell. At 1540 Cordes observed a spot fire one half mile ahead of the main fire and recognized that the dozer line was likely compromised. Cordes reported to his superior, Todd Abel, that he could not transmit on the air to ground radio frequency and wanted aviation to drop retardant and water on the fire at will. Abel relayed Cordes's message to aviation.

At or around 1550, Cordes advised Structure Group 1 crews to move out of Yarnell and Glen Ilah. He estimated the fire front to be traveling at 4 miles per hour.

At or around 1620, crews working the east side of Division Z began to assemble at their vehicles. A 45 mph wind was blowing smoke, ash, and embers onto the crews. At approximately 1630, Division Z crews drove out of the area to their safety zone.

At approximately 1630, fire was at the perimeter of Glen Ilah. The sky was dark and the atmosphere was smoky. During an approximate 15 minute period, fire pushed by high winds burned through Glen Ilah.

ASFD incident management (Esquibel, Cordes, Abel, Musser, Hall, and others): knew that the fire had recently transitioned to an extended attack potentially "life-threatening" condition; knew of forecasted afternoon thunderstorms, lightning, and gusty winds; observed approaching thunderstorms; observed thunderstorm outflow winds push the fire rapidly south; knew that employees were positioned downwind of the rapidly progressing wind driven fire, and knew that suppression strategies continued to focus on protection of non-defensible structures. Despite this knowledge, ASFD failed to re-evaluate, re-prioritize

and update suppression efforts and they made risk management decisions and planned operations based on values to be protected ahead of firefighter safety. The resulting failure to adequately plan for timely retreat when conditions changed unnecessarily exposed firefighters working in the path of active fire to impending hazards and associated life threatening exposure to smoke, burns, and death.

Instance d:

At or around 1500, the east flank of the fire was now a head moving east towards Sickles Ranch. Abel and other incident management focused their attention on structure protection operations at the ranch as well as structure protection in Model Creek and Peeples Valley.

Following a wind shift at 1530, Division A Supervisor (Eric Marsh) and Granite Mountain IHC rested near the top of the Weaver Mountains with an unobstructed view of the fire.

At approximately 1545, Marsh spoke with Operations Section Chief Todd Abel regarding the approaching storm and changes in the wind. Marsh conveyed to Abel that they were in a safe place. During interviews Abel stated that he believed at the time that Marsh and Granite Mountain IHC would stay in the black or hike west over the top of the ridge to avoid lightning.

At or around 1550, GMIHC lookout McDonough, located in a valley below his crew, retreated from his lookout position as fire crossed his trigger point.

At approximately 1559, Abel notified ADC to contact the Yavapai County Sheriff and evacuate Mountaineer Trailer Park located in Yarnell. Progressing fire reached the first trigger point set for a one-hour warning for evacuation of Structure Protection Group 1. Shortly thereafter, Structure Protection Group 1 trigger point number 2 was reached the decision was made to evacuate Yarnell.

At approximately 1600, Operations Section Chief Paul Musser radioed Granite Mountain IHC to ask if they could assist at Yarnell. Either Marsh or Granite Mountain IHC Captain Jesse Steed replied that they could not and suggested he contact Blue Ridge IHC.

At approximately 1630, Marsh spoke with Aerial Supervision Module B-33 and reported that they were going down their escape route to the safety zone. B-33 asks if everything is okay. Marsh responded that everything is okay they are just heading to the safety zone.

At approximately 1642, Marsh radioed on the air to ground frequency that their escape route had been compromised. He advised that they were cutting and burning out a safety zone and would call back after they got into their shelters. A couple of subsequent transmissions occurred but no words could be deciphered. Nineteen members of the Granite Mountain IHC were entrapped and burned-over resulting in 19 fatalities.

ASFD incident management (Marsh, Abel, Musser, Hall, and others): knew that the fire had recently transitioned to an extended attack potentially "life-threatening" condition; knew of forecasted afternoon thunderstorms, lightening, and gusty winds; observed approaching thunderstorms; observed thunderstorm outflow winds push the fire rapidly south; knew that Granite Mountain IHC was positioned south of the fire; and knew that suppression strategies continued to focus on protection of non-defensible structures. Despite this knowledge, ASFD incident management failed to re-evaluate, re-prioritize and update suppression efforts and they made risk management decisions and planned operations based on values to be protected ahead of firefighter safety. The resulting failure to adequately plan for a timely retreat of firefighters when conditions changed unnecessarily exposed firefighters to life threatening exposure to smoke, burns, and death.

Note any other comments made by the employer, or other information relative to this citation, not already noted above.

Penalty calculation:

Probability:

Number of employees: 10+

Frequency of exposure: 10

Proximity to hazard: 10

Stress: 10

Other:

TOTAL:40

Number of factors:4

Probability TOTAL:10G

Severity:10H

Event Date	Event Code	Action Code	Citation Type	Penalty	Abate Date	Final Order
	Z Add transaction	A Add	SW Serious Willful	70000.00		

The Arizona Division of Occupational Safety and Health



Worksheet

Tue Nov 26, 2013 1:34pm

Inspection Number				317242683	
Opt. Insp. Number				0618	
Establishment Name Arizona State Forestry Division					
Type of Violation		Citation Number		Item/Group	
Number Exposed		No. Instances		REC	
Std. Alleged Vio.		23.0418(01)			

Abatement Period	MultiStep Abatements			Final Abatement	Action Type/Dates
	PPE Period	Plan	Report		
30					
Abatement Documentation Required				Y	Date Verified

Substance Codes	
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AVD/Variable Information:

A.R.S. Section 23-418.01: An additional penalty of \$25,000 is assessed under A.R.S. section 23-418.01 for each employee that died, which shall be paid by ASFD to the following employees' dependents or the employee's estate if the employee did not have any dependents: Andrew Ashcraft, Robert Caldwell, Travis Carter, Dustin DeFord, Christopher MacKenzie, Eric Marsh, Grant McKee, Sean Misner, Scott Norris, Wade Parker, John Percin, Jr., Anthony Rose, Jesse Steed, Joe Thurston, Travis Turbyfill, William Warneke, Clayton Whitted, Kevin Woyjeck, and Garret Zuppiger. In assessing this penalty, the Commission finds that the following statutory elements of A.R.S. section 23-418.01 are met:

- Each employee sustained death caused by the violation cited in Citation 1, Item 1 and the Commission assessed a penalty to the Arizona State Forestry Division under section 23-418, subsection A, for that violation;
- Compensation benefits are paid under chapter six of Title 23 to the employee's dependents, or, if no dependents, would have otherwise been paid under chapter six of Title 23; and
- The violation for which the Arizona State Forestry Division is assessed a penalty under section 23-418, subsection A, did not result from the deceased employees' disobedience to specific instructions given to the employees regarding the job condition causing the employees' death or relating to the safety standards applicable to that job condition.

The additional penalty provided by this section is not a compensation benefit under Chapter six of Title 23.

Penalty Calculations				Adjustment Factors			Proposed Adjusted Penalty
Severity	Probability	Gravity	GBP	Size	Good Faith	History	
			0.00	0	0	0	475000.00
Repeat Factor		0					

Employee Exposure:

Instance Description:	A. Hazard	B. Equipment	C. Location	D. Injury/Illness	E. Measurements
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Event Date	Event Code	Action Code	Citation Type	Penalty	Abate Date	Final Order
	Z Add transaction	A Add		475000.00		

The Arizona Division of
Occupational Safety and Health



Worksheet

Wed Nov 27, 2013 12:24pm

				Inspection Number		317242683	
				Opt. Insp. Number		0618	
Establishment Name Arizona State Forestry Division							
Type of Violation		S Serious		Citation Number	02	Item/Group	001
Number Exposed		81		No. Instances	2	REC	A Accident
Std. Alleged Vio.		23.0403(A)					

Abatement Period	MultiStep Abatements			Final Abatement	Action Type/Dates
	PPE Period	Plan	Report		
3					
Abatement Documentation Required			Y	Date Verified	

Substance Codes	
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AVD/Variable Information:

A.R.S. Section 23-403(A): The employer did not furnish to each of his employees employment and a place of employment which were free from recognized hazards that were causing or likely to cause death or serious physical harm to their employees, in that the employer failed to implement fire suppression plans consistent with A.R.S. Section 37-623 Suppression of wildfires and Arizona State Forestry Division - Standard Operational Guideline 701 Fire Suppression and Prescribed Fire Policy (2008) in a timely fashion during the life-threatening transition between initial attack and extended attack fire operations thereby reducing the risk of firefighter exposure to smoke inhalation, burns, and death:

- Yarnell Hill Fire, Yarnell, Arizona: On June 29, 2013, when the fire escaped initial attack, an incident complexity analysis was not conducted and reviewed by fire management to ensure that wildfires increasing in complexity are quickly identified and a safe transition occurs to the appropriate level incident response.
- Yarnell Hill Fire, Yarnell, Arizona: On June 29, 2013, when the fire escaped initial attack, an Escaped Fire Situational Analysis (EFSA) or similar Wildland Fire Situation Analysis (WFSa), Wildland Fire Decision Support System (WFDSS), or Operational Needs Assessment was not conducted by fire management to ensure a safe transition to extended attack.
- Yarnell Hill Fire, Yarnell, Arizona: On June 29, 2013, after the fire escaped initial attack and prior to transitioning to a more complex management team, an Incident Action Plan (IAP) containing objectives reflecting the overall incident strategy, specific tactical actions, and supporting information for the next operational period was not conducted by fire management to ensure a safe transition to extended attack.

Penalty Calculations				Adjustment Factors			Proposed Adjusted Penalty
Severity	Probability	Gravity	GBP	Size	Good Faith	History	
H High	G Greater	10	7000.00	0	0	0	7000.00
Repeat Factor		0					

Employee Exposure:							
Occupation	Wildland Firefighters			Employer	ASFD		
Nr of Employees	31			Duration	8+ hours	Frequency	Daily
Employee Name	Structure Protection Group 2						
Address				Phone	() -		
Occupation	Wildland Fighter			Employer	ASFD		

Nr of Employees	1	Duration	3+ hours	Frequency	Daily
Employee Name	Brendan McDonough				
Address		Phone	() -		
Occupation	Wildland Firefighters	Employer	ASFD		
Nr of Employees	30	Duration	8+ hours	Frequency	Daily
Employee Name	Division Z				
Address		Phone	() -		
Occupation	Wildland Firefighters	Employer	ASFD		
Nr of Employees	19	Duration	6+ hours	Frequency	Daily
Employee Name	Granite Mountain IHC				
Address		Phone	() -		

Instance Description:	A. Hazard	B. Equipment	C. Location	D. Injury/Illness	E. Measurements
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Date/time condition observed by CSHO:

CSHO did not observe any of the cited instances. Details of exposure/violation were obtained through witness interviews, review of documents, and review of video and photographs taken by witnesses and other fire personnel working at the Yarnell Hill Fire.

Instance description: Describe the hazardous condition. Include make, model/serial numbers and measurements where applicable.

On the evening of Friday, June 28, 2013, a lightning strike started a small fire on the west side of the Weaver Mountains (State Trust Land) northwest of Yarnell, Arizona. Due to the location of the fire and land ownership, the Arizona State Forestry Division assumed suppression responsibility of the fire. The fire was in the assigned area of District Forester Jim Downey. Downey assigned a Type 4 Initial Attack Incident Commander, Russ Shumate (Assistant Fire Management Officer) working out of Prescott to the fire.

At approximately 1630 on Saturday, June 29, 2013, the fire, estimated to be 8 acres in size, jumped over the east control line (a two-track road) and began burning on the east side of the Weaver Mountains. The fire escaped initial attack and transitioned to a more complex fire requiring additional management and field resources.

By 2000 on June 29, 2013, ICT4 Shumate began ordering additional resources to staff a Type 2 incident management team. Additional ground and aviation suppression and support forces were ordered as well.

ASFD selected a short Type 2 incident management team without completing an incident complexity analysis, an Escaped Fire Situation Analysis (EFSA) required by ASFD Standard Operational Guideline 701, a Wildland Fire Situation Analysis (WFSa) and an Incident Action Plan (IAP) as required by interagency industry practice and standards. These standard analytical tools guide fire management decision-making to ensure that an adequate match exists between fire complexity, incident management capabilities, and fire suppression objectives.

At 1337 on Sunday, June 30, 2013, nearly 34 hours after the fire had started, District Forester Jim Downey and Type 2 Incident Commander Roy Hall completed a fire complexity analysis. Their analysis using the industry standard "Incident Analysis Type 1 & 2" checklist mistakenly indicated that the existing level of incident command (Type 4) would be sufficient for the fire. However, a hand written note at the bottom of the checklist indicated "Rates Type 2 - Upgrade to Type 1."

ADOSH performed the analysis using the same "Incident Analysis Type 1 & 2" checklist and consideration of known conditions. This analysis indicated that on the evening of June 29, 2013 the Yarnell Hill Fire was transitioning to a Type 1 complexity fire. The correct incident complexity was eventually chosen by Downey and Hall; however, it was more than a day late and resulted in the exposure of hundreds of firefighters to complex fire hazards that may have otherwise been controlled by an adequately staffed fire response operation.

Fire management's delay in completing a fire complexity analysis likely delayed assignment of a replacement incident commander. Initial Attack Incident Commander Russ Shumate worked a 30 hour shift before incident management was turned over to his replacement Roy Hall. During this time, Shumate was faced with ongoing logistical, planning, safety, communications and operational challenges as fire complexity changed.

The fire was originally managed by a Type 4 incident commander. On the evening of June 29, 2013, following the failure of initial attack efforts, fire complexity changed from a Type 4 incident to a Type 1 incident. Instead of conducting an incident complexity analysis, an Escaped Fire Situational Analysis and an Incident Action Plan, fire management assigned a Type 2 - short team to manage the fire. The Type 2-short incident command team members arrived at different times, which prevented key personnel from involvement in the development and implementation of fire suppression plans. Once fire activity picked up on the morning of Sunday, June 30, 2013, incident command became overwhelmed resulting in multiple firefighter exposures to smoke inhalation, burns, and death.

By the time Downey and Hall completed their analysis of fire complexity, the fire was completely out of control, and had burned an estimated 1,000 acres and four structures. By the end of that day, and before the arrival of the Type 1 Incident Management Team on July 1, 2013 at 1800, the fire burned over 8,000 acres, over one hundred structures, exposed dozens of firefighters to smoke inhalation, burns, and death, and resulted in the entrapment death of 19 firefighters.

The assigned Type 2 Short Incident Management Team and associated resources (ground crews and aviation) attempted to manage hazardous complex fire conditions that exceeded their capabilities.

Describe employee exposure to the condition, including the relationship to this cited employer.

Over 300 firefighters were employed directly by or under cooperative agreements with the Arizona State Forestry Division (ASFD) and were exposed to smoke inhalation, burns, and death by rapidly progressing wildland fire. The employer failed to implement wildfire suppression plans consistent with A.R.S. Section 37-623 Suppression of wildfires and ASFD SOG - 701 Fire Suppression and Prescribed Fire Policy (2008) which would include an incident complexity analysis, EFSA, WFSA or WFDSS and Incident Action Plan.

There is no specific OSHA standard that addresses this hazard and a general duty citation is therefore recommended based on the following information:

A: Recognition of the Hazard:

A.1: Employer Recognition:

Evidence the Arizona State Forester recognized the hazard includes documents the ASFD provided ADOSH that it uses in wildland fire operations and safety in Arizona.

A.R.S. Section 37-623 Suppression of wildfires; powers and duties of state forester; entry on private lands.

Arizona State Forestry Division, Standard Operational Guideline 701, Fire Suppression and Prescribed Fire Policy (2008).

NWCG Wildland Fire Incident Management Field Guide (2013)

NWCG Interagency Standards for Fire and Fire Aviation Operations (2013)

NWCG Incident Response Pocket Guide (2010)

Relevant excerpts from the SOG-701 are described below. Relevant excerpts from the NWCG documents, which apply to both employer and industry hazard recognition is described in the following section titled "Industry Recognition."

A.2: Industry Recognition:

The Arizona State Forester provided ADOSH with the following documents that it uses in wildland fire operations and safety in Arizona:

NWCG Wildland Fire Incident Management Field Guide (2013)

NWCG Interagency Standards for Fire and Fire Aviation Operations (2013)

NWCG Incident Response Pocket Guide (2010)

Arizona State Forestry Division, Standard Operational Guideline 701, Fire Suppression and Prescribed Fire Policy (2008)

Policy, Page 2

1. **Safety:** Firefighter and public safety is the first priority. All fire management activities must reflect this commitment.
2. **Fire Management:** The full range of fire management activities will be used to hold wildfire losses on state lands to a level consistent with resource values at risk while providing adequate health and safety protection to the public and firefighters and with a minimum expenditure of state funds.
3. **Response to Wildfire:** Appropriate response to wildfires is based on environmental, social and legal considerations, and the likely consequences on firefighter and public safety and welfare, natural and cultural resources and the values to be protected, and the economic interests of the Land Trust and State Treasury.
4. **Use of Wildfire:** Wildfires will not be used to enhance natural resources. Wildfires will be controlled, contained, or confined at the least cost to the State, consistent with firefighter and public safety and welfare.
5. **Protection Priorities:** The protection of human life is the single, overriding suppression priority. Setting priorities among protecting human communities and community infrastructure, other property and improvements, and natural and cultural resources will be done based on the values to be protected, human health and safety, and the cost of protection. Once people have been committed to an incident, these human resources become the highest value to be protected.
6. **Wildland Urban Interface:** The operational roles of the State as partners in the wildland urban interface are wildland firefighting, hazard reduction, cooperative prevention and education, and technical assistance. Structural fire suppression is the responsibility of federal, tribal, or local governments. The State may assist with exterior structural fire protection activities under formal fire protection agreements that specify the mutual responsibilities of the partners.
7. **Suppression:** Wildfires are suppressed at minimum cost, considering firefighter and public safety, and all values to be protected, consistent with management objectives.
8. **Prevention:** The State will work with the federal wildland agencies and with local governments and partners and other affected groups and individuals to prevent unauthorized ignition of wildland fires.
9. **Standardization:** The State will implement training and qualification requirements, operational procedures and methodologies, and public education programs for all fire management activities that are compatible with the federal wildland agencies.
10. **Interagency Cooperation:** Fire management planning, preparedness, prevention, suppression, fire use, restoration and rehabilitation, monitoring, research, and education will be conducted on an interagency basis with the involvement of cooperators and partners.(emphasis added)

Wildfire Suppression Strategies, Page 4:

Transition from initial attack to extended attack can be especially dangerous. During this transition, the fire shall be managed as a potentially life-threatening event. Identification of the fire behavior thresholds at which large fires typically occur is important because these thresholds indicate fire danger levels that compromise safety and control. When such thresholds are approached, fire program managers shall require additional supervisory and suppression support.

When a potentially life-threatening event exists, action shall be taken to provide for the safety of firefighters, other personnel, and the public, regardless of suppression costs or resource losses. (emphasis added)

Escaped Fires, Page 9:

Wildfires and prescribed fires which are expected to exceed initial attack capabilities or prescription, or burn into the next burning period (10:00 a.m. to sundown) will be considered an escaped fires. All escaped fires will have an Escaped Fire Situation Analysis completed by the responsible District Forester, or their designated representative.

The District Forester shall promptly organize and activate sufficient resources to implement an appropriate suppression action for each escaped fire. Such action will be consistent with the fire suppression direction for the area and the decisions approved in the Escaped Fire Situation Analysis. The Escaped Fire Situation Analysis will be reviewed daily and updated as necessary. (emphasis added)

2013 Wildland Fire Incident Management Field Guide, National Wildfire Coordinating Group (NWCG)

Chapter 2, Operational Guides, Extended Attack, Page 23

Definition of Extended Attack

Extended Attack is the suppression activity for a wildfire that has not been contained or controlled by initial attack or contingency forces and for which more firefighting resources are arriving, en route, or being ordered by the Initial Attack Incident Commander.

An Extended Attack Incident is the phase of the incident when Initial Attack capabilities have been exceeded. This has a high potential for more serious accidents and injuries. All planned actions must consider firefighter and public safety as the number one priority.

When complexity levels exceed Initial Attack capabilities, the appropriate ICS positions should be added to the command staff commensurate with the complexity of the incident. Complexity is usually Type 3; however complexity could be typed at any level. (emphasis added)

Chapter 2, Operational Guides, Page 24

Change From an Initial Attack Incident to an Extended Attack Incident

Early recognition by the Initial Attack IC that the Initial Attack forces will not control a fire is important. As soon as the Initial Attack IC recognizes that additional resources are needed or knows additional forces are en route, the IC may need to withdraw from direct fireline suppression and must prepare for an Extended Attack mode of operation.

The Initial Attack IC will perform the following duties when changing to an Extended Attack Incident if all positions are not filled:

- o Establish an Incident Command Post (ICP) and check-in location(s) to receive, brief, and assign incoming resources.*
- o Use complexity analysis to validate organizational needs (see IRPG).*
- o Follow the risk management process in the IRPG. Review and update regularly during the incident. (emphasis added)*

Chapter 2, Operational Guides, Page 27

Extended Attack Safety Checklist

After your initial sizeup of the fire and/or transition from an Initial Attack IC, answer the following questions (repeat this analysis whenever there is a change in conditions on the fire or a predicted change in fire conditions). If the answer is NO to any of the checklist questions, you MUST take corrective action(s) IMMEDIATELY. (emphasis added)

Chapter 2, Operational Guides, Page 30

TRANSFER OF COMMAND

Many safety problems emerge as an incident becomes larger and/or more complex. Incident transfer of command historically has been one of the most dangerous phases of incident management. Incidents should transfer command at a specific time, preferably at the start of a new operational period. The operational effort should continue during transfer period with command and control of the incident firmly in place, and with clear, achievable, and sound strategy and tactics communicated to and implemented by all firefighting resources. (emphasis added)

Agency Administrator(s)' Responsibility for the Transfer of Command and Release of Incident Management Teams

The following guidelines are for the orderly transfer of command of fire management authorities to incoming ICs and their teams as well as their release. Agency Administrator(s) always maintain responsibility for the incident. Some information will need to be in writing and some may be verbal. (emphasis added)

Chapter 2, Operational Guides, Page 32

Transfer of Authority

1. The IC in place is in charge until officially released. Release should not occur until incoming IC and team members are briefed by their counterparts and ready to take full command of incident.
2. The operational effort should continue during the transfer period, with command and control of the incident firmly in place, and with clear, achievable, and sound strategy and tactics communicated to and implemented by all firefighting resources. As a general rule, command transfer should occur at the end of an operational period.
3. The requesting unit should specify the expected time of arrival and expected time of transfer of command to the incoming team.
4. The current IC should contact the local Agency Administrator in advance for location and time for Agency Administration briefing.
5. The requesting agency should accomplish the following before the arrival of the incoming team:
 - a. Make contact with incoming IC before his or her arrival. Give IC an update on progress of fire and inquire if there are any special needs for the team.
 - b. Determine ICP, Base, and Staging Area locations.
 - c. Order support equipment, supplies, and initial basic support organization for the incident.
 - d. Determine transportation needs of the team, and obtain needed vehicles.
 - e. Schedule the Agency Administrator briefing time and location.
 - f. Obtain necessary information for the Agency Administrator briefing.
 - g. Obtain necessary communications equipment and support for the incident.
6. It is the responsibility of the jurisdictional Agency Administrator(s) to ensure that, where required, the Wildland Fire Decision Support System (WFDSS) is used.
7. The existing IC at the ICP should brief the incoming IC and team. The time of transfer of command will depend upon incident complexity, expertise of the existing team, and/or other problems.
8. Complete a written Delegation of Authority, per agency policy, for the incoming IC to review.

The fire was originally managed by a Type 4 incident commander. On the evening of Saturday, June 29, following the failure of initial attack efforts, fire complexity changed from a Type 4 incident to a Type 1 incident. Rather than conduct a complexity analysis, fire management assigned a Type 2 - short team to manage the fire. The Type 2 incident command team members arrived at different times which prevented key personnel from involvement in the development and implementation of fire suppression plans. Once fire activity picked up on the morning of Sunday, June 30, 2013, incident command became overwhelmed resulting in multiple firefighter exposures to smoke inhalation, burns, and death.

Chapter 4, References, Incident Complexities, Page 137 **Incident Complexity Analysis (Type 1 or 2)**

Guide to completing the following table:

1. Analyze each element and check the response, Yes or No.
2. If positive responses exceed, or are equal to, negative responses within any primary factor (A-G), the primary factor should be considered as a positive response.
3. If any three of the primary factors (A-G) are positive responses, this indicates the fire situation is or is predicted to be of Type 1 complexity.
4. Factor H should be considered after numbers 1-3 are completed. If more than two of the items in factor H are answered Yes, and three or more of the other primary factors are positive responses, a Type 1 team should be considered. If the composites of H are negative, and there are fewer than three positive responses in the primary factors (A-G), a Type 2 team should be considered. If the answers to all questions in H are negative, it may be advisable to allow the existing overhead to continue action on the fire.

NWCG Interagency Standards for Fire and Fire Aviation Operations (2013)

Chapter 11, Incident Management and Response, Page 11-1

Incident Command System (ICS)

The ICS is the on-site management system used in NIMS. The ICS is a standardized emergency management system specifically designed to provide for an integrated organizational structure that reflects the complexity and demands of single or multiple incidents, without being hindered by jurisdictional boundaries. ICS is the combination of facilities, equipment, personnel, communications, and procedures operating within a common organizational structure to manage incidents. ICS will be used by the agencies to manage wildland fire operations and all-hazard incidents.

Wildland Fire Complexity

Wildland fires are typed by complexity, from Type 5 (least complex) to Type 1 (most complex). The ICS organizational structure develops in a modular fashion based on the complexity of the incident. Complexity is determined by completing an Incident Complexity Analysis - (Refer to samples in appendix E & F). Units may develop their own Incident Complexity Analysis format to replace appendix F.

Incidents not meeting the recommended incident typing characteristics below 1 should have a documented Complexity Analysis (Appendix F) verifying the 2 command organization is appropriate. (emphasis added)

Note: The Incident Complexity Analysis (1&2) contained in Appendix E of the 2013 Interagency Standards for Fire and Aviation is identical to the Incident Complexity Analysis contained in the 2013 Wildland Fire Incident Management Field Guide discussed previously.

Chapter 11, Incidence Management & Response, Page 11-3

For purposes of initial attack, the first IC on scene qualified at any level will assume the duties of initial attack IC. The initial attack IC will assume the duties and have responsibility for all suppression efforts on the incident up to his/her level of qualification until relieved by an IC qualified at a level commensurate with incident complexity.

As an incident escalates, a continuing reassessment of the complexity level should be completed to validate the current command organization or identify the need for a higher level of incident management.

An IC is expected to establish the appropriate organizational structure for each incident and manage the incident based on his/her qualifications, incident complexity, and span of control. If the incident complexity exceeds the qualifications of the current IC, the IC must continue to manage the incident within his/her capability and span of control until replaced.

A.3: Arizona Industry Common Practice, pursuant to A.R.S. Section 23-403(C):

Notwithstanding subsection A of this section, a condition or practice which is common within an industry is not deemed a recognized hazard unless a standard or regulation concerning the condition or practice has been developed pursuant to section 23-410 or 23-414.

It is a common practice in the industry to perform the required analysis and planning. The failure to perform an incident complexity analysis, an Escaped Fire Situational Analysis, a Wildland Fire Situational Analysis or Wildland Fire Decision Support System and Incident Action Plan is deemed a recognized hazard

B: Probability of death or serious physical harm:

The probability of employee exposure to serious physical harm and death is directly related to fire behavior, weather, and distance employees work from fire and smoke. Should wind driven wildland fire or smoke overtake an employee the probability of serious physical harm or death is extremely high due to exposure to toxic gases and extreme high temperature.

C: What feasible abatement methods are available to address this hazard?

The employer can abate by actions that include, timely performing the following when a fire escapes an initial attack:

Early recognition by the Initial Attack IC that the Initial Attack forces will not control a fire is important. As soon as the Initial Attack IC recognizes that additional resources are needed or knows additional forces are en route, the IC may need to withdraw from direct fireline suppression and must prepare for an Extended Attack mode of operation.

Incident complexity analysis, Escaped Fire Situational Analysis, and

Wildland Fire Situational Analysis or

Wildland Fire Decision Support System,

and an Incident Action Plan.

D: Appropriateness of the penalty amount:

An employee exposure value of 10 was selected as more than 10 employees were exposed to wildland fire.

Frequency of exposure was estimated to be a value of 10 (16 hour workday and up to 14 consecutive days).

Proximity was estimated to be a value of 10 (at the point, high risk hazards).

Stress was estimated to be a value of 10 (high management stress, very poor conditions).

A severity factor of 10 was selected as employee exposure to smoke inhalation or burns would likely result in serious debilitating injuries or death.

Describe employer knowledge of the condition and of employee exposure to the condition.

Pursuant to Arizona Revised Statutes, A.R.S. Section 37-623, The Arizona State Forestry Division has responsibility for management of fires on State lands and private property outside of incorporated areas. The Yarnell Hill Fire initially started on State trust land yet mostly burned private lands outside of incorporated areas.

On the evening of Friday, June 28, 2013, a lightning strike ignited a small fire on the west side of the Weaver Mountains (State Trust Land) north and west of Yarnell, Arizona. Due to the location of the fire the Arizona State Forestry Division (ASFD) took control of the fire. ASFD District Forester Jim Downey was assigned to manage the fire.

In the late afternoon of Saturday, June 29, 2013, the Yarnell Hill Fire escaped initial attack and became an extended attack operation. Photographs taken by aviation (air attack) on the afternoon of June 29, 2013, show that the fire jumped the east control line (defined as a slop over) and began burning on the eastern slope of the Weaver Mountains. The Incident Commander, Russ Shumate, was in contact with aviation and knew of the fire's escape from the east control line.

Interviews of fire management and employees uniformly demonstrated knowledge of expected extreme fire behavior based on extended drought conditions, high fuel loading, excessive heat, and forecasted afternoon thunderstorms. In addition, fire management and incident command knew that structures in Peoples Valley, Yarnell, and Glen Ilah would be threatened by the fire.

Additionally, the ASFD provided to ADOSH documentation of the practices it uses in managing fire, the documents included the NWCG 2013 Interagency Standard for "Fire and Fire Aviation Operations," the NWCG 2013 "Wildland Fire Incident Management Field Guide" and the NWCG "Incident Response Pocket Guide". These documents refer to the need to complete a Fire Complexity Analysis, an Escaped Fire Situational Analysis and an Incident Action Plan when transitioning from a Type 4 incident to a Type 2 incident.

ASFD knew that a complexity analysis was necessary; however, the analysis wasn't completed until after fire management had transitioned to a more complex team. The completed complexity analysis indicated that the highest level management team was necessary.

Despite this knowledge, fire management did not complete a Fire Complexity Analysis until the following day.

Fire management did not complete an Escaped Fire Situational Analysis (EFSA).

A Wildland Fire Situational Analysis (WFSA) decision and/or Wildland Fire Decision Support System (WFDSS) was not published until July 4, 2013.

An Incident Action Plan (written or oral) with objectives reflecting the overall incident strategy and specific tactical actions and supporting information for the next operational period was not completed and should have been articulated to the incoming Type 2 Incident Commander during the transitional period.

ASFD fire management knew or should have known that this fire complexity analysis was required to be performed on June 29, 2013 when the fire escaped initial attack. This delay exposed firefighters to hazards of smoke inhalation, burns, and death which otherwise could have been avoided had sufficient incident management staff been assigned and present at the fire on June 30, 2013.

Note any other comments made by the employer, or other information relative to this citation, not already noted above.

Penalty calculation:

Probability:

Number of employees: 10+

Frequency of exposure: 10

Proximity to hazard: 10

Stress: 10

Other:

TOTAL: 40

Number of factors: 4

Probability TOTAL: 10G

Severity: 10H

Event Date	Event Code	Action Code	Citation Type	Penalty	Abate Date	Final Order
	Z Add transaction	A Add	S Serious	7000.00		

The Arizona Division of
Occupational Safety and Health



Worksheet

Wed Nov 27, 2013 12:20pm

				Inspection Number		317242683	
				Opt. Insp. Number		0618	
Establishment Name Arizona State Forestry Division							
Type of Violation		S Serious		Citation Number	02	Item/Group	002
Number Exposed		81		No. Instances	2	REC	A Accident
Std. Alleged Vio.		23.0403(A)					

Abatement Period	MultiStep Abatements			Final Abatement	Action Type/Dates
	PPE Period	Plan	Report		
3					
Abatement Documentation Required			Y	Date Verified	

Substance Codes	
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AVD/Variable Information:

A.R.S. Section 23-403(A): The employer did not furnish to each of his employees employment and a place of employment which were free from recognized hazards that were causing or likely to cause death or serious physical harm to their employees, in that pursuant to Arizona State Fire Division Standard Operating Guideline SOG-701, transition from initial attack to an extended attack operations is extremely dangerous and critical incident management personnel necessary to support the planning and implementation of fire suppression operations arrived late or were absent from their assigned positions during the life-threatening transition thereby increasing the risk of firefighter exposure to smoke inhalation, burns, and death:

- a) Yarnell Hill Fire, Yarnell, Arizona: On or about June 30, 2013, fire management positions of Safety Officer and Planning Section Chief were unfilled and therefore unable to participate during critical fire suppression planning, transition planning, and oversight of ongoing wildfire suppression operations.
- b) Yarnell Hill Fire, Yarnell, Arizona: On June 30, 2013, at approximately 1330, Division Z Supervisor departed from his assigned position which left Division Z without supervision during ongoing wildfire suppression operations.

Penalty Calculations				Adjustment Factors			Proposed Adjusted Penalty
Severity	Probability	Gravity	GBP	Size	Good Faith	History	
H High	G Greater	10	7000.00	0	0	0	7000.00
Repeat Factor		0					

Employee Exposure:							
Occupation	Wildland Firefighters			Employer	ASFD		
Nr of Employees	31			Duration	8+ hours	Frequency	daily
Employee Name	Structure Protection Group 2						
Address				Phone	() -		
Occupation	Wildland Firefighter			Employer	ASFD		
Nr of Employees	1			Duration	3+ hours	Frequency	Daily
Employee Name	Brendan McDonough						
Address				Phone	() -		
Occupation	Wildland Firefighters			Employer	ASFD		

Nr of Employees	30	Duration	8+ hours	Frequency	Daily
Employee Name	Division Z				
Address		Phone	() -		
Occupation	Wildland Firefighters	Employer	ASFD		
Nr of Employees	19	Duration	6+ hours	Frequency	Daily
Employee Name	Granite Mountain IHC				
Address		Phone	() -		

Instance Description:	A. Hazard	B. Equipment	C. Location	D. Injury/Illness	E. Measurements
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Date/time condition observed by CSHO:

CSHO did not observe any of the cited instances. Details of exposure/violation were obtained through witness interviews, review of documents, and review of video and photographs taken by witnesses and other fire personnel working at the Yarnell Hill Fire.

Instance description: Describe the hazardous condition. Include make, model/serial numbers and measurements where applicable.

Wildland fire suppression response actions follow the National Incident Management System whereby fire incident management teams of varied complexity are ordered by wildland protection agencies, through a network of national, regional, and local dispatch centers to suppress fires on public and private lands. The complexity of an incident management team is determined by the complexity of the incident they have been assigned to manage. Incident complexity ranges from Type 5 (least complex) to a Type 1 (most complex).

When incident complexity requires Type 1, 2, or 3, incident management teams, each member of the team is charged with specific duties to ensure that management of the fire is consistent with the objectives of the wildland management agency while considering firefighter safety, resources to be protected, and cost. When management team members are not present, their duties must either be performed by others or left undone thereby increasing the probability of employee exposure to wildland fire hazards.

Instance a:

On or about 1600 on Saturday, June 29, 2013, the Yarnell Hill Fire, under the command of Type 4 Incident Commander Russ Shumate, escaped initial attack and burned onto the east slope of the Weaver Mountains one mile south of the communities of Peoples Valley, and two miles northwest of the communities of Yarnell and Glen Ilah. That afternoon, and into the evening, fire management ordered and dispatched resources and personnel to arrive at the fire the following morning.

On June 29, 2013, at 2120, Yarnell Hill Fire Deputy Incident Commander Glenn Joki contacted Norval Tyler at the Arizona Dispatch Center (ADC) and requested two safety officers be assigned to the Yarnell Hill Fire. The following day, at 1248 on Sunday, June 30, 2013, ADC dispatched two safety officers to the fire.

On June 30, 2013, Safety Officer Tony Sciacca arrived to the fire at approximately 1430, which was more than 22 hours after the fire had escaped initial attack efforts and more than six hours after fire suppression operations had begun that day. Safety Officer Marty Cole arrived to the fire at approximately 1600, which was 24 hours after the fire had escaped initial attack and more than eight hours after fire suppression operations had begun that day. In the interim, the Incident Commander had the responsibility to ensure completion of the Safety Officer's duties, which included: analyze safety aspects of selected and alternative suppression strategies/tactics; prepare, review, and manage the safety portion of the Incident Action Plan; jointly develop the Incident Action Plan Safety Analysis with the Operations Section Chief; present safety briefings to overhead which emphasize hazards and risks associated in action plan components; establish a system to monitor fire activities for hazards and risks; review and approve medical plan, monitor operational period lengths and ensure firefighter compliance with work/rest guidelines; monitor food, potable water, and sanitation service inspections; monitor firefighter personal protective equipment requirements, and monitor all air operations, etc.

At 1430 on June 30, 2013, when Safety Officer Tony Sciacca arrived, fire suppression operations were fully implemented, over 300 firefighters were assigned to positions throughout the 8,000 acre fire area, and an approaching thunderstorm would

quickly result in abandonment of suppression plans. Dozens of firefighters working at isolated portions of the fire were exposed to fire and smoke from the rapidly progressing wind driven wildland fire. Nineteen firefighters would die as a result of an entrapment and burnover.

Although safety is the responsibility of all firefighters and management, the specific incident management team position of Safety Officer is intended to ensure a focused evaluation of firefighter safety independent of pressures associated with suppression objectives, suppression progress, resource protection, and cost. Had a Safety Officer been involved in suppression planning, oversight of suppression operations, and re-evaluation of firefighter exposure when conditions changed, the chosen suppression strategies and tactics implemented on June 30, 2013 may have been different.

On June 29, 2013, at 2120, Yarnell Hill Fire Deputy Incident Commander Glenn Joki contacted Norval Tyler at the Arizona Dispatch Center (ADC) and requested Planning Section Chief Brian Lauber respond to the fire.

At 2249 on June 29, 2013, Planning Section Chief Brian Lauber was contacted by ADC and accepted the assignment. He was scheduled to arrive at the fire at 0800 the following day. However, Lauber arrived at the fire on June 30, 2013 at 1630, more than eight hours after his assigned response time. In the interim, Incident Commander Roy Hall was required to ensure that completion of the Planning Section Chief's duties, which included: conduct planning meetings and operational briefings, supervise development of an Incident Action Plan and ensure that copies are distributed to Unit Leaders, advise general staff of significant changes in incident status, prepare and distribute Incident Commander's orders, ensure that information regarding special environmental protection needs are included in the Incident Action Plan, assemble information on alternative fire suppression strategies, and ensure the collection and reporting of agency required information is completed, etc.

By 1630 on June 30, 2013, when Planning Section Chief Lauber arrived to the fire, suppression operations were chaotic. Firefighters were retreating to avoid a fire that had significantly increased in intensity and changed directions. Dozens of firefighters working at isolated portions of the fire were exposed to fire and smoke from the rapidly progressing wind driven wildland fire. Nineteen firefighters would ultimately die as a result of an entrapment and burnover.

The incident management team position of Planning Section Chief is responsible for collecting, evaluating, disseminating, and updating information about the development of the incident and status of resources. The information collected, assembled, and distributed by the Planning Section Chief provides fire management with an understanding of current conditions, predicted probable course of incident events, alternative strategies, and control of operations. Because this position was vacant, the Incident Commander had to balance his own workload and determine which Planning functions he would perform himself or delegate to someone else. A major function associated with the Planning Section is ensuring that field personnel have appropriate maps of the fire area. This function was not completed until the evening of Sunday, June 30, 2013. Had a Planning Section Chief been involved in preliminary suppression planning, firefighter safety associated with suppression strategies and tactics implemented on June 30, 2013 may have been different.

Instance b:

On June 30, 2013, at 1030, Rance Marquez arrived to the incident command post and received a personalized briefing and was assigned to be Supervisor of Division Z. He cloned his radio and drove out to his assigned position as Division Z Supervisor for a geographical area located north of Yarnell and adjacent to Division A. Operations Section Chief Todd Abel was his direct supervisor.

By the time Marquez arrived at his work location, the existing team had already built a 2 mile long dozer line. Marquez, Blue Ridge IHC Superintendent Brian Frisby, and Division A Supervisor Eric Marsh discussed roles and responsibilities. Marquez cannot determine a good Division break and believes the existing plan is problematic as fuels were heavy, the terrain was difficult, and the resources assigned were limited. Marquez departs the area, returns to the incident command post and reports his findings to Musser. He never returns to Division Z and no other Supervisor was assigned as his replacement.

As a result, Division Z Supervisor duties including the following were not performed: use of the risk management process to ensure firefighter safety, supervision of assigned operations; accountability of assigned resources at all times; coordination of activities with adjacent Divisions; keeping direct supervisor informed of situation and resources status; conducting safety briefing to subordinate resources; briefing and assignment of specific work tasks to Task Forces/Strike Team Leaders; provide Incident Communications of all status changes of assigned resources; ensure that assigned personnel and equipment get on and off the fireline in a timely and orderly manner; resolve logistics problems within the Division/Group; and approve and turn in time for all resources in Division/Group to the Time Unit.

On June 30, 2013, at approximately 1600, firefighters working on Division Z were faced with retreat from rapidly progressing wind driven wildland fire. Fire crews were unsure as to when to evacuate and it was not until they became engulfed by smoke

and windblown embers that firefighters recognized that emergency escape was necessary. Had a Division Supervisor been present at Division Z, accountability of assigned forces would have been managed, and the timing and decision to evacuate may have been clearly conveyed to all forces in advance of exposure to smoke, windblown embers, and possible entrapment.

Describe employee exposure to the condition, including the relationship to this cited employer.

Over 300 firefighters were employed directly by or under cooperative agreements with the Arizona State Forestry Division (ASFD) and were exposed to smoke inhalation, burns, and death by rapidly progressing wildland fire in that critical fire management personnel were not involved in fire suppression planning and implementation of fire suppression operations.

There is no specific OSHA standard that addresses this hazard and a general duty citation is therefore recommended based on the following information:

A: Recognition of the Hazard:

A.1: Employer Recognition:

Evidence the Arizona State Forester recognized the hazard includes documents the ASFD provided ADOSH that it uses in wildland fire operations and safety in Arizona.

A.R.S. Section 37-623 Suppression of wildfires; powers and duties of state forester; entry on private lands.

Arizona State Forestry Division, Standard Operational Guideline 701, Fire Suppression and Prescribed Fire Policy (2008).

NWCG Wildland Fire Incident Management Field Guide (2013)

NWCG Interagency Standards for Fire and Fire Aviation Operations (2013)

NWCG Incident Response Pocket Guide (2010)

Arizona State Forestry Division, Standard Operational Guideline 701, Fire Suppression and Prescribed Fire Policy (2008)

Policy, Page 2

1. **Safety:** *Firefighter and public safety is the first priority. All fire management activities must reflect this commitment.*
2. **Fire Management:** *The full range of fire management activities will be used to hold wildfire losses on state lands to a level consistent with resource values at risk while providing adequate health and safety protection to the public and firefighters and with a minimum expenditure of state funds.*
3. **Response to Wildfire:** *Appropriate response to wildfires is based on environmental, social and legal considerations, and the likely consequences on firefighter and public safety and welfare, natural and cultural resources and the values to be protected, and the economic interests of the Land Trust and State Treasury.*
4. **Use of Wildfire:** *Wildfires will not be used to enhance natural resources. Wildfires will be controlled, contained, or confined at the least cost to the State, consistent with firefighter and public safety and welfare.*
5. **Protection Priorities:** *The protection of human life is the single, overriding suppression priority. Setting priorities among protecting human communities and community infrastructure, other property and improvements, and natural and cultural resources will be done based on the values to be protected, human health and safety, and the cost of protection. Once people have been committed to an incident, these human resources become the highest value to be protected.*
6. **Wildland Urban Interface:** *The operational roles of the State as partners in the wildland urban interface are wildland firefighting, hazard reduction, cooperative prevention and education, and technical assistance. Structural fire suppression is the responsibility of federal, tribal, or local governments. The State may assist with exterior structural fire protection activities under formal fire protection agreements that specify the mutual responsibilities of the partners.*
7. **Suppression:** *Wildfires are suppressed at minimum cost, considering firefighter and public safety, and all values to be protected, consistent with management objectives.*

8. **Prevention:** *The State will work with the federal wildland agencies and with local governments and partners and other affected groups and individuals to prevent unauthorized ignition of wildland fires.*
9. **Standardization:** *The State will implement training and qualification requirements, operational procedures and methodologies, and public education programs for all fire management activities that are compatible with the federal wildland agencies.*
10. **Interagency Cooperation:** *Fire management planning, preparedness, prevention, suppression, fire use, restoration and rehabilitation, monitoring, research, and education will be conducted on an interagency basis with the involvement of cooperators and partners.*
(emphasis added)

Wildfire Suppression Strategies, Page 4:

Transition from initial attack to extended attack can be especially dangerous. During this transition, the fire shall be managed as a potentially life-threatening event. Identification of the fire behavior thresholds at which large fires typically occur is important because these thresholds indicate fire danger levels that compromise safety and control. When such thresholds are approached, fire program managers shall require additional supervisory and suppression support.

When a potentially life-threatening event exists, action shall be taken to provide for the safety of firefighters, other personnel, and the public, regardless of suppression costs or resource losses.

Escaped Fires, Page 9:

Wildfires and prescribed fires which are expected to exceed initial attack capabilities or prescription, or burn into the next burning period (10:00 a.m. to sundown) will be considered an escaped fires. All escaped fires will have an Escaped Fire Situation Analysis completed by the responsible District Forester, or their designated representative.

The District Forester shall promptly organize and activate sufficient resources to implement an appropriate suppression action for each escaped fire. Such action will be consistent with the fire suppression direction for the area and the decisions approved in the Escaped Fire Situation Analysis. The Escaped Fire Situation Analysis will be reviewed daily and updated as necessary.
(emphasis added)

There is no specific OSHA standard that addresses this hazard. However, this hazard is recognized by the employer, his industry, or both, in the following manner:

A.2: Industry Recognition:

The Arizona State Forester provided ADOSH with the following documents that it uses in wildland fire operations and safety in Arizona:

NWCG Wildland Fire Incident Management Field Guide (2013)

NWCG Interagency Standards for Fire and Fire Aviation Operations (2013)

NWCG Incident Response Pocket Guide (2010)

2013 NWCG Wildland Fire Incident Management Field Guide

Preface, Page i

Purpose

The Wildland Fire Incident Management Field Guide states, references, or supplements wildland fire incident management and operational standards established by the National Wildfire Coordinating Group (NWCG).

Chapter 2, Operational Guides, Extended Attack, Page 23

Definition of Extended Attack

Extended Attack is the suppression activity for a wildfire that has not been contained or controlled by initial attack or contingency forces and for which more firefighting resources are arriving, en route, or being ordered by the Initial Attack Incident Commander.

An Extended Attack Incident is the phase of the incident when Initial Attack capabilities have been exceeded. This has a high potential for more serious accidents and injuries. All planned actions must consider firefighter and public safety as the number one priority.

Chapter 2, Operational Guides, Control or Transfer to Type 2 Incident, Page 26

The primary objective of all ICs [incident commanders] is to provide for firefighter and public safety. Discharge of this objective applies the appropriate suppression response. This objective may require transfer of command. A measurable performance element with safety implications is the execution of this transfer of command. Adequate staffing, ordering of needed resources, good planning, good documentation, and quality briefings are all important elements of transfer of command.

Chapter 2, Operational Guides, Large Fire Management Teams, Page 28

Type 2 Organization

A Type 2 Organization is the first level at which most or all of the Command and General Staff positions are activated and are filled by a Type 2 Incident Management Team (IMT). The IC and Command and General Staff must function as a team, handling many aspects, such as:

- o Supervising a large organization.*
- o Planning during multiple operational periods.*
- o Gathering information to develop a written IAP.*
- o Providing logistical support, including the establishment and operation of a Base and possibly Camps.*

Chapter 2, Operational Guides, Transfer of Command, Page 30

Many safety problems emerge as an incident becomes larger and/or more complex. Incident transfer of command historically has been one of the most dangerous phases of incident management. Incidents should transfer command at a specific time, preferably at the start of a new operational period. The operational effort should continue during transfer period with command and control of the incident firmly in place, and with clear, achievable, and sound strategy and tactics communicated to and implemented by all firefighting resources.

Chapter 3, Position Responsibilities, Position Checklists, Safety Officer, Page 43

Safety Officer (SOF1/2, SOFR)

The Safety Officer, a member of the Command Staff, is responsible for monitoring and assessing hazardous and unsafe situations and developing measures for assuring personnel safety. The Safety Officer will correct unsafe acts or conditions through the regular line of authority, although they (Safety Officer) may exercise emergency authority to stop or prevent unsafe acts when immediate action is required.

Only one Safety Officer will be assigned for each incident. The Safety Officer may have assistant Safety Officers as necessary, and the assistant Safety Officer may represent assisting agencies or jurisdictions. Assistant Safety Officers may have specific responsibilities, such as air operations, hazardous materials, etc.

Critical Safety Responsibilities

- o Analyze proposed and selected strategic alternatives from a safety perspective, ensuring that risk management is a priority consideration in the selection process.*
- o Direct intervention will be used to immediately correct a dangerous situation.*
- o Prepare the safety message included in the IAP.*
- o Develop the Incident Action Plan Safety Analysis (ICS 215A) planning matrix with the Operations Section Chief.*

o Present safety briefing to overhead. Safety briefing should emphasize hazards and risks involved in action plan components.

Other Duties

- o Establish systems to monitor fire activities for hazards and risks. Take appropriate preventive action.*
- o Priority of recommendations will start with risks having the highest potential for death or serious injury and follow through to those of lesser degree.*
- o Establish operating procedures for assistant Safety Officers.*
- o Evaluate operating procedures. Update or modify procedures to meet the safety needs on the fire.*
- o Review and approve Medical Plan (ICS 206).*
- o Review IAPs to ensure that safety issues have been identified and mitigated.*
- o Analyze observations from staff and other personnel.*
- o Ensure accidents are investigated.*
- o Prepare accident report upon request of the Incident Commander.*
- o Monitor operational period lengths of incident personnel to ensure work/rest guidelines are followed; recommend corrective action to Incident Commander.*
- o Monitor food, potable water, and sanitation service inspections. Request assistance from health departments as needed.*
- o Monitor incident PPE needs.*
- o Inspect incident facilities, hand tools, power equipment, vehicles, and mechanical equipment.*
- o Monitor driver or operator qualifications and operational periods.*
- o Monitor all air operations; review aircraft incidents and accident reports.*
- o Ensure appropriate accident, incident, and other safety reports (such as SAFECOMs and SAFENETs) are completed and submitted.*
- o Prepare final safety report upon request of the Incident Commander.*

Chapter 3, Position Responsibilities, Position Checklists, Planning Section Chief, Page 65
Planning Section Chief (PSC1/2)

The Planning Section Chief, a member of the General Staff, is responsible for collecting, evaluating, disseminating, and using information about the development of the incident, status of resources, and demobilization of the incident.

Information is needed to understand the current situation, predict probable course of incident events, prepare alternative strategies and control operations for the incident, and provide for an orderly and economical demobilization of the incident.

Critical Safety Responsibilities

- o Conduct Planning Meetings and operational briefings.*
- o Supervise preparation of IAP [Incident Action Plan] (see Planning Process), and ensure sufficient copies are available for distribution through Unit Leader level.*
- o Advise General Staff of any significant changes in incident status.*
- o Prepare and distribute Incident Commander's orders.*
- o Ensure that information concerning special environmental protection needed is included in the IAP.*
- o Establish information requirements and reporting schedules for all ICS Organizational elements for use in preparing the IAP.*
- o Instruct Planning Section Units in distribution of information.*

Other Duties

- o Assemble information on alternative strategies.*
- o Perform operational planning for Planning Section.*
- o Ensure that normal agency information collection and reporting requirements are met.*
- o Prepare recommendations for release of resources (for approval by the Incident Commander).*
- o Ensure demobilization plan and schedule are developed and coordinated with Command, General Staff, and Agency Dispatchers.*
- o Establish a communications link between the agency Demobilization Organization and the incident Demobilization Unit.*

Chapter 3, Position Responsibilities, Position Checklists, Division/Group Supervisor (DIVS), Page 48

The Division/Group Supervisor is responsible for implementing the assigned portion of the IAP.

Critical Safety Responsibilities

- o Use the risk management process, and supervise operations in the Division.*
- o Maintain accountability of assigned resources at all times.*
- o Coordinate activities with adjacent Divisions.*
- o Keep supervisor informed of situation and resources status.*
- o Provide safety briefing to subordinate resources.*

Other Duties

- o Brief and assign specific work tasks to Task Forces/Strike Team Leaders.*
- o Inform Incident Communications of all status changes of assigned resources.*
- o Ensure that assigned personnel and equipment get on and off the fireline in a timely and orderly manner.*
- o Resolve logistics problems within the Division/Group.*
- o Approve and turn in time for all resources in Division/Group to the Time Unit.*

A.3: Arizona Industry Common Practice, pursuant to A.R.S. Section 23-403(C):

Notwithstanding subsection A of this section, a condition or practice which is common within an industry is not deemed a recognized hazard unless a standard or regulation concerning the condition or practice has been developed pursuant to section 23-410 or 23-414.

Incident command transitions are required and common in the industry of wildland fire suppression. This transitional period is recognized throughout the industry as a highly hazardous condition. Arizona State Forestry Division and Interagency wildfire policy and procedures clearly identify transition from initial attack to extended attack as a particularly dangerous period in the evolution of a wildland fire requiring prompt organization and activation of suppression resources.

B: Probability of death or serious physical harm:

The probability of employee exposure to serious physical harm and death is directly related to fire behavior, weather, and distance employees work from fire and smoke. Should wind driven wildland fire or smoke overtake an employee the probability of serious physical harm or death is extremely high due to exposure to toxic gases and extreme high temperature.

C: What feasible abatement methods are available to address this hazard?

Feasible abatement includes:

ASFD could ensure that a sufficient number of Type 1 and 2 incident command and general staff personnel are available during the fire season for rapid deployment consistent with State and Interagency policy and procedures. If adequate State personnel are not available, then ensure that regional resources are promptly dispatched.

ASFD could ensure that implementation of suppression operations are adequately supervised to assure the safety and accountability of firefighters.

D: Appropriateness of the penalty amount:

An employee exposure value of 10 was selected as more than 10 employees were exposed to wildland fire.

Frequency of exposure was estimated to be a value of 10 (16 hour workday and up to 14 consecutive days).

Proximity was estimated to be a value of 10 (at the point, high risk hazards).

Stress was estimated to be a value of 10 (high management stress, very poor conditions).

A severity factor of 10 was selected as employee exposure to smoke inhalation or burns would likely result in serious debilitating injuries or death.

Describe whether the employer knew, or with the exercise of reasonable diligence, could have known of the presence of the hazardous condition and of employee exposure to the condition.

Pursuant to Arizona Revised Statutes, A.R.S. Section 37-623, The Arizona State Forestry Division has responsibility for management of fires on State lands and private property outside of unincorporated areas. The Yarnell Hill Fire initially started on State trust land yet mostly burned private lands outside of incorporated areas.

On the evening of Friday, June 28, 2013, a lightning strike ignited a small fire on the west side of the Weaver Mountains (State Trust Land) north and west of Yarnell, Arizona. Due to the location of the fire the Arizona State Forestry Division (ASFD) took control of the fire. ASFD District Forester Jim Downey was assigned to manage the fire. ASFD employee Russ Shumate was the initial attack Incident Commander. On Sunday, June 30, 2013, ASFD employee Roy Hall was designated the extended attack Incident Commander.

Between June 28, 2013 and July 1, 2013, ASFD personnel operating in the capacity of Fire Management Officer, District Forester, Incident Commanders (IC4 and IC2) and support staff managed Yarnell Hill Fire suppression operations. Incident Command positions as well as ground and aviation operations were managed and conducted by ASFD staff or by staff from other agencies working under cooperative agreements with ASFD.

Interviews of fire management and employees uniformly demonstrated knowledge of expected extreme fire behavior based on extended drought conditions, high fuel loading, excessive heat, and forecasted afternoon thunderstorms. Incident command reported this information to fire crews during morning briefings and throughout the day as new information became available. One week earlier a number of firefighters worked the Doce Fire, near Prescott, Arizona, and experienced similar fire conditions.

On the afternoon of Saturday, June 29, 2013, ASFD knew that initial attack of the fire failed and assigned crews were overwhelmed by conditions. The fire had transitioned to a more complex incident and a higher complexity incident management team was needed. The Arizona Dispatch Center (ADC) managed by ASFD coordinated the ordering and dispatch of personnel and resources to the fire.

ASFD knew that fire complexity transition is dangerous as the condition is termed "Life-Threatening" in their policies outlined above. Additionally, ASFD follows NWCG Interagency policies and procedures which also recognize fire complexity transitions as highly hazardous periods for firefighters.

On June 30, 2013, extreme fire behavior combined with strong thunderstorms created an extremely active fire that burned relatively uninhibited by suppression resources. Wind direction changed multiple times and wind intensity picked-up substantially ahead of forecasted thunderstorms. During this period, multiple incidences of employee exposure to smoke, burns, and death occurred because fire management failed to promptly remove employees working downwind of a rapidly progressing wind driven wildland fire.

ASFD fire management (Geyer, Downey, Shumate, Hall, Abel, Musser, and others): ordered and dispatched personnel to the Yarnell Hill Fire; knew that the fire had escaped initial attack and increased in complexity with a high potential for rapid growth; knew that incident management transitions represent a particularly dangerous period for firefighters; determined the level of incidence response; knew that critical incident management personnel necessary to support the planning and implementation of fire suppression operations would not arrive to the fire until well after operations were underway; and knew that Division Z Supervisor position was vacant. Despite this knowledge, ASFD incident management did not prioritize firefighter safety ahead of the value of structures and pastureland in that key planning, safety, and field management roles and responsibilities were known to be unfilled, which was inconsistent with ASFD and Interagency policy, procedures, and guidelines thereby increasing the potential for firefighter exposure to impending hazards and associated life threatening exposure to smoke, burns, and death.

Instance a:

ASFD knew that a Safety Officer was not assigned to the fire until 14 hours after the transitioning incident management team had been assigned to the fire.

ASFD knew that a Safety Officer was not present at the fire when fire planning occurred.

ASFD knew that a Planning Section Chief was not present at the fire when fire planning occurred.

Instance b:

ASFD through Operations Section Chief Paul Musser knew that the Supervisor of Division Z abandoned his assigned position and no replacement was assigned.

ASFD knew that supervision of firefighters is an essential function to assure the safety and accountability of firefighters.

Note any other comments made by the employer, or other information relative to this citation, not already noted above.

Penalty calculation:

Probability:

Number of employees: 10+

Frequency of exposure:10

Proximity to hazard:10

Stress:10

Other:

TOTAL:40

Number of factors:4

Probability TOTAL:10G

Severity:10H

Event Date	Event Code	Action Code	Citation Type	Penalty	Abate Date	Final Order
	Z Add transaction	A Add	S Serious	7000.00		