

FIRE PREVENTION AND SUPPRESSION PLAN

Liberty Utilities (Calpeco Electric) and all Contractors working on the 650 Line Upgrade Project shall comply with the specific measures set forth in this document. This fire plan shall be provided prior to starting operations during the Fire Precautionary Period and shall be updated as needed. All information contained in this document is in compliance with the Project Applicant Proposed Measure (APM) HAZ-5.

This plan ensures that Liberty Utilities and its contractors are aware of and comply with the Public Resource Code and Forest Practice Rules. The California Public Resources Code (PRC) and the Forest Practice Rules (FPR) contain many provisions to reduce the risk of fire. This plan requires strict adherence to the PRC, FPR, the USFS fire precautionary measures and additional fire preventive measures required by Sierra Pacific Industries (SPI). Some of SPI's required fire preventive measures are stricter than State fire prevention laws, and these measures are incorporated into this fire plan. Liberty Utilities will take the appropriate precautionary measures to avoid a fire and be properly equipped and prepared to take all appropriate action in the event of a fire.

Implementation of this plan is required by all contractors, including vegetation management, transmission line and substation contractors. While the basis of this plan addresses details of vegetation management, it is the responsibility of the T-line and Substation Contractors to also complete with all aspects of this plan, the fire safety laws and regulations, and the permit requirements.

Liberty Utilities' Contractors (including Vegetation Management, Transmission Line, and Substation Contractors) shall designate an On-Site Supervisor/ Fire Supervisor when the daily Project Activity Level (PAL) is C, D, Ev or E/Red Flag. The On-Site Supervisor/ Fire Supervisor shall be capable of receiving notices, taking action, and directing a response to a fire. The On-Site Supervisor/ Fire Supervisor shall be identified in the Fire Suppression Resource Inventory/ Incident Action Plan (FSRI/IAP) – Exhibit 1. The On-Site Supervisor/ Fire Supervisor shall be responsible for completing the FSRI/IAP for each day of operations and shall maintain all records in relation to the FSRI/IAP. All FSRI/IAP documentation shall be made available upon request.

Throughout the entire project area, should any Liberty Utilities' Contractors be aware through contact with CAL FIRE, National Weather Service, other fire weather web sites or through SPI notification that "Red Flag Warning" conditions have been issued and are in effect for the area of operations, then the procedures and restrictions of PAL E shall be in effect for the time period in which the Red Flag Warning is in place.

Upon request of the applicable regulatory agency or landowner, Liberty Utilities shall permit and assist in periodic testing and inspection of required fire equipment.

The following definitions shall apply:

Vegetation Management Active Landing: Any location the Permittee is skidding logs into, or performing other operations such as delimiting, log manufacturing, and chipping. Except for EV and E days, loading logs or stockpiled chips only on a cleared landing does not constitute an Active Landing.

Hot Saw: A harvesting system that employs a high-speed (>1100 rpm) rotating felling head (i.e., full rotation lateral tilt head).

Mechanical Operations: The process of felling, skidding, chipping, shredding, piling, log processing and/or yarding which requires the use of motorized power which includes, chainsaws, chippers, motorized carriages, masticators, stroke delimiters, skidders etc.

I. SPECIFIC EQUIPMENT REQUIREMENTS AND FIRE PRECAUTIONARY MEASURES

Specific equipment requirements and fire precautionary measures are shown in the following table.

An itemized checklist of specific equipment and tool requirements is provided in Exhibit 2.

A. Fire Tools and Equipment Liberty Utilities and their contractors shall meet applicable parts of Section 4428 of the CPRC.

Unless agreed otherwise, Fire tools kept at each Active Landing shall be sufficient to equip all employees in the felling, yarding, loading, chipping and material processing operations associated with each landing. Fire equipment shall include two tractor headlights for each tractor dozer used in operations. Tractor headlights shall be attachable to each tractor and served by an adequate power source. Fire tools shall be kept in a sealed fire tool box adjacent to the Active Landing and readily accessible in event of fire.

Trucks, tractors/skidders, pickups and other similar mobile equipment shall be equipped with and carry at all times a size 0 or larger shovel with an overall length of not less than 46 inches and a 2-1/2 pound axe or larger with an overall length of not less than 28 inches.

All required fire tools shall be maintained in suitable and serviceable condition for fire fighting purposes.

B. Fire Extinguishers Liberty Utilities' contractors shall equip each internal combustion yarder, fuel truck, and loader with a 4-A:60-B:C fire extinguisher for oil and grease fires.

Skidders and tractors shall be equipped with a minimum 5-B:C fire extinguisher.

Fire extinguishers shall be mounted, readily accessible, properly maintained and fully charged.

Liberty Utilities' contractors shall equip all mechanized harvesting machines and log processors with hydraulic systems, powered by an internal combustion engine (e.g. masticator, chipper, feller/buncher, harvester, forwarder, Hot Saw, stroke delimber, etc), with at least two 4-A:60-B:C fire extinguishers or an acceptable CAFS substitute identified in Section K.

C. Spark Arresters and Mufflers

Except for tractors and other equipment with exhaust-operated turbochargers, Liberty Utilities' Contractors shall equip each operating tractor and any other internal combustion engine with an approved spark arrester. There shall be no exhaust bypass on any system.

Spark Arresters shall be a model tested and approved under Forest Service Standard 5100-1a as shown in the National Wildfire Coordinating Group Spark Arrester Guide, Volumes 1 and 2, and shall be properly mounted and maintained according to manufacturer's specifications.

Every motor vehicle subject to registration shall at all times be equipped with an adequate exhaust system meeting the requirements of the California Vehicle Code.

D. Power Saws or Similar Power Tools

Each power saw or similar line construction power tools shall be equipped with a spark arrester approved and maintained in effective working order as identified in the Spark Arrester Guide in Section C. above and according to applicable parts of CPRC Section 4442 or 4443. An Underwriters Laboratories (UL) approved fire extinguisher containing a minimum 14 ounces of fire retardant shall be kept within 25 feet of each operating saw, with unrestricted access for the operator from the point of operation.

A size 0 or larger shovel with an overall length of not less than 46 inches shall be kept with each gas can, but not more than 25 feet from each power saw when used off cleared landing areas.

E. Fire Supervisor &

Liberty Utilities Contractors shall designate for the project and furnish on project area during operating hours a Fire Supervisor, named in writing and

Fire Patrolperson authorized to act on behalf of Liberty Utilities in fire prevention and suppression matters.

Unless agreed otherwise, Liberty Utilities Contractors shall furnish and designate in writing a Fire Patrolperson each operating day when Project Activity Level C or higher is in effect. When on duty, the Fire Patrolperson is required to patrol the operation for the prevention and detection of fires, to take suppression action where necessary and to notify Fire Dispatch as required under Sections I. Reporting Fires and L. Communications. This Fire Patrol is required to be on foot, unless otherwise agreed.

The individual doing the walking foot patrol shall have a vehicle parked within or as close as possible to the patrolled area, and the vehicle shall be equipped to fight fire with the following:

1. A serviceable 5 gallon backpack pump filled with water,
2. A shovel or McLeod fire tool,
3. Either a double bit axe or a serviceable chainsaw with a minimum 20" bar, and
4. Communications equipment capable of summoning additional fire suppression resources and promptly reporting to the responsible agency for fire suppression.

The patrol shall carry a round point shovel with an overall length of at least 46 inches during the entire walking foot patrol. A record containing the name of the fire patroller, date, and time of patrol shall be kept on site and available for inspection by any applicable regulatory agency.

F. Seasonal Permits Liberty Utilities' contractors shall obtain written permits from Forest Service before allowing welding, warming fires or burning. No warming fires will be allowed when burning permits are required by the state.

G. Clearing of Fuels Liberty Utilities and their contractors shall clear away and keep clear all vegetation, as follows:

Activity	Minimum Impact
Welding equipment and stationary log loaders, yarders and other equipment listed in California State Law:	10 feet slope radius
Brush and Blade Guards:	Operators shall clean out guards no less frequently than every two hours during operations to prevent the build-up of vegetative material.
Tail or Corner haulback blocks:	All tail and side blocks on a cable setting shall be located in the center of an area that is cleared to mineral soil at least 15 feet in diameter.
Line near, between or above blocks:	Sufficient clearing to prevent line from rubbing on any materials.

H. Smoking No smoking will be allowed on this operation outside of a motor vehicle, and no disposal of cigarette butts outside of a motor vehicle on this operation. Compliance with **APM HAZ-6. While this APM allows smoking in designated cleared areas, Liberty Utilities has established smoking will only be allowed in closed motor vehicles. This does NOT include smoking in an open back or trackhoe. The cab must be inclosed to allow smoking.**

I. Reporting Fires As soon as feasible, but no later than **15 minutes** after discovery, Liberty Utilities or their contractors shall notify the appropriate Fire Dispatch Center (As identified in Section III of this plan) of any fires within project area or along any used roads.

J. Tank Truck Liberty Utilities and their contractors shall provide a fire-dedicated water tank, truck or trailer on or in proximity to project area during operations within the Fire Precautionary Period, unless otherwise agreed.

Tank truck or trailer shall contain at least 300 gallons of water and comply with the following requirements:

1. Pump, which at sea level, can deliver 23 gallons per minute at 175 pounds

per square inch measured at the pump outlet. Pumps shall meet or exceed the pressure values identified in the following table for nearest temperature and elevation:

T e m p	Sea Level		1000 Feet		2000 Feet		3000 Feet		4000 Feet		5000 Feet		6000 Feet		7000 Feet		8000 Feet		9000 Feet		10000 Feet	
55	179	23	174	23	169	23	165	22	161	22	157	22	153	22	150	21	146	21	142	21	139	21
70	175	23	171	23	166	22	162	22	158	22	154	22	150	21	147	21	143	21	139	21	136	20
85	171	23	168	23	163	22	159	22	155	22	151	21	147	21	144	21	140	21	136	20	133	20
100	168	23	164	23	159	22	155	22	152	22	148	21	144	21	141	21	137	20	133	20	131	20
	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G
	S	P	S	P	S	P	S	P	S	P	S	P	S	P	S	P	S	P	S	P	S	P
	I	M	I	M	I	M	I	M	I	M	I	M	I	M	I	M	I	M	I	M	I	M

The pump outlet shall be equipped with 1-1/2 inch National Standard Fire Hose thread. A bypass or pressure relief valve shall be provided for other than centrifugal pumps.

- 300 feet of 1-inch_rubber-covered high-pressure hose mounted on live reel attached to pump with no segments longer than 50 feet, when measured to the extreme ends of the couplings. Hose shall have reusable compression wedge type 1-inch brass or lightweight couplings (aluminum or plastic). One end of hose shall be equipped with a coupling female section and the other end with a coupling male section. The hose shall, with the nozzle closed, be capable of withstanding 200 PSI pump pressure without leaking, distortions, slipping of couplings, or other failures.
- A shut-off combination nozzle that meets the following minimum performance standards when measured at 100 P.S.I. at the nozzle:

	G.P.M.	Horizontal Range
Straight Stream	10	38 feet
Fog Spray	6 - 20	N/A

- Sufficient fuel to run pump at least 2 hours and necessary service accessories to facilitate efficient operation of the pump.

5. When using Hot Saws or Masticators, an additional 250 feet of light weight hose shall be immediately available for use and be capable of connecting to the 300 feet of hose and appurturances in (2) and (3) above.
6. This equipment and accessories shall be deliverable to a fire in the area of operations and is subject to the requirements for each specific project activity level identified.

K. Compressed Air Foam System (CAFS)

A fire suppression system where compressed air is added to water and a foaming agent. By agreement, Liberty Utilities or their contractors may substitute a CAFS or functional equivalent in lieu of the tank truck, trailer or fire extinguishers, provided it meets or exceeds the following specifications and requirements:

1. Variable foam expansion ratio – 10:1 to 20:1.
2. Units shall be kept fully charged with air; water and foam concentrate as recommended by the manufacturer and have the appropriate tools to service the system.
3. The unit shall contain enough energy to empty tank and clear hose prior to exhausting propellent.
4. The unit shall be capable of being completely recharged within 10 minutes.
5. When used on cable yarding landings, the unit shall be outfitted for immediate attachment to carriage and transported without damage to the unit.

Fire extinguishers required for Hot Saws, Masticators and similar equipment identified in Section B. above may be substituted with a 3 gallon CAFS.

Tank truck, trailer or equivalent may be substituted with a 30 Gallon CAFS with at least 550 feet of one inch hose and an adjustable nozzle with enough water, air and foam concentrate for at least one recharge.

This equipment and accessories shall also be deliverable to a fire in the area of operations and subject to the requirements for each specific activity level.

L. Communications

Liberty Utilities and their contractors shall establish a serviceable communications system which connects each operating side within the project area, and is capable of notifying fire dispatch within **15 minutes** of discovery of any fires on the project area or along haul route, either directly

or indirectly through other contacts. The communication device must be one of the following: King radios, cell phones, two-way radios, or satellite phone. A Citizen's Band (CB) radio is not acceptable communications.

M. Cable Yarding
Tank Unit

When all or part of trees designated for cutting will be harvested by a long span (over 1,500 feet) cable yarding operation, Permittee shall provide at each active cable yarding landing a tank truck, trailer or acceptable CAFS substitute which can be lifted and transported by the carriage.

The unit shall meet the same requirements as specified for the tank truck, trailer or approved CAFS substitute.

N. Helicopter
Yarding Fire
Precautions

Permittee shall provide and maintain fire equipment as follows:

1. The fire tool box required under this provision shall be equipped for attachment to the helicopter long line so that it may be hauled to needed locations. Such attachment device shall not interfere with access to fire tools. Unless agreed otherwise, the fire tool box shall be located at the Active Landing ready for immediate dispatch.
2. An external helibucket readily attachable to the helicopter, with a capacity of at least 500 gallons, and having a remote control door mechanism adequate for rapid dropping of water. The helibucket shall be located at the helicopter service landing and shall be filled with water ready for immediate dispatch unless otherwise agreed.
3. All aircraft used in conjunction with the contractor's operations shall be equipped with an operable radio system capable of meeting Region Five avionics requirements.
4. For protection of fuel servicing operations, fire extinguishers which have the following ratings based on the open hose discharge capacity, i.e., "broken hose," of the aircraft fueling system shall be readily available:
 - a. Where said capacity does not exceed 200 gallons per minute, at least one approved extinguisher having a minimum rating of 20-B;
 - b. Where said capacity is in excess of 200 gallons per minute, but not over 350 gallons per minute, one approved extinguisher having a minimum rating of 80-B;
 - c. Where said capacity is in excess of 350 gallons per minute, two approved extinguishers, each having a minimum rating of 80-B.
5. By agreement, a suitable CAFS may also be used in lieu of the above extinguishers.

6. Extinguishers of over 50 pounds gross weight shall be of wheeled type or be mounted on carts to provide mobility and ease of handling.

II. PROJECT ACTIVITY LEVEL (PAL) - EMERGENCY PRECAUTIONS

The US Forest Service and/or Sierra Pacific Industries may change the predicted activity level if the current fire situation, weather and vegetation conditions warrant an adjustment. If practicable the PAL for the appropriate landowner will be determined by 6:00 PM for the following days PAL. Liberty Utilities and its contractors shall obtain the predicted PAL before starting work each day. Contact information specific to operating areas are listed below:

Operation Area	Contact Description	Contact Information
AREA 1	El Dorado National Forest	530-644-6048
AREA 2	Sierra Pacific Industries District 3	866-737-3473
AREA 3	Tahoe National Forest	530-587-2158

Exhibit 3 – Operation Area Map is attached for reference

PROJECT ACTIVITY LEVEL TABLE

Level	<i>Project Activity Minimum Requirements with additional SPI Restrictions. <u>Restrictions at each level are cumulative.</u></i>
A	Minimum restrictions found in the ‘Specific Equipment Requirements and Fire Precautionary Measures’ table above is required. Immediately following the cessation of operations using Hot Saws, a walking Fire Patrol will be conducted over all of the Hot Saw area operated that day.
B	Immediately following the cessation of operations using Hot Saws, chainsaws, ground-based tracked equipment, cable yarding, ripping, clearing, mastication, welding, blasting, or cutting torches, a walking Fire Patrol is required over all the areas operated that day. Tank truck, trailer, or approved CAFS substitute shall be on or adjacent to any Active Landing or Active Staging Area.

C	<p>1. When Hot Saws or Masticators are operating, a tank truck, trailer or approved CAFS substitute shall be within ¼ mile of these operations. Effective communications shall exist between the operator and the Active Landing.</p> <p>2. Immediately after Mechanical Operations cease, a walking Fire Patrol is required for two hours on all areas operated that day.</p>
D	<p>1. Beginning at 1:00 PM, and continuing for two hours after cessation of operations, a walking Fire Patrol is required once every hour on all areas operated that day. Immediately following the cessation of Hot Saw or Masticator operations, a walking Fire Patrol will be conducted over all of the areas operated that day for three hours.</p> <p>2. No Dead Tree felling after 1:00 PM, except recently dead.</p> <p>3. No Welding, cutting of metal or blasting after 1:00 PM, except as allowed by special permit or authorization.</p>
Ev	<p>1. No welding, cutting of metal or blasting.</p> <p>2. The following activities may operate all day:</p> <ul style="list-style-type: none"> a) Loading and hauling logs decked at approved landings. b) Loading and hauling chips stockpiled at approved landings. c) Servicing equipment at approved sites. d) Dust abatement, road maintenance (Chainsaw use prohibited), culvert installation within cleared area, chip sealing, paving, earth moving or rock aggregate stock pile loading and installation (does not include pit or quarry development). e) Chainsaw and log processing operations associated with loading logs or other forest products at approved landings. f) Line material staging and management. g) Utility Pole installation using rubber-tired equipment <p>3. Hot Saws or Masticators may operate until 1:00 PM; provided that:</p> <ul style="list-style-type: none"> a) A tractor or other equipment with a blade capable of constructing fireline is on or adjacent to the active landing or within ¼ mile of the operating equipment. This piece of equipment shall have effective communication with the Hot Saw or Masticator. b) Fire Patrol (walking) is conducted once every hour on all areas operated that day, starting at 9:00 AM and continuing for three hours after cessation of operations. c) Any additional restrictions specified by the USFS. <p>4. All other conventional Mechanical Operations are permitted until 1:00 PM, if</p>

	<p>walking Fire Patrol is conducted once every hour on all areas operated that day, starting at 9:00 AM and continuing for two hours after cessation of operations.</p> <p>5. Some operations may be permitted after 1:00 PM, on a case-by-case basis, under the terms of a PAL Ev Variance Agreement. Activities for which a Variance may be issued are:</p> <ul style="list-style-type: none"> • Rubber Tire Skidding • Chipping on Landings • Helicopter Yarding • Fire Salvage <p>When approved by a Line Officer, a Variance Agreement can be implemented when the criteria specified in the agreement are met and mitigation measures are in place. This approval is good for ten (10) days unless cancelled sooner or extended by the Contracting Officer for an additional ten (10) days. Variance approval can be withdrawn at the sole discretion of Forest Service. Variance approval is contingent on the 7-day fire weather forecast, fuel conditions, site characteristics, current fire situation, state of Liberty Utilities' or their contractor's equipment for prevention and suppression readiness, type of operation and social and community considerations etc. (See attached Project Activity Level Variance Agreement).</p>
<p>E</p>	<p>The following activities may operate all day:</p> <ol style="list-style-type: none"> 1. Loading and hauling logs decked at approved landings. 2. Loading and hauling chips stockpiled at approved landings. 3. Servicing Equipment at approved sites. 4. Dust abatement, road maintenance (chainsaw use prohibited) or loading stock piles and rock aggregate installation (does not include pit or quarry development). 5. Chainsaw operation associated with loading at approved landings. 6. Non-equipment related BMP installations 7. Material receiving and staging management. 8. Pole framing, at approved staging areas.

	9. All hand digging, and non-equipment related site preparation activities. All other activities are prohibited.
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III. REPORTING WILD FIRES

Liberty Utilities or their contractor shall report all fires as soon as possible but no later than 15 minutes after initial discovery to the appropriate fire dispatch center listed below:

AREA 1. – All land within the Lake Tahoe Basin

Name	Telephone
Emergency	911
Camino Interagency ECC	530-642-5170
Lake Tahoe Basin Management Unit	530-543-2600
North Tahoe PUD (where appropriate)	530-546-4212

AREA 2. – All privately owned lands located outside of the Lake Tahoe Basin

Name	Telephone
Emergency	911
Grass Valley Interagency ECC	530-477-5853
Sierra Pacific Industries (where appropriate)	530-272-2297
Northstar Fire Department (where appropriate)	530-562-1212
Truckee Donner Land Trust (where appropriate)	530-582-4711
Truckee Airport District (where appropriate)	530-587-4599

AREA 3. – All Federally owned lands located outside of the Lake Tahoe Basin

Name	Telephone
Emergency	911
Grass Valley Interagency ECC	530-477-5853
Tahoe National Forest – Truckee Ranger Station	530-587-3558

When reporting a fire the following information will be provided:

- Your name
- Call back telephone number
- Project name

- Location, including legal description (Township, Range, Section) or GPS location (Latitude/Longitude)
- Descriptive location (Reference point)
- Fire Information
- Size
- Rate of spread
- Wind conditions
- Access
- Hazards to personnel

Immediately following any fire related emergency, the designated Project Manager shall be notified.

EXHIBIT 1 - FIRE SUPPRESSION RESOURCE INVENTORY (FSRI) / INCIDENT ACTION PLAN (IAP)

COMPANY NAME: _____ **THP OR PROJECT NAME:** _____ **THP OR EXEMPTION #** _____

IN CASE OF FIRE CALL:	Primary Fire Dispatch # ()	Secondary Fire Dispatch # ()
Other Contacts	Company Office ()	Forester ()

(a) Name, address, and 24-hour telephone number an individual and an alternate who has authority to respond to Department requests for resources to suppress fires.

Primary Contact Name	Address	City	Zip
Primary Phone Numbers	Cell: ()	Home: ()	
Alternate Contact Name	Address	City	Zip
Alternate Phone Numbers	Cell: ()	Home: ()	

(b) Number of individuals available for fire -fighting and their skills

On-Site Supervisor/ Fire Supervisor	Cell: ()	Home: ()
Assistant Fire Supervisor	Cell: ()	Home: ()
Patrolman, Dispatcher or Other	Cell: ()	Home: ()

Individuals	Crew Foreman	Dozer Operators	Fallers	Fire Fighters	Others	Total
In Woods						
Other						

(c) Equipment available for fire- fighting. The Fire Suppression Resource Inventory shall be submitted to the ranger unit headquarters office of the Department having jurisdiction for the timber operation.

Equipment	Location	Number	Make & Model	Size
Bulldozers with lights				
Bulldozers without lights				
TIMBCOs or similar				
Dozer transports				
Crew trucks				
Pickup trucks conventional				
Pickup trucks 4-WD				
Portable pumps				
Fire Trailer				
Water trucks with pumps				
Water trucks without pumps				
Other				

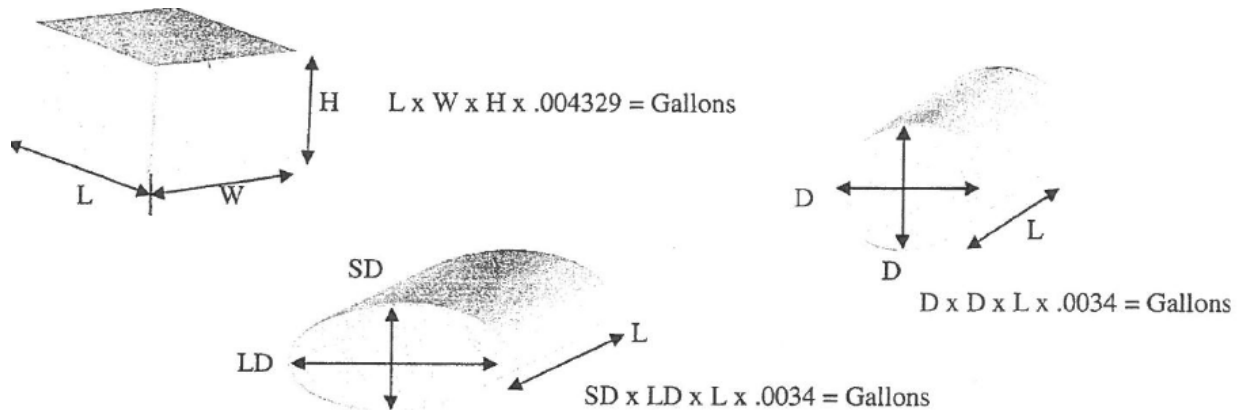
Location	Shovels	Chain Saws	Scraping Tools	5 Gal Pumps	Flashlights	Canteens	Radios
Job Site							
On Equipment/ Pickups							
Other							

Note: Items (a), (b) and (c) as stated above are the minimum requirements of the Forest Practice Rules 918.1, 938.1 and 958.1

CURRENT LOCATION/PROSPECTIVE LOGGING AREAS: Attach a map showing roads, landmarks, creeks, other water sources, etc. for directing fire crews by telephone to any fire on or near logging area.
Legal Description of the Land: Section(s) _____ Twp. _____ Range: _____ County _____
Geographic location of operation areas:
Best emergency access routes in to operation areas:
Nearest Emergency helicopter landing zone (UTM or Lat/Long if possible):
DESCRIBE COMMUNICATION DEVICES AND CREW RESPONSIBILITIES FOR DETECTION, CONTROL, AND SUPPRESSION OF FIRE:
DESCRIBE METHODS AND DOCUMENTATION FOR DAILY FIRE INSPECTION OF LOGGING AREAS BY RESPONSIBLE PATROL:

Exhibit 2 – Equipment and Tools Requirements Checklist

Formula to determine Tank Volume (all dimensions measured in INCHES)



PRESSURE VALUE CHART

Temp	Sea Level		1000 Feet		2000 Feet		3000 Feet		4000 Feet		5000 Feet		6000 Feet		7000 Feet		8000 Feet		9000 Feet		10000 Feet	
	55	179	23	174	23	169	23	165	22	161	22	157	22	153	22	150	21	146	21	142	21	139
70	175	23	171	23	166	22	162	22	158	22	154	22	150	21	147	21	143	21	139	21	136	20
85	171	23	168	23	163	22	159	22	155	22	151	21	147	21	144	21	140	21	136	20	133	20
100	168	23	164	23	159	22	155	22	152	22	148	21	144	21	141	21	137	20	133	20	131	20
	PS	G	PS	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G
	I	P	I	P	S	P	SI	P	S	P	S	P	S	P	S	P	S	P	S	P	S	P
	M		M		I	M		M		I	M		I	M		I	M		I	M		I

INSTRUCTIONS FOR FIRE INSPECTION FORM

- Measure water tanks in INCHES and record volume of tank.
- Inspect tank and check if required items are available and properly serviceable
- Pumps shall be tested on Project Area using a 5/16" orifice in the Forester One Inch In-Line Gauge test kit
- Identify each vehicle or piece of equipment by a unique ID or serial number
- Each hand tool must be sharp, tight, and serviceable according to Forest Service standards at the end of inspection form
- Seal fire toolbox when all requirements are met and record the seal number

TANK TRUCK REQUIREMENTS:

Minimum required PSI: _____

Tank Capacity (≥ 300 gallons): _____

	ACCEPTABLE	REMARKS
• Outlet with 1 ½ " National Standard Fire Hose Thread		
• 300' of ¾" inside diameter rubber covered hose		
• Live reel: proper hose and couplings (50' segments)		
• Gear-driven motors will have bypass or pressure release valve		
• Shut off combination nozzle meeting minimum performance Specs: straight stream (10 GPM & 38' horizontal range) and fog Spray (6-20 GPM). Note: A nozzle tip of >1.4" diameter will produce the required straight stream of 10 GPM.		
• Hose shall (with nozzle closed) be capable of withstanding 200 PSI pump pressure w/o leaking, distortions, or other failures		
• Pressure type hose clamps between pump & live reel		
• 1 spare spark plug (correct size & kind)		
• 1 spark plug wrench (correct size & kind)		
• hour supply of fuel		
• 1 quart crank case oil (for 4-cycle engines)		
• One 8" crescent wrench		
• Hose gaskets to fit all couplings		
• 2 combination spanner wrenches (1" & 1 ½")		
• Grease gun or grease for pumps requiring lubing		
• Assorted screwdrivers to fit pumper		
• 1 slip joint pliers		
• 2 starting ropes for pumper (1 on pumper and 1 extra)		
• container for the above items		
• Pumper attachable to available, working vehicle for transporting		
• Tires on trailer serviceable with proper p.s.i.		
• Additional 250' hose if using Hot Saw or Masticator		

COMPRESSED AIR FOAM SYSTEM (CAFS)

(For substitution of a tank truck by agreement)

	ACCEPTABLE	REMARKS
• 30 Gallon CAFS with at least 550 feet of one inch hose		
• Fully charged with air, water and foam concentrate		
• Unit has enough energy to empty tank and clear hose prior to exhausting propellant		
• Capable of being completely recharged within 10 minutes		
• Attachment for carriage transport (cable operations > 1500')		
• Appropriate tools to service the system		
• Adjustable nozzle with enough water, air and foam concentrate for at least one recharge		
• Variable foam expansion ration – 10:1 to 20:1		
• Equipment and accessories are deliverable to a fire in the area of operations.		

LANDING/STAGGING SITE FIRETOOL BOX REQUIREMENTS:

Fire Binder Seal #: _____

	ACCEPTABLE	REMARKS
• Number of tools must = Number of purchaser's fire crew personnel associated with each landing		
• 1 serviceable 5 gallon backpack filled with water		
• 2+ axes and/or Pulaskis (sharp, smooth handles)		
• 2 + McLeods (sharp, smooth handles)		
• Shovels to equip remaining men - # required: _____		
• 2 attachable headlights for each dozer (if not attached)		
• 1 chainsaw with 20" + bar, 3 ½ horsepower: ID# _____		
o Approved Spark Arrestor: Max. screen size ≤0.023		
o Extra spark plug (to fit saw)		
o Chainsaw file		
o Srench (or wrench and screwdriver)		
o 2 falling wedges		
o 1 sledge hammer or single bit axe (2 ½ lb. +)		
o 2 hours of fuel mix and bar oil		
- OR -		
• 6' crosscut saw:		
o 1 double bit axe (36", sharp, smooth handle)		
o Sledge hammer or maul (6 lbs. or more, > 32")		
o 2 falling wedges		

PASSENGER VEHICLES AND LOG TRUCKS:

	ID _____	ID _____	ID _____
• 1 shovel (size 0 or larger; handle smooth, <u>> 46"</u> , sharp)			
• 1 axe (<u>≥2 ½ lbs.</u> ; handle smooth, <u>≥ 28"</u> , and sharp)			
• Working muffler - no leaks			

PASSENGER VEHICLES/CREW TRUCKS/LINE TRUCKS AND LOG TRUCKS:

	ID _____	ID _____	ID _____
• 1 shovel (size 0 or larger; handle smooth, <u>> 46"</u> , sharp)			
• 1 axe (<u>≥2 ½ lbs.</u> ; handle smooth, <u>≥ 28"</u> , and sharp)			
• Working muffler - no leaks			

FIRE PATROL VEHICLE:

	ID _____	ID _____	ID _____
• 5 gallon backpack pump filled with water			
• Shovel or McLeod fire tool			
• Double-bit axe or serviceable chainsaw with <u>≥ 20"</u> bar			
• Serviceable communications equipment			
• Fire Extinguisher 5-B:C			
• Working muffler – no leaks			

FUEL TRUCK:

	ID _____	ID _____	ID _____
• 1 shovel (size 0 or larger; handle smooth, <u>> 46"</u> , sharp)			
• 1 axe (<u>≥2 ½ lbs.</u> ; handle smooth, <u>≥ 28"</u> , and sharp)			
• Fire Extinguisher (Class 4-A:60-B:C or larger)			
• Working muffler - no leaks			

WATER TRUCK:

	ID _____	ID _____	ID _____
• 1 shovel (size 0 or larger; handle smooth, <u>> 46"</u> , sharp)			
• 1 axe (<u>≥2 ½ lbs.</u> ; handle smooth, <u>≥ 28"</u> , and sharp)			
• Spark arrestor on water pump			
• Working muffler - no leaks			

**MECHANIZED HARVESETERS, FELLER/BUNCHERS,
CHIPPERS, FORWARDERS, PROCESSORS:**

	ID _____	ID _____	ID _____
• Approved spark arrestor or turbo charged			
• 1 shovel (size 0 or larger; handle smooth, <u>> 46"</u> , sharp)			
• 1 axe (<u>>2 ½ lbs.</u> ; handle smooth, <u>> 28"</u> , and sharp)			
• Two 4-A:60-B:C fire extinguishers or equivalent			
• Remove wood dust/chips and debris from equipment daily			

**MECHANIZED HARVESETERS, FELLER/BUNCHERS,
CHIPPERS, FORWARDERS, PROCESSORS:**

	ID _____	ID _____	ID _____
• Approved spark arrestor or turbo charged			
• 1 shovel (size 0 or larger; handle smooth, <u>> 46"</u> , sharp)			
• 1 axe (<u>>2 ½ lbs.</u> ; handle smooth, <u>> 28"</u> , and sharp)			
• Two 4-A:60-B:C fire extinguishers or equivalent			
• Remove wood dust/chips and debris from equipment daily			

GRADERS, BACKHOES, ROLLERS, EXCAVATORS

	ID _____	ID _____	ID _____
• 1 shovel (size 0 or larger; handle smooth, <u>> 46"</u> , sharp)			
• 1 axe (<u>>2 ½ lbs.</u> ; handle smooth, <u>> 28"</u> , and sharp)			
• Fire Extinguisher 5-B:C			
• Approved spark arrestor or turbo charged			

LOADERS:

	ID _____	ID _____	ID _____
• Approved spark arrestor or turbo charged			
• 1 shovel (size 0 or larger; handle smooth, <u>> 46"</u> , sharp)			
• 1 axe (<u>>2 ½ lbs.</u> ; handle smooth, <u>> 28"</u> , and sharp)			
• Fire Extinguisher (Class 4-A:60-B:C or larger)			

YARDERS – Cable System:

	ID _____	ID _____	ID _____
• Approved spark arrestor or turbo charged			
• Fire Extinguisher (Class 4-A:60-B:C or larger			
• Tail holds: 1 shovel (size 0 or larger; handle smooth, > 46", sharp) and one five gallon backpack pump (full) or fire extinguisher size 4-A rating or larger within 25'			

TRACTORS/SKIDDERS:

	ID _____	ID _____	ID _____
• Approved spark arrestor or turbo charged			
• 1 shovel (size 0 or larger; handle smooth, > 46", sharp)			
• 1 axe (≥ ½ lbs.; handle smooth, ≥ 28" , and sharp)			
• 2 headlights – attachable with power source (tractors with blades only)			
• Fire Extinguisher 5-B:C			

CHAINSAWS: (fallers)

	ID _____	ID _____	ID _____
• Approved muffler system with screen			
○ Max. screen size < 0.023" (test with 0.024" gauge)			
• Dog ears, etc. (if required)			
• Fire Extinguisher: 14 oz., UL approved, kept with saw)			
• 1 shovel (Size 0; ≥ 46" length) kept with saw			
• Gas can kept within 300' of faller			

CHAINSAWS: (fallers)

	ID _____	ID _____	ID _____
• Approved muffler system with screen			
○ Max. screen size ≤ 0.023" (test with 0.024" gauge)			
• Dog ears, etc. (if required)			
• Fire Extinguisher: 14 oz., UL approved, kept with saw)			
• 1 shovel (Size 0; ≥ 46" length) kept with saw			
• Gas can kept within 300' of faller			

FIRE TOOL BOX FOR CAMPING
Camp/Fire Box Location: _____

	ACCEPTABLE	REMARKS
<ul style="list-style-type: none"> Sufficient supply of tools to equip 50% of able bodied personnel such as shovels, axes, saws, backpack pumps, and scraping tools. 		
<ul style="list-style-type: none"> One headlight that is attachable to half of the dozers 		
<ul style="list-style-type: none"> Canteens and flashlights for 1/3 of personnel 		

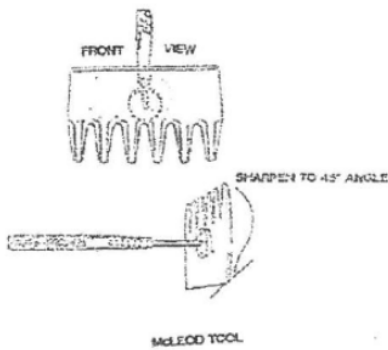
Fire Extinguishers required for each mechanized machine with hydraulic systems, powered by an internal combustion engine (chipper, fellerbuncher, harvester, forwarder, hot saws, stroke delimeter, masticator, drilling equipment, hydraulic hand tools during pole framing, etc.), except tractors and skidders; may be substituted with a 3 gallon CAFS.

Hand Tool Requirements The objective of this section is to set forth standard criteria for the serviceability and maintenance of fire suppression hand tools required under TSC operations. A serviceable tool is one which is in adequate condition to perform the function for which it was designed, and in a safe manner.

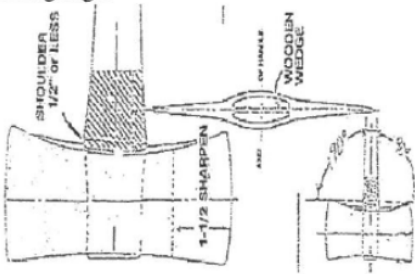
Fire Tools: PR/FR shall be personally be responsible for maintaining fire tools in a serviceable condition as follows:

- A. All tool heads will be tight on the handle. (Epoxy heads are acceptable). Some operators prefer to have a hammer and wedges on hand in the toolboxes with the tools.
- B. All cutting edges on these tools will be sharpened according to the attached specification and diagrams. (Exhibits 1-3).
- C. Tool handles will not be painted or excessively oily, and shall be free of such defects as cracks, splinters, twist or warp, and slivers.

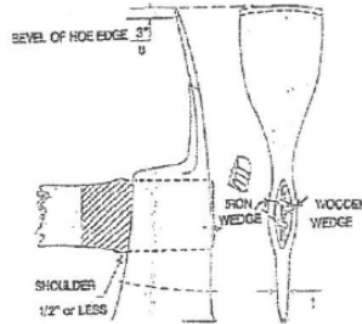
McLeod Standards Grind the hoe so there is a good cutting edge on the inside face; bevel to slope outward at an angle of approximately 45 degrees. Bevel to be on outside of blade away from handle.



Ax Standards Grind on even taper - 1 1/2" back from cutting edge.

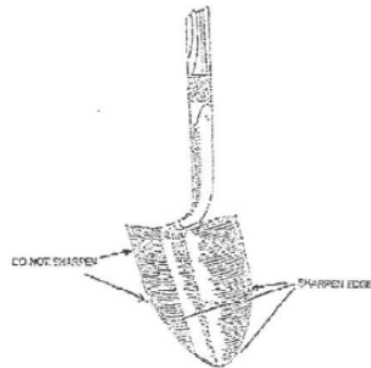


Pulaski Standards Axe bit to be ground with an even taper back from the cutting edge at least *1 1/2". Hoe side ground to a good cutting edge, the bevel to be approximately 3/8" deep on the inside of the blade that is, on the side facing the handle.



***Note: Pulaski cutting edge may range from minimum 1 1/2" to 2 1/2" maximum (per CPRC and 2409.15 Chapter 60 R5 Supplement.)**

Shovel Standards – Regular or size “0” long handle Regular designed shovels, being utilized for fire-fighting should be sharpened from the point towards the top of the spade to where the curve stops. To sharpen further serves no purpose and presents a safety hazard to the user. The purpose of sharpening the tool is so that it may be used to cut small twigs and branches, and to scrape surface litter and duff. The beveled edge can be up to 60 degrees, depending on the shovel. To sharpen to a more acute angle may result in nicks, dings, and gouges upon use; thereby defeating the purpose. Most sharpen to about 45 degrees.



650 Power Line Upgrade Fire Plan - Exhibit 3 - Operation Area Map

