Presents . . .

Identification of
&
Solutions to
Unsafe Working Conditions
in Forest Service Facilities

About this Program . . .

This is a slide/ text presentation. It can be used on its own for orientation or used with the accompanying text. Number(s) and letter(s) references, which are generally in the lower right hand corner, refer to code violation(s) in text.
I. Housekeeping
   A. Clean and free of hazards (OSHA 1910.22, .141)
   B. Grounds free of weeds and debris (UFC 1103.2.4)
   C. Equipment/Furnace/Electrical Panel Rooms (UFC 1103.3.2.4) Combustible material shall not be stored in mechanical or electrical equipment rooms.
   D. Material Storage (H&S Code)
   E. Other

II. Walking and Working Surfaces
   A. Stairs (OSHA 1910.24, UBC 1006, NFPA 1015-2.2, UCBC 405.1)
   B. Guardrails and toeboards (OSHA 1910.23, UBC 509, UCBC 405, NFPA 1015-2.2.4)
   C. Ladders (OSHA 1910.25, .26, .27)
   D. Safe loadings of shelves, lofts, etc. posted (OSHA 1910.22)
   E. Other

III. Exits and Related Features
   A. Exit construction, width, number (OSHA 1910.37, UBC 1003 and 1005, NFPA 101 Section 5.3) For the majority of Forest Service buildings the minimum corridor width will be 36” for buildings having an occupant load of 49 and less and, for others. Most will be 1 hour fire rated and will require 2 exits.
   B. Exits unobstructed (OSHA 1910.37, UBC 1005.4, UFC 1103.3.2.3)
   C. Exit Signing (OSHA 1910.37, UBC Section 1013, NFPA 101)
   D. Interior finishes (NFPA 1016-5, UBC 801.1-806)
   E. Evacuation plan posting & adequacy (OSHA 1910.38)
   F. Furnishings (OSHA 1910.37, NFPA 10131-1.2)
   G. Other
IV. Fire Protection

A. Fire extinguisher types (OSHA 1910.157 (d) I UFC STANDARD 10-1)
B. Fire extinguisher spacing, location and mounting (OSHA 1910.157 (d), NFPA 10, UFC Standard 10-1)
C. Fire extinguisher inspection maintenance and testing (OSHA 1910.157 (e), NFPA 10)
D. Fire ladders (H&S Code)
E. Smoke Detectors (UBC 310.9, Federal Fire Safety Act of 1992)
   Smoke detectors are required in every sleeping room and corridor on every floor and shall be hardwired and interconnected when power is from a commercial source.
F. Fire extinguishers for residential use (UFC Standard 10-1)
G. Other

G. Other

Reference Key

V. Machine Guarding

A. Saws, grinders, & other machinery (OSHA 1910.212, 213, 215)
B. Other protective devices (OSHA 1910.219)
C. Other

VI. Electrical

A. Circuit breakers identified, properly sized (OSHA 1910.303, NEC 384.13).
   All panelboard circuits and circuit modifications shall be legibly identified as to purpose or use on a circuit directory located on the face or inside of the panel doors.

(continued on next slide)
B. Working space adequate (OSHA 1910.303, NEC 110-16). Working clearance at electrical panels shall be 30" wide by 36" in front of panel for majority of situations.

C. Live parts guarded (OSHA 1910.303, NEC 110-17). Live parts of electrical equipment operating at 50 volts or more shall be guarded against accidental contact by approved enclosures.

D. System grounded (OSHA 1910.304, NEC Article 250). All electrical systems shall be effectively grounded.

E. Receptacles and polarity (OSHA 1910.304, 305, NEC Article 410-L)

F. Cords, cord connectors, and caps (OSHA 1910.305, UFC Section 8506)

G. Lighting fixtures, lampholders, lamps (OSHA 1910.305, NEC Article 410)

H. Appliances, motors (OSHA 1910.305, NEC Article 422 and 430)

I. Multi-plug adaptors not permitted (UFC Section 8507)

J. Other

VII. Gas Appliances

A. Gas appliances (NFPA 545.1.8, 5.1.9, 5.1.10, UMC 308.2)

B. Physical Protection (NFPA 54 5.1.9)

C. Accessibility (NFPA 545.2.1)

D. Shutoff valve (UMC 303.2)

E. Clearance from combustibles (NFPA 545.2.2)

F. Appliance shutoff valves and access (NFPA 545.5.4)

G. Appliance connectors (NFPA 545.5.5)

H. Dryers (NFPA 54 6.4)

I. Infrared heaters (NFPA 54 6.19)

J. Room heaters (NFPA 54 6.24)

K. Industrial air heaters (NFPA 546.9)

L. Ventilation and connectors (NFPA 54 5.3)

M. Other
Reference Key

VIII. LP Gas
   A. Location and storage (UFC 8204, UFCS 82-1)
   B. No-Smoking signs (UFC 8208)
   C. Clearance from combustibles (UFC 8209)
   D. Protection from vehicles (UFC 8210)
   E. Prohibited installation (UFC 304.6)
   F. Other

IX. Compressed Gases
   A. Cylinder condition (OSHA 1910.101, CGA pamphlet P-1)
   B. Storage (UFC 7402, NFPA 59 3-2.3)
   C. Other

Reference Key

X. Water Heaters
   A. Pressure and temperature relief Valve (UPC 1007, H&S Code)
   B. Gas Water Heater (UPC 1305)
   C. Non-gas water heater (UPC 1306)
   D. Other

XI. Flammable and Combustible Liquids
   A. Storage containers (OSHA 1910.106 (d), (g), Subpart H)
   B. Storage cabinets (OSHA 1910.106 (d)
   C. Emergency power cutoff (for dispenser) (OSHA 1910.106 (g) (3) (iii))
   D. Ignition sources out of hazardous Areas (OSHA 1910.106 (g)(6))
   E. Other
XII. Miscellaneous
A. First aid supplies readily available (OSHA 1910.151 (d))
B. Woodstove chimneys, spark arrester, oily rags Maintained (H&S Code, UFC 1109.7, UFC 1103.2.1.3)
C. OSHA posters (OSHA 1960.12)
D. Personal protective equipment (OSHA 1910 Subpart I)
E. Caution, Danger signs (FS H&S Code, OSHA 1910.144)
F. Toilet ball cock (UPC 1003)
G. Bookcases, tall cabinets anchored (H & S)
H. Noise (OSHA 1910.95)
I. Hazardous Materials (OSHA Subpart H)
J. Pesticide Storage (UFC 8601)
K. Other

Reference Key

This is a historical sign at Ninemile Ranger District (Lolo National Forest). It identifies the safety culture heritage that is still effective today.
The General Accounting Office and the Dept. of Labor assure a minimum of $4.00 in savings for every $1.00 invested in safety.

**12 Major Topics**

- Housekeeping
- Walking and Working Surfaces
- Exits and Related Features
- Fire Protection
- Machine Guarding
- Electrical
12 Major Topics (cont.)

- Gas Appliances
- LP Gas
- Compressed Gases
- Water Heaters
- Flammable and Combustible Liquids
- Miscellaneous

The Potential Bomb
Housekeeping

Keep grounds free of weeds and debris.
Electrical panels blocked etc, etc, etc

Clean and free of hazards???
Who’s mess is this anyway?!?!

Keep it neat and organized!!!
Do not store under stairs.

Trusses are not designed for these loads.
Walking and Working Surfaces
Landings are required at all doors. Here: at top step.

Guardrails needed.

No open risers allowed.
Railings need to be extended for persons with disabilities.

Tripping hazard.

Public access: Guardrails 42” high, 4” spacing.
Non-public access:
Guardrails 42” high, 12” spacing.
II.B
Overloaded shelves.

II.C
No defects in ladders allowed.

Safe loading posted.

I.A, I.D, II.D
Grounds not free of weeds.
Old defective ladder.

7” toe space required.
Electrical needs to be in conduit.
Construction Barriers???

Exits and Related Features
Egress windows required from all sleeping rooms.

MINIMUM SIZE WINDOW FOR 20” CLEAR WIDTH
OPENABLE AREA = 5.7 sq.ft.

MINIMUM SIZE WINDOW FOR 24” CLEAR HEIGHT
OPENABLE AREA = 5.7 sq.ft.

Good fire escape ladder. Window may not meet size requirement.
Nice attempt but does not meet requirements.

Even I could get out through this window.
Where’s the sign?

III.B, III.C, IV.B

III.B, III.C
Violations galore!!!!!
It says: “You are here”, but WHERE AM I!!!!!!!!!!

Fire Protection
Fire extinguishers should be marked out of service.

Where did it go?

Out of date!
This removed battery may cost a life.

**Machine Guarding**
No belt guard.

Guards needed for belts, gears, and pinch points.

Has it all!
Guards, guards, guards!
Ensure guards are attached and spaced correct distance from grinder.
Safety guard - max. 1/4”.
Work rest - max. 1/8”.

Belt guards and inspection tags required on compressors.
Homemade nozzle not allowed. Pressure max. is 30 psi.

Not organized.
Good hand tool storage.

Beam not designed for point load.
Missing finger guard.

180° guard required on all hand grinders.
Lock out - tag out.
Breakers not identified.
Live parts not guarded.
Clearance at electrical panels shall be 30” wide x 36” in front.

Good clearance around electrical panel.
VI.A, VI.C

Live parts exposed in a residence.

More live wires exposed.

V.L.C
All electrical systems shall be mechanically attached to be effectively grounded.

Extension cords shall not be used as permanent wiring.
Homemade receptacles not allowed.

Over circuit or overload protection required on all extension cords.
Typical extension cord problems:
• Ground prong broken off.
• Illegal splicing.
• No covers for plugs.

Fixture not explosion proof. One spark in box and this gas house is history!
Gas Appliances

Inadequate clearance from pipe to combustible wall surface.
Vent shall extend above roof.

Lp Gas
Improper storage: inside building.

The Good, the Bad, and the UGLY
Good Intent

VIII.A, VIII.C, IX.A

Good examples of lp gas storage.
Keep weeds and debris cleared away. Secure tanks and protect from vehicles.

Use of bollards to protect gas pipe and meter.
Compressed Gases

Anti-flashback protection

OK

IX.B, XII.D

Do not store together.

IX.B
Acetylene bottle secured and separated when not in use.

Water Heaters
Pressure relief valve and piping required. Conduit required for electrical to water heaters.

Strong odor, control valve was found leaking. No combustion air vent.
Flammable & Combustible Liquids

Hooray for MSDS Stations!!!!
As different as winter and summer!!!!

Some materials should not be stored together

XI.A
XI.B, XII.I
What’s in and what’s out?

Dispensing and containment.
One solution to containment.

Another Super Fund site in the making.
This is not what is meant by “containment”.

Batteries in barrel creating hazardous waste.
This is the way to go when you don’t have building containment.

Does this look like your boneyard? If so call 1-800-CLEAN-IT-UP
Please do not turn on the heater while I’m standing here!

Each container needs to be labeled.
Before and after at same location.

Maybe not the safest place to work on a chain saw.
CHAIN SAW STORAGE

**Good...** but oil soaked wood shelves

CHAIN SAW STORAGE

**Better...** but possible dispensing problems
FIRST PRIZE!

Miscellaneous

M
Up to date? Body Fluid Barrier Kit included?

Permanent eye wash station.
Eye wash station. Note sign. **Keep area clear!**

Good example fifteen minute portable.
Food and non-food items shall not be stored together.

No anti-siphon device

Possible cross contamination
Fire wall between garage and house has been compromised.

Commercial range hood requires automatic fire extinguishing system.
Signs of leaking - no roof cap.

Daddy, do we have a monster in the basement?

Structural problems? Contact the Regional Structural Engineer or Architect before you do anything.
Who needs that floor joist anyway? There’s plenty of other ones.

Don’t cut floor joists!!!
Oily rags need to be deposited in safety cans.

Parts washer… always make sure fusible link is intact.
Please pull out a sharpened #2 pencil for the 30 page test that follows this presentation!
Yes, that means you!
Wake UP!!!!!!!
Just joking!!!!

Remember... Safety Comes First!

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