STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

NORTHEAST UTILITIES SERVICE COMPANY APPLICATION TO THE CONNECTICUT SITING COUNCIL FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED ("CERTIFICATE") FOR THE CONSTRUCTION OF A NEW 345-KV ELECTRIC TRANSMISSION LINE FACILITY AND ASSOCIATED FACILITIES BETWEEN SCOVILL ROCK SWITCHING STATION IN MIDDLETOWN AND NORWALK SUBSTATION IN NORWALK, INCLUDING THE RECONSTRUCTION OF PORTIONS OF EXISTING 115-KV AND 345-KV ELECTRIC TRANSMISSION LINES, THE CONSTRUCTION OF BESECK SWITCHING STATION IN WALLINGFORD, EAST DEVON SUBSTATION IN MILFORD, AND SINGER SUBSTATION IN BRIDGEPORT, MODIFICATIONS AT SCOVILL ROCK SWITCHING STATION AND NORWALK SUBSTATION, AND THE RECONFIGURATION OF CERTAIN INTERCONNECTIONS

DOCKET NO. 272

MARCH 16, 2005

THE TOWNS OF CHESHIRE, DURHAM, WALLINGFORD AND WOODBRIDGE AND CITY OF MILFORD

JOINT BRIEF ON SELECTED ISSUES

The above - captioned municipalities (collectively, the "Towns") hereby submit this Joint Brief to the Connecticut Siting Council (the "Council"), concerning the Towns' collective position on issues of common concern. Each of the Towns is also submitting, in groups of one or more, an additional Brief addressing specific issues of concern to each individual Town.[1] This Joint Brief also responds, where referenced, to the Council's invitation to address specific questions contained in its Memorandum dated February 17, 2005.

I. THE APPLICATION MUST BE DISMISSED.

A. THE APPLICANTS HAVE NOT MET THEIR BURDEN OF PROOF UNDER THE PUBLIC UTILITIES ENVIRONMENTAL STANDARDS ACT ("PUESA").

i. PUESA Requires the Balancing of a Facility's Benefits Against the Harm to the Environment Caused by the Facility.

The Connecticut legislature enacted PUESA to ensure that the public need for certain electric infrastructure facilities, is balanced against the need to protect the natural environment. The requirement for that balancing appears at the very beginning of PUESA, in Conn. Gen. Stat. § 16-50g:

> The purposes of this chapter are: To provide for the balancing of the need for adequate and reliable public utility services at the lowest reasonable cost to consumers with the need to protect the environment and ecology of the state and to minimize damage to scenic, historic, and recreational values; to provide environmental

[1] The undersigned represent solely the Towns of Durham and Wallingford in this proceeding but understand that they are authorized to file this Joint Brief on behalf of the other Towns.

> quality standards and criteria for the location, design, construction and operation of facilities for the furnishing of public utility services at least as stringent as the federal environmental quality standards and criteria, and technically sufficient to assure the welfare and protection of the people of the state. . . ."

With respect to PUESA's requirements for electric transmission line facilities, Conn. Gen. Stat. § 16-50l(a)(1)(A)(v) includes in those requirements "a description of the effect of the proposed transmission line. . .on the environment, ecology, and scenic, historic and recreational values. . . ." Finally, Conn. Gen. Stat. § 16-50p contains the Council's standards and conditions for the granting of a Certificate for a tranmission line facility. The Council cannot grant a Certificate unless it first finds and determines "[t]he nature of the probable environmental impact of the facility alone and cumulatively with other existing facilities, 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 concerning, the natural environment, ecological balance, public health and safety, scenic, historic and recreational values, forests and parks, air and water purity and fish, aquaculture and wildlife. . . ".

Thus, PUESA sets out specific requirements concerning the effects of an electric transmission line facility on the environment, for both information to be included in an Application as to those effects, and the mandatory Council analysis in balancing the need for the facility against those effects. Those requirements must be followed if the Council is to achieve the Legislature's goals set out in the preamble to PUESA. See, Conn. Gen. Stat. § 16-50g, supra.

The Applicants have not satisfied the aforesaid requirements in this proceeding. Their Application (both as originally filed and as supplemented) lacks critical information required by PUESA. The Council therefore cannot perform the analysis required under PUESA, and for that reason must dismiss the Application.

ii. The Application Lacks Required Information Needed by the Council to Perform its Statutory Analysis.

a. The Application Lacks Information Required by the Council's Best Management Practices In Effect at the Time the Application was Filed.

The Council's Electric and Magnetic Field Best Management Practices in effect at the time the Application was filed (the "Vintage BMP") required "baseline, preconstruction *measurements* of EMF during siting of new facilities"; as well as the "adoption and use of a *uniform measurement protocol*" for the making of those measurements" (emphasis added). *See*, Vintage BMP dated February 11, 1993, Nos. 6. and 8.[2] The referenced uniform measurement protocol is the Institute of Electrical and Electronics Engineers, Inc.'s Standard 644-1994 ("IEEE Std. 644").[3] *See*, Application, Volume 6, page 8. IEEE Std. 644 requires (in Section 8 thereof; "Reporting field measurements") that "[b]ackground information, such as environmental conditions (e.g., temperature, humidity, ground cover), transmission line parameters (e.g., line voltages and

[2] A copy of the Vintage BMP was appended to the 2/15/05 *Procedural Motion of the Town of Wallingford* as Appendix B.

[3] The relevant Section of IEEE Std. 644 was appended to the 2/15/05 *Procedural Motion of the Town of Wallingford* as Appendix C.

currents, conductor geometry, measurement locations), and instrumentation used should be recorded. . . " at the time EMF measurements are made.[4]

The Applicants did not include in the Application (and have not provided at any time since filing the Application) the information required by the Vintage BMP, except for the "spot" measurements of EMF. *See*, Application, Volume 6, pages 7-23. Specifically, the Applicants have not at any time provided the "transmission line parameters" – the "line voltages and currents" – required by IEEE Std. 644 for each of the EMF measurements submitted in the Application, notwithstanding their representations to the contrary. For example, in response to a question during the January 5, 2005 hearing, which asked where the Applicants had provided "both the [EMF] field measurements and the associated current flows," Witness Prete identified the Applicants' response to Interrogatory AG-16 as "one of the documents you may want to refer to. . . ." *Tr. 1/05/05 at 133-134.* At the February 1, 2005 hearing, during follow-up questions to Witness Prete as to whether the response to AG-16 did, in fact, include both EMF measurements and current flows, Counsel for CL&P stated that the Applicants would stipulate that the response did not include current flows. *Tr. 2/01/05 at 69.* During that same hearing, Witness Bailey also conceded that the BMP

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[4] As discussed infra, the amendments to PUESA in P.A. 04-246 (enacted after the filing of the Application, required the Council to both update the Vintage BMP and apply the updated Vintage BMP in this proceeding. Also as discussed infra, the Council has not properly updated the Vintage BMP. Finally, as discussed infra, the Applicants have not complied with the Council's updated Vintage BMP, even assuming arguendo that the Council properly updated the Vintage BMP.

Measurements in the Application did not include associated current flows. *Tr. 2/01/05 at 62.*[5]

Because of the Applicants' failure to provide the information required by IEEE Std. 644, the EMF measurements in the Application are useless and meaningless numbers. Such EMF measurements cannot be used by the Council to find and determine "the nature of the probable environmental impact" of EMF from the proposed transmission lines, as required by Conn. Gen. Stat. § 16-50p.

b. The Application Lacks Required Information Concerning Other Environmental Impacts of the Proposed Facilities.

As discussed supra, the Council cannot grant a Certificate unless it finds and determines the nature of the probable environmental impact of a proposed facility, including a specification of "every significant" adverse environmental effect thereof. Because of fundamental changes to the proposed transmission facilities since the filing of the Application, the Application does not contain (and the Applicants have not subsequently provided) information required by the Council to perform its statutorily – required balancing of public need against the environmental impacts of the proposed facilities. The Application is therefore fatally incomplete and must be dismissed.

The Legislature's recent passage of P.A. 04-246 ("P.A. 04-246") resulted in the submission by the Applicants of new configurations for the transmission facilities under review in this proceeding.[6] *See, e.g.*, "EMF Mitigation Options for

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[5] This is not withstanding the earlier unqualified testimony of Witness Bailey to the effect that the measurements reported in the Application were performed according to IEEE Std. 644. *Tr. 01/05/05 at 141.*

[6] P.A. 04-246 is discussed in greater detail infra.

Cross Sections 1 – 8," filed by the Applicants on 05/28/04; *See, also,* "Valley View Drive Structure Heights and EMF Calculations," filed by the Applicants on 02/16/05. Tower heights for those structures are significantly greater (and the footprint of the support structures for those towers are significantly larger) than the equivalent dimensions in the Application. *Tr. 2/01/05 at 161-164.*

However, the Applicants have not provided the Council with any assessment of the increased environmental impacts of those higher towers and larger support structures. As a result, the Council cannot evaluate the effects of both the construction and the permanent replacement of the larger support structures on wetlands, vernal pools and amphibian breeding areas.[7] The Council also cannot evaluate the greater impacts of the larger support structures, on any residential and recreational areas in which they will be located. Finally, the Council cannot evaluate the increased impacts of the higher towers (in some cases nearly triple the height of those originally proposed) on residential, scenic and historic viewsheds.

The Council must therefore dismiss the Application. The Council cannot, as suggested by the Applicants in the February 1st Letter, defer its evaluation of the environmental impacts of the modified transmission facilities, until such time as the Applicants file their D & M plan. Such a procedure would violate Conn. Gen. Stat. § 16-50p(a)(2), which prohibits the Council from issuing a Certificate unless it finds and determines the nature of the "probable environmental impact"

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[7] In a letter to the Council dated 02/01/05 ("February 1st Letter"), the Applicants conceded as much, stating that effects on wetlands could not be quantified at that

of a proposed facility. "It is clear that an administrative body must act strictly within its statutory authority, within constitutional limitations and in a lawful manner. . . . It cannot modify, abridge or otherwise change the statutory provisions under which it acquires authority unless the statutes expressly grant it that power." (Internal citations omitted). *City of Waterbury v. Commission on Human Rights and Opportunities*, 160 Conn. 226, 230, 278 A.2d 771, 773-774 (1971).

B. THESE PROCEEDINGS HAVE NOT COMPLIED WITH THE PROVISIONS OF P.A. 04-246.

i. P.A. 04-246 Imposes Certain Obligations on the Applicants and the Council Concerning EMF from Overhead Transmission Lines.

P.A. 04-246, a 2004 amendment to PUESA, imposed new obligations on the Applicants and the Council with respect to EMF from overhead transmission lines. As explained infra, neither the Applicants nor the Council have complied with those obligations. Therefore, the Application must be dismissed.

a. The Applicants Have Not Identified "Statutory Facilities" Requiring Protection from EMF from Overhead Transmission Lines.

P. A. 04-246 amended Conn. Gen. Stat. § 6-50p to require, inter alia, that overhead portions of a transmission line:

> "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

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time "due to uncertainties regarding precisely which Product design will be certified by the Council."

> 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. (Emphasis supplied).

This language demonstrates the Legislature's intent that certain locations where children live or spend significant amounts of time ("Statutory Facilities") must be protected from EMF from new overhead transmission lines through the establishment of buffer zones. The buffer zones must, at a minimum, consist of the existing transmission right-of-way. Therefore, the Council cannot, consistent with P.A. 04-246, approve a new overhead transmission line segment in any location where a Statutory Facility extends into the existing right-of-way, as such would violate P.A. 04-246's minimum buffer zone requirements. If the language of a statute is clear, it is presumed that the words expressed the intent of the Legislature. *Orticelli v. Powers*, 495 A.2d 1023, 197 Conn. 9 (1985).

It is equally obvious that in order to fulfill this statutory requirement, the Council must be informed as to the precise location of each Statutory Facility in the existing right-of-way, prior to certificating an overhead transmission line. For that reason, the Legislature included in P.A. 04-246 (in Section 1 thereof, amending Conn. Gen. Stat. § 16-50l(a)(1)(C)), a requirement that each applicant requesting certification by the Council of a transmission line facility, submit to the Council "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**. . . . " (emphasis supplied).

The Applicants have not fulfilled that statutory requirement. For example, in the Applicants' response dated 01/26/05 to Q–D–W-062 (requesting that the Applicants "[i]dentify each structure in the Town of Durham, any portion of which is within the existing right-of-way"), the Applicants identified one such structure and further conceded that "[o]ther structures that appear to encroach into the existing right-of-way, as they existed in Spring 2002, can be identified in the aerial photographs in Volumes 11 and 12 of the Application. A land survey will be required to determine if the structures do, in fact, encroach. Such surveys will be done as part of the D&M Plan process." In response to cross-examination by Council for the Town of Durham at the 02/01/05 hearing, Witness Bartosewicz confirmed that the identified structure in the right-of-way was a home, and that the Applicants' definition of other "structures" in the above response could include other homes. Tr. 02/01/05 at 71-72. Additionally, in the Applicants' response dated 01/26/05 to Q–D–W–063 (requesting identical information with respect to structures in the Town of Wallingford), the Applicants stated that such structures "that appear to encroach into the existing right-of-way, as they existed in Spring 2002, can be identified in the aerial photographs in Volume 11 of the Application. . . . A land survey will be required to determine if the structures do, in fact, encroach. Such surveys will be done as part of the D&M Plan process."[8]

The aforesaid responses do not comply with P.A. 04-246's unambiguous requirement that the location of each Statutory Facility in the existing right-of-

[8] If the ROW were to be moved over the JCC camp or ballfield (without relocating the camp or ballfield to CL&P's adjacent property, referred to as "Option C"), it would violate P.A. 04-246.

way; i.e., "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. . .", be identified by the Applicants, so that that the Council shall, as a condition of certification, ensure that no overhead transmission lines be sited at such locations.[9] The "land survey" proposed by the Applicants must be performed prior to certification; not, as proposed by the Applicants, after certification and "as part of the D&M Plan process." Because the Applicants have not performed that survey, the Application is incomplete and must be dismissed.[10]

b. The Vintage BMP Have Not Been Updated in the Manner Required by P.A. 04-246.

Section 3 of P.A. 04-246 requires the Council to find and determine, as a condition of certification, that any overhead portions of a transmission line facility are consistent with, inter alia, the "Council's best management practices for electric and magnetic fields for electric transmission lines." P.A. 04-246 Section 3, amending Conn. Gen. Stat. § 16-50p(a)(4)(C). Additionally, Section 10 of P.A. 04-246 directs the Council to "adopt, and revise as the [C]ouncil deems necessary, standards for best management practices for electric and magnetic fields for electric transmission lines. Such standards shall be based on the latest

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[9] It is noted that, at a minimum, no overhead transmission line(s) may be sited adjacent to the residential structure in Durham identified by the Applicants.

[10] It is also noted that the information supplied by the Applicants as to structures in the right-of-way was as of Spring 2002. That (concededly) incomplete information is thus worse than incomplete, being nearly three years out of date.

completed and ongoing scientific and medical research on electromagnetic fields. . . ."

Read together, the aforesaid provisions evince a legislative mandate to the Council that it update the Vintage BMP "based on the latest completed and ongoing scientific and medical research on electromagnetic fields," and apply the updated Vintage BMP in this proceeding to the Application.[11] By Motion dated July 23, 2004, the Towns of Durham and Wallingford moved that the Vintage BMP must be updated in this proceeding; the Applicants disputed that claim in a Brief in opposition to that Motion dated September 3, 2004. Although the Council did not rule on this important issue, it subsequently issued what purports to be an updated Vintage BMP (the "New BMP"). However, the New BMP do not meet the requirements of P.A. 04-246. Furthermore, based on the Council's report to the Legislature dated January 10, 2005, the New BMP were adopted on the basis of improper ex parte communications with "energy industry" interests.

On December 21, 2004, the Council issued the New BMP. The New BMP eliminated certain key elements of the Vintage BMP and introduced untested new concepts. In so doing, the Council eviscerated safeguards against EMF exposure contained in the Vintage BMP. The eliminated safeguards from the Vintage BMP included Requirements Nos. 6, 7 and 8 thereof, which respectively required "baseline" and "post-construction" measurements of EMF, made in accordance with IEEE Std. 644. The concepts introduced in the New BMP substitute EMF modeling for EMF measurements and a "no net increase" test.

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[11] P.A. 04-246 was made expressly applicable to this proceeding.

These changes would result in the approval of overhead transmission facilities which achieve a "no net increase" in EMF over existing levels. However, that "achievement" would be based upon EMF modeling rather than EMF measurements, thus completely eliminating the consideration of "real-world" EMF levels, in favor of modeled EMF values of questionable or (at best) unknown validity.[12]

The Council cannot, consistent with P.A. 04-246, abandon its prior EMF measurement protocol in favor of EMF calculations. By doing so in issuing the New BMP, the Council violated P.A. 04-246.

An additional flaw in the New BMP is the misguided reliance therein on the National Electric Safety Code ("NESC") in establishing the buffer zone required by P.A. 04-246. *See*, New BMP at 3. The clear intent of the statutorily required buffer zone is to protect the public from the adverse health effects of EMF. On cross examination of the Applicants' witnesses regarding the safety issues actually addressed by the NESC, those witnesses made heroic efforts to defend the NESC as substantively dealing with EMF. *Tr. 1/5/05 at 137 (Zaklukiewicz).* That witness later conceded that the actual health risks addressed by the NESC provisions at issue were electrocution risks and not EMF as a public health concern. *Tr. 2/1/05 at. 54.* The Council's reliance on those inappropriate safety standards is additional evidence that the New BMP are, substantively fatally flawed.

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[12] The "no net increase" standard would violate P.A. 04-246. See Section II.d., *supra.*

Furthermore, the Council's adoption of the New BMP was based upon improper ex parte communications. As previously discussed, the Council issued the New BMP after a vote and approval at a Council meeting held on December 21, 2004. The Towns were afforded no notice or opportunity to participate in the Council's consideration and adoption of the New BMP. Notwithstanding that fact, the Council's statutorily – required report on its adoption of the New BMP (the "Council Report") states that "[t]he Council received verbal remarks from the energy industry and their requests have been included [in the New BMP]."

Upon learning of the Council Report, the Connecticut Attorney General (the "AG") wrote a letter to the Council Chairman dated March 8, 2005 ("First AG Letter"), wherein the AG stated that the language in the Council Report "could be construed as an admission by the Council that it received "ex-parte communications which are prohibited by law." First AG Letter at page 1. For that reason, the First AG Letter requested that the Council, *inter alia*, "immediately and publicly disclose the specific nature of the communications that are referred to in the [Council Report]. . . ." First AG Letter at page 2,

The Council's reply dated March 14, 2005, to the First AG Letter (the Council Reply"), described a telephone conversation between Council staff and CL&P engineer Robert Carberry, during which Mr. Carberry gave Council staff recommended changes to the draft New BMP. Council Reply at pages 4-5. The Council Reply defended that conversation on the basis that relevant statutory

provisions concerning ex parte communications (discussed *infra*) were not applicable..Council Reply at page 5[13]

In a response to the Council Reply the very next day (the "Second AG Letter"), the AG unequivocably rejected the Council's reasoning, concluding that "[t]he Council revised its EMF BMP without notice to, or input from, the public and non-applicant parties and intervenors in this case. **Only one party. . .the [A]pplicant[s] –knew that the BMP were being revised and only one party had an opportunity to comment on those revisions**. . . " (emphasis supplied). Second AG Letter at page2. The Second AG Letter concluded that "[u]nder the circumstances, the Council must immediately rescind its [New BMP]." Second AG Letter at page 3.

The Towns concur with the AG that the receipt by the Council of "verbal remarks from the energy industry" violated Conn. Gen. Stat. § 4-181(a) and (c). Those provisions state in pertinent part, respectively:

> Unless required for the disposition of ex parte matters authorized by law, no hearing officer or member of an agency who, in a contested case, is to render a final decision or to make a proposed final decision **shall communicate, directly or indirectly, in connection with any issue of fact, with any person or party, or, in connection with any issue of law, with any party or the party's representative, without notice and opportunity for all parties to participate.** (Emphasis added)
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> and:
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> Unless required for the disposition of ex parte matters authorized by law, no party or intervenor in a contested case, no other agency, and no person who has a direct or indirect interest in the outcome of the case, shall communicate, directly or indirectly, in connection with any issue in that case, with a hearing officer or any member of the agency, or with any employee or agent of the agency assigned to assist the hearing officer or

[13] The referenced telephone conversation occurred around the date of the Council's adoption of the New BMP.

members of the agency in such case, **without notice and opportunity for all parties to participate in the communication.** (emphasis added)

The issue of how the Council must address EMF concerns in its review of the transmission facilities proposed in this proceeding, is the single most important issue herein, as demonstrated by the legislature's passage of P.A. 04-246, including the requirements supra that the Council both update the Vintage BMP, and apply the updated Vintage BMP in this proceeding.[14] The Council's Best Management Practices are therefore central to this proceeding. The Council's procedures to update the Vintage BMP and apply the updated Vintage BMP are, without question, "issues of fact" and "issues in this case" and are expressly subject to the requirements of Conn. Gen. Stat. § 4-181 (a) and (c) supra. The Council's report to the legislature demonstrates a facial violation of those requirements within the context of its proceedings in Docket 272 and has prejudiced the Towns. Once it has been demonstrated that a violation of § 4-181 has occurred, a presumption of prejudice must be deemed to arise. *Henderson v. Department of Motor Vehicles*, 202 Conn. 453, 457-458 (1987).

In essence, the Council allowed the Applicants to tacitly consent to the adoption of the New BMP, subject to its comments. The other parties were not afforded the same opportunity. In fact, the Towns disagree with many of the substantive determinations in the New BMP, which are at issue in this proceeding. Unlike the Applicants, however, the Towns were not given the

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[14] The Second AG letter makes this point as well, stating that because of the passage of P.A. 04-246, "the Council's EMF BMP have assumed a new and additional importance and relevance to the present case. . .the development of the [New BMP] during this ongoing contested proceeding, in which EMF is a central issue in dispute,

chance to review the New BMP, comment on them, or express their approval or disapproval of them prior to the adoption of the New BMP. Clearly, the Towns have been prejudiced, as the New BMP became a part of the Docket proceeding.

Therefore, the New BMP are both substantively and procedurally flawed, and must be rescinded and amended before being applied by the Council in a new proceeding to evaluate a 345 kV transmission facility from Middletown to Norwalk.

c. Even Assuming Arguendo that the New BMP are Valid, the Applicants have not Complied with the New BMP.

Finally, assuming *arguendo* that the New BMP meet the requirements of P.A. 04-246 and were properly promulgated by the Council (neither of which is conceded by the Towns), the Application must nonetheless still be dismissed, by reason of the Applicants' failure to comply with the New BMP. Section II of the New BMP ("*Pre and Post Construction MF Measurements*") imposes the following obligation on the Applicants:

> When designing a transmission line project, an applicant shall provide design alternatives and pre-construction estimates of MF resulting from each alternative. Preconstruction MF measurements can be obtained using mathematical modeling under a variety of current flows under normal loading, defined as 70 percent of the peak load, and peak loading conditions during winter and summer weather conditions.

At the February 1, 2005 hearing, Witness Prete testified that he understood the "mathematical modeling" of "Preconstruction MF measurements" to mean EMF calculations. *See, Tr. 2/1/05 at 235.* Mr. Prete further testified that for the 27.7 gigawatt ("GW") case, which has been identified as system-wide

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has a direct, material impact on this contested proceeding. . . ." Second AG Letter at

peak load within the next five years, 70% of peak load would require calculations assuming 19.39GW. *Id. Mr. Prete then admitted that the applicants have not done any 70% peak load EMF calculations. See, Tr. 2/1/05 at 236.* Certainly, the Record of this proceeding does not contain any EMF calculations at 70% of peak load.

Because the Applicants have failed to provide pre-construction calculations modeling EMF levels at 70% of peak load at statutory facilities, they have failed to comply with the New BMP, assuming *arguendo* that the New BMP are valid and were properly promulgated by the Council. The Council thus cannot grant a Certificate for the Application, by reason of that omission.

II. THE TOWNS' POSITIONS RE: CERTAIN ISSUES CONCERNING EMF.

A. P.A. 04-246 ESTABLISHES THAT EMF IS A SIGNIFICANT PUBLIC HEALTH ISSUE.

P.A. 04-246 sets forth the legislative conclusion that high voltage overhead transmission lines present a significant public health concern. While the Council in this Docket took in evidence and heard conflicting testimony over the course of many hearing days concerning the open question of whether EMF causes childhood leukemia, that debate is irrelevant to the creation of meaningful buffer zones. Indeed, as a result of the enactment of P.A. 04-246, ***the Siting Council is no longer charged with determining whether EMF causes cancer.*** Rather, because the Legislature already decided that high voltage overhead transmission lines pose a health concern, the issue that is ***now*** before the Siting Council is limited to these two issues: (1) how to achieve the legislative

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mandate requiring undergrounding; and (2) how to establish meaningful buffer zones to protect the residents of this state, including children, where undergrounding is proven to be not feasible.

If the Applicants meet their burden to overcome the presumption in favor of undergrounding, the Council must establish meaningful buffer zones near the overhead portion of the transmission line. This decision must be based on meaningful criteria, premised on (1) projections of loading on the proposed overhead line for its operational life consistent with the Applicants' planning projections, and (2) EMF exposures, erring on the side of caution because of the potential health impacts on children. This determination must be transparent and objective, and not shaded by any skepticism as to whether EMF can be definitively proven to cause cancer.[15] The criteria used by the Applicants (the 15GW case at 6 milliGauss ("mG")) do not provide the Council with the tools to create a meaningful buffer zone. Instead, using the 15GW case at 6mG as the criteria to set a buffer zone guarantees a result; the certification of the line without a buffer zone that will protect public health and safety, in direct contravention to the legislative mandate provided for in P.A. 04-246.

It is unassailable that the purpose of P.A. 04-246 is to protect the health and safety of residents of the State of Connecticut from the effects of EMF created by high energy overhead transmission lines and, most particularly, to

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[15] On this question, the Towns contend that the credible testimony in this Docket supports the conclusion that there is an association between childhood leukemia and EMF exposure which is consistent across all studies and cannot be ignored.

protect the children of the State of Connecticut from the increased risk of childhood leukemia from exposure to EMF.

Section 7 of P.A. 04-246 adds a new subsection (h) to Section 16-50p of the General Statutes. It specifically provides that a proposal to place overhead lines adjacent to residential areas, private or public schools, licensed child daycare facilities, licensed youth camps, or public playgrounds is inconsistent with the purposes of the Chapter.[16] Clearly, overhead lines near residences, schools, playgrounds, or other areas where children congregate is inimical to public policy as expressed unambiguously in P.A. 04-246.[17] Indeed, in a letter from Governor Rell to the Council, the Governor expressly cites to the "recently passed legislation" which she characterized as "placing greater emphasis" on undergrounding.

As previously discussed, Section 3 of P.A. 04-246 amends subsection (a) of Section l6-50p to require that any overhead lines

> ...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 daycare 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.

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[16] References to the "Chapter" in the Act are to Chapter 277a of the General Statutes.

[17] See Section VI for a discussion on the definition of residential areas.

P.A. 04-246 is a legislative determination that EMF from high voltage transmission lines **are** a matter of public health concern which **must** be addressed by locating transmission lines underground to avoid areas of special concern.

Notwithstanding this clear legislative determination, the Council's EMF expert Dr. Ginsberg was continuously challenged as to the degree of significance of the association between EMF and childhood leukemia.[18] Other questions of Dr. Ginsberg concerned sources of EMF exposure other than the transmission line, including, electric blankets, alarm clocks, Gameboys, televisions, refrigerators, freezers, fans and other household appliances. It is self-evident, however, that parents can make their own decisions as to whether to allow their children to drink coffee, play with Gameboys or spend time in front of household appliances. The same choices, however, are not available with respect to a new transmission line near statutory facilities, such as schools, day camps, day care facilities and playgrounds. In looking at the Record, and these issues in

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[18] In response to a question by Mr. O'Neill positing that the association is insignificant, Dr. Ginsberg opined: "No, clearly not that, because when you have this much trouble in designing a study where there's a control, a true control population, and so when the epidemiology is this difficult to design, a good study, and still you run the studies and you pool the populations and you come up with meta analyses that show a signal, we don't see that as insignificant. We see that as – especially when it becomes an end point in people, in young children, in – for a serious end point such as leukemia, we don't see that as an insignificant association." *Tr. 10-14-04 at 95-96.* In response to Mr. Heffernan, Dr. Ginsberg stated that the association is "somewhat impressive." *Tr. 10-14-04 at 124.* Later when Mr. O'Neill questioned whether Dr. Ginsberg was "unwittingly" "fueling" a "kind of a hysteria in the community," Dr. Ginsberg responded that the meta analyses suggest a signal that "raises a concern – it raises the uncertainty and some concern that we as a health agency can't ignore and we have to let the public know that this exists....They did find a direct correlation between the measured levels and the increased cancer incidents – or the cancer incidents when you pooled across studies." *Tr. 10-14-04 at 147-51.*

particular, the Council must be mindful of P.A. 04-246's mandate with respect to undergrounding and, if undergrounding is not feasible, to establish meaningful buffer zones because of the legislative determination that there is a health risk to children from overhead transmission lines.

The Council cannot render meaningless the Legislature's intent by accepting the Applicants' assertions with respect to: (1) threshold EMF exposure levels (i.e., 6mG or higher); and (2) the proper line loading (i.e., the 15 GW New England wide case). This result-oriented "end-run" around the Legislature should not be endorsed by the Council. Instead, the creation of meaningful buffers must be based on EMF exposure of 3mG or less and line loading higher than the 15GW case, the average New England wide load for ***2002***. The Council must base its decision on projections as to the growth in the load on the line for the duration of the life of the line.[19] Since the Applicants are not seeking a Certificate to operate the line for 5 years, and the effectiveness of P.A. 04-246 is not limited to five years, the Council must establish a meaningful buffer zone based on projections of the load on the line in 2010, 2020 and beyond.

B. THE COUNCIL MUST USE A 3mG THRESHOLD EXPOSURE LEVEL.

Based on the credible evidence in the Record, the Council must employ a 3mG exposure criterion in order to establish a meaningful buffer zone. Dr. Ginsberg testified that between 3mG and 6mG is a "gray" area, in large part because he was unaware of any analyses which were based on a defined exposure between 3 and 6mG that showed whether this exposure was safe or

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[19] The proposed transmission line will have a useful life of approximately 40 years. *Tr. 10-14-04 at 240.*

unsafe. However, the testimony and supporting information provided by Drs. Bell, Rabinowitz and Gerber, and the studies which they cite, establish a statistically significant increased risk to children exposed to EMF levels of only 2mG to 5mG. This scientific analysis directly debunks the unsubstantiated view that EMF levels between 3mG and 6mG can be considered safe for children. Thus, the only prudent course of action is to create a buffer zone where EMF exposure levels at the edge of the buffer zone are no greater than 3mG.

On the other hand, Drs. Bailey and Cole, highly paid consultants to the utilities[20], do not believe that there is any risk at any exposure level, and differ greatly with Drs. Ginsberg, Bell, Rabinowitz and Gerber. Drs. Bailey and Cole also disagree with the fundamental principal underlying P.A. 04-246; that is, EMF from high voltage transmission lines **are** a matter of public health concern. If left to their own devices and a continuing source of limitless revenue from the utilities, Drs Bailey and Cole would continue their crusade on behalf of the utilities, being more than willing to "roll the dice" with the health of the children of Connecticut. The Council does not have this luxury.

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[20] Dr. Cole received $400 per hour for his work in this Docket. *Tr. 3-25-04 @ 130.* He has testified on the issue of EMF and cancer for utilities "15 or 20" times over the course of 20 years. *Id at 132.* He has also served on panels or councils funded by the utilities, and has co-authored articles with utility company employees. *Id. at 133-140.* Clearly, he is the utility industry's "hired gun" and his opinion should be treated with grave skepticism. To be consistent, however, Dr. Cole has also testified or rendered opinions on behalf of the vinyl plastic industry, the automobile industry, and chemical companies. *Id. at 141-142.* He has also published an article challenging IARC's classification of dioxin as a Group I carcinogen, and recommended a national program to switch smokers from cigarettes to chewing tobacco. *Id. at 227-232.* In fact, Dr. Cole's bias is so strong that even he agreed that he is "solidly skeptical about new claims of environmental health dangers." *Id. at 143.* Dr. Bailey received $310 per hour. *Tr. 5-12-04 at 27.* He has also testified on behalf of other utilities in

Drs. Bailey and Cole cling to the opinion that buffer zones are meaningless because of their misguided belief that there is no health consequence if the exposure is 3mG, 6mG or even 100mG. Accordingly, their opinions provide no guidance to the Council which must decide whether 3mG or 6mG is the appropriate threshold exposure level for creating a meaningful buffer zone in compliance with P.A. 04-246. As to this important issue, the Council must pay close attention to the testimony of the only non-paid experts in this Docket on this issue, namely Drs. Ginsberg, Bell, Rabinowitz and Gerber, and disregard the irrelevant and purchased testimony of Drs. Bailey and Cole.

Dr. Ginsberg testified at many different points in this Docket. The key portions of his testimony are as follows:

- [t]he NIEHS evaluation concludes that among some of the epidemiological studies there is a fairly consistent pattern that links EMF exposures above 3 milligaus with a small increased risk of leukemia in children. ... *See State Agency Comments 1 (March 15, 2004)*

- If homes, schools, or other places where people would spend significant amounts of time are located within 300 feet of power transmission lines, average EMF levels could exceed typical background levels. *See State Agency Comments 1 (March 15, 2004)* The 300 foot buffer came from the Bonneville Power Authority 1994 Report. *Tr. 5-13-04 at 70.*

- Increasing the buffer zone to potential receptors is a guaranteed way to lower EMF exposure. *Tr. 6-17-04 at 16.*

- Given the suggestive positive findings for exposures above 3 or 4 mG in the Greenland and Albohm meta-analyses, DPH finds that prudent avoidance is warranted in this ***uncertain zone above 3 mG***. *See CSC Ex. 6; Tr. 6-17-04 at 13.*

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other proceedings. *Id. at 28.* The applicants' panel are the only paid witnesses on the topic of EMF in this docket.

- What we have is a lot of uncertainty. That uncertainty increases above 3 to 4 milligaus… [A]bove 3 to 4 milligaus, we can't answer somebody's question on the phone and say is my child safe in that environment, we cannot say with certainty, with the kind of certainty that we as a health department would like to give that that is a safe situation. *Tr. 5-12-04 at 178.*

- [W]here we're basically focusing in on background is mostly 3 or below. *Tr. 10-14-04 at 127.*

Dr. Ginsberg consistently testified that background levels are considered to be 3mG or less and that between 3mG and 6 mG is a "gray" area in which there is a great deal of uncertainty.

To be clear, Dr. Ginsberg did not opine that 6mG is the appropriate exposure level upon which to base a buffer zone. As he said repeatedly, The Connecticut Department of Public Health ("DPH") is not a risk management agency. *Tr. 10-14-04 at 93.* Rather, the DPH assesses risk. *Id.* In that regard, Dr. Ginsberg opined that prudent avoidance is warranted in the "uncertain zone above 3 milligaus….it's above background and so we advise people to – if they can in whatever way is feasible for them, reasonable for them, to limit exposures to background." *Tr. 10-14-04 at 187-88.* Significantly, the DPH's definition of prudent avoidance does not include economics: "[W]hen we talk about prudent avoidance at the Health Department, it's not necessarily about the level of economic investment or measures that one has to take to avoid an exposure. The context within which we make a statement like that is that the exposure is something that should be avoided under circumstances that one can normally take within their power and control." *Tr. 10-14-04 at 92.*

The only nexus in Dr. Ginsberg's testimony between 6mG and the meta-analyses was that 5.8 "happened to be the average .. which did show the increased correlation." *Tr. 10-14-04 at 188-89.* Dr. Bell explained the danger of relying on the average exposure level:

> [T]he average value of 5.8mG for children in the greater than 3mG exposure group in the Greenland study is elevated since there are a very few children who develop leukemia who have very high exposures to EMF, but the vast majority of children with leukemia in this exposure group actually had measured exposures substantially less than 5.8mG. In fact, most of them had exposures closer to 3mG....Therefore the estimate of 5.8mG markedly overestimates the exposure of the typical child who developed leukemia in the studies analyzed by Greenland.
>
> *PFT 1-12-05 at 1-2.*[21]

Dr. Ginsberg did not claim that EMF exposures below 6mG are safe for children. In response to a question by Chairman Katz, Dr. Ginsberg stated: "[W]e don't have a defined exposure of 3 to 6 in any of these studies that say it is safe or unsafe." *Tr. 10-14-04 at 189.* Dr. Ginsberg recognized that the studies are above 2mG, above 3mG or above 4mG with no ceiling. *Tr. 10-14-04 at 188.*

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[21] While Drs. Bailey and Cole attempted to undermine this examination performed by Drs. Bell, Rabinowitz and Gerber, the best they could come up with was to accuse Drs. Bell et al of data-dredging and refusing to consider possible confounders. Interestingly enough, when Attorney Schaefer asked Dr. Cole about confounders on March 25, 2004, Dr. Cole said that he was not aware of a confounding factor that explains the statistical association shown in the studies between EMF and childhood leukemia. *Id at 179.* Ten months later, when attempting to undermine Drs. Bell et al's examination, Dr. Cole raised traffic as a possible confounder. That assertion not only contradicts his prior sworn testimony, but also stands in opposition to opinions expressed by Drs. Ahlbom and Linet. With respect to data-dredging, Dr. Bell and Dr. Bailey agreed that Drs. Bell et al were merely testing the hypothesis suggested by between 3 and 6 mG. Drs. Bell et al's examination of the Greenland data does not amount to data-dredging under Dr. Cole's own definition since there was a pre-stated hypothesis.Chairman Katz and Dr. Ginsberg concerning the issue of what was occurring

"Nobody has teased out to say that just between 3 and 6 specifically is a known increase in risk." *Id.*

Chairman Katz' question and Dr. Ginsberg's response formed the hypothesis for examination by Drs. Bell, Rabinowitz and Gerber. *See PFT 1-12-05.* The results of this examination are extremely important in determining a meaningful buffer as required by P.A. 04-246. Drs. Bell, Rabinowitz and Gerber looked at the data from Table 3 in the Greenland meta-analysis in order to focus in on the 2mG to 5 mG range. *Tr. 1-20-05 at 149.* That examination is extremely revealing:

> If one looked at just a 2 to 5 milligaus window, there was a statistically significant 30 percent increase in the risk of leukemia in children. So these would be obviously a statistically significant or a highly significant outcome. If one looked at the 3 to 5 milligaus range exclusively, there was a statistically significant 80 percent increase risk of leukemia in children just exposed in that range of 3 to 5 milligaus.

Tr. 1-20-05 at 150. Consistent with this examination and Dr. Ginsberg's testimony as described above, the Council should set the buffer zone based on an EMF exposure level of 3mG or less.

Dr. Ginsberg focused the issue best: "You know, our bottom line is what is the EMF level at the -- where the receptor, the young child is going to be spending a lot of time." If the Council were to set an exposure level at 6mG at schools, camps, playgrounds or other statutory facilities where the "young child is going to be spending a lot of time" it would be doing so despite the advice from the Council's own witness, Dr. Ginsberg, that prudent avoidance is warranted above 3mG because of the uncertainty between 3mG and 6mG, and despite the

opinion of the Yale doctors and scientists; i.e., Drs. Bell, Rabinowitz and Gerber, that between 2mG and 5mG the statistically significant increase in risk of childhood leukemia is between 30-81%. *PFT 1-12-05 at 5.*[22]

As Drs. Bell, Rabinowitz and Gerber stated, the Council needs to decide whether "knowingly exposing children to a statistically significant 30%-81% increase in the risk of leukemia is an acceptable public health policy directed at an involuntary susceptible population, the children of Connecticut." *PFT 1-12-05.* While the Towns are not the risk managers here, they are the major stakeholder, and implore the Council not to take this risk with their children. Accordingly, the Towns urge the Council to adopt an exposure threshold of 3mG or less in order to establish a meaningful buffer as mandated by P.A. 04-246.

i. The 15GW "case" should not be the basis upon which the Council considers EMF, as it does not project loads into the future.

Employing the 15 GW "case" to calculate EMF exposure is extremely short-sighted, as it represents average New England system loading for 2002. The Council should not rely on the 15GW case as it is outdated, unrealistic, and does not provide any guidance as to the levels of EMF exposure in the future. Further, the Applicants have admitted that the 15GW case presumes that 50% of the time the actual load will exceed 15GW, and that for hundreds of hours each year children will be exposed to EMF generated from a system load that will exceed 20GW. With all due respect, basing a buffer zone designed to protect public health on a 2002 load figure, in which the actual load

[22] The increased risk between 2mG and 5mg is 30% and between 3mG and 5mg is 81%. Both are statistically significant. PFT 1-12-05 at 4.

exceeded this figure 50% of the time six years prior to operation of the new transmission line, makes absolutely no sense. This standard would violate the letter and spirit of P.A. 04-246.

The 15GW case is flawed in many respects. In 2002, for instance, 52 percent of the hours of the year were above the 15GW level. *Tr. 2-1-05 at 231-32.* That means that well over 4,000 hours per year were above 15GW. More significantly, however, is that in 2002, 4 percent of the hours were at 20GW or above. *Tr. 9-29-04 at 149.* That means that in 2002 for 349.44 hours, load levels were at 20GW or above. In 2002, approximately 263 hours were at or above 21GW. *See 9-27-04 Q-W-M-O -006.* The Applicants' forecast for a 30GW case shows that 1,825 hours will be at 21GW or above. *Id.* Under a 30 GW case, approximately 262 hours were at or above 25 GW (83% of 30 GW) and approximately 735 hours were at or above 23 GW (76% of 30 GW). The Applicants provided no EMF calculations at either 23 GW or 25 GW. These stark figures illustrate the fallacy of the 15GW average case, as under the 15GW case based on 2002 data or the 30GW case based on forecasts into the future, the number of hours that children will be exposed to EMF generated from a power load of 20GW or above is striking and of significant clinical importance with regard to the development of leukemia.

The new best management practices require the Applicants to model EMF levels at 70% of peak load. However, in violation of P.A. 04-246, no EMF calculations were provided at 19.39 GW (70% of 27.7GW) , or at 21 GW (70% of 30GW, which is projected peak during the first five years of operation under the

90/10 case). The 2002 data underlines the importance of looking at 70 percent of peak. In 2002, 431 hours were above the 19.39 GW level and approximately 263 hours were at or above 21GW. *See 9-27-04 Q-W-M-O -006.*

Unfortunately, the Applicants have failed to provide any EMF calculations based on the expected growth in demand in the system, other than EMF calculations associated with the 27.7 GW peak. The Applicants estimate that peak load growth in SWCT could be as high as 2 percent per year over the next 10 years assuming normal weather. *Response to Towns 02, 036 (h).* Under average weather conditions, there is a 50/50 chance that the 27.7 GW peak could be hit within the next 5 years. *Tr. 2-1-05 at 226-27.* Under extreme conditions, the 27.7GW peak could be hit this year. *Tr. 9-29-05 at 161.* Under the 90/10 case, a 30GW peak could be hit in 2013 (within the first 5-6 years that this line is in service). *Tr. 2-1-05 at 233.* However, if the choice is between the peak case to be hit within the next five years and the average load hit three years ago, the Council must look to the future growth in the system and rely on the 27.7 GW case. The EMF levels at statutory facilities are unacceptably high under the 27.7 GW case.[23]

Moreover, with respect to this particular line, the 27.7GW peak case represents only 44 percent of normal ratings for the conductor being proposed for the overhead portion of the transmission line, and could be exceeded under contingency conditions under peak loads. *Tr. 2-1-05 at 227; Response to Towns*

[23] *See* the Woodbridge Brief for the EMF levels at the JCC and Ezra Academy and the Milford brief for the EMF levels at Eisenhower Park and other statutory facilities, by way of example.

-02, 037. Mr. Fitzgerald stated that under normal conditions, pre-contingency, the different conductors on the lines could be loaded as high as 66.2 percent of their normal ratings. *Tr. 3-25-2004 at 271.*

While the Towns do not agree that average load levels are meaningful, to the extent that the Council considers "cases" based on average load, the Applicants should have calculated EMF for average New England wide system loads of 16.8 GW, 18.2 GW[24], 19.39 GW and 21GW, but did not.[25] As such, the Record is incomplete for the Council to be able to estimate with any accuracy the EMF levels expected with the higher loads in the future, other than the 27.7 GW case.

It is self-evident that the only way to plan for EMF exposure into the future is to understand what loads are expected in the short and long-term. The record is clear that in the short-term the 16.8 GW and 18.2 GW average New England system load will be exceeded, and for sustained periods of time children will be exposed to elevated EMFs. Without a meaningful buffer zone based on load levels that will be achieved during the operation of this line, these exposures increase the risk of childhood leukemia and are unacceptable.

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[24] The Applicants expect that when the 27.7GW peak is hit, the average New England system load will be 16.8 GW. *Tr. 9-29-05 at 161-62.* Yet, no calculations have been provided for the 16.8 GW case which is likely to be achieved within the next 5 years. Yet, even the 16.8 GW average case is short-sighted, since it correlates to the 27.7 GW peak which under the 50/50 case will be hit within the next five years. Under the 90/10 case, a 30GW peak could be hit in 2013 (within the first 5-6 years that this line is in service). *Tr. 2-1-05 at 233.* The 30GW peak case equates to an average system load of 18.2 GW. *Response to W-M-O-006; Tr. 9-29-04 at 162.*

[25] The 19.39GW case represents 70% of peak as required by the new BMPs. The 21GW case represents 70% of a peak of 30GW, which could be hit as early as 2013.

Certainly, for purposes of system planning, the Applicants would never build a transmission system based on the 15 GW case. The Southwest Connecticut Working Group and the ROC Committee used the 27.7 GW and 30 GW cases. *Tr. 9-29-04 at 157.* The reason for studying a 30 GW case, according to the Applicants, was because "the ISO had indicated a desire to look a little bit longer and determine if this 345kV loop will last through a higher load level than what is projected to be in the late 2008, 2010 time period... You want to determine how long your solution is going to last." *Tr. 9-29-04 at 159.* Yet, for purposes of protecting the safety of children, the Applicants remain steadfast that the historic 15 GW case is applicable. The same standard of projecting load into the future for system planning should be applied to protecting children. The Council must base its decision on a meaningful buffer on projections into the future; not on historic irrelevant data. Unfortunately, since the Applicants only provided data for a 15 GW and 27.7 GW case, the Council must rely on the 27.7 GW case since it represents the only set of calculations or figures which takes into account the future growth in load.[26]

The Applicants' explanation for refusing to provide EMF calculations taking future growth in load into account is not credible. While it is understandable that for system planning, they must stress the system, they have not explained why they did not provide EMF calculations for non-stress average cases that correlate to the peaks, assuming, *arguendo*, that average cases

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[26] In fact, in response to a question from Chairman Katz, Mr. Zaklukiewicz agreed it would be "reasonable" for the Council to use the 27.7 GW case when looking at "how many milligausses the proposed line will have." *Tr. 5-12-04 at 39.*

matter, such as at 16.8 GW, 18.2 GW, 19.39 GW or higher. When asked whether they calculated the EMF levels for an 18 GW case, the Applicants responded simply: "We were asked to do it at 15GW." *Tr. 2-1-05 at 233.* The Applicants then said that with respect to the 18.2 GW average case (correlates to the 30GW peak) that "if we were to try to serve 30 gigawatts in New England, we would need appreciably more generation in all of New England. And exactly where that generation would be located is anyone's guess....so to turn around and try to correlate what the flows would be on this 345-kV line without knowing where the generation will have to be located to serve that load is --- is an estimate. And anyone's guess in this room is probably as good as anyone elses." *Tr. 2-1-05 at 233-34.* [27] [28] The Legislature and the Towns are not interested in guesswork when it comes to protecting the health and safety of children. Since it is undisputed that 30 GW will be hit during the operational life of this line, the Applicants needed to make certain assumptions about generation in order to calculate what the projected EMF levels will be on the line based on realistic forecasts of load.[29]

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[27] The assumptions made with respect to the 15GW case are equally speculative, because there is no way of knowing what generation will be available in five or ten years. *Tr. 9-29-05 at168-69.*

[28] It is telling, however, that the applicants were comfortable to speculate in a non-EMF related response, that "with the additional transfer capability provided by this project, it is quite likely that the system can be operated with no or very little generation in service within SWCT." *Response to Q-CSC-076.* Moreover, even when load is near peak, "sufficient, less expensive and potentially less polluting generation may be available such that relatively little local generation in SWCT is dispatched." *Response to Q-CSC-075.*

[29] The Applicants were certainly able to make system planning assumptions with respect to the 27.7 GW case. *Tr. 2-29-04 at 151-52.*

ii. Split – Phasing Should not be Viewed as a "Miracle Cure," as There is no Experience with it at 345kV, and the Claimed Reduction in EMF is Unproven.

All of the Applicants' EMF calculations rely on split phasing and taller towers to reduce EMF exposure levels. This reliance is troubling, as there is no proven basis to conclude that split phasing will generate the massive EMF reductions claimed by Dr. Bailey.[30]

There is no field data demonstrating the extent to which split phasing reduces EMF exposure levels. Back in June 2004, Dr. Ginsberg stated that "during the course of these hearings there has been a lack of actual measurement data documenting the effectiveness of split phasing in lowering EMF." *CSC Ex. 6.* To date, the Record is devoid of any actual measurement data at 345kV. Dr. Ginsberg further recommended that it may be "prudent for the Council to request a limited field trial of split phasing that would take place over the course of days to weeks of power transmission" in order to "determine whether split phasing is a consistent and reliable EMF reduction method..." *Id.* No field trial of split phasing at 345kV was ever submitted into the Record.[31]

Moreover, the EMF calculations, including the accuracy of split phasing, are dependant on the validity of the input assumptions. The calculations will vary

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[30] It is telling that split-phasing did not emerge as a mitigation "strategy" in this Docket until after the Application was filed and only after communities expressed concern over EMF caused by the overhead lines. *Tr. 6-13-04 at 109.*

[31] The Towns respectfully submit that in establishing buffer zones to protect public health and safety, the Council should rely on studies on a somewhat larger scale than Dr. Bailey's backyard experiment. Dr. Bailey's 3-foot transmission line probably does not quite meet KEMA's definition of "actual industry experience."

greatly depending on many factors, including load. *Tr. 5-13-04 at 34.*[32] The model is very sensitive to changes or errors in the input variables. *Tr. 5-13-04 at 59.*

There is also no track record for split phasing at 345kV as a mitigation measure for EMF exposure levels. Mr. Zaklukiewicz readily admitted that split phasing has never been used for this purpose in the U.S. at 345kV. *Tr. 5-12-04 at 50.* The only instance of split phasing being employed to reduce EMF exposure levels is in connection with a 115kV transmission line in western New York. *See Applicants Ex. 139.*

There are no real world examples of split phasing utilized to consistently and reproducibly mitigate EMF, leaving the Record insufficient with respect to the ability of split phasing to produce such massive reduction in EMF exposure. While the Towns support split phasing in concept as a potential mitigation measure for both an underground and overhead application (to the extent that the Applicants meet their burden with respect to overhead lines under P.A. 04-246), the Towns are not willing to blindly accept that split phasing will work to the extent claimed, based on the Record in this Docket.

Accordingly, without additional assurances that it will work to reduce EMF to the exposure levels claimed, the Council must have a "back-up" plan consisting of constant monitoring and significant adverse operating consequences (or other stringent measures to reduce exposure levels to

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[32] See the discussion above concerning the appropriateness of the 15GW and 27.7 GW cases.

background) for the Applicants if the EMF levels are above background levels. Because of the experimental nature of split phasing as a mitigation strategy, the Council should not rely on it as the "cure," without condition.

The Applicants have refused to accept responsibility for the efficacy of split phasing. If it does not work to the extent represented, the Applicants will not commit to shutting down the line, significantly restricting the flows to reduce EMF exposures levels to background at the edge of the right-of way near statutory facilities, or any other mitigation measures. Accordingly, to the extent that the Council is willing to buy into the split phasing experiment, there must be post-construction measurements conducted at frequent intervals to verify the pre-construction calculations. If the split phasing experiment fails; that is, if the EMF levels are above background at the edge of the right of way near statutory facilities, the line should be shut down, or the current through the lines should be reduced, so that background levels are achieved.

Again, the Council should not use the children of Connecticut as a science experiment. The margin of error is slim, as each incremental rise in milligaus levels at statutory facilities increases the risk of childhood leukemia.

iii. A "No Net Increase" Standard Would Violate P.A. 04-246

At various points in the hearing, members of the Council posited the question whether the Council could establish buffer zones which are based on a "no net increase" standard; i.e., keeping EMFs at existing levels, following the

construction of a new overhead transmission line. The Towns respectfully submit that if the Council adopts this standard, it will certainly violate P.A. 04-246.

Section 3 of P.A. 04-246 requires that **new** 345-KV overhead lines

> ...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 daycare 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.

There is nothing in P.A. 04-246 remotely suggesting that the Council will have discharged its obligations by simply maintaining the status quo. Rather, the Council must create a buffer zone that protects public health and safety any time a **new** 345-kV line is proposed.

In this docket, the Record is clear that there is an identifiable and statistically significantly increased health risk to children who are exposed to EMFs greater than 3 mG. There are clearly many locations along the right of way where existing EMF levels far exceed this figure and are unacceptably high. In the absence of an application to construct a new 345-kV line, we can be certain that the Applicants would do absolutely nothing to mitigate the EMF levels at these areas, and the Siting Council would have no obligation to act under P.A. 04-246. But once a new 345-kV line is proposed, the requirements in P.A. 04-246 are imposed, and the Council cannot certify an overhead line that results in

EMF levels that exceed 3 mG at protected Statutory Facilities -- regardless of what the existing levels were prior to the filing of the application.[33]

iv. The Vermont Siting Decision is Irrelevant

The Applicants submitted a decision from the Vermont Siting Board, for the purpose of introducing into the Record a decision in which a siting board found that there is no adverse health impact from EMF, and accordingly failed to implement any prudent avoidance in siting an overhead power line. *Petition of Vermont Electric Power Company and Green Mountain Power Corporation to State of Vermont Public Service Board, Docket No. 6860.* This decision is irrelevant to this proceeding for a number of reasons.

First, unlike the State of Vermont, the State of Connecticut has already conclusively determined legislatively that EMFs pose an adverse health impact. This was the basis for the enactment of P.A. 04-246. Conversely, the Vermont decision is premised on the contrary finding that there is no health impact from EMF. Since the Connecticut legislature has reached the polar opposite conclusion for siting decisions in this state, the siting decision of the Vermont Public Service Board is completely inapplicable.

Second, there is nothing in the Vermont decision that reveals similar areas of sensitivity which this Siting Council faces. The decision does not discuss potential impacts to schools, playgrounds, child daycare facilities, youth camps, public playgrounds or residential areas in the siting of that line. By contrast, the

[33] Existing EMF levels on existing transmission lines are also irrelevant as P.A. 04-246 only applies to new high voltage transmission projects.

route from Milford to Middletown is dense with statutory facilities that will be adversely impacted by the siting of an overhead line.

Third, the rights of way in Vermont are far wider than those in Segments 1 and 2, thereby providing a built-in buffer which does not exist in this state. In the Vermont decision, the board noted that EMF levels were not a concern in part because by increasing from a 115-kV to 345-kV line, the right of way would expand from 100 feet to *250 feet.* Vermont Decision at p. 67. Between Milford and Middletown, rights of way are 165 feet in width, thereby ensuring closer proximity between the new 345-kV line and Statutory Facilities.

For these reasons, the Vermont decision is completely irrelevant to the Council's siting decision.

Moreover if the Council is going to consider what other states have done by citing Vermont in one docket proceeding (rather than applying P.A. 04-246), then the Council must also examine California, Colorado, Michigan, New Jersey and the Tennessee Valley Authority. The 1999 California Department of Health requires that the following setbacks be employed for schools near transmission lines: 100 feet for 50-133kV lines, 150 feet for 220-230kV lines and 350 feet for 500-550kV lines. *Bell et al Pre-Filed Testimony, 5-11-04 at 2.* Colorado defines prudent avoidance to include, among other options, the burial of lines, and limiting exposure to schools. *Id at 3.* Michigan requires set back to achieve 2mG for sites impacted by a high power transmission line. *Id. at 4.* The Tennessee Valley Authority states that a 300 foot buffer for homes and a 1,200 foot buffer for schools is desirable. *Bell et al Pre-Filed Testimony, 5-11-04 at 4.*

III. THE SITING COUNCIL MUST ESTABLISH BUFFER ZONES FOR OVERHEAD LINES WHICH PROTECT THE PUBLIC HEALTH, SAFETY AND WELFARE FROM THE EFFECTS OF EMF.

Section 3 of P.A. 04-246 amends Subsection (a) of Section l6-50p of the General Statutes to provide, *inter alia*, that the Council shall not grant a certificate unless it finds that the overhead portion of the lines are consistent with:

> "the council's best management practices for electric and magnetic fields for electric transmission lines...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 daycare facilities, licensed youth camps or public playgrounds adjacent to the proposed route or the overhead portion 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."

Therefore, in order to approve an application which includes overhead lines adjacent to Statutory Facilities, the Council must first find that undergrounding adjacent to Statutory Facilities is not feasible due to its impact on the reliability of the electric system of the state, as required by Section l6-50p (h) of the General Statutes (Section 7 of P.A. 04-246).[34] If the applicant has overcome that hurdle, then the application can only be certified if there is a buffer zone where there are Statutory Facilities adjacent to overhead portions of the proposed transmission line, which is adequate to protect the public health and safety. It must be reemphasized that, based upon the purpose, intent, and

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[34] The issues of what constitutes being "adjacent" to Statutory Facilities and the measure of electromagnetic fields are dealt with in other Sections of this Joint Brief.

language of P.A. 04-246, the question of whether EMF is a matter of public health concern is not a matter for consideration by the Council in determining whether a buffer zone is adequate to protect the public health and safety. The Legislature has conclusively established in P.A. 04-246 that exposure to elevated levels of EMF is to be avoided as a matter of public health and safety.[35]

In making the determination as to the appropriate buffer to protect the public health and safety, the Council must be guided by the record of the proceeding before it.[36] The only **known** and **proven** method for reducing EMF generated by a transmission line at a given load is distance, which can be achieved both horizontally and vertically.[37] Therefore establishing appropriate buffers requires determining not only a horizontal location, but also the vertical height of the conductor, which involves both tower height and conductor sag. Therefore the width of the buffer will, of necessity, vary based upon tower height and conductor location. Once an appropriate buffer has been established if there are Statutory Facilities located within the buffer then the Siting Council must not certify the transmission line.

Nowhere in P.A. 04-246 has the legislature granted any authority for

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[35] Section III addresses the issue contained in Question (4) of the Council's memorandum dated February 17, 2005.

[36] As set forth in the EMF section *supra*, the Towns have asserted that to establish a buffer adequate to protect the public health and safety requires that the EMF level be 3 mG, based upon a system wide load of 27.7 GW.

[37] As discussed *supra*, split-phasing to reduce EMF is, by comparison, essentially experimental at this point in time.

the taking of Statutory Facilities, for the purpose of creating a buffer zone to site site an overhead 345 kV transmission line. Section 04-246 requires the Council to create a buffer which protects the public health and safety. Clearly, the location of Statutory Facilities within a buffer area necessary for the protection of public health and safety creates a hazard to the public health and safety resulting in the exact opposite of the Council's charge. The legislative history discloses no indication that the legislature intended that the companies use P.A. 04-246 as a sword to take property as opposed to the protective measure intended. The legislative history, in fact, suggests just the opposite, that a transmission line will be sited in a location where a safe buffer can be established taking into account the location of Statutory Facilities.

> "REP. MINER: (66th)
> Thank you Mr. Speaker. And in terms of let's say of a subsequent development on that, could a municipality deny an application for a playground or something if it was located within a certain distance of a power if it had already been erected? Through you Mr. Speaker.
> DEP. SPEAKER HYSLOP:
> Representative Backer.
> REP. BACKER: (121st)
> Through you Mr. Speaker. That's an excellent question, I think it speaks to a number of planning and zoning and conservation development type things that we have done around the State. If it was within the right of way or perhaps the buffers that were defined by the Siting Council I would say that they would not be allowed to.
> However, that said I think that we need to revisit this and not specifically on this bill. We've done it on other things

> and other places to work with our towns to prevent schools from being built under the wires and right of ways, which have happened. In particular a very high profile one in this particular case, that we could go forward to work with the communities to be certain that those right of ways are protected and buffers are protected so we will not expose children to these types of EMFs.
> So I think the answer is, the answer to your question about siting a school or a playground I think within the right of way it's obvious that they would not be allowed to do that. I think within the buffer zones established by Siting Council that's a question that would have to be determined at the local planning and zoning."

Clearly the legislature did not envision the existence of Statutory Facilities within the buffer zone, as it debated the ability to construct those facilities "after" the siting and construction of the transmission line. In addition, it is clear that the legislature did not contemplate the exercise of the power of eminent domain to establish the buffer zone. This is evident by Representative Backer's response that while there would be no right to construct in the right of way, (which would be established through purchase or the power of eminent domain) within the buffer zone the right to develop would be controlled by municipal zoning commissions (since eminent domain, which would preclude such development, would not be available to create such a buffer zone).

The authority to condemn is to be strictly construed in favor of the owner and against the condemnor and the prescribed method of taking Connecticut

Light and Power Company v. Wanda L. Huschke, 35 Conn. Supp 303, 311-312 (1979).

Even if the provisions of Conn. Gen. Stat. §16-50k could be interpreted to allow the takings of properties, to create a safe buffer zone, certification of a transmission line which would require such takings would still violate PUESA's purpose to assure the welfare and protection of the people of the State as set forth in Conn. Gen. Stat. §16-50g. In particular, the desire of the legislature to protect the takings of homes is well established in PUESA. Subsection (c) of Conn. Gen. Stat. §16-50y specifically grants to residential property owners the right to contest the company's need to acquire its property before the Council. A statute designed to protect Statutory Facilities cannot be used to justify the taking of Statutory Facilities. Such a twisted interpretation would violate both the letter and the spirit of P.A. 04-246. "We are required to "construe a statute in a manner that will not thwart [the legislature's] intended purpose or lead to absurd results. . . . We must avoid a construction that fails to attain a rational and sensible result that bears directly on the purpose the legislature sought to achieve. . . . If there are two possible interpretations of a statute, we will adopt the more reasonable construction over one that is unreasonable" (Internal citations and quotation marks omitted). *State v. Ehlers*, 252 Conn. 579, 593 (2000).

In certifying a transmission line, the Council does not have the power to grant the Applicants the right to condemn property. It is the Towns' position that the Applicants are powerless to condemn properties for the purposes of establishing the buffer zone required under P.A. 04-246. Therefore, where

Statutory Facilities are located within a buffer zone which is required to achieve public safety, the Council must deny certification of the transmission line. In addition, even if the power of eminent domain existed, the taking of properties to create such a buffer zone is contrary to the legislative intent and mandates that the Council, in performing the balancing test required under PUESA, deny certification of the transmission line.

IV. THE SITING COUNCIL IS PROHIBITED FROM CONSIDERING COSTS IN DETERMINING WHETHER TO ORDER PORTIONS OF THE PROPOSED LINE ADJACENT TO STATUTORY FACILITIES TO BE UNDERGROUND.

The Council has requested the parties to this proceeding to brief whether the Council is prohibited or required to consider costs as a factor in determining whether to order undergrounding of the proposed 345 KV transmission line adjacent to Statutory Facilities.[38] For the reasons set forth herein, cost is entirely irrelevant and there is no dollar amount above which cost is a factor to be considered in rebutting the presumption that a proposal to place 345 KV transmission lines adjacent to Statutory Facilities; i.e., residential areas, private or public schools, licensed child daycare facilities, licensed youth camps or public playgrounds is inconsistent with the purposes of PUESA.

Section 7 of P.A. 04-246 adds a new subsection (h) to Section 16-50p of the General Statutes, which provides:

> " (h) for facilities described in subdivision (1) of subsection (a) of section 16-50i, as amended, with a capacity of three hundred forty-five kilovolts or greater, there shall be a presumption that a proposal to place the overhead portions, if any, of such facility

[38] This Section VI addresses the issue presented in Question 1(a) of the Council memorandum dated February 17, 2005.

> 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."

Section 16-50p(a)(3)(D) mandates that the Council cannot grant a certificate for an electric transmission line facility unless it shall find and determine, "...(iii) that the overhead portions, if any, of the facility are cost effective and the most appropriate alternatives based on a life cycle cost analysis of the facility and underground alternatives to such facility, [and] are consistent with the purposes of this chapter. . . . " While P.A. 04-246 modified some numbering in PUESA, even prior to its adoption, PUESA required that a condition precedent to the granting of a certificate for a transmission line facility was a finding by the Council, *inter alia*, that the overhead portions of the facility were both cost effective and the most appropriate alternative based on the life cycle cost analysis of the facility and the underground alternatives to such facility and "consistent with the purposes of this chapter." Therefore, even prior to the adoption of P.A. 04-246, the legislature had distinguished between a finding that a proposed transmission line was consistent with the purposes of PUESA and a finding of the cost effectiveness of an overhead facility compared with any underground alternative, requiring that the Council find that both standards be met prior to the granting of a certificate for a transmission line which included any overhead facilities, whether or not equal to or greater than 345 kilovolts.

In addition to adding numerous other findings, the legislature, in adopting P.A. 04-246, identified the location of 345 kV transmission lines overhead next to Statutory Facilities as presumptively inconsistent with the purposes of PUESA. The legislature specified only one circumstance pursuant to which this presumption could be rebutted; the technological infeasibility of undergrounding the transmission line. In defining its role in interpreting statutes, our courts have repeatedly stated,

> "Our fundamental objective is to ascertain and give effect to the apparent intent of the legislature...In seeking to discern that intent, we look to the words of the statute itself, to the legislative history and circumstances surrounding its enactment, to the legislative policy it was designed to implement, and to its relationship to existing legislation and common law principles governing the same general subject matter." Marrocco v. Giardino 255 Conn. 617, 624 (2001)

The language of Section 7 of P.A. 04-246 is clear and unequivocal. The legislature has provided only one criterion capable of rebutting the presumption that overhead 345 kV lines next to Statutory Facilities are inconsistent with the purposes of P.U.E.S.A. If it intended for there to be more, it would have stated so in the Statute. In Schult v. Schult, 40 Conn. App. 675, 684 (1996) the court stated the standard for rebutting a statutory presumption:

> "A presumption requires that a particular fact be deemed true until such time that the proponent of the invalidity of the fact has **by the particular quantum of proof required by the case,** shown by sufficient contradictory evidence, that the presumption has been rebutted." (emphasis added)

In Section 7 of P.A. 04-246 the legislature has established technological infeasibility of undergrounding as the quantum of proof required to rebut the

negative presumption arising from locating an overhead 345 KV transmission line next to Statutory Facilities.

In overturning a decision finding that a rebuttable presumption had been rebutted, the Court in Marrocco v. Giardino, supra, 255 Conn. at 637, cited the maxim of statutory construction known as "expressio unius est exclusio alterius" translated as "the expression of one thing is the exclusion of another". The Court stated, "where express exceptions are made, the legal presumption is that the legislature did not intend to save other cases from the operation of the statute". In P.A. 04-246 the legislature has expressed one, and only one, exception to the presumption.

The legislative history of P.A. 04-246 is equally telling in establishing that the legislative intent is fully in accord with its unequivocal language:

- Representative DelGobbo (p. 240). But is it your understanding that for purposes of this section that the reasonable costs that are being discussed and that the prudent cost incurred what that is referring to costs that are being discussed and that the prudent costs incurred what that is referring to is that if there are – because we are requiring lines to be buried that might not have otherwise been or added technologies a cost to be submitted – that those incremental costs that in fact we're deeming those to be appropriate to be reimbursed.

- Representative Backer (p.241). Through you, I think the answer to the rather complicated question the Representative well knows that there are any number of agencies that could affect the outcome of cost here. If this amendment should pass we will set one of the highest bars in the country for electromagnetic fields and standards for construction of transmission lines.

  It still has to go to the Siting Council and that's the first stop where costs could vary and change. We cannot in this body engineer and dictate the engineering of transmission line. It's incredibly complicated and difficult. But we have set a very high bar. The next stop would be for FERC. And at FERC, certain recoverable costs would be set for the building of the

transmission line. However, FERC may not approve of some of those costs created in the Siting Council.

The bill has considered the fact that some of those normally recovered costs within the standard construction practice would be recognized but some of the extraordinary gold plating that we have required here in this legislature may not be recoverable at the federal level. This language attempts to be certain that those costs – legitimate costs that were created in this Chamber and in the Senate of this Legislature – will be recoverable at DPUC.

So the answer to that is yes it does contemplate that if certain costs that we've created here in the legislature are not recoverable from the Federal Energy Commission we will make them recoverable through DPUC.

- Representative Kalinowski (p.247) This bill is not perfect. But it does afford the opportunity for us to act in the best interests of the people. And not some economic advantage that disregards that interest.

- Representative Backer (p. 253) Certainly this legislation presumes that the line will be buried. And if you take a look at ii, it sets up – and I hate to use the term because I'm not a lawyer – but it sets up a somewhat of a rebuttable situation. Where you assume it will be buried and you back to the various caveats of reliability, operability and the technical feasibility of burying the line. And that of course will in the end mitigate the installation of being completely underground. That said I cannot answer Representative Farr's question on cost because the Siting Council when they are done with their deliberations will determine how much goes underground.

- Representative Backer (p. 255) There is no doubt in my mind this will add millions, if not a hundred million dollars in cost, I don't have those exact figures. There's no doubt in my mind that it will add those costs when spread out across the State I think you'll see something along the lines of a 1% or 2% increase. But as earlier I set a caveat to make sure people understood.

- Representative Farr (p. 257) I'm very uncomfortable saying that I'm willing to spend what could be hundreds of millions of dollars to put lines underground in some areas. Recognizing that there are impacts and I'm willing to recognize that there are negative impacts from the visuals, recognize that people don't want them going through their back yards and there ought to be ways to compensate for that.

  But I'm not comfortable and I'm not persuaded that it's necessary to put these lines underground for the consumers is not worth it and I'm not sure

I understand that. I was hopeful that we would get some kind of legislation that balances the concern, the legitimate concerns that consumers have about property values and visuals and everything else with the need for providing high powered lines.

And if the end result is a bill that ultimately requires them all to be buried then I guess I'm going to vote against it. I may be the only one in the Chamber to do that but I'm going to vote against it. I live in a community where when they wanted to build I84 they just went through and took houses and we've got people who have highways in their backyard. And we didn't say we're going to put I84 underground because we couldn't afford to put I84 underground.

- Representative Backer (p. 285) The bill is really silent on cost. However, it's silent on costs in terms of how they would have to make their choices. Reliability, operability along with technical feasible or infeasible language will dictate their decision. Now that said bill is clearly encouraging Siting Council, ordering then to look at best management of electromagnetic field technology. So the best management for that might be any number of things that we've discussed previously in this debate. So without being able to have exact situation I would tell Representative Miner that cost should not be a consideration. Best management of electromagnetic fields and practices should be.

There is not one shred of evidence in the Record that suggests that the presumption could be rebutted by anything other than the evidence that undergrounding is technologically infeasible based on reliability and operability.

To construe P.A. 04-246 as including cost in the consideration of technical infeasibility would have the effect of rendering Section 7 of the legislation meaningless. As previously set forth herein, prior to the adoption of P.A. 04-246, PUESA already required a finding of both cost effectiveness of the overhead portion of the transmission lines, as well as a finding that the proposal is consistent with PUESA. Conn. Gen. Stat. § 6-50p(a)(3)(D).

> "It is a fundamental maxim of statutory construction that the use of...different terms...within the same statute suggests that the legislature acted with complete awareness of their different meanings...and that it intended the terms to have different

meanings..." Celentano v. Oaks Condominium Association 265 Conn. 579, 609 (2003).

The decision of the legislature not to incorporate costs in Conn. Gen. Stat. § 16-50p(h), as contained in 16-50p(a)(3)(D), is a clear indication of the legislative intent that cost not be a consideration in rebutting the presumption of inconsistency with the purposes of PUESA under 16-50p(h). While the Council may, and in fact must, look at a plethora of issues, including cost, in determining whether a proposed transmission line is consistent with the purposes of PUESA, that does not mean that those same issues are to be weighed in rebutting the specific presumption of inconsistency under 16-50p(h). Such an interpretation would render 16-50p(h) meaningless.

Based upon the express language of Section 7 of P.A. 04-246, its legislative history and the application of traditional maxims of statutory construction, proof of technological infeasibility is the only basis for rebutting the presumption that the location of a 345kV transmission lines above ground next to Statutory Facilities is contrary to the purposes of PUESA; and more particularly, cost at *any* price is not a factor in that determination.

V. THE ISO NEW ENGLAND APPROVAL PROCESS IS NOT RELEVANT TO THE COUNCIL'S CONSIDERATION OF THE APPLICATION.

Because the ISO New England ("ISO-NE") approval process is completely different from the Council's statutory mandate, the likelihood of ISO-NE approval of the proposed transmission line facilities is not relevant to the Council's deliberations.[39]

[39] Section V addresses the issue contained in Question (3) of the Council's memorandum dated February 17, 2005.

ISO-NE engages in two levels of approval of a configuration. This approval process takes place only after the Council has certified a line. The first level of approval is described as the "18.4 process," in reference to Section 18.4 of the NEPOOL agreement. ISO-NE has defined the 18.4 process as a "pass/fail" process, and a "no harm" standard. Tr. 3-23-04 at 134, 175. Specifically, a configuration is approved "provided that it causes no harm and no degradation anywhere else." Tr. 3-23-04 at 175.

The second level of ISO-NE approval is the "12.C process." In the 12.C process, ISO-NE makes a determination as to the socialization of costs for a proposed configuration, which is then presented to FERC. FERC is the ultimate decision-maker. Tr. 3-23-04 at 130. ISO-NE described 12.C as "an anti-gold-plating standard." Tr. 3-23-04 at 136. The major objective of 12.C is "to find the most cost-effective solution." Id. at 136-37.

The Council's standards are delineated in PUESA. Unlike ISO-NE, the Council is required to balance the need for reliable electric service with "the need to protect the environment and ecology of the state and to minimize damage to scenic, historic and recreational values." Conn. Gen. Stat. §16-50g. Accordingly, whereas ISO-NE's 18.4 process focuses solely on whether a configuration will operate reliably, the Council's statutory mandate requires the balancing of many factors that ISO-NE does not consider.

Under P.A. 04-246, there is now a statutory obligation for the Council to maximize the number of underground miles in approving an application. Significantly, the Legislature did not include the consideration of costs as a factor

for the Council in determining the maximum amount of the line which can be buried. By contrast, under ISO-NE's 12.C approval process, finding a least-cost solution is paramount, and ISO-NE has no statutory mandate to maximize underground miles.

In light of the differing standards that the Council and ISO-NE follow, it would be inappropriate for the Siting Council to consider the likelihood of ISO-NE's approval in carrying out its charge under PUESA. While ISO-NE's witnesses may be free to weigh in with their views of potential configurations in this docket, the Council should never lose sight of the fact that ISO-NE's opinions are colored by ISO-NE's view of its own approval process.

As Chairman Katz correctly stated:

> We're going to develop a complete record on these issues. *The ISO 18.4 process does not control this proceeding.* We will do our thing and we will determine what we think is technologically feasible. When we're done they will do their thing. Our thing is going to end up with some combination of underground and overhead if completely underground is not feasible that we feel is supported by a record. It has nothing to do with preferences, precedent for the rest of New England, and whether it's easy or not. The law doesn't say it has to be easy, it has to be technologically feasible. Tr. 1-13-05 at 10 (emphasis added).

The Towns respectfully concur. The Council should not (and cannot) cede its regulatory authority to ISO-NE. ISO-NE's threats that it will not approve more than 24 miles of underground lines must not interfere with the Council's job of balancing factors and maximizing undergrounding as required by PUESA.

VI. P.A. 04-246 MUST BE INTERPRETED IN A WAY THAT FULFILLS THE LEGISLATIVE INTENT TO PROTECT THE PUBLIC FROM THE POTENTIAL HEALTH AND SAFETY EFFECTS OF TRANSMISSION LINES.

In enacting P.A. 04-246, the General Assembly's principal motivation and concern was to ensure the health and safety of the public. This is evident from the language of P.A. 04-246 itself as well as the legislative history and purpose. P.A. 04-246 and its key undefined terms, "adjacent" and "residential areas" must be interpreted and implemented by the Council in a way that fulfills this purpose to the fullest extent possible.

As previously discussed *supra*, P.A. 04-246 amends Conn. Gen. Stat. §16-50p by creating a new presumption regarding overhead electric transmission lines. The Council has requested that the parties address several questions regarding the scope and definition of the terms "adjacent" and "residential area" as they are used in this subsection.[40]

A. THE PROXIMITY OF THE PROPOSED OVERHEAD TRANSMISSION LINES TO A PROTECTED STATUTORY FACILITY MUST BE DETERMINED CONSERVATIVELY AND ON A CASE-BY-CASE BASIS.

The term "adjacent" must be interpreted to mean any area in close enough proximity to the overhead transmission line to pose a potential risk to public health and safety. Specifically, this requires the Council to evaluate areas on a site-specific basis rather than following a rigid or inflexible definition.

The question of how a statute, and the terms contained therein, should be construed is one of basic statutory interpretation. The fundamental task of statutory construction is to ascertain the intent of legislature and to construe statutes in manner that effectuates that intent. Wiseman v. Armstrong, 269

[40] Section VI addresses the issues contained in Questions 1(b) and (4) of the Council's memorandum dated February 17, 2005.

Conn. 802, 809, 850 A.2d 114 (2004). Relevant statutory law and precedent provide the framework for this analysis.

We are directed by Conn. Gen. Stat. §1-2z [41] to first consider the plain language of the text. "The meaning of a statute shall, in the first instance, be ascertained from the text of the statute itself and its relationship to other statutes. If, after examining such text and considering such relationship, the meaning of such text is plain and unambiguous and does not yield absurd or unworkable results, extratextual evidence of the meaning of the statute shall not be considered." Conn. Gen. Stat. §1-2z. In this case, the term "adjacent" is not defined within the text of the statute itself, nor can its meaning be conclusively ascertained from its interrelation with other parts of PUESA.

When used in this statutory context, "adjacent" is neither plain nor unambiguous. When a statute does not define a term, such as the term "adjacent" in Conn. Gen. Stat. § 16-50p(h), courts "look to the common understanding of the term as expressed in the dictionary." Tele Tech of Connecticut Corp., v. Dept. of Public Utility Control, 270 Conn. 778, 798, 855 A.2d 174 (2004). In this case however, reference to standard dictionaries is of little help. For instance, the Merriam-Webster Dictionary defines "adjacent" as "having a common endpoint or border." Merriam-Webster Dictionary (10th Edition, 2004). In contrast, Black's Law Dictionary defines it to be"(l)ying near or close to, but not necessarily touching" (emphasis added). Black's Law Dictionary (8th Edition, 2004). This term cannot, therefore be plain and unambiguous as it is equally capable of either definition.

When a statute is not plain and unambiguous, courts seek guidance from the legislative history of the statute and the circumstances surrounding its enactment, the legislative policy it was designed to implement, the statute's relationship to existing legislation and common-law principles governing the same general subject matter. State v. Lutters, 270 Conn. 198, 205, 853 A.2d 434 (2004). The legislative history of this statute reflects the clear intention of the legislature to protect the health and safety of the public by precluding the location of high powered transmission lines proximate to certain categories of protected areas (previously identified herein as Statutory Facilities). Representative Terry Backer, Co-Chairman of the Energy and Technology Committee and sponsor of the bill that would become P.A. 04-246, stated:

> This amendment has moved in a way, in a cautionary way to protect various citizens. I think I made it clear from the onset and I think it's been repeated several times not only by me but by others. That the impact of electromagnetic fields is fiercely debated between experts from both sides. Fiercely debate and yet there is no conclusion. And so in answer to the Representative's question I would say that we have not established those public health and safety standards with the exception of trying to mitigate electromagnetic fields near those very sensitive laundry list that we gave before about schools and playgrounds and licensed day care center.
>
> (Transcript, House Debate Bill No. 5418, pp.261-262).

This statement and similar statements of the overwhelming majority that supported the bill, demonstrate that the purpose of P.A. 04-246 was to address the potential hazards of EMF exposure from high powered transmission lines and to protect certain sensitive areas from those risks to the fullest extent possible.

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[41] Formerly Public Act 03-154

P.A. 04-246 creates a presumption of the incompatibility of overhead transmission lines near or proximate to Statutory Facilities. For the purposes of considering the proximity of the proposed transmission line to Statutory Facilities, the Council must therefore construe "adjacent" so as to prevent the siting of any overhead transmission line in close enough proximity to those areas to create any danger to health and safety. It would thwart the intent of the legislature for the Council to conclude what this term should mean generically, rather than considering the potential impacts to each Statutory Facility. Instead, the Council must review the proposal for an overhead transmission line facility near each Statutory Facility and conservatively fashion a decision that optimally implements the legislative goal.

Specifically, the presumption against overhead transmission lines is applicable in any context in which a Statutory Facility is located on the same parcel or shares a common boundary line with the transmission line right-of-way. The Council also must consider other situations which do not fall into either of these categories, but in which the overhead transmission line could be located within an unsafe distance to a Statutory Facility. In short, the Council must first review each potential Statutory Facility along the proposed overhead right-of-way that could be impacted by EMF exposure, and then make a determination that effectuates the intent of the legislature to fully safeguard that Protected Area.

B. RESIDENTIAL AREAS INCLUDE ANY PARCEL OF PROPERTY WHICH CONTAINS A RESIDENTIAL STRUCTURE.

The category of "residential areas" must be interpreted to include any parcel on which there exists a residential structure. Further, the definition of a

residential area cannot include just the residential structure itself; the entire residential parcel must be included. Any other interpretation would frustrate the legislative intent behind P.A. 04-246.

"Residential areas" are one of the areas protected from overhead transmission lines by P.A 04-246. The legislation provides no definition of this term. Again, recourse to standard dictionaries is of limited use. The Merriam-Webster Dictionary defines "residential" as "restricted to or occupied by residences" as in "a residential neighborhood." Merriam-Webster Dictionary (10th Edition, 2004). As it is a term contained in an environmental statute, a broad and liberal reading is required.

Section 16-50p of PUESA was amended by P.A. 04-246 to include the presumption against overhead transmission lines in locations such as "residential areas." "[E]nvironmental statutes are remedial in nature and should be construed liberally to accomplish their purposes." *Kenney v. Old Saybrook*, 237 Conn 135, 157 (1996). The Supreme Court of Connecticut has further concluded that a remedial statute must be afforded liberal construction in favor of those whom the legislature intended to benefit. *Hartford Hospital v. Dept. of Consumer Protection*, 243 Conn 709, 720 (1998).

Finally, the purpose of this remedial statute cannot be overlooked when determining what the scope of "residential areas" should be. "In order to identify what Courts have recognized that the purpose or purposes of the legislation, and the context of the language, broadly understood, are directly relevant to the

meaning of the language of the statute." *Avalonbay Communities, Inc. v. Inland Wetlands Com'n Of The Town Of Wilton,* 266 Conn. 150, 159 832 A.2d 1 (2003).

The legislature was concerned about the exposure of Connecticut residents to EMF from overhead transmission lines. In enacting this protective legislation, it certainly would not value the health and safety of residents who live in smaller neighborhoods along the right of way, any less than those that live in the more densely populated areas in this area. The Council should therefore liberally interpret this area of special concern to include any property on which a residential structure currently exists.

Further, in order for this protective statutory presumption to make any sense at all it must apply to the entire residential parcel, not just the residential structure itself. "It is a basic tenet of statutory construction that the legislature did not intend to enact meaningless provisions. . . . [S]tatutes must be construed, if possible, such that no clause, sentence or word shall be superfluous, void or insignificant. . . . " (Internal quotation marks omitted.) *Segal v. Segal,* 264 Conn. 498, 507, 823 A.2d 1208 (2003). The legislature could have used the terms "residence" or "residential structure." Instead, they specified "residential *areas*" (emphasis added) which would most certainly include both the structure and the property on which it is located.

Residential areas or neighborhoods are not simply collections of buildings. They are also comprised of front and back yards, as well as the swingsets, treehouses and pools that can be found in those yards. The areas in

which children can be expected to play should be provided at least the same level of protection as the structure in which they live.

VII. P.A. 04-246 REQUIRES THE APPLICANTS TO DEMONSTRATE THAT IT IS "TECHNOLOGICALLY INFEASIBLE" TO BURY PORTIONS OF THE LINE.

As has been noted previously, Section 16-50p requires portions of a 345-kV transmission line facility adjacent to Statutory Facilities to be buried, unless the Applicants demonstrate that it will be technologically infeasible to bury the facility.[42]

Although the legislature established this presumption, P.A. 04-246 did not expressly define the term "technological infeasibility." The text of the statute did, however, direct the Council to determine the effect of burying the facility "on the reliability of the electric transmission system of the state."

In addressing the issue of statutory construction, one must start with the plain language of the statute. *Mennone v. Gorden,* 889 F. Supp 53 (D. Conn 1995). Feasible means capable of being successfully done or accomplished. *Mastorgi v. Valley View Farms*, 138 Conn 313 (1951). *See, also, Fromer v. Bayer-Napert Partnership*, 599 A.2d 1074, 42 Conn Sup 57 (1990) (feasible means capable of being done or carried out).

Here, the Applicants, through the ROC Committee, contend that further buried cable beyond the 24 miles proposed is not feasible. The Record, however, does not support this position.

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[42] Section VII addresses the issue contained in Question 1(c) of the Council's memorandum dated February 17, 2005.

In fact, the Council's expert KEMA testified and submitted a report opining noting that additional lengths of underground cable could be achieved through the use of mitigation technology, such as C –Type Filter. *Harmonic Impedance Study for Southwest Connecticut Phase II Alternatives dated October 18, 2004.* For months, KEMA advocated the use of C-Type Filters as a mitigation technique to address the harmonics issues identified by ISO-NE. When the ROC Final Report dated December 20, 2004 identified temporary overvoltages ("TOV"s) as an obstacle to additional undergrounding, KEMA responded by again opining that C-Type Filters were an appropriate mitigation technique -- in this instance, to address TOVs. *"Observations on the Reliability and Operability Committee's Final Report" dated January 18, 2005 (the "KEMA White Paper").*

However, at the eleventh hour, the KEMA representatives suddenly contradicted their prior conclusion that C-Type Filters should be used to mitigate TOVs, because in their new opinion "to be technologically feasible...the mitigation technology must be proven in actual industry practices." Transcript, February 17, 2005, p. 16.

This self-limiting definition of feasibility was not contemplated, by the statute, nor by the General Assembly. As Representative Backer, the House Chair of the Energy and Technology Committee observed the legislature was looking to set a "very high bar for any utility...company to jump over". Tr. 232. Obviously the protection of public health and safety should inspire innovation.

The Council should note that the definition of feasibility offered by the KEMA representatives, in their recantation of their prior testimony, would

preclude all of the foregoing: (1) split phasing for the purpose of mitigating EMF; (2) the use of XLPE cable for the length of the 24 mile line; (3) other innovative EMF mitigation techniques.

Clearly, the applicants have not met their burden of demonstrating infeasibility. There has not been any showing that the use of C-Type Filters, as proposed, would not work. In fact, the studies that have been run using C-Type Filters have confirmed that Filters are successful in mitigating TOVs, and will permit additional underground miles. *Tr. 2-17-05 at 16-17.*

A presumption "requires that a particular fact be deemed true until such time as the proponent of the invalidity of the fact has, by the particular quantum of proof required by the case, shown sufficient contradicting evidence that the presumption has been rebutted." *Schult v. Schult*, 40 Conn App 675, 684 (1996).

Given the expressed legislative intent to create a "high bar" for the utility companies, the Towns urge the Council to adopt a "clear and convincing evidence" standard to overcome the statutory presumption, *See, e.g.* Conn. Gen. Stat §16-8a (DPUC whistleblower statute). Further, the Towns submit that the Council cannot be constrained by KEMA's unduly restrictive definition of "technological feasibility." If KEMA's standard of "actual industry practice" were adopted, virtually all innovation would be discouraged and it would be impossible for the Council to comply with the legislative mandate of P.A. 04-246.

The General Assembly intended to impose a heavy burden on the Applicants to overcome the presumption. The Council should find that the Applicants have not met their collective burden.

Respectfully submitted,

THE MUNICIPALITIES OF
CHESHIRE, DURHAM,
MILFORD, WALLINGFORD
AND WOODBRIDGE

BY _____

Peter G. Boucher
Alan P. Curto
Halloran & Sage LLP
225 Asylum Street
Hartford, CT 06103
Tel: (860) 522-6103
Fax: (860) 548-0006
Their Attorneys

CERTIFICATION

This is to certify that on this 16th day of March, 2005, a copy of the foregoing was either mailed, postage prepaid, or hand-delivered to:

cc: Service List

_____

Peter G. Boucher

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