Department of Examinations and Assessment

Louisiana State Licensing Board for Contractors

LSLBC

Solar Energy Equipment

Solar Energy Equipment

The following is excerpted from the Louisiana Administrative Code 46:XXIX, Chapter 3, Section 319 (i.e., the Rules and Regulations of the Board):

A. Contractors applying for the classification of Solar Energy Equipment, must, in addition to all other application or licensing requirements, meet the following requirements prior to issuance of this classification:

1. Hold one or more of the following major classifications:

    a. Building Construction
    b. Electrical Work
    c. Mechanical Work
    d. Residential Building Contractor

2. Complete training in the design of solar energy equipment by an entity and course approved by the board.

3. Pass a written examination approved by the State Licensing Board for Contractors on the installation and maintenance of solar energy equipment.

    a. Any contractor licensed by the State Licensing Board as of August 1, 2014, holding the major classification of Building Construction, Electrical Work (Statewide) and/or Mechanical Work (Statewide) shall be deemed to have met this examination requirement.

    b. An applicant who holds a current Solar PV Installer Certification for solar electric systems or a current Solar Heating Installer certification for solar thermal hot water systems issued by the North American Board of Certified Energy Practitioners shall be deemed to have met both this examination requirement and the training requirement in 1115(A.)(2.).

B. Any work performed to connect wiring or hookups for any photovoltaic panel or system wherein the panel or system is of a value, including labor, materials, rentals, and all direct and indirect project expenses of $10,000 or more shall be performed only by a contractor or subcontractor who holds the classification of Electrical Work or who may perform Electrical Work under the provisions of La. R.S. 37:2156.2(IX)(B.).

C. Any work performed to connect piping or equipment for any solar thermal system wherein the system is of a value, including labor, materials, rentals, and all direct and indirect project expenses of $10,000 or more shall be performed only by a contractor or subcontractor who holds the classification of Mechanical Work or who may perform Mechanical Work under the provisions of La. R.S. 37:2156.2(IX)(B.).

D. Entities engaging in the business of selling or leasing solar energy equipment wherein such entities enter into agreements for installing, servicing, or monitoring solar energy equipment, including entities engaged in the business of arranging agreements for the lease or sale of solar energy systems or acquiring customers for financing entities, must possess a state contractor's license with the classification of Solar Energy Equipment. Contractors licensed in the state as of August 1, 2014 holding the major classifications of Building Construction, Electrical Work Statewide or Mechanical Work Statewide shall be deemed to have met the examination requirement.

Solar Energy Equipment is a **closed book** examination with 100 multiple-choice questions covering the basics of this trade. You will have **four hours** to complete this examination.

Listed below is only a sample of the many good references available on this subject which may be helpful in studying for this examination. This is not a comprehensive listing. Please note that it is not necessary to read all of the books in order to pass the examination. Rather, this list is intended to suggest what types of books might be useful in helping to acquire the basic knowledge needed to perform this type of work.

We try to keep this list current with books in print, but some books go out of print from time to time. These books may be available in your local library's collection or through your local library by using the services of Inter-Library Loan.

If still in print, these books may also be available through your local bookstore or by contacting the publisher.

All references available via the internet are followed by the appropriate website address for obtaining the reference. From time to time, website addresses may change and no longer be available. In such cases, please search for the appropriate new website address or contact the publisher or a library to obtain a copy.

Content Outline

Solar Thermal Systems	**11%**	**General Knowledge and Photovoltaic Theory**	**15%**
Piping Interconnections and Components	**7%**	**Permitting, Interconnections of Utilities and Inspection**	**8%**
Electrical Interconnections and Components	**15%**	**Safety**	**10%**
Estimating and Project Design	**10%**	**Service and Maintenance**	**8%**
Design and Calculations	**16%**		

2012 Solar Electricity Handbook, Boxwell,Michael; Greenstream Publishing; UK; 2012.

2012 Uniform Solar Energy Code, IAPMO/ANSI USEC1-2012; International Association of Plumbing and Mechanical Officials; Ontario, CA, 2012.

2014 National Electrical Code; National Fire Protection Association; Quincy, MA; 2014.

Photovoltaic Systems; Second Edition; Dunlop, James; American Technical Publishers, Inc.; Orland Park, IL; 2010.

NCCER Solar Photovoltaic Systems Installer, Trainee Guide; National Center for Construction Education and Research; Pearson; New York; 2011.

Standard for Installing and Maintaining Photovoltaic (PV) Power Systems, NECA 412-2012; National Electrical Contractors Association; Bethesda, MD; 2012.

References Continued

Solar Water Heating Systems: Fundamentals and Installation; International Pipe Trades Joint Training Committee, Inc.; American Technical Publishers, Inc.; Orland Park, IL; 2013.

Safety and Health Regulations for Construction; Code of Federal Regulations, Title 29, Part 1926; U. S. Department of Labor, Occupational Safety and Health Administration; Washington, D.C. https://www.osha.gov/

Introduction to Solar Principles; Kissell, Thomas E.; Prentice Hall; Boston; 2012.

Solar Electric Handbook; Second Edition; Solar Energy International; Pearsons Learning Solutions; Boston, MA 2013.

Solar Energy Photovoltaics and Domestic Hot Water; Plante, Russell H.; Academic Press; Waldham, MA; 2014.

Approved Solar Energy Equipment Training Providers and Courses

Following is a list of Solar Energy Equipment Training Course Providers and their courses that have been approved by the Louisiana State Licensing Board for Contractors. The contractor must already have the classifications of either Building Construction, Electrical Work, Mechanical Work or hold a Residential Building Contractor license. All contractors applying for the specialty of Solar Energy Equipment must have completed and provide proof to this Board of training in the design and installation of solar energy systems by an entity accredited by this Board.

In order for a contractor to add the specialty classification of Solar Energy Equipment to an existing Commercial License, the contractor must complete a written request or an Adding a Classification Form and pay all required fees associated with the additional classification.

Allied Business Schools, Inc.

George Achenbach, President

Course: *Introduction to Photovoltaic Systems Advanced Principles*

22952 Alcalde Drive
Laguna Hills, CA

888.501.7686

Alternate Energy Technologies, LLC

Tanya Meyer, Training Director

Course: *AET SOLAR THERMAL TRAINING*

1345 Energy Cove Court
Green Cove Springs, FL 32043
800.874.2190
904.297.9369
tanya@setsolar.com

Ambassador Energy, Inc.

Steve Fulgham / Catherine Kelso

Course: *Entry Level PV Design and Installation*

24630 Washington Avenue, Suite 102
Murrieta, CA 92562
866.586.1840
866.793.8001
www.ambassadorenergycollege.com

CleanEdison

Mike Hopper / Alan Cook, Instructors

Courses: *Entry Leve Solar PV Training*
Solar PV Mastery Training
Advanced Solar PV Training
Nivel Principiantede Energia Solar Fotovoltacia
Commercial and Utility Solar Mastery

2358 Maritime Drive, Suite 110
Elk Grove, CA 95758

888.513.3476
info@cleanedison.com www.cleanedison.com

Baton Rouge Community College

Lisa Verret

Course: *Solar Panel Design and Installation Program (NABCEP)*

888.501.7686

www.mybrc.edu

Delgado Community Colleges Technical Division

Kathy Storm

Course: *NABCEP Entry-Level Solar Electric*

22952 Alcalde Drive
Laguna Hills, CA

888.501.7686

BP Solar International, Inc. in association with **AMERESCO SOLAR**

John Dunlop, PE

Course: *Installing Code-Compliant Photovoltaic Systems*

800.899.7978
www.ameresco.com

Dow Solar

Carolyn Schlueter

Course: *Dow POWERHOUSE™ Solar Shingles Below-the-Roof Installation Training*

415.626.6465
caschlueter@dow.com

Eco Solar Technologies Inc.

Rich Cooley, President/CEO

Course: *Solar Thermal System Installer Certification Course*

6619 N Scottsdale Rd
Scottsdale, AZ 85250

480.284.5562
www.ecosolartechnologies.com

International Brotherhood of Electrical Workers/National Electrical Contractors Association /New Orleans Electrical Joint Apprenticeship and Training Committee

Alvin Riley

Course: *Photovoltaic Systems*

PO Box 58972
New Orleans, LA 70158

908.472.216

Enphase Energy

Peter Lum

Course: *Designing and Installing Systems with the Microinverter Technology*

1420 N. McDowell Blvd
Petaluma, CA 94954
877.797.4743
training@enphaseenergy.com
www.enphaseenergy.com

Lafayette Technical College

Louisiana Technical College, Lafayette Campus

Course: *NABCEP Entry-Level Solar Electric Systems*

1101 Bertrand Drive
Lafayette, LA 70508

337.262.5962

Florida Solar Energy Center

Course: *Install Photovoltaic System*

1679 Clearlake Road
Cocoa, FL 32922-5703

321.638.1010

Lennox Indoor Comfort Systems

D. Kevin Gates

Course: *SunSource Solar Electric*

318.709.5522

Louisiana CleanTech Network

Stephen Shelton

Course: *Louisiana CleanTech Network Solar*

504.343.4638

Ontility, LLC

Janet Hughes

Course: *Entry Level Solar Electric Systems*
Solar Thermal Design and Installation

877.858.7479

North American Board of Certified Energy Practitioners

Course: *NABCEP PV Entry Level Certificate of Knowledge*

800.654.0021
www.nabcep.org

Smart North America, Inc.

Ruth Page-Nelson

Courses: *Entry Level Training Provider for Solar Photovoltaics*
Entry Level Training Provider for Solar Hot Water
Solar Technical Sales, Business Operations, Design, Installation and Commissioning

1255 Collier Road, NW Suite 500
Atlanta, GA 30318
800.764.3085
334.685.0420
ruthn@smartgridnorthamerica.com

Louisiana Green Corps, Inc.

Angela Isla, Program Manager

Courses: *Advanced PV Installer Program*
PV Entry Level Program

PO Box 52444
New Orleans, LA 70152
855.648.3338 x704
www.lagreencorps.org
info@lagreencorps.org

Solairgen School of Solar Technology

Kelly Provence, Instructor

Courses: *PV201-OL PV Design and Installation*
PV203 PV System Design and Installation

119 Highway 52
West Dahlonega, GA 30533
800.262.7560
706.867.0678
info@solairgen.com

Solar Energy International

Johnny Weiss

Courses: *Solar Electric Fundamentals and Grid-Direct Design*
Photovoltaic Design and Installation

PO Box 715
Carbondale, CO
970.963.8855

www.solarenergy.org

Sun Pirate

Roger Coghlan

Courses: *Photovoltaic System Design and Installation*
Fundamentals of Solar Hot Water Heating

PO Box 187
Cotati, CA 94931

707.792.6929

Solar Energy Supply

Jason Garsee / Harold Butler

Course: *Photovoltaic Systems*

318.397.4147
877.397.4147

UMA Solar

Loren Zucconi

Courses: *UMA Solar-Entry Level Solar Electric Systems*
Solar Thermal Design and Installation

950 Sunshine Lane
Altamonte Spgs, FL 32714-3803

407.339.8267 x111

Solar University, Inc.

Michael Hynes

Course: *PV Installer Training Course*

5902 Las Positas Rd
Livermore, CA 94551

If you are a training entity that would like to be accredited by this Board, please contact us at examinations@lslbc.louisiana.gov.