Unit 1: Safety

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Safety

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Objective

Describe the hazards of working around electrical Power Lines and their related equipment.
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Objective
Describe the methods and terminology regarding Safety Practices when investigating power line related wildfires.

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Is This Line Safe?
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How about this one?

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Video Review

Please review the following videos:

(Note: Both videos can be found in the Appendices Section – Electrical Video file on the training disk)

A) Overland - Boom Cable contacting Power Lines

B) Transformer Failure – Shorting out of transformer
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This Could Happen To You!

Downed Power Line Claims the Life of One Fire Fighter and Critically Injures Two Fellow Fire Fighters

A fire fighter was electrocuted and two other fire fighters were injured when they contacted an electric fence while fighting a grass fire. A fire was started when a downed power line ignited the surrounding grass. The Chief was the first to arrive on scene, and he confirmed that a power line was down. He also indicated to the responding fire fighters that the electric fence bordering the area was energized by the downed power line. Two fire fighters arrived and crawled underneath the bottom wire of the electric fence. After approximately 15 minutes on the fire ground, the three fire fighters were found lying in the area of a secondary fire.

Another Example

Fire Fighter Dies After Coming into Contact With a Downed Power Line

A fire fighter was electrocuted after responding to a call involving a brush fire located in a utility easement. The victim, the Chief, the Captain, the Lieutenant, and a fire fighter proceeded to the utility easement. They noted a tree had fallen and was leaning against the overhead power lines but did not see any downed lines. They found a small patch of smoldering debris between the base of an oak tree and woody brush. The victim, standing approximately 2 feet from the oak tree, was directed by the Chief to stomp out the embers in the smoldering brush. The victim contacted a downed, single-phase, 7.2 KV power line when he stepped on the smoldering pile.
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Call In the Experts -
They have the proper PPE.

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Terminology
Each Electric Power Company may have different terms for these types of operations. Find out the terms used by the companies in your area and make sure that you are operating in an area that has been rendered safe.
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Important Safety Terms

*Dead*: De-Energized (temporarily or permanently) disconnected from electrical energy or source of electrical energy.

*Grounded*: To connect a line or a piece of equipment to the earth.

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Important Safety Terms (cont’d)

*Dead and Grounded*: Disconnected from a source of electric energy and connected by a secondary or safety line to earth so that any electrical energy that passes through the line or equipment will shunt to ground.

*Locked Out*: The electric line or equipment has been physically removed from the system and cannot be energized until the circuit has been physically reconnected to the system.
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On with Your Investigation and Collection of Evidence

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Additional Safety Tips

Check Industry Standard, Occupational Health and Safety, and Environmental Protection Agency Regulations in your area:

➢ Some provisions prohibit non-certified individuals from operating or having lift equipment within 10 feet of energized conductors
➢ Some provisions prohibit non-certified individuals from being in possession of or storing hazardous materials that can be found in electrical equipment
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Knowledge Check

When initiating your fire investigation of a wildfire potentially caused by electric power lines or equipment, the necessary PPE includes:

A. Your standard wild land fire service PPE
B. Specialty items from the electrical utility provider
C. Your standard investigative safety equipment
D. Specialty items from your agency’s supply unit.

Knowledge Check

You can conduct fire investigations around electric facilities and equipment when they are found to be:

A. Show no signs of arcing and are safe to the touch
B. Are touching the ground
C. Show no signs of arcing, are safe to the touch, and are touching the ground
D. Certified “Dead and Grounded” or “Locked Out” by the electric utility provider

TRANSITION to Unit 2: Investigator Qualifications