# NFRC Solar Spectrum Task Group

***Chair: Joe Hayden/Pella Corporation***

*Report by: William C. duPont/Sunergy Consulting*

## Status Update

March 23, 2015

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# Current TG Objectives

**This task group shall analyze the use of standard solar spectrum/spectra for NFRC use, which affects simulated Solar Transmittance and SHGC ratings. This includes the following four tasks:**

1) **Create a documented advantage-disadvantage assessment of changing spectra, including an assessment of the effect on stability in NFRC programs.**
   *Document any issues with the current spectrum and how the proposed changes would address these issues.*

2) **Investigate new/existing standard solar spectra for NFRC use based on current best knowledge of solar energy and selected environmental conditions and compare the new spectra to the current spectrum.**
   *Document how any new/existing spectra is better or more accurate than the current spectrum for NFRC programs.*

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# Current TG Objectives

*(continued)*

**3) Strive to have any new/existing spectra adopted by a standards organization (ASTM, ISO, etc.), if applicable.**
*A documented effort should be made for international harmonization both of the spectra and its use.*

**4) Create a documented assessment (including pros and cons) of changing calculation methodology:**
***FROM:*** *Direct solar spectra at normal incidence.*
***TO:*** *Updated direct solar spectra at normal incidence combined with diffuse solar spectra at hemispherical angle of incidence.*
• *Include implications of the new methodology being out of alignment with ISO 15099 and/or the need to update ISO 15099.*

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# Task Group Members

Joe Hayden (chair)
Dennis Anderson
Mike Buchanan
Dave Cooper
Charlie Curcija
Willie duPont
Chris Gueymard
Jacob Jonsson
Jim Larsen
Roger LeBrun
Christian Kohler
Bipin Shah
Tim Singel
Jason Theois
Mike Thoman
Dan Wacek

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# Activities & Summary since September 2014

- Conducted 7 conference calls
- Extensive discussion about the justification to change from existing standard
  - Some feel change is not warranted
  - Agreement that ASTM G197 in its current form is not optimal for NFRC
- Compiled list of International Spectra and Spectral Standards (Tasks 2 & 3)
- In the process of developing an detailed "Pro & Con" document (Tasks 1 & 4)

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# List of International Spectra & Standards

- Reviewed 9-10 Standards
- Published by ASTM, CIE, DIN/EN, IEC, ISO & JIS
- Reviewed year, spectral range, number of wavelengths, Air Mass, model & spectral components (direct, global & diffuse)

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# Document "Pros & Cons"

- Simple list of Advantages and Disadvantages of adopting new spectra
- Detailed descriptions and justifications of each item on the list (2nd Layer)
- Developing Research Project to address issues that the task group is having difficulty resolving on its own
  - Proposed Summary Page will be presented at the Research Subcommittee Meeting

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# Future Task Group Activities

- Complete List of "Pros & Cons"
- Develop Work Statement for Research Project
- Continue Discussion
  - **Next conference call scheduled in April**

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# Questions ???

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