1. D. Cooper (Chair) called the meeting to order 3:04 pm EDT.
2. B. Shah took notes.
3. Review & approve agenda.
4. Old Business:
   a. Review sub-team findings of all documents for VIG inclusion. Action: Each team that reviewed the documents needs to write something for each subcommittee that owns each document so that it can be presented and updated.
      i. Simulation Manual (Technical)
         1. (M. Buchanan) VIG is not mentioned in the Window7/Therm7 simulation manual. A section would need to be added.
         2. Action: C. Curcija will need to write this.
      ii. NFRC 100, 200 (Technical)
          1. 100 (T. Cinnamon) No obvious language that prohibits VIG in 100. (D. Cooper) had some items that need attention including:
             a. Scope 2.d & 2.g need to specifically mention VIG
             b. Definitions – need VIG
             c. Section 4 – General, 4.3.2.2 may need to be revised to contain a guarded hot plate test specifically.
             d. Is the spacer type called out in NFRC100?
          2. 200 (D. Duly) some items that need attention including:
             a. Section 2.1 (Products and Affects covered) that needs to callout VIG in “O”
             b. Definitions need VIG or do not need to be duplicated
             c. Definition of pillar (maybe in the 100 rather than 200?)
             d. Consider language for SHGC/VT for pillars affecting these calculations (Is there a tolerance for SHGC/VT where pillars could be ignored?)
                i. Action: Ask C. Curcija about his opinion and any documentation or studies on this
                ii. Action: Review ISO SG1 Glass Use draft document for direction
          iii. NFRC 700 and if for commercial, NFRC 705 (Ratings)
              1. 700 - (K. Vilhauer)
                 a. Section 4.3.4 – Do we need to list out VIG under special cases?
                 b. Is there any special labeling? Group does not think so.
                 c. Section 6.5 –
i. ii would need to be reviewed for “air space”
   ii. iv would need to be reviewed for “spacer type”

2. 705 - (J. Hughes)
   a. Definition of “Spacer” would need to be modified to not be confused with “pillars”
   b. Any other definitions?

b. Verify Window/Therm v7 Program for VIG Simulation.
   i. Simulate VIG constructions in Window/Therm v7.
      1. 2 frame materials (aluminum / PVC)
      2. 2 frame types (operating / fixed)
      3. 2 VIG types (NSG / Guardian)
      That is 8 simulations.
   ii. Volunteers to write up RFQ.

**Date: 05/16/2016:**
Bipin Shah, Charlie Curcija, Dave Cooper, David McDonald, Willie Dupont, Michael Buchan, Niel MsSprorran, Jen Pedgett (NFRC staff).

Willie concern: We need to validate the model for use in simulation. If we are not using Window and using constant K then.
- Why we need a model?
- edge of glass calculation modeling.

Dave: Returned from ISO meeting on VIG. The models for VIG are in good agreement. Problem is measurement of pressure in the VIG. Conductivity measurement is used to back out the value of pressure. Willie: will all K-value be provided by manufacturer.
Manufacturer will provide the K-value, spacer and the glass value. Manufacturer will measure the K-Value with a standard testing method. Pressure value representing the K-value will be documented by Manufacturer for modeling.
Charlie: VIG belong to glazing system. Specify vacuum gap (pressure, spacer thickness, spacer spacing). Willie: we are talking using WINDOW program vacuum glazing. Information for vacuum will be locked down.

**Steps for modeling** VIG: K-Value will be measured in a lab using standard adopted by NFRC. VIG manufacture will document the VIG gap information (gap, spacer, pressure etc).

**Action item**: Come up with the method VIG parameters

**Lab Physical Testing**
   iii. VIG center of glass using GHP method.
   iv. VIG in constructions from b. 1. above – thermal hot box testing.
      1. SHGC measurement using NFRC SHGC procedure.
   v. Volunteers to write up RFP. Provide Budget

c. Compare Modeling to lab results.
   ISO is working on VIG test standard, D. Cooper: update to TG.

Charlie: (NFRC 101 can be updated for K-Value), NFRC 100 or NFRC simulation manual for pressure calculation.
Willie: How to measure SHGC and VT
Charlie: effect of pillars need to be looked at.
Dave: ISO committee determined that the pillars don’t have effect on SHGC. Guardian did measure in solar calorimeter and the test results validate.

d. Compare Modeling to Lab test
   - U-factor
   - SHGC

e. ISO is working on VIG test standard: Dave Cooper
5. New Business:
   i. None
6. Assignments / next steps.
7. Schedule Next Meeting
   i. Tuesday, June 7, 2016 @ 2:00 – 3:00 PM EDT
8. Meeting adjourned at 5:07 pm EDT.