Figure 4.8. Potential hazards from lightning include electrocution, burns, fire, falling debris.
(Courtesy of NOAA Photo Library NOAA Central Library OAR-ERL National Severe Storms Laboratory)

Lightning

Lightning results from the buildup and discharge of electrical energy in clouds (Figure 4.8). Lightning may strike many miles from an associated thunderstorm and may strike when no rain or clouds are present.

Lightning is unpredictable and can strike many miles away from the storm cloud.

If exposed to a lightning storm:

- Remove all cast and crew from elevated positions such as aerial lifts, sets, and scaffolding.
- Then, if safe to do so, have a qualified person lower all unmanned equipment and shut down generators.
- When instructed, move to the designated safe assembly area.
- Do not return to the area until an all clear signal has been given.
- Seek shelter in a sturdy building, a hardtop automobile, or a truck with the windows rolled up. If such cover is not available, seek shelter in wooded areas with thick, small trees. Avoid isolated trees.
- Avoid high ground and keep clear of tall, grounded, or conductive objects near the ground such as towers, aerial lifts, camera booms, scaffolding, fences, grip stands, and other metal equipment.
- Avoid using electrical equipment or appliances, including corded telephones. Instead, use a cordless or cell phone.
- Stay out of bodies of water because water is conductive.

Estimating Proximity to Lightning

There are a variety of ways to gauge the distance of lightning strikes. Weather radar, which detects lightning strikes, is reported by government weather services and through the media. A lightning app shows real-time lightning-strike locations and sends alerts when lightning approaches a preselected location. A lightning meter gives an approximation of distance (some are significantly more accurate than others).

It is also possible to estimate the distance of lightning by the thunder. When lightning is seen, count the seconds until thunder is heard and then divide the seconds counted by five to obtain the approximate distance in miles to the lightning. Note: One second does not equal one mile.

Example:

There are 10 seconds between the flash and the thunderclap.

$$\frac{10 \text{ seconds}}{5} = 2 \text{ miles}$$

Using this example, the lightning occurred two miles away.

When lightning is seen or thunder is heard, it is time to stop work and seek shelter. Wait 30 minutes from the last thunderclap to establish an all clear.

Other Severe Weather Conditions

There are many other severe weather conditions such as blizzards or severe snow storms, flash flooding, and large hail.

Guidelines for these weather conditions can be found in Safety Bulletin #38, *Guidelines for Inclement or Severe Weather*, which is available online at www.csatf.org..