

**CONNECTICUT SITING COUNCIL
Docket 370A
APPLICATION OF THE CONNECTICUT LIGHT AND POWER COMPANY**

**COMMONWEALTH OF MASSACHUSETTS
ENERGY FACILITIES SITING BOARD
WESTERN MASSACHUSETTS ELECTRIC COMPANY
EFSB 08-2 / D.P.U. 08-105/08-106**

**Record Evidence Concerning Agawam SS – Ludlow SS Route Selection:
Proposed “Northern Route” and “Southern Route Alternative”**

August 20, 2009

The Applicant, The Connecticut Light & Power Company (“CL&P”), proposes that the following material already in the record of one or both of the above captioned proceedings now pending before the Connecticut Siting Council (“CSC”) and the Massachusetts Energy Facilities Siting Board (“EFSB”) be considered by both agencies in the joint hearings to be held on September 22 and September 23:

1. **Material from EFSB Petition Designated by Highlighting in Attachment A**
(Highlighted Table of Contents)
2. **Material from CSC Application Designated by Highlighting in Attachment B**
(Highlighted Table of Contents)
3. **Pre-Filed Direct Testimony Filed With EFSB – of Timothy B. Barton and John C. Case** (Barton, p. 4, describing updated tables from sections 4 and 5 of the Petition; Case, pp. 3-10, describing updates to scope/ engineering affecting Northern Route and 115-kV upgrades for Southern Route)
4. **Pre-Filed Direct Testimony Filed With CSC – of Robert E. Carberry / Scott E. Newland Designated by Highlighting in Attachment C** (Highlighted Table Of Contents)
5. **Pre-Filed Direct Testimony Filed With CSC – of Louise Mango Designated by Highlighting in Attachment D** (Highlighted Table Of Contents)

6. Responses Filed With EFSB Responding to the Following Questions:

- EFSB-A-14 Please explain in detail why between the Agawam Substation and South Agawam Switching Station, the southern route is designed for two 345 kV structures. Specifically, is it necessary for the southern route to continue north to the Agawam Substation, supply power to the 115 kV system at that substation, and then continue south to Connecticut; alternatively, could the southern route travel to the South Agawam Switching Station supply power to the 115 kV system at that location, and then continue south to Connecticut? Please include a discussion of the benefits and costs of continuing on to the Agawam Substation, and explain the drawbacks, if any, of extending the 345 kV line only as far north as the South Agawam Switching Station.
- EFSB-A-15 Conceptually, as a modification to the Southern Route would it be possible to build a 345 kV switch / ring bus at South Agawam and then construct a single 345 kV line from South Agawam to Agawam substation? Please evaluate cost, environmental impacts, and system reliability.
- EFSB-A-16 Conceptually, as a modification to the Southern Route, would it be possible to place 345/115 kV transformers at South Agawam and then construct multiple 115 kV line from South Agawam to Agawam substation? Please evaluate cost, environmental impacts, and system reliability.
- EFSB-A-17 Please discuss the availability of other locations to construct a 345/115 kV substation either to the south or to the west of downtown Springfield. In what ways are alternative locations superior and inferior to Agawam Substation and South Agawam for voltage transformation to supply 115 kV bulk power to the area?
- EFSB-A-28 Please refer to Table 5-31. Please explain:
- a. Why the costs differ between routes for row 3 -- build a new 345 kV line from Agawam Substation to North Bloomfield Substation (MA only)
 - b. Why the costs for the re-build for the 1781 line from Agawam Substation to South Agawam Switching Station (row 4) is only for the northern route;
 - c. Why the costs for placing the 1781 line on the Ludlow Substation to Agawam Substation structures (row 4) is only for the southern route;
 - d. Why the costs differ between routes for row 9 -- break three-terminal circuits 1254, 1723 into two terminal circuits creating a total of four circuits;
 - e. Why the costs differ between routes for row 10 -- rebuild circuit 1845 from Shawinigan Switching Station to Ludlow Substation;
 - f. Why the costs differ between routes for row 12 -- rebuild lines 1601, 1602, 1314 and 1230 from Agawam 16C Substation to East Springfield Junction;
 - g. Please detail what miscellaneous substations refers to, and why the costs differ by route.

- EFSB-A-33 Please refer to page 3-4 of the redacted public version of the July 2008 NU Solution Report for the Springfield Area. In comparing options, NU notes that routes through Meekville Junction included 31.48 miles “in Connecticut, where there was the possibility of 10.56 miles of 345-kV underground cables.” Was such a possibility related to Connecticut’s EMF policies? To what extent was selection of the proposed project, and its route, dependent on avoiding undergrounding that might be required by Connecticut EMF policies? Please provide support for your answer.
- EFSB-RS-1 Please discuss whether it is likely the southern route could be constructed if approved by the Siting Board, in light of the possibility that the CT Siting Council might not approve the portion that is located in Connecticut. Please discuss how the location of a portion of the southern route in another state – outside of the Siting Board’s jurisdiction, was incorporated into the site selection process.
- EFSB-RS-2 Please refer to the Petition at 4-8. Please list the different factors that would have been considered in evaluating the feasibility of each type of line configuration and associated routing for the potential underground options in comparison to potential overhead options.
- EFSB-RS-3 Please refer to the Petition at Table 4-4 Project Evaluation Criteria Metrics. Please provide a table similar to Table 4-4 but with 3 columns: (1) northern route 345 kV only; (2) southern route 345 kV only; and (3) 115 kV route only, with spurs.
- EFSB-RS-4 Please refer to the Petition at Table 4-6. Please provide a table similar to Table 4-6 but with 3 columns: (1) northern route 345 kV only; (2) southern route 345 kV only; and (3) 115 kV route only, with spurs.
- EFSB-RS-5 Please refer to the Petition at 4-33. Please discuss in more detail how the three primary reliability differences identified between the northern route and the southern route affect reliability, specifically:
- a. The 345 kV line is longer for the southern route;
 - b. the 345 kV line shares a structure with a 115 kV line along the northern route, while the 354 kV line is on a single pole for the southern route; and
 - c. the existing 345kV circuit and the new 345 kV circuit would share a common ROW for 3.3 miles on the southern route.
- EFSB-RS-6 Please refer to Table 5-31. Given the breakdown of the costs for both the northern and southern route, please identify and calculate those costs, for each route, which would be associated with: (1) Massachusetts only; and (2) Connecticut only.

- EFSB-RS-7 Please refer to Table 5-31. Please provide a breakdown of the costs for: (1) the northern route, 345 kV only; (2) the southern route, 345 kV only; and the (3) 115 kV upgrades (if they differ by 345 kV routes please provide both sets of costs).
- EFSB-RS-8 Please refer to page 3-18 of the redacted public version of the July 2008 NU Solution Report for the Springfield Area. NU lists proximity to the Fairmont Switching Station, allowing future connection between the 345 kV system and up to nine 115 kV lines, as a feature of the Northern Route. Does WMECO continue to consider this an advantage of the Northern Route? Are there other such long-range advantages or disadvantages of the Proposed Project, the Southern Route, or other project approaches that could be considered?
- EFSB-RS-10 Please refer to the response to EFSB-RS-5. Please address the reliability differences between the 345 kV sharing a structure with the 115 kV on the northern line, versus the 345 kV being separate from the 115 KV line, using the southern route. The discussion should focus on operation of the two lines rather than how the 345 kV is outaged on a single versus double line.
- EFSB-RS-11 Please refer to the response to EFSB-RS-7. Would the figure of \$309 million, the subtotal of the 115 kV line costs for the southern route, be the cost of upgrading the Springfield area 115 kV system if the project only consisted of 115 kV upgrades? Is this the cost of Expansion Plan 4a or 4b (see response to EFSB-N-46). If not, please explain how the costs differ and under what assumptions.
- EFSB-LU-1 For the northern route, please provide: (1) the number of residences within 25 feet of edge of the ROW; and (2) the number of residences within 50 feet of the edge of the ROW.
- EFSB-LU-2 For the southern route please provide:
- a. the number of residences within 25 feet of edge of the ROW for (1) the 115 kV upgrades, and (2) the 345k KV line;
 - b. the number of residences within 50 feet of the edge of the ROW for (1) the 115 kV upgrades, and (2) the 345k KV line.
- EFSB-LU-3 Please indicate how many, if any, residences and/or businesses will fall within the ROW of the northern route. If applicable, please identify the address of each identified residence and/or business and the description of its location within the ROW.
- EFSB-LU-4 Please indicate how many, if any, residences and/or businesses will fall within the ROW of the southern route. If applicable, please identify the address of each identified residence and/or business and the description of its location within the ROW.

- EFSB-LU-5 Please indicate how many properties would require widening of the ROW along the northern route. If applicable, please identify the address of each identified residence and the amount additional ROW that would be required.
- EFSB-LU-6 Please indicate how many properties would require widening of the ROW along the southern route. If applicable, please identify the address of each identified residence and the amount additional ROW that would be required.
- EFSB-LU-7 Please refer to the Petition at 5-98 to 5-99. Please provide the predictive model study for evaluating the archaeological and historical resources conducted for both routes.
- EFSB-LU-12 Please refer to the Petition at 5-93 to 5-95. Please prepare tables similar to Tables 5-25 and 5-26 but showing the additional width and acreage of cleared vegetation, taking into account areas where vegetation has grown back where management was discontinued. Are any rare songbird species present on rights-of-way in the Greater Springfield area?
- EFSB-LU-19 Please indicate whether the proposed upgrade and expansion to the Agawam Substation would be the same whether the northern or southern route is selected. If not, please detail the differences and level of expansion.
- EFSB-LU-26 Please refer to the responses to EFSB-LU-1 and EFSB-LU-2. Please explain why for the southern route, the number of residences listed for 115 kV route with spurs differs from the response to EFSB-LU-1.
- EFSB-LU-30 Please refer to the Timothy Barton prefiled testimony:
- c. On Table 5-5, it appears that the evaluation criteria includes the Connecticut portion of the route, although the note states that the Connecticut portion is excluded for some criteria. Please clarify. Why is the Connecticut portion from Bloomfield to the Massachusetts border included? Please provide a revised chart that includes only the Massachusetts portion of the northern route.
 - d. On Table 5-6, it appears that the evaluation criteria includes the Connecticut portion of the route, however, the note states that the Connecticut portion is excluded for some criteria. Does this note pertain to the portion of the southern route noticed in the Petition or just the portion from Bloomfield to the Massachusetts border? Please clarify. Why is the Connecticut portion from Bloomfield to the Massachusetts border included? Please provide a revised chart that includes only the portion of the southern route excluding Bloomfield to the Massachusetts border.
 - e. Please refer to Tables 5-10 and 5-11. What changed along the southern route to cause such a large change in number of residences within 101 to 300 feet of the edge of the ROW? If the tables both now include the portion in Connecticut from Bloomfield to the Massachusetts border, why doesn't the corresponding line item for the northern route change in the same manner?

EFSB-V-1 Please refer to the Petition at Exhibit 5.1, “typical cross- sections and photo simulations”. For many of the photos of the cross sections, associated simulations of new facilities are not included, as identified by “this page intentionally left blank”. Please provide the photo simulations, if applicable, for each of the blank pages associated with the cross section drawings.

EFSB-V-2 Please refer to the Petition at Exhibit 5.2.and the following mapsheets. Please provide photo simulations of the proposed facilities from the identified views based on the following two configurations: (1) the northern route as proposed with 115 kV overhead; and (2) the northern route as proposed with 115 kV underground. Please identify the locations of each simulation, and include those locations where trees would be removed, and where the worst case views would occur.

- a. Mapsheet 01 of 03 -- view from homes along Oakridge Drive and Pine Street;
- b. Mapsheet 02 of 22 -- view from homes along Silverlake Drive, Lakeview Circle, Wrenwood Lane and Lancaster Drive;
- c. Mapsheet 03 of 22 -- view from homes along High Street;
- d. Mapsheet 04 of 22 -- view from homes along Guy Place and Silver Street;
- e. Mapsheet 05 of 22 -- view from homes along Greenleaf Avenue and Larchwood Street;
- f. Mapsheet 06 of 22 -- view from homes along Piper Road;
- g. Mapsheets 07/08 of 22 -- view from homes along Labelle Street;
- h. Mapsheet 09 of 22 -- view from homes along Schoolhouse Road;
- i. Mapsheet 10 of 22 -- view from homes along Granby Street and apartment house to the west of East Springfield Junction;
- j. Mapsheet 12 of 22 -- view from homes along Shawinigan Drive;
- k. Mapsheet 13 of 22 -- representative views from Blue Bird Acres
- l. Mapsheet 15 of 22 -- view from homes along Libby Street/Stanley Street
- m. Mapsheet 18 of 22 -- view from homes along Booth Street and Lyon Drive
- n. Mapsheet 19 of 22 -- view from homes along Woodcrest Court, from both sides of the ROW

EFSB-V-3 Please refer to the Petition at Exhibit 5.2. and the following mapsheets. Please provide photo simulations of the proposed facilities along the southern route. Please identify the locations of each simulation, and include those locations where trees would be removed, and where the worst case view would occur.

- a. Mapsheet 05 of 20 -- view from homes along Brookfield Lane/Andover Lane (please include views from 2nd floor condos)
- b. Mapsheet 10 of 20 -- view from homes along Country Club Drive

- c. Mapsheet 11 of 20 – view from the Elms Condos
- d. Mapsheet 12 of 20 – view from homes along Old Orchard Road and Samble Lane
- e. Mapsheet 14 of 20 – view from homes along Greenleaf Dive (Tall Pines development)
- f. Mapsheet 14 of 20 – view from homes along Bonair and Deepwood Drive
- g. Mapsheet 17 of 20 – view from homes along Manchonis Road
- h. Mapsheet 18 of 20 – view from homes along May Road and Hill Terrace
- i. Mapsheet 19 of 20 – view from homes along Meadowlark Circle

EFSB-V-4 Please refer to the Petition at Exhibit 5.2. and mapsheet 08 of 22. Please provide photo simulations of the proposed facilities from homes along Granger Street, Amherst Street, Delany Avenue and Bill Street. For each location, base the identified views on the following three configurations: (1) the northern route as proposed with 115 kV overhead; (2) the northern route as proposed with 115 kV underground; and (3) the southern route as proposed with 115 kV overhead. Please identify the locations of each simulation, and include those locations where trees would be removed, and where the worst case view would occur.

EFSB-V-5 Please refer to the Petition at Tables 5-12 and 5-13. For each project segment where it is indicated that “wooded buffer between ROW and residential areas would be decreased,” please indicate the specific amount of wooded buffer, in linear feet, that would be removed for each segment.

EFSB-V-6 Please refer to the Petition at Exhibit 5.2 and mapsheet 05 of 22. Please describe in detail how the views of the ROW from the West Springfield High School would change. Please include from what areas of the school and schoolyard the views would be changed and a photo simulation of such views, based on the three configurations listed in EFSB-V-4.

EFSB-V-7 Please refer to the Petition at Exhibit 5.2 and mapsheet 06 of 22. Please describe in detail how the views of the ROW from the West Springfield Middle School would change. Please include from what areas of the school and schoolyard the views would be changed and a photo simulation of such views, based on the three configurations listed in EFSB-V-4.

EFSB-V-8 Please refer to the Petition at Exhibit 5.2, mapsheet 03 of 22 and Figure 7-13. Please describe in detail how the expansion of the Agawam Substation and new lines would affect the views from Prospect Street, including the location and amount of tree removal (and specify the types of trees, such as the rows of red pines) associated with the expansion and the new transmission line. Please provide the distance from the new fence line to the closest residence. Please provide a photo simulation including the current views, and future views based on the new components both inside the existing fence line and the expanded area to the north of the existing facility, and the associated tree clearing.

EFSB-V-9 At the May 7, 2009, Public Hearing in Agawam, the Company indicated that it would meet on-site with residents of Prospect Street to discuss the expansion of the Agawam Substation (Tr. A at 90). Has the Company meet with the residents? If so, please provide a summary of the meeting, if not, when does the Company anticipate conducting such a meeting.

EFSB-V-10 Please refer to the Petition at Exhibit 5.2, mapsheet 03 of 22 and Figure 7-13. Please describe in detail how the expansion of the Agawam Substation would affect the views from Sutton Place West, including the residences and the recreational facilities. Please provide the distance from the new fence line to the closest residence and recreational facility. Please provide a photo simulation including the current views, and future views based on the new components both inside the existing fence line and the expanded area to the north of the existing facility, and the associated tree clearing.

EFSB-V-51 Please refer to the response to EFSB-V-5. Please explain the discrepancy between columns 5 and 6, where in some areas it says “wooded buffer between ROW and residential or agricultural area would be decreased” in column 5 and then the last column for decrease in wooded buffer, the chart shows “none.” (pages 6, 7, 8, 10).

EFSB-V-52 Please refer to the response to EFSB-V-5. Please explain why the southern route would require such significant areas of buffer removal -- between 100 to 190 feet, for the construction of one line of 345 kV monopoles.

EFSB-V-53 Please refer to the response to EFSB-V-9. Based on John Case’s pre-filed testimony, has the Company selected option number three? Please provide the status of the reconfiguration of the Agawam Substation as it relates to the Agawam-West Springfield project.

EFSB-NO-1 Please refer to Table 5-10 of the Petition;

- a. Please identify all “public facilities” within 1,200 feet of the edge of the ROW. Please provide actual distances for each facility to the ROW.
- b. In collecting the information for Table 5-10, did the measurements take into account playgrounds and playing fields for schools, or just the distance to the actual building? If only the distance to buildings were used, please also provide the distances to the edge of the school property, and update Table 5-10 if necessary.

EFSB-NO-2 Please refer to Table 5-11 of the Petition;

- a. Please identify all “public facilities” within 1,200 feet of the edge of the ROW. Please also provide actual distances for each facility to the ROW.

- b. In collecting the information for Table 5-11, did the measurements take into account playgrounds and playing fields for schools, or just the distance to the actual building? If only the distance to buildings were used, please provide the distances to the edge of the school property, and update Table 5-11 if necessary.

EFSB-NO-3 Please provide a table detailing the construction noise at the closest residences (i.e., less than 25 feet from the source of construction noise, at 25 feet, at 50 feet, and at 100 feet) for both the northern and southern routes. Please include construction noise from installation of monopoles, installation of H-frames, clearing of ROW, noise emanating from temporary work spaces etc. Please include an analysis of noise increases during construction based on daytime ambient and nighttime ambient.

EFSB-NO-4 Please provide a table detailing the construction noise at the closest residences to each of the substations and switching stations. Please include construction noise from installation of all substation equipment and access roads. Please indicate the noise impacts at the substation property lines and at a number of residential receptors. For the Agawam Substation include Sutton Place Apartments and Prospect Street. Please include an analysis of noise increases based on daytime ambient and nighttime ambient.

EFSB-NO-5 Please refer to the Petition at 5-24. Please provide the basis for the assertion that along the northern route “construction activities are not expected to substantially affect the local noise environment”?

EFSB-NO-11 Please refer to the response to EFSB-NO-3. Based on the charts presented, please explain how the Company concluded that construction sound levels are expected to be in the 65-75 dba range at distances greater than 50 feet away based on the minimum and maximum data for noise levels 50 feet away shown in the response.

EFSB-NO-12 Please refer to the response to EFSB-NO-4. Based on the charts presented, please explain how the Company concluded that construction sound levels at the residences proximate to the substation properties are expected to be in the 75-85 dBA range. Based on the actual location of residences proximate to each facility, please provide specific data on the construction noise at each substation.

7. Responses Filed with the CSC Responding to the Following Questions:

CSC-02/Q-CSC-047 Provide the number of homes and/or properties that would have to be purchased along the entire GSRP northern route and Southern Route Alternative (for both CT and MA).

CSC002/Q-CSC-049 Provide the Plan as stated on page 2 of Appendix O-1 in Volume 1 of the Application, for the pre- and post-NEEWS magnetic field line design alternatives for the Southern Route Alternative.

OCC-01/Q-OCC-002 The Application (p. ES-18) states that, if the Southern Route Alternative (to GSRP), an alternative which CL&P apparently does not favor, is certificated by the Massachusetts Energy Facilities Siting Board, some 5.4 miles thereof would be located in Connecticut.

- (a) Does CL&P believe that this 5.4 mile section must be reviewed by the CSC in this docket, regardless of actions by the Mass EFSB, or that such Connecticut review would be needed only if the Mass EFSB rejects GSRP in favor of the Southern Route Alternative?
- (b) Please treat this interrogatory as a continuing request, which CL&P should update periodically as appropriate.

8. MISCELLANEOUS

- A. Sections of Draft Environmental Impact Report filed with the EFSB, designated by highlighting in **Attachment E** (Highlighted Table of Contents)
- B. Comments of the Connecticut Department of Environmental Protection dated July 15, 2009, filed with CSC.
- C. Supplemental EMF Field Design Management Plan (concerning the CT portion of the Southern Route) filed in partial response to CSC Interrogatory CSC-02- Q- CSC-049
- D. Excerpts from CSC Hearing Transcripts of July 21 and July 29 (7/21: pp. 167-170, questions from CSC member P. Ashton as to system benefits and responses; 7/29: pp. 69-74, questions from the Enfield Town Attorney and responses).

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| EX. 2.2: | NPCC's "Bulk Power System Protection Criteria," Document A-05 (revised January 30, 2006) |
| EX. 2.3: | ISO-NE Planning Procedure No. 3, "Reliability Standards for the New England Area Bulk Power Supply System" (PP3) (effective date October 13, 2006) ("ISO PP3") |
| EX. 2.4: | David Ehrlich, Demand Resource Group, "Load Forecast Presentation: Current Methodologies" (May 5, 2006) |
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