



# **Journeyman Lineman: Technical/Physical Abilities Assessment**

Introduction & Preparation Guide for Transmission &  
Distribution Journeyman Lineman

Information | Strategies | Further Resources



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## WELCOME!

Congratulations!

You are taking the first step to ensure your success on the Journeyman Lineman Technical/Physical Abilities Assessment and ultimately in your career at San Diego Gas & Electric (SDG&E). The Journeyman Lineman Technical/Physical Abilities Assessment used at SDG&E is designed to measure your technical and physical capabilities for performing the demands of the job of a Journeyman Lineman. How you perform on the test is an indication of how successful you are likely to be in this job. This guide includes information about the assessments used to select employees and who is qualified and likely to excel on the job. Additionally, this guide provides test preparation tips, resources, and suggestions for how to do your best.

**Good Luck!**

## HOW TO USE THIS TEST GUIDE

This guide is divided into several sections aimed at helping you perform your best on the technical and physical abilities assessments. These sections include:

### **Journeyman Lineman Job Overview:**

This section will provide an overview of what to expect when working as a Journeyman Lineman (Transmission and Distribution) at SDG&E.

### **Overview: Journeyman Lineman Technical/Physical Abilities Assessment:**

This section of the guide provides a detailed walk-through of the testing process. This includes the check-in process, the introduction to the testing procedures that you will receive upon arrival, information regarding the 10-minute warm-up period, and the order in which you will complete each of the assessments (for either Transmission or Distribution).

### **Test Descriptions:**

This section will provide a detailed overview of each of the five transmission and seven distribution assessments. This will include the personal protective equipment (PPE) you will be provided and/or expected to have on the day of testing, an overview of each component of the test, test instructions, how you will be scored, and retest opportunities.

## Test Taking Strategies:

This section of the guide provides various suggestions for how to both physically and mentally prepare for the test prior to taking it, when you begin, and during the test.

## Further Resources:

The Journeyman Lineman position is a physically demanding job that requires great strength and endurance. The final section of this guide will provide resources and suggestions for further developing your physical abilities.

If you are a *first-time* test taker, take time to read through this entire manual and familiarize yourself with the assessments you will be taking.

If you are *retaking* these assessments, pay attention to the general test taking strategies, relax, and take advantage of the resources described at the back of this guide.

Let's get started!

## Accommodation

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In accordance with the Americans with Disabilities Act (ADA), if you have a disability, you have the right to request an accommodation in the hiring and testing process. If you believe that your disability requires special arrangements to take the test(s), please contact [talentacquisition@sdge.com](mailto:talentacquisition@sdge.com) **prior** to your scheduled test day, to ensure the adequate time needed to make the needed arrangements.

## **Journeyman Lineman Job Overview**

The mission of SDG&E is to provide electrical energy and natural gas services to residential and business customers accurately, safely, and efficiently. To accomplish this mission, the Journeyman Lineman is a key position responsible for the construction, maintenance, and repair of electrical power transmission and distribution systems. This role plays a critical part in ensuring a reliable and safe electrical supply to our customers. The job demands a high degree of technical expertise, physical ability and agility, and safety consciousness.

Journeyman Linemen must be capable of performing physically demanding tasks, including climbing poles, working from elevated platforms, and handling heavy equipment. They work on both energized overhead and underground lines (Distribution) and/or climb towers working on high-voltage lines (Transmission).

To ensure safety and effective job performance, SDG&E must select individuals whose skills and capabilities meet both the technical and physical demands required of this job. This Technical/Physical Abilities assessment was designed to evaluate your technical/physical capabilities effectively and safely as it pertains to the appropriate Journeyman Lineman (Transmission/Distribution) position.

At SDG&E, the Journeyman Lineman position is considered a Qualified Electrical Worker (QEW) where the individual has earned and attain a certified journeyman lineman card from an accredited program. Being a Journeyman Lineman is both challenging and rewarding. While reviewing the materials in this preparation guide please consider the tasks required and if this job is a good fit for you!

## Overview: Journeyman Lineman Technical/Physical Abilities Assessment

**Checking In:** When you arrive at the testing center you will check-in and provide identification documentation in the form of either a driver's license, U.S. passport, or SDG&E employee badge (if currently employed for the company). You will be checked to ensure you are wearing proper apparel. If you are not wearing the proper apparel you will be dismissed from testing.

**Test Day – What to Wear:** To ensure your safety, please follow these clothing requirements:

- A long sleeve work shirt is required (no dress wear; shirt must be appropriate for physical activity)
- Long pants are required (jeans or other pants appropriate for physical activity)
- Wear boots or hard-soled shoes that have a heel height of at least  $\frac{1}{2}$  an inch. Soft-soled and/or flat-soled footwear (tennis shoes, athletic shoes, and any shoe without acceptable heel height) is prohibited

**Acceptable Clothing and Footwear:**







**ACCEPTABLE.** Hard-sole with a proper heel height.



**UNNACCEPTABLE.** Not a hard-sole, too angular of a heel.



**UNNACCEPTABLE.** Improper heel, not proper coverage.



**UNNACCEPTABLE.** Improper heel, soft sole.

**Weight Requirement:** During the check-in process you will also be weighed. The equipment used during testing does not support a weight higher than 310 lb. If you weigh more than 310lbs, while fully dressed and holding and/or wearing the proper PPE (and harness for those who will require it for testing), you will be dismissed from testing due to safety protocols.

**PPE & Equipment Requirements:** If you are not wearing proper clothing and/or footwear, you will be dismissed from testing. If your climbing gear is not approved or you don't bring climbing gear, you will be dismissed from testing. Administrators will indicate the reason(s) for dismissal, if dismissed.

**Introduction:** After checking in, you will be given an introduction of the testing process. This introduction will include information regarding either the five Transmission or seven Distribution assessments with descriptions of each.

If you have questions at this point in the testing process, please ask for clarification.



**Stretch Preparation:** After the introduction, you will be given a 10-minute warm-up period. During this time, you may engage in any warm-up of your choice. Example stretches are shown on the following page for reference.

Stretching is important for multiple reasons including aiding in the process of healing old injuries, improving one's flexibility, and helping to prevent future injuries. Some things to remember when stretching:

**DO:**

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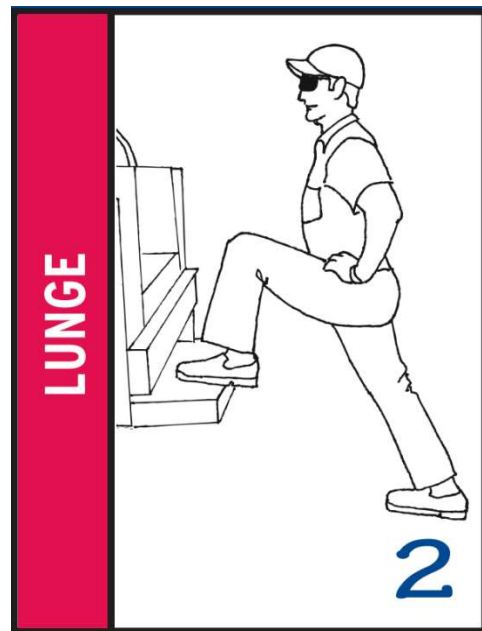
- Stretch to the point where you feel a **slight** discomfort. Hold and breathe.
- A comfortable stretch is more effective
- Hold each stretch for a slow count of 10
- Try to breathe slowly in and out through your nose
- Be **consistent** and **persistent**!
- Try to stretch deeply at least once a day – more is better. Stretch before work and periodically throughout the day.

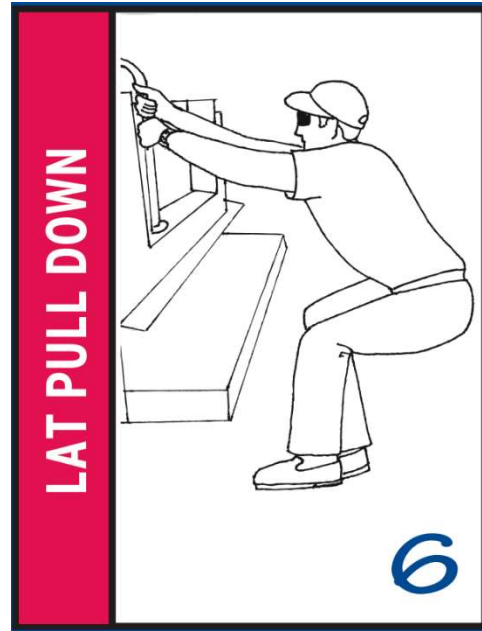
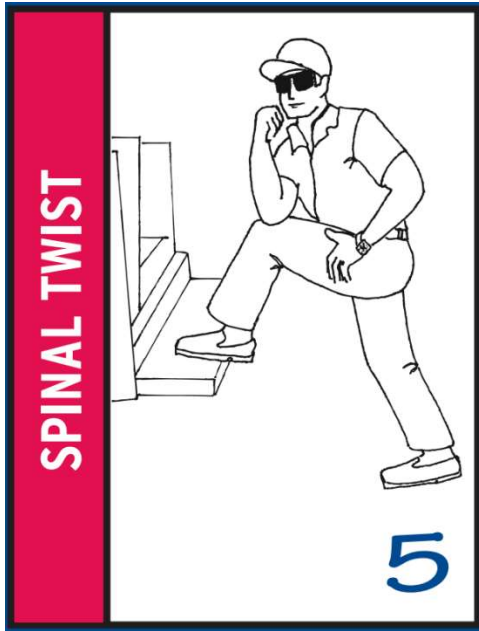
**DON'T:**

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- Don't strain yourself past the point of slight discomfort. If you experience sharp pain, you're trying too hard
- Stay within reasonable limits so your body can lengthen safely and slowly
- Don't bounce
- Don't hold your breath!
- **Don't give up!** Stretching is a winning proposition because no matter how tight you are when you begin – your flexibility will improve each time you stretch.

Example stretches include:





**The Assessments:** After the introduction and warm-up, you will begin the assessments. You will complete the (Transmission or Distribution) assessments in the order listed below. These assessments are further detailed and explained in the **Test Description** section of this manual. You will be informed about the time limits required to pass, and how you will be scored for each assessment. You will be given a minimum of a 10-minute rest break between each test of the overall assessment (test battery).

#### Order of Assessment Administration

##### Transmission:

1. Climbing Skills
2. Cut Out Change Out
3. 69kv Middle Post Insulator Change Out
4. Tower Climb
5. 230kv Broken Bell Change Out

##### Distribution: *(A total of 8 different rotation options may be used during administration)*

1. Climbing Skills
2. Secondary Crossarm Change Out
3. Primary Dead End Change Out
4. Cut Out Change Out
5. Terminate 200 Amp Elbow
6. Isolate and Ground 3 Phase Cable
7. Phase a Pad Mount Switch

**Guidelines:** To ensure your safety, it is important to follow the test administrator's instructions exactly throughout the testing process. Do not hesitate to ask questions if something is unclear. Once you have entered the testing area, you will need to remain there for the duration of the test. Water and restrooms will be available on site. At no point during the testing process should you talk to any other applicants about the test or the selection procedures. Cellular phones, I-watches, PDA's, and other electronic devices are not allowed in the testing area. You must pass all five Transmission assessments (but may fail the Tower Climb based on time) to pass the test battery. For Distribution assessments, you must pass all seven assessments (but may fail one out of the three Underground tests based on time) to pass the test battery.

**Note:** For your safety, if the test administrator observes you experiencing nausea, dizziness, and/or shortness of breath they may stop you from completing the test. Additionally, if you sustain an injury, experience pain, or request to stop, the testing may end.

For safety reasons, SDG&E will cancel test sessions during inclement weather conditions (e.g., rain, wind), including wet-bulb globe temperatures (WBGT) that exceed 90 degrees.

## Test Descriptions

The technical/physical abilities test for the Journeyman Lineman position is composed of five Transmission and seven Distribution assessments.

You will either complete the:

Transmission:

1. Climbing Skills
2. Cut Out Change Out
3. 69kv Middle Post Insulator Change Out
4. Tower Climb
5. 230kv Broken Bell Change Out

Or,

Distribution:

1. Climbing Skills
2. Secondary Crossarm Change Out
3. Primary Dead End Change Out
4. Cut Out Change Out
5. Terminate 200 Amp Elbow
6. Isolate and Ground 3 Phase Cable
7. Phase a Pad Mount Switch

Each of these assessments are explained in detail below.

**Safety:** To ensure your safety, you will be provided with the necessary Personal Protective Equipment (PPE) throughout the testing process. The safety equipment varies for each assessment but includes:

- Full body harness, and Tower harness
- Atlas safety device (tower climb)
- Tools

**Required:** You will be required to bring the following PPE to test.

- Gloves
- Hardhat
- Body belt
- Position strap

**NOTE:** In order to ensure your safety throughout the testing process it is required that you wear the provided/requested PPE and appropriate apparel as detailed above (i.e., long sleeved shirt, long pants, and boots or hard-soled shoes that have a heel height of at least ½ an inch).

### *About Technical/Physical Abilities Assessments*

Technical/Physical Abilities assessments are used by SDG&E to help ensure that employees will be able to successfully and safely perform the physical tasks associated with physically demanding jobs. Technical/Physical Abilities testing allows for skills and abilities to be tested in real-world scenarios that are directly applicable to the job for which you are applying. Technical/Physical Abilities testing differs depending on the situation, but often involves several components aimed at assessing ones' strength, endurance, and/or agility. While the test itself may differ slightly from the work of a Journeyman Lineman, the physical abilities being assessed are consistent with those that are required for success in this job.

Additionally, Technical/Physical Abilities testing also provides candidates with a realistic job preview, which can help individuals determine if the job is a good fit for them.



## **Transmission – Climbing Skills**

**Overview:** Much of a Lineman's work occurs at the top of wooden and steel poles. After extensive training, all Linemen must be able to ascend and descend multiple types of poles. In this assessment, you will demonstrate that you can safely ascend and descend a 65-foot pole with three set of 10-foot crossarms. You will be required to bring your own body belt and positioning strap (e.g., Buck Squeeze, Jelco Pole Choker) for safety precautions.

**Task:** You will be required to climb up a pole with multiple sets of crossarms. At the top, you will perform specific tasks before descending. This test is designed to assess your climbing skills, not to determine if you are a professional climber.

### ***Prior to Test:***

1. You will receive detailed instructions for the assessment.
2. You will put on personal protective equipment (PPE) including gloves, a hardhat with a chin strap, safety glasses, and climbing gear.
3. You will sign a score sheet to confirm you understand the instructions.

### ***During the Test:***

#### ***Ascent:***

1. On the command "GO," you will ascend the pole to the lower set of crossarms. The timing device will start.
2. Use a second safety belt above the lower set of crossarms.
3. Continue ascending to the higher set of crossarms.
4. Use a second safety belt above the higher set of crossarms.
5. Ascend to the pole top crossarm.

#### ***On Pole Tasks:***

1. Lean to the left or right to remove the pin from the crossarm.
2. Circle the pole and lean to the opposite side to place the pin in the hole on the crossarm.

#### ***Descent:***

1. Descend to the higher set of crossarms.
2. Step past the higher set of crossarms and use the second safety belt between the crossarms.
3. Descend to the lower set of crossarms.

4. Step past the lower set of crossarms and use the second safety belt below them.
5. Continue descending to the ground.
6. When both feet touch the ground, the test is complete, and the timing device will stop.

**Climbing Skills Score:** Your score on the Climbing Skills assessment will be based on the following:

1. Completing each task (e.g., belting above the crossarms).
2. Quality ratings for ascending, working on, and descending the pole.
3. Avoiding automatic test failure actions.
  1. Break 100% fall restraint
  2. Five or more minor cut outs (1 foot out of pole)
  3. One or more major cut outs (2 feet out of pole, uncontrolled)
  4. Drop pin
4. The total time to complete the test.
  1. Complete the test in 16 minutes or less.

**Test Standard:** To pass, you must:

1. Complete the test in 16 minutes or less.
2. Obtain an overall rating of "1" or higher.
3. Not commit any automatic failure actions.

If you commit any of these actions, the test will stop, and you will fail. You will not proceed to subsequent tests if you fail. You will not be given a retest opportunity.

Images of the **Climbing Skills** assessment:



## **Transmission – Cut Out Change Out**

**Overview:** The Cutout Replacement test evaluates your ability to safely and efficiently change out the outside southside cutout from a bucket truck with another Qualified Electrical Worker (QEW) in the bucket. You can use the rubber glove or stick method, or a combination of both. You must maintain a 12kV Minimum Approach Distance (M.A.D.) and ensure the safety of the QEW, who will not perform any tasks unless instructed by you.

**Task:** You will change out the cutout while maintaining safety protocols and proper communication with the QEW and ground personnel.

### ***Prior to Test:***

1. You will receive detailed instructions for the assessment.
2. You will sign a score sheet to confirm you understand the instructions.
3. You will gather all needed tools and equipment.

### ***During the Test:***

#### **Tailgate:**

1. You will provide the test administrator with a tailgate, including a description of the tasks to be performed.
2. You will put on personal protective equipment (PPE).

#### **Ascent:**

1. Start the timing device when you begin raising the bucket with the QEW.

#### **On Pole Tasks:**

1. Set up the handline and cover conductors as needed.
2. Use the mechanical jumper to bypass the cutout.
3. Open the cutout door and remove the leads.
4. Remove and reinstall the cutout.
5. Reconnect the leads and close the cutout door.
6. Remove the jumper and covers.

#### **Descent:**

1. Descend in the bucket with the QEW and handline.

2. When the bucket reaches the ground, the test is complete, and the timing device will stop.

**Cut Out Change Out Score:** Your score on the Cut Out Change Out assessment will be based on the following:

1. Completing each task (e.g., removing cutout leads).
2. Quality ratings for bucket operation, use of live line tools, use of cover, communication, and maintaining M.A.D..
3. Avoiding automatic test failure actions.
  1. Opening the cutout without the jumper in place.
  2. Uncontrolled energized conductor.
  3. Connecting opposite phases with the jumper.
4. The total time to complete the test.
  1. Complete the test in 42 minutes or less.

**Test Standard:** To pass, you must:

1. Complete the test in 42 minutes or less.
2. Obtain an overall rating of "1" or higher.
3. Not commit any automatic failure actions.

If you commit any of these actions, the test will stop, and you will fail. You will not proceed to subsequent tests if you fail. You will not be given a retest opportunity.

Images of the **Cut Out Change Out** assessment:





## **Transmission – 69kv Middle Post Insulator Change Out**

**Overview:** The Middle Post Insulator Replacement test evaluates your ability to safely and efficiently change out a 69kV middle post insulator on a pole using the provided rigging and equipment. You must consider the conductor and equipment energized and maintain the Minimum Approach Distance (M.A.D.) throughout the test.

**Task:** You will replace the middle post insulator while adhering to safety protocols and maintaining proper communication with the Qualified Electrical Worker (QEW) and ground personnel.

### ***Prior to Test:***

1. You will receive detailed instructions for the assessment.
2. You will sign a score sheet to confirm you understand the instructions.
3. You will gather all needed tools and equipment.

### ***During the Test:***

#### **Tailgate:**

1. You will provide the test administrator with a tailgate describing the tasks to be completed.
2. You and the QEW will put on personal protective equipment (PPE) and climbing gear.

#### **Ascent:**

1. Climb the pole with a handline to the first post. Start the timing device when you begin climbing.

#### **On Pole Tasks:**

1. Test and ground the phases to create an Equipotential Zone (EPZ).
2. Rig and remove the middle post insulator.
3. Send the post to the ground and receive it back.
4. Install the post and transfer the wire back.

#### **Descent:**

1. Descend the pole with the handline to the ground.
2. When both feet touch the ground, the test is complete, and the timing device will stop.

**69kv Middle Post Insulator Change Out Score:** Your score on the 69kv Middle Post Insulator Change Out assessment will be based on the following:

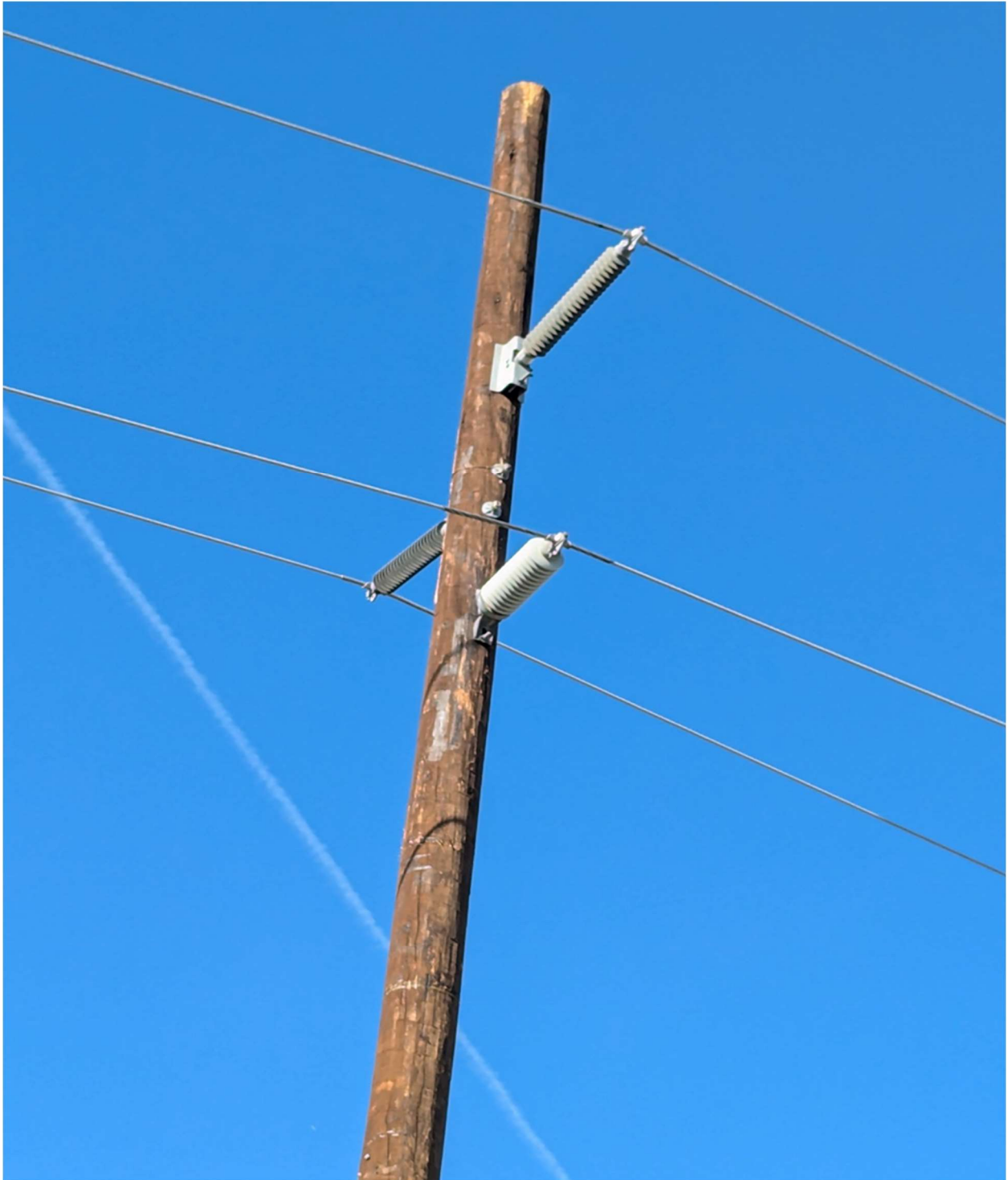
1. Completing each task (e.g., covering conductors).
2. Quality ratings for ascending the pole, working on the pole, descending the pole, grounding using live line tools, rigging, tool use, communication, and maintaining M.A.D..
3. Avoiding automatic test failure actions.
  1. Breaking 100% fall restraint.
  2. Five or more minor cutouts (1 foot out of the pole).
  3. One or more major cutouts (2 feet out of the pole, uncontrolled).
  4. Dropping the post.
  5. Losing control of the conductor.
  6. Not testing before grounding.
  7. Grounds falling off the line while working the EPZ.
4. The total time to complete the test.
  1. Complete the test in 1 hour and 27 minutes or less.

**Test Standard:** To pass, you must:

1. Complete the test in 1 hour and 27 minutes or less.
2. Obtain an overall rating of "1" or higher.
3. Not commit any automatic failure actions.

If you commit any of these actions, the test will stop, and you will fail. You will not proceed to subsequent tests if you fail. You will not be given a retest opportunity.

Images of the **69kv Middle Post Insulator Change Out** assessment:



## **Transmission – Tower Climb**

**Overview:** The Tower Climbing test evaluates your ability to safely and efficiently ascend, traverse, and descend a tower. You will be equipped with a fall arrester kit and other safety gear to ensure your safety throughout the test.

**Task:** You will climb the tower, traverse its sides, and then descend, following specific safety protocols and using the provided equipment.

### ***Prior to Test:***

1. You will receive detailed instructions for the assessment.
2. You will sign a score sheet to confirm you understand the instructions.
3. You will put on personal protective equipment (PPE) and a harness.
4. Attach the ASAP fall arrester kit to the rope on the step leg.

### ***During the Test:***

#### **Ascent:**

1. On the command "GO," you will ascend the tower step leg to the middle arm. The timing device will start.
2. Unhook from the harness and traverse one side of the tower using the Y-lanyard, pelican hooks, and/or second safety rope.
3. At the far side of the tower, ascend to the upper arm.

#### **Traverse:**

1. Traverse the tower at the upper arm using the Y-lanyard, pelican hooks, and/or second safety rope. Complete a 360-degree traverse across all four tower sides.

#### **Descent:**

1. Descend the tower lacing to the middle arm using the Y-lanyard, pelican hooks, and/or second safety rope.
2. Hook the harness onto the rope and descend the step leg to the ground.
3. When both feet touch the ground, the test is complete, and the timing device will stop.

**Tower Climb Score:** Your score on the Tower Climb assessment will be based on the following:

1. Completing each task (e.g., ascending the tower step leg to the middle arm).

2. Quality ratings for ascending the step leg, ascending the tower lacing, traversing the tower lacing, descending the tower lacing, and descending the step leg.
3. Avoiding automatic test failure actions.
  1. Breaking 100% fall restraint.
4. The total time to complete the test.
  1. Complete the test in 15 minutes or less.

**Test Standard:** To pass, you must:

1. Complete the test in 15 minutes or less.
2. Obtain an overall rating of "1" or higher.
3. Not commit any automatic failure actions.

If you commit any of these actions, the test will stop, and you will fail. You will not proceed to subsequent tests if you fail. You will not be given a retest opportunity.

Images of the **Tower Climb** assessment:





## Transmission – 230kv Broken Bell Change Out

**Overview:** The 230kV Bell Replacement test evaluates your ability to safely and efficiently change out a 230kV bell on a tower using the provided rigging and equipment. You must consider the conductor and equipment energized, maintain the Minimum Approach Distance (M.A.D.), and ensure the safety of the Qualified Electrical Worker (QEW), who will not perform any tasks unless instructed by you.

**Task:** You will replace the 230kV bell while adhering to safety protocols and maintaining proper communication with the QEW and ground personnel.

### ***Prior to Test:***

1. You will receive detailed instructions for the assessment.
2. You will sign a score sheet to confirm you understand the instructions.
3. You will gather all needed tools and equipment.

### ***During the Test:***

#### **Tailgate:**

1. You will provide the test administrator with a tailgate describing the tasks to be completed.

#### **Ascent:**

1. You and the QEW will ascend to the work area in a bucket, with you operating the bucket. The timing device will start.

#### **On Tower Tasks:**

1. Test phase and ground the phase you are working on using the hot stick.
2. Rig and unpin the broken bell.
3. Re-pin the bell, tighten the hardware, and remove the rigging.
4. Remove the rigging from the tower and the grounds.

#### **Descent:**

1. Descend the tower in the bucket with the QEW.
2. When the bucket reaches the ground, the test is complete, and the timing device will stop.

**230kv Broken Bell Change Out Score:** Your score on the 230kv Broken Bell Change Out assessment will be based on the following:

1. Completing each task (e.g., covering conductors).
2. Quality ratings for bucket operation, grounding using live line tools, rigging, tool use, communication, and maintaining M.A.D.
  1. Dropping the bell.
  2. Not testing before grounding.
  3. Uncontrolled energized conductor.
  4. Ground falling off the line.
3. The total time to complete the test.
  1. Complete the test in 1 hour and 10 minutes or less.

**Test Standard:** To pass, you must:

1. Complete the test in 1 hour and 10 minutes or less.
2. Obtain an overall rating of "1" or higher.
3. Not commit any automatic failure actions.

If you commit any of these actions, the test will stop, and you will fail. You will not proceed to subsequent tests if you fail. You will not be given a retest opportunity.

Images of the **230kv Broken Bell Change Out** assessment:



## Distribution – Climbing Skills

**Overview:** Much of a Lineman's work occurs at the top of wooden and steel poles. After extensive training, all Linemen must be able to ascend and descend multiple types of poles. In this assessment, you will demonstrate that you can safely ascend and descend a 65-foot pole with three set of 10-foot crossarms. You will be required to bring your own body belt and positioning strap (e.g., Buck Squeeze, Jelco Pole Choker) for safety precautions.

**Task:** You will be required to climb up a pole with multiple sets of crossarms. At the top, you will perform specific tasks before descending. This test is designed to assess your climbing skills, not to determine if you are a professional climber.

### ***Prior to Test:***

1. You will receive detailed instructions for the assessment.
2. You will put on personal protective equipment (PPE) including gloves, a hardhat with a chin strap, safety glasses, and climbing gear.
3. You will sign a score sheet to confirm you understand the instructions.

### ***During the Test:***

#### ***Ascent:***

1. On the command "GO," you will ascend the pole to the lower set of crossarms. The timing device will start.
2. Use a second safety belt above the lower set of crossarms.
3. Continue ascending to the higher set of crossarms.
4. Use a second safety belt above the higher set of crossarms.
5. Ascend to the pole top crossarm.

#### ***On Pole Tasks:***

1. Lean to the left or right to remove the pin from the crossarm.
2. Circle the pole and lean to the opposite side to place the pin in the hole on the crossarm.

#### ***Descent:***

1. Descend to the higher set of crossarms.
2. Step past the higher set of crossarms and use the second safety belt between the crossarms.
3. Descend to the lower set of crossarms.

4. Step past the lower set of crossarms and use the second safety belt below them.
5. Continue descending to the ground.
6. When both feet touch the ground, the test is complete, and the timing device will stop.

**Climbing Skills Score:** Your score on the Climbing Skills assessment will be based on the following:

1. Completing each task (e.g., belting above the crossarms).
2. Quality ratings for ascending, working on, and descending the pole.
3. Avoiding automatic test failure actions.
  1. Break 100% fall restraint
  2. Five or more minor cut outs (1 foot out of pole)
  3. One or more major cut outs (2 feet out of pole, uncontrolled)
  4. Drop pin
4. The total time to complete the test.
  1. Complete the test in 16 minutes or less.

**Test Standard:** To pass, you must:

1. Complete the test in 16 minutes or less.
2. Obtain an overall rating of "1" or higher.
3. Not commit any automatic failure actions.

If you commit any of these actions, the test will stop, and you will fail. You will not proceed to subsequent tests if you fail. You will not be given a retest opportunity.

Images of the **Climbing Skills** assessment:





## Distribution – Secondary Crossarm Change Out

**Overview:** The Secondary Hardware Crossarm Replacement test evaluates your ability to safely and efficiently change out the secondary hardware crossarm. You must consider all equipment and conductors energized and simulate using Class "0" gloves for secondary work.

**Task:** You will replace the secondary hardware crossarm while adhering to safety protocols and maintaining proper communication with ground personnel.

### ***Prior to Test:***

1. You will receive detailed instructions for the assessment.
2. You will sign a score sheet to confirm you understand the instructions.
3. You will gather all needed tools and equipment.

### ***During the Test:***

#### **Tailgate:**

1. You will provide the test administrator with a tailgate, including a description of the tasks to be performed and the circuit number.
2. You will put on personal protective equipment (PPE) and climbing gear.

#### **Ascent:**

1. Start the timing device when you begin climbing the pole with a handline.

#### **On Pole Tasks:**

1. Cover and uncover conductors as needed.
2. Set up rigging on the pole.
3. Rig conductors and remove the crossarm.
4. Unpin secondary spools and rig the service.
5. Remove flat braces and straps, and undo hardware.
6. Reinstall the crossarm and hardware, and transfer conductors and service.
7. Remove rigging and covers.

#### **Descent:**

1. Descend the pole with the handline to the ground.
2. When both feet touch the ground, the test is complete, and the timing device will stop.



**Secondary Crossarm Change Out Score:** Your score on the Secondary Crossarm Change Out assessment will be based on the following:

1. Completing each task (e.g., covering conductors).
2. Quality ratings for ascending the pole, working on the pole, descending the pole, use of cover, rigging, and communication.
3. Avoiding automatic test failure actions.
  1. Breaking 100% fall restraint.
  2. Five or more minor cutouts (1 foot out of the pole).
  3. One or more major cutouts (2 feet out of the pole, uncontrolled).
  4. Dropping the crossarm.
  5. Losing control of the conductor.
  6. Opposite phases or ground contacting each other.
  7. Contacting uncovered conductor with an unprotected part of the body.
4. The total time to complete the test.
  1. Complete the test in 1 hour and 5 minutes or less.

**Test Standard:** To pass, you must:

1. Complete the test in 1 hour and 5 minutes or less.
2. Obtain an overall rating of "1" or higher.
3. Not commit any automatic failure actions.

If you commit any of these actions, the test will stop, and you will fail. You will not proceed to subsequent tests if you fail. You will not be given a retest opportunity.

Images of the **Secondary Crossarm Change Out** assessment:



## Distribution – Primary Dead End Change Out

**Overview:** The Dead End Poly Insulator Replacement test evaluates your ability to safely and efficiently change out a dead end poly insulator on the 12kV buck arm using the Equipotential Zone (EPZ) method. You must maintain the Minimum Approach Distance (M.A.D.) of 26 inches for 12kV throughout the test.

**Task:** You will replace the dead end poly insulator while adhering to safety protocols and maintaining proper communication with ground personnel.

### ***Prior to Test:***

1. You will receive detailed instructions for the assessment.
2. You will sign a score sheet to confirm you understand the instructions.
3. You will gather all needed tools and equipment.

### ***During the Test:***

#### **Tailgate:**

1. You will provide the test administrator with a tailgate, including a description of the tasks to be performed.
2. You will put on personal protective equipment (PPE) and climbing gear.

#### **Ascent:**

1. Start the timing device when you begin climbing the pole with a handline.

#### **On Pole Tasks:**

1. Cover conductors as needed.
2. Use a load bust tool to open cutouts on the buck arm.
3. Remove leads and create an Equipotential Zone (EPZ) by grounding the lines.
4. Set up rigging and remove the dead end poly insulator.
5. Reinstall the insulator and remove the rigging.

#### **Descent:**

1. Descend the pole with a handline to the EPZ.

#### **On Pole Tasks:**

1. Remove grounds and reinstall leads using a shotgun stick.
2. Close cutouts with a switch stick and uncover conductors.

#### **Descent:**

1. Descend the pole with a handline to the ground.
2. When both feet touch the ground, the test is complete, and the timing device will stop.

**Primary Dead End Change Out Score:** Your score on the Primary Dead End Change Out assessment will be based on the following:

1. Completing each task (e.g., opening cutouts with a load bust tool).
2. Quality ratings for ascending the pole, working on the pole, descending the pole, use of live line tools, rigging, communication, and maintaining M.A.D. of 26 inches.
3. Avoiding automatic test failure actions.
  1. Breaking 100% fall restraint.
  2. Five or more minor cutouts (1 foot out of the pole).
  3. One or more major cutouts (2 feet out of the pole, uncontrolled).
  4. Failing to test de-energized before grounding.
  5. Energizing before removing a ground.
  6. Putting grounds on by hand.
  7. Contacting uncovered conductor with an unprotected part of the body.
  8. No rubber gloving off of the pole.
4. The total time to complete the test.
  1. Complete the test in 59 minutes or less.

**Test Standard:** To pass, you must:

1. Complete the test in 59 minutes or less.
2. Obtain an overall rating of "1" or higher.
3. Not commit any automatic failure actions.

If you commit any of these actions, the test will stop, and you will fail. You will not proceed to subsequent tests if you fail. You will not be given a retest opportunity.

Images of the **Primary Dead End Change Out** assessment:



## Distribution – Cut Out Change Out

**Overview:** The Cutout Replacement test evaluates your ability to safely and efficiently change out the outside southside cutout from a bucket truck with another Qualified Electrical Worker (QEW) in the bucket. You can use the rubber glove or stick method, or a combination of both. You must maintain a 12kV Minimum Approach Distance (M.A.D.) and ensure the safety of the QEW, who will not perform any tasks unless instructed by you.

**Task:** You will change out the cutout while maintaining safety protocols and proper communication with the QEW and ground personnel.

### ***Prior to Test:***

1. You will receive detailed instructions for the assessment.
2. You will sign a score sheet to confirm you understand the instructions.
3. You will gather all needed tools and equipment.

### ***During the Test:***

#### **Tailgate:**

1. You will provide the test administrator with a tailgate, including a description of the tasks to be performed.
2. You will put on personal protective equipment (PPE).

#### **Ascent:**

1. Start the timing device when you begin raising the bucket with the QEW.

#### **On Pole Tasks:**

1. Set up the handline and cover conductors as needed.
2. Use the mechanical jumper to bypass the cutout.
3. Open the cutout door and remove the leads.
4. Remove and reinstall the cutout.
5. Reconnect the leads and close the cutout door.
6. Remove the jumper and covers.

#### **Descent:**

1. Descend in the bucket with the QEW and handline.



2. When the bucket reaches the ground, the test is complete, and the timing device will stop.

**Cut Out Change Out Score:** Your score on the Cut Out Change Out assessment will be based on the following:

1. Completing each task (e.g., removing cutout leads).
2. Quality ratings for bucket operation, use of live line tools, use of cover, communication, and maintaining M.A.D..
3. Avoiding automatic test failure actions.
  1. Opening the cutout without the jumper in place.
  2. Uncontrolled energized conductor.
  3. Connecting opposite phases with the jumper.
4. The total time to complete the test.
  1. Complete the test in 42 minutes or less.

**Test Standard:** To pass, you must:

1. Complete the test in 42 minutes or less.
2. Obtain an overall rating of "1" or higher.
3. Not commit any automatic failure actions.

If you commit any of these actions, the test will stop, and you will fail. You will not proceed to subsequent tests if you fail. You will not be given a retest opportunity.



Images of the **Cut Out Change Out** assessment:



## Distribution – Terminate 200 Amp Elbow

**Overview:** The 200A Elbow Termination test evaluates your ability to safely and efficiently terminate a 200A elbow on 2 solid cable.

**Task:** You will terminate the 200A elbow while adhering to safety protocols and maintaining proper communication with the electric line assistant.

### ***Prior to Test:***

1. You will receive detailed instructions for the assessment.
2. You will sign a score sheet to confirm you understand the instructions.
3. You will gather all needed tools and equipment.

### ***During the Test:***

#### **Tailgate:**

1. You will provide the test administrator with a tailgate describing the tasks to be completed.

#### **Test Tasks:**

1. Start the timing device.
2. Measure and cut the H1B bushing.
3. Mark and strip the cable jacket.
4. Measure and cut for the turn back and semi-con.
5. Apply aqua seal and electrical tape.
6. Secure concentrics with bleeder wire and make final cuts.
7. Remove semi-con and insulation for the lug.
8. Apply and squeeze the lug with the MD-6 battery press.
9. Clean, grease, and attach the elbow and probe.
10. Attach the bleeder wire and stop the timing device.

**Terminate the 200 Amp Elbow Score:** Your score on the Terminate the 200 Amp Elbow assessment will be based on the following:

1. Completing each task (e.g., training concentrics and bleeder wire).
2. Quality ratings for measurements and tool use.
3. Avoiding automatic test failure actions.
  1. Insulation showing below the elbow.
4. The total time to complete the test.
  1. Complete the test in 26 minutes or less.

**Test Standard:** To pass, you must:

1. Complete the test in 26 minutes or less.
2. Obtain an overall rating of "1" or higher.
3. Not commit any automatic failure actions.

If you commit any of these actions, the test will stop, and you will fail. You will not proceed to subsequent tests if you fail. You will not be given a retest opportunity.

Images of the **Terminate the 200 Amp Elbow** assessment:



## Distribution – Isolate and Ground 3 Phase Cable

**Overview:** The Loadside Loadbreak Elbows Isolation test evaluates your ability to safely and efficiently isolate the 3 loadside loadbreak elbows (marked with white tape) and ground at a 3-phase pad mount transformer. You will then remove the grounds and re-energize the system. You must maintain the Minimum Approach Distance (M.A.D.) on the hot stick throughout the test.

**Task:** You will isolate and ground the loadside loadbreak elbows, then remove the grounds and re-energize the system while adhering to safety protocols and maintaining proper communication with the electric line assistant.

### ***Prior to Test:***

1. You will receive detailed instructions for the assessment.
2. You will sign a score sheet to confirm you understand the instructions.
3. You will gather all needed tools and equipment.

### ***During the Test:***

#### **Tailgate:**

1. You will provide the test administrator with a tailgate that describes the tasks to be completed.

#### **Test Tasks:**

1. The test administrator will tell you to begin and start the timing device.
2. Identify the loadside cable.
3. Use a shotgun stick to place the standoff feedthroughs in the transformer.
4. Open the elbows.
5. Stand off the cables on the standoff feedthroughs to isolate and de-energize the cable.
6. Test and ground the de-energized cable.
7. Remove the grounds and energize the cable.
8. When the cable is energized, stop the timing device.

**Isolate and ground 3 Phase Cable Score:** Your score on the Isolate and ground 3 Phase Cable assessment will be based on the following:

1. Completing each task (e.g., identifying the cable).
2. Quality ratings for tool use, use of live line tools, maintaining M.A.D., and communication.
3. Avoiding automatic test failure actions.
  1. Grounding without testing de-energized.
  2. Grounding energizing cables.



3. De-energizing the transformer (wrong cable).
4. The total time to complete the test.
  1. Complete the test in 23 minutes or less.

**Test Standard:** To pass, you must:

1. Complete the test in 23 minutes or less.
2. Obtain an overall rating of "1" or higher.
3. Not commit any automatic failure actions.

If you commit any of these actions, the test will stop, and you will fail. You will not proceed to subsequent tests if you fail. You will not be given a retest opportunity.

Images of the **Isolate and ground 3 Phase Cable** assessment:



## Distribution – Phase a Pad Mount Switch

**Overview:** The Phasing Set test evaluates your ability to safely and efficiently use a phasing set to phase Way 1 and Way 2 at a pad mount switch with another qualified electrical worker (QEW). You must maintain the Minimum Approach Distance (M.A.D.) on the hot stick and ensure the safety of the QEW, who will not perform any tasks unless instructed by you.

**Task:** You will phase Way 1 and Way 2 at a pad mount switch while adhering to safety protocols and maintaining proper communication with the QEW.

### ***Prior to Test:***

1. You will receive detailed instructions for the assessment.
2. You will sign a score sheet to confirm you understand the instructions.
3. You will gather all needed tools and equipment.

### ***During the Test:***

#### **Tailgate:**

1. You will provide the test administrator with a tailgate describing the tasks to be completed.

#### **Test Tasks:**

1. The test administrator will tell you to begin and start the timing device.
2. Identify the switch positions to be phased.
3. Remove the caps and check the bushings.
4. Assemble the phasing set and change the setting to line phase.
5. Working with the QEW, phase the two positions.
6. Reinstall the caps using the shotgun stick.
7. When you reinstall the caps, stop the timing device.

**Phase a Pad Mount Switch Score:** Your score on the Phase a Pad Mount Switch assessment will be based on the following:

1. Completing each task (e.g., identifying the cable).
2. Quality ratings for tool use, use of live line tools, maintaining M.A.D., and communication.
3. Avoiding automatic test failure actions.
  1. Not checking for no phase.
  2. Not differentiating between phase and no phase.
4. The total time to complete the test.
  1. Complete the test in 17 minutes or less.

**Test Standard:** To pass, you must:

1. Complete the test in 17 minutes or less.
2. Obtain an overall rating of "1" or higher.
3. Not commit any automatic failure actions.

If you commit any of these actions, the test will stop, and you will fail. You will not proceed to subsequent tests if you fail. You will not be given a retest opportunity.

Images of the **Phase a Pad Mount Switch** assessment:





## Test Taking Strategies

The following section includes tips for taking a wide variety of tests in addition to specific strategies for success on the Journeyman Lineman Technical/Physical Abilities Assessment.

Strength and endurance training is beneficial for your health regardless of whether you are taking the physical abilities test. If you are not currently involved in strength training and/or you are not currently working in a physically demanding job, it may be helpful to consider these tips and suggestions.

*Note: You should always check with your doctor before engaging in any physical training program.*

### **Before the Test**

**Prepare!** One of the best ways to succeed during the physical abilities assessments is to prepare both physically and mentally. Being a Journeyman Lineman requires physical strength, endurance, and flexibility. Working out, lifting weights, and stretching prior to testing may aid in your success (see Further Resources section for suggestions on how to improve your physical abilities).

**Be consistent.** Being consistent is important when building strength and endurance. Take time off to rest, when necessary, but a consistent routine can help you stay on track.

**Rest and eat right.** Make sure you get plenty of rest and eat healthy while you are training, especially the days leading up to the test and the day of the test.

### **When You Begin**

**Be positive!** These assessments are not designed to trick you or be unnecessarily difficult. Start with a positive attitude and don't give up! While this type of testing may be new to you, remember that you are not expected to be an expert Lineman when taking this test.

**Pay close attention to all test instructions!** Make sure to follow all directions provided. To ensure that you perform at your best and do not get injured, pay attention to all test instructions. Make sure to assume the correct body positioning and perform the assessments as instructed.

**Get ready.** Take part in the warm-up and stretching exercises prior to testing.

**Relax.** Ways to reduce feelings of stress include not talking with others who are stressed about the test immediately beforehand, making sure you understand the directions, and reviewing this guide. See the following section for resources on relieving test-related stress.

## **During the Test**

**Make good choices.** If you do not feel well or have reason to believe you cannot safely perform the assessments (e.g., illness, injuries, etc.), reschedule your testing session. There will be other opportunities. Your health and safety are of utmost importance.

**Listen to your body.** If you experience any unexpected pain during stretching or testing, stop!

**Utilize given materials.** Be sure to carefully review this guide. In addition to this guide, you will be provided with information regarding the five Transmission and seven Distribution assessments on the day of your test session. Use the information discussed in this guide and on-site when taking the test. Asking questions for clarification is encouraged!

## FURTHER RESOURCES:

*Note: You should always check with your doctor before engaging in any physical training program.*

The following resources contain information that may be helpful when developing your strength and endurance. If you choose to perform the following exercises, make sure you understand the proper techniques and form. If you do not perform them the correct way, you may not see improvement – worse yet, you risk getting injured.

SDG&E is in no way affiliated with any of these resources, they are simply listed as suggestions.

### Testing Strategies: Technical/Physical Abilities Assessment

The Journeyman Lineman Technical/Physical Abilities Assessment measures muscular strength, endurance, flexibility, pole climbing, and mechanical ability. Listed below are strategies that may help to improve your success.

### Muscular Strength Training:

- **Upper Body Strength Training:** The physical abilities test requires upper arm strength. Some basic exercises that focus on these muscle groups include wrist curls, concentration curls, hammer curls, and chin-ups.
  - Suggested Resource: *20 Minute Upper Body Home Workout* from Asphalt Green: <https://www.asphaltgreen.org/blog/20-minute-upper-body-home-workout>
- **Abdominal Strength Training:** The physical abilities test requires abdominal strength. Ways to increase your core strength include workouts such as planks, crunches, sit-ups, and bridges.
  - Suggested Resource: *Slide Show: Exercises to Improve Your Core Strength* from Mayo Clinic: <https://www.mayoclinic.org/healthy-lifestyle/fitness/multimedia/core-strength/sls-20076575?s=1>
- **Trunk/Lower Back Strength Training:** The physical abilities test requires lower body strength. Some basic exercises that focus on these muscle groups include workouts such as squats, calf raises, dumbbell rows, back extensions, and stiff legged dead lifts.
  - Suggested Resource: *10 Lower Body Workouts Anyone Can Try at Home* by Sergio Pedemonte for Lifehack: <https://www.lifehack.org/833817/lower-body-workout>

### **Endurance Training:**

- The physical abilities test requires endurance. Some basic exercises to increase your endurance include walking, jogging, swimming, and biking.
  - Suggested Resource: *Best Exercises to Improve Stamina* by Naveed Saleh for MDLinx: <https://www.mdlinx.com/article/best-exercises-to-improve-stamina/lfc-4133>

### **Flexibility Training:**

- Ways to increase your flexibility include practicing yoga and stretching. Some common stretches include hamstring stretches, hip flexor stretches, cross-body shoulder stretches, and touching your toes.
  - Suggested Resource: *12 Stretching Exercises to Increase Your Flexibility* by Adam Evans for Lifehack: <https://www.lifehack.org/877492/how-to-become-flexible>

### **Pole Climbing:**

- Due to safety precautions, it is **not** recommended that you practice pole climbing prior to the assessment. It is not expected that you will be an expert pole climber when first taking the assessment! Rather, consider if you have a fear of heights and, if so, if the job is a good fit for you.

### **Mechanical Ability**

- Mechanical ability generally refers to one's ability to effectively use and maintain machinery. Additionally, mechanical ability requires proper identification and knowledge of tools.
  - Some tools you may want to be able to identify and properly use for this test include carriage bolts, washers, nuts, screws, hammers, lock pliers, screwdrivers, and wrenches.

### **Additional Resources:**

- Very Well Fit: Strength Training Exercises & Workouts
  - <https://www.verywellfit.com/strength-weight-training-4157132>
- Shape Fit: Strength Training Benefits – Lift Weights for Overall Wellness
  - <https://www.shapefit.com/exercise/strength-training.html>
- Wikipedia: List of Weight Training Exercises
  - [https://en.wikipedia.org/wiki/List\\_of\\_weight\\_training\\_exercises](https://en.wikipedia.org/wiki/List_of_weight_training_exercises)

### Additional Test Taking Strategies:

General test taking strategies that may be particularly useful and relevant to this test include reducing test-related anxiety and attention to detail.

- **Test Anxiety:** *10 Ways to manage and overcome test anxiety.* An article from University of Colorado Boulder for Health and Wellness Services explaining the signs of test anxiety and suggestions on how to best manage it.
  - **Web address:** <https://www.colorado.edu/health/blog/test-anxiety>
- **Stress Tolerance:** *Best Ways to Manage Stress:* An article from Harvard Health Publishing for Harvard Medical School explaining the stress response, how to recognize it, and how to manage it.
  - **Web address:** <https://www.health.harvard.edu/mind-and-mood/best-ways-to-manage-stress>
- **Attention to Detail:** *6 Tips and 4 Exercises to Improve Your Attention to Details:* An article from New Health Advisor providing tips to improve attention to detail.
  - **Web address:** <https://www.newhealthadvisor.org/how-to-improve-attention-to-detail.html>