Sample PV Hands-on Lab Activity Form

Date: Sept 24, 2011 **Class:** Introduction To PV (PV-1)

Instructor: Robert Peabody **Time Allotted for Lab**: 2 hours

Lab Title: PV Roof Racking Standoff Installation

1. Lab description. The class will install standoffs for a PV racking system according to the project plans and specifications provided to each student.

2. Instructional objectives. Participants will accurately measure, layout and install the standoffs required for the racking system of a 2 kW grid tied PV array, according to the plans (provided) and following the installation requirements (as stated below).

3. Safety. Students must have completed the Fall Protection Safety class and are required to attend the Standoff lab Safety Meeting to be able to participate.

4. Facilities. Outside half gable roof mock up with safety rail.

5. Supplies. Students to bring their own tool pouch, tape measure & hand tools.

6. Safety. Harnesses and lanyards will be provided. Students should bring their own personal protective equipment (PPE).

7. Equipment. Digital camera, deep stud detector, laser level, and Sol Metric Suneye.

8. Tools. Two (2) portable drills, two (2) portable impact drivers, chargers for both, deep sockets & drill bit sets, two 3/8" socket wrench sets, four (4) channel lock pliers, 50 foot tape, and chalk line.

9. Materials. Pro Solar fast jack standoffs with bases, stainless steel lags bolts and washers, Oatey Roof Boots, six tubes of Sikaflex UV-rated sealant, standoff shims.

10. Procedures. Plans and specifications (provided) to be read and understood before installation.

    a. All participants will understand and follow the safety requirements of the job.
    b. Participants will accurately evaluate structural layout and rafter condition.
    c. Roof surface will be evaluated concerning mounting condition and corrective action taken, if required, before install.
    d. The location of standoffs will be determined using the plans (provided) and through accurate measurements. Measurements should be double checked and confirmed.
    e. Rafters will be accurately located and pilot holes drilled in the center of

rafters only.

f. Standoffs will be attached using the appropriate lag bolts (provided). Standoffs will be correctly flashed and UV rated sealant applied as per the plans.

11. Documentation/ Data recording requirements
    a. Record the start time and finish time of the job.
    b. Take digital pictures before, during the install, and after completion.
    c. Verify the plans and document any discrepancies or site related problems.
    d. Record the on-center spacing of the rafters. (16" O.C., 24" O.C., etc.)
    e. Measure and record the finished layout of the standoffs and note any differences to the measurements on the plans.

12. Results / Conclusions. Each student must write a detailed report of the project.

13. Student Evaluation: Based on participation and standoffs lab quiz.