# Scope

This micro-credential lists the fundamental requirements for a person to demonstrate proficiency aligning shafts within the wind turbine using a laser shaft alignment system.

# MICRO-CREDENTIAL Laser Shaft Alignment

* 1. Did the trainee complete all Workplace Safety Training topics?
     1. Trainee MUST
        1. Have completed ALL Workplace Safety Training topics prior to attempting this competency
  2. Did the trainee perform a hazard assessment for the work about to be demonstrated?
     1. Trainee MUST
        1. Perform a hazard assessment for the area in which they are to demonstrate laser shaft alignment.
        2. Use safety glasses as a minimum requirement for PPE
        3. Verbally communicate to the evaluator and include all recognized hazards
        4. Identify the rotating shaft and entanglement hazards specifically
     2. Proper PPE MUST
        1. Be selected and inspected for the hazards identified
  3. Did the trainee perform the required steps for work at the turbine?
     1. Trainee MUST
        1. Verbalize and/or demonstrate the steps that are required prior to shutting off the machine and climbing
  4. Did the trainee(s) set up the laser equipment correctly?
     1. Trainee(s) MUST
        1. Set up and install the laser measurement equipment according to the turbine and manufacturer recommended procedures
        2. Demonstrate to the evaluator the plan to keep cable and equipment safe from entanglement, impact and crushing BEFORE the machine shafts are rotated
           1. all measurements MUST be taken and reported in metric units of millimeters(mm)
        3. Demonstrate creating a new file for the machine to be measured
        4. Measure and enter all of the required dimensions for the tool to operate
  5. Did the trainee(s) make adjustments and re-measure the machine alignment until the machine was in alignment tolerance?
     1. Trainee(s) MUST
        1. Make adjustments and re-measure the machine alignment
           1. The adjustment and re-measure MUST continue until the machine is aligned within tolerance or the evaluator instructs the trainee(s) to cease the demonstration. The tolerance that is to be used is the tolerance specified in the service manual or 0.3mm all directions; whichever is LESS
  6. Did the trainee(s) save the final measurements into the file which was created in Step E?
     1. Trainee(s) MUST
        1. show the evaluator the file containing the final results
     2. Evaluator MUST
        1. Open the file and view the results
           1. The results MUST be printed to a thumb drive by the trainee(s) (or evaluator). A PDF file containing the results MUST be emailed with the competency form to receive credit.
  7. Did the trainee(s) disassemble and store the tool away properly?
     1. Trainee(s) MUST
        1. Disassemble and store the tool away properly in the storage box
           1. Any damages to the tool MUST be noted and brought to the attention of a wind turbine technician instructor
  8. Did the trainee(s) perform the steps to place the turbine back into operation?
     1. Trainee(s) MUST
        1. Demonstrate that the machine is fault free and ready to run
        2. Demonstrate calling the operations center and informing that all work is complete
        3. Demonstrate enabling the remote access function of the machine
           1. For purposes of testing, demonstration may be a verbalized explanation of the process
  9. Did the trainee(s) complete all paperwork correctly?
     1. Trainee(s) MUST
        1. Complete a damage and service report
        2. Turn in reports with the competency report to receive credit
           1. The trainee(s) MUST include the .pdf file of the alignment measurements to receive credit
  10. Did the trainee(s) perform all tasks in a safe manner?
      1. Trainee(s) MUST
         1. Use all PPE and practice the safety steps required for work on a wind turbine system