Wed., Feb. 27, 3:00 Final Discussion

The final discussion reviewed many of the complex topics covered during the two days. The following summary attempts to convey both the comments that represented a consensus and the comments that were controversial. Note that consensus was based on the comments made via microphone, not by a show of hands.

There was a clear consensus regarding the need to broaden the conversation. The current task groups do not address all aspects of system performance. There is clear interest in including such topics as:

- Durability/reliability of cabling (see the poster with the electrocuted rat!)
- Junction box issues
- Inverter and microelectronics interactions. For example, PID may be addressed by grounding the negative side of the array, but not all inverters allow this.
- Trackers and energy storage systems, which affect the end result.
- Increased focus on safety, including issues related to system design.

These issues could be addressed by a separate task force, but there are many topics that should be discussed together, so enlarging the current task force would be better.

Similarly, there was agreement that the discussion needs to include all stakeholders. This workshop is designed to be a “nerdfest” for reliability engineers; however, when it comes time to define the final rating system, all stakeholders should be consulted. Given the movement of manufacturing abroad, the foreign manufacturers must also be included.

In contrast, there was no agreement upon the best way to communicate the results of the test (whether A, B, C, numerical ratings, spider plots, climate-specific rankings, city-specific rankings, etc.). We don’t have a clear vision of how the rating system will turn out to be useful. Currently, companies tend to differentiate products according to the market segment (residential vs. utility). The aesthetics and safety class ratings may drive the differences, or the company may be selling the same product with a different marketing package. A suggestion was made that the primary cost drivers will be differentiated by mechanical stresses, rather than by difference in temperature. Also, it is not clear who should make each of the decisions. Many more conversations will be needed to develop a consensus on these choices.

The following are points on which the community continues to agree:

- We would like to predict the service lifetime, rather than stopping at a comparative test. We should keep our eyes on that end goal—even if it cannot be achieved today.
- The tests must combine stresses, rather than applying the stresses separately.
- The tests must have direct relationship to customer satisfaction.
- The use environment includes the mounting system as well as the climate.
- System maintenance/inspection will be important, though it’s not clear if/how this should be included in the work of the task force.
- Quality control during manufacturing is essential; the design certification is meaningless if the design quality is not controlled. Products coming from some companies today have variable quality.
- The workshop’s requirement of each organization presenting work strengthens the meeting. Sharing of information benefits all of us.