**Solar Electric Technician Training**

**Module 2: Occupational health and safety**

**V2-Answers for Scenario exercise on workplace safety for solar electric technicians**

## Scenario 1: Rooftop solar panel installationz

1. **Description**: You are assigned to install solar panels on the roof of a residential building. The roof is sloped, and the installation site is exposed to direct sunlight. There are various electrical tools and cables around.
2. **Potential hazards:**
   * Risk of falling from a height.
   * Electrical hazards from tools and cables.
   * Heat-related illnesses due to exposure to sunlight.
   * Slippery surfaces in case of rain or morning dew.
3. **Mitigation strategies**:
   * Use fall protection equipment such as harnesses and guardrails.
   * Ensure proper insulation and maintenance of electrical tools and cables.
   * Schedule work during cooler parts of the day and provide adequate hydration and rest breaks.
   * Use slip-resistant footwear and ensure the roof surface is dry before starting work.

## Scenario 2: Solar panel maintenance in a remote area

1. **Description**: You are tasked with performing maintenance on a solar panel array located in a remote, off-grid area. The site is surrounded by rugged terrain and is far from immediate medical assistance.
2. **Potential hazards:**
   * Limited access to emergency medical services.
   * Wild animal encounters.
   * Harsh weather conditions.
   * Isolation and difficulty in communication.
3. **Mitigation strategies:**
   * Carry a well-equipped First Aid kit and ensure all team members are trained in First Aid.
   * Use protective clothing and equipment to deter wild animals.
   * Monitor weather forecasts and plan work accordingly, ensuring proper shelter is available.
   * Equip team members with reliable communication devices and establish check-in protocols.

## Scenario 3: Installing solar panels in an industrial setting

1. **Description**: You are installing a large solar panel system on the roof of an industrial warehouse. The site is busy with ongoing industrial activities, including heavy machinery operations.
2. **Potential hazards:**
   * Risk of collisions with heavy machinery.
   * Exposure to hazardous materials stored in the warehouse.
   * Noise pollution causing distractions and potential hearing damage.
   * Complex electrical systems and high voltage.
3. **Mitigation strategies**:
   * Coordinate with the site manager to create a safe work zone away from heavy machinery.
   * Conduct a thorough assessment of hazardous materials and ensure safe storage and handling.
   * Provide hearing protection and enforce its use in noisy areas.
   * Ensure all electrical work is done by qualified personnel and de-energize systems when possible.

## Scenario 4: Solar panel installation on a floating platform

1. **Description**: You are installing solar panels on a floating platform located on a lake. The platform is prone to movement, and there is a risk of falling into the water.
2. **Potential hazards**:
   * Risk of drowning or injury from falling into the water
   * Electrical hazards due to proximity to water
   * Platform instability and movement
   * Weather-related risks such as strong winds or storms
3. **Mitigation strategies**:
   * Provide and mandate the use of life jackets for all personnel.
   * Ensure all electrical equipment is waterproof and insulated.
   * Use stabilizing equipment to minimize platform movement and conduct work when water conditions are calm.
   * Monitor weather conditions closely and halt operations during adverse weather.