February 7, 2014

Lisa A. Skumatz, Ph.D.

Skumatz Economic Research Associates (SERA)

762 Eldorado Drive

Superior, Co. 80027

**RE: CL&P Review of the Draft Regional Hours of Use Study**

Dear Ms. Skumatz,

The Connecticut Light and Power Company (CL&P) is pleased to submit these written comments with regard to a draft evaluation report: *Northeast Residential Lighting Hours-of-Use Study,* (“Study”), January 17, 2014, NMR Group, Inc. (“NMR”). The draft Study was submitted to CL&P on January 24, 2014 with a request for comments to be provided by February 7, 2014.

The primary purpose of the Study for Connecticut was to provide DEEP, the EEB, and the electric utilities (“the Companies”) with revised estimates of daily hours of use, load shapes, and coincidence factors for energy efficient residential lighting, for use in future planning and savings estimates.

Overall, CL&P is very pleased with the study, including its content, organization and level of detail. CL&P will review these findings and incorporate them into future planning efforts and the Connecticut Program Savings Document (PSD).

CL&P would like to offer a few constructive comments and recommendations pertaining to the Study for consideration:

**Mapping of Locations to Connecticut PSD.** The Study provides estimates of hours of use per day by location, but the location groupings do not precisely match Connecticut’s existing definitions. CL&P requests that evaluators provide an updated version of the existing table in the Connecticut Program Savings Document (PSD) (see Table 1, attached) in order to use the best possible data going forward. CL&P understands that the evaluators did not record data at this level, but believes that the evaluators are best positioned to select a mapping of available study room types to PSD room types, based on their knowledge of the data.

**Statistical Differences Between Regional HoU Estimates.** When presenting estimates in tables such as Table 3-1, evaluators appear to have used a lack of overlap between 90% confidence intervals as a necessary and sufficient criterion for declaring a statistically significant difference (SSD) at the 90% level. For a one-sample test, exclusion of the null hypothesis from the confidence interval is logically equivalent to statistical significance. However, for two-sample tests, CL&P believes this criterion may be too strict and may underestimate the number of SSDs.[[1]](#footnote-1) This possible underestimation of SSDs does not undermine the validity of the study, however, CL&P requests clarification on this issue. For example, CL&P notes that Table 3-5 appears to report zero SSDs between the modeled state estimates at the 90% confidence level While an incidence of zero is possible, CL&P believes that a 90% confidence level should result in a “false positive” finding of statistical significance 10% of the time on average even for identical populations. CL&P recommends that evaluators explain the methodology that was used and review the assignment of statistical significance for possible cases where two confidence intervals may overlap, but a SSD nonetheless exists.

Thank you for the opportunity to provide these comments.

Very truly yours,

Joseph Swift

Operations Supervisor

Connecticut Light and Power

**Table 1: Hours of Use per Day by Location (hd)**

|  |  |  |
| --- | --- | --- |
| **Location** | **Non-Low Income** | **Low Income** |
| **hd,NLI** | **hd,LI** |
| Bedroom | 1.08 | 1.60 |
| Bathroom | 0.65 | 1.60 |
| Den/Office | 2.97 | 2.97 |
| Garage | 1.32 | 1.32 |
| Hallway | 6.25 | 1.74 |
| Kitchen | 2.97 | 3.66 |
| Living Room | 2.97 | 3.20 |
| Dining Room  | 2.97 | 2.97 |
| Exterior | 2.89 | 2.89 |
| Basement | 1.29 | 1.45 |
| Closet | 1.24 | 1.24 |
| Other | 2.05 | 2.05 |
| Unknown  | 2.77 | 2.77 |

1. Among other sources, see, “If we're so different, why do we keep overlapping? When 1 plus 1 doesn't make 2“, Canadian Medical Association Journal, http://www.cmaj.ca/content/166/1/65.long [↑](#footnote-ref-1)