STATE OF CONNECTICUT
SITING COUNCIL

APPLICATION TO THE CONNECTICUT LIGHT AND POWER COMPANY FOR CERTIFICATES OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR THE CONNECTICUT PORTION OF THE GREATER SPRINGFIELD RELIABILITY PROJECT AND FOR THE MANCHESTER TO MEEKVILLE JUNCTION CIRCUIT SEPARATION PROJECT	:	DOCKET NO. 370A
APPLICATION OF NRG ENERGY, INC. PURSUANT TO CONN. GEN. STAT. § 16-50l(a)(3) FOR CONSIDERATION OF A 530 MW COMBINED CYCLE GENERATING PLANT IN MERIDEN, CONNECTICUT	:	DOCKET NO. 370B
	:	January 15, 2010

BRIEF OF RICHARD BLUMENTHAL, ATTORNEY GENERAL FOR THE STATE OF CONNECTICUT

Richard Blumenthal, Attorney General for the State of Connecticut ("Attorney General"), hereby submits his brief in the above-captioned consolidated proceedings.

I. EXECUTIVE SUMMARY

The Attorney General strongly supports the construction of energy infrastructure in Connecticut that is proven to be necessary to provide safe, reliable and efficient power to the State's consumers, so long as the projects are designed to minimize the impact that they will have on Connecticut's environment, communities and residents. The significant challenge facing the Connecticut Siting Council ("Council" or "CSC") in these consolidated proceedings is to determine whether the Connecticut Light and Power Company's ("CL&P") proposed Greater Springfield Reliability Project ("GSRP"), a twelve mile 345 kilovolt ("kV") electric transmission

line from the North Bloomfield substation in Bloomfield, Connecticut through East Granby and Suffield, NRG Energy Inc.'s ("NRG") proposed 530 megawatt ("MW") combined cycle generation facility in Meriden, Connecticut ("Meriden facility"), or perhaps some combination of the two, is or are necessary to address established system needs.

The facts and circumstances of this case are unique and substantially different than the major transmission line proceedings that the Council has considered over the last few years, most notably the Bethel-to-Norwalk line and the Middletown-to-Norwalk line.[1] Unlike those prior cases, the vast majority of the need for GSRP, as well as the great bulk of the transmission upgrades required to complete the project, are located in Massachusetts. The Massachusetts Energy Facility Siting Board ("EFSB") is currently considering the need for GSRP, as well as the various routing options in that state.

Should the EFSB find that GSRP is not needed in Massachusetts, there would be no reason for the Council to approve the project in Connecticut, as it certainly would not be built. Consequently, the Council should defer its final decision in this case until the EFSB renders its decision regarding the need for GSRP. If necessary, the Council should deny the pending applications without prejudice to allow the EFSB the opportunity to render its decision. Should the Council decide to issue its decision in this case before the EFSB rules, it should at the very least explicitly condition any approval of GSRP upon a consistently affirmative ruling by the EFSB. If the EFSB finds that GSRP is needed and the Council agrees, the Attorney General urges the Council to approve the least invasive configuration possible to minimize the impact that the project would have on the impacted towns and residents to the greatest extent possible.

This case is also unique because of the competing application filed by NRG. The Meriden Facility is already fully certificated by the Council and there is, therefore, little that the

[1] Connecticut Siting Council Docket Numbers 217 and 272, respectively.

Council can do in this case that will directly result in that plant being constructed and placed in service. Therefore, the Council should make clear in its final decision that any decision in this case that is not directly favorable to NRG should not be interpreted to reflect negatively on the merits of that project. The Meriden Facility deserves full and fair review by other appropriate agencies and entities in Connecticut. NRG should have the opportunity to demonstrate that the Meriden Facility could provide meaningful benefits to electric customers if financing arrangements can be made in a cost-effective manner.

II. INTRODUCTION

CL&P claims that GSRP is necessary to strengthen the regional transmission system that serves greater Springfield, Massachusetts as well as north-central Connecticut. CL&P's proposal includes the construction of a 345 kV electric transmission line in an existing right-of-way ("ROW") from the North Bloomfield, Connecticut substation north through Bloomfield, East Granby and Suffield, Connecticut to the South Agawam substation in Massachusetts. Approximately 12 miles of this line are in Connecticut. GSRP also includes far more substantial transmission upgrades in Massachusetts; 23 miles of new 345 kV transmission line as well as 27 miles of existing and new 115 kV lines in and around greater Springfield, Massachusetts.

CL&P's affiliate, the Western Massachusetts Electric Company ("WMECO"), has a pending application before the EFSB for the Massachusetts portion of the project. Both the Council and the EFSB must approve the same version of the GSRP line in order for this project to be built. The proposed new 345 kV transmission line would complete a 345 kV "loop" through north-central Connecticut and western Massachusetts. CL&P Application for Certificates of Environmental Compatibility and Public Need for the Connecticut Portion of the

Greater Springfield Reliability Project and for the Manchester to Meekville Junction Circuit Separation Project ("CL&P Application"), E-2.

The Attorney General urges the Council to defer its decision in this case until the EFSB rules on the need for the project in Massachusetts. If the EFSB finds that the project is not needed in Massachusetts, the project is certainly not needed in Connecticut and should not be approved by the CSC. This may require the Council to deny the pending applications without prejudice until such time as the EFSB rules on GSRP. At the very least, if the Council is not inclined to delay its decision until after the EFSB rules, the Council should explicitly condition any approval of the GSRP project upon a finding by the EFSB that the project is needed and upon its approval of a consistent route to assure that the ends of the lines approved in Connecticut and Massachusetts meet.

If the EFSB finds that there is a need for GSRP and the Council agrees, the Council must examine all possible configuration options and approve the least invasive configuration available. This requires the rejection of the proposed Southern Route alternative that calls for not only the construction of twelve miles of 345 kV line from North Bloomfield to South Agawam that is required for the proposed northern route, but also calls for an additional 5.4 miles of 345 kV line in Connecticut, 3.7 miles of which traverse a densely settled residential area of Enfield, Connecticut.

This also requires the rejection of the "Estey" proposal, which calls for the completion of a 345 kV loop around Springfield, Massachusetts via the proposed northern route and southern route alternative without the line from North Bloomfield to South Agawam. While this route would reduce the amount of 345 kV construction in Connecticut from the proposed 12 miles to 5.4 miles, 3.7 miles of that surviving portion in Enfield, Connecticut goes through a densely

developed area. The Council must also fully consider NRG's application and consider whether a less invasive transmission alternative would be available if the Council considered the addition of generation in Connecticut.

For any transmission project that may be approved in this proceeding, the Council must work to minimize to the greatest extent possible the impact that the facility will have on Connecticut's environment, communities and its citizens. This requires careful consideration of the various underground alternatives proposed as well as the configuration and appearance of any overhead facilities that may be required. In addition, the CSC must work to ensure that CL&P does all it can to work with affected communities and neighbors on such issues as electric and magnetic field ("EMF") mitigation, construction and remediation to minimize the impact of this painful process, even if it is possible that certain of the costs associated with such measures may not be considered appropriate for regional cost sharing.

With regard to the Meriden Facility, the Council should make sure that nothing in its final decision negatively impacts NRG's ability to seek financing arrangements with other Connecticut agencies or other entities. NRG deserves a full and fair opportunity to show that the addition of the Meriden facility, if done on a cost-effective basis, could provide meaningful benefits to Connecticut's electric consumers.

III. STATUTORY BACKGROUND

CL&P's proposed GSRP project meets the statutory definition of a facility pursuant to Conn. Gen. Stat. § 16-50i(1), which states that "facility" means "[a]n electric transmission line of a design capacity of sixty-nine kilovolts or more, including associated equipment . . . ." As such, CL&P filed its application with the Council pursuant to Conn. Gen. Stat. § 16-50l(A), which

requires that CL&P's application include, among other things, a description of the proposed transmission line and a full explanation of why the project is necessary.[2]

Pursuant to Conn. Gen. Stat. § 16-50p(a)(1), the Council may grant or deny the application as filed, or grant it "upon such terms, conditions, limitations or modifications of the construction or operation of the facility as the council may deem appropriate." In approving the application, however, the Council must, pursuant to Conn. Gen. Stat. § 16-50p(a)(3)(A), find and determine the public need for the facility and the basis for the need. Conn. Gen. Stat. § 16-50p(c)(3) states that, "a public benefit exists if such a facility is necessary for the reliability of the electric power supply of the state or for the development of a competitive market for

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[2] Specifically, Conn. Gen. Stat. § 16-50l(A) states:

> (i) A description, including estimated costs, of the proposed transmission line, substation or switchyard, covering, where applicable underground cable sizes and specifications, overhead tower design and appearance and heights, if any, conductor sizes, and initial and ultimate voltages and capacities; (ii) a statement and full explanation of why the proposed transmission line, substation or switchyard is necessary and how the facility conforms to a long-range plan for expansion of the electric power grid serving the state and interconnected utility systems, that will serve the public need for adequate, reliable and economic service; (iii) a map of suitable scale of the proposed routing or site, showing details of the rights-of-way or site in the vicinity of settled areas, parks, recreational areas and scenic areas, residential areas, private or public schools, licensed child day care facilities, licensed youth camps, and public playgrounds and showing existing transmission lines within one mile of the proposed route or site; (iv) justification for adoption of the route or site selected, including comparison with alternative routes or sites which are environmentally, technically and economically practical; (v) a description of the effect of the proposed transmission line, substation or switchyard on the environment, ecology, and scenic, historic and recreational values; (vi) a justification for overhead portions, if any, including life-cycle cost studies comparing overhead alternatives with underground alternatives, and effects described in clause (v) of this subparagraph of undergrounding; (vii) a schedule of dates showing the proposed program of right-of-way or property acquisition, construction, completion and operation; (viii) identification of each federal, state, regional, district and municipal agency with which proposed route or site reviews have been undertaken, including a copy of each written agency position on such route or site; and (ix) an assessment of the impact of any electromagnetic fields to be produced by the proposed transmission line; and

electricity and a public need exists if such facility is necessary for the reliability of the electric power supply of the state." Moreover, Conn. Gen. Stat. § 16-50p(h) provides that "[f]or purposes of this section, a public need exists for an energy facility if such facility is necessary for the reliability of the electric power supply of the state."

The Council must also find and determine the probable environmental impact of the proposed facility, "including a specification of every significant adverse effect, including, but not limited to, electromagnetic fields that, whether alone or cumulatively with other effects, on, and conflict with the policies of the state . . . ." Conn. Gen. Stat. § 16-50p(a)(3)(B), and explain why the adverse effects are not sufficient to deny the application. Conn. Gen. Stat. § 16-50p(a)(3)(C). Furthermore, in the case of an electric transmission line, Conn. Gen. Stat. § 16-50p(a)(3)(D) requires the Council to determine what parts of the line will be located overhead and that the overhead portions are consistent with the Council's best management practices for electric and magnetic fields and:

> are to be contained within an area that provides a buffer zone that protects the public health and safety, as determined by the council. In establishing such buffer zone, the council shall take into consideration, among other things, residential areas, private or public schools, licensed child day care facilities, licensed youth camps or public playgrounds adjacent to the proposed route of the overhead portions and the level of the voltage of the overhead portions and any existing overhead transmission lines on the proposed route. At a minimum, the existing right-of-way shall serve as the buffer zone.

Moreover, Conn. Gen. Stat. § 16-50p(i) states that for a proposed electric transmission line of 345 kV or greater, such as GSRP:

> there shall be a presumption that a proposal to place the overhead portions, if any, of such facility adjacent to residential areas, private or public schools, licensed child day care facilities, licensed youth camps or public playgrounds is inconsistent with the purposes of this chapter. An applicant may rebut this presumption by demonstrating to the council that it will be technologically infeasible to bury the facility. In determining such infeasibility, the council shall consider the effect of burying the facility on the reliability

of the electric transmission system of the state and whether the cost of any contemplated technology or design configuration may result in an unreasonable economic burden on the ratepayers of the state.

In this consolidated proceeding, with two competing applications, the Council must also consider Conn. Gen. Stat. § 16-50p(a)(3)(F), which states that, "[i]n the case of an application that was heard under a consolidated hearing process with other applications that were common to a request for proposal, that the facility proposed in the subject application represents the most appropriate alternative among such applications based on the findings and determinations pursuant to this subsection."

IV. PROPOSED PROJECTS

A. GSRP

1. GSRP Description

a. Proposed Northern Route

On October 20, 2008, CL&P filed its eleven volume Application with the Council. The GSRP project consists of a new 345 kV transmission line and other improvements to the electric transmission systems of CL&P in Connecticut and WMECO in Western Massachusetts. CL&P Application, A-1. In Connecticut, the proposed "northern route" would run from the North Bloomfield substation in Bloomfield, Connecticut north for approximately 12 miles through East Granby and Suffield, and then into Massachusetts, ultimately terminating at WMECO's Ludlow Substation in Ludlow, Massachusetts. CL&P Application, A-1; E-4. The proposed route would be "predominantly" in an existing CL&P transmission ROW that currently carries 115 kV transmission lines. CL&P Application, E-5. The existing ROW would have to be widened for a distance of roughly 1,000 feet between Phelps Road and Mountain Road in Suffield and for a distance of roughly 400 feet east of Ratley Road in Suffield. CL&P Application, E-5. This

ROW was established sometime before 1924 and was upgraded in the 1930's, 1941-42, 1957 and again in 1997. Carberry/Newland PFT, 4-5.

CL&P's "base line" design calls for steel or wood pole H-frames averaging 90 feet in height on the east side of the existing 115 kV lines in the existing ROW. Carberry/Newland PFT, 7. CL&P's "BMP design," its proposal to mitigate EMF's consistent with the Siting Council's Best Management Practices for EMF ("BMP" or "EMF BMP"), calls for 110 foot steel monopoles in a "delta" configuration for the "BMP focus area," a 3.2 mile stretch from Country Club Lane in East Granby to Phelps Road in Suffield. Carberry/Newland PFT, 7. The proposed new 345 kV line would functionally replace the two existing 115 kV lines that now run in that ROW. Application, E-7. The two existing 115 lines would be bundled together (split phased) and run parallel to the new 345 kV line (on the west side of the new line) from Granby Junction north to Massachusetts. Carberry/Newland PFT, 8; CL&P Application, E-7.

The proposed route from the North Bloomfield substation to Granby Junction is 4.7 miles in an existing ROW. That ROW now carries three different power lines, each one on a separate set of structures:

1. two 115 kV circuits on lattice towers averaging 70 feet in height;

2. a 23 kV line used for distribution service on wood poles averaging 40 feet in height; and

3. a single 115 kV circuit on H-frame structures averaging 60 feet in height.

Carberry/Newland PFT, 5-6.

CL&P intends to remove from service all three existing 115 kV lines from North Bloomfield to Granby Junction after the proposed 345 kV lines are energized, which would leave only the newly constructed 345 kV line and the 23 kV distribution line in this ROW. CL&P

Application, I-1 – I-3. Transcript ("Tr.") July 22, 2009, 156-157. "Unless CL&P determines that there may be a near-term need to reuse any of these line sections . . . it will file a petition with the CSC for approval to remove the line sections after the GSRP has been completed." Carberry/Newland PFT, 8. CL&P testified that if its proposed project is approved, it expected to file such an application to remove the existing 115 kV lines within one year from the completion of the 345 kV line. Tr. July 22, 2009, 159. While the removal of these 115 kV lines would not create any opportunities for different configurations of the 345 kV lines, it could allow some portion of the cleared area within the ROW to re-grow to its natural form. Tr. July 22, 2009, 160-161; July 29, 87.

The proposed route from Granby Junction through Suffield to Massachusetts is 7.2 miles in the same existing ROW. This ROW is "typically" 305 feet wide and now holds two 115 kV circuits on one line of lattice towers averaging 70 feet in height. Carberry/Newland PFT, 6. The existing steel lattice 115 kV structures would continue in use after the two existing 115 kV lines are "bundled" together into a single circuit. CL&P proposed that the new 345 kV lines would go on steel or wood H-frames averaging about 90 feet in height, or on 110 foot steel monopoles if necessary to mitigate EMF. CL&P Application, I-4. Tr. July 22, 2009, 165.

It would be possible to place the new 345 kV lines and the existing, bundled 115 kV lines on one set of 130 foot steel monopoles from Granby Junction through Suffield – the configuration preferred by the towns of East Granby and Suffield if the Council must approve overhead transmission lines in this portion of the ROW. This would allow for less clearing of the ROW and removal of the steel lattice structures. Tr. July 22, 2009, 165; 169.

b. Proposed Southern Route Alternate

CL&P also proposed the "Massachusetts Southern Route Alternative," which includes the same 12 miles of 345 kV line from North Bloomfield to Agawam, Massachusetts as well as an additional 1.1 miles in Suffield, Connecticut and 4.3 miles in Enfield, Connecticut along an existing ROW. CL&P Application E-7 – E-8, Figure H-4; Tr. September 22, 2009, 34. 3.7 miles of this route in Enfield goes through densely developed residential neighborhoods, including the areas on Sword Avenue, Alban Road, Brainard Road, East Forest Drive and Maple Street. Application Vol. 9 Maps 3, 4 and 5; Transcript September 22, 39. The Southern Route Alternative would also require rebuilds of the 115 kV lines on the proposed northern route. Tr. September 22, 2009, 34-35. Moreover, the Southern Route Alternative would require 159 acres of ROW clearing, whereas the proposed northern route would require clearing of 45 acres. Tr. September 22, 2009, 178-179.

Both CL&P and WMECO favor the proposed northern route because it is significantly less costly, has fewer environmental impacts and offers superior reliability. Application, H-54; Transcript September 22, 40. The Southern Route Alternative costs $52 million more and it requires significant land acquisition and clearing in Massachusetts. Tr. September 22, 2009, 40, 42-43. It also requires more 345 kV line (25 miles versus 16 miles overall), more visual impact and does not eliminate the need to re-construct the 115 kV lines along the proposed northern route. Tr. September 22, 2009, 41-42, 57-58. Moreover, it does not offer any advantages in terms of reliability. Tr. September 22, 2009 45-48. In fact, it seems to offer a less reliable route because it would place multiple 345 kV lines in a single ROW, a practice that is not preferred by transmission planners. Tr. October 28, 2009, 106.

2. Alleged Need for GSRP

According to the Application, GSRP is necessary to provide safe, reliable and economic electric transmission service throughout the Greater Springfield area as well as in north-central Connecticut, and to ensure that these areas of the regional transmission grid comply with mandatory federal and regional reliability standards. CL&P Application, A-1. CL&P described GSRP as purely a reliability-based project that is designed to address needs that exist today. Tr. July 21, 2009, 46-47, 154-155. At the present time, according to CL&P, the Springfield area transmission system and the regional bulk power system that connects western Massachusetts and north-central Connecticut are at risk of thermal overloads and voltage collapse that could lead to extended blackouts. Scarfone PFT, 25.

The transmission system that now serves the Springfield area consists largely of 115 kV lines constructed from the 1940's to the 1970's and does not meet current reliability standards; it becomes overloaded under normal conditions with all lines in service. CL&P Application, A-1. CL&P asserts that 345 kV upgrades in and around Springfield, including in north-central Connecticut, if built as proposed, would both relieve the congestion in the Greater Springfield area and would increase the import capacity between Connecticut and Massachusetts by 200 MW to 300 MW. CL&P Application, A-2; Scarfone PFT, 39.

CL&P relies upon the Southern New England Transmission Reliability Report 1, Needs Analysis ("Needs Analysis"), dated January 2008, submitted as part of Volume 5 of CL&P's Application. The Needs Analysis was created by ISO New England, Inc. ("ISO-NE"), [3] National Grid and Northeast Utilities, who formed a working group to develop a ten year plan for transmission system improvements in Southern New England. Needs Analysis Introduction, iii.

[3] ISO-NE is the transmission planning authority in New England. It also operates the bulk transmission system and operates the wholesale electricity markets in the region. Tr. July 21, 2009, 139.

This analysis revealed a number of reliability concerns, including Springfield area reliability and transmission transfer capability into Connecticut. Needs Analysis Introduction, iv.

According to CL&P, electric transmission systems must pass specific tests to comply with certain reliability criteria. These tests include whether the transmission system can deliver power under anticipated facility outage events and whether the system can transfer power within the ISO-NE control area. Needs Analysis, 7. Moreover, ISO-NE Planning Procedure 3 states that the transmission system should be designed and operated such that the loss of a major portion of the system "should not result from any reasonably foreseeable contingencies." Needs Analysis, 8. To determine compliance, models are created to test for single contingencies (the loss of one system element) and two contingencies (the loss of two system elements). Needs Analysis, 8.

CL&P identified five specific needs that would be addressed by the proposed project:

1. overloads on the 115 kV system primarily in Massachusetts but also in Connecticut;
2. voltages issues in Massachusetts;
3. short-Circuit problems at certain Massachusetts substations;
4. stability issues (the ability to withstand faults);[4] and
5. import capacity into north-central Connecticut.

Tr. July 21, 2009, 51-52.

With regard to the import capacity issue, the Needs Analysis stated that:

> The 2009 resource requirements for the Connecticut area demonstrate the need for improvements to the area's import capability, generating resources, or a combination of both. Some improvement in import capability can be obtained by mitigating the limitations associated with the Springfield area. However, these improvements are still insufficient to meet the projected supply resource requirements for the 2009 Connecticut

[4] Note, however, that ISO-NE did not agree that there are stability issues on the Greater Springfield system. Tr. October 28, 2009, 76.

> peak-load conditions. Limitations of the Connecticut import capabilities are a result of insufficient available 345 kV transmission capacity.

Needs Analysis, 14. The Needs Analysis further stated that "significant improvement in Connecticut's power-transfer capability is essential for maintaining an adequate and reliable level of supply resource for the Connecticut area beginning in 2009 and beyond." Needs Analysis, 16. CL&P acknowledged during the hearings, however, that if import capacity into north-central Connecticut were the only issue presented, its proposed transmission line would not be the best way to address it. Tr. July 21, 2009, 56.

CL&P stated that it tested the transmission system by applying "credible" generation dispatch scenarios and then measuring the performance of the existing system when stressed by one or two "contingencies." Scarfone PFT, 17. Neither NERC (the Northeast Electric Reliability Council) nor ISO-NE, however, specify the various generation dispatch scenarios to be applied. Rather, that judgment is "left to the sound engineering judgment of transmission planners." Scarfone PFT, 20. Thus, CL&P ran three dispatch scenarios of Springfield Area generation to test the system; all on, half-on and less than one-half on. Scarfone PFT, 27. The Company also assumed 350 MW transfer to NY over Cross-Sound cable, saying it was a normal operating characteristic. Scarfone PFT, 29.

CL&P claims that its tests demonstrate that its proposed project will not only resolve problems in the Springfield area but will also reinforce the reliability of the electric supply to north-central Connecticut. CL&P Application, F-20 – F-21. The existing 115 kV system is not capable, according to CL&P, of reliably serving the "double duty" of supplying local load in the Springfield area and supporting interstate transfers with Connecticut. CL&P Application, F-27.

ISO-NE strongly supported the need for the GSRP project to address identified reliability concerns in the Greater Springfield and Northern Connecticut areas. Mezzanotte PFT, 2-3; 5.

Without transmission improvements, according to ISO-NE, the system may fail to be reliable. Mezzanotte PFT, 4. The Needs Analysis shows "an increasingly high risk that the system will be unable to withstand single and multiple element contingencies following the single loss or outage of certain critical facilities in these areas as the system approaches or exceeds forecasted peak load levels." Mezzanotte PFT, 11. According to ISO-NE, GSRP should not be deferred. OCC-ISO-NE-16. ISO-NE first identified violations in Springfield area in 2005, and claims that those needs persist. OCC-ISO-NE-16.

3. Resource Alternatives to GSRP

CL&P asserts that there are no satisfactory or sufficient non-transmission alternatives that meet the need for the GSRP project. CL&P Application, G-10. CL&P considered whether generation projects outside of north-central Connecticut could affect the need for the GSRP and found that "there were no practical non-transmission alternatives (including generation alternatives) that could replace or defer the need for the proposed transmission project . . . ." CSC-4; ICR Report, Ex. 3, Vol. 5 of Application. See "Assessment of Non-Transmission Alternatives to the NEEWS Transmission Projects: Greater Springfield Reliability Project," September 2008, Application, Vol. 5 ("NTA Report"); Scheller PFT, 2.

The NTA Report considered additional demand side management ("DSM"), the addition of large scale generation resources as well as the "do nothing" strategy. CL&P Application, G-2. CL&P specifically studied whether the addition of NRG's Meriden facility and the GE plant in Oxford changed need for project and found that even under the most optimistic dispatch scenario, the operation of these plants did not resolve the reliability problems in the Springfield area or in north-central CT. CSC-CL&P-18. The NTA Report, however, only tested to determine whether the non-transmission alternatives provided the same level of reliability as the

proposed GSRP project. Tr. July 21, 2009, 62. Thus, if GSRP is either not needed or is overkill, this Report is of limited value. Nonetheless, CL&P maintains that even if the Council denied CL&P's Application and approved the Meriden facility, CL&P would immediately re-apply to construct GSRP because the transmission system needs would persist. Tr. July 22, 2009, 212.

4. Underground Configurations Evaluated for GSRP Proposed Route

CL&P evaluated a number of possible underground alternatives for GSRP, but rejected all of them. Carberry/Newland PFT, 21. The alternatives included partial and total underground routes in the ROW and in roads. Tr. July 22, 2009, 170. While technically possible, CL&P rejected them as primarily because they are more environmentally harmful and roughly ten times more expensive per mile than overhead construction. OCC-CL&P-6; Carberry/Newland PFT, 26. Underground construction in the exiting ROW corridor would require less clearing in the ROW, but would impact wetlands, require new easements for construction, require Department of Environmental Protection and Army Corps of Engineers permits and would require the construction of two transition stations, each of which would need two to four acres of land and cost $15 million. Moreover, one of the transition stations could have to be placed on utility owned land in a Wildlife Management Area in East Granby. CSC-CL&P-6; CSC-CL&P-34; DEP Comments, 6-7; Tr. July 22, 2009, 173. CL&P rejected the idea of undergrounding in the roads because of the cost, construction constraints, environmental impacts as well as the potential impacts on homes and businesses. CL&P Application H-19. The Connecticut Department of Transportation also expressed significant reservations about underground construction in state roads. Department of Transportation PFT, 1-5.

Moreover, according to CL&P, the cost of underground construction is $37.3 to $46.1 million per mile, whereas the cost of overhead construction is roughly $3.4 million per mile.

Suffield-CL&P-5. The cost of undergrounding to Connecticut's electric consumers, however, would be even greater because the costs of underground construction would not be shared, or regionalized, among all electric customers in New England as is the case with overhead lines.[5] As a result, the total projected cost to Connecticut electric customers of constructing GSRP all underground in the existing ROW would increase cost from about $41 million if built overhead to about $455 million. OCC-CL&P-7; Carberry/Newland PFT, 28. When measured on a per-customer basis, the projected cost of overhead construction of GSRP comes to roughly $0.88 per residential CL&P customer per month whereas the projected cost of underground construction comes to $3.37 per residential customer per month. For commercial and industrial customers, the projected cost of overhead construction would be $1,053 per customer per month whereas the projected cost of underground construction would be roughy $4,000 per customer per month. Tr. July 29, 2009, 277-278. All of these amounts would be paid over a period of 40 years subject to depreciation. Tr. July 29, 2009, 307.

5. <u>The "Estey" Alternate Route</u>

During these proceedings, Council member Estey asked whether an alternate configuration that consists of constructing a 345 kV loop around Springfield from Ludlow to South Agawam to Hampton to Ludlow would solve the transmission reliability needs in the Greater Springfield area. Tr. July 22, 2009, 34-35, 37-38, 123-124. This route would not include the 12 mile 345 kV line addition from North Bloomfield through East Granby and Suffield to South Agawam, thus leaving the only Connecticut portion to be the 5.4 miles of the southern route alternative in Suffield and Enfield.

CL&P testified that such a configuration would require study – causing significant delay – and it was skeptical that it would be adequate. Tr. July 22, 2009, 128; Tr. July 29, 2009, 68-69.

[5] When transmission costs are regionalized, Connecticut's electric consumers pay roughly 27% of the project costs.

For example, CL&P testified that such a configuration would not provide sufficient back-up to the Bloomfield and Agawam lines. Tr. July 22, 2009, 63. CL&P also speculated without the benefit of any study, however, that the "Estey" route could eliminate certain of the problems that exist on in the Springfield area if coupled with additional modifications, tr. July 22, 2009, 36, 54, 128, though it would not address the import capacity issue into north-central Connecticut. Tr. July 22, 2009, 37, 128. At the same time, however, CL&P admitted that the import capacity issue standing alone would be best addressed by non-transmission alternatives. Tr. July 21, 2009, 56. In other words, if the import capacity issue were the only problem to be addressed, GSRP would not be the most appropriate solution.

6. Statutory Facilities

Conn. Gen. Stat. § 16-50p(i) establishes the rebuttable presumption that transmission lines of 345 kV or greater shall be constructed underground if they are "adjacent to" statutory facilities. This statute defines statutory facilities as public or private schools, licensed day care facilities, licensed youth camps, public playgrounds and residential areas. The Council defined residential areas in its Opinion in Docket No. 272 as developed neighborhoods, not just zoned residential or sparsely settled areas. This presumption can be overcome if burying line is not feasible for technical or economic reasons. In such cases, CSC can site lines overhead near statutory facilities so long as the lines are contained in a "buffer zone" adequate to protect health and safety. A transmission ROW can qualify as a buffer zone.

According to CL&P, there are no schools, day cares, camps or public playground along preferred overhead route for the proposed GSRP line. CL&P Application, H-28. CL&P argues that none of the residences along the proposed GSRP route qualify as "residential areas" for the purposes of Conn. Gen. Stat. § 16-50p(i) under the Council's interpretation in Docket No. 272.

Tr. July 22, 2009, 182; Application, H-28. CL&P further claimed that even if Council were to find that the homes along the ROW were "residential area" for the purposes of § 16-50p(i), CL&P believes that it has rebutted the presumption for underground lines based on the cost burden to Connecticut ratepayers of undergrounding the transmission lines. Carberry/Newland PFT, 52. Moreover, according to CL&P, EMF mitigation does not provide any justification for undergrounding since "split phase" overhead construction would produce lower EMF levels than undergrounding. Carberry/Newland PFT, 52.

7. Magnetic Fields

In 2007, the Council adopted its Revised EMF BMP, which provides guidelines for the reduction of magnetic fields associated with new transmission lines at the edge of the ROW, particularly where the new line is adjacent to statutory facilities. Pursuant to the EMF BMP, the applicant must:

> -include in its application an assessment of the impacts on EMF produced by the proposed transmission line, including routes in proximity to statutory facilities. This includes EMF measurements at such facilities with projected levels caused by the new line at normal and peak loads and design alternatives with EMF calculations;
>
> -propose no-cost/low-cost measures to reduce EMF via a field design plan;
>
> -include a statement that the application is consistent with the EMF BMP.

See CL&P Application, O-7.

CL&P's Field Design Plan begins with a base design that includes all no-cost EMF mitigation measures and examines modified designs that incorporate low-cost mitigation measures near potential statutory facilities and make recommendations of its favored design that seek to achieve 15% or more EMF mitigation compared to the base design with an investment of 4% of the total cost of the base design project. CL&P Application, O-8. Such a design, CL&P

claims, would produce lower EMF than occur along major transmission ROWs, distribution lines and in many every-day settings and thus will provide an adequate buffer zone. CL&P Application O-8 – O-9.

For CL&P's baseline design, the EMF readings and projections are as follows. From North Bloomfield to Granby Junction:

-Pre-Construction: 16.0 mG on west/north ROW
0.5 mG on east/south ROW

-Post-Construction: 10.2 mG on west/north ROW
13.4 mG on east/south ROW

CL&P Application O-20; Carberry/Newland PFT, 35.

From Granby Junction to the Massachusetts border:

-Pre-Construction: 8.7 mG on west/north ROW
0.1 mG on east/south ROW

-Post-Construction: 23.5 mG on west/north ROW
12.6 mG on east/south ROW

-Post-Constr BMP: 17.9 mG on west/north ROW (24% reduction)
9.8 mG on east/south ROW (22% reduction)
-cost of BMP measures = ~$2 million, or 1.6%.
-utilizing 110' mono-pole, split phasing.

CL&P Application, O-30; O-64. Carberry/Newland PFT, 36.

CL&P then provided to the Council an array of low EMF alternative or possible designs. They are:

-Baseline Design: 23.6 mG on west/north ROW
12.6 mG on east/south ROW

-Alt 1 (H-Fr. +20'): 22.8 mG on west/north ROW
12.3 mG on east/south ROW
0.4% cost increase

-Alt 2 (delta): (CL&P Preferred)	16.9 mG on west/north ROW 9.7 mG on east/south ROW 1.6% cost increase
-Alt 3 (delta + 20'):	15.1 mG on west/north ROW 9.1 mG on east/south ROW 3% cost increase
-Alt 4 (vertical):	15.8 mG on west/north ROW 9.6 mG on east/south ROW 2.6% cost increase
-Alt 5 (vert +20'):	13.4 mG on west/north ROW 9 mG on east/south ROW 3.5% cost increase
-Alt 6 (split phase):	2.4 mG on west/north ROW 1.9 mG on east/south ROW 10.1% cost increase (~$13.5 million) (uses 2x number of conductors) (lower than UG; lower than existing)
-Alt 7 (345/115 Composite)	19.1 mG on west/north ROW 8.3 mG on west/north ROW 11% cost increase.

CL&P Application, Appendix O-1, 12; Carberry/Newland PFT, 39. Tr. July 22, 2009, 184-185.

CL&P proposed the Delta configuration (Alt. 2) in the EMF target area -- the 3.2 mile segment in the Newgate Road and Phelps Road areas of E. Granby and Suffield -- but stated that it would build any of these configurations if required by the Council. CL&P Application, Appendix O-1, 14. CL&P's proposed configuration would cost an additional $1 million per mile, but would result in less ROW clearing and lower EMF.

The split phase (Alt. 6) would reduce EMF below existing levels, from about 16 mG to 2.4 and 1.9 mG. CL&P did not, however, recommend this configuration because it estimated the cost to be an additional $9.3 million, more than double the cost of the 4% rule of thumb in EMF BMP, and because the structures would be 130 feet high and have greater visual impact due to

the height and the use of two sets of conductors. Carberry/Newland PFT, 40. Tr. July 22, 2009, 189.

The Council must bear in mind, however, that the 4% figure in the EMF BMP is a guideline, not an absolute cap. As the Council stated in the EMF BMP, "[i]n general, the Council recognizes that projects can vary widely in the extent of their impacts on statutory facilities, necessitating some variance above and below the four percent figure." EMF BMP, 5. (Emphasis added). Moreover, the height of split phase structures need not always be 130 feet. Specific heights depend on topography and the use of dead-end rather than tangent structures could reduce the heights, as could a reduction in the distance between the structures. Tr. July 22, 2009, 197-198. Note that CL&P's preferred EMF mitigation technique is 110 foot delta structures.

The Council should also bear in mind the comments provided by the Connecticut Department of Health ("DPH") dated October 8, 2009, which stated that while most of the proposed GSRP line poses no public health concern, the area near Newgate Road and Phelps Road in East Granby and Suffield comes closer to homes and the addition of a 345 kV line would substantially increase EMF in those areas at the edge of the ROW. DPH continued that CL&P's proposed delta configuration is "less than adequate" to address the EMF increase due to this project and would spend only 1.6 percent of the cost of the project on EMF reduction, far below the 4% guideline. DPH stated that the split phase design would reduce EMF to a much greater extent – below even exiting levels – and would do so at under 5 percent of the total project cost. Similarly, the DEP urged the Council to consider process used in 272 that led to the use of split phase construction. DEP Comments, 8.

8. Mitigation of Impact of Construction

CL&P acknowledged in this proceeding that a "lesson learned" from the Bethel-to-Norwalk project and the Middletown-to-Norwalk project is the impact of construction-related disturbances on neighbors and local communities. CSC-CL&P-15. Over the course of those projects, CL&P increased its outreach, provided more information and allowed greater opportunity for residents and municipalities to voice their concerns and preferences. Particular concerns raised included work hours, access to businesses, trespassing, vegetation/landscaping, housekeeping of work areas and the appearance of overhead structures. CSC-CL&P-15.

In this case, CL&P committed to continue such outreach efforts. Tr. July 22, 2009, 211. CL&P also stated, however, that unlike the Middletown-to-Norwalk project, the Council should make final decisions regarding height and appearance of structures after receiving input from staff, municipalities and the public rather than leave decision to local authorities. This would avoid result in that case where differing preferences by affected municipalities led to the use of a variety of overhead structure types and created an inconsistent appearance. CSC-CL&P-40; Tr. July 22, 2009, 202. Even if the Council reserves for itself final say in such areas, the Council should nevertheless give considerable weight to the views of the affected municipalities concerning the appearance of the GSRP lines. In addition, the Council should bear in mind DPH's recommendation of split-phase configuration in the Newgate Road and Phelps Road areas as well as DEP's recommendation in favor of screening at certain points along overhead ROW where lines would be visible. DEP Comments, 10, 13.

B. Meriden Facility

On March 19, 2009, NRG filed with the Council its application in this proceeding pursuant to Conn. Gen. Stat. § 16-50l(a)(3) in which it proposed the 530 MW Meriden Facility

as an alternative energy solution to the GSRP project. ("NRG Application"). NRG submitted its application in response to the Connecticut Energy Advisory Board's ("CEAB") request for proposals seeking alternatives to CL&P's GSRP project and a subsequent CEAB Evaluation Report to the Connecticut Siting Council dated February 17, 2009 ("CEAB Report") in which the CEAB concluded that NRG's proposes Meriden Facility should be considered by the Council as a possible alternative to the GSRP.[6][7]

The CEAB stated in its Report that NRG's proposed project (in addition to the other two projects proposed in the CEAB's RFP process) "ha[s] the potential to be feasible and may, if implemented, have an effect on the overload conditions identified in the needs assessment and therefore are worthy of further consideration. Hence, the CEAB is of the view that the CSC should consider the RFP Projects as it assesses the need for a solution and proposed transmission solution." CEAB Report, 2. According to CEAB, both GSRP and the Meriden Project:

> if implemented, would enhance system reliability. However, . . . the CEAB does not have sufficient information to make a definitive assessment of how the three proposed projects, individually or in combination, might meet the need that gave rise to CL&P's Transmission proposal.

CEAB Report, 42.

[6] Pursuant to Conn. Gen. Stat. § 16a-7c, the CEAB issued an RFP and solicited proposals for any projects that "might be alternative resources for some or all of the needs identified in CL&P's application." CEAB Report, 10. "As contemplated in the RFP, projects were solicited to address the needs in whole or in part, as it is possible that combinations of two or more projects could, together, provide an effective solution." CEAB Report, 21.

[7] Conn. Gen. Stat. § 16a-7c(f) states that not later than 45 days after the deadline for submissions in response to the CEAB's RFP, the CEAB "shall issue a report that evaluates each proposal received, including any proposal contained in an application to the council that initiated a request for proposal . . . . The board shall forward the results of such evaluation process to the Connecticut Siting Council."

1. Project Description

The Meriden Facility sits on a 36 acre parcel of land located off South Mountain Road in Meriden, within 2,500 feet of the boundary with Berlin. NRG Application, 12. This parcel is crossed by two 345 kV transmission lines to which the facility could interconnect. NRG Application, 12. According to NRG's application, "[i]n 2003, NRG completed substantially all of the site preparation and civil construction for the Meriden project . . . ." Completion of this project would require equipment installation, including the gas and steam turbines and their connections, which amounts to roughly 80 percent of the work to complete the facility and about 90 percent of the cost of the facility. NRG Application, 12; Tr. October 27, 2009, 7-8. The City of Meriden supports the completion of the Meriden Facility.

The Meriden Facility is not new to the Council. PDC-El Paso Meriden, LLC, the former sponsor of the Meriden Facility, applied for and received a Certificate for the Meriden Facility from the Council in 1999. See CSC Docket No. 190 Decision and Order dated April 27, 1999; CSC-NRG-10. This certificate expires on April 27, 2011. The Council required NRG to submit a new application in the present proceeding in order for NRG's proposal to be considered as an alternative proposal to the GSRP. See Council Memorandum, Docket No. 370, dated February 27, 2009. If the Meriden Facility were approved in this proceeding, NRG stated that it could be placed in service in approximately June of 2012. NRG Application, Attachment C.

2. The Stated Purpose of NRG's Application in this Proceeding Is To Help It Secure Financing Necessary to Complete Construction of the Meriden Facility

NRG filed its Application in this proceeding to help it secure the financing necessary to complete the Meriden Facility. Specifically, NRG argues that the latest Integrated Resource Plan ("IRP") issued by the DPUC assumed the completion of GSRP as well as the rest of the NEEWS

projects. Tr. October 27, 2009, 25-26. A Siting Council decision that GSRP is not needed could, NRG claims, lead to the next IRP being concluded without the assumed need for GSRP or NEEWS, which in turn could make the Meriden Facility a more attractive resource alternative and thus more likely to secure a financing arrangement via a DPUC-approved contract. Tr. October 22, 2009, 225-226, 237. Put another way, a Council finding that the Meriden Facility is a superior alternative to the GSRP could, according to NRG, lead to a CEAB recommendation that the DPUC procure in-state generation assets and would position the Meriden Facility as an optimal candidate for such an award. "A favorable ruling by the Council in this proceeding could very well elevate NRG's chances of securing a contract for the Meriden Project in a standard service solicitation depending on the DPUC-approved solicitation guidelines." OCC-NRG-24. See also Tr. October 27, 2009, 19.

NRG further asserts that additional generation in Connecticut, such as the Meriden Facility, could eliminate the need to increase import capacity to north-central Connecticut. If so, then the addition of new generation could allow for a different GSRP configuration that has less impact on Connecticut. Tr. October 27, 2009, 13-14, 24. Thus, NRG suggested during these proceedings that the Council direct a study to determine whether less transmission would be required in Connecticut if there were additional generation in the State to address the import capacity issue. Tr. October 27, 2009, 17-18, 20-21, 44; October 22, 2009, 239. Such a study, according to NRG, could be done in 30 to 60 days and would assure that the Council only approves the least costly and least invasive transmission facility in this case.[8] Tr. October 27, 2009, 48.

[8] NRG testified that it did not have the ability to conduct such a study on its own, though it admitted that it did not ask ISO-NE to study such a scenario. Tr. October 27, 2009, 83.

NRG indicated that the estimated cost of the Meriden Facility depended upon the terms of the long-term contract that it hopes to secure. NRG apparently contemplates a "contract for differences" in which the revenues its plant earns in the market would be used to offset its fixed and variable costs, with the buyer of the output being responsible for the net costs. NRG Application, 20 - 21. NRG suggests that the cost of the Meriden Facility may be greater than the Connecticut portion of GSRP as proposed, but claims that revenues derived from that project could render it cost effective. OCC-NRG-25. On the other hand, NRG admitted during these proceedings that the cost of its proposal to complete the Meriden Facility are not known and cannot be determined by the Council at this time because those costs depend on the terms of a contract that has yet to be negotiated or approved in a future Connecticut Department of Public Utility Control ("DPUC" or "Department") proceeding. Tr. October 27, 2009, 10-11.

The Council already certified the Meriden Facility. In so doing, the Council long ago recognized the system benefits that this generating plant could provide to Connecticut, including the addition of generation capacity in the State, the displacement of older, dirtier and less efficient units as well as adding jobs in the state and providing approximately $85 million in property tax revenues to Meriden. NRG Application, 5. As a result, the Council has already done what it can to support the Meriden Facility. The result that NRG seeks in this proceeding is more properly sought at the DPUC in a forum in which the Department could appropriately consider the cost and potential benefits of NRG's proposal to Connecticut's electric consumers.

That said, however, in the event that the Council does not choose the Meriden Facility in this case, the Council should make clear that its final decision does not and should not negatively reflect on the relative merits of the Meriden Facility. NRG's project deserves full and complete

review by the appropriate agencies at the appropriate time to determine whether its benefits can and should be provided in a cost-effective manner.

V. OTHER PARTICPANTS

A. Town of Suffield

The Town of Suffield prefers approval of the NRG Facility in this case rather than GSRP because it would not impact Suffield. If GSRP is approved by the Council, Suffield prefers that it be placed underground in Suffield to the greatest extent possible. Tr. November 5, 2009, 43. For any portions that cannot be buried underground, Suffield asks that the Council place the proposed 345 kV line and the existing 115 kV lines on a single structure and remove the existing 115 kV lattice structures. Suffield also asks for screening of the new transmission lines. Tr. November 5, 2009, 50.

B. Town of East Granby

Like Suffield, the Town of East Granby prefers approval of the NRG Facility. The proposed GSRP route, according to East Granby, and the necessary widening of the clearing area in the ROW, would "adversely affect the scenic and aesthetic properties of both the Ridge and the (Metacomet) Trail." Hayden PFT, 2. East Granby further states that the proposed route also impacts a substantial residential development, especially along Newgate Road, and, according to East Granby, presents health issues and will adversely affect property values. Hayden PFT, 3. East Granby states that if GSRP is required, it would prefer that the proposed 345 kV lines as well as the existing 115 kV lines in East Granby be placed underground. If an all underground route is not possible, then place the transmission lines underground near residential areas. Finally, if the GSRP lines must be built overhead, East Granby prefers a single tower carrying both 115 kV and 345 kV lines. Hayden PFT, 4. Tr. November 5, 2009, 42-43, 49.

C. Town of Enfield

On July 6, 2009, the Town of Enfield Office of the Town Manager stated Enfield's support for CL&P's "Preferred Route" and "expresse[d] its steadfast opposition" to the Massachusetts Southern Route Alternative, which would severely impact the northern portion of Enfield. Tr. November 5, 2009, 12.

D. Citizens Against Overhead Power Line Construction c/o Richard Legere

Citizens Against Overhead Power Line Construction ("CAOPLC") represents about 100 West Suffield and East Granby families concerned with the impacts of the overhead 345 kV GSRP line. CAOPLC Request for Party Status, dated May 28, 2009, 1. These impacts include the potential health effects from EMF, adverse affects on property values as well as visual impacts. Id., 1-2. CAOPLC seeks undergrounding of the proposed transmission line in East Granby and Suffield, but not under existing roads. Id., 3. Rather, it suggests that CL&P should propose new underground routes that will not impact public with EMF. Id., 5.

In pre-filed testimony filed in this proceeding on September 16, 2009,[9] CAOPLC suggests that underground construction was a prudent method to address EMF health concerns and recommended that the Council consider high voltage direct current ("HVDC") construction. CAOPLC PFT, September 16, 2009, 8. It further testified that the visual impact of the proposed GSRP project was understated by CL&P. Id., 25.

E. Connecticut Department of Transportation

The Connecticut Department of Transportation ("DOT") expressed its concern with the potential for longitudinal underground transmission line installations within the right-of-way of state highways. DOT PFT, 1. According to DOT, its infrastructure improvement program impacts utilities in its ROW, and future relocation of underground transmission lines is even

[9] This testimony was later supplemented by CAOPLC on October 30, 2009.

more expensive than original installation. DOT PFT, 2. In order to construct the proposed transmission lines in state highway ROWs, DOT requires an encroachment permit and agreement with CL&P that the Company will bear cost of installation and relocation and compliance with its utility accommodation manual. DOT PFT, 2-4.

DOT further stated that the construction of transmission lines in state highway ROWs complicates its engineering duties and responsibilities and that it would require extensive limitations on construction work hours in its ROW. DOT PFT, 2. DOT also testified that it would require that CL&P place splicing chambers for underground construction as far away as possible from the travelled way. DOT PFT, 3.

VI. DISCUSSION

A. Defer Decision Until the Massachusetts EFSB Rules

The consolidated proceedings before the Council present a number of unique circumstances and challenges. Unlike the Bethel-to-Norwalk line and the Middletown-to-Norwalk line, the vast majority of the transmission upgrades associated with GSRP are to occur in Massachusetts and the majority of the reliability benefits that will be derived from this project will be for Massachusetts customers in the Greater Springfield area. The Massachusetts portion of this project consists of 23 miles of new 345 kV line and the reconstruction and upgrade of 27 miles of existing and new 115 kV lines in and around the Springfield area. CL&P Application, E-2. In contrast, the Connecticut portion of the proposed GSRP project contains roughly 12 miles of 345 kV lines and no comparable amounts of 115 kV upgrades and rebuilds. Also unlike Bethel-to-Norwalk and Middletown-to-Norwalk, the present case involves two competing applications, each of which claims to address the needs of Connecticut's electric system. CL&P has proposed a 345 kV electric transmission line from the North Bloomfield substation in

Connecticut north to Agawam, Massachusetts and NRG has proposed an electric generating facility in Meriden, Connecticut. Moreover, these competing applicants have presented vastly different views of the needs facing Connecticut and the region and the appropriate infrastructure upgrade to address those needs.

In light of these unique circumstances, the Council must take a deliberate and measured approach when addressing the competing applications in these consolidated proceedings. The Council should begin by deferring its decision in this case to allow the Massachusetts EFSB to be the first regulatory body to address GSRP for two reasons. First, because the great bulk of the work associated with GSRP will occur in Massachusetts and because the primary driver for this project is to upgrade the reliability of the transmission system serving the Greater Springfield, Massachusetts area, the EFSB should address the need for this project before the Council does. If the EFSB finds that the proposed transmission project is not needed in Massachusetts, the project is certainly not needed in Connecticut. Similarly, if there is no need for GSRP, then there would be no need to address the proposed alternative Meriden Facility.

Second, even if the EFSB finds that there is a need for GSRP, it is imperative that the route of the transmission project approved in Massachusetts be entirely consistent with any approved by the Council in Connecticut. In other words, both the EFSB and the Council must approve the same route to ensure that the ends of the transmission lines approved in each state meet at the border. If the routing of any approved projects is not compatible, then the Council should not approve GSRP in Connecticut.

In the event that the Council determines that the statutory timeframe for the completion of this proceeding set forth in Conn. Gen. Stat. § 16-50p(a)(2)(C) prevents it from deferring its decision in this case until the EFSB rules, the Council should deny the applications without

prejudice and invite the re-filing of the applications after the EFSB rules. At the very least, should the Council refuse to delay its decision in these proceedings until the EFSB rules, it should explicitly condition any approval of any aspect of GSRP or the Meriden Facility upon a finding by the EFSB that there is a need for GSRP in Massachusetts. The Council must also explicitly condition any approval of GSRP upon the approval by the EFSB of the same route as that which is approved by the Council, which should be the proposed northern route.

B. Need

In order to approve an application, the Council must, pursuant to Conn. Gen. Stat. § 16-50p(a)(3)(A), find and determine the public need for the facility and the basis for the need. Section 16-50p(c)(3) states that:

> a public benefit exists if such a facility is necessary for the reliability of the electric power supply of the state or for the development of a competitive market for electricity and a public need exists if such facility is necessary for the reliability of the electric power supply of the state.

Moreover, Conn. Gen. Stat. § 16-50p(h) provides that "[f]or purposes of this section, a public need exists for an energy facility if such facility is necessary for the reliability of the electric power supply of the state."

As noted supra, CL&P testified that GSRP is needed to provide safe, reliable and economic electric transmission service throughout the Greater Springfield area as well as in north-central Connecticut, and to ensure that these areas of the regional transmission grid comply with mandatory federal and regional reliability standards. CL&P Application, A-1. NRG testified that additional generation in Connecticut, such as the Meriden Facility, could eliminate the need to increase import capacity to north-central Connecticut and therefore could possibly allow for a different GSRP configuration that has less impact on Connecticut. Tr. October 27, 2009, 13-14, 24.

The Connecticut Office of Consumer Counsel ("OCC"), however, testified that CL&P has failed to show any need for the GSRP project, either at present or at any future time used by electric system planners, including CL&P and ISO-NE. Chernick PFT, 4. Tr. October 21, 2009, 11. OCC stated simply that "no need has been demonstrated for any project to be approved." Chernick PFT, 43.

According to OCC, CL&P's Needs Analysis relies on numerous assumptions that are implausible or even impossible, including:

> -applying the most demanding weather conditions, highly unlikely generation patterns, unprecedented and excessive transmission loadings, suspending all future energy efficiency efforts and the operation of retired power plants, and assuming that ISO-NE would violate its own reliability procedures. Chernick PFT, 4;
>
> -assuming contingency scenarios, and ISO-NE's response to those assumed conditions, that are not plausible. Chernick PFT, 5;
>
> -assuming transmission loadings that could not be expected to be reached until 2020. Chernick PFT, 15;
>
> -assuming generation dispatch scenarios for the Springfield area generation that are highly unlikely, once in a thousand years or once in ten thousand years. Chernick PFT, 21;
>
> -assuming dispatch of several Maine and Massachusetts generators that have been retired. Tr. October 27, 2009, 49; Chernick PFT, 24; and
>
> -assuming imports from Canada that are hundreds of more MW than plausible. More realistic dispatch assumptions without the addition of retired power plants would result in lower imports into Connecticut and less stress on the Springfield area transmission system. Chernick PFT, 28.

OCC further stated that *"CL&P has designed the scenarios to create the appearance of a problem that the GSRP can solve*." Chernick PFT, 26. (Emphasis in original). While GSRP could provide economic benefits, OCC stated that it is not justified by reliability. Chernick PFT,

6. Thus, OCC stated that CL&P should pursue its proposal through the DPUC's IRP process. Chernick PFT, 6-7.

Since OCC does not agree that CL&P has demonstrated a need for GSRP, OCC cannot recommend the Meriden Project as an alternative to GSRP. Chernick PFT, 7. OCC recognized, however, that the addition of new generating capacity in Connecticut would likely reduce Connecticut's need to import power on peak usage days which would, in turn, improve the reliability of its energy infrastructure. Chernick PFT, 26. OCC testified, however, that CL&P favors a transmission line because transmission is a highly lucrative investment for the Company. Chernick PFT, 41-42.

In response, CL&P argued that the studies which demonstrate the need for GSRP apply accepted transmission planning criteria to test the transmission system in the greater Springfield. These criteria require CL&P to plan for a variety of contingencies that could occur in the future and to provide system operators with the ability to deal with any and all such contingencies that may arise. Relying on ISO-NE's PP3 criteria, CL&P asserted that transmission planning criteria, which it used in its needs studies, differ vastly from transmission operating criteria, which informed the basis of OCC's testimony. According to CL&P, it is inappropriate to apply operating criteria to test the validity of transmission planning studies. Tr. July 22, 2009, 106-107. This, according to CL&P, explains why its stress tests of the transmission system included generation that had been retired and seemingly implausible dispatch scenarios. Tr. July 22, 2009, 107. OCC, in turn, countered that the electric system could probably survive even the highly unlikely dispatch scenarios posited by CL&P in its tests and that CL&P's proposal was intended to gold plate the system. Tr. October 21, 2009 195-196, 98-99, 101.

ISO-NE supports the need for the GSRP project to address identified reliability concerns in the Greater Springfield and Northern Connecticut areas. Mezzanotte PFT, 2-3; 5. ISO-NE testified that without transmission improvements, the system may fail to be reliable. Mezzanotte PFT, 4. That is because, according to ISO-NE, reliability issues in Massachusetts – including overloads, voltage issues and short circuit problems – as well as thermal overload issues in Connecticut, coupled with a need to increase import capacity into north central Connecticut, require the construction of the GSRP project. Tr. October 28, 2009, 78. ISO-NE claimed that it first identified violations in Springfield area in 2005, and those needs persist. OCC-ISO-NE-16.

"The Needs Analysis identifies and details reliability concerns with the Greater Springfield and north-central Connecticut area electric systems." Mezzanotte PFT, 11. According to ISO-NE, the Needs Analysis shows "an increasingly high risk that the system will be unable to withstand single and multiple element contingencies following the single loss or outage of certain critical facilities in these areas as the system approaches or exceeds forecasted peak load levels." Mezzanotte PFT, 11. ISO-NE further shares CL&P's concern with thermal overloading of transmission lines and poor voltage performance. Mezzanotte, PFT, 12. Thus, ISO-NE concluded that the GSRP as proposed should not be deferred. OCC-ISO-NE-16.

ISO-NE testified that the addition of the Meriden Facility, or any additional generation in Connecticut, would not affect the need for GSRP. Tr. October 28, 90, 94. It further stated that no additional study was necessary to determine the need for GSRP, regardless of the purpose of such study or the time it would take to conduct such a study. Tr. October 28, 2009, 98-100. ISO-NE, however, acknowledged that it lacks the authority to compel the Council to approve applications that come before it. It can only compel transmission owners such as CL&P to seek to build transmission upgrades that it believes are necessary, but those transmission owners must

seek and receive all necessary state approvals, including the Council's approval, in order to construct any such project. Tr. October 28, 2009, 48. If the Council were to deny CL&P's Application, neither ISO-NE, nor NERC or FERC, could compel the construction of that project. Tr. October 28, 2009, 73-74.

It is important to bear in mind that the bulk of the GSRP project is physically located in Massachusetts and that the EFSB is currently reviewing those portions of the project. Among other things, the EFSB must determine that there is a need for the project in Massachusetts and determine the appropriate routing of the proposed project. OCC is a party in the EFSB proceeding in Massachusetts and is arguing in that proceeding that the applicants have failed to demonstrate the need for the GSRP project. Tr. October 22, 2009, 9-10. ISO-NE is also a participant in the Massachusetts proceeding.

In the event that Massachusetts finds GSRP needed for system reliability, the Council must assess the alleged need for GSRP or the Meriden Facility. If there is no need, then the Council need not address the relative merits of either competing applicant's proposal. As fully described herein, both CL&P and ISO-NE, the entity primarily responsible for transmission system planning and operations in New England, have testified that GSRP is needed to assure the safe and reliable provision of electricity in the Greater Springfield area as well as in north central Connecticut. The Connecticut OCC has challenged these assertions, testifying that the neither CL&P nor ISO-NE has demonstrated a need for the proposed transmission upgrade. In so doing, the OCC challenged the transmission planning criteria used by ISO-NE and CL&P to justify the need for the GSRP project, claiming that these criteria are at odds with the manner in which the transmission system in New England is actually operated.

Thus, even in the event that the Council determines that CL&P carried its burden of demonstrating a need for GSRP based on the application of existing transmission planning criteria by ISO-NE, Northeast Utilities and National Grid, it is entirely fair and appropriate for the Council to question the usefulness of these planning criteria if they are as inconsistent with the actual operation of a transmission system as OCC suggested. Moreover, if this issue cannot be resolved in the present case, the Council should consider opening a dialogue with its counterpart siting authorities in the other New England states and ISO-NE to address and resolve the appropriate planning standards that should be applied to assess and determine the need for transmission facilities in the region.

C. GSRP Versus the Meriden Facility

If the Council finds that there is or are reliability needs, the Council must consider whether and how GSRP and the Meriden Facility meet these needs and weigh the relative pros and cons of the competing projects. The two projects are markedly different. GSRP is a transmission line that, according to ISO-NE and CL&P, will address the significant reliability issues facing the greater Springfield area, which include overloads, voltage issues, short circuit problems and stability issues, primarily in Massachusetts. Moreover, if approved, GSRP would receive "regionalized" cost treatment, meaning that the reasonable cost of the project as determined by ISO-NE would be spread among the six New England states based on their relative percentage of regional load, meaning that Connecticut would pay roughly 27 percent of that total cost.

On the other hand, GSRP consists of at least twelve miles of overhead 345 kV transmission lines on structures that could be as high as 110 to 130 feet near homes in three or possibly four Connecticut municipalities. The construction of these lines would in most cases

require widening of the cleared area in existing transmission ROWs and the construction of these lines would have a major impact on these towns and local residents. Moreover, any regionalized cost treatment would not include any costs determined by ISO-NE to provide local benefits that are not necessary for system reliability. Such costs would likely include the cost of undergrounding the transmission lines, route deviations to address local concerns or alternate routing or wire configurations to address local concerns like EMF.

The Meriden Facility does not present many of the "local impact" concerns that GSRP does. It previously received its siting approvals and construction of the shell of this facility has already been completed. Moreover, unlike the towns that would be impacted by GSRP, the City of Meriden supports the Meriden Facility. On the other hand, however, the completion of this generation facility will not address the specific reliability issues identified by ISO-NE and CL&P in the greater Springfield area, such as the overloads, voltage and stability issues, though it could address an import capacity need in Connecticut. Moreover, even with a positive result in the present proceeding it is unclear whether NRG will in fact receive the financing it requires to actually complete the Meriden Facility. Further, CL&P testified that even if the Council chose the Meriden Facility over GSRP in this proceeding, CL&P would immediately re-file its application for the GSRP line because the reliability needs in the Greater Springfield area would persist and would require upgrades in Connecticut to resolve.

D. **The Council Must Minimize the Impact of Any Project that May Be Approved in This Proceeding to the Greatest Extent Feasible**

If the Council approves GSRP, the Meriden Facility or some combination of the two, it must mitigate the impact of that approved facility on the towns, communities and neighbors to the greatest extent possible.

1. GSRP

GSRP poses a number of significant issues that the Council must address if it is approved in this proceeding, including routing, overhead versus underground, EMF mitigation and visual impact.

a. Routing

CL&P asked that the Council approve its preferred overhead "Northern Route Alternative." This twelve mile route, which goes from the North Bloomfield substation north through East Granby and Suffield to the Massachusetts border, travels in an existing transmission right of way that will require only minimal expansion to house the proposed 345 kV line. The alternate configuration, the "Southern Route Alternative," includes the Northern Route and adds 1.1 miles of 345 kV lines in Suffield and 4.3 miles of 345 kV line primarily in Enfield. Moreover, more than three and one-half miles of the portion in Enfield goes through a densely developed residential area.

If the Council approves the GSRP line, it must approve only the preferred Northern Route. The CSC must firmly reject the Southern Route alternative, regardless of what route the EFSB may prefer. The Southern Route alternative imposes significantly greater impacts on Connecticut than the proposed Northern Route and is a less reliable configuration. The Council should also reject the "Estey" route alternative, which would construct the 345 kV loop around Springfield, Massachusetts. While such a route would eliminate the need for the 12 miles of 345 kV line from Bloomfield through Suffield, the remaining portion in Connecticut would include the 4.3 miles of 345 kV line in Enfield that has onerous impacts on the residential area through which it passes.

b. Overhead or Underground

CL&P proposed all overhead construction of the GSRP line along the Northern Route. It also provided various underground alternatives. The consideration of overhead versus underground construction raises a number of complex and competing issues. Overhead construction, as proposed, is operationally preferred for a number of reasons. Overhead transmission lines are quicker to construct, which allows system improvements to be put in place more expeditiously. It is also easier to maintain and repair, which allows the regional transmission grid system to be restored more quickly in the event of a fault or other malfunction. It is also significantly less costly on a number of levels. It is significantly less expensive to construct and the costs of overhead construction are likely to be receive regionalized cost treatment, meaning that Connecticut only pays 27 percent of the total cost of overhead construction.

The use of underground lines for GSRP is technologically feasible, for the entire Connecticut route or portions thereof, either under roads or in the ROW. Underground 345 kV lines have significantly less visual impact as the lines are placed underground. Underground construction also changes the nature of the EMF impact, though it does not eliminate EMFs. On the other hand, large transition facilities are required at both ends of underground lines. Each such facility would require two to four acres of land for construction, cost roughly $15 million each, and will impact local communities. Moreover, the construction of underground 345 kV lines – while it requires less clearing of the ROW – presents a number of environmental impacts from the digging and trenching required for the lines and the splicing chambers. Further, the relative cost impact of underground lines on Connecticut ratepayers will likely be substantial. The cost of undergrounding 345 kV lines tends to be roughly ten times greater than overhead construction and these costs are not likely to be shared by the other New England states.

As required by Connecticut law, the Council should carefully consider the application of underground technology for any or all portions of any transmission line(s) that may be approved in this proceeding, especially in those specific areas identified in Conn. Gen. Stat. §§ 16-50p(a)(3)(D) and 16-50p(i). These areas most certainly include the Country Club Lane and Phelps Road areas of East Granby and Suffield.

c. **Overhead Configuration**

If the Council approves any portion of GSRP and determines that any portion of that line must be overhead, the Council must make another set of difficult decisions. There are a variety of possible overhead configurations. Each addresses particular needs or interests, but no one configuration can meet all needs or interests.

If overhead lines are required in residential areas, there is likely to be strong local interest in mitigating EMF levels to the greatest extent possible. A split phase configuration in such sensitive areas is the optimal configuration to address EMF concerns associated with overhead 345 kV lines. The split phase configuration reduces projected EMF levels for the new 345 kV lines to levels that are below the EMF levels associated with the existing 115 kV lines and well below the levels of any other possible overhead or underground configuration. The application of split phase lines is also consistent with the Council's EMF BMPs, because even if the cost exceeds the 4 percent total cost benchmark, that benchmark is not a cap and should not be used to deny local residents the reasonable opportunity to mitigate EMFs in a reasonable fashion.

The split phase configuration, however, has greater visual impact than other potential configurations and could lead to a less uniform appearance of the lines. Therefore, the Council should engage the local residents and municipalities and gather their input, allowing them to

weigh the pros and cons of the split phase configuration. Such input is critical as it is the local residents who must live with the EMF and visual impacts of the overhead lines.

In addition to EMF mitigation, another strong interest is in mitigating the visual impact of any overhead lines that may be associated with the GSRP project. In general, lower structures – such as the 90 foot wooden H-frame in CL&P's proposed base case – are the least visually obtrusive overhead option and are cost effective. Reducing the height of the overhead structures may be valued by the affected municipalities and local residents, particularly in areas near the Metacomet Trail. Moreover, the wood poles would blend more with the forested surroundings than steel structures.

At the same time, however, such lower structures require greater cleared width of the ROW. Steel structures, such as the composite pole that could hold both the new 345 kV line and the existing 115 kV line would be taller and thus more visible, as high as 110 to 130 feet, but would allow for a significantly narrower cleared area of the ROW. Such structures would also allow CL&P to remove the existing lattice structures that currently hold the existing 115 kV lines, something that East Granby and Suffield specifically requested if they are compelled to receive overhead lines. Again, the Council should engage the municipalities and local residents on questions relating to overhead configurations.

d. **Remediation**

Consistent with its usual practice, the Council will likely defer issues relating to construction to the development and management ("D&M") phase of this proceeding should any project be approved. Nonetheless, the Council should make clear in any final decision in this case that approves overhead lines that it will require CL&P to commit to minimizing the impact of construction on neighbors and municipalities, remediate construction sites and work with local

residents and towns to take all reasonable steps to protect the local residents from the impacts of not only construction, but also the appearance of the new plant. This should include reasonable screening and landscaping, even if it may be possible that certain of the costs associated with such measures may not ultimately qualify for regional cost sharing.

2. Meriden Facility

Should the Council select the Meriden Facility in this proceeding, it should see no change to the present circumstances. NRG already holds a Council certificate for this project and the actual construction of this facility depends on developments that are beyond the Council's ability to control, primarily financing. Moreover, since the shell of the building that would house the Meriden Facility is already at least partially completed, the construction of the remainder of this facility would not impact the local residents in the same profound manner as GSRP. Even so, however, if and when the Meriden Facility is completed, NRG and the Council should do all that they can to minimize the impact of such construction on the local residents.

3. Communication with Municipalities and Neighbors

If either GSPR or Meriden is selected in this proceeding, the Council must institute and enforce a meaningful dialogue between the constructing company(ies) and the affected municipalities and residents to minimize the impacts of the entire project to the greatest extent possible. These steps must go far beyond merely notifying residents of construction schedules and the like. They must also include a meaningful dialogue regarding the appearance of the facility, possible ways to mitigate its visual impact such as landscaping and visual screening as well as working with affected residents and towns to minimize the impact of the construction process.

In its final decision, the Council must require an aggressive outreach program in which the company and the Council offer outreach meetings, such as open house presentations, during which they can discuss configuration options and provide visual images of the various alternatives. The Council should also strongly consider the input of the affected municipalities and residents that is provided in such settings. The Council should consider the engagement of an independent monitor to help guide the local affected municipalities and residents through this unfamiliar process, facilitate discussion and work to make sure that local interests are being considered in a meaningful manner. Such an independent monitor would report to the Council on progress and ensure that local voices are heard.

WHEREFORE, for the foregoing reasons, the Attorney General hereby submits this brief in the above-captioned proceedings.

Respectfully submitted,

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Service is hereby certified
to all parties and intervenors
listed on this agency's service
list for this consolidated
proceeding.

_____

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