PV Systems Integrator Workshop
Clarion Hotel, San Jose
Wednesday, March 31- Thursday, April 1, 2010

Wednesday, March 31, 2010	
7:30 AM - 8:00 AM	**Registration and Continental Breakfast**
8:00 AM - 9:00 AM	**Introduction to the Workshop and Department of Energy perspective** • *Kevin Lynn, U.S. Department of Energy, Solar Energy Technologies Program* • *Charles Hanley, Sandia National Laboratories*
9:00 AM – 9:25 AM	**Results of Registration Survey** • *Jennifer Granata, Sandia National Laboratories*
9:25 AM – 9:45 AM	**Integrator Business Model I** What happens between the phone call and system commissioning? A **full service integrator** discusses their business model • *Juris Kalejs, American Capital Energy*
9:45 AM – 10:05 AM	**Integrator Business Model II** What happens between the phone call and system commissioning? A **kW-MW integrator** discusses their business model • *Jeanine Cotter, Luminalt*
10:05 AM – 10:20 AM	**Break**
10:20 AM – 11:50 AM	**Tutorial: *Application of a Reliability Program Plan*** • *Dan Farley, Delphi*
11:50 AM – 12:50 PM	**Lunch (provided)**
12:50 PM – 1:20 PM	**Levelized Cost of Electricity Sensitivity Assessment** What are the potential cost and LCOE sensitivities when PV systems lack reliability? • *Chris Cameron, Sandia National Laboratories*
1:20 PM – 2:20 PM	**Interactive Exercise: "Steps to Integration"** Group will develop a comprehensive list of "Steps to Integration," each of which has reliability implications. Topics will include integrator functions and associated barriers to systems reliability. • *Bryan Pai, SENTECH, Inc.*
2:20 PM – 2:50 PM	**Introduction of GoldSim Model with Hypothetical PV System** • *Josh Stein, Sandia National Laboratories*
2:50 PM – 3:05 PM	**Break**
3:05 PM – 3:35 PM	**Sandia's PV Systems Reliability Tool Suite** o Boundary Diagrams o System FMEA approach o PVROM / PVRAM • *Michael Quintana and Jennifer Granata, Sandia National Laboratories*
3:35 PM – 3:50 PM	**Introduction of Module Field Failure Database** • *Ryan Smith, National Renewable Energy Laboratory*

Wednesday, March 31 continued	
3:50 PM – 5:00 PM	**Survey Session # 2** - Survey #2 will build on the results of the "Steps to Integration" exercise. The result will be a rank ordering of integrator functions that most influence system reliability and are primary candidates for research and development efforts. ***Please bring a laptop computer to session if possible.***
5:00 – 6:00 PM	**Networking Hour**
6:00 – 8:00 PM	**Luau Dinner (dinner provided, cash bar)**
Thursday, April 1, 2010	
8:00 AM – 8:30 AM	**Registration and Continental Breakfast**
8:30 AM – 9:30 AM	**Results of Survey #2** • *Jennifer Granata, Sandia National Laboratories*
9:30 AM – 11:45 AM	**Exercise to Identify High Priority, High Value Opportunities for Improved Reliability** This session will result in the identification of opportunities to develop methods, tools, standards, models, and other resources that may assist integrators in addressing reliability issues. The group will address the impact of the top reliability issues identified in Survey # 2 on Wednesday. Issues will be discussed in the contexts of financing, system designs, O&M strategies and costs, and PV system marketability. • *Bryan Pai, SENTECH, Inc.*
11:45 AM – 1:00 PM	**Lunch (provided)**
1:00 – 2:30 PM	**Sandia Integrated PV Model Discussion** Demonstration of an integrated PV performance, weather, reliability and O&M model being developed at Sandia. This session may present the opportunity for interactive input, depending on audience interests. • *Josh Stein, Sandia National Laboratories*
2:30 – 3:00 PM	**Feedback and Wrap-up** Integrators are the face of the PV industry. Your understanding and management of reliability issues can significantly impact the ability of PV to penetrate the energy generation sector. Our wrap-up session will include an opportunity for participants to discuss how the results will help them better understand and address reliability of PV systems and identify any unresolved issues that present an opportunity for further discussion. • *Michael Quintana, Sandia National Laboratories* • *Bryan Pai, SENTECH, Inc.*