



Abengoa Mojave Solar Project

Case Study on Solar Asset Life Cycle

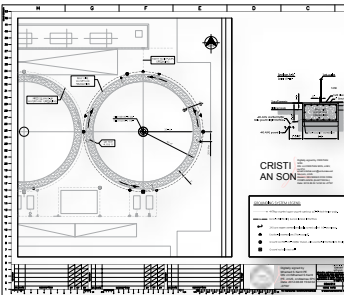
Design • Execution • Acceptance



Move Forward with Confidence

**BUREAU
VERITAS**

DESIGN



Civil

- Design Review – Codes / Standards
- Grading
- Erosion Control
- Review / Evaluation
- Storm Water Pollution Prevention Plan
- Evaluation
- Inspections
- Roads and Other Infrastructure
- California Public Works Green Book

Structural

- Plan Review to California Building Code
- American Society of Civil Engineers 0705
- Lateral Analysis
- Electrical

Electrical

- National Design Review
- National Electric Safety Code
- Institute of Electrical and Electronics Engineers (IEEE)
- General Order 95 for California Public Utilities Commission

Mechanical

- California Mechanical Code
- ASME – B31.1, B31.2, B31.3, B31.8 & B31.8S

Fire and Life Safety

- California Building Code
- California Building Fire Code
- National Fire Protection Association
- Safety to California Occupational Safety and Health Administration
- Fire Suppression and Fire Notification



EXECUTION



Site Inspection

- Civil
- Storm Water Pollution Prevention Plan
- Structural
- Electrical Transmission System Engineering
- Gas Transmission System Engineering
- Building
- Oversight of Special Inspections
 - Soil
 - Reinforced Concrete
 - Concrete Testing
 - Welding
 - Masonry

Shop and Source Inspection

- Electrical
- Mechanical
- Structural

Safety

- Workers Safety Inspection

ACCEPTANCE

Final Inspection License to Operate Certificate of Occupancy

Certificate of Occupancy	
XXXX Generating Station	
Department of Building Inspection	
<i>This certificate is issued pursuant to the requirements of Section 220.9 of the 2009 California Building Code certifying that at the time of issuance these structures are in compliance with the LCORS of the CBCS regulating building construction or use. For the following:</i>	
Use Classification: XXX	Bldg. Permit No.: XX-XXX-XX
Group: X	Use Zone: Industrial
Owner of Building: Power Company USA	Address: 123 Power Production Place
Type of Construction: X	Locality: Anytown, CA
Building Official: Kevin J. Williams	BY: Bureau Veritas North America, Inc. 180 Promenade Circle Sacramento, CA 95834
Date: _____	
This Certificate of Occupancy shall be posted in a conspicuous place on the premises and shall not be removed except by the Building Official.	

BUILDING INSPECTIONS REPORT	
Bureau Veritas North America, Inc. 180 Promenade Circle, Suite 100 Sacramento, CA 95834	
Phone: 916-617-0088	Fax: 916-617-0088
www.bvbuildingquality.com	
<input type="checkbox"/> APPROVED <input checked="" type="checkbox"/> DISAPPROVED <input type="checkbox"/> REINSPECTION REQUIRED	
DATE/TIME:	WEATHER:
TIME:	DELAY REASON:
PROJECT: American Mutual Solar Project	
CONTRACTOR: _____	
INSPECTOR: _____	
TYPE OF INSPECTION: _____	
AREA/MATERIALS INSPECTED: _____	
REPORT DELIVERED TO: <input checked="" type="checkbox"/> CONTRACTOR <input checked="" type="checkbox"/> ENGINEER/ARCHITECT <input type="checkbox"/> BUILDING DEPT. <input type="checkbox"/> OWNER	
MAKE THE FOLLOWING CORRECTIONS AND SECURE INSPECTION APPROVAL TO PROCEED WITH THIS PHASE OF WORK:	

COMMENTS:	

VISITORS:	



Bureau Veritas and the Abengoa Mojave Solar Project

The 250MW Abengoa Mojave Solar Project, scheduled to go into service 2013, will supply electricity to Pacific Gas & Electric. The project will help the State of California move toward its goal of 4,300 additional megawatts of solar power production. The project will generate enough electricity to power approximately 90,000 homes and alleviate over 430 kilotons of greenhouse gas emissions annually. The sun will provide 100% of the power supplied to the project through solar-thermal collectors; no supplementary fossil-based energy source will be utilized for electric power production.

Bureau Veritas has been involved in the Abengoa Mojave Solar Project on many levels. Many of the materials used in the construction of this project were inspected by Bureau Veritas in the facilities in which they were manufactured. Shop inspection of this type helps to mitigate the risk embedded in the purchase of materials and adverse effects to the asset. Inspections are conducted to ensure that the specifications and requirements of the project design are adhered to by manufacturers. In addition, many of these materials were shipped to the project site in Bureau Veritas inspected shipping containers.

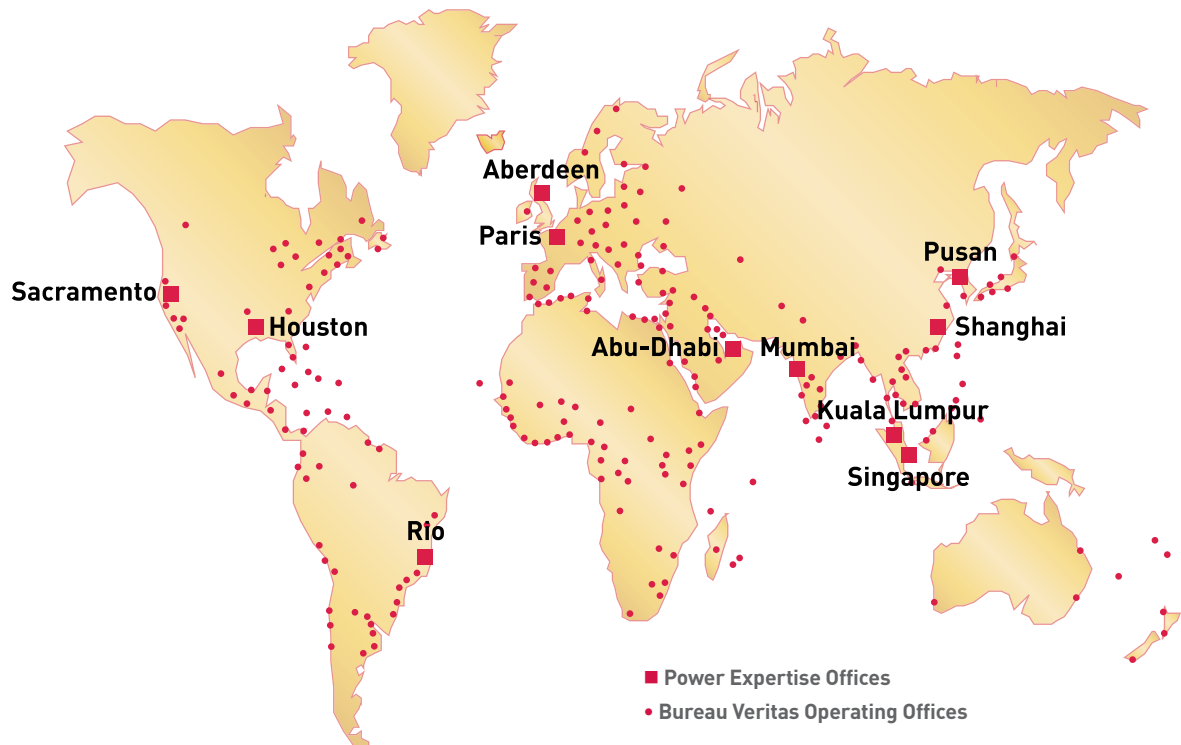
Bureau Veritas was selected by the California Energy Commission (CEC) to serve as the Delegate Chief Building Official (DCBO) for the Abengoa Solar Mojave Solar Project. Bureau Veritas provides verification that the project is constructed per approved plans and specifications and that the project is compliant with California Codes and Standards. As DCBO Bureau Veritas provides plan review, site inspection, safety officer services and fire plan review, safety and inspection services. In addition, Bureau Veritas will provide assistance for the entire document review and control process, as well as provide an archive of all completed work fulfilling technical requirements. In addition, the entire plan review process is being implemented online to minimize time, costs, and paper waste. Bureau Veritas provides assurance that the Abengoa Mojave Solar project is built in compliance with all applicable codes and standards and that the integrity of the project is not compromised during the design, execution and acceptance phases of the project.

With 47,000 employees across the globe Bureau Veritas provides industrial, technical, and local expertise that is unsurpassed. Bureau Veritas has over 3,000 QHSE professionals in over 80 offices across the United States, and operations in over 1,000 offices in 140 countries, developing solutions that contribute to risk prevention and performance improvement to help projects create long-term value through our technical and regulatory expertise.



WORLDWIDE NETWORK & EXPERTISE

Bureau Veritas has offices in 140 countries. Our main Power Generation offices bring together multi-disciplinary teams of experts and engineers in all disciplines required in the life cycle of any type of power generation plants. With this dedicated organization, we serve national power companies, IPP's, engineering companies, equipment suppliers and utilities.



ABOUT BUREAU VERITAS

Founded in 1828, Bureau Veritas is a service company specializing in the fields of Quality Assurance, Environmental, Health, and Safety. Bureau Veritas assists its clients with the management of their assets, personnel, and systems to provide a measure of their current compliance with applicable standards, and gap analysis to help them achieve future compliance.

Bureau Veritas routinely works with national and international power & utilities companies, engineering companies, turnkey contractors, or equipment suppliers.



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