EnergyPro Review Summary - July 11 2014 (EnergyPro V6.2.0.3)

After our review of the most recent submission dated July 3rd2014, we see you have addressed majority of our comments for previous submissions. Though we have some additional comments on this package, we are moving forward with the prospective approval of Energy Pro V6.2.0.3 on July 22 2014 Business meeting. Hopefully we can address these issue in time for the business meeting to allow us to recommend EnergyPro V6.2 for certification in the July 22nd Business meeting. However in order to reach that milestone we would like to work with you to address these issues with utmost urgency.

The following are the three groups of tests that we reviewed on EnergyPro and associated findings that we have for each group as below:

Self Certification Statement – We need to receive a new Self-Certification statement based on the final planned release version (e.g., Energy Pro V6.2). The last submitted statement is for V6.0 and not usable towards this package.

Appendix 3B – Sensitivity Tests –

Unmet Load Hours (UMLH) - As per section 3.5.1.6 (Reporting Test Results) of the Nonresidential ACM Reference Manual this parameter must be reported in the row for each test run on this worksheet. Because of the importance of this to design decisions, this parameter should be readily available or accessible to user. We would like to have this parameter printed on the results summary or as a log file to allow us to crosscheck the validity of the data entries.

Sensitivity Tests for Simplified Geometry Prototypes - There are some typos/ minor errors in the data entry for TDV (rows 151 and 167). We did enter the correct results and see no change the Pass status of the specific test. As per our comment before, we are not using the test 122 (or row 165) as it is resulting from our errant Reference Method results. As such we will not be using this for this review.

Sensitivity Test for detailed Geometry Prototypes – There were three tests cases where the TDV data entry not present causing the test to Fail (rows 37, 118, 126). Furthermore, there is one test relevant to Medium Office economizer control check (row 95 or test 75) also shows up as Fail. But we will not be reviewing this specific test as we previously indicated to you.

In this worksheet you have skipped many tests that cannot be completed by DOE2 engine based software which are tests 42 (or row 51) through 65, 66, 67, 69, 70, 73, 74, 77, 78, 81, 82, 83, 85, 86, 89, 90, 91, and 104. Much of these are hidden rows between 49 and 85 on this worksheet. Here is the way to identify these test number or relevant rows. For test 42 which is on row 51 involves prototype 0404207-OffLrg-Cont.DimHighVT where digits 3,4, and 5 is the three digit identifier of test number. EnergyPro software should warn user or indicate/ remove capability of these measures from being modeled by user.

Appendix 3C – Ruleset Implementation Tests –

There are three rules that were not implemented correctly in your software. These are Lighting LPD allocation for space category method, Envelope Rule for Roof –Solar Reflectivity, and Ventilation rate rule. Details of the error are noted below:

LPD rule for space category method:

Retail Medium Prototype – some areas where LPD 2.15 is used (i.e., 1.5 plus 0.65 task and floor display) while the Standard building should have 1.7 LP (Retail 1.2 LPD plus added 0.5 from note 6 and 7 together 1.7W/sq.ft)

Medium Office Prototype - General lighting for office space is 0.75 W/sq.ft . Incorrectly used at 0.8 W/sq.ft

Envelope Solar Reflectivity for Roof –The proper Solar reflectivity for aged roof is 0.75 and this rule is improperly using 0.85 as reflectivity. *This is incorrectly applied all prototypes. I am verifying this with my colleague Payam, who is our subject matter expert for Envelope area. I will confirm this back to you on Monday (July 14th).*

Ventilation rate Rule- Large Office Prototype –For Floor 1 and Floor 12 per square foot ventilation rate is not correct. Currently you are using 0.495 and 0.05 respectively. However, the correct rates are Please use Table 120.1-A in the Standards for determining the proper ventilation rates. As indicated if the floor 1 is a retail space then the rate would be 0.20 cfm/sq.ft while the floor 12 would be 0.15 cfm/sq.ft. as standards.

Dated 08252014 (final acceptable results from version 6.2.0.9)

Received revised package for LargeOffice with proper Ventilation rules within appendix 3c sub-sheet large office prototype. The results are in line with proper Appendix 3B results too within 15% mark as previously accepted.

Therefore, the condition was removed (after the revised submission meeting the earlier noted requirements from Part 1 admin code 10-109(h) alternative testing procedures established by the Executive Director's order.

SIMPLE GEOMETRY TEST CASES	#REF!	#REF!					#REF!
0200015-OffSml-SG-Baseline	278.84	257.96		**1.3942**			**-5.4%**
0211015-OffSml-SG-EnvRoofInsulation	281.64	260.66	Pass	**1.4082**			
0211315-OffSml-SG-EnvWallInsulation	277.99	256.87	Pass	**1.3899**			
0200016-OffSml-SG-Baseline	209.50	187.31		**1.0475**			**-7.0%**
0211116-OffSml-SG-EnvRoofInsulation	211.44	190.29	Pass	**1.0572**			
0211416-OffSml-SG-EnvWallInsulation	208.52	185.96	Pass	**1.0426**			
0200006-OffSml-SG-Baseline	200.31	192.88		**1.0016**			**-2.4%**
0211206-OffSml-SG-EnvRoofInsulation	200.72	193.07	Pass	**1.0036**			
0211506-OffSml-SG-EnvWallInsulation	200.17	192.41	Pass	**1.0009**			
0300015-OffMed-SG-Baseline	198.72	**217.06**		**0.9936**			**6.0%**
0311615-OffMed-SG-WWR40	202.66	224.04	Pass	**1.0133**			
0311715-OffMed-SG-WWR20	190.58	203.05	Pass	**0.9529**			
0312215-OffMed-SG-WinUSHGC	197.16	214.61	Pass	**0.9858**			
0300016-OffMed-SG-Baseline	128.70	**138.24**		**0.6435**			**4.0%**
0311816-OffMed-SG-WWR40	131.41	142.13	Pass	**0.6571**			
0311916-OffMed-SG-WWR20	123.49	131.17	Pass	**0.6175**			
0312316-OffMed-SG-WinUSHGC	127.57	136.91	Pass	**0.6379**			
0300006-OffMed-SG-Baseline	122.90	**141.93**		**0.6145**			**8.3%**
0312006-OffMed-SG-WWR40	125.74	145.15	Pass	**0.6287**			
0312106-OffMed-SG-WWR20	118.98	136.16	Pass	**0.5949**			
0312406-OffMed-SG-WinUSHGC	120.87	139.22	Pass	**0.6043**			
0500015-RetlMed-SG-Baseline	409.31	**434.26**		**2.0465**			**4.8%**
0511615-RetlMed-SG-SRR5	414.15	451.99	Pass	**2.0708**	20.28%		
0511915-RetlMed-SG-SRR1	407.39	430.34	Pass	**2.0369**	-4.10%		
0512215-RetlMed-SG-SkyUSHGC	409.32	434.13	Fail	**2.0466**	-2.19%		
0500016-RetlMed-SG-Baseline	261.23	**275.78**		**1.3062**			**3.9%**
0511716-RetlMed-SG-SRR5	266.08	290.03	Pass	**1.3304**	13.30%		
0512016-RetlMed-SG-SRR1	259.40	270.06	Pass	**1.297**	-4.93%		
0512316-RetlMed-SG-SkyUSHGC	260.90	275.62	Pass	**1.3045**	-2.77%		
0500006-RetlMed-SG-Baseline	260.80	**257.72**		**1.304**			**-0.8%**
0511806-RetlMed-SG-SRR5	263.88	270.82	Pass	**1.3194**	10.07%		
0512106-RetlMed-SG-SRR1	259.63	252.80	Pass	**1.2982**	-2.71%		
0512406-RetlMed-SG-SkyUSHGC	261.02	257.76	Pass	**1.3051**	-1.92%		