

<p>DOCKET NO. 470B - NTE Connecticut, LLC application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a 550-megawatt dual-fuel combined cycle electric generating facility and associated electrical interconnection switchyard located at 180 and 189 Lake Road, Killingly, Connecticut. Reopening of this application based on changed conditions pursuant to Connecticut General Statutes §4-181a(b).</p>	<p>} Connecticut } Siting } Council</p>	<p>June 6, 2019</p>
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Findings of Fact

Introduction

1. Pursuant to Connecticut General Statutes (C.G.S.) §16-50g et seq., on August 17, 2016, NTE Connecticut, LLC (NTE or Applicant) applied to the Connecticut Siting Council (Council) for a Certificate of Environmental Compatibility and Public Need (Certificate) for the construction, maintenance, and operation of a 550-megawatt (MW) combined cycle electric generating facility and associated electrical interconnection switchyard located at 180 and 189 Lake Road, Killingly. The proposed facility is referred to as Killingly Energy Center (KEC). (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact #1; NTE 1c – Environmental Overview in Support of Petition for Changed Conditions “EOSPCC”, p. 1)
2. NTE is a Delaware Limited Liability Company with principal offices located at 24 Cathedral Place, Suite 300, St. Augustine, Florida. NTE, an affiliate of NTE Energy, LLC (NTE Energy), is focused on the goal of developing, constructing, owning, and operating power projects across the United States. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact #2)
3. The parties to the original Docket No. 470 proceeding were NTE, Not Another Power Plant (NAPP), the Town of Killingly (Town), Sierra Club (SC), Connecticut Fund for the Environment (CFE), and Wyndham Land Trust, Inc. (WLT). (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact #7)
4. During the original Docket No. 470 proceeding, pursuant to CGS §22a-19, the Council granted NAPP, SC and WLT Connecticut Environmental Protection Act intervenor status. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact #8)
5. During the original Docket No. 470 proceeding, pursuant to CGS §16-50n(c), the Council grouped the following Parties with the same interests: NAPP, SC and WLT (Grouped Party). (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact #9)
6. In the original Docket No. 470 proceeding, NTE planned to participate in ISO New England, Inc.’s (ISO-NE) Forward Capacity Auction (FCA) #11. NTE originally sought to receive a Capacity Supply Obligation (CSO) for the 2020-2021 Capacity Commitment Period (CCP) for KEC. (Council Administrative Notice Item No. 57 – Docket No. 470, Findings of Fact #1 and #95)
7. FCA #11 was held on February 6, 2017 and had six rounds of competitive bidding. NTE participated in five rounds of bidding, but subsequently withdrew from the auction before it was concluded because of concerns about cost and schedule uncertainties regarding its ongoing permitting efforts. Thus, NTE did not receive a CSO for KEC. (Council Administrative Notice Item No. 57 – Docket No. 470, Findings of Fact #1, #99 and #100)

8. On February 13, 2017, NTE filed a motion to reopen the evidentiary record in the original Docket No. 470 for the limited purpose of introducing new evidence related to the results of the FCA held on February 6, 2017 and NTE's participation in that auction. On March 3, 2017, the Council granted NTE's motion to reopen and scheduled an additional evidentiary hearing held on March 23, 2017 at the Council's office in New Britain in the original Docket No. 470. (Council Administrative Notice Item No. 57 – Docket No. 470, Findings of Fact #23 and #25)
9. On May 11, 2017, in the original Docket No. 470, the Council voted to deny without prejudice a Certificate to NTE for the 550-MW combined cycle electric generating facility and associated electrical interconnection because the Council determined that the public benefit had not been demonstrated. (Council Administrative Notice Item No. 57 – Docket No. 470, Decision and Order)
10. On July 3, 2017, pursuant to CGS §4-183 and 16-50q, NTE served the Council with an administrative appeal of the Council's May 16, 2017 final decision to deny without prejudice the application of NTE for a Certificate. The administrative appeal was subsequently withdrawn by NTE on February 16, 2018. (*NTE Connecticut, LLC v. Connecticut Siting Council*, CV-17-6038497-S)

Docket No. 470A: Changed Conditions

11. On January 19, 2018, pursuant to CGS §4-181a(b), NTE filed a motion to reopen and modify the Council's May 11, 2017 decision to deny without prejudice a Certificate to NTE for the 550-MW electric generating facility and associated electrical interconnection. Specifically, NTE described its steps to secure certain permits, finalize project-related agreements and make beneficial facility modifications. These efforts put NTE in a strong position to participate in FCA #12 in February 2018. However, on February 8, 2018, NTE notified the Council that KEC was not selected by ISO-NE to receive a CSO in FCA #12, and NTE withdrew its motion. (NTE 1 – Motion to Reopen and Modify, dated January 18, 2019)

Docket No. 470B: Changed Conditions

12. On January 18, 2019, pursuant to CGS §4-181a(b), NTE filed a Motion to Reopen and Modify (Motion to Reopen and Modify) the Council's May 11, 2017 decision to deny without prejudice a Certificate to NTE for the 550-MW electric generating facility and associated electrical interconnection. (NTE 1 – Motion to Reopen and Modify)
13. In NTE's Motion to Reopen and Modify, NTE noted several changed conditions including, but not limited to, the following:
 - a) NTE has been pre-qualified by ISO-NE to participate in FCA #13;
 - b) On December 10, 2018, NTE secured approval of a minor modification to its air permit from the Connecticut Department of Energy and Environmental Protection (DEEP) to utilize improved turbine technology and increase the generation output from 550 MW to 650 MW;
 - c) NTE executed an Engineering Agreement with Yankee Gas for engineering and permitting of the lateral gas service line (to be owned and operated by Yankee Gas) to provide for the delivery of natural gas from the Algonquin gas transmission line to the proposed facility;
 - d) NTE has entered into a Water Supply Agreement with the Connecticut Water Company (CWC), dated October 31, 2017 for the delivery of up to 400,000 gallons of water per day to the proposed facility;

- e) NTE has entered in two separate Construction Agreements with CWC through which NTE has committed to pay all costs associated with the installation of a new water line connecting the CWC system to the proposed facility and the Killingly Industrial Park and for the interconnection of CWC's Plainfield and Crystal Water systems;
- f) On January 30, 2018, the Town Council approved and executed NTE's proposed Tax Stabilization Agreement (TSA) and Community Environmental Benefits Agreement (CEBA) for the proposed facility;
- g) NTE finalized the form of a Property Value Guarantee Agreement (PVG) and has committed to offer the PVG to all property owners within 2,500 feet of the proposed project site;
- h) NTE has worked with Yankee Gas in finalizing a service agreement;
- i) NTE has selected Mitsubishi Model M501JAC combustion turbine generator (CTG) to replace the originally proposed Siemens Model SGT6-8000H turbine. The Mitsubishi turbine system, besides its nominal power increase to 650 MW, includes the following benefits:
 - i. Improved efficiency;
 - ii. Continued rapid starts and dual-fuel rapid switching ability;
 - iii. Reduction in short-term particulate matter emissions rates while maintaining a similar emissions profile for balance of the associated air emissions parameters;
 - iv. Higher design turbine heat input rating and output allowing for a reduction in fuel consumption by the system's duct burners; and
 - v. Increased output at essentially no additional cost or environmental impact; and
- j) NTE has improved the overall layout of the proposed facility with minor repositioning of certain facility components, relocating the perimeter access road and eliminating the proposed retaining wall in the northeastern portion of the site resulting in an increased setback from sensitive on-site environmental resources.

(NTE 1 – Motion to Reopen and Modify, pp. 5-8)

- 14. On January 18, 2019, the Council issued a memorandum to the service list for the original Docket No. 470 proceeding requesting comments or statements of position in writing with respect to whether the Motion to Reopen and Modify should be granted or denied by February 7, 2019. CFE and the Grouped Party submitted comments in opposition to the Motion to Reopen and Modify. (Council Memorandum dated January 18, 2019; Record)
- 15. At a meeting held on February 14, 2019, the Council voted to grant NTE's Motion to Reopen and Modify its May 11, 2017 decision to deny without prejudice a Certificate for the construction, maintenance and operation of a 550-MW dual-fuel combined cycle electric generating facility and associated electrical interconnection switchyard, based on changed conditions pursuant to CGS §4-181a(b). This reopened proceeding is identified as Docket No. 470B. (Council Memorandum dated February 15, 2019)
- 16. The purpose of the proposed project is to develop and operate an independent power production facility in the wholesale electric power market operated by ISO New England, Inc. (ISO-NE). (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact #4)

Procedural Matters

17. During a regular Council meeting on February 14, 2019, the Council voted to approve the schedule of the reopened proceeding with a public field review, evidentiary session and public comment session in the Town of Killingly on April 4, 2019. On February 15, 2019, all parties and intervenors to the original Docket No. 470 proceeding were notified of the reopening. (Record; Council Memorandum dated February 15, 2019)
18. On February 15, 2019, pursuant to C.G.S. §16-50m, the Council sent a letter to the Towns of Killingly, Putnam and Pomfret to provide notification of the scheduled public hearing and to invite the municipalities to participate in the proceeding. (Record)
19. Pursuant to C.G.S. §16-50m, the Council published legal notice of the date and time of the public hearing in The Bulletin on February 21, 2019. (Record)
20. On March 6, 2019, the Council held a pre-hearing conference on procedural matters at the office of the Council, 10 Franklin Square, New Britain, Connecticut, for parties and intervenors to discuss the requirements for pre-filed testimony, exhibit lists, administrative notice lists, expected witness lists, filing of pre-hearing interrogatories and the logistics of the public inspection of the project. (Council Pre-Hearing Conference Memoranda, dated February 27, 2019 and March 7, 2019)
21. Pursuant to R.C.S.A. §16-50j-21, on March 14 2019, NTE installed two signs, measuring four feet by six feet, along Lake Road. One sign was located at 180 Lake Road, and the other sign was located at 189 Lake Road. The signs included the Applicant's name, type of facility proposed, the date and time of the Council's public hearing, and contact information for the Council. (NTE 5)
22. The Council and its staff conducted a public inspection of the 180 and 189 Lake Road, Killingly sites on April 4, 2019, beginning at 1:30 p.m. The site walk included three stops around the proposed power plant site and one stop at the utility switchyard site on the opposite side of Lake Road. (Council Hearing Notice dated February 15, 2019; NTE 3 – Proposed Site Walk Plan; Transcript 04/04/2019, 3:00 p.m. [Tr. 1], p. 18)
23. Pursuant to C.G.S. § 16-50m, the Council, after giving due notice thereof, held a public hearing on April 4, 2019, beginning with an evidentiary session at 3:00 p.m. and continuing with a public comment session at 6:30 p.m. at the Killingly Town Hall, Meeting Room, 172 Main Street, Killingly, Connecticut. (Council Hearing Notice dated February 15, 2019; Tr. 1, p. 1; Transcript 04/04/2019, 6:30 p.m. [Tr. 2], p. 1)
24. The Council continued the public hearing by holding evidentiary sessions on April 18, 2019 and May 2, 2019 at the office of the Council at 10 Franklin Square, New Britain, Connecticut. (Council Continued Hearing Memoranda of April 5 and April 22, 2019; Transcript, April 18, 2019, 11:00 a.m. [Tr. 3], p. 1; Transcript, May 2, 2019, 11:00 a.m. [Tr. 4] p. 1)
25. The Connecticut Supreme Court acknowledges that constitutional principles permit an administrative agency to organize its hearing schedule so as to balance its interest in reasonable, orderly and non-repetitive proceedings against the risk of erroneous deprivation of a private interest. (*Concerned Citizens of Sterling v. Connecticut Siting Council*, 215 Conn. 474 (1990); *Pet v. Department of Public Health*, 228 Conn. 651 (1994); *FairwindCT, Inc. v. Connecticut Siting Council*, 313 Conn. 669 (2014))

Municipal Consultation and Community Outreach

26. In an effort to keep the Killingly community informed on NTE's progress with the project and its efforts to reopen this proceeding, NTE held additional community outreach meetings on December 18, 2017 and June 20, 2018 at the Killingly High School. Notice of these community outreach meetings were published in The Bulletin and the Killingly Villager and also posted on the subject property. (NTE 1 – Motion to Reopen and Modify, p. 8)
27. At these community outreach meetings, NTE described the changed conditions referenced in the Motion to Reopen and Modify; updated Killingly residents on the status of the TSA and the CEBA with the Town; and answered questions regarding the proposed KEC facility and NTE's plans to file the Motion to Reopen and Modify with the Council. (NTE 1 – Motion to Reopen and Modify, p. 8)
28. NTE continues to update the KEC website (www.killinglyenergycenter.com) and make publicly available copies of all new reports, applications, materials, permits, and presentations made on behalf of KEC on the website and also in hard copy in the Killingly Public Library. (NTE 1 – Motion to Reopen and Modify, p. 8; Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact #28)
29. C.G.S. § 22a-20a and DEEP's Environmental Justice Guidelines require applicants seeking a permit from DEEP or the Council for a new or expanded facility defined as an "affecting facility" that is proposed to be located in an environmental justice community to file an Environmental Justice Public Participation Plan (EJPPP). The proposed facility would be an "affecting facility" under C.G.S. §22a-20a because it would be an "electric generating facility with a capacity of more than ten megawatts." However, per the 2018 Connecticut Distressed Municipalities list, the Town is no longer considered a "distressed municipality" per C.G.S §32-9j and is no longer subject to the Environmental Justice program. Notwithstanding, NTE plans to submit an updated final Environmental Justice Report to DEEP describing its most recent community outreach efforts. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact #36; C.G.S. § 22a-20a; NTE 1 – Motion to Reopen and Modify, p. 8; NTE 4, response 1; Tr. 3, p. 235)
30. Pursuant to C.G.S § 22a-20a, any municipality, owner or developer may enter into a CEBA in connection with the affecting facility. (C.G.S § 22a-20a)
31. NTE and the Town of Killingly negotiated and executed a CEBA. The CEBA has several components, including but not limited to a financial component, reference to a decommissioning plan for KEC, establishing educational scholarships for Killingly students who seek to study environmental science in college, and the purchase and planting of trees on an annual basis. (NTE 1a; NTE 7, response 43)
32. On January 30, 2018, the Killingly Town Council approved and executed the CEBA and TSA with NTE. Both of the agreements have been executed by both parties. (NTE 1a; NTE 7, response 43, p. 2)

State Agency Comments

33. Pursuant to C.G.S. §16-50j(g), on February 15, 2019, the following state agencies were requested to submit written comments regarding the proposed facility by March 28, 2019: DEEP; Department of Agriculture (DOAg); Department of Public Health (DPH); Council on Environmental Quality (CEQ); Public Utilities Regulatory Authority (PURA); Office of Policy and Management (OPM); Department of Economic and Community Development (DECD); Department of Emergency Services and Public Protection (DESPP); Department of Consumer Protection (DCP); Department of Labor (DOL); Department of Administrative Services (DAS); Department of Transportation (DOT); the Connecticut Airport Authority (CAA); and the State Historic Preservation Office (SHPO). (Council Hearing Package, dated February 15, 2019)
34. On February 26, 2019, the Council received a response from CAA indicating that it is necessary for NTE to file Form 7460, Notice of Proposed Construction or Alteration, with the Federal Aviation Administration (FAA). CAA notes that this is a necessary step to determine if the proposed project would result in a hazard to air navigation. (CAA Comments received February 26, 2019)
35. On March 14, 2019, the Council received a response from DPH with comments regarding Aquifer Protection Area mapping, water supply analysis, interconnection between CWC's Crystal and Plainfield Systems, DPH review and approval of water supply infrastructure improvements*, and cross connection control and backflow prevention measures. DPH also included its prior comments dated October 20, 2016 from the original Docket No. 470. DPH's comments are attached hereto as Attachment 1.

*DPH noted that water supply infrastructure improvements must be constructed and approved for use prior to construction of KEC. (See FOF #38.)

(DPH Comments dated March 14, 2019)
36. By letter dated March 26, 2019, DEEP requested an extension of time to April 1, 2019 to submit its comments. By letter dated March 27, 2019, the Council granted DEEP an extension of time to April 1, 2019 to submit its comments. (DEEP Request for Extension of Time dated March 26, 2019; Council Letter Regarding Extension of Time dated March 27, 2019)
37. On April 1, 2019, the Council received a response from DEEP with comments regarding modifications to the originally approved facility, electric system benefits, air permitting status, diversion permit, Natural Diversity Database (NDDDB) review, stormwater permitting, wastewater discharge permitting, wetland mitigation plans/water quality certification, noise impacts, and fuel supply. DEEP's comments are attached hereto as Attachment 2. (DEEP Comments received April 1, 2019)
38. On April 24, 2019, the Council received additional comments from DPH. Specifically, DPH revised its earlier comment to note that, "Since CWC's water supply analysis includes the use of an interconnection between Crystal and Plainfield systems to demonstrate an adequate margin of safety, the water supply infrastructure improvements must be constructed and approved for use prior to operation of the KEC plant." DPH's additional comments are attached hereto as Attachment 3. (DPH Comments dated April 24, 2019)
39. While the Council is obligated to consult with and solicit comments from state agencies by statute, the Council is not required to abide by the comments from state agencies. (Council Administrative Notice Item No. 61 – *Corvoran v. Connecticut Siting Council*, 284 Conn. 455 (2007))

40. The following agencies did not respond to the Council's request for comment on the proposed facility: DOAg, CEQ, PURA, OPM, DECD, DESPP, DCP, DOL, DAS, DOT, and SHPO. (Record)

Public Benefit

Evolving Benefits

41. Pursuant to Public Act 98-28, An Act Concerning Electric Restructuring, generators of electricity may compete with each other for the development of electric generation. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 48)
42. Pursuant to CGS §16-50p(c), a public benefit exists when a facility is necessary for the reliability of the electric power supply of the state or for the development of a competitive market for electricity. Public benefit exists if the Council finds and determines a proposed electric generating facility contributes to forecasted generating capacity requirements, reduces dependence on imported energy resources, diversifies state energy supply mix and enhances reliability. (CGS §16-50p(c); *Preston v. Connecticut Siting Council*, 20 Conn. App. 474 (1990); *Preston v. Connecticut Siting Council*, 21 Conn. App. 85 (1990))
43. The concept of a regional New England electricity market began with the Northeast Blackout of 1965, during which more than 30 million customers from Maine to New Jersey were without power, and the recognition that the reliability of an electricity system is best met by pooling power generation resources across a region (e.g. the New England states) as opposed to on an individual (e.g. state by state) basis. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact #49)
44. In 1999, the wholesale electric markets were in their infancy in New England. The process called “deregulation” had just begun, during which ownership of generation resources by vertically integrated utilities with guaranteed cost recovery was being transferred to competitive entities that were dependent on the competitive wholesale markets to compensate them for the cost of operating their generation facilities and allow them the opportunity to recover their investment. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact #50)
45. Created by the Federal Energy Regulatory Commission (FERC) in 1997, ISO-NE is the independent, not-for-profit corporation responsible for the reliable operation of New England's electric power generation and transmission system, overseeing and ensuring the fair administration of the region's wholesale electricity markets, and managing comprehensive regional electric power planning. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact #51)
46. ISO-NE operates the power system and the competitive wholesale electric markets so that the lowest cost resources are used first to meet consumer demand. However, ISO-NE's primary responsibility is electric reliability. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact #52)
47. ISO-NE is fuel and technology neutral and takes no position on any proposed energy projects. ISO-NE does not own any transmission or distribution lines or power plants. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact #53)

48. The New England region operates a power pool and is interconnected with other power pools associated with New York and the Canadian provinces of Québec and New Brunswick. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact #54)
49. The early period of deregulation, from the late '90s to the mid-2000s, brought a rush for new generation. Seven applications for efficient combined-cycle gas/oil-fired power plants were made to the Council. Of the five approved, including Towantic, three came to fruition promptly (Milford, Lake Road, Bridgeport Energy), benefiting Connecticut and the region with new electric supply. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact #55)
50. As early as 2002, the Council recognized the potential problem of over-dependence on natural gas. The concern remains current. Specifically, the most recent Integrated Resource Plan (IRP) issued by DEEP (2014 IRP) stated, “There is growing concern over New England’s increasing dependence on natural gas...and the implications resulting from such dependence in terms of reliability and cost.” (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact #56)
51. After the first wave of power-plant construction, New England public utility departments engaged with FERC to find a market solution that would bring down the high environmental and economic costs of generation. This resulted in a 2006 settlement between states’ attorneys-general and FERC whereby a regional Forward Capacity Market was phased in that gradually managed not only to de-escalate wholesale energy prices but also to encourage diversity in energy resources: first, renewable fuels and, second, “demand response”, also called “load response”, that is, various forms of energy conservation and efficiency. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 57)
52. During 2007, Public Act 07-242 became effective, with a sweeping set of provisions. Key among them were: 1) a fast-track schedule to achieve 20 percent renewable energy sources by 2020, with a detailed set of rules for how to get there; 2) a policy that any needs for new generation resources must “first be met” by procuring all cost-effective programs to reduce electric demand; 3) commitment to the Regional Greenhouse Gas Initiative (RGGI) and an agreement to dedicate funds gained from RGGI cap-and-trade auctions to the state’s energy efficiency goals. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact #58)
53. The new generation spurred by deregulation at the turn of the century could not benefit Connecticut without a more efficient transmission system. During the first part of the decade 2000-2010, the Council approved Dockets 217 and 272, major 345-kV upgrades serving southwest Connecticut. Subsequently, through a regional upgrade planned by ISO-NE called New England East-West Solution (NEEWS), the Council approved the Connecticut portions of two major interstate 345-kV upgrades, one linking north-central Connecticut with Massachusetts, the other linking northeastern Connecticut with Rhode Island. Overall, since 2000 the new backbone of a strong 345-kV system in Connecticut has emerged, bringing benefits paralleling those of generation. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact #59)
54. In 2011, FERC issued its Order 1000, which mandates improvements in regional transmission planning processes, with a focus on public policy projects and cost allocation. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact #62)

55. The investments by Connecticut and the region in Conservation and Load Management and Distributed Generation have resulted in less stress on the electric system, reduced need to construct additional generation and transmission and greater ability to serve loads while reducing pollution from burning fuel, particularly fossil fuel. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact #63)
56. Connecticut continues to prioritize investment in energy efficiency as a “first fuel” to resolve the capacity and electricity market needs, to the extent technically available and cost-effective. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact #64)
57. PA 11-80 was the legislation that restructured the Department of Environmental Protection as the Department of Energy and Environmental Protection. Section 51 of PA 11-80 requires that DEEP prepare Connecticut’s Comprehensive Energy Strategy (CES) reports. The first CES was published on February 19, 2013. It advocated smaller, more diversified generation projects using renewable fuels, as well as smaller, more innovative transmission projects emphasizing reliability. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact #65)
58. The 2014 IRP contains a section entitled “Plan for Achieving Reliable, Clean, and Cost-Effective Energy Supply.” Three of the IRP’s eight recommendations concern distributed generation (DG) in general, combined heat and power (CHP) in particular, and DG’s transmission partner, the microgrid. Many forms of DG involve renewable fuels, and should be supported to help meet Connecticut’s RPS requirements. CHP is particularly worth support in locations where it can power microgrids and/or avoid costly upgrades to the electricity infrastructure. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact #66)
59. The second CES (2018 CES) was published on February 8, 2018 and included the following strategies for Connecticut (relative to the electric grid and electric generation):
 - a) Grow and sustain renewable and zero-carbon generation in the state and region;
 - b) Expand deployment of all cost-effective distributed generation (behind the meter) in a sustainable manner;
 - c) Continue to improve grid reliability and resiliency through state and regional efforts*; and
 - d) Modernize the grid.

*This includes supporting ISO-NE in improving regional winter natural gas generation fuel security and reliability.

(Council Administrative Notice Item No. 69 – 2018 CES)

Reports on Resource Adequacy

60. According to the Council’s 2017/2018 Forecast of Connecticut Electric Loads and Resources Report dated November 8, 2018 (Council Forecast Report), “This Council has considered Connecticut’s electric energy future and finds that even taking into account the most conservative prediction, the ISO-NE 90/10 forecast, and a slated retirement of Bridgeport Harbor Unit (BHU) #3, at-risk power plant retirements, the worst-case generating output (the summer output), and the inclusion of BHU#5 and neglecting the load reducing effects of small DG, the resources (i.e. generation plus import) for Connecticut during 2018-2027 will be adequate to meet demand. Connecticut currently has and is projected to have a sizeable surplus of resources for the forecast period.” This analysis is based on the electric generation in Connecticut (and import into Connecticut) versus the ISO-NE 90/10 forecast for Connecticut itself, not the New England region as a whole. (Council Administrative Notice Item No. 38 – Council 2014/2015 Forecast Report, pp. 13-14, 17)

61. While the Council Forecast Report is for Connecticut only, Connecticut operates as part of a broader grid. Thus, what is most important is the overall level of resource adequacy in the New England region. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 69)
62. ISO-NE holds an annual auction to acquire the power system resources needed to meet projected demand for the New England region in three years' time. The annual Forward Capacity Market (FCM) Auction (FCA) is held approximately three years before each capacity commitment period to provide time for new resources to be developed. Capacity resources can include traditional power plants, renewable generation, imports, and demand-side resources, such as load management and energy efficiency measures. Resources clearing in the auction will receive a monthly payment during the delivery year in exchange for their commitment to provide power or curtail demand when called on by ISO-NE. Resources that fail to meet their capacity commitment during a shortage event must refund part of their capacity payment, and this refunded money goes to resources that over-performed during the shortage event. (Council Administrative Notice Item No. 37 – ISO-NE FCA #12 Press Release dated February 28, 2018; NTE 2 – ISO-NE FCA #13 Press Release dated February 6, 2019)
63. According to ISO-NE's 2017 Regional System Plan (2017 RSP), "Sufficient resources are projected for New England through 2026, assuming no retirements and the successful completion of all new resources that have cleared the FCM. The planning analysis accounts for new resource additions that have responded to market improvements and low net-load growth, which reflects behind-the-meter photovoltaic (PV) and an increase in the forecasts of energy-efficiency resources. Although the recent trend of generation resource retirements has abated, additional resources are likely to retire. The ISO is committed to procuring adequate demand and supply resources through the FCM and expects the region to install adequate resources to meet the physical capacity needs that the installed capacity requirements (ICRs) will define for future years." (Council Administrative Notice Item No. 23 – 2017 RSP, pp. 64-65)

Net Load Forecasts

64. In this context, ISO-NE Net Load Forecast means ISO-NE's gross 50/50 forecast minus behind the meter solar PV and minus energy efficiency effects. (Council Administrative Notice Item No. 26 – 2018 CELT Report, Section 1.1 – Summer Peak Capabilities and Load Forecast with Footnotes)
65. The ISO-NE 2017 Net Load Forecast (2017 Net Forecast) has a compound annual growth rate (CAGR) of -0.072 percent based on 26,482 MW for 2017 and 26,310 MW for 2026. (Council Administrative Notice Item No. 23 – 2017 RSP, p. 40)
66. The ISO-NE 2018 Net Load Forecast (2018 Net Forecast) has a CAGR of -0.36 percent based on 25,729 MW for 2018 and 24,912 MW for 2027. (Council Administrative Notice Item No. 26 – 2018 CELT Report, Section 1.1 – Summer Peak Capabilities and Peak Load Forecast and Section 1.5.1 – Peak Loads)

67. ISO-NE’s 2018-2027 Forecast Report of Capacity, Energy, Loads and Transmission (2018 CELT Report) table is listed below.

1.1 Summer Peak Capabilities and Load Forecast (MW)											
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
ISO-NE RELIABILITY COORDINATOR AREA											
1. LOAD ^(1, 2, 3)											
1.1 GROSS - Without reductions ⁽⁴⁾	28817	29060	29298	29504	29744	29994	30245	30486	30721	30957	31192
1.1.1 Behind-the-Meter (BTM) PV ⁽⁵⁾	547	633	721	790	851	901	945	980	1009	1031	1051
1.2 NET - With reductions for BTM PV ⁽⁵⁾	28270	28427	28577	28714	28893	29093	29300	29506	29712	29926	30141
1.2.1 Energy Efficiency (EE) ⁽⁷⁾	2432	2699	3066	3416	3757	4072	4359	4617	4848	5052	5229
1.3 NET - With reductions for BTM PV and EE	25838	25729	25512	25298	25136	25021	24942	24889	24864	24874	24912
2. CAPACITY BASED ON FCM OBLIGATIONS											
2.1 GENERATING RESOURCES ⁽⁸⁾	29627	30441	30871	31308	29941	29941	29941	29941	29941	29941	29941
2.2 DEMAND RESOURCES (DR) ^(8, 9)	2691	2956	2828	3211	3600	3600	3600	3600	3600	3600	3600
2.2.1 ACTIVE DR	382	408	464	420	624	624	624	624	624	624	624
2.2.2 PASSIVE DR	2309	2548	2364	2791	2975	2975	2975	2975	2975	2975	2975
2.3 IMPORTS ⁽¹⁰⁾	1376	1598	1481	1265	1247	81	81	81	81	81	81
2.4 TOTAL ⁽¹¹⁾	33693	34995	35180	35784	34788	33622	33622	33622	33622	33622	33622
3. CAPACITY BASED ON SEASONAL CLAIMED CAPABILITY (SCC) ^(12, 13)											
3.1 GENERATION CLAIMED FOR CAPABILITY	29174	30974	31381	31407	31590	31608	31634	31658	31676	31688	31698
4. RESERVES - Based on Reference Load with reduction for Passive DR											
4.1 INSTALLED RESERVES - Based on CSOs of Generating Resources (line 2.1), Active DR (line 2.2.1), and Imports (line 2.3)											
4.1.1 MW	5547	6718	7305	7696	6676	5626	5705	5758	5783	5773	5735
4.1.2 % OF LOAD	21	26	29	30	27	22	23	23	23	23	23
4.2 INSTALLED RESERVES - Based on Generation SCC (line 3.1), Active DR (line 2.2.1), Imports (line 2.3), and Exports ⁽¹⁴⁾											
4.2.1 MW	4994	7151	7715	7795	8326	7293	7398	7475	7518	7520	7492
4.2.2 % OF LOAD	19	28	30	31	33	29	30	30	30	30	30

(Council Administrative Notice Item No. 26 – 2018 CELT Report, Section 1.1)

Generating Capacity Retirements in New England

68. The following generating resources have been identified by ISO-NE as retired or slated to retire in the near future:

Power Plant	Fuel	Summer Capacity	Status
Vermont Yankee	Nuclear	604 MW	Retired
Mount Tom	Coal	143 MW	Retired
Salem Harbor	Coal and Oil	749 MW	Retired
Pilgrim	Nuclear	677 MW	To be retired in 2019
Brayton Point	Coal and Oil	1,535 MW	Retired
Norwalk Harbor	Oil	342 MW	Retired
Bridgeport Harbor No. 3	Coal	383 MW	To be retired in 2021
Mystic No. 7	Oil/Gas	573 MW	Closed or retiring
Total		5,006 MW	

(Council Administrative Notice Item No. 23 – 2017 RSP, p. 49; Council Administrative Notice Item No. 28 – ISO-NE 2018 Regional Electricity Outlook (REO), p. 20; Council Administrative Notice Item No. 26 – 2018 CELT Report, Section 2.1; Council Administrative Notice Item No. 45 – 2019 REO, p. 18; Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 86; Council Administrative Notice Item No. 45 – 2019 REO, p. 18)

69. The following generating resources are considered at “at risk for retirement” by ISO-NE in coming years. These “at risk” power plants are listed below.

Power Plant	Fuel	Summer Capacity
Yarmouth Nos. 1-4	Oil	808 MW
Merrimack No. 1-2	Coal	438 MW
Newington No. 1	Oil/Natural Gas	400 MW
Schiller Nos. 4&6	Coal	95 MW
Canal Nos. 1&2*	Oil	1,125 MW
West Springfield No. 3**	Natural Gas/Oil	94 MW
Middletown Nos. 2-4***	Oil/Natural Gas	744 MW
Montville Nos. 5-6****	Oil/Natural Gas	480 MW
New Haven Harbor*****	Oil/Natural Gas	347 MW
Total		4,531 MW

*Canal No. 1 is oil-fired only. Canal No. 2 is oil/natural gas.

**While primarily fueled by natural gas, this is a steam turbine unit.

***Middletown No. 4 is oil-fired only. Middletown Nos. 2 and 3 are oil/natural gas.

****Montville No. 5 is oil/natural gas. Montville No. 6 is oil-fired only.

*****This is the steam unit. It doesn’t have a unit number. Also, listed is the summer MW rating.

(Council Administrative Notice Item No. 27 – ISO-NE 2017 REO, pp. 27-28; Council Administrative Notice Item No. 28 – ISO-NE 2018 REO, pp. 8 and 20; Council Administrative Notice Item No. 26 – 2018 CELT Report, Section 2.1; Council Administrative Notice Item No. 49 – Council 2017/2018 Forecast Report, Appendix A; Council Administrative Notice Item No. 45 – 2019 REO, p. 18)

70. Connecticut subsequently announced at the end of 2018 securing output under long-term contracts from both Millstone and Seabrook nuclear power plants*. This ensures no imminent loss of these (zero-carbon) resources. The expectation is that such resources would be in operation for at least the terms of the respective contracts.

*Millstone and Seabrook (combined) currently produce about 3,300 MW.

(Grouped Party 1 – Synapse Report, p. 14; Tr. 3, pp. 36-37; Council Administrative Notice Item No. 45 – 2019 REO, p. 18)

71. The 2018 and 2019 ISO-NE Regional Electricity Outlooks identify several new large electric generation projects to go online by 2020. Such plants with their projected operational target dates are listed below.

Power Plant	Fuel	FCA-cleared Capacity	Operational Target Date*
Towantic	Natural Gas/Oil	750 MW	2018
Footprint	Natural Gas	674 MW	2018
Bridgeport Harbor No. 5	Natural Gas/Oil	484 MW	2019
Canal No. 3	Natural Gas/Oil	333 MW	2019
Medway	Natural Gas/Oil	195 MW	2018
Wallingford No. 6 and 7	Natural Gas	90 MW	2018
Total		2,526 MW	

*Projected dates, subject to delays

(Council Administrative Notice Item No. 45 – ISO-NE 2019 REO, p. 18; Council Administrative Notice Item No. 28 – ISO-NE 2018 REO, p. 21; Council Administrative Notice Item No. 38 – ISO-NE FCA Results Filing in FERC Docket No. ER18-940-000, dated February 28, 2018, Appendix A; Council Administrative Notice Item No. 23 – 2017 RSP, pp. 48 and 72; Council Administrative Notice Item No. 26 – 2018 CELT Report, Section 2.1; Council Administrative Notice Item No. 45 – 2019 REO, p. 18)

KEC Benefit

New England Reliability

72. Connecticut and the rest of the ISO-NE region are inextricably interconnected and rely on each other for a reliable electricity system. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 75)
73. In addition to ISO-NE’s winter energy concerns, system reliability is comprised of two aspects: resource adequacy and transmission security. Resource adequacy means having sufficient resources to meet load at all times. Transmission security means having a system that can withstand contingencies such as the loss of a transmission line, or successive losses of multiple transmission lines, or the loss of a major generating plant, during a time of high system load. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 76; Grouped Party 1 – Synapse Report, p. 17)
74. The physical power from the KEC facility would be delivered to ISO-NE, and it would follow the normal flow of power to where it is needed within the ISO-NE region. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 77)
75. Power pooling, such as in New England, allows for the economies of scale and scope for power plants. A bigger power plant typically leads to a lower dollar per MW cost to build the power plant and higher efficiency. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 78)

76. ICR is a measure of the installed resources that are projected to be necessary to meet both ISO-NE's and the Northeast Power Coordinating Council's (NPCC) reliability standards, with respect to satisfying the peak load forecast for the New England Balancing Authority while maintaining required reserve capacity. (Council Administrative Notice Item No. 36 - ISO-NE ICR Report dated January 2016, p. 9)
77. Net ICR (NICR) is the installed capacity requirement for New England net of capacity credits from the Hydro Quebec interconnection and is lower than ICR. Either of these two metrics, ICR or NICR, can be considered the reliability need for capacity resources in New England. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 81)
78. ISO-NE computes and annually updates NICR for the New England Region. There is no separate NICR for Connecticut. (Grouped Party 1 – Synapse Report, p. 18)

ISO-NE's FCA

79. While NICR is a reliability “target” for New England, the FCA rules allow the New England region to acquire more or less capacity (in MW) than NICR. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 88)
80. Capacity resources that clear the auction receive a Capacity Supply Obligation (CSO). A CSO requires the capacity resource to bid into the day-ahead energy market during the 12-month Capacity Commitment Period (CCP), which begins roughly three years after the auction is held. For example, for the thirteenth FCA (FCA #13), resources that cleared in February 2019 are committed to the June 1, 2022 through May 31, 2023 CCP (2022-2023 CCP). (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 89; NTE 2 – ISO-NE FCA#13 Press Release dated February 7, 2019)
81. New generator resources may elect to have a CSO and a clearing price of a cleared offer continue to apply after the CCP of the initial award and may “lock in” the clearing prices for one or seven years. (NTE 4, response 19)
82. To ensure accurate capacity pricing, ISO-NE has developed capacity market rules that prevent resources from bidding below their actual costs. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 90)
83. Capacity that clears the FCA in excess of NICR will always clear at a price at least as high as capacity cleared at the level of NICR. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 91)
84. If more resources clear FCA than NICR, they are not considered “surplus resources” and they would still be necessary for reliability. What has been approved by FERC and what the wholesale regions recognize is that if more resources are procured than NICR, it still has reliability value. NICR is used to define a specific range in which to select the most economic group of resources to meet the reliability need. Ultimately, the FCA process is to procure the most efficient set of resources to meet reliability requirements. (Tr. 4, pp. 123-124)
85. Securing a CSO is sufficient but not necessary to demonstrate a resource's necessity for electric reliability. (Tr. 4, p. 111)

86. In FCA #11 (held in 2017), 35,835 MW cleared the auction. The clearing price was \$5.297 or about \$5.30 per kW-month. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 94)
87. In FCA #12 (held in 2018), 30,011 MW cleared the auction. The clearing price was \$4.63 per kilowatt-month (kW-month). (Council Administrative Notice Item No. 37 – ISO-NE FCA #12 Press Release dated February 28, 2018)

FCA #13 and NTE's Participation

88. On September 23, 2018, NTE received notice that it had been pre-qualified by ISO-NE to participate in FCA #13, and ISO-NE established a minimum offer price* for KEC.

*This minimum offer price is substantially below the offer price ISO-NE set for KEC in both FCA #11 and FCA #12.

(NTE 1 – Motion to Reopen and Modify, p. 3, 5-6)

89. On February 4, 2019, NTE participated in FCA #13 and was notified on February 6, 2019 that KEC was selected by ISO-NE to receive a seven-year CSO (for approximately 631.955 MW) for the CCPs of 2022 through 2029. (NTE 2 – Affidavit of Timothy Eves dated February 7, 2019; Tr. 4, pp. 108-109; Council Administrative Notice Item No. 46 – ISO-NE FCA#13 Filing to FERC dated February 28, 2019, Appendix A)
90. By press release dated February 6, 2019, ISO-NE's results in FCA #13 indicate sufficient resources to meet peak demand in 2022-2023. FCA #13 closed with a final clearing price of \$3.80 per kW-month. Approximately 34,839 MW cleared FCA #13, in excess of the NICR target of 33,750 MW. (NTE 2 – ISO-NE FCA #13 Press Release dated February 6, 2019; Grouped Party 1 – Synapse Report, p. 18)
91. For interconnection purposes, ISO-NE defines “large generators” as generators with a generating capacity greater than 20 MW. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 103)
92. The approximate breakdown of capacity resources that cleared FCA #13 are listed below.

Existing Generation	28,774 MW
New Generation in Primary Auction	783 MW
New Generation in Substitution Auction	54 MW
Existing Energy Efficiency and Demand-Reduction Measures	3,386 MW
New Energy Efficiency and Demand-Reduction Measures	654 MW
Total Imports from New York, Quebec, and New Brunswick	1,188 MW
Total Cleared Capacity Resources in FCA #13	34,839 MW
NICR	33,750 MW
Capacity in Excess of NICR	1,089 MW

NTE 2 – ISO-NE FCA #13 Press Release dated February 6, 2019; Grouped Party 1 – Synapse Report, p. 18)

93. On or about February 28, 2019, ISO-NE submitted its FCA#13 results to FERC. FERC's review of the FCA#13 results filing is ongoing. (Council Administrative Notice Item No. 46 – ISO-NE FCA#13 Filing to FERC dated February 28, 2019; Tr. 4, p. 108)
94. If the proposed project is approved by the Council, and the CSO is subsequently terminated by ISO-NE, NTE would not construct the facility. (Tr. 4, p. 110)

Competitive Markets Benefit

95. As an independent power production facility, the KEC project is the type of project that competitive markets were developed to create. KEC would not be relying on contracts with electric utilities in order to get built. KEC relies on market signals primarily for capacity and energy, as well as ancillary services, and it is responding to those market signals and identifying a need to build the plant. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact #114; Tr. 1, p. 22)
96. Individual state procurement processes using Requests for Proposals (RFPs) and the ISO-NE market structure (for energy, capacity, and ancillary services) would remain competitive absent KEC. (Grouped Party 1 – Synapse Report, p. 11)

Transmission Reliability Benefit

97. While KEC would connect to the electric transmission system, KEC itself is not an electric transmission facility within the meaning of C.G.S. §16-50i(a)(1). KEC is an electric generating facility under CGS §16-50i(a)(3). (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact #6; CGS §16-50i)
98. From a transmission reliability perspective, the KEC project, as a Connecticut generation resource, could reduce the potential impact of a loss of a transmission line importing power into the State. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 115; Tr. 1, p. 22)

Flexibility and Ramping Benefit

99. Most of the major new resources attracted by the FCM are natural gas-fired generators with the ability to start up quickly. Several also plan to have dual-fuel capability so they can switch to an alternate fuel (typically oil) to maintain reliability if gas is unavailable or at a premium, such as during wintertime pipeline constraints. These types of flexible resources will be necessary in the coming years not only to meet demand, but to help balance intermittent output from wind and solar resources, as well as to provide the grid-stability services that renewables generally do not. (Council Administrative Notice Item No. 28 – 2018 ISO-NE REO, p. 21)
100. KEC contains all of the fast-acting, flexible and dispatchable operating characteristics needed to fully support the expanded integration of variable renewable resources at the grid-connected and distributed levels. (NTE 1b – Pre-filed Testimony of Paul Hibbard, p. 3)

Winter Reliability Benefit

101. New England has adequate capacity resources to meet demand, due to each subsequent FCM event securing the required resources for the CCP. However, as more limited energy resources are developed and traditional generating resources retire, the grid may not be able to supply enough energy to meet electricity demand. ISO-NE first identified this issue as a wintertime fuel-security problem, but the broader issue of year-round energy security will need to be addressed as the operational dynamics of the hybrid grid take hold. (Council Administrative Notice Item No. 45 – 2019 REO, p. 32; Tr. 3, p. 27-28)
102. KEC would help address the energy security problem by being a resource that has fuel security via the long-term firm natural gas contract and backup ultra-low sulfur distillate (ULSD) fuel*.

*The winter output with natural gas is 669 MW, including duct firing. Winter operation with ULSD is approximately 428 MW. (Tr. 3, pp. 28-29; NTE 4, response 8)
103. KEC has entered into the same type of firm, priority natural gas transportation contract as the local natural gas distribution companies (LDCs). Most, if not nearly all, other natural gas-fired power plant owners in the New England region have chosen not to enter into such priority, long-term financial arrangements to guarantee the transportation of natural gas to their power plants. (NTE 1b – Pre-filed Testimony of Paul Hibbard, p. 11)
104. The region is losing traditional generators that have substantial on-site fuels (e.g. nuclear, oil, or coal) and can sustain extended operations during cold weather conditions for days and even weeks on end. Without these resources, it becomes even more critical for ISO-NE to be able to effectively preserve energy supplies for forecasted cold weather conditions. (Council Administrative Notice Item No. 45 – 2019 REO, p. 34)
105. Additional dual-fuel capability, which will increase the inventory of stored oil available to generate electricity when other fuels are not available in sufficient quantities, would also provide a key contribution to power system reliability. However, state emissions requirements are tightening, which will limit the amount of time some generators can run on oil and obtaining permits to construct new dual-fuel generators is becoming more difficult. (Council Administrative Notice Item No. 21 – ISO-NE Operational Fuel-Security Analysis dated January 17, 2018, p. 51)
106. Beginning in the winter of 2018/2019, ISO-NE pursued the following winter reliability measures:
 - a) ISO-NE began forecasting and publishing a 21-day energy assessment of New England generators' fuel inventories, emissions limitations, and other factors that could restrict availability. Resources are informed of actual or anticipated energy-supply deficiencies, giving them advance notice to take action as necessary (including scheduling fuel deliveries);
 - b) ISO-NE began providing generators with an opportunity cost amount that they can incorporate into their next-day energy market offer. This reduces the likelihood that a generator with limited fuel will be dispatched and consume fuel prematurely;
 - c) Besides the base capacity payment in the FCM, there is a new performance payment that either rewards or penalizes the capacity resource based on the energy or the reserves it supplies during periods of system stress.

(Council Administrative Notice Item No. 45 – 2019 REO, p. 35)

107. For the winters of 2022/2023 through 2024/2025, ISO-NE has been given FERC approval to retain resources on the basis of fuel-security reliability need. For example, Mystic #8 and #9 will be retained under these new provisions for the 2022-2023 CCP and potentially for the 2023-2024 CCP. Other resources seeking to retire will be evaluated under these new provisions. However, ISO-NE’s ability to retain resources for fuel security will expire after the 2024-2025 period. (Council Administrative Notice Item No. 45 – 2019 REO, p. 36)

Economic Benefit

108. The originally proposed 550 MW KEC project was estimated to reduce wholesale electricity costs to Connecticut ratepayers approximately an average of \$215M per year. While similar modeling was not conducted with the proposed 650 MW KEC project, savings to electric ratepayers would be expected and could be greater than previously estimated, due to the larger size of KEC. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 129; NTE 4, response 20)

109. The financial risk associated with the Project is on NTE. Hypothetically, if the Project were constructed but did not generate any MW-hours of electrical energy, the ratepayers would not be at risk. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact #130)

Project Alternatives

NTE’s Location Alternatives

110. Due to the growing need identified by NTE for flexible, reliable baseload power generation in ISO-NE’s territory, NTE evaluated potential development sites throughout New England. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact #131)

111. Connecticut was selected as a focus area for site selection because Connecticut was identified by NTE as having a need to supplement and replace existing aging power generating assets. Also, locations in Connecticut are closer to load centers, south of transmission and natural gas constraint points in the New England region where much of the existing generation is north of these constraints. (Council Administrative Notice Item No. 57 – Docket 470, Finding of Fact #132)

112. The comparison of NTE’s site alternatives is listed below.

Category	Alternative Site 1 – 295 Lake Road, Killingly	Alternative Site 2 – 251 Lake Road, Killingly	Proposed Site – 180 and 189 Lake Road, Killingly
Site Size	Sufficient acreage available	Sufficient acreage available	Sufficient acreage available
Owner Interest	Potential for option	No interest in option	Potential for option
Engineering Suitability	Site constrained due to parcel configuration and location of existing infrastructure corridors. Unlikely to support a facility layout.	Sloping site. Given location of wetland/floodplain constraints, it may prove challenging to avoid impacts.	Sloping site. Location of mapped constraints appears to retain sufficient area for a layout that would avoid impacts.

Air Quality	No material difference between all three sites	No material difference between all three sites	No material difference between all three sites
Wetlands	Mapped wetland hydric soils within Quinebaug River floodplain area	Mapped wetlands, hydric soils, and potential streams	Mapped wetlands, stream, and hydric soils. Considerable non-mapped area remains.
Floodplain	Significant area of floodplain mapped adjacent to Quinebaug	Floodplain pocket in center of site	Floodplain pocket. Considerable non-mapped area remains.
Protected Species	Entire site in State-mapped habitat area	Southern portion of site in State-mapped habitat area	Southern portion of site in State-mapped habitat area. Northern tip in mapped area along Quinebaug River
Land Use and Zoning	Zoned Industrial	Zoned Rural Development with future Industrial area	Zoned Rural Development with future Industrial area
Noise	Residential standards not required to be met at property lines	Residential standards required to be met at property lines	Residential standards required to be met at property lines
Visibility	Closest to Quinebaug River and Interstate 395	Generally wooded setting	Wooded setting
Cultural Resources	Closest to Quinebaug River, although existing infrastructure disturbance reduces potential sensitivity	Minimal prior disturbance	Minimal prior disturbance
Water Supply	No material difference between all three sites	No material difference between all three sites	No material difference between all three sites
Wastewater	No material difference between all three sites	No material difference between all three sites	No material difference between all three sites

(Council Administrative Notice Item No. 57 – Docket 470, Finding of Fact #133)

NTE's Technology Alternatives

Renewable Energy Technologies

113. NTE considered renewable energy technologies as an alternative. However, solar and wind are intermittent resources, as opposed to flexible, baseload technologies. (Council Administrative Notice Item No. 57 – Docket 470, Finding of Fact #134)
114. The load factor (or equivalently, the capacity factor) of a power plant is the ratio of its actual electrical energy output over a period of time to its maximum potential output if it were possible to operate at full nameplate capacity continuously for that same period of time. (Council Administrative Notice Item No. 57 – Docket 470, Finding of Fact #135)

115. One MW of PV electric generation is not equivalent to one MW of conventional natural gas-fueled generation in terms of electrical energy production because of the different capacity factors involved. The capacity factor of solar PV is primarily limited by technical factors such as adequate sun, whereas the capacity factor of conventional natural gas-fueled generation is primarily limited by dispatch or required load. (Council Administrative Notice Item No. 57 – Docket 470, Finding of Fact #136)
116. ISO-NE estimates that the average solar PV capacity factor in Connecticut (assuming fixed panels) is approximately 16 percent based on alternating current (AC) output. (Council Administrative Notice Item No. 57 – Docket 470, Finding of Fact #137)
117. Assuming that all 73 acres for the KEC site was usable, this would result in about 12 MW of solar-powered generation under ideal conditions only. (Council Administrative Notice Item No. 57 – Docket 470, Finding of Fact #138)
118. The KEC site could yield just over 3 MW of wind-powered generation at maximum wind output conditions, based on the parcel size. (Council Administrative Notice Item No. 57 – Docket 470, Finding of Fact #139)
119. The solar or wind alternatives located at the KEC site would result in considerably lower energy production than the technology proposed by NTE. (Council Administrative Notice Item No. 57 – Docket 470, Finding of Fact #140)
120. In addition to solar and wind, fuel cells are also considered a Class I renewable energy source in Connecticut per CGS §16-1. Fuel cells were considered by NTE as an alternative, but dismissed due to their lack of proven operation at a sufficiently large scale. For example, the 63.3 MW fuel cell facility approved by the Council in Petition No. 1184 was, at the time, among the largest fuel cell proposals in the world. Site impacts include about 13.7 acres of land and water consumption is approximately 300,000 gallons per day (gpd). For a fuel cell project to generate approximately 650 MW, would result in far greater impacts than KEC. (NTE 4, response 4; CGS §16-1)

Energy Storage Technologies

121. Energy storage systems do not yet allow for reliable power generation across the potential demand spectrum. (Council Administrative Notice Item No. 57 – Docket 470, Finding of Fact #141)

Simple Cycle Combustion Technology

122. A full load heat rate is a measurement of a power plant's efficiency in converting feedstock or fuel (such as natural gas) into electricity at maximum operating output. A lower heat rate equates into higher efficiency. (Council Administrative Notice Item No. 57 – Docket 470, Finding of Fact #142)
123. Simple cycle combustion turbine (SCCT) technology is not as efficient as combined cycle units in terms of energy and emissions produced. SCCTs have a heat rate in the range of 9,750 to 10,850 British Thermal Units (Btu) per kilowatt-hour (kWh). Combined cycle technology has heat rates between 6,430 and 7,050 Btu/kWh. (Council Administrative Notice Item No. 57 – Docket 470, Finding of Fact #143)
124. SCCTs are quick starting and well suited for meeting peak electric demand as opposed to baseload demand. As such, SCCT technology would not provide the power to meet KEC's objectives and the needs of the region. (Council Administrative Notice Item No. 57 – Docket 470, Finding of Fact #144)

Site

125. The subject properties include an approximately 63-acre parcel (Generating Facility Property) located north and west of Lake Road at an address of 189 Lake Road and an approximately 10-acre parcel (Utility Switchyard Property) located immediately across the street from the Generating Facility Property and south and east of Lake Road at an address of 180 Lake Road. (Council Administrative Notice Item No. 57 – Docket 470, Finding of Fact #145)
126. The proposed generating facility site (Generating Facility Site) would be located on the Generating Facility Property. The utility switchyard site (Utility Switchyard Site) would be located on the Utility Switchyard Property. Collectively, these two sites are referred to as the KEC site (KEC Site). (Council Administrative Notice Item No. 57 – Docket 470, Finding of Fact #146)
127. On March 3, 2016, NTE entered into an Option Agreement for the Purchase of Real Property associated with both the 10-acre parcel and the 63-acre parcel from Geoffrey A. Sorrow, Gerald T. Erwin, Sr., and Annarita D. Erwin. The Option Agreement has not materially changed, except it was recently extended until March 4, 2020. (Council Administrative Notice Item No. 57 – Docket 470, Finding of Fact #147; NTE 4, response 2)
128. The Generating Facility Site is largely undeveloped. One two-story house and associated structures are located in the southwest corner of the Generating Facility Site, with the balance consisting of undeveloped woodland, a man-made pond, wetlands, and bedrock outcrops near the center of the parcel. (Council Administrative Notice Item No. 57 – Docket 470, Finding of Fact #148)
129. The Generating Facility Site is mostly former agricultural land now covered with a mixture of hardwoods and coniferous (e.g. white pine and hemlock) forest. (Council Administrative Notice Item No. 57 – Docket 470, Finding of Fact #149)
130. The existing residence and other associated structures on the Generating Facility Property would be demolished if KEC is constructed. (Council Administrative Notice Item No. 57 – Docket 470, Finding of Fact #150; NTE 3 – Proposed Site Walk Plan, p. 1)
131. Several small dumpsites were observed by DEEP on the Generating Facility Property including, but not limited to, discarded appliances, a pickup truck, gas grills, tires, bottles, and cans. Such debris areas on the Generating Facility Site would be cleaned up as part of preliminary site preparation activities. (Council Administrative Notice Item No. 57 – Docket 470, Finding of Fact #151; NTE 3 – Proposed Site Walk Plan, p. 1; Council Administrative Notice Item No. 57 – Docket 470, DEEP Comments dated November 7, 2016, p. 1)
132. The Utility Switchyard Property is predominantly wooded, with an open field and a dilapidated barn structure located to the north, along Lake Road. Other features include several small outbuildings, stone walls, a remnant foundation, and a small family cemetery. (Council Administrative Notice Item No. 57 – Docket 470, Finding of Fact #153)
133. The Utility Switchyard Property is generally steeper and more irregular in terrain than the Generating Facility Site, particularly towards the southern end. Forest cover is hardwood, chiefly black locust, sugar maple, and ash. Shrub cover and the remnants of a grassy barnyard are found towards the northern end of this parcel. The remnants of a barn across from the Sorrow residence and the stone wall-enclosed Lippett Family cemetery are the chief manmade features on this parcel. (Council Administrative Notice Item No. 57 – Docket 470, Finding of Fact #154; DEEP Comments received April 1, 2019)

134. An existing Eversource transmission line right-of-way abuts the Utility Switchyard Property to the east. There are two 115-kV lines on the eastern portion of the right-of-way and two 345-kV lines on the western portion of the right-of-way. (Council Administrative Notice Item No. 57 – Docket 470, Finding of Fact #155)
135. Terrain in the immediate vicinity of the KEC site is relatively flat. (Council Administrative Notice Item No. 57 – Docket 470, Finding of Fact #156)
136. The KEC Site is located in the Rural Development District Zone. (Council Administrative Notice Item No. 57 – Docket 470, Finding of Fact #157)
137. The KEC Site is located in an area of Killingly that includes a mix of industrial development in the Killingly Industrial Park, as well as rural residential and lakefront residential uses. (Council Administrative Notice Item No. 57 – Docket 470, Finding of Fact #158)
138. The Generating Facility Site is identified in the Town of Killingly’s *2010-2020 Plan of Conservation and Development* as an area intended for future industrial use. (Council Administrative Notice Item No. 57 – Docket 470, Finding of Fact #152)
139. There is one off-site residence located within 1,000 feet of the center of the proposed power plant footprint at the Generating Facility Site. This closest off-site residence is located at 149 Lake Road, and its property boundary is located approximately 150 feet southwest of the nearest proposed KEC equipment. In total, three off-site residential properties have property boundaries that intersect the 1,000-foot radius from the center of the power plant footprint. (Council Administrative Notice Item No. 57 – Docket 470, Finding of Fact #159; NTE 4, response 3)
140. There are six residences located within 1,000 feet of the center of the Utility Switchyard Site. The nearest residence is located at 154 Lake Road and its property boundary is located approximately 28 feet southwest of the Utility Switchyard Property. (Council Administrative Notice Item No. 57 – Docket 470, Finding of Fact #160; NTE 4, response 3)
141. The existing Lake Road Generating Facility (LRGF), an approximately 800 MW combined-cycle electric generating plant is located at 56 Alexander Parkway, Killingly, approximately 1 mile northeast of the proposed KEC. (Council Administrative Notice Item No. 57 – Docket 470, Finding of Fact #161)
142. The municipal population information is listed below.

Town	Population in Year 2017
Killingly	17,172
Putnam	9,357
Pomfret	4,167

(Council Administrative Notice Item No. 20 – United States Census Bureau, American Fact Finder)

Project

143. The proposed project includes construction of a nominal 650 MW combined cycle natural gas-fueled power plant with ULSD as a backup fuel and its associated Plant Switchyard, power plant equipment areas, parking areas, and related storage facilities. (NTE 1c – Environmental Overview in Support of Petition for Changed Conditions “EOSPCC”, p. NTE 1, p. ES-1 and Figure 2-5 KEC Plot Plan; Tr. 4, p. 143)

144. The project would use a combined-cycle configuration with one Mitsubishi 501JAC CTG and one associated steam turbine. (NTE 1c, EOSPCC, p. 5 and Figure 2 – KEC Plot Plan; Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 163)
145. There is not sufficient room at the Generating Facility Property to install more than one combined cycle generating unit configuration. (NTE 4, response 7; Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 165)
146. The complete power output of the proposed power plant in MW is listed below, modeled for various conditions.

	Natural Gas Summer	Natural Gas Winter	Natural Gas ISO*	ULSD Summer	ULSD Winter	ULSD ISO*
Combustion Turbine Generator	386 MW	417 MW	394 MW	292 MW	319 MW	314 MW
Steam Turbine Generator (with duct firing)	265 MW	273 MW	273 MW	N/A	N/A	N/A
Steam Turbine Generator (without duct firing)	163 MW	168 MW	168 MW	126 MW	122 MW	132 MW
Parasitic Load (with duct firing for natural gas only)	(19 MW)	(21 MW)	(20 MW)	(12 MW)	(13 MW)	(13 MW)
Net Output (with duct firing for natural gas only)	632 MW	669 MW	647 MW	406 MW	428 MW	433 MW

*International Organization for Standardization (ISO) conditions are a temperature of 59 degrees Fahrenheit (F), a relative humidity of 60 percent and an atmospheric pressure of 14.7 pounds per square inch absolute. (NTE 4, response 8; NTE 1c – EOSPCC, p. 11)

147. The major buildings on the site would include the following: (1) turbine building, to house the steam turbine generator (STG); (2) administrative/warehouse building, with dimensions of approximately 175-foot by 65-foot; and (3) water treatment building, with dimensions of 65 feet by 55 feet. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 167; NTE 4, response 9; NTE 1c – EOSPCC, Figure 2 – KEC Plot Plan)

148. The heat recovery steam generator (HRSG) would be located immediately northwest of the combustion turbine. The HRSG recovers heat from the combustion turbine exhaust and provides steam to power the STG in order to generate even more power than from the combustion turbines alone, thus providing a “combined cycle.” (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 168; NTE 1c – EOSPCC, Figure 2 – KEC Plot Plan)
149. The HRSG exhaust stack, approximately 150 feet in height and approximately 22 feet in diameter, would be located at the end of the HRSG. (NTE 1c – EOSPPC, p. 12; (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 169; NTE 4, response 42)
150. The HRSG stack location was shifted approximately 35 feet to the south of its originally proposed location for the 550 MW facility. The final grade of the updated HRSG stack location is approximately 318 feet amsl. (NTE 4, response 6)
151. The air-cooled condenser structure (ACC) would measure approximately 344 feet by 202 feet by 86 feet high. As its name indicates, it would cool and condense the steam exhaust from the HRSG using air, not water. The process would not use a wet-surface cooler. These features of the ACC’s overall design are intended to reduce water consumption. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 170; NTE 1c – EOSPCC, p. 12 and Figure 2 – KEC Plot Plan)
152. A natural gas-fired auxiliary boiler would operate as needed to keep the HRSG warm during periods of turbine shutdown and provide sealing steam to the steam turbine during combustion turbine generator startups to reduce startup times and emissions. The auxiliary boiler’s stack would be approximately 90 feet tall. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 171; NTE 1c – EOSPCC, p. 13)
153. The plant would have a 1,380-kW* backup generator fueled by ULSD to supply on-site power in the event of a power outage. If approved, details of the containment measures for the generator’s fuel, oil and coolant would be included in the Development and Management Plan (D&M Plan).

*This is the engine output or mechanical output. The electrical output in kW would be less based on the generator efficiency.

(NTE 1c – EOSPCC, New Source Review Permit to Construct and Operate a Stationary Source, p. 1; Tr. 3, p. 45; Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 172)
154. The CTG and STG would each be connected to its respective generator step-up transformer (GSU Transformer) to boost the voltage to 345-kV. (NTE 1, Vol. 1, p. 15)
155. One 27-kV breaker for the CTG would be gas-insulated with sulfur hexafluoride (SF₆). (NTE 4, response 5)
156. NTE’s Plant Switchyard (Plant Switchyard) would be located adjacent to the GSU Transformers and would consist of two 345-kV circuit breakers, disconnect switches, and associated bus structures, and it would serve to consolidate the output from both generators to a single point of connection. (Council Administrative Notice Item No. 57 – Docket 470, Finding of Fact #174)

157. The two 345-kV circuit breakers in the Plant Switchyard would be gas-insulated with SF₆*. At the 345-kV level, breakers without SF₆ are not available.

*The Plant Switchyard would not be considered a gas-insulated switchyard (GIS) because the SF₆ is only for the breakers, not to insulate the conductors.

(NTE 4, response 3; Tr. 1, pp. 18-19; Tr. 4, pp. 144-145)

158. The Plant Switchyard, being separate from the Utility Switchyard, allows NTE to control and operate its own circuit breakers and equipment independently of Eversource. This not only eliminates complicated coordination between two parties, but also allows each party to rely solely on its own lock-out/tag-out system to ensure the safety of their respective personnel. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 175)
159. A short three-phase transmission line segment, originating from the Plant Switchyard, would cross Lake Road and terminate at Eversource's Utility Switchyard, located at the Utility Switchyard Site on the opposite side of Lake Road. (Council Administrative Notice Item No. 57 – Docket 470, Finding of Fact #176)
160. There would be a raw water tank and a demineralized water tank. Each tank would contain 500,000 gallons of water. The water tanks would each be approximately 45 feet in diameter by 45 feet tall. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 178; NTE 4, response 10)
161. The plant would have two water demineralization trailers located on the western side of the plant. The demineralization trailers would be utilized only when the facility is firing on ULSD. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 179; Tr. 1, pp. 14-15)
162. A fuel-oil storage tank would store 1,000,000 gallons of ULSD. It would be 75 feet in diameter by 45 feet tall. The tank would include a secondary steel containment. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Facts # 180 and 211; NTE 4, response 12; NTE 1c – EOSPCC, p. 13)
163. Access to the site property would be via Lake Road. The proposed plant access road on the subject property would be constructed off of Lake Road. (NTE 1c – EOSPCC, Figure 2 – KEC Plot Plan)
164. Approximately 2,500 linear feet of asphalt driveway would be constructed on the subject property to loop around the power block. If the project is approved, the final driveway design would be included in the D&M Plan. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 182; NTE 4, response 13)
165. Most unpaved areas within the KEC footprint would be crushed stone. However, many of the outlying areas would be revegetated after construction is completed. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 183)
166. The KEC facility would be surrounded by an eight-foot tall chain link fence with standard two-inch mesh and three strands of barbed wire at the top as an anti-climbing measure. The fence line has been adjusted to follow the toe of the graded slop on the north and northeast sides of project site. If the project is approved, the final fence design would be included in the D&M Plan. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 184; NTE 4, response 14)

167. Construction would be conducted in accordance with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control*. (NTE 1c – EOSPCC, Stormwater Pollution Prevention Plan, p. 8)
168. The drainage design and water quality mechanisms have been designed in accordance with the *2004 Connecticut Stormwater Quality Manual*. (NTE 1c – EOSPCC, Stormwater Pollution Prevention Plan, p. 8)
169. The estimated construction cost of the proposed project is indicated below.

	Proposed Project Costs
Equipment Costs*	\$346M
Construction and Other Costs**	\$239M
Total Estimated Costs	\$585M

**Includes the combustion turbine and generator, HRSG, HRSG stack, steam turbine generator, cooling and related systems, and the plant switchyard.*

***Includes development, design and construction and other balance of plant equipment not included in the Equipment costs.*

(NTE 4, response 15)

Utility Switchyard

170. The Utility Switchyard, to be located on the Utility Switchyard Property, would be owned and operated by Eversource, and an easement would be granted by NTE to Eversource for such purposes. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 188)
171. The Utility Switchyard would be located immediately adjacent to Eversource’s 115-kV and 345-kV transmission line right-of-way, eliminating the need for any new transmission corridor or right-of-way to facilitate KEC’s output from the Utility Switchyard to the regional transmission system. The Utility Switchyard would be designed to allow for an in-and-out tap of the existing 345-kV transmission line, such that the power generated by KEC can flow through that existing line. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact #189)
172. Eversource’s planned Utility Switchyard would be designed to be air-insulated, rather than gas-insulated. The three 345-kV breakers within the Utility Switchyard would be gas-insulated with SF₆*.

**The Utility Switchyard would not be considered a gas-insulated switchyard (GIS) because the SF₆ is only for the breakers, not to insulate the conductors.*

(Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 190; NTE 4, response 5; Tr. 1, pp. 18-19)

173. Eversource will file a Petition for a Declaratory Ruling for the Utility Switchyard project and its connection to the existing transmission line right-of-way at a later date if the proposed project is approved. See next section titled Electrical Interconnection. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 191; Tr. 1 p. 20)

Electrical Interconnection

174. There would be an electrical interconnection from the Utility Switchyard to one of the existing 345-kV transmission lines located in an existing right-of-way east of the Utility Switchyard Site. The connection would split the #3271 345-kV line into two lines: one traveling to the north and one traveling to the south. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 192; NTE 4, Attachment 7, EMF Assessment dated March 13, 2019)
175. NTE received a complete System Impact Study for the 650 MW KEC project on February 6, 2018. NTE is currently in the Large Generator Interconnection Agreement negotiation process with ISO-NE and Eversource. (NTE 4, response 22)

Natural Gas Pipeline Connection

176. The natural gas interconnection includes a natural gas pipeline lateral approximately 2.8 miles in length, connecting the Algonquin Gas Transmission Pipeline to the north to KEC to the south within an existing natural gas line lateral right-of-way owned and operated by Yankee Gas. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 194)
177. The existing Yankee Gas pipeline is approximately four or six inches in diameter with a pressure of approximately 600 pounds per square inch gauge (psig). (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 195)
178. NTE would not utilize the existing Yankee Gas pipeline. A new pipeline would be installed adjacent to the existing line. The existing pipeline would be taken out of service after the new pipeline is installed. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact #196)
179. NTE entered into a Preliminary Engineering Agreement (original and two amendments) for natural gas pipeline upgrades with Yankee Gas, thus enabling Yankee Gas to complete the detailed design and permitting efforts for the pipeline upgrade to service KEC and for use by other customers. Based on such design, the new pipeline would be approximately 16 inches in diameter with a maximum allowable operating pressure of approximately 750 psig. (NTE 7 – Attachments 1B, 1C and 1D; NTE 4, response 24)
180. The new natural gas pipeline would remain within the existing right-of-way. (NTE 4, response 25)
181. As an alternative, NTE had originally considered tapping off of the existing natural gas line that currently serves LRGF, but that was determined not to be the most economical alternative. In addition, the existing Yankee Gas pipeline is located closer to KEC. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 200)

Water Supply Interconnection

182. An existing water main, adequate to meet KEC's water needs, currently exists at the intersection of Lake Road and Louisa Viens Drive. The water main would be extended along Lake Road approximately 3,100 feet to the KEC access drive. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 201)

183. The water supply connection to KEC, in addition to the interconnection of the Crystal and Plainfield water systems, would be the permitting responsibility of Connecticut Water Company (CWC). CWC is a public service company under the authority of PURA. Thus, CWC may consult with the Town, but it does not require local approvals for these water line improvements. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 202)

Wastewater Interconnection

184. KEC intends to discharge its wastewater into the existing municipal wastewater treatment system. A sewer main manhole, adequate to meet KEC's discharge volumes, currently exists just west of the intersection of Lake Road and Louisa Viens Drive. The sewer main would be extended along Lake Road approximately 3,100 feet to the KEC access drive. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 203)
185. It is expected that all wastewater piping work would occur within Lake Road. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 204)
186. Given that the wastewater discharge piping associated with KEC would be located within the limits of local roadways, it may, pursuant to local regulations, require local approvals. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 205)

Municipal Regulate and Restrict Orders and its Appeal

187. On October 13, 2016, in the original Docket No. 470 proceeding, NTE received copies of the Town Inland Wetlands and Watercourses Commission (IWWC) and Town Planning and Zoning Commission (PZC) Regulate and Restrict Orders (collectively, the Municipal Orders), issued pursuant to C.G.S. §16-50x(d). (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 206)
188. Subsequently, on October 27, 2016, in the original Docket No. 470 proceeding, NTE submitted to the Council an Appeal of and Responses to the Municipal Regulate and Restrict Orders (ARR Orders). (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 207)
189. Several of the Municipal Orders requested certain facility plan modifications. Thus, on October 27, 2016, NTE submitted a modified version of the originally proposed KEC facility site plan and other materials. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 208)
190. During the evidentiary hearing held on November 3, 2016, the Council voted to incorporate NTE's ARR Orders into the original Docket No. 470 proceeding consistent with Council practice in past matters. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 209)
191. On April 11, 2019, the Town filed written comments to provide updated responses to the Municipal Orders/ARR Orders relative to the proposed 650 MW KEC facility. (Town 1)
192. On April 24, 2019, NTE and the Town met to discuss various Municipal Orders and any outstanding/unresolved appeals of such orders. All outstanding appeals have been resolved. (Tr. 4, pp. 63-64, 125)

Killingly Inland Wetland and Watercourses Commission (IWWC) Orders

193. Based upon the outlet of the proposed drainage structure and re-grading of the site, the IWWC is concerned that wetlands A1, A3, and X would not receive adequate overland flow resulting in their destruction. A potential solution to this concern is described in the "Recommendations for CSC Conditions and Third Party Review" by the Town's consultant, TRC Environmental Corporation (TRC Report), as:
- a) Rainfall recharge to groundwater feeding the wetlands would be significantly impacted by the Project through the extensive loss of forested loose understory layer, site re-grading and compaction of the site soils. To provide positive means of groundwater recharge, a continuous crushed stone filled trench shall be installed along the limits of grading from Wetland A1 to Wetland A3;
 - b) The trench shall be a minimum of three feet wide by five feet deep and shall be completely enclosed with filter fabric and covered with 1 foot of topsoil;
 - c) The bioretention basin crushed stone underdrains shall be tied into the crushed stone trench. This system will provide additional treated stormwater runoff storage for recharge immediately up gradient from the wetland system; and
 - d) Soil breaks in the stone filled trench shall be provided between the bioretention basins to ensure even distribution of water along the entire limits of grading.

The IWWC believes that this potential solution would not only allow the wetlands to receive flows as and where they do currently, it would also be a benefit for the Applicant as it could do away with the proposed wet basin, avoiding a potential "decoy" vernal pool.

NTE finds this order acceptable in part and appeals the order in part. The primary stormwater basin has been reassessed to incorporate a crushed stone layer into the design to encourage further infiltration. Two additional basins at the headwaters of Wetland A1 and A3 have been added and incorporated into the stormwater design in the Revised SWPPP and Updated E&S Plan. The two additional basins would also incorporate a crushed stone layer to encourage infiltration. Further, NTE would provide an infiltration mechanism as recommended (i.e., a crushed stone trench) between two new additional basins and Wetlands A1 and A3, respectively. NTE has verified that the two additional basins, two additional crushed stone trenches, and the addition of crushed stone to all three basins would allow for more than the recommended infiltration volume. Therefore, NTE appeals the limited portion of the order call for the installation of a trench between KEC's limits of grading and the entirety of Wetlands A1 to A3.

NTE also notes that the proposed crushed stone surfaces in these features would serve as a further opportunity for infiltration and groundwater recharge at the completion of construction. The "wet pool" feature has been removed from the primary stormwater basin as requested. Although the original design was protective of both the wetland function and potential vernal pool usage, the updated design would also support wetland and vernal pool functions effectively. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 210)

The Town of Killingly accepts the changes already made by NTE, and no further action would be required to comply with this Municipal Order to Regulate and Restrict (MORR). (Town 1, p. 3)

194. The IWWC believes that the proposed ULSD tank and containment area would pose a number of problems. Specifically, the size of the containment area would force a large increase in grading towards the wetlands (A1); the drainage inside the containment area could potentially allow for a fuel spill to enter the wetlands; and the fabric containment area would have to be installed by hand and each seam must be joined adequately or there would be a risk of a spill getting into the ground water.

The IWWC recommends a double-walled or “tank within a tank” configuration rather than the proposed single wall tank and containment area along with a smaller containment area directly surrounding the proposed tank.

Per TRC Report:

- a) Eliminate the ULSD storage tank spill containment berm and change the welded steel tank design to a double-wall or "tank in a tank" design;
- b) The bottom of the tank shall have a double floor with interstitial leak detection monitoring. The tank bottom shall have an engineered cathodic protection system;
- c) The welded steel tank shall be designed and constructed in accordance with API Standards and shall comply with seismic design standards;
- d) Hydrostatic and leak testing and inspection shall be under the direction of a competent third party licensed professional engineer;
- e) Underground fuel piping shall be double walled with interstitial leak detection sensing;
- f) The fuel unloading area shall have spill containment suitable to handle the largest tanker capacity used to offload fuel to the storage tank and shall conform to 40 C.F.R. §112; and
- g) A Spill Prevention, Control and Countermeasures Plan and Facilities Response Plan conforming to 40 C.F.R. §112 shall be prepared and implemented. The operator shall and facility personnel shall receive and keep updated the required spill response training and shall retain the services of an on-call Connecticut licensed spill response contractor to assist with larger spills.

NTE finds this order acceptable. Although the bermed and lined spill containment design for the ULSD storage tank as originally proposed is a commonly used and accepted design, NTE has revised the ULSD storage tank to include a secondary steel containment around the tank as requested, which would allow for elimination of the bermed spill containment area and is included in the Revised Site Plan. The tank would include a double floor with engineered cathodic protection and would be designed, fabricated and constructed in accordance with American Petroleum Institute (API) standards applicable to Welded Steel Storage Tanks for Oil Storage (API- 650) and associated appendices for under tank leak detection. The tank would be subject to scheduled inspections as per API-653 (Tank Inspection, Repair and Alteration). Below grade piping would be comprised of double wall pipe with interstitial leak detection, and the loading areas would be designed in accordance with 40 C.F.R. §112 with spill containment capability suitable to handle the largest tanker capacity used to offload fuel to the storage tank. As required, a spill prevention plan will be prepared and implemented in accordance with 40 C.F.R. §112, which will include contact information for a licensed spill response contractor. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 211)

The Town of Killingly accepts the changes already made by NTE. The Town recognizes that NTE has committed to complying with the other conditions, and future actions and submissions would be required to comply with this MORR. (Town 1, p. 4)

195. The IWWC notes that the 25 foot no disturbance buffer in Section 6.3 of the IWWC regulations is not being upheld. Specifically, Section 6.3 states: “No disturbance wetland buffer - 25 feet.” Separation distances listed above may be increased by IWWC if deemed necessary for the protection and preservation of the natural and indigenous character of the wetlands and/or watercourses system and riparian corridors due to site specific factors such as topography, slope, soil type, presence of rare, endangered and/or species of concern, unique or uncommon habitats, etc. The IWWC recommends that this buffer be increased to a minimum of 75 feet from Wetlands A1 and A3 wherever feasible.

The TRC Report agrees with IWWC's recommendation:

- a) Within the main plant parcel, move the limits of all grading activities, clearing and disturbance a minimum of 75 feet from all wetland boundaries and maintain the tree canopy in this zone;
- b) The location of the administration building, compressor station, main plant facility, tanks and other site features shall be moved to accomplish the required separation;
- c) Slopes should be no greater than 2 horizontal to 1 vertical and shall have turf established to stabilize the surface from erosion; and
- d) Erosion netting or turf reinforcing mat shall be used on all slopes equal to or steeper than 3 horizontal to 1 vertical along the north side of the site along the wetlands.

The IWWC also agrees with TRC that a 2:1 vegetated slope should be required; however, if it is feasible to have 3:1 slopes, the IWWC would prefer that all slopes be at 3:1.

NTE finds this order acceptable in part and appeals the order in part. The majority of KEC's originally proposed layout was located more than 25 feet from wetlands, with the exception of the very tip of Wetland A3 (which is within 20 feet of proposed grading) and the area where a retaining wall would be constructed to avoid impact to Wetland X. However, in response to this order, certain elements (i.e., air cooled condenser, gas compressor building, and ring road) on the Generating Facility Site have been relocated or reconfigured to increase the separation distance from all wetlands boundaries to a minimum of 25 feet as required by IWWC Regulations and depicted in the Revised Site Plan.

NTE has increased that separation distance/buffer further, to comply with the requested 75-foot separation, where feasible. Side slopes on the Revised Site Plan are predominantly 2:1 and would be vegetated. The only location where a 1:1 slope is required is a 2,500-square foot area adjacent to Wetland X where that steeper slope is required to comply with the 25-foot no disturbance buffer from Wetland X as defined in the IWWC Regulations. For this limited area, NTE appeals that portion of the order calling for a maximum 2:1 slope. Instead, rip-rap would be employed in this limited area for stabilization of the 1:1 slope. In all other areas, permanent turf reinforcement matting would be utilized as specified in the previously submitted plans and in the order. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 212)

NTE has subsequently eliminated the retaining wall near Wetland X and incorporated 2:1 slopes all around the perimeter of the Generating Facility Property. The distance from KEC to Wetland X was also increased to a minimum of 38 feet. (Tr. 1, p. 28; NTE 1c – EOSPCC, p. 14)

The Town of Killingly accepts the changes already made by NTE and the more recent changes to grading and wetland/disturbance separation contained in the site drawings revised to 01/17/2019 as part of Exhibit 3. No further action would be required to comply with this MORR. (Town 1, p. 5; Tr. 3, p. 8)

196. The IWWC believes that the proposed E&S Plan is too broad and does not go into enough specifics for the challenges of the site. In many instances, the proposed silt fence and hay bales may not be enough to stop all sedimentation, especially during construction when retention basins may not be in place and functioning. An independent inspector should be onsite to monitor erosion and sedimentation and drainage, in addition to periodic inspections performed by Town staff. The IWWC also recommends that temporary drainage basins be constructed prior to grading the areas around Wetlands A1, A3, and X. Runoff shall be directed at the drainage basins.

The TRC Report also addresses this recommendation:

- a) Temporary sediment basins shall be added upgradient of Wetlands A1 and A3 and shall be properly sized in accordance with the CT Water Quality Manual; and
- b) Section 6.3 of the IWWC Regulations states: “No system, at any distance from such watercourse or inland wetland, shall be constructed or maintained in such a manner so as to allow untreated surface drainage into any such watercourse or inland wetlands. Guidelines are available in the *2004 Storm Water Quality Manual...*”

NTE finds this order acceptable. NTE concurs that the discharge of untreated stormwater runoff to wetlands and significant resource areas is unacceptable, and has not, therefore, included that type of discharge in its stormwater design. Temporary sediment basins have been added upgradient of Wetlands A1 and A3 and included in the Updated E&S Plan as requested, and these features, along with the other best management practices (BMPs) identified in the Updated E&S Plan, would be among the first measures implemented during initial site disturbance activities. The construction contractor would conduct regular inspections, as will NTE, during construction to affirm that BMPs are properly installed, maintained and functioning for the intended purpose. As required by DEEP, monthly inspection reporting will be completed by a licensed professional engineer or certified professional in stormwater quality (CPSWQ). In addition, NTE expects that the Council would require a third-party inspector be utilized during construction, and Town and DEEP staff would also have authority to visit the site for construction inspections. These various checks and balances would provide assurance that appropriate BMPs are selected and implemented to keep the work area stabilized and prevent off-site concerns. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 213)

The Town of Killingly accepts the changes already made by NTE, the more recent changes to the site drawings revised to 01/17/2019 as part of Exhibit 3 and the revised Stormwater Pollution Prevention Plan contained in Exhibit 3. The Town recognizes that NTE has committed to complying with the other conditions, and future actions and submissions would be required to comply with this MORR. (Town 1, p. 6)

197. The IWWC recommends that at least one hydrodynamic chamber that also removes suspended solids be installed in-line with the proposed catch basins prior to the exit to the proposed drainage basin(s). This is in line with past practices on industrial and commercial sites.

NTE finds this order acceptable. NTE would comply with this order and has amended its Project via the Revised Site Plan and the Revised SWPPP, accordingly. The original KEC plan specified a hydrodynamic separator with oil isolation capabilities at the single discharge point of the stormwater collection system. The drainage design in the Revised SWPPP has been modified to incorporate three separate discharge points each equipped with hydrodynamic separators. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 214; Tr. 3, p. 60)

The Town accepts the changes already made by NTE, and no further action would be required to comply with this MORR. (Town 1, p. 7)

198. IWWC notes that the proposed 15,000 square feet of wetlands disturbance at the proposed switchyard site (Wetland D) requires a permit from the US Army Corps of Engineers (ACOE). NTE is proposing a reclamation site of approximately 17,000 square feet of created wetland. Typically, when an applicant proposes a reclaimed/created wetland it is done at a 1.5:1 according to past practice. IWWC believes that NTE should propose a larger mitigation area and created wetland. Detailed plans and plantings should be submitted to the IWWC for review. This wetland should also be monitored by an independent inspector and maintained after project completion to insure the wetland characteristics remain. The created wetland should be monitored for a period of two growing seasons after full establishment.

The TRC Report expounds on this:

- a) Wetland mitigation is proposed to offset the direct impact to Wetland D associated with the construction of the switchyard. A wetland replication area consisting of approximately 17,000 square feet (0.39 acre) is proposed;
- b) The proposed grading, planting and monitoring plans and details associated with the wetland replication area has not yet been completed;
- c) Since the replication area is greater than 5,000 square feet, an application will need to be submitted to the New England District of the ACOE. The New England District of ACOE has detailed wetland creation plan submission requirements that should ensure that sufficient detail is provided in the future; and
- d) The Town shall be given an opportunity to review and approve this plan.

NTE finds this order acceptable. NTE agrees that the proposed wetland fill, of 12,500 square feet (not the 15,000 square feet referenced in the order), requires filing with the ACOE to affirm coverage under its General Permit program. As a part of that filing, additional detail would be developed regarding mitigation. NTE has proposed 17,000 square feet of wetland replication, which would provide several hydrologic regimes, not just the "seasonally saturated" regime of the existing wetland, and support a higher diversity of flora and fauna, including amphibians. The resulting created wetland has the potential to provide more function and value than the existing wetland area, which is transitional in nature and replete with invasive plants: NTE is willing to increase this to 18,750 square feet to reflect a 1.5:1 ratio.

In addition to the 18,750 square feet of created wetlands now proposed within a 0.77-acre conservation easement, NTE previously identified in its Application proposed wetland enhancements, including 35,000 square feet on the Generating Facility Site and 18,000 square feet on the Switchyard Site. NTE discussed this proposed mitigation strategy with ACOE during a pre-application meeting on September 28, 2016. At that meeting, the ACOE discouraged the use of replication as a mitigation strategy and suggested that an In-Lieu Fee, coupled with the proposed enhancements, was a more appropriate strategy. However, as noted above, NTE is willing to continue to provide for replication and is willing to do so at a 1.5:1 ratio. As noted, additional details would be provided in the ACOE pre-construction notification and would be shared with the IWWC. Section 5.2 of NTE's *Wetland Report: Proposed Conditions* references evaluation through two growing seasons and notes that additional detail regarding monitoring provisions would be provided in the mitigation plan. However, in order to better align with ACOE wetland mitigation guidance, monitoring and requisite maintenance would be expanded to five years post-implementation and would include invasive plant control and eradication. Monitoring would be conducted by a qualified inspector (i.e., wetland scientist or wetland

ecologist) with appropriate reports submitted to both the ACOE and the IWWC. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 215)

The Town accepts the changes already made by NTE and the more recent changes to the site drawings revised to 01/17/2019 as part of Exhibit 3. The Town recognizes that NTE has committed to complying with the other conditions, and future actions and submissions would be required to comply with this MORR. (Town 1, p. 8)

199. IWWC notes that there have been no submissions to the IWWC for permitting of any proposed gas lines and water lines. Accordingly, the IWWC requires that all permits for water and gas be applied for and approved prior to the construction of the proposed generating facility.

Per the TRC Report:

- a) Water supply from CWC, involving the Killingly system interconnection with the Plainfield system, shall receive permit and other necessary approvals from DEEP and DPH before any work on the site shall commence;
- b) In addition, the plans for installation of water mains shall receive all local and DOT road disruption and restoration permits, including detailed plans for maintenance and protection of traffic before site work shall commence; and
- c) Plans for the installation of sewer, water main and gas pipelines in Lake Road, including detailed plans for maintenance and protection of traffic, shall require submission to the Town for review and approval before any site work shall commence.

NTE finds this order acceptable in part and appeals the order in part. NTE is committed to work with the CWC, Eversource f/k/a Yankee Gas and the Town to obtain all necessary State and local permits and approvals for the extension of water, sewer and natural gas service to the KEC facility, including all necessary road disruption and restoration permits needed to complete these improvements. NTE expects, however, that these permitting procedures will run concurrently with certain site construction activity and do not need to be completed before "any site work shall commence." NTE, therefore, appeals only this limited portion of this order. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 216)

The Town understands that based on NTE's most recent filings with the Council that commitments and agreements have been made with CWC and Yankee Gas to obtain the required services needed to operate the plant. The Town also understands that a water diversion permit application is pending with DEEP, and local/state approvals for the gas main upgrade have not been secured. Given the critical nature of these approvals to the operation of the plant, the Town did not initially accept NTE's appeal to waive any conditions required in this MORR. (Town 1, p. 9)

However, upon further discussion with the Town, NTE agreed that third parties like CWC and Yankee Gas would apply to the Town for their appropriate permits in a timely manner to support their installation schedule. NTE has also discussed scheduling with the Town and provided a construction schedule to the Town. In the event that NTE cannot secure a required permit, the CEBA requires that NTE post a decommissioning bond that the Town could draw upon to remove a partially built (or fully built non-operational) facility that NTE has constructed prior to a critical permit that had not been issued. (Tr. 4, pp. 66, 94-95)

200. NTE is showing an increase in peak runoff from the switchyard site to the neighboring property. The IWWC requests that the final peak runoff be equal to current peak runoff. IWWC also requests that stormwater retention as well as treatment of any runoff be submitted and reviewed by the IWWC prior to approval. NTE should follow MS4 guidelines for monitoring all stormwater

on site prior to any discharge to neighboring properties. The IWWC would like to be informed of the Council's ruling and the procedure followed to procure that ruling. The IWWC would also like to be informed of any modifications to this proposal by either the Council or NTE. Referral back to the IWWC should be a condition of approval. Any recommendations made by the IWWC would be submitted to the Council for approval and/or to keep the Council informed of the actions taken by the IWWC and the Applicant.

NTE finds this order acceptable. A stormwater basin with low level outlet has been designed and placed adjacent to the switchyard to limit peak runoff and discharge at or below pre-construction conditions. Such modifications were included in the Revised SWPPP and Updated E&S Plan. As required, MS4 guidelines and procedures for stormwater monitoring would be upheld during construction. While peak runoff increases for the switchyard area were minor with the previous design, the revised design would ensure that the peak runoff would be equivalent to the current peak runoff. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 217)

The Town accepts the changes already made by NTE, the more recent changes to the site drawings revised to 01/17/2019 as part of Exhibit 3 and the revised Stormwater Pollution Prevention Plan contained in Exhibit 3. The Town accepts the changes already made by NTE, and no further action would be required to comply with this MORR. (Town 1, p. 10)

Killingly Planning and Zoning Commission (PZC) Orders

Emergency Management Services

201. The PZC requests that proper access for fire and all emergency response equipment be maintained throughout all stages of the construction period, on site and along Lake Road.

NTE finds this order acceptable. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 218)

The Town recognizes that NTE has committed to complying with this condition, and future actions would be required to comply with this MORR. (Town 1, p. 10)

202. The PZC requests that the owner/operator prepare and keep current an emergency response plan and shall maintain at all times a designated team of on-site personnel trained to respond to emergency situations. The plan shall identify Town fire, police and emergency units, Town Officials, and Town Staff that would be notified in the event of an emergency situation.

NTE finds this order acceptable. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 219)

The Town recognizes that NTE is committed to complying with the conditions, and future actions and submissions would be required to comply with this MORR. (Town 1, p. 10)

203. The PZC requests that the owner/operator put in place an emergency response plan, to include a spill prevention control and countermeasure plan. This plan must be created in conjunction with the proper Town staff and emergency personal.

NTE finds this order acceptable. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 220)

The Town recognizes that NTE is committed to complying with the conditions, and future actions and submissions would be required to comply with this MORR. (Town 1, p. 11)

204. The PZC requests that the Fire Marshal, the Town Manager, and all other appropriate Town staff be notified as soon as practical within the first hour of occurrence of any spills and/or non-routine, unexpected situations that arise at the facility that may pose a heightened risk to the public.

NTE finds this order acceptable. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 221)

The Town recognizes that NTE is committed to complying with the conditions, and future actions would be required to comply with this MORR. (Town 1, p. 11)

205. The PZC requests that the owner/applicant provide access to an on-site first aid station to all employees during the construction phase of the project.

NTE finds this order acceptable. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 222)

The Town recognizes that NTE is committed to complying with the conditions, and future actions would be required to comply with this MORR. (Town 1, p. 11)

Water Supply and Utilities

206. The PZC requests that engineering drawings for the design for the improvements to the water system (from Plainfield) be submitted to the Town Engineering Department/Planning Department for review to verify that there will be enough water in said supply for the proper fire protection through the construction phase and thereafter.

NTE finds this order acceptable in part and appeals the order in part. NTE would share the Town's request to review engineering design drawings with the CWC and would comply with all applicable state and local laws and regulations related to water supply improvements, the connection of the Killingly and Plainfield water systems and the adequacy of that water supply to the KEC facility. However, NTE cannot unilaterally commit to the Town's request without the consent of CWC. Therefore, NTE appeals only this limited portion of the order. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 223)

The Town recognizes that NTE is committed to complying with the conditions, and future actions and submissions would be required to comply with this MORR. (Town 1, p. 12)

207. The PZC requests that water supply improvements from CWC, involving the Killingly system interconnection with the Plainfield system, receive permit and other necessary approvals from the DEEP and DPH before any work on the main site commences. In addition, the PZC requests that the plans for installation of water mains receive all local and DOT road disruption and restoration permits, including detailed plans for maintenance and protection of traffic, before any work on the main site commences.

NTE finds this order acceptable in part and appeals the order in part. NTE and the CWC would comply with all applicable State and local requirements related to water supply improvements associated with the connection of the Killingly and Plainfield systems, including any road opening permits or approvals. Work related to these improvements would likely occur concurrently, with

other on and off-site project improvements. However, NTE does not believe that the water system improvements need to be completed before the commencement of "any work on the main [Project] site." NTE, therefore, appeals this limited portion of the Commission's order. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 224)

The Town understands based on NTE's most recent filings with the Council that commitments and agreements have been made with CWC to obtain the required water service needed to operate the plant. The Town also understands that a water diversion permit is pending with DEEP, and DOT approvals for the water main upgrade have not been secured. Given the critical nature of these approvals to the operation of the plant, the Town did not initially accept NTE's appeal to waive the need for the regulatory approvals required to comply with this MORR. (Town 1, p. 12)

However, upon further discussion with the Town, NTE provided a construction schedule to the Town. (Tr. 4, pp. 94-95)

208. The PZC requests that the owner/applicant confirm with the Town Engineering Department/Planning & Development Department, after construction and all improvements, that there is sufficient water supply to provide for the operation of the plant under all circumstances and for the fire protection for the duration of the project. (Reference is hereby made to the correspondence from CT Water Company, stating the project is to be revisited annually.)

NTE finds this order acceptable. NTE will provide the Town with information from the CWC regarding the sufficiency of the water supply as requested. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 225)

The Town recognizes that NTE is committed to complying with the conditions, and future actions and submissions would be required to comply with this MORR. (Town 1, p. 13)

209. The PZC requests that appropriate bonds be provided to the Town to ensure road repair and maintenance and protection of traffic associated with any failure, settlement, defect or other similar associated cost associated with water main installation.

NTE finds this order acceptable. NTE recognizes that it must comply with all local requirements for any work that may occur within local roadways, including any and all necessary bonding requirements. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 226)

The Town recognizes that NTE is committed to complying with the conditions, and future actions and submissions would be required to comply with this MORR. (Town 1, p. 13)

210. The PZC requests that plans for the installation of sewer, water main and gas pipelines in Lake Road, including detailed plans for maintenance and protection of traffic, be submitted to the Town (Engineering Department/Planning & Development Department) for review and approval before any site work shall commence.

NTE finds this order acceptable in part and appeals this order in part. NTE, in cooperation with CWC, Eversource and the Town, would comply with this order and submit all plans for sewer, water and gas line work in Lake Road to the Town prior to the commencement of work within Lake Road. However, NTE does not believe that the commencement of this permitting for work within Lake Road needs to occur "before any site work shall commence." NTE, therefore, appeals only this

limited portion of this order. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 227)

Given the critical nature of these approvals to the operation of the plant, the Town of Killingly did not initially accept NTE's appeal to waive any conditions required to comply with this MORR. (Town 1, p. 13)

However, upon further discussion with the Town, NTE agreed that the appropriate contractors would apply to the Town for the required permits (such as for gas and water piping) and gain approval prior to starting any work in the Town's right-of-way or roadway. NTE has discussed scheduling with the Town and provided a construction schedule to the Town. In addition, NTE would commence site work such as clearing or civil work for the proposed facility prior to the issuance of all permits for the water and gas lines. (Tr. 4, pp. 67-68, 94-95, 97-98)

NTE would depend on third parties to install, for example, the natural gas and water lines. NTE would post performance or payment bonds (as applicable) if that is part of the Town's process to obtain the necessary permits. (Tr. 4, p. 96-97)

211. The PZC requests that natural gas system interconnection and improvements necessary to supply fuel for the project receive all local, state and federal approvals required before any site construction shall commence. The PZC also requests that all such approvals be filed with the Town (Engineering Department/Planning & Development Department).

NTE finds this order acceptable in part and appeals the order in part. NTE will receive all necessary local, state and federal permits and approvals for the natural gas interconnection service required for the KEC facility, and it agrees to file all such approvals with the Town. NTE expects that permitting for the gas line interconnection will occur concurrently with other site development activity and does not need to occur "before any site work shall commence." NTE, therefore, appeals only this limited portion of this order. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 228)

The Town understands that based on NTE's most recent filings to the Council that commitments and agreements have been made with Yankee Gas to obtain the required service needed to operate the plant. The Town also understands that local/state approvals for the gas main upgrade have not been secured. Given the critical nature of these approvals to the operation of the plant, the Town did not initially accept NTE's appeal to waive any conditions required to comply with this MORR. (Town 1, p. 14)

Upon further discussion with the Town, NTE provided a construction schedule to the Town. (Tr. 4, pp. 94-95)

212. The PZC requests that appropriate bonds be provided to the Town to ensure road repair and maintenance and protection of traffic associated with any failure, settlement, defect or other similar associated cost associated with utility installations.

NTE finds this order acceptable. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 229)

The Town recognizes that NTE is committed to complying with the conditions, and future actions and submissions would be required to comply with this MORR. (Town 1, p. 14)

Widening of Lake Road and Traffic

213. The PZC would like to see the switchyard be moved across the street (to the north side of roadway) onto the main location of the proposed energy power plant. The reasoning behind this is as follows:

- the removal of high tension lines over the roadway;
- less impact on the rural neighborhood;
- minimize the impact on the cemetery that is located on the present switchyard site; and
- allow the minimization of the curve radius on the widening of Lake Road.

NTE appeals this order for the following reasons, in response to the PZC's four listed concerns:

- a) Due to the current configuration, location and size of structures of the existing transmission line right of way east of the Generating Facility Site, as well as the topography on the Generating Facility Site and the existing transmission line right of way, the interconnection with the Eversource 345 kV transmission system would still be required to take place south of Lake Road, on the Switchyard Site. Therefore, the transmission lines would still be required to cross Lake Road, even if the switchyard itself was located on the Generating Facility Site;
- b) There are currently four transmission lines (two 115 kV, two 345 kV) crossing Lake Road approximately 550 linear feet from the location of KEC's proposed Lake Road crossing. The proposed location of the switchyard is immediately adjacent to this major transmission corridor. The location of the switchyard and transmission line crossing over Lake Road is consistent with what currently exists in this area. In addition, placement of the utility switchyard north of Lake Road would significantly lessen the amount of equipment setback to Lake Road, as well as increasing the required amount of grading, potential blasting and potential tree clearing close to the property boundary required, thereby increasing visual impact of the entire project;
- c) The cemetery will be protected and enhanced even with the Utility Switchyard on the Switchyard Site. Buffer has been maintained where possible, and a retaining wall has been incorporated into the design to maximize separation where a buffer cannot be established. NTE would work with the State Historic Preservation Office to implement construction and operational measures to prevent impact and to better showcase the cemetery as a local historical resource; and
- d) The design of the curve radius is independent of the location of the Utility Switchyard. Rather, the location of existing transmission line towers, neighboring properties, and the cemetery are the key factors. Notwithstanding, NTE is proposing to widen the width of the road to accommodate two WB-62 Design vehicles traveling in opposite directions. The design of the roadway will be coordinated with the Town Engineering Department and all applicable DOT and Town specifications will be met. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 230)

The Town accepts the changes already made by NTE regarding the switchyard location, and NTE has agreed to widen and realign a portion of Lake Road in accordance with the details noted in FOF#214. (Town 1, p. 15)

214. The PZC requests that engineering drawings for the widening and realignment of Lake Road be submitted to the Town Engineering Department/Planning Department for review and approval. The design shall allow safe travel way and sight distance for large tractor trailer trucks/tankers (WB-62 design vehicles) and Town fire trucks traveling east of the plant entrance.

NTE finds this order acceptable. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 231)

The Town recognizes that NTE is committed to complying with the conditions, and future actions and submissions would be required to comply with this MORR. (Town 1, p. 15)

215. The PZC requests that other signage needed to restrict truck traffic west of the site entrance be provided at the direction of the Town Engineering Department.

NTE finds this order acceptable. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 232)

The Town recognizes that NTE is committed to comply with the conditions, and future actions and submissions would be required to comply with this MORR. (Town 1, p. 16)

216. The PZC requests that any stone walls/fences disturbed by the road realignment be restored at a safe distance from the edge of the travel way to maintain the rural character of the road. The PZC also requests that the owner/applicant shall bear the burden of the cost of said restoration.

NTE finds this order acceptable. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 233)

The Town recognizes that NTE is committed to complying with the conditions, and future actions and submissions would be required to comply with this MORR. (Town 1, p. 16)

217. The PZC requests that all project construction traffic be required to enter from the east and leave to the east toward Attawaugan Crossing Road /1-395 along Lake Road. The PZC also requests that traffic not be permitted to travel west on Lake Road toward Route 101.

NTE finds this order acceptable. NTE assumes for the purposes of this response that "construction traffic" does not include personal vehicles driven by construction workers and employees at the NTE site. Passenger vehicles may well use portions of Lake Road to the west of the site in accordance with current restrictions. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 234)

The Town accepts NTE's response and recognizes that NTE is committed to complying with the conditions, and future actions and submissions would be required to comply with this MORR. (Town 1, p. 16)

218. The PZC requests that, when traffic volumes and deliveries during construction create traffic issues, the contractor be required to comply with the Town's request to provide manual traffic control support or modify activities to alleviate congestion and ensure public safety, and that non-compliance result in project shut-down until measures correct the issues to the Town's satisfaction. The PZC requests that the contractor be required to alert the Town of any deliveries of oversize vehicles that may need traffic control.

NTE finds this order acceptable in part and appeals this order in part. NTE will comply with this order and will work with the Council and the Town throughout the construction of the KEC to ensure adequate and appropriate traffic and public safety measures are in place and will alert the Town prior to delivery of any over-sized vehicles, equipment or facility components. NTE disagrees that non-compliance should result in shut-down of KEC construction activities; rather, should an issue arise, NTE and the Town would determine the specific cause and immediately agree on measures to address the particular issue of concern. Therefore, NTE appeals only this limited portion of the PZC order. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 235)

The Town did not initially accept NTE's response and waive its right to shut down the work activities until corrective measures are implemented and protect the safety of its residents. (Town 1, p. 17)

However, upon further discussion with the Town, NTE notes that it would work with the Town to address road concerns. NTE also notes that a protocol would be in place in the event of an unsafe condition. NTE would be given a certain amount of time to address the condition. If NTE does not rectify the issue within the timeline, the Town would have the right to shut down only the unsafe portion of the project. (Tr. 4, pp. 101-103)

219. The Town requests that all road construction along Lake Road is inspected by either the Town, or in its sole discretion a designated representative, paid for by NTE, (to make sure that all construction is done to the proper standards and that public safety is recognized and properly required traffic controls, and construction matters are in place at all times). The Town shall have the authority to direct the owner/applicant to cure deficiencies in workmanship. Non-compliance would result in road construction project shut-down until measures to correct the issues to the Town's satisfaction.

NTE finds this order acceptable in part and appeals this order in part. NTE will comply with this order and will work with the Council and the Town throughout the construction of the KEC to ensure adequate and appropriate traffic controls and public safety measures are in place for road construction along Lake Road. NTE disagrees that non-compliance should result in shut-down of KEC construction activities; rather, should an issue arise, NTE and the Town would determine the specific cause and immediately agree on measures to address the particular issue of concern. Therefore, NTE appeals only this limited portion of the PZC order. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 236)

The Town did not initially accept NTE's response and waive its right to shut down the work activities until corrective measures are implemented and protect the safety of its residents. (Town 1, p. 17)

Upon further discussion with the Town, NTE notes that it would work with the Town to address road concerns. NTE also agreed that the Town has the right to shut down road construction, but not construction of the entire KEC project. NTE notes that a protocol would be in place in the event of an unsafe condition. NTE would be given a certain amount of time address the condition. If NTE does not rectify the issue within the timeline, the Town would have the right to shut down only the unsafe portion of the project. (Tr. 4, pp. 68-69, 101-103)

220. The Town requests that the road widening of Lake Road is completed prior to the commencement of site construction activities. Also, owner/applicant must provide the Town with a plan on how they are going to acquire the property in order to complete the widening of Lake Road.

NTE finds this order acceptable in part and appeals the order in part. Lake Road widening and property acquisition plans would be developed and submitted to the Town for review prior to the commencement of any road widening improvements. Other site construction activities may commence prior to the approval of the Lake Road widening plans. Reconstruction of the roadway would likely be completed early in the construction process, but would not need to occur "prior to the commencement of site construction activities." Therefore, NTE appeals only this limited portion of the PZC order. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 237)

The Town did not initially accept NTE's response and would require that road widening be implemented prior to construction to protect the safety of its residents. (Town 1, p. 18)

Following its April 24, 2019 meeting with NTE, the Town agreed to allow NTE to proceed with construction on the project site prior to completion of the Lake Road improvements. (Tr. 4, pp. 64-70, 91-107)

221. The Town requests bonding to ensure that all road work is constructed and completed properly and on time.

NTE finds this order acceptable. NTE will comply with all bonding requirements for the Lake Road improvements. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 238)

The Town recognizes that NTE is committed to complying with the conditions, and future actions and submissions would be required to comply with this MORR. (Town 1, p. 18)

Pre-Construction and Construction

222. The Town requests that a copy of any construction sequencing and management plan include, but not be limited to, detailed project schedules for all work activities with weekly work plans, lay down areas, worker numbers, worker parking, traffic management, delivery routes, and coordination with local authorities regarding any potentially disruptive deliveries. The Town requests that it receive a copy of said construction sequencing and management plan, and that said plan shall be delivered in a prompt and timely manner, including any changes thereto.

NTE finds this order acceptable. NTE will comply with this order and fully expects that the described construction sequencing and management plan will be required as a part of the Council's D&M Plan. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 239)

The Town recognizes that NTE is committed to complying with the conditions, and future actions and submissions would be required to comply with this MORR. (Town 1, p. 18)

223. The PZC requests that a pre-construction meeting with key town staff (Engineering Department/Planning & Development/ Building Office/Fire Marshal) is required no less than eight weeks in advance of any proposed construction commencement including initial site clearing and preparation.

NTE finds this order acceptable. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 240)

The Town recognizes that NTE is committed to complying with the conditions, and future actions would be required to comply with this MORR. (Town 1, p. 19)

224. The PZC requests that notification be provided to the Town and key Town staff, e.g. Engineering Department/Planning & Development/Building Office/Fire Marshal, no less than three weeks in advance of:

- a) Commencement of facility construction;
- b) Commencement of facility testing;
- c) Commencement of commercial operation;
- d) Commencement of any routine maintenance which generates loud or unusual noises; and
- e) Permanent termination of any operation of the project.

NTE finds this order acceptable. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 241)

The Town recognizes that NTE is committed to complying with the conditions, and future actions and submissions would be required to comply with this MORR. (Town 1, p. 19)

225. The PZC requests that notification be provided to the Town of any unscheduled maintenance which generates loud or unusual noises shall be made as soon as the need is apparent.

NTE finds this order acceptable. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 242)

The Town recognizes that NTE is committed to complying with the conditions, and future actions would be required to comply with this MORR. (Town 1, p. 19)

226. The Town requests copies of any required construction reports submitted to the Council that are part of the Council's regulations and restrictions, including but not limited to, quarterly progress reports, starting with the commencement of construction and ending with the commencement of commercial operation.

NTE finds this order acceptable. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 243)

The Town recognizes that NTE is committed to complying with the conditions, and future actions and submissions would be required to comply with this MORR. (Town 1, p. 20)

227. The PZC requests that the Town and key town staff, e.g. Engineering/Planning & Development/Building Office/Fire Marshal shall receive copies, notices and the opportunity to review any other applications, petitions or amendments that may be required in conjunction with this project and/or necessary for its interconnection into the public water supply lines, the electrical transmission grid and/or fuel pipeline, or any other related activity.

NTE finds this order acceptable. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 244)

The Town recognizes that NTE is committed to complying with the conditions, and future actions and submissions would be required to comply with this MORR. (Town 1, p. 20)

228. The Town requests that an independent third party engineering/environmental professional be hired by the Town to act as its representative, paid for by the owner/applicant, to be on site every day during the construction period to verify that all proper procedures, regulation, restrictions, etc. on the federal, state and local level are being met and followed by the owner /applicant and its representatives. The third party (town representative) shall have the authority to direct the contractor to cure deficiencies in workmanship, including requiring additional sedimentation and erosion control measures and dust control. If deficiency is not cured, the Town shall have the authority to shut down the project until the deficiencies are cured.

NTE finds this order acceptable in part and appeals this order in part. NTE does not object to the request that the project hire a third party engineering/environmental professional to monitor construction activity. NTE would look to the Council to provide the scope of work to be performed and inspection frequency by a third-party professional. NTE appeals that limited portion of the order that attempts to dictate the need for daily site inspections. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 245)

The Town notes that the frequency of inspections needs to be driven by work activities being performed. There is no way to predict in advance the necessary inspection frequency, and therefore, the Town needs to be provided funding to ensure that daily inspection can be performed as the work may dictate. (Town 1, p. 20)

However, in consultation with the Town, NTE notes that a protocol would be in place in the event of an unsafe condition. NTE would be given a certain amount of time to address the condition. If NTE does not rectify the issue within the timeline, the Town would have the right to shut down only the unsafe portion of the project. (Tr. 4, pp. 101-102)

NTE (or through its contractor) agrees to apply to the Town for the required building permits for the buildings and structures at an appropriate time in the construction sequence. NTE also agrees that the Town would be responsible for conducting inspections on the work for which it issued the building permits, and the inspections would occur per the schedule that has been set forth between NTE and the Town. Furthermore, NTE would reimburse the Town for the cost of such inspections. (Tr. 4, p. 103)

229. The PZC requests that the entire site during the construction phase and after shall be surrounded by security fencing, and said security fencing shall be gated at night to protect the public.

NTE finds this order acceptable. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 246)

The Town recognizes that NTE is committed to complying with the conditions, and future actions and submissions would be required to comply with this MORR. (Town 1, p. 21)

Oil Storage Tank

230. The PZC requests that NTE eliminate the oil storage tank spill containment berm and change the welded steel tank design to a double wall or "tank-in-a-tank" design. The bottom of the tank shall have a double floor with interstitial leak detection monitoring. The tank bottom shall have an engineered cathodic protection system. Exterior tank coating shall be a neutral beige/tan color to be selected by the Town Engineering Department. The welded steel tank shall be designed and constructed in accordance with API Standards and shall comply with seismic design standards. Hydrostatic and leak testing and inspection shall be under the direction of a competent third party licensed professional engineer. Underground fuel piping shall be double walled with interstitial leak detection sensing. The fuel unloading area shall be designed and constructed with spill containment suitable to handle the largest tanker capacity used to offload fuel to the storage tank and shall conform to 40 C.F.R. §112. A Spill Prevention, Control and Countermeasures Plan and Facilities Response Plan conforming to 40 C.F.R. §112 shall be prepared and implemented. The operator shall and facility personnel shall receive and keep updated all of their required spill response training and shall retain the services of an on-call Connecticut licensed spill response contractor to assist with large spills throughout the lifetime of the power generating plant.

NTE finds this order acceptable. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 247)

The Town recognizes that NTE is committed to complying with the conditions, and future actions and submissions would be required to comply with this MORR. (Town 1, p. 4)

Storm Drainage

231. PZC defers to IWWC on storm drainage and also refers to the TRC Report.

NTE refers to its responses to IWWC orders noted above. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 248)

Refer to the updated responses to NTE's responses and comments to IWWC. (Town 1, p. 21)

232. The Town also requests that the owner/applicant be held to the standards listed in the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control* and the *2004 Connecticut Stormwater Quality Manual*.

NTE finds this order acceptable. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 249)

The Town recognizes that NTE is committed to complying with the conditions, and future actions and submissions would be required to comply with this MORR. (Town 1, p. 22)

Pedestrian and Vehicular Access

233. The PZC requests that the owner/applicant provide safe and secure pedestrian access to and from the employee parking lot and the main construction site.

NTE finds this order acceptable. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 250)

The Town recognizes that NTE is committed to complying with the conditions, and future actions would be required to comply with this MORR. (Town 1, p. 22)

234. The PZC requests that, at all times (pre-construction, construction, and post construction), the owner/applicant make sure that there is an ingress and egress available to emergency services vehicles.

NTE finds this order acceptable. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 251)

The Town recognizes that NTE is committed to complying with the conditions, and future actions would be required to comply with this MORR. (Town 1, p. 22)

235. The PZC notes that no permanent access is shown on any plans with regard to the switchyard if the switchyard stays on the southern side of Lake Road. This is a concern for public health, safety, and general welfare.

NTE notes that the permanent access to the switchyard site is shown on the original site plan included as a part of NTE's Application on Figure 2-8. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 252)

The Town accepts the response by NTE, and no further action would be required to comply with this MORR. (Town 1, p. 23)

Noise Abatement

236. The State of Connecticut noise standard and the Town noise ordinance defines ambient/background sound as the L₉₀ (not L_{EQ}) standard. Noise analysis and background noise levels shall be rerun using this standard for compliance. The standard also has a numerical definition for prominent discrete tones that shall also be included in the report. If a prominent discrete tone sound is generated by the project, then the allowable 51 dBA limit is reduced by 5 dBA.

NTE appeals this order. The Connecticut noise regulations and the Town noise ordinance identify the L₉₀ to characterize background noise; however, background noise is not used to determine compliance unless measured levels are in excess of the standards, which is referred to as 'high-background noise'. If measured levels are in excess of the standards (51 dBA), a sound source is not permitted to exceed the background noise level by 5 dBA. The measured L₉₀ values presented in Section 7.4 of the CSC Application are well below the most stringent 51 dBA standard; therefore, the area surrounding the KEC Site is not considered to have high-background noise and the absolute standards apply. KEC meets the most stringent 51 dBA sound level limit applicable at the property boundaries. Additionally, no discrete tones are

expected to be associated with normal operation of the KEC. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 253)

The Town accepts the response by NTE, and no further action would be required to comply with this MORR. (Town 1, p. 23)

NTE further notes that discrete tones would not be an issue during construction. (Tr. 4, p. 71)

237. The PZC requests that the noise modeling results be presented for discrete residential location property lines to show if compliance with the noise standards is achieved because the ambient measurement locations are not necessarily at the actual residences. The standards apply at the residential property lines.

NTE appeals this order. The Connecticut noise regulations and the Town noise ordinance identify the point of compliance as the property boundary. The analysis completed for the KEC includes modeling results at discrete locations that confirm compliance at the property boundary; therefore, normal operation of the KEC will be in compliance with state and local noise standards. The isopleth map, provided in Figure 7-5 of the CSC Application and in the Updated Acoustic Modeling Analysis, illustrates the level of sound resulting from KEC's normal operation in areas surrounding the KEC Site. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 254)

The Town accepts the response by NTE, and no further action would be required to comply with this MORR. (Town 1, p. 24)

238. The PZC notes that there is no analysis in the application of the potential impact that the modeled operational sound levels may result in non-conformance with noise standards. The PZC requests that the analysis be expanded to show the modeled project sound levels at discrete residential locations, the measured late night ambient L_{90} (not L_{EQ}) sound levels, and what increases over ambient are expected at night. Showing compliance with the regulatory limits is required, but simply meeting a limit does not necessarily mean that no impacts will occur. A basis or rationale for determining if the expected project noise levels and/or the increase over ambient conditions are significant shall also be provided.

NTE appeals this order. Normal operation of the KEC has been demonstrated to comply with applicable state and local standards, which do not require comparison to ambient conditions unless a project setting is identified as a high-background noise area (as outlined in Section 22a-69-3.6 of the Connecticut noise regulations). As noted above, the area surrounding the KEC Site is not considered a high-background noise area. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 255)

The Town accepts the response by NTE, and no further action would be required to comply with this MORR. (Town 1, p. 24)

239. A statement is made that there would not be a perceptible change in sound at locations near Alexander Lake, yet, there is no analysis of this within the report. Further, no ambient measurements were conducted near Alexander Lake to support this assertion. NTE indicates the noise contours show Project levels of 27 dBA or lower, and that the lowest nighttime sound measured anywhere was 26 dBA. However, the contours provided by NTE clearly show Project levels of greater than 30 dBA at Alexander Lake. The PZC believes that increased levels of 3 dBA or more are considered perceptible and applicant's data therefore indicates a perceptible change.

NTE appeals this order. Modeled sound levels near Alexander Lake show decibel values ranging from the mid-20s to the low-30s dBA in the Application (Figure 7-5) and even lower levels for more of the Alexander Lake area in the Updated Noise Modeling, which reflects the layout refinements and the effect of intervening structures. KEC has demonstrated compliance with the stringent 51 dBA limit applicable at the property boundaries and sound levels at Alexander Lake are well below that limit. Imperceptibility or inaudibility under all operating conditions is not required by the Town or the State of Connecticut, and is an unrealistic expectation for this Project or any other industrial or commercial activity. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 256)

The Town accepts the response by NTE, and no further action would be required to comply with this MORR. (Town 1, p. 25)

240. The PZC notes that construction may occur 7 days per week, and that construction could last for 3 years. The PZC requests that some numerical analysis of construction noise levels be provided to support NTE's assertion that no adverse or long-term impacts will occur.

NTE appeals this order. Both the State and local noise requirements list construction, including loud noises such as blasting, as exceptions to the requirements, if created during daytime hours. NTE has committed to restricting particularly loud construction activities (i.e., blasting, steam blows) to daytime hours. Although a numerical analysis could be conducted, it could only employ assumptions based on the anticipated range of activities during certain phases of construction, which would vary depending on construction progress and would not be particularly meaningful. NTE would establish a procedure prior to the start of construction to address the handling of construction noise-related complaints. NTE also notes construction work would typically occur five days per week. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 257)

The Town recognizes that NTE is committed to complying with the conditions, and future actions and submissions would be required to comply with this MORR. (Town 1, p. 25)

241. The PZC requests that the owner/applicant shall provide to the Town's staff (e.g. Engineering Department/Planning Department) the name and number of the owner/applicant's key personnel to contact that can resolve an issue the Town may have with noise.

NTE finds this order acceptable. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 258)

The Town recognizes that NTE is committed to complying with the conditions, and future submission would be required to comply with this MORR. (Town 1, p. 25)

242. The PZC requests that the owner/applicant provide notification to the Town's staff (e.g. Engineering/Planning & Development/ Building Office/ Fire Marshal) if there is going to be noise for an extensive period of time so the public may be notified.

NTE finds this order acceptable. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 259)

The Town recognizes that NTE is committed to complying with the conditions, and future actions and submission would be required to comply with this MORR. (Town 1, p. 25)

243. In the event that a noise abatement issue cannot be resolved, in the Town's sole discretion in a timely and effective manner; the Town shall follow and enforce its existing noise ordinance found in its Code of Ordinances Chapter 12.5 (Planning and Development) Article VI (Noise Ordinance, Sections 12.5-120, et. seq., and as may be amended.

NTE finds this order acceptable. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 260)

The Town recognizes that NTE is committed to complying with the conditions, and future actions and submissions would be required to comply with this MORR. (Town 1, p. 26)

Other Pollution or Related Issues

244. The PZC requests that the Council review and consider additional analysis regarding the-effect of air emissions on nearby sensitive receptors. The additional analysis should include an evaluation through the DPH on the effect that air emission from the plant will have on the incidence(s) of asthma and other respiratory ailments in the Town of Killingly and surrounding communities. The Town of Killingly is concerned with the effects upon young children and the elderly, as there are schools and elderly care facilities all located within an approximately a 2.00 / 3.00 mile radius of the proposed site development. The PZC refers the Council to the following Center for Disease Control and Prevention (CDC) and DPH sources:
- a) <https://www.cdc.gov/air/pollutants.htm>; and
 - b) <http://www.ct.gov/dph/cwp/view.asp?a=3137&q=398480>.

NTE appeals this order. KEC has been designed to comply with the National Ambient Air Quality Standards (NAAQS), which have been established by the U.S. Environmental Protection Agency (EPA) to protect the most sensitive populations, such as children, elderly, and individuals suffering from respiratory disease. These and other air quality requirements are addressed in NTE's pending air permit application now undergoing DEEP review. Additionally, operation of the KEC will displace older, less-efficient generating units, improving the air quality of the surrounding area. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 261)

The Town recognizes that NTE has obtained the required air permit from DEEP to construct the facility in its current configuration. While the Town has no regulatory authority to require the requested analysis, the Town had initially requested that NTE perform an analysis to allay the concerns of its residents that may be affected by air emissions from the proposed facility. (Town 1, p. 26)

Following the April 24, 2019 meeting between NTE and the Town, and under the terms of the CEBA, NTE would be providing an annual payment to the asthma respiratory illness assistance fund to provide funding for unreimbursed medical costs associated with asthma and respiratory illnesses and to fund asthma research. (Tr. 4, pp. 103-104)

245. For the emergency generator and fire pump respectively. Tier II and Tier III emission standards are proposed. These comply with New Source Performance Standards (NSPS) IIII. But for Best Available Control Technology (BACT), one must consider available and innovative technologies. The PZC believes that it is reasonable to reject Tier IV engines, which would typically use selective catalytic reduction (SCR). But there are Tier III (less polluting) engines widely available at the rating specified for the emergency generator.

NTE appeals this order. No Tier III standards have been promulgated for engines greater than 560 kilowatt (kW), and the emergency generator proposed for KEC is 1,500 kW. KEC's proposed fire pump engine (228 kW) meets the Tier III standard. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 262)

The Town recognizes that NTE has obtained the required permit from DEEP to construct the facility in its current configuration. The Town accepts the response by NTE, and no further action would be required to comply with this MORR. (Town 1, p. 27)

246. The PZC notes that air emission for formaldehyde from the combustion turbine generator (CTG) are based upon the Maximum Achievable Control Technology (MACT) floor emission rate determined by EPA for the National Emission Standard for Hazardous Air Pollutants (NESHAP) Subpart YYYYY, as representative for a CTG equipped with DLN combustors and an oxidation catalyst, Subpart YYYYY applies to major sources of Hazard Air Pollutants (HAPs). The project is an area source. Subpart YYYYY does not apply to duct burners. The application should either use vendor data for formaldehyde emissions, or use AP42 emission factors.

NTE appeals this order. AP-42 emission factors are based upon emissions testing conducted more than 20 years ago on uncontrolled and now-obsolete combustion turbine generators (CTGs), and are inappropriate to apply to the unit proposed for the KEC facility, which is a new state-of-the-art CTG equipped with dry low nitrogen oxide (NOx) combustors and an oxidation catalyst. EPA's MACT Floor evaluation involved extensive testing of similar state-of-the-art CTGs equipped with similar emission controls. As a result, NTE believes the Subpart YYYYY values represent the most applicable formaldehyde emission factor for the KEC CTG. The formaldehyde emission rates used by KEC are identical to the limits approved by DEEP as BACT in the most recent combined cycle turbine project in Connecticut (Towantic Energy), as well as those proposed in the most recent application currently before the DEEP (Bridgeport Harbor). NTE also notes that the Subpart YYYYY regulation actually does not apply to major sources of HAP; rather, it applies to a CTG located at a major source of HAP, as determined by potential emissions from the entire facility, not just from the CTG. (See 40 CFR 63.6085.) KEC is not a major source of HAP, and therefore it is correct that Subpart YYYYY does not apply to the KEC CTG. However, Subpart YYYYY remains relevant as setting forth up-to-date and representative emission factors for the KEC CTG. Also, although duct burners are not directly covered under Subpart YYYYY, in cases such as this where such equipment would be integral and difficult to separately monitor, it is common practice to incorporate duct burner emissions into the CTG emission figures. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 263)

The Town recognizes that NTE has obtained the required air permit from DEEP to construct the facility in its current configuration. The Town accepts the response by NTE, and no further action would be required to comply with this MORR. (Town 1, p. 28)

247. The Town requests that it be given the opportunity to review Air Permit conditions imposed by DEEP, and if there are changes to the plant design and operation, the Town requests that it be given sufficient time to review and respond.

NTE finds the order acceptable. While outside the scope of the Council's authority, the Town currently has reviewed and will continue to have the opportunity to review and comment on the NTE Air Permit application now being reviewed by DEEP. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 264)

The Town recognizes that NTE has obtained the required permit from DEEP to construct the facility in its current configuration. The Town accepts the response from NTE, and no further action would be required to comply with this MORR. (Town 1, p. 28)

Erosion and Sediment and Dust Control

248. The PZC requests that phasing and details of the grading activities be provided, with additional E&S control information shown for each phase on the drawings. Locations for soil, topsoil and rock stockpiles shall be provided, with appropriate means to control erosion and sedimentation. Location for the placement of rock crushing and screening operations shall be shown along with appropriate means of E&S Control. Total quantities of estimated earth excavation, rock excavation and fill volumes shall be provided. Any soil material brought to the site and used on the project shall be tested at a frequency of 1 sample per 1000 cubic yards for all constituents to determine compliance with the DEEP standards for Residential Direct Exposure and GA Pollutant Mobility Criteria.

NTE finds the order acceptable. Should the project be approved by the Council, NTE will prepare and submit a detailed phasing and construction sequencing plan in conjunction with registration under the DEEP General Permit for the Discharge of Stormwater Associated with Construction Activities. This registration will be prepared by a licensed professional engineer and will require a 3rd party review by a second licensed professional engineer prior to submittal to the DEEP. NTE expects approximately 220,000 cubic yards of material to be relocated on site, resulting in a balanced cut and fill. As described in Section 3.2.1 of the Application (Volume I), the intent of the grading plan is to minimize the total net import or export of material to or from the site. Limited quantities of structural fill may need to be brought to the site if adequate material is not present. Imported soils will be subject to appropriate testing. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 265)

The Town recognizes that NTE is committed to complying with the conditions, and future actions and submissions would be required to comply with this MORR. (Town 1, p. 29)

249. The PZC requests that the temporary sediment basins be added upgradient of Wetland A1 and A3 and shall be properly sized in accordance with the Connecticut Water Quality Manual.

NTE finds this order acceptable and notes that change in the Revised SWPPP and Updated E&S Plan. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 266)

The Town accepts the changes already made by NTE, the more recent changes to the site drawings revised to 01/17/2019 as part of the Exhibit 3, and the revised Stormwater Pollution Prevention contained in Exhibit 3. The Town recognizes that NTE has committed to complying with the other conditions, and future actions and submissions would be required to comply with this MORR. (Town 1, p. 29)

250. The General Permit for Stormwater for Construction Activities requires that, for site disturbances of 15 acres or more, the SWPPP and stormwater system design must be reviewed and certified by a third-party independent Connecticut Licensed Professional Engineer not connected to the project; thus, the PZC requests that this be a condition of approval.

NTE finds this order acceptable. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 267)

The Town recognizes that NTE is committed to complying with the conditions, and future actions and submissions would be required to comply with this MORR. (Town 1, p. 29)

251. The PZC requests that a detailed plan for dust control and management for site grading and on-site soil/rock processing be required. Significant volumes of water will be required to prevent fugitive dust and tracking onto Lake Road. Provisions for water supply, water tanker, sprinklers and equipment water sprays shall be provided and in place before site work begins.

NTE finds this order acceptable. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 268)

The Town recognizes that NTE is committed to complying with the conditions, and future actions and submissions would be required to comply with this MORR. (Town 1, p. 30)

252. The Town requests that the Applicant become familiar with the Town's Earth Filling and Excavation Regulations (Section 560 - Town Zoning Regulations), and that the Applicant follow said regulations as a requirement. The PZC requests that the Applicant provide the Commission with the detailed plan for dust control and management as noted above.

NTE finds this order acceptable. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 269)

The Town recognizes that NTE is committed to complying with the conditions, and future actions and submissions would be required to comply with this MORR. (Town 1, p. 30)

Site Plan Conditions/Grading

253. The Town requests that within the main plant parcel, the owner/applicant shall move the limits of all grading activities, clearing and disturbance a minimum of 75 feet from all wetland boundaries and maintain the tree canopy in this zone.

NTE finds this order acceptable in part and appeals this order in part. See NTE's response to IWWC in FOF #195 above. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 270)

The Town accepts the changes already made by NTE and the more recent changes to grading and wetland/disturbance separation contained in the site drawings revised to 01/17/2019 as part of Exhibit 3. No further action would be required to comply with this MORR. (Town 1, p. 30)

254. The Town requests that the location of the administration building, compressor station, main plant facility, tanks and other site features shall be moved to accomplish the required separation.

NTE finds this order acceptable in part and appeals this order in part. See NTE's response to IWWC in FOF #195 above. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 271)

The Town accepts the changes already made by NTE and the more recent changes to the grading and wetland/disturbance separation contained in the site drawings revised to 01/17/2019 as part of Exhibit 3. No further action would be required to comply with this MORR. (Town 1, p. 31)

255. The Town requests that slopes should be no greater than two horizontal to one vertical and have turf established to stabilize the surface from erosion. The Town requests that erosion netting or turf reinforcing mat be used on all slopes equal to or steeper than three horizontal to one vertical along the north side of the site along the wetlands, if the Council allows the slopes to be greater than 2:1.

NTE finds this order acceptable in part and appeals this order in part. See NTE's response to IWWC in FOF #195 above. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 272)

The Town accepts the changes already made by NTE and the more recent changes to grading and wetland/disturbance separation contained in the site drawings revised to 01/17/2019 as part of Exhibit 3. No further action would be required to comply with this MORR. (Town 1, p. 31)

Landscaping

256. The Town requests that NTE provide a complete landscaping plan for the main plant site and the switchyard site prepared by a licensed landscape architect. The Town requests that the plan be submitted to the PZC for review and approval. The plan shall provide adequate tree and shrub plantings to provide an effective visual screen from Lake Road and the residential property abutting on the west. Areas of the site disturbed by site grading activities that are not part of the active facility shall be replanted with trees to reestablish wooded/ forested coverage. There must be enough soil (12" - 18" of combined top spoil and sub soil) to sustain such forested coverage.

NTE finds this order acceptable. The revised grading plan and elimination of the fuel tank berm will allow the project to maintain greater vegetated buffers along the western property boundary. Where possible, existing vegetation along Lake Road and the western boundary will also be maintained. Where grading requires removal of vegetation in areas that are not part of the active facility, forested coverage will be re-established to provide visual screening. A landscaping/planting plan will be prepared and presented as a part of the D&M Plan for review by the Town and approval by the Council. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 273)

The Town accepts the changes already made by NTE and the more recent changes to grading and layout contained in the site drawings revised to 01/17/2019 as part of Exhibit 3. The Town recognizes that NTE is committed to complying with the conditions, and future actions and submissions would be required to comply with this MORR. (Town 1, pp. 31-32)

257. The Town requests that buffers be doubled within certain areas of the site, where possible to limit the impact upon the surrounding residential area.

NTE finds this order acceptable in part and appeals this order in part. NTE will attempt, where possible, to maintain existing vegetation along the perimeter of the KEC site and increase the size of that buffer nearest the adjacent residential neighbors. NTE cannot commit, at this point, to the "doubling" of these buffers and therefore appeals this portion of the PZC order. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 274)

The Town accepts the changes already made by NTE and the more recent changes to grading and layout contained in the site drawings revised to 01/17/2019 as part of Exhibit 3. No further action would be required to comply with this MORR. (Town 1, p. 32)

258. The Town requests that the owner/applicant comply with the necessary lighting to adhere to the Town's Dark Sky regulations found in the Town Subdivision Regulations Article IV Section 17 Lighting - "Outdoor lighting...shall be designed to provide the minimum lighting necessary to ensure adequate safety, night vision, and comfort, and shall not create or cause excessive glare on adjacent properties and public street rights-of-way. Streetlights shall be avoided in subdivisions located in rural areas of Town."

NTE finds this order acceptable. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 275)

The Town recognizes that NTE is committed to complying with the conditions, and future actions and submissions would be required to comply with this MORR. (Town 1, p. 32)

Neighborhood Impact

259. Should the Council find that factors and reasons for not moving the switchyard override the PZC's preference for the move, the PZC requests that the owner/applicant do research in the graveyard area, outside of the stone walls to verify that the switchyard will not interfere with any possible grave sites located outside of the stone walls.

NTE finds this order acceptable. NTE will comply with this order by working with the SHPO to identify appropriate measures in areas where the 50-foot buffer recommended by the SHPO cannot be maintained. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 276)

The Town recognizes that NTE is committed to complying with the conditions, and future actions and submissions would be required to comply with this MORR. (Town 1, p. 33)

Architectural and Aesthetic Impact

260. The PZC requests that, where it can be accomplished, buffer zones be doubled. Where buffer zones cannot be doubled, PZC requests that they be maximized and that plantings/landscaping are put in place that buffers KEC from the surrounding area.

NTE finds this order acceptable in part and appeals this order in part. NTE will attempt, where possible to maintain existing vegetation along the perimeter of the KEC site and increase the size of that buffer nearest the adjacent residential neighbors. NTE cannot commit, at this point to the "doubling" of these buffers and therefore appeals this portion of the PZC order. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 277)

The Town accepts the changes already made by NTE and the more recent changes to grading and layout contained in the site drawings revised to 01/17/2019 as part of Exhibit 3. No further action would be required to comply with this MORR. (Town 1, p. 33)

261. The PZC would like the total project to be on one parcel of real estate.

NTE appeals this order. See NTE's Response in FOF #213 above. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 278)

The Town accepts the changes already made by NTE and the more recent changes to grading and layout contained in the site drawings revised to 01/17/2019 as part of Exhibit 3. No further action would be required to comply with this MORR. (Town 1, p. 33)

Zoning Regulations

262. The PZC requests that the owner/applicant be aware of other Town Zoning Regulations that apply to this project and should be followed:

- a) Section 450, *et seq.* - Dimensional Regulations;
- b) Section 470, *et seq.* - Site Plan Review;
- c) Section 560, *et seq.* - Earth Filling & Excavation;
- d) Section 700, *et seq.* - Special Permits; and
- e) Section 790 –Bonding.

NTE finds this order acceptable. NTE is familiar with the identified provisions of the Town Zoning Regulations. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 279)

The Town recognizes that NTE is committed to complying with the conditions, and future actions and submissions would be required to comply with this MORR. (Town 1, p. 34)

Additional Orders of Regulation & Restriction

263. On April 11, 2019, the Town included Additional Orders of Regulation and Restriction as noted below.

- a) Based on Exhibit 3, dated January 19, 2019, the NTE site drawings and noise analysis proposed modifications to the site plan. Specifically, property line noise barriers have been added that were not part of the original filing by NTE to the Council. Such noise barriers are listed below.
 - i. Two noise barriers have been positioned along the southwestern property line. One of them would be approximately 430 feet long with a height of approximately 28 feet for a distance of 314 feet, transitioning to a height of 24 feet for 116 feet; and
 - ii. The second barrier would be approximately 16 feet high and approximately 122 feet long.

The locations of the noise barriers are illustrated in the latest site layout. Both of the barriers would be about 50 feet from the property boundary. Exhibit 3 does not provide any alternative designs to address noise attenuation at the source areas and eliminate the need for the barriers. In the absence of alternative evaluation, the Town orders that a full, independent and complete alternative evaluation be performed by a qualified noise expert to determine alternative approaches to noise attenuation and either eliminate the need for the property perimeter noise barriers or minimize the height and length of barriers required to comply with the Killingly and state noise regulations. Structural plans for the noise barrier would need to be submitted to the Town as well. In light of the fact that the barriers were not proposed in the original submission, an explanation of what has changed to warrant this significant modification to the design is a requirement. (Town 1, p. 34)

NTE agreed to comply with this additional order. NTE's engineering, procurement and construction (EPC) contractor is currently in the process of finishing the design. Such contractor would guarantee noise ordinance compliance, but may come up with a different noise abatement plan than previously developed. NTE would go over the noise control design alternatives with the Town and indicate what NTE considers to be the best approach before filing the final plan in the D&M Plan. NTE also notes that their EPC contractor would provide a guarantee that the proposed project would meet the state and local noise control standards. (Tr. 4, pp. 69-70, 104-106)

Permits and Approvals

United States Army Corps of Engineers (ACOE)

264. NTE anticipates that the ACOE would likely find the wetland impacts to be eligible for a preconstruction notification rather than an individual permit. (Tr. 1, p. 26)

Connecticut Department of Energy and Environmental Protection (DEEP)

265. NTE was issued its initial air permit from DEEP on June 30, 2017. On March 16, 2018, DEEP issued a modified air permit for a 550 MW facility with a Mitsubishi CTG. On December 10, 2018, NTE received its latest modified permit for KEC, taking into account the proposed 650 MW facility with a Mitsubishi M501JAC CTG, duct burner and other equipment. (NTE 1c – EOSPCC, pp. 16-18 and Appendix A – Current Air Permits; NTE 1a, p. 3)
266. NTE anticipates that the proposed project would qualify under DEEP's Section 401 Water Quality Certification General Permit. (Tr. 1, p. 26)
267. Pursuant to CGS §22a-430b, DEEP retains final jurisdiction over stormwater management. NTE would need to obtain a General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (Construction General Permit), and General Permit for the Discharge of Stormwater Associated with Industrial Activities. Specifically, NTE would file for the Construction General Permit at least 90 days prior to construction. (Tr. 1, p. 25; CGS §22a-430b)
268. NTE's Wastewater Discharge Permit for discharge to sanitary sewer would be issued prior to discharge. The application has been filed and is currently under review. (Tr. 1, p. 25-26; Tr. 3, p. 88; Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact #290)
269. NTE's NDDB review by DEEP included an initial consultation that was completed on March 18, 2016. The recommended studies were also completed. On February 19, 2019, NTE filed with DEEP for an updated NDDB review and included its proposed avoidance measures and habitat creation plans. By letter dated March 11, 2019, DEEP indicated that it concurs with the proposed avoidance measures and habitat creation plans. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact #292; NTE 4, response 36, Attachment 5)

Connecticut Department of Transportation (DOT)

270. Since the Project does not have direct access to a State highway, and no off-site roadway improvements would be required to offset the impact of site related traffic, an encroachment permit is not expected to be required. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 293)

U.S. Fish & Wildlife Service

271. The U.S. Fish & Wildlife Service (USFWS) approved a bat monitoring work plan on May 11, 2016 and confirmed that no other studies would be required. On September 27, 2016, USFWS confirmed that it had reviewed the monitoring report and has no questions or comments. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 294)

Federal Aviation Administration (FAA)

272. By letter dated March 25, 2019, the Federal Aviation Administration (FAA) issued a Determination of No Hazard to Air Navigation (No Hazard Determination) for the 150-foot HRSG stack. The No Hazard Determination expires on September 25, 2020 unless construction commences or it is extended/revised by the FAA. (NTE 6)
273. According to the No Hazard Determination, marking and lighting of the HRSG stack is not required for aviation safety, but could be performed on a voluntary basis. NTE does not plan to mark or light the HRSG stack in order to reduce the visual impact of the stack on surrounding areas. (NTE 6; Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 296)
274. Per the No Hazard Determination, FAA requires that NTE file Notice of Actual Construction or Alteration within five days after the construction reaches its greatest height. NTE would provide such notice to FAA as required. (NTE 6; Tr. 1, p. 28)
275. It is not necessary for NTE to seek FAA determinations of no hazard to air navigation for other proposed structures on the site. The single No Hazard Determination letter for the HRSG stack is sufficient because it is the tallest structure. Notwithstanding, NTE would likely seek FAA approval for construction cranes that would be taller. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 298; Tr. 1, pp. 28-29)
276. The proposed HRSG stack would be located approximately 2.9 miles (or 2.6 nautical miles) north-northwest of Danielson Airport and not aligned with the nearest runway. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 299; NTE 4, response 42)

Fuel

Natural Gas

277. Natural gas would be supplied via a new Yankee Gas natural gas pipeline lateral interconnected to one of the two nearby Algonquin Gas Transmission (AGT) pipelines. The AGT pipelines are located approximately two miles to the north of KEC and generally travel in a northeast/southwest direction. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 300)
278. NTE has a contract for year-round firm natural gas delivery for KEC. The contract is for seven years, beginning in 2022, which aligns with KEC's CSO. The gas contract also has a provision for a 7-year extension to the initial term. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 301; NTE 4, response 26)

279. KEC's firm natural gas transport contract would provide up to 110,000 million Btus (MMBtus) of natural gas per day*. This is sufficient to support KEC's operations at maximum output for a 24-hour period.

*This is equivalent to approximately 103 million standard cubic feet per day.

(NTE 4, response 27; Tr. 1, p. 15; NTE 11, Late Filed Exhibit No. 3; Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 302)

280. Natural gas customers with interruptible service would have their service curtailed before consideration of curtailing service to a firm natural gas customer. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 303)
281. The only natural gas pipeline upgrade required for KEC is the approximately 2.8 miles of Yankee Gas pipeline connection to Algonquin. (Tr. 3, p. 236; NTE 1c – EOSPCC, p. 23; Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 194)
282. NTE's natural gas compressors would be located in the western portion of the proposed project footprint. (NTE 1c – EOSPCC, Figure 2, KEC Plot Plan)

Ultra-low Sulfur Distillate (ULSD)

283. Backup fuel would be required in order to meet capacity and delivery obligations to ISO-NE, as delivery obligations are not excused even in the event of curtailment of firm natural gas supply. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 306)
284. ISO-NE has instituted a “pay for performance” (PFP) component to the FCA construct to ensure capacity resources are available during periods of system stress (referred to as Capacity Scarcity Conditions) for a multitude of reasons, including but not limited to, fuel availability. The PFP is a two-settlement capacity market design that rewards capacity resources that make investments to successfully boost performance during periods of system stress. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact #307)
285. While KEC would be predominantly a natural gas-fired facility, the proposed KEC facility would also be able to burn ULSD as an alternative fuel to ensure reliability. KEC's ULSD backup would protect against forfeiting capacity revenues under PFP and also provide the necessary level of reliability to support ISO-NE's system as a result of winter reliability concerns, even though KEC would have a very reliable firm supply of natural gas fuel. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact #308)
286. NTE ULSD fuel use would be subject to a 720-hour annual limit based on its latest DEEP Air Permit. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 309; Tr. 1, p. 38; Tr. 3, pp. 102-103; Tr. 4, pp. 130-131)
287. Under the terms of its air permit, NTE would not be allowed to switch to ULSD (from natural gas) purely because it would be more economical to do so. (Tr. 3, pp. 39-40)
288. NTE projects that ULSD would be needed, on average, for very few hours per year based on historical force majeure or curtailments on the Algonquin pipeline. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 311)

289. Events that would require the use of ULSD are generally not known in advance. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 312)
290. In the event of a ULSD event in the summer, the MW output of KEC would be roughly 406 MW. This is lower than NTE’s summer CSO requirement of about 631 MW. NTE would have to cover the shortfall in the market or pay a penalty under such circumstances. (NTE 4, response 8; Tr. 4, pp. 109-110; Council Administrative Notice Item No. 46 – ISO-NE FCA#13 Filing to FERC dated February 28, 2019, Appendix A; Tr. 3, p. 141)
291. The maximum ULSD consumption rate of the plant, under full load conditions, would be approximately 23,000 gallons per hour. (NTE 11, Late Filed Exhibit No. 6)
292. On-site ULSD storage would be sufficient for approximately 43 hours while operating at full load and with no refueling. (NTE 11, Late Filed Exhibit No. 6)
293. NTE would require an average of three truck deliveries* per hour for the duration of the ULSD operation in order keep up with full load conditions. With continuous refueling deliveries, KEC could theoretically run on ULSD indefinitely, subject only to the hours limit in its air permit.
- *There would be three ULSD truck unloading stations, and individual trucks can unload in less than an hour (or roughly 40 minutes) Each truck could carry 7,700 gallons, so three trucks per hour would be about 23,100 gallons per hour.
- (NTE 11, Late Filed Exhibit No. 7; Tr. 1, p. 27; Tr. 3, p. 46-47)
294. The ULSD storage tank, truck unloading area, and associated pumping and piping facilities would be designed in accordance with all applicable regulatory standards, which include established standards for secondary containment to prevent leaks and spills from contaminating the environment. A bermed and lined spill containment design for the ULSD storage tank was originally proposed, but NTE has revised the ULSD storage tank to include a secondary steel containment around the tank. (Council Administrative Notice Item No. 57 – Docket No. 470, Findings of Fact #211 and #316)
295. NTE expects that, with proper maintenance, ULSD can be stored for up to three years. Initially, the inventory can be maintained with recirculation, water removal, and possible heating. The ULSD would be sampled and analyzed on a regular basis as required to determine if there has been any deterioration of the product and to help predict the remaining life. If the ULSD inventory is not consumed after approximately one year, NTE may consider treating the ULSD with a stabilizer or biocide, as necessary, to control growth of microbial bacteria. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 317)
296. Prior to reaching the end of its useful life, the ULSD inventory could either be sold back to the supplier or sold to a contractor who would resell it for other uses. Then, the ULSD tank would be replenished with fresh ULSD. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 318)

Project Construction

297. Site preparation would include, but not be limited to, flagging the limits of construction; installing an anti-tracking construction entrance; cutting trees within the defined clearing limits and removing cut wood; chipping brush, branches and small trees and stockpile chips for use on site for erosion and sedimentation controls (E&S Controls) and install E&S Controls. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 319)
298. On the 63-acre Generating Facility Property, approximately 24 acres of land (including construction laydown) would be disturbed, leaving approximately 39 acres or 62 percent of the area undisturbed. On the 10-acre Utility Switchyard Property, a total of approximately 4 acres would be disturbed, leaving 6 acres or 60 percent of the area undisturbed. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 320; NTE 4, response 16)
299. NTE estimates that there would be approximately 220,000 cubic yards of material relocated on site, resulting in balanced cut and fill. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 321; NTE 4, response 17)
300. Limited quantities of structural fill may be needed and brought to the site if such material is not present. It would be clean fill, and it would be tested for existing contaminants. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 322)
301. If the proposed project is approved, tree clearing and other site preparation activities would commence in early August 2019 and construction would take place over the following 31 months to achieve commercial operation in March 2022. According to NTE's CSO, the plant is required to achieve commercial operation no later than June 1, 2022. (NTE 1c – EOSPCC, p.14 and Figure 4 – Updated KEC Schedule; NTE 4, responses 21 and 30)

Facility Operation

302. The proposed KEC facility is expected to have a service life of at least 30 years. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 324; NTE 4, response 18a)
303. If the project is approved, according to the CEBA, NTE would provide a decommission plan in the Development and Management Plan, including plant infrastructure removal plans and site restoration plans. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 325; Tr. 1, p. 73)
304. KEC would operate as a baseload facility. KEC's load factor would be in the range of 65 to 80 percent. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 326; NTE 4, response 18b)
305. During normal operation, the power production from KEC may vary from approximately 47 percent load (or about 305 MW net) to 100 percent load (or about 650 MW net), depending on the ISO-NE electric system dispatch and ambient conditions. (NTE 4, response 18c)
306. Typically, combined-cycle facilities operate as baseload facilities early in their useful life and as intermediate facilities later in their useful life. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 328)

307. KEC would have an annual average full load net heat rate of approximately 6,500 Btu/kWh. The proposed combined cycle net efficiency would be about 53 percent while operating on natural gas and without duct firing. (NTE 4, responses 18d and 18e)
308. Duct firing would be operated during high demand periods and peak load conditions. Given the higher heat rate of duct firing capacity, it is only economically dispatched during periods of high electricity use or in response to a specific reliability request by ISO-NE. KEC's duct burner would only be designed to operate on natural gas, not ULSD. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 330)
309. The duct burner would have a capacity factor of approximately 30 percent for the first 5+ years of KEC operation. The duct burner itself has ramping ability when it is in use. (NTE 11, Late Filed Exhibit No. 4; Tr. 3, pp. 26-27)
310. KEC would have the ability to provide Connecticut and ISO-NE with a full range of essential reliability services including frequency response, voltage control, non-spinning reserves*, automatic generation control, fast ramping capability, and flexible operating modes (i.e. baseload, cycling and peaking generation).

*KEC would not provide spinning reserves.

(NTE 1b – Pre-filed Testimony of Paul Hibbard, p. 3; Tr. 1, p. 102)

311. The start-up times for the proposed KEC facility are listed below.

Parameter	Proposed KEC Facility (natural gas operation)	Proposed KEC Facility (ULSD operation)
Cold start-up time (minutes)	35	45
Hot start-up time (minutes)	35	45

(NTE 4, responses 18f and 18h)

312. The ramp rate for KEC would be approximately 29 MW per minute. (NTE 4, response 18h)
313. Black start capability is not proposed for KEC. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 333)

Fire Protection and Safety

314. KEC would be designed, constructed and operated in accordance with federal, state, and local regulations and responsible engineering practices, including the Occupational Safety and Health Administration (OSHA) standards. The latest edition of design standards and regulations would be used to develop KEC's programs. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 334)
315. Plans and provisions for cyber security protection would be implemented, consistent with the North American Electric Reliability Corporation (NERC). Plans and provisions for physical site security would be implemented consistent with the Council's Whitepaper on the Security of Siting Energy Facilities. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 335)

316. KEC would incorporate a variety of alarms and controls systems to provide early identification of emergency situations that may require plant and/or system shutdown. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 336)
317. KEC would have an on-site fire protection system consisting of hydrants, hose stations, sprinkler systems, deluge systems, CO₂ system, and portable fire extinguishers. Fire suppression water would be supplied from KEC's 500,000-gallon raw/fire suppression water storage tank. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 337)
318. NTE would assist in the training of emergency responders to address a power plant emergency. In particular, NTE would coordinate with local fire stations to ensure that appropriate equipment and training is available to meet emergency needs. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 338)
319. NTE would comply with the provisions of CGS §16-50ii, including, but not limited to, avoiding the use of flammable gas to clean or blow the gas piping*; and retaining a special inspector to assist the municipal fire marshal in reviewing construction plans, conducting inspections during the construction, and the review and approval of methods for cleaning the interior of the gas piping.

*NTE's contractor would likely use compressed air for such purposes.

(CGS §16-50ii; Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 339; Tr. 3, p. 95; NTE 7, response 48)
320. NTE would remit a fee to the Code Training Fund to be used in the training of local fire marshals on complex issues of electric generating facility construction in accordance with CGS §29-251c. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 341)
321. NTE would develop an emergency response/safety plan (Emergency Plan) in consultation with State and local public safety officials. If the project is approved, NTE would file its Emergency Plan with the Council as part of the D&M Plan. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 342)
322. A 12,000-gallon tank would store 19 percent aqueous ammonia for emissions control (during both natural gas and ULSD operation) and would be located within a concrete containment area with the capacity to store 110 percent of the aqueous ammonia. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 343; Tr. 1, pp. 41-42; Tr. 3, p. 48)
323. When operating on natural gas, approximately two deliveries per week of aqueous ammonia would be required to replenish the supply. When operating on ULSD, less than one delivery per day of aqueous ammonia would be required. (Tr. 4, p. 145)
324. Hydrogen would be used as a medium for cooling both generators (i.e. the STG and CTG). It would be a closed-loop system, but hydrogen replenishment will be required due to small leakages from the seals and/or removal of hydrogen for safety purposes to perform generator maintenance. (Tr. 1, p. 41; Tr. 3, pp. 47-48)
325. The hydrogen storage tube trailer would be located to the south of the turbine building in the proximity of the water tanks. (NTE 7, response 47)

326. Approximately 40,000 standard cubic feet of hydrogen, including the amount contained in the generators and the amount stored in the tube trailer, would be stored on site. (NTE 7, response 47)
327. Hydrogen would be stored in accordance with 29 CFR 1910.103 (OSHA Occupational Safety and Health Standards for Hydrogen), NFPA 497 “Recommended Practice for the Classification of Flammable Liquids, Gases, or Vapors of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas,” and supplier recommendations. (NTE 7, response 47)
328. NTE estimates that the tube trailer would be replaced approximately once per month. (NTE 7, response 47)
329. KEC would develop specific site safety procedures, operating procedures and an emergency response plan which would address the safe delivery, storage and usage of hydrogen. In addition, site personnel would receive both initial and continuous training in each of these areas. (NTE 7, response 47)

Electric and Magnetic Fields

330. NTE’s consultant, Exponent, performed an electric and magnetic field (EMF) assessment (EMF Assessment) that includes KEC’s new 345-kV electrical interconnection and the existing transmission right-of-way west of the Utility Switchyard. (NTE 4, Attachment 7, EMF Assessment dated March 13, 2019)
331. The construction of the new 345-kV overhead transmission line connection that would cross Lake Road would increase magnetic field levels (under average annual load conditions) to a maximum of 380 milligauss (mG) directly under the center of the line and over Lake Road, adjacent to KEC. (NTE 4, response 39 and Attachment 7, EMF Assessment dated March 13, 2019)
332. KEC’s power output would increase magnetic field levels in the center of the electric transmission right-of-way adjacent to the Utility Switchyard to 249 mG under average annual load conditions. The maximum magnetic field level on this right-of-way would be 258 mG, directly under the #3271 345-kV transmission line. (NTE 4, response 40 and Attachment 7, EMF Assessment dated March 13, 2019)
333. All projected magnetic field levels identified in the EMF assessment would remain below the International Commission on Non-Ionizing Radiation Protection acceptable exposure level of 2,000 mG for the general public as recognized in the Council’s “Electric and Magnetic Field Best Management Practices for the Construction of Electric Transmission Lines in Connecticut” (EMF BMPs). (NTE 4, Attachment 7, EMF Assessment dated March 13, 2019; Council Administrative Notice Item No. 47 – EMF BMPs)

ENVIRONMENTAL EFFECTS

Visibility

334. The tallest feature of the KEC plant would be the HRSG stack reaching 150 feet above (final) grade or about 468 feet amsl. (NTE 1c – EOSPCC, p. 12; NTE 4, response 6)

335. Although the maximum predicted air quality impacts would be lower than the applicable standards with the proposed 150-foot HRSG stack, a shorter stack would not be technically feasible due to the need to accommodate emissions testing equipment and stack silencing. NTE selected the stack height at the level it believes would best balance minimizing air quality impacts while minimizing visibility. The selected stack height would generally not be an intrusive visual element in the area. (NTE 4, response 34; Council Administrative Notice Item No. 57 – Docket No. 470, NTE 7, response 50)
336. The visual study area, based on a five-mile radius, has an area of approximately 50,265 acres. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 351; Tr. 1, pp. 38-39)
337. Taking into account only the effects of terrain and neglecting vegetation, about 25 percent of the visual study area would have views of the HRSG stack. Taking into account the effects of terrain and vegetation, about 2 percent of the visual study area would have views of the HRSG stack. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 352; Tr. 1, pp. 38-39)
338. The 2 percent of the visual study area that would have views of the HRSG stack is not expected to materially change between leaf-on and leaf-off conditions. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 353; Tr. 1, pp. 38-39)
339. Within the five-mile radius study area, the highest ground elevation is approximately 764 feet amsl. This is about 296 feet higher than the top of the HRSG stack. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 354; NTE 1c – EOSPCC, p. 12; NTE 4, response 6)
340. The three existing facility stacks at the LRGF are 165 feet tall. The ground elevation for the LRGF stacks (~319 feet amsl) is similar to the final ground elevation for KEC's HRSG stack (~318 feet amsl). (NTE 1c – EOSPCC, p. 12; NTE 4, response 6; Council Administrative Notice Item No. 53 – Docket No. 189; Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 355)
341. The adjacent Eversource electric transmission corridor includes structures with heights ranging from 364 to 469 feet amsl. (NTE 4, response 41)
342. The Project would not be expected to materially impact The Last Green Valley National Heritage Area (LGVNHA), which extends over an approximately 706,000-acre area generally located along the Quinebaug River Valley. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 356; Tr. 1, p. 39)
343. The Airline North State Park Trail (ANSPT) runs generally in an east-west direction, and it is located approximately 1.8 miles northwest of KEC at its closest point. In most locations on the ANSPT, dense existing vegetation would be expected to screen the distant views of KEC. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 357; Tr. 1, pp. 39-40)
344. An approximately 32-mile portion of Route 169, from Rocky Hollow Road in Lisbon to the Massachusetts border in Woodstock, has been designated as a National Scenic Byway. A portion of Route 169 is located approximately two miles west of KEC. However, intervening topography and tall, dense vegetation would significantly screen views of KEC from this roadway. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 358; Tr. 1, p. 40)

345. State-designated Scenic Roads within a five-mile radius of KEC include portions of Route 244 (at a distance of 3.1 miles from KEC) and Route 97 (at distance of 4.5 miles from KEC). These State Scenic Roads are located at an even greater distance from KEC than Route 169 and views of KEC would be similarly screened by vegetation. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 359; Tr. 1, p. 40)
346. Other features at the Generating Facility Site include the HRSG, which extends from its stack and the turbine building, with the ACC located northeast of the HRSG stack and northwest of the turbine building. The ACC structure consists of a large bank of fans on a steel support structure. Although no building enclosure is associated with the ACC, the fan bank itself represents a solid visual element at the top of the ACC. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 360; NTE 1c – EOSPCC, p. 22 and Figure 2 – KEC Plot Plan)
347. Ancillary buildings, equipment and storage tanks would have an industrial appearance, but would be considerably smaller than the main structures. None of these elements would be expected to affect KEC's potential for visual impact on the surrounding area. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 361; NTE 1c – EOSPCC, p. 22)
348. KEC would be designed to maintain as much of the existing vegetation as possible. The Generating Facility Site has substantial wooded vegetation, with only the southeastern corner near Lake Road unscreened by trees. The Switchyard Site is more open along Lake Road, but much of the Switchyard Site is also heavily forested. Although clearing would be required around KEC and for the temporary work spaces, an approximately 50-foot wooded buffer along Lake Road would be maintained. Specifically, the trees for this buffer would be retained or replanted. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 362; Tr. 1, p. 80)

Exhaust Plumes

349. The combustion of natural gas produces water vapor. The exhaust plume emitted from the HRSG stack would be colorless and transparent except under certain conditions. The visibility of a plume is a function of humidity and temperature. As such, a visible exhaust plume would exist under certain operating and atmospheric conditions. Generally, visible plumes are rare at temperatures above 40 degrees Fahrenheit (F). Visible plumes are more prevalent in cold (i.e. less than 40 degrees F) or very humid conditions such as near 100 percent relative humidity. For example, for a clear day in January with stable atmospheric conditions (e.g. no wind), the plume from KEC would rise to approximately 41.2 meters or about 135 feet above the top of the HRSG stack. With greater movement of the surrounding air, the visible plume would dissipate more rapidly. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 363; NTE 4, response 42)
350. Since KEC would run primarily on natural gas, the exit velocity at the top of the stack would be approximately 75.8 feet per second for natural gas operation under full load conditions. The exit temperature would be approximately 181 degrees F under such conditions. This is based on -10 degrees F ambient temperature. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 364; NTE 4, response 42)
351. The ACC would not create a plume. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 366; NTE 4, response 42)

Aviation Safety of Exhaust Plumes

352. Concerns can exist when small aircraft are proximate to thermal exhaust stacks and in critical phases of flight, particularly takeoff, landing, and within an airfield traffic pattern (i.e. following a standard path in preparation for landing). (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 368)
353. Given the distance of approximately 2.9 miles from the proposed HRSG stack to Danielson Airport and that the proposed HRSG stack is not aligned with the nearest runway of Danielson Airport, aircraft would not be expected to be in critical phases of flight when in the vicinity of the KEC facility. Notwithstanding, to address the possible risk of exhaust plumes posing a hazard to aircraft, NTE performed a plume analysis using software recommended by the FAA. (NTE 4, response 42; Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 369)
354. The MITRE Corporation (MITRE) software recommended by FAA (and licensed to NTE’s consultant Tetra Tech, Inc.) uses power plant data and nearly three years of meteorological data to determine the probabilities that any of four different aircraft types: light sport; light general aviation; business jet; and narrow-body (essentially a fairly large commercial jet) would experience either severe turbulence or an upset as a result of a power plant exhaust plume. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 370)
355. For the purposes of the plume analysis, the criterion used to determine whether an aircraft “upset” would occur is the vertical gust required to reach a 45-degree wing tilt for an aircraft executing a turn with a 25-degree wing tilt with the gust caused by the stack plume hitting the wing tip. “Severe turbulence” is considered by MITRE to be vertical acceleration of 1g* or greater.
- *One “g” is a measure of the acceleration equivalent to that resulting from earth’s gravity.
- (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 371)
356. Tetra Tech ran the MITRE model conservatively based on full load natural gas operation of KEC with duct firing. Since the plume would be larger under colder temperatures, an ambient temperature of -10 degrees F was assumed. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 372; NTE 4, response 42)
357. Over congested areas (e.g. cities and towns), aircraft must fly no lower than 1,000 feet above the highest obstacle within a horizontal 2,000-foot radius of the aircraft. The Killingly area, in the vicinity of KEC, would be considered a “congested area.” (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 373; NTE 4, response 42)
358. Based on the results of the MITRE, the following probabilities of “severe turbulence” associated with various types of aircraft at certain distances from the proposed KEC HRSG stack are listed in the tables below.

Aircraft Type	Probability of Severe Turbulence	Vertical Distance	Radial Distance
Light Sport	1 in 10,000	1,500 feet	300 feet
Light General Aviation	1 in 10,000	800 feet	100 feet
Business Jet	1 in 10,000	550 feet	75 feet
Narrow-Body Jet	1 in 10,000	400 feet	40 feet

(NTE 4, response 42)

359. On September 24, 2015, the FAA issued a memorandum referencing a change to the Aeronautical Information Manual (AIM) made on July 24, 2014. The change updated terminology and provided more detail regarding the associated hazards of exhaust plumes. In addition, in order to retain a current license, all aircraft pilots are required to complete a Biennial Flight Review. This refresher training includes both classroom and flight time and is intended to enhance pilots awareness of regulatory and other information in the AIM. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 375; (NTE 4, response 42)

Noise

360. NTE performed a noise assessment study for the proposed project, including ambient noise monitoring and noise modeling. The ambient noise measurements were performed on March 21 and 22, 2016, and represents current noise levels in the area. Short-term monitoring was conducted at five locations. Long-term monitoring was conducted at one location. Measurements at such locations are shown in the chart below:

Location (relative to KEC Turbine Building)	Daytime L_{EQ} Measured Noise Levels	Nighttime L_{EQ} Measured Noise Levels
ST-1 – 860 feet southeast across Lake Road	47	47
ST-2 – 550 feet west	39	42
ST-3 – 1,020 feet northeast	38	32
ST-4 – 650 feet southeast	39	41
ST-5 – Utility Switchyard Site	42	47
LT-1 – 380 feet south	42	38

(Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 376; NTE 1c – EOSPCC, Appendix D – Sound Survey and Analysis Report dated January 2019, pp. 8-9)

361. Using L₉₀, ambient noise ranged from 30 dBA to 40 dBA at nighttime and 32 to 36 dBA during the daytime for short-term noise monitoring. For long-term noise monitoring, using L₉₀, ambient noise ranged from 32 dBA to 38 dBA during the daytime period and 26 dBA to 35 dBA during the nighttime period. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 377)

362. NTE’s noise analysis model generates results that can be determined at any location along the property boundaries. Thus, when selecting ambient noise level measurement locations, NTE typically looks for locations that are offset from a project itself, but in various compass directions around the site and generally focusing on public ways in those vicinities. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 378)

363. KEC would be considered an industrial Class C noise emitter, and its surrounding areas are considered Class A residential receptors. DEEP Noise Standards for a Class C source emitting to a Class A receptor are 61 dBA daytime and 51 dBA nighttime. (NTE 1c – EOSPCC, Appendix D – Sound Survey and Analysis Report dated January 2019, p. 6)

364. The Town Noise Standards are consistent with DEEP Noise Control Standards, except the definition of “daytime” or “nighttime” differs slightly. The Town considers daytime to be 7:00 a.m. to 9:00 p.m. for residential receptors. DEEP considers daytime to be 7:00 a.m. to 10:00 p.m. for residential receptors. (NTE 1c – EOSPCC, Appendix D – Sound Survey and Analysis Report dated January 2019, pp. 6-7)

365. KEC is not located within a high-background noise area because the L_{90} ambient measurements are below 51 dBA. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 381)
366. NTE used the Cadna-A computer noise model to predict noise levels expected from the proposed project. (NTE 1c – EOSPCC, Appendix D – Sound Survey and Analysis Report dated January 2019, p. 18)
367. The following noise mitigation measures were included in the noise analysis:
- a) The HRSG stack would incorporate a silencer system that would reduce the noise from the upper stack portion and the exhaust stack exit;
 - b) The HRSG stack inlet would incorporate acoustical mitigation measures to reduce the overall sound power level to 85 dBA;
 - c) The HRSG inlet duct would incorporate an acoustical shroud to reduce the overall sound power level to 96 dBA;
 - d) The HRSG upstream selective catalytic reduction (SCR) would incorporate acoustical mitigation measures to reduce the overall sound power level to 105 dBA;
 - e) The HRSG downstream SCR would incorporate acoustical mitigation measures to reduce the overall sound power level to 97 dBA;
 - f) The fuel gas heater stack would incorporate a silencer to reduce the overall sound power level to 83 dBA;
 - g) The ACC would be a low noise design incorporating noise reduction measures to achieve a net sound power level of 103 dBA;
 - h) The closed cooling water fin-fan tower would be a low noise design incorporating noise reduction measures to achieve a net sound power level of 95 dBA; and
 - i) Two noise barriers have been positioned around the southwestern property line. One noise barrier would be approximately 430 feet long with a height of approximately 28 feet for 314 linear feet transitioning to a height of approximately 24 feet for the remaining 116 linear feet. The other noise barrier would be approximately 16 feet high and 122 feet long.
- (NTE 1c – EOSPCC, Appendix D – Sound Survey and Analysis Report dated January 2019, pp. 20-21)
368. The proposed facility would be in compliance with DEEP noise control and Town standards, provided that various proposed noise control measures are employed. (NTE 1c – EOSPCC, Appendix D – Sound Survey and Analysis Report dated January 2019, pp. ES-1, 6-7, and 23-24)
369. Construction noise is exempt from DEEP standards. Construction noise during the day is exempt from the Town of Killingly Noise Ordinance. To the extent that any construction activities must occur after 9:00 p.m. (i.e. defined by Killingly's ordinance as the start of the nighttime), NTE would implement construction noise mitigation measures. (NTE 1c – EOSPCC, Appendix D – Sound Survey and Analysis Report dated January 2019, p. 17; R.C.S.A. §22a-69-1.8(g))

Traffic

370. In the vicinity of the Project and the existing Eversource transmission line right-of-way, Lake Road is a paved road approximately 24 feet wide, with a single travel lane in each direction, and it is separated by a painted double yellow centerline. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 390)

371. DOT data indicates that a portion of Lake Road (north of Route 101) carries an average daily traffic* of 1,700 vehicles per day, with a morning peak hourly volume of 150 per hour at 7:00 a.m. and an afternoon peak hourly volume of 174 vehicles at 4:00 p.m.

*These figures are accurate for a 2019 design year. However, even with a change in design year from 2019 to 2021, no significant change would be expected.

(Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 391; NTE 4, response 28)

372. Construction would occur over a 31-month period (August 2019 through March 2022) with peak volumes observed over a three-month period. (NTE 4, response 30)

373. Based on a peak construction employment level of approximately 450, during the peak period of construction, the proposed project would generate approximately 495 peak hour trips. (NTE 1c – EOSPCC, Appendix E – Traffic Statement, p. 1)

374. During the morning peak hour, the I-395 southbound off-ramp to Attawaugan Crossing Road would see an increase in delay of 18 seconds, and the 95 percent queue would extend an additional 70 feet. During the afternoon peak hour, the eastbound through movement of Attawaugan Crossing Road at Tracy Road would experience an additional 23 seconds of delay, and the queue would extend an additional 103 feet. These impacts would only occur during the construction of the facility and not during normal operation of the facility. (NTE 1c – EOSPCC, Appendix E – Traffic Statement, p. 2)

375. The existing roadway network has sufficient excess capacity in order to accommodate the increased traffic related to the construction activities for the proposed project. The two locations that would experience impacts would still operate at acceptable levels of service, and the impacts would be temporary and of short duration. Thus, no mitigation measures would be required. (NTE 1c – EOSPCC, Appendix E – Traffic Statement, p. 2)

376. The proposed project would have up to 30 employees present during plant operations, and this would result in less than 25 peak hour trips under normal operations*.

*These projections are conservative. It is likely that not more than 20 employees would be present during operations, resulting in even fewer peak hour trips.

(Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 392; NTE 4, response 29)

377. In order to allow WB-62 design vehicles to access the proposed KEC facility, a widening of a portion of Lake Road is planned. NTE would commence this work early in the construction process. NTE also has plans to address a sharp turn on Lake Road that occurs in the vicinity of the Eversource transmission right-of-way. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact #397; Tr. 4, pp. 99-100)

378. The volume of truck traffic associated with replenishing the ULSD supply during a ULSD operation event would not have a significant impact on traffic operations in the local roadway network. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 400; NTE 4, response 31; NTE 11, Late Filed Exhibit No. 7)

Historic and Archaeological Resources

379. A Phase I Cultural Resources Reconnaissance Survey Report (Phase I Report) dated August 2016 was prepared by Tetra Tech for the KEC project and considered both the 180 Lake Road and 189 Lake Road parcels. The assessment concluded that no further archaeological investigations are recommended. A historic architectural survey was conducted by Tetra Tech for standing structures within the Project Study Area. Tetra Tech concluded that none of the structures are eligible for listing on the National Register for Historic Places (NRHP). (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 401)
380. The Phase I Report was reviewed by the Connecticut SHPO, which determined that there would be no effect on the historic properties, and no additional archaeological investigations are warranted. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 402)
381. Correspondence received from the Mashantucket Pequot Tribal Nation (MPTN) dated November 5, 2016 indicated that the MPTN concurs with the Phase I Report that no archaeological sites were identified in particular areas. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 403)
382. No correspondence or feedback from the Mohegan Tribal Historic Preservation Office (MTHPO) has been received to date. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 405; NTE 4, response 38)
383. The layout of the Utility Switchyard would be designed to avoid adversely impacting the private Sorrow Cemetery as identified in the Option Agreement submitted on August 25, 2016. Specifically, SHPO recommends a 50-foot buffer be incorporated into the design. A 50-foot minimum buffer can be accommodated by NTE for most, but not all, areas surrounding Sorrow Cemetery. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 406)

Geology and Hydrology

384. A geotechnical investigation was performed to obtain information on subsurface soil, rock and groundwater conditions and a report (Geotech Report) was issued in July 2016. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 407)
385. Surficial geology maps describe the overburden soils as ground-moraine (i.e. glacial till) consisting of poorly sorted, poorly stratified deposits generally composed of glacial debris ranging from clay-size particles to boulders. Boulders were observed at the ground surface. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 408)
386. The Bedrock Geological Map of Connecticut identified the bedrock as Quinebaug Formation consisting of medium to dark gray, medium-grained, well-layered gneiss. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 409)
387. In some locations, excavation up to 30 feet of glacial till and bedrock are proposed to reach the required subgrade. Conventional heavy construction equipment, such as excavators, bulldozers, graders, front-end loaders, and dump trucks can remove soils and portions of weathered rock. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 410)

388. While techniques such as ripping are feasible for shallow rock cuts, certain areas would require blasting to reach the proposed subgrades. Controlled blasting techniques would be utilized to ensure that nearby structures are not damaged by blasting, flyrock or debris. Controlled blasting mats would be utilized to contain flyrock within the construction area. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 411)
389. A specialized blasting contractor would implement the work in accordance with a formal blasting plan. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 412)
390. NTE’s geotechnical engineering consultant, Haley & Aldrich, Inc. (Haley & Aldrich) monitored a test boring program consisting of 18 test borings. Fifteen of these test borings were located on the Generating Facility Property, and three were located on the Utility Switchyard Property. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 413)
391. Groundwater levels measured in test borings (during and after drilling) and observation wells corresponded to about 5 to 20 feet below ground surface. Water levels observed in the borings shortly after drilling are typically influenced by drilling operations, and thus, they may not represent stabilized conditions. Groundwater levels will fluctuate with season, precipitation, and nearby construction activity. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 414)
392. Final excavation, subgrade preparation, filling, foundation construction, and utility construction should be conducted in dry conditions. Since most excavations would be in low permeability soils and bedrock, anticipated temporary construction dewatering activities would likely be minor and largely related to the control of precipitation that falls on excavations and surface water runoff into excavations. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 415)
393. It would be expected that dewatering could be accomplished by open pumping from sumps, temporary ditches, and trenches within and around excavations. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 416)
394. The “Indoor Radon Potential Map of Connecticut” dated 1997 and prepared by DEEP indicates that the site is located within a “moderate-high” area of radon potential. Moderate-high zones are defined as areas where 33 percent of the tested homes in that area have basement air radon levels greater than or equal to 4.0 picocuries per liter of air (pCi/L), respectively. Given this radon potential, Haley & Aldrich recommends that the Project team assess if a radon protection system is warranted. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 417)
395. The KEC Site is located in Federal Emergency Management Agency (FEMA) Zone C, an area located outside of the 100-year and 500-year flood zones. However, a small area on the Generating Facility Property, north of the KEC footprint, is designated a 100-year flood zone or FEMA Zone A. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 418)
396. The Project would not be located within a DEEP-designated Aquifer Protection Area. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 419)
397. Groundwater at the KEC site is classified as Class GA according to DEEP water quality classifications. Class GA-designated uses include existing and private and potential public or private supplies of water. DEEP presumes that groundwater in such areas is suitable for drinking and other domestic uses without treatment. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 420)

398. KEC would be located within the watershed of the Quinebaug River. Groundwater in this sub-basin currently flows and would continue to flow from the KEC site and discharge into the Quinebaug River. KEC does not propose to use groundwater at this site and would incorporate spill prevention and control measures such as containment and curbing areas to prevent ULSD or other chemicals from discharging to the groundwater. Thus, the proposed project would not be expected to impact Class GA groundwater resources. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 421)

Agriculture

399. Prime Farmland Soils are defined by the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) as having the ideal combination of chemical and physical characteristics to support crop production, such as for food, feed, forage, fiber and oil and seed crops. These soils are also considered important for pasture land, range land and forest land. (Council Administrative Notice Item No. 6 – USDA Soil Survey Manual; 7 C.F.R. §657.5 (2016) – Identification of Important Farmlands)
400. Statewide Important Farmland Soils do not meet all of the requirements to be considered Prime Farmland Soils, but they are equally as important in the production of food, feed, forage or fiber crops. (Council Administrative Notice Item No. 6 – USDA Soil Survey Manual; 7 C.F.R. §657.5 (2016) – Identification of Important Farmlands)
401. The site is not currently in productive agricultural use. (NTE 7, response 44)
402. The only mapped Prime Farmland Soils (Ninigret-Tisbury soil series complex) and Statewide Important Farmland Soils are located in the northern portion of the Generating Facility Site. The only element of the proposed facility that would overlap with the approximately 0.5-acre of these mapped agricultural soils is a portion of KEC's stormwater management system. The project soil scientist investigated this area of "overlap" and determined that the soils are not typical of the Ninigret-Tisbury soil complex, but rather are characterized by a thin sandy outwash deposit over a till deposit. Thus, the proposed project would not affect Prime Farmland Soils or Statewide Important Farmland Soils. (NTE 7, response 45; Tr. 3, p. 47)
403. Public Act 490 is Connecticut's Land Use Value Assessment Law for Farm Land, Forest Land and Open Space Land (Public 490 Program) that allows land to be assessed at its use value rather than its fair market or highest and best use value for the purpose of local property taxation. Neither the Generating Facility Parcel nor the Utility Switchyard Parcel is part of the Public 490 Program. (NTE 7, response 46)

Wetlands

404. The Inland Wetlands and Watercourses Act (IWWA), CGS §22a-36, *et seq.*, contains a specific legislative finding that the inland wetlands and watercourses of the state are an indispensable and irreplaceable but fragile natural resource with which the citizens of the state have been endowed, and the preservation and protection of the wetlands and watercourses from random, unnecessary, undesirable and unregulated uses, disturbance or destruction is in the public interest and is essential to the health, welfare and safety of the citizens of the state. (CGS §22a-36, *et seq.*)
405. The IWWA grants regulatory agencies with the authority to regulate upland review areas in its discretion if it finds such regulations necessary to protect wetlands or watercourses from activity that will likely affect those areas. (CGS §22a-42a)

406. The IWWA forbids regulatory agencies from issuing a permit for a regulated activity unless it finds on the basis of the record that a feasible and prudent alternative does not exist. (CGS §22a-41)
407. There are seven wetlands on the Generating Facility Property, known as Wetland A1, Wetland A2, Wetland A3, Wetland B, Wetland C, Wetland E, and Wetland X. There is one wetland located on the Utility Switchyard Property, known as Wetland D. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 422)
408. Wetland A1 is a roughly 0.25-acre man-made pond, originally developed in 1959 as a swimming hole and a source of water for the then-active farm. As a spring-fed pond, it is fed by both groundwater discharge and a small rivulet associated with a springhouse. The hydro-geomorphic setting is classified as “groundwater depression” within the pond, and “groundwater slope” on adjacent wetlands. It is largely shaded by trees, both broad-leaf deciduous and evergreen. The pond depth fluctuates seasonally, but it retains some water year-round. Wetland A1 is located in the southern portion of the Generating Facility Property. Wetland A1 is located approximately 54 feet northeast of the proposed KEC fence line at the closest point. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 423)
409. Wetland A2 and its associated intermittent stream is roughly 1.98-acres in size and is located on the Generating Facility Property. This intermittent stream has a stony substrate in its upper reach, near the pond, and it becomes more sandy as soils transition from those derived from glacial till to sandy glacial outwash deposits. Wetland A2 begins at the outlet to Wetland A1 and extends northwesterly to the northern limits of the Generating Facility Property. The distance between KEC and Wetland A2 (since the originally proposed project) has increased from 34 feet to 70 feet. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 424; NTE 1c – EOSPCC, p. 14)
410. Wetland A3 is the largest wetland unit in the vicinity of the Project and located in the central portion of the Generating Facility Property. Wetland A3 is approximately 6.26 acres in size. Underlying sandy outwash surficial materials determine the nature of Wetland A3. Extensive, very poorly drained, peaty soils support sunny emergent marsh on the east side of the swamp, dominated by tussock sedge and skunk cabbage, and also thickets of red maple saplings. The hydro-geomorphic setting of Wetland A3 is classified as “groundwater slope” because the low-gradient wetland intercepts the sub-regional groundwater table in the permeable and sandy outwash soils. The distance from KEC’s development footprint to Wetland A3 (since the originally proposed project) has increased from 214 feet to 234 feet. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 425; NTE 1c – EOSPCC, p. 14)
411. Wetland B is approximately 1.8 acres and located in the far northwestern section of the Generating Facility Site. The southeastern portion of Wetland B is a forested hillside with deep, friable, poorly drained soils derived from glacial till. Spiceberry and winterberry are the dominant shrubs, with red maple as the dominant tree species. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 426)
412. Wetland C is an approximately 0.08-acre hillside swale that joins (with Wetland B) an off-site stream from the east. Wetland C does not qualify as a watercourse because it is lacking a defined channel. Its vegetation includes sparse skunk cabbage, some barberry, birch samplings, and red maples. Much of the surface flow associated with this wetland unit is expected to infiltrate, especially as it reaches Hinckley soil, continuing, subsurface, towards the Quinebaug River. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 427)

413. Wetland E is an approximately 0.04-acre wetland pocket that is located upgradient of Wetland C at the far northern portion of the Generating Facility Site. Wetland E is seasonally flooded to seasonally saturated wetland with poorly drained soils and a hydro-geomorphic setting classified as “surface water slope.” It is dominated by hemlock in the overstory, and, due to dense shading, little vegetation grows in the understory. A few violets, wood ferns, poison ivy, grasses, and New York fern were observed in this area. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 428)
414. Wetland X is a roughly 0.027-acre narrow wetland with disturbed soils located in the western portion of the Generating Facility Property. Wetland X is located southwest of Wetland A2 and close to Wetland A1. Wetland X is located within an area that has historically been farmed and used as a travel way to other portions of the overall site. Wetland X is a seasonally saturated wetland devoid of an overstory, but it has hydrology suitable for hydrophytes such as skunk cabbage, sensitive fern and a few sedges. The distance between KEC and Wetland X (since the originally proposed project) has increased from 28 feet (to the south) and 26 feet (to the north) to 38 feet and 40 feet, respectively. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 429; NTE 1c – EOSPCC, p. 14)
415. Wetland D encompasses approximately 0.51 acres of the eastern portion of the Utility Switchyard Property. Wetland D is dominated by scrub shrub and emergent (i.e. wet meadow) cover types, mostly with poorly drained outwash-derived soils. The scrub shrub portion of Wetland D is dominated by white pine and red maple saplings, but also includes shrubs such as highbush blueberry, meadowsweet, and willows. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 430)
416. NTE would perform wetland restoration invasive species removal for a total of 35,000 square feet (or about 0.8 acre) for Wetland A2 and Wetland X. (NTE 1c – EOSPCC, Appendix B – Updated Site Plans, Proposed Grading and Drainage)
417. No direct wetland impacts are proposed on the Generating Facility Site. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 431; NTE 1c – EOSPCC, p. 20)
418. Direct wetland impacts would be limited to approximately 12,500 square feet of Wetland D on the Utility Switchyard Property in order to accommodate the utility switchyard. Alternative layouts for the utility switchyard were considered during the planning phase in an effort to avoid direct wetland impacts, but the site constraints and Eversource’s required specifications for the utility switchyard did not allow complete avoidance. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 432)
419. Since opportunities for wetland restoration, such as restoring a degraded and/or filled wetland, do not exist at the KEC Site, compensatory wetland mitigation in the form of wetland creation coupled with wetland enhancement is proposed. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 433)
420. A suitable site for wetland creation is proposed in the northeastern portion of the Switchyard Site, which is currently an open field. The wetland creation area is approximately 21,475 square feet or about 0.49 acres. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 434; NTE 4, response 36, Attachment 5, Wetland Mitigation and Restoration Plan; NTE 1c – EOSPCC, p. 14)

421. No significant or adverse impacts to wetlands and watercourses, either on-site or off-site, were expected to result from the originally proposed project. The originally proposed mitigation package, consisting of wetland habitat replication, enhancement and preservation was expected to more than offset the direct wetland impacts, and the currently proposed project results in all wetland buffer distances either remaining the same (as originally proposed) or in some cases increasing (e.g. for Wetland X, Wetland A2, and Wetland A3). (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 437; NTE 1c – EOSPCC, p. 14)

Wildlife

Birds

422. The nearest Important Bird Area as identified by the National Audubon Society is the Bafflin Sanctuary Complex, located approximately 1 mile west of KEC. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 438)
423. The top and sides of the HRSG stack, while hot during operation, would not represent attractive perching sites for birds. The stack test platforms and associated ladders, however, are more suitable perching locations. These features safely support stack testers during plant operations and would not represent surfaces too hot for bird perching. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 439)
424. The majority of studies on bird mortality due to collisions with towers focuses on very tall towers (i.e. greater than 1,000 feet), illuminated with non-flashing lights, and utilizing guy wires. These types of towers, if sited in major migratory pathways, could result in significant bird mortality. More recent studies of short towers, including, but not limited to, studies prepared for USFWS, reveal that short towers of less than 300 feet rarely kill migratory birds. Thus, the design features of concern do not apply to KEC's proposed HRSG stack. With a relatively short 150-foot HRSG stack, no guy wires, and no proposed lighting, no adverse impact to migrating bird species would be expected to be associated with KEC. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 440)
425. The broad-winged hawk, a State-designated Species of Special Concern, was observed at the Utility Switchyard Site. However, it would be unlikely that the broad-winged hawk would be impacted because much unfragmented, high quality forest would remain at or near the Utility Switchyard Site. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 441; NTE 1c – EOSPCC, p. 20)

Mammals

Bats

426. NTE's consultant, Tetra Tech, performed a presence/absence survey of bats (Bat Survey). The Bat Survey included a desktop analysis and the deployment of ultrasonic bat detectors/recorders. Specifically, acoustic bat detection and recording was performed by Tetra Tech between June 2, 2016 and June 9, 2016. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 442)
427. The acoustical detectors were deployed on two locations at the Generating Facility Property. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 443)

428. During the acoustical survey, five bat species were identified: the eastern red bat; the big brown bat; the hoary bat, a State-designated Species of Special Concern; the silver-haired bat, a State-designated Species of Special Concern; and the little brown bat, a State-designated Endangered Species. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 444)
429. The four species not identified during the acoustical survey were the following: the Indiana bat, a State-designated and federally designated Endangered Species; the Northern long-eared bat (NLEB), State-designated Endangered Species and federally designated Threatened Species*; the tri-colored bat, a State-designated Endangered Species; and the small footed bat.

*No additional federally-designated species are expected to occur at the site.

(Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 445; Tr. 1, pp. 36-37)

430. As a precautionary measure, tree clearing for the Project would be restricted in accordance with USFWS Rule 4(d) requirements and would not occur in the months of June or July, in order to avoid the pup season for the bat species. By letter dated March 11, 2019, DEEP indicates that it concurs with this seasonal restriction as an avoidance measure for bats. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 446; NTE 4, response 36, Attachment 5, NTE's Request for Natural Diversity Database Review and DEEP Natural Diversity Database Letter dated March 11, 2019)
431. NTE would prefer not to “phase” tree clearing. NTE would prefer to perform all of the tree clearing at once for efficiency in order to ensure compliance with seasonal restrictions on clearing with respect to bats. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 447)
432. Significant wooded areas would remain on the site and in its vicinity, with expansion of edge effect habitat providing for additional foraging lanes for bats. The area would continue to provide habitat suitable for bat use during the summer activity period. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 448)

Reptiles

Turtles

433. Two State-designated reptile species have been identified by DEEP in the vicinity of the KEC Site. These listed species are the wood turtle, a State-designated Species of Special Concern; and the eastern box turtle (EBT), a State-designated Species of Special Concern. These turtle species were not encountered at the KEC Site or in its immediate vicinity during field surveys. Such surveys were performed by NTE's consultant, REMA Ecological Services, LLC (REMA), on May 26, 2016; June 10, 2016; and June 13, 2016. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 449)
434. While neither turtle species were found at the KEC Site, REMA concludes that it is likely that the EBT occurs at the site, given the availability of habitats and the landscape context. REMA also concludes that it is not likely that wood turtles occur at the site, given the availability of habitats and local topography. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 450)

435. NTE plans to implement a Turtle Protection Plan (TPP) for the EBT. The conditions associated with the TPP are listed below.
- Prior to Construction:
- a) Silt fencing shall be installed around the work area prior to any construction during the turtle hibernation period between November 1 and April 1; and
 - b) The area within the perimeter of the silt fence shall be canvassed by a qualified individual one day prior to the installation of the silt fencing and for five consecutive days after installation for the presence of turtles. Any turtles found within the bounds of the silt fence shall be relocated outside of the bounds of the silt fence.
- During Construction:
- c) Work crews shall be appraised of the species description and possible presence prior to construction;
 - d) Work crews shall search the work area for turtles prior to the start of each construction day;
 - e) Any turtles encountered during the work shall be moved unharmed to an area immediately outside of the fenced work area and oriented in the same direction it was walking when found;
 - f) All precautionary measures should be taken to avoid degradation to wetland habitats including any wet meadows and seasonal pools. No work is proposed in such areas at the Generating Facility Site;
 - g) Work in wetlands at the Utility Switchyard Site during the early morning and evening hours should occur with special care not to harm basking or foraging individuals;
 - h) No heavy machinery or vehicles shall be parked within the protected work areas, and precautions shall be taken when the machinery is traveling to the work area to avoid turtles; and
 - i) All silt fencing shall be removed after work is completed when soils are stable so that reptile and amphibian movement between uplands and wetlands is not restricted.
- (NTE 4, response 36 – Attachment 5, NTE’s DEEP NDDDB Review filing)
436. By letter dated March 11, 2019, DEEP indicated that it concurs with the TPP. (NTE 4, response 36 – Attachment 5, DEEP NDDDB Letter dated March 11, 2019)
437. NTE is also willing to consider having little to no gap between the bottom of the facility fence and grade to reduce the risk of turtles or other wildlife from being trapped. Specifically, NTE expects that the facility fence would be designed such that the bottom of the fence would be touching grade. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 452)

Amphibians

Vernal Pool Species

438. Two potential amphibian breeding areas were identified early in February 2016. Specifically, these were a man-made pond in Wetland A1* and also a small flooded portion of Wetland B. This small area of vernal pool embedded in Wetland B was determined to be the only viable on-site habitat for the breeding and reproduction of wood frogs and spotted salamanders, which are considered obligate “vernal pool” amphibians.

*This pond is not considered a vernal pool. It contains adult and fingerling-sized smallmouth bass, as well as crayfish.

(Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 453 and November 3, 2016 Evidentiary Hearing Transcript, pp. 212-239)

439. Although the vernal pool habitat located within Wetland B does not have optimal hydrology for the reproduction of spotted salamanders, it is possible that successful reproduction could be supported during certain years. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 454)
440. Development of the proposed project would not occur closer than 430 feet from the edge of the vernal pool in Wetland B. (NTE 4, response 37)
441. The U.S. Army Corps of Engineers Vernal Pool Best Management Practices (ACOE Vernal Pool BMPs) define the Vernal Pool Envelope (VPE) as the area located within 100 feet from the edge of the vernal pool depression's edge. ACOE Vernal Pool BMPs define the Critical Terrestrial Habitat (CTH) as the area located from 100 feet to 750 feet from the vernal pool depression's edge. (Council Administrative Notice Item No. 100 – ACOE Vernal Pool BMPs, pp. 1-2)
442. At a distance of 430 feet, no work would be performed within the VPE. However, construction would occur within the CTH. (NTE 4, response 37)
443. The total area of the CTH is approximately 43.1 acres, but not all of the area is accessible because it includes a portion of the Quinebaug River to the northwest. The currently accessible total CTH area is approximately 39.8 acres. Post-construction, approximately 2.5 acres or about 6.3 percent of the (currently accessible) CTH area would be impacted by construction of KEC. Post-construction development within the CTH would still be less than 25 percent of the CTH area, consistent with ACOE Vernal Pool BMPs. (Council Administrative Notice Item No. 100 – ACOE Vernal Pool BMPs, pp. 1-2)
444. The proposed project would be consistent with the U.S. Army Corps of Engineers Vernal Pool Best Management Practices. (Tr. 1, p. 37)

Invertebrates

Lepidoptera

445. REMA conducted a survey of moth and butterfly species on three separate nights: June 1, 2016; July 18, 2016; and July 26, 2016. REMA utilize ultraviolet, mercury vapor and white fluorescent lights to attract insects and also searched flower heads and the ground by headlamps and sweeping. REMA also observed butterfly species on June 10, 2016 and August 3, 2016. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 459)
446. The purpose of the survey was to determine the presence of the following State-listed invertebrates identified by DEEP: the fragile dagger moth, a State-designated Species of Special Concern; the pink star moth, a State-designated Species of Special Concern; and the frosted elfin, a State-designated Threatened Species. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 460)
447. None of the three State-designated invertebrate species were found at the KEC Site during the survey. While this does not preclude their presence, their absence during the survey and the differing habitats at the reported nearby collection sites make this possibility less likely. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 461)

448. NTE's proposed Lepidoptera habitat was originally proposed in the wetland mitigation area on the Switchyard Site. However, the proposed 3,700 square foot (or about 0.08-acre) Lepidoptera habitat has been relocated to the southeastern corner of the Generating Facility Site. By letter dated March 11, 2019, DEEP indicated that it concurs with NTE's Upland Lepidopteran Habitat Plan. (NTE 1c – EOSPCC, p. 14; NTE 4, response 36 – Attachment 5, Wetland Mitigation and Restoration Plan and DEEP NDDDB Letter dated March 11, 2019)
449. NTE would include legumes and vegetative species that would support pollinators for the wetland replication area. NTE is also willing to consider such plantings along the embankment around KEC at the Generating Facility Site. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 463; NTE 4, response 36 – Attachment 5, Wetland Mitigation and Restoration Plan)

Air Quality Issues

450. KEC is located in an area of non-attainment for ozone. Air quality in the Killingly area does not currently meet the National Ambient Air Quality Standards (NAAQS) for ozone, which is created by a photochemical reaction involving nitrogen oxides (NO_x) and volatile organic compounds (VOC). (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 464)
451. The Project must meet air-quality requirements for non-attainment New Source Performance Standards, and Prevention of Significant Deterioration (PSD). The PSD regulations require compliance with Best Available Control Technology (BACT) emission rate limits,* Connecticut Ambient Air Quality Standards (CAAQS) and NAAQS. Major new stationary sources of non-attainment pollutants in non-attainment areas must demonstrate compliance with Lowest Achievable Emission Rate (LAER) limits and obtain emission offsets. The proposed project would meet all of these requirements.

*KEC's existing air permit has the same LAER and BACT limits approved in the original KEC air permit, with the exception of a reduction to the BACT limit for particulate matter (PM).

(Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 465; NTE 1c – EOSPCC, p. 10)

452. As required by the Clean Air Act, the EPA sets the NAAQS through a rigorous scientific process at levels determined to be protective of the health of the most sensitive individuals such as children, the elderly, chronic asthmatics, and people with other pulmonary diseases. Furthermore, an added margin of safety is included in calculating the standards. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 470)

453. A comparison of the originally proposed Siemens CTG and the proposed Mitsubishi CTG for PM emissions rates (on a pounds per million Btus basis) is listed below.

Pollutant	Permitted (Siemens CTG)			Proposed (Mitsubishi CTG)		
	Gas w/o DF	Gas w/ DF	ULSD	Gas w/o DF	Gas w/ DF	ULSD
PM	0.0044	0.0050	0.0168	0.0022	0.0046	0.0083
PM ₁₀ /PM _{2.5}	0.0044	0.0050	0.0168	0.0022	0.0046	0.0083

lb/MMBtu = pounds per million British thermal units; w/o DF = without duct firing; w/ DF = with duct firing; PM₁₀ = particulate matter with a diameter less than 10 microns; PM_{2.5} = particulate matter with a diameter less than 2.5 microns.

(NTE 1c – EOSPCC, p. 10)

454. The Project would be subject to LAER for NO_x. Dry low-NO_x combustion in conjunction with SCR would control NO_x emissions when the plant is firing natural gas. Water injection with SCR would control NO_x emissions when the plant is firing ULSD. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 466)
455. An oxidation catalyst would control emissions of carbon monoxide (CO) and volatile organic compounds (VOC). KEC would also utilize clean-burning natural gas with a maximum sulfur content of 0.5 grains per 100 standard cubic feet in conjunction with limited firing of ULSD as backup fuel, to minimize sulfur dioxide (SO₂), particulate matter (PM), sulfuric acid (H₂SO₄), lead (Pb), and hazardous air pollutant (HAP) emissions. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 467)
456. A comparison of the originally proposed Siemens CTG and the proposed Mitsubishi CTG on a pounds per hour basis is listed below.

Pollutant	Siemens CTG			Mitsubishi CTG		
	Gas w/o DF	Gas w/ DF	ULSD	Gas w/o DF	Gas w/ DF	ULSD
PM	13.0	19.5	30.0	7.9	21.9	26.7
PM ₁₀ /PM _{2.5}	13.0	19.5	30.0	7.9	21.9	26.7
SO ₂	4.5	5.9	4.0	6.0	7.6	4.9
NO _x	22.5	29.7	40.9	29.6	37.2	50.6
VOC	2.8	8.3	7.1	3.6	10.4	8.9
CO	6.2	15.4	11.2	8.1	19.2	14.1
Lead	1.44E-03	1.9E-03	3.0E-03	1.9E-03	2.3E-03	3.2E-03
H ₂ SO ₄	1.6	2.0	1.5	2.1	2.7	1.8

(NTE 1c – EOSPCC, p. 10)

457. There would be increased lead emissions for the Mitsubishi CTG configuration (versus the originally proposed Siemens CTG configuration) associated with the ULSD firing*, but the proposed emissions rates would comply with air permits requirements.

*With the current air permit, NTE is using AP-42, Section 1.4, which is a conservative lead emissions factor for the natural gas-fired boilers.

(Tr. 1, pp. 22-24)

458. The maximum annual emissions rates (in tons per year) for the originally proposed Siemens CTG* and the proposed Mitsubishi CTG are listed below*.

Pollutant	Siemens CTG	Mitsubishi CTG
PM	88.7	54.9
PM ₁₀ /PM _{2.5}	88.7	54.9
SO ₂	25.1	25.1
NO _x	130.1	130.1
VOC	41.7	45.5
CO	134.6	77.8
Lead	0.0018	0.009
H ₂ SO ₄	8.76	9.62
CO ₂ e	1,989,650	2,207,451
Ammonia	49.8	54.6

CO₂e = carbon dioxide equivalents

*This comparison is for the CTGs only and excludes equipment such as the natural gas-fired boiler, emergency fire pump engine, natural gas heater, and emergency generator engine.

(NTE 1c – EOSPCC, p. 11)

459. NTE has already acquired its offsets for NO_x. (Tr. 1, pp. 49-50)

460. NTE modeled PM_{2.5} concentrations in the vicinity of the proposed KEC facility. Conservatively assuming roughly 8,260 hours of ULSD firing in a year, even though ULSD usage is limited to 720 hours per year, the proposed facility’s maximum worst-case modeled annual PM_{2.5} would be on the order of 0.134 micrograms per cubic meter (µg/m³). This level would occur approximately near the Utility Switchyard site. That would be the so-called “point of maximum impact”, and would drop off with distance. See Figure 6. (Tr. 1, pp. 37-38; NTE 4, response 33, Attachment 4 – PM_{2.5} Map)

461. When a fossil-fueled unit is operating on the margin, the operation of KEC would tend to lower emissions, and fossil-fueled units* are on the margin most of the time in the New England region.

*However, when fossil-fueled units are on the margin, KEC would be competing with the other newer combined-cycle plants for very few hours of the year for many years.

(Tr. 4, p. 116)

462. As a thermal power plant greater than 25 MW, the proposed project would be subject to RGGI. The proposed project would comply with the requirements of RGGI. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 477; Tr. 4, p. 115)

463. The status of the EPA Clean Power Plan (CPP) is still uncertain at this point. Specifically, CPP was vacated by the court. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 478; Tr. 4, p. 125)

464. NTE has committed to implement a voluntary GHG reduction program for KEC. NTE developed this program to support Connecticut's compliance with the Global Warming Solutions Act of 2008 (GWSA) or CGS §22a-200a, to reduce GHG emissions at 80 percent below 2001 levels by 2050. (NTE 4, response 35)

465. Following consultation and conceptual alignment with both DEEP* and SC, NTE committed to the voluntary GHG reduction program (that anticipates both reductions** and offsets***) through which NTE would effectively eliminate GHG emissions from KEC by 2050****.

*This commitment is not included in the DEEP air permit because it is not the type of program that is included in air permits.

**Reductions could be achieved by improved combustion technologies to reduce CO₂ emissions. The proposed Mitsubishi combustion turbine could be potentially be upgraded in the future to take advantage of such technologies.

***NTE does not require offsets for GHG at this time, but later on in the operating period when NTE is tight on emissions, it may need to buy GHG emissions offsets.

****Specifically, NTE would reduce KEC's GHG emissions by 80 percent by 2050, and after 2050, KEC would operate with zero GHG emissions.

(NTE 4, response 35; Tr. 1, pp. 48-50; Tr. 3, pp. 49-50; Tr. 3, pp. 114-115)

466. The total amount of SF₆ to be used in all locations for the proposed project is approximately 111 pounds. There would be minor losses of SF₆ (including during maintenance) that would necessitate adding to the charge. (NTE 4, response 5; Tr. 1, p. 19)

Water Use

467. The ACC design utilizes less water than a conventional wet-cooled facility. It relies on indirect heat transfer with the ambient air, thereby eliminating the need for the substantial water requirements typical of many water-cooled power generating facilities in which conventional forced-draft wet cooling towers result in substantial evaporative cooling losses (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 481)

468. The project would require water primarily for the following uses: steam-cycle makeup, water injection during ULSD firing to control increased NO_x emissions versus when consuming natural gas, evaporative cooler, and potable water. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 482)
469. The Project's evaporative cooler would be a humidification system that lowers the combustion turbine inlet temperature to help power output and efficiency. The evaporative coolers would generally operate at temperatures above 59 degrees F. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 483)
470. NTE originally considered inlet air chilling versus evaporative cooling of the incoming air to the combustion turbine to reduce water consumption. However, inlet air chilling was not selected due to significant parasitic load associated with the chilling and piping system, which would have a negative effect on plant efficiency (which affects GHG reduction), as well as increased cost. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 484)
471. KEC's water supply would be provided by the CWC, Crystal Water Division, a subsidiary of Connecticut Water Service, Inc. CWC currently serves the Town and would require no increase in permitted capacity of existing wells to meet KEC's water needs. However, the Eastern Regional Distribution Improvements (ERDI) would also be required. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 485)
472. The following wellfields are either proximate to KEC or anticipated to be used to provide water to KEC: Killingly Industrial Park Wellfield; Philip B. Hopkins Wellfield; Brooklyn Wellfield; and Plainfield Division Wellfield. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 486)
473. ERDI would include a new water line approximately 12,000 feet long and running in roughly a north-south direction from the Crystal System in Killingly to the Crystal-Plainfield System in Killingly. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 487)

474. The potable water consumption rates for the proposed facility in gallons per day (gpd) from CWC, based on various conditions, are listed below.

Operating Conditions	KEC's Potable Water Consumption in gpd
Natural Gas Winter Temperatures Full Load Evaporative Cooler Off Duct Burner Off	~48,900 gpd
Natural Gas Average Ambient Temperature Full Load Evaporative Cooler Off Duct Burner Off	~48,800 gpd
Natural Gas Summer Temperatures Full Load Evaporative Cooler On 12hrs/day Duct Burner On 12hrs/day	~98,400 gpd
ULSD Winter Temperatures Full Load Evaporative Cooler Off Duct Burner N/A (Off)	~396,300 gpd
ULSD Summer Temperatures Full Load Evaporative Cooler On 12hrs/day Duct Burner N/A (Off)	~398,100 gpd

(NTE 4, response 32, Attachment 3, Water Balance Diagram, Summary Flow Table)

475. The worst-case water consumption rate of KEC would be approximately 398,100 gpd under ULSD operating conditions with evaporative cooling, but NTE continues to utilize 400,000 gpd as a conservative round number. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 489; Tr. 1, p. 87; NTE 4, response 32, Attachment 3, Water Balance Diagram, Summary Flow Table)
476. NTE is willing to comply with DPH recommendations as outlined in DPH's comments. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 490; Tr. 1, pp. 30-34; Tr. 4, p. 97)
477. A safe yield analysis was performed, and it was determined that CWC would have adequate water supply to serve KEC once the two water systems are connected, i.e. ERDI are completed. CWC also considered drought conditions in its analysis. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 491)

478. An updated water supply plan was filed by CWC in May 2018. While that update did not include projections associated with KEC, it did indicate that a connection between the Plainfield and Crystal systems was anticipated within the five-year planning period. The updated plan notes that, with the addition of the third well at the P.B. Hopkins well field (installed several years ago), there are currently no outstanding supply needs in the Crystal system. In the event that additional supply is needed, the interconnection between the Plainfield and Crystal systems would allow excess capacity to augment the Crystal system's available supply. Upon discussions with NTE, CWC reported to NTE that it does not believe it needs to make any additional revisions to its water supply plan at this time. (NTE 11, Late Filed Exhibit 2)

Gray Water Alternative

479. Gray water is essentially treated wastewater or treated sewage. NTE could potentially source the gray water from the Killingly Water Pollution Control Authority (KWPCA). (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 492)
480. Although the KWPCA facility treated effluent or gray water supply option is technically feasible for KEC, it has several drawbacks as noted below:
- a) KWPCA is not obligated nor under contract or letter of agreement to provide such gray water;
 - b) It would involve infrastructure development that supports a single use (i.e. KEC's gray water supply), rather than the broader benefit associated with the CWC water system connection;
 - c) There is unknown variability of the treated effluent water quality;
 - d) There is reduced reliability due to the increased complexity and extent of water treatment equipment;
 - e) It would require increased makeup water flow;
 - f) It would involve increased wastewater discharge flow;
 - g) Flow to the Quinebaug River would decrease;
 - h) Installed costs would be higher due to pump and pipeline infrastructure;
 - i) Installed costs would be higher to accommodate KEC's facility makeup water treatment system; and
 - j) KEC would have higher water treatment operating and maintenance costs.
- (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 494)
481. After finishing its gray water analysis and entering into an agreement with CWC, NTE decided not to pursue the Gray Water Alternative. Furthermore, the drawbacks associated with the Gray Water Alternative are still applicable to the proposed KEC project. (Tr. 1, p. 36; Tr. 3, p. 46)

Water Discharge

482. The KEC project is proposed to discharge wastewater to the Killingly sewer system. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 495)

483. The wastewater that NTE would discharge from the proposed KEC facility would be associated with five sources listed below.
- a) Operation of the reverse osmosis demineralizer water treatment system includes a reject stream which concentrates any impurities existing in the raw water source;
 - b) Equipment drains and floor drains receive wastewater from equipment drains and washdowns. These wastewaters would be directed to an oil/water separator prior to discharge;
 - c) Sanitary wastewater from toilet flushes, sink drains, shower drains, and drinking fountains would be directly discharged into KEC's sewer connection;
 - d) In order to maintain safe and reliable operation, the HRSG must “blow down” water from the steam cycle; and
 - e) Also for safety and reliability, the CTG evaporative cooler must “blow down” water from the sump.
- (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 496)

484. These five wastewater sources would flow directly via an approximately 3,100-foot sewer interconnection to the existing sewer system in Lake Road. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 497)

485. The total proposed wastewater discharges per day for KEC are listed below.

	Natural Gas Operation of KEC	ULSD Operation of KEC
Discharge to Sewer (gpd)	35,000 to 56,000	Up to 33,000

(NTE 4, response 32, Attachment 3 – Updated KEC Water Balance Table)

486. Wastewater generated by KEC would be pre-treated to the extent required to assure compliance with sewer discharge requirements of the Town of Killingly's sewer system. Use of the oil/water separators for the building drains would ensure compliance with such criteria. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 499)
487. NTE has received confirmation of the existing sewer system's ability to accept and treat the required volumes of wastewater discharge. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 500)

Solid and Hazardous Waste

488. During the construction of KEC, solid waste would be generated that is typical of normal construction efforts including, but not limited to, packing materials, office waste, scrap lumber, metals, cables, cardboard containers, and debris from lunches, catering, and vending machines. In addition, during construction and pre-operational cleaning, some solvents and flushing materials would be used. Solid waste that can be neither recycled nor reused would be stored in on-site containers for disposal. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 502)

489. During the operation of KEC, generated solid waste would be anticipated to consist of office waste, including paper and miscellaneous trash, as well as plant operations wastes such as spent chemical and lube oil containers, water treatment waste, spare parts, packaging, etc. Any solid waste generated would be removed by a licensed hauler. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 503)
490. SCR catalysts would be removed and returned to a catalyst vendor for regeneration, salvage, or disposal. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 504)
491. Programs would be developed to ensure that potentially hazardous wastes are separated from normal waste, including segregation of storage areas and proper labeling of containers. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 505)
492. All waste would be removed from the KEC site by licensed contractors in accordance with applicable regulatory requirements and managed in licensed facilities. (Council Administrative Notice Item No. 57 – Docket No. 470, Finding of Fact # 506)

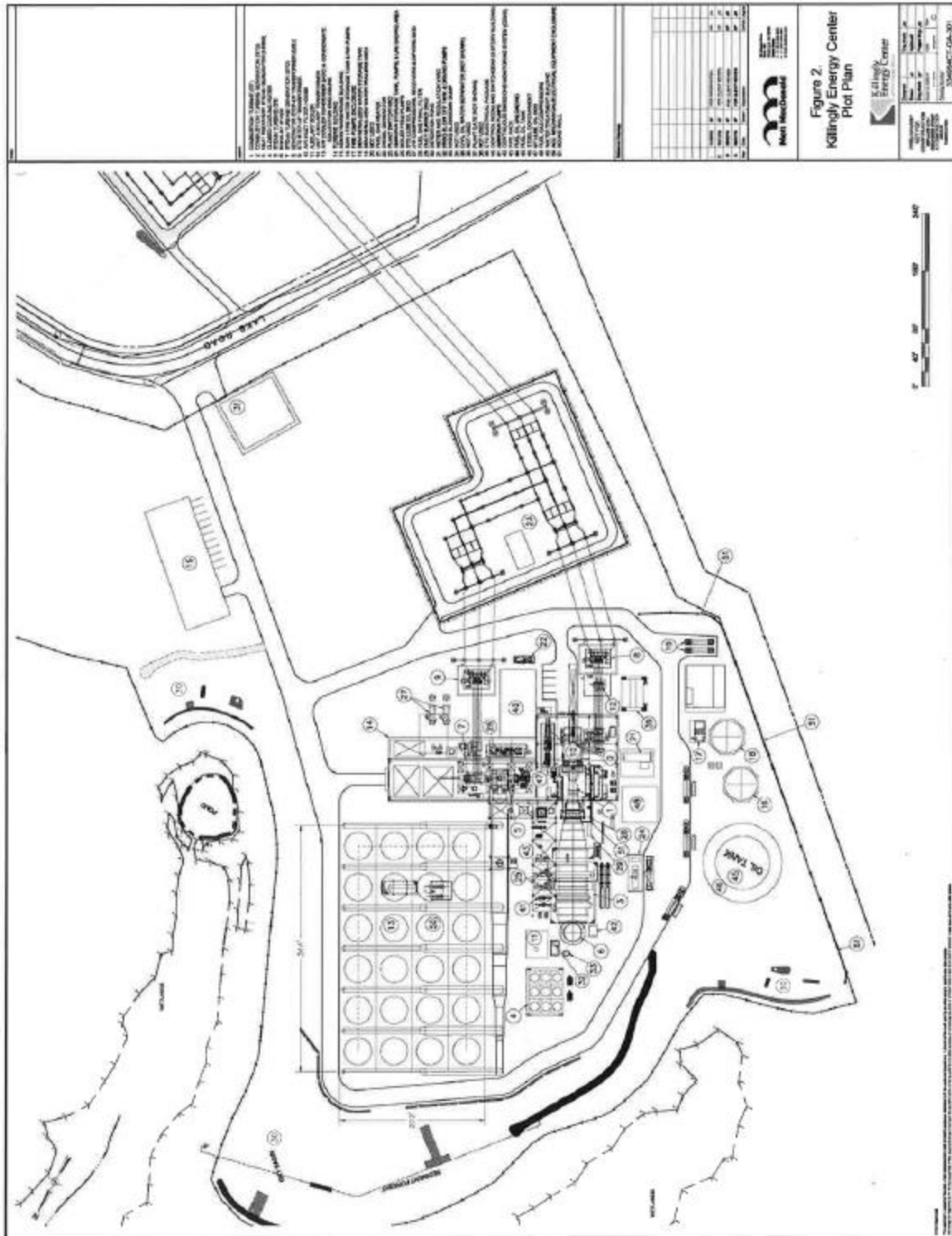
Neighborhood Concerns

493. Pursuant to C.G.S. § 16-50m, the Council, after giving due notice thereof, held a public comment session on Thursday, April 4, 2019 at 6:30 p.m. at the Killingly Town Hall, Town Meeting Room, 172 Main Street, Killingly, Connecticut. The public comment session concluded at 8:25 p.m. (Council's Hearing Notice dated February 15, 2019; Tr. 2)
494. During the public comment session, approximately 40 interested persons provided oral limited appearance statements and while the record was open, approximately 171 interested persons provided written limited appearance statements. (Tr. 1; Public Comment Record)
495. Of the approximately 20 oral and written limited appearance statements in favor of the proposed facility, concerns include, but are not limited to, the following:
- creation of local jobs;
 - cleaner source of energy;
 - tax revenue;
 - reliable electricity generation;
 - economic growth for the area;
 - lower energy costs; and
 - proximity to existing electric transmission infrastructure.
- (Tr. 2; Public Comment Record)

496. Of the approximately 186 oral and written limited appearance statements in opposition to the proposed facility, concerns include, but are not limited to, the following:
- air emissions;
 - lack of need for the energy;
 - impacts to wetlands and watercourses;
 - noise;
 - increased traffic;
 - diminished water supply;
 - impacts to wildlife;
 - visibility;
 - threat of spills and explosions;
 - property values; and
 - construction impacts. (Tr. 2; Public Comment Record)
497. By letter dated April 12, 2019 State Senator Mae Flexer of the 29th District notes that the LRGF is less than one mile from the proposed KEC and has a nominal capacity of 792 MW. This existing plant represents a substantial and ongoing commitment by Killingly to support the regional electric grid, along with the energy needs of homes and businesses in Connecticut and beyond in neighboring New England states. Thus, the addition of the approximately 650 MW KEC would make Killingly the largest natural gas power generating site in all of Connecticut and the second largest generating site in all of Connecticut – second only to Millstone Nuclear Power Plant in Waterford. Senator Flexer believes that is an enormous burden to place on the people of Killingly, and it would be unfair to concentrate a large fraction of the State’s electric power generation emissions in Killingly. She is also concerned that the dedication of large quantities of local water to the proposed KEC facility would constrain the use of those resources for other purposes, both in the present and the future. (Sen. Flexer Comments dated April 12, 2019)
498. If the Council decides to approve KEC, Senator Flexer urges the Council to only approve such a project if there is a guarantee that a Project Labor Agreement (PLA) would be put in place. This agreement would ensure that the facility would be built by the most highly trained workers and would provide these workers with quality wages. Senator Flexer also believes that the PLA should be transferrable to future owners of this property should the current proponents of the this project sell it to another entity. (Sen. Flexer Comments received on April 12, 2019)
499. NTE does not have a project labor agreement (PLA) in place. NTE hasn’t finished selecting its contractor at this time. NTE plans to make KEC a union project. Specifically, NTE would not utilize a contractor that does not use union labor, but would leave the specific contractual arrangement between the unions and NTE’s contractor. (Tr. 4, pp. 89-90)
500. In response to neighborhood concerns, for the proposed project, NTE made the deliberate decision to keep the development footprint within the bounds of the originally proposed project, increased some of the distances from the developed footprint and wetlands, and continued to maintain and consider strategies for maintaining sound levels. (Tr. 4, pp. 125-127)
501. If sound walls continue to be a component of noise mitigation, NTE notes that different colors, materials and design features could be considered. (Tr. 4, pp. 126-127)

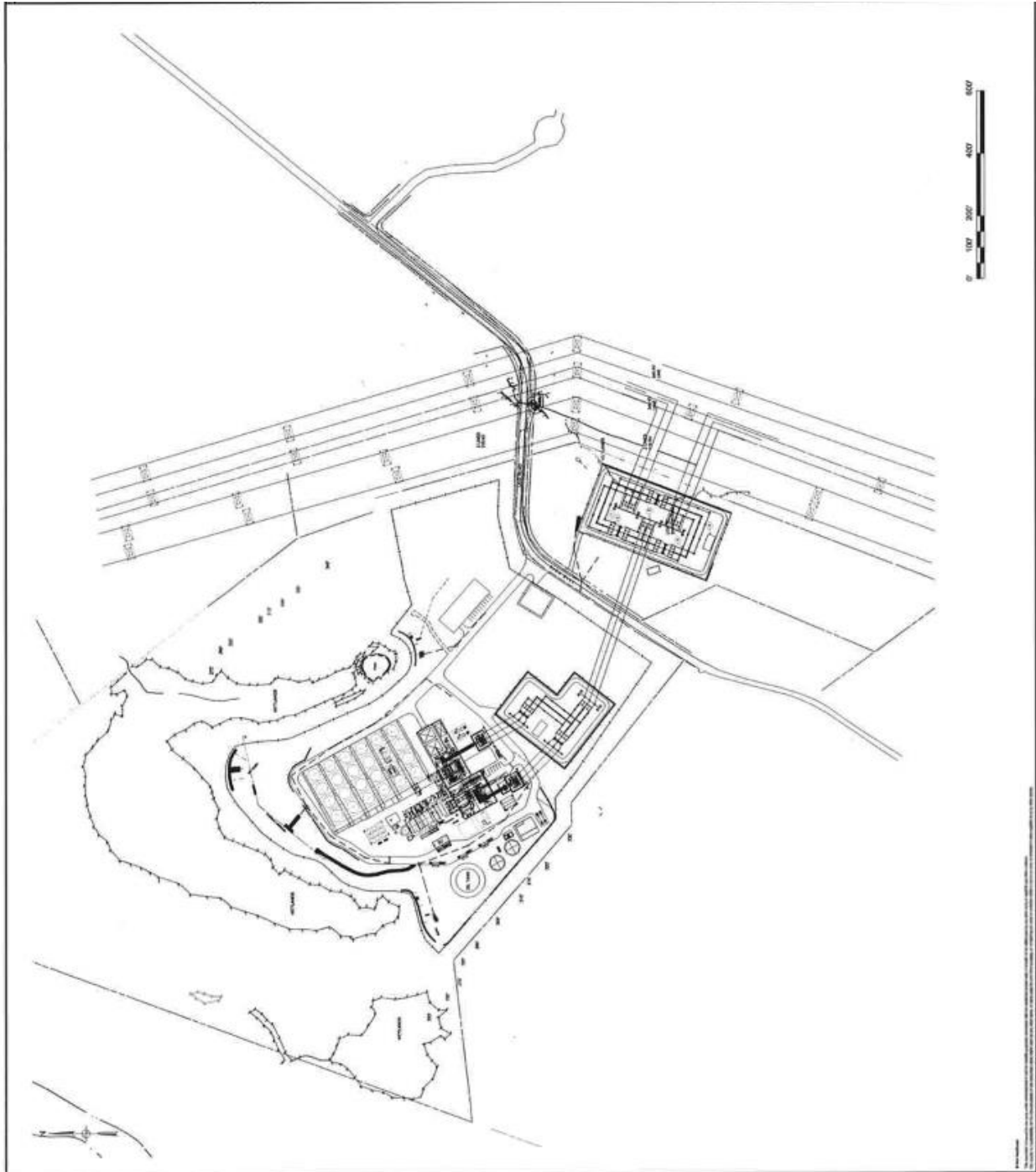
502. As of January 26, 2017, the Town of Killingly was not aware of any official complaints or investigations related to noise in the vicinity of the proposed site. (Council Administrative Notice Item No. 57 – Docket No. 470, January 26, 2017 Transcript, pp. 1029-1030)

Figure 1 – Proposed Site Plan



(NTE 1c – EOSPCC, Figure 2 – KEC Plot Plan)

Figure 2 – Site Plan with future Eversource Utility Switchyard



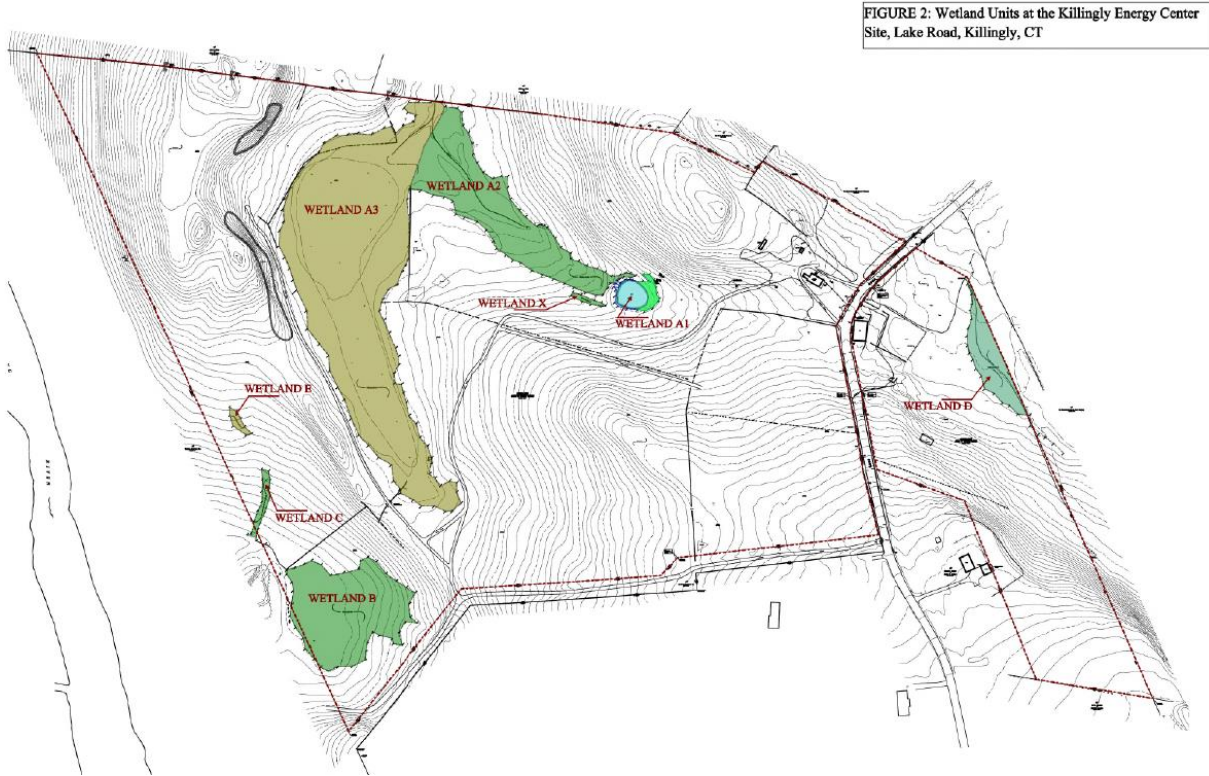
(NTE 1c – EOSPCC, Figure 1 – Proposed KEC Site Plan

Figure 3 – Photo Rendering of Proposed Plant



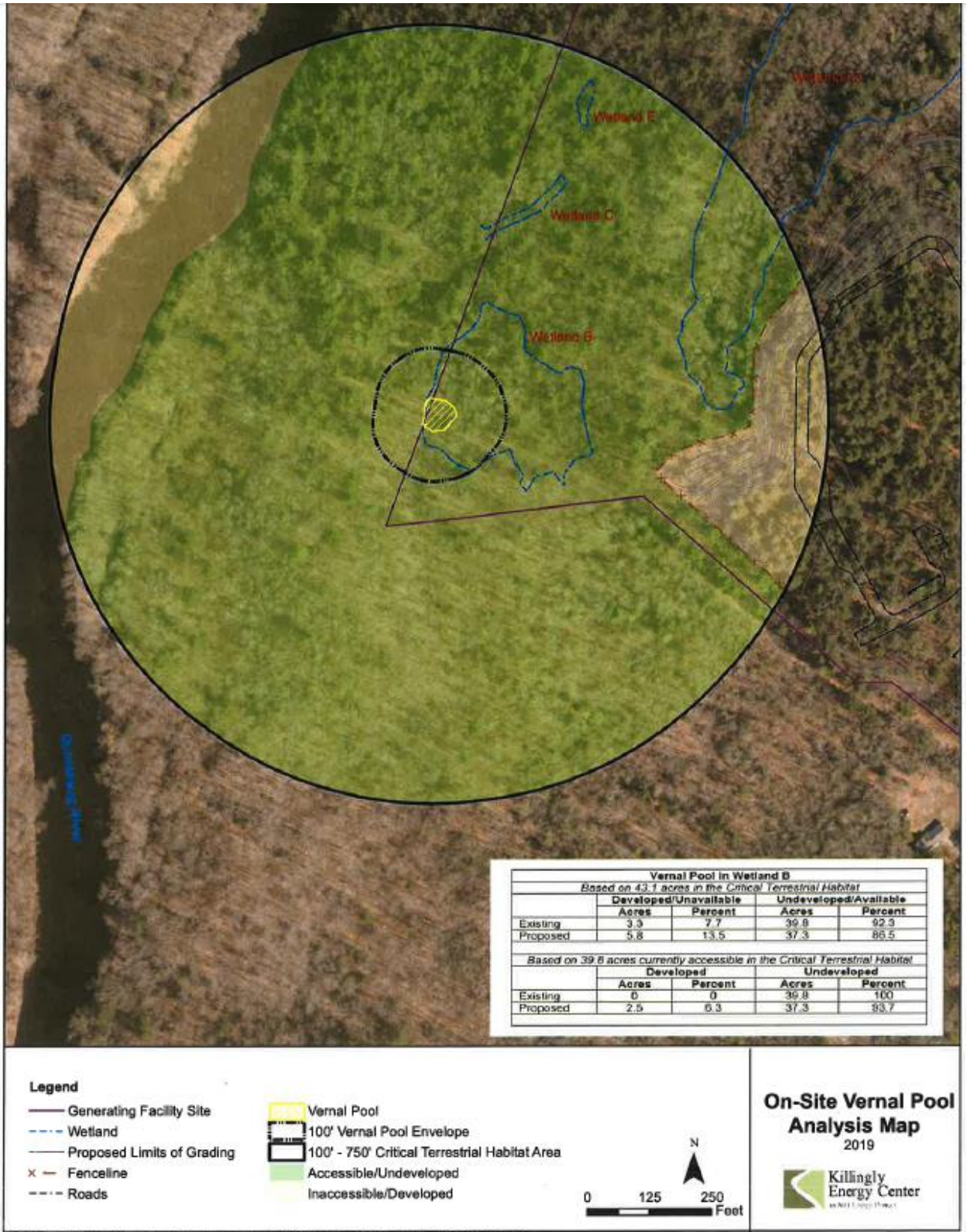
(NTE 1c – EOSPCC, Figure 3 – KEC Facility Rendering)

Figure 4 – Wetland Map



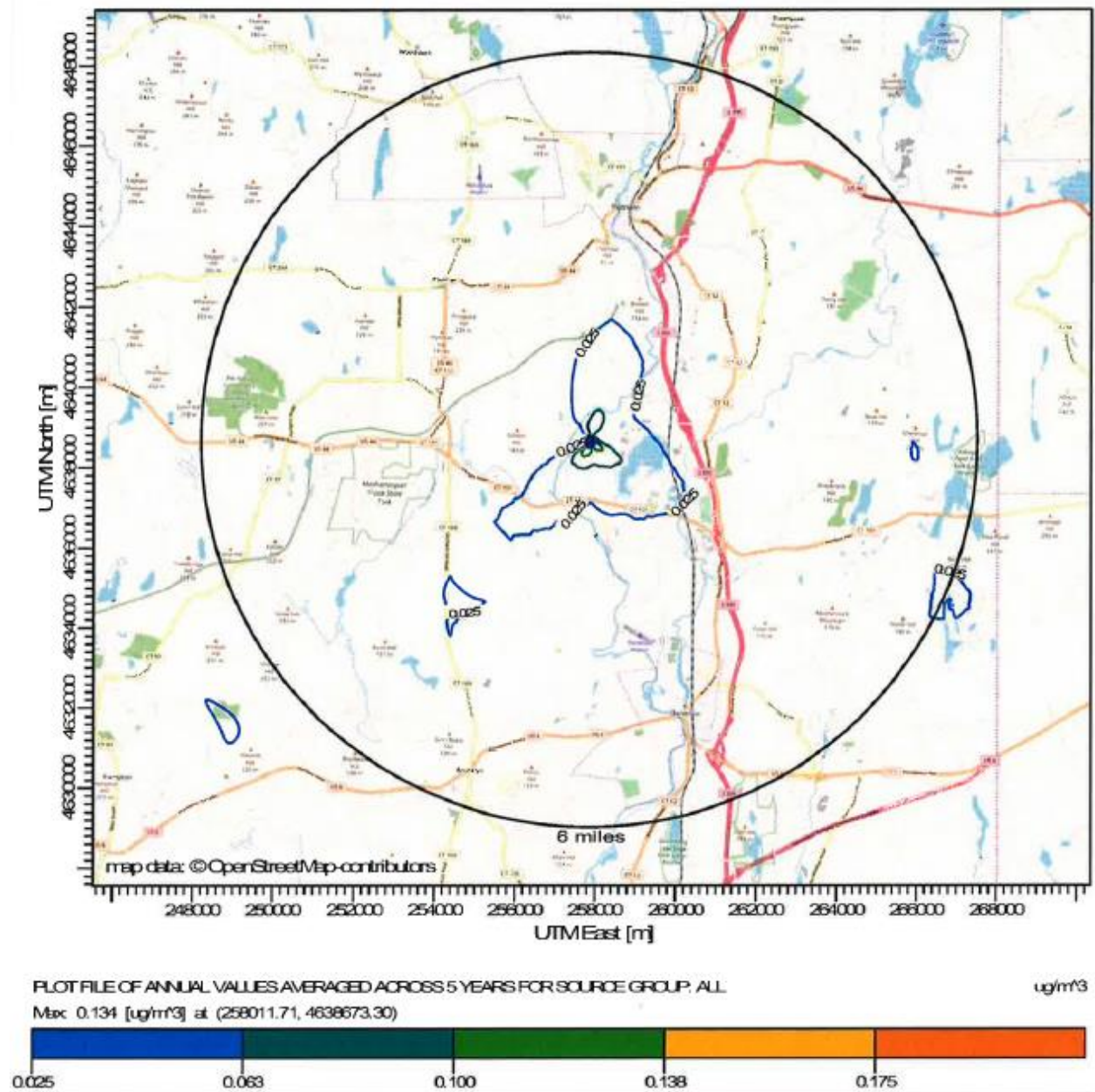
(Council Administrative Notice Item No. 57 – Docket 470, Findings of Fact, Figure 5 – Wetland Map)

Figure 5 – Vernal Pool Analysis



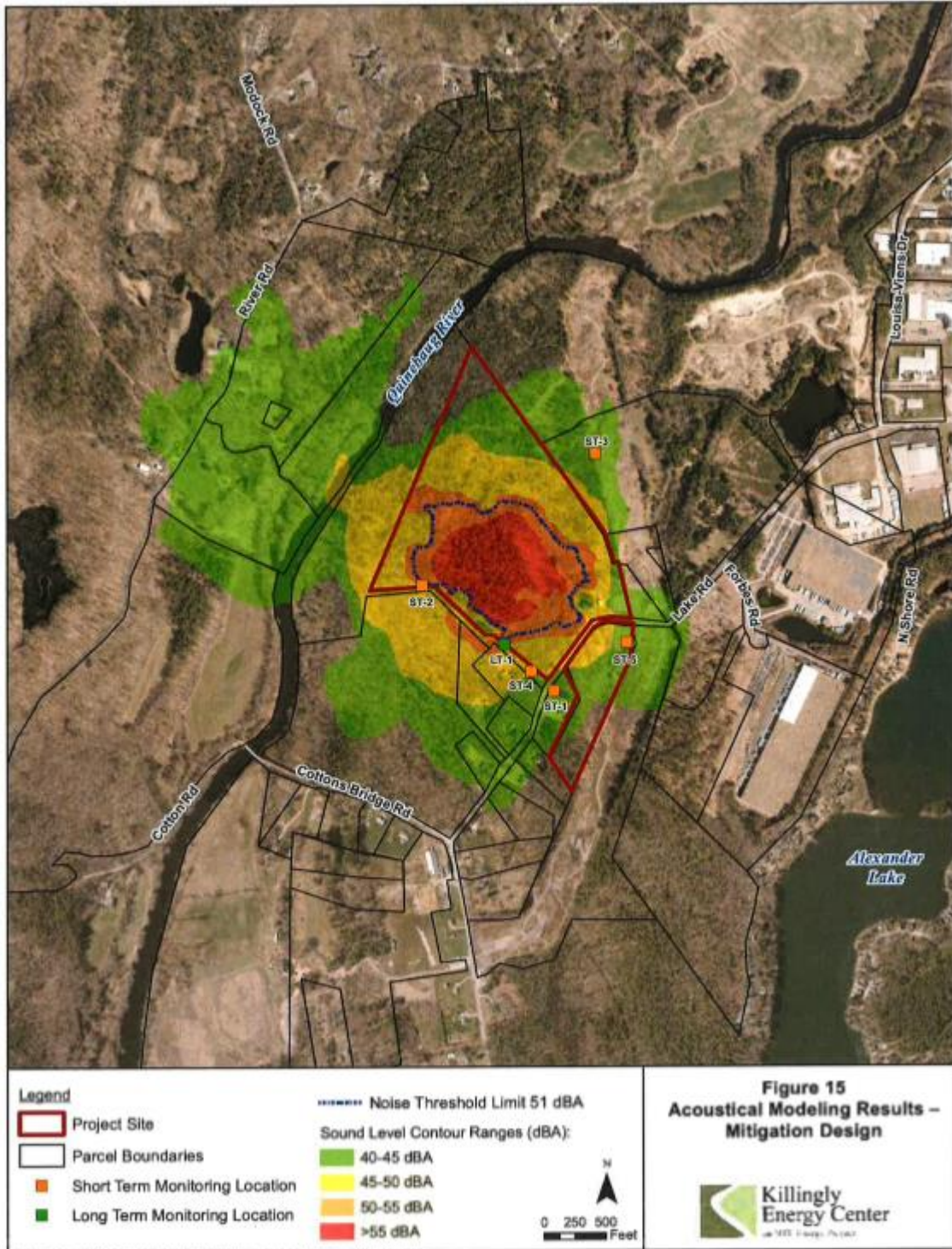
(NTE 4, response 37, Attachment 6)

Figure 6 – PM_{2.5} Dispersion Map



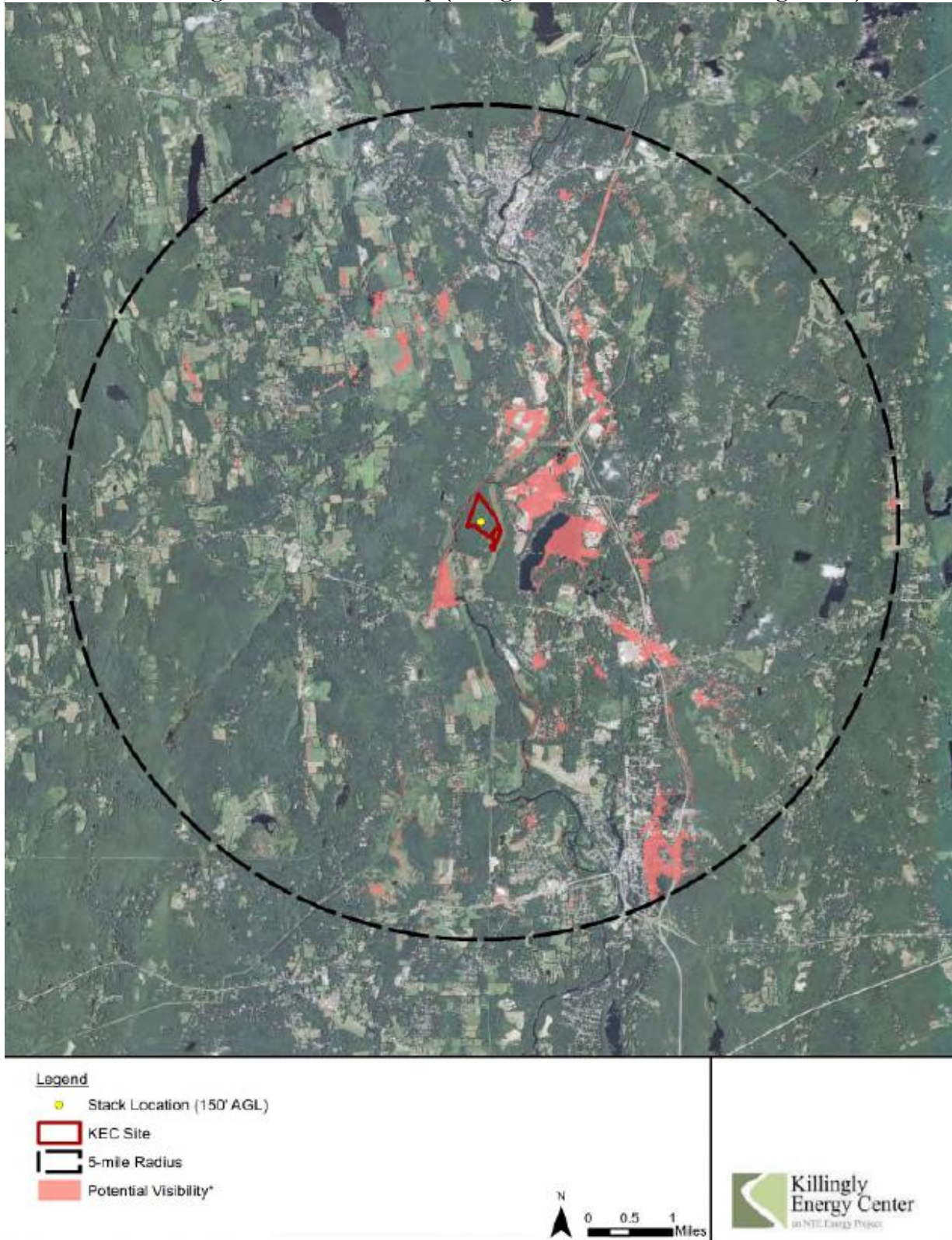
(NTE 4, response 33, Attachment 4)

Figure 7 – Projected Sound Levels



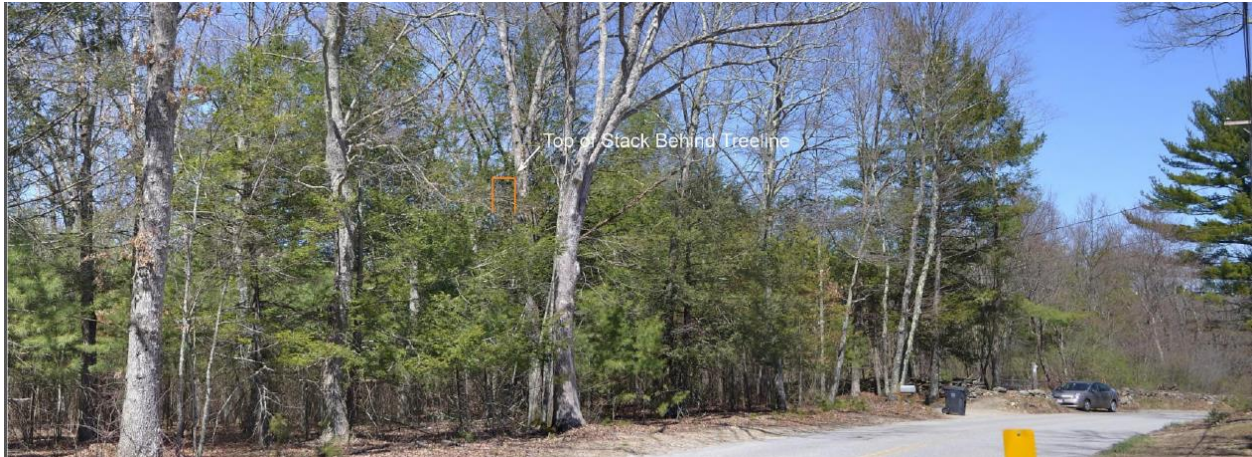
(NTE 1c – EOSPCC, Figure 15 – Acoustical Modeling Results Mitigation Design)

Figure 8 – Viewshed Map (taking into account terrain and vegetation)



(Council Administrative Notice Item No. 57 – Docket 470, Findings of Fact, Figure 9)

Figure 9 – Photo-simulation of Stack Height – 154 Lake Road



(Council Administrative Notice Item No. 57 – Docket 470, Findings of Fact, Figure 10; Tr. 1, p. 39)

Figure 10 – Photo-simulation of Stack Height – Island Road



(Council Administrative Notice Item No. 57 – Docket 470, Findings of Fact, Figure 11; Tr. 1, p. 39)

Figure 11 – Photo-simulation of Stack Height – Route 101



(Council Administrative Notice Item No. 57 – Docket 470, Findings of Fact, Figure 12; Tr. 1, p. 39)

Figure 12 – Photo-simulation of Stack Height – Kearny Fork



(Council Administrative Notice Item No. 57 – Docket 470, Findings of Fact, Figure 13; Tr. 1, p. 39)

Figure 13 – Photo-simulation of Stack Height – Route 44



(Council Administrative Notice Item No. 57 – Docket 470, Findings of Fact, Figure 14; Tr. 1, p. 39)

Figure 14 – Photo-simulations of Stack Height – Louisa Viens Drive



(Council Administrative Notice Item No. 57 – Docket 470, Findings of Fact, Figure 15; Tr. 1, p. 39)

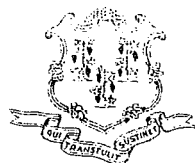
Figure 15 – Photo-simulation of KEC Plume



(Council Administrative Notice Item No. 57 – Docket 470, Findings of Fact, Figure 16; Tr. 1, p. 39)

STATE OF CONNECTICUT

DEPARTMENT OF PUBLIC HEALTH



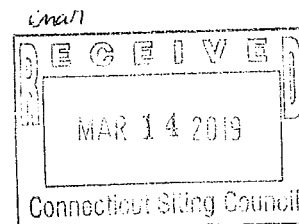
Raul Pino, M.D., M.P.H.
Commissioner

Ned Lamont
Governor
Susan Bysiewicz
Lt. Governor

Drinking Water Section

March 14, 2019

Melanie Bachman
Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051



Re: Docket No. 470B-NTE Connecticut, LLC application for a Certificate of Environmental Compatibility and Public Need (CECPN) for the construction, maintenance and operation of a 550-megawatt dual fuel combined cycle electric generating facility and associated electrical interconnection and switchyard located at 180 and 189 Lake Road, Killingly, Connecticut. DPH Project #2016-0214

Dear Ms. Bachman:

The Drinking Water Section (DWS) of the Department of Public Health (DPH) has reviewed the information submitted in support of the CECPN application for the above noted Docket Number for the Killingly Energy Center (KEC). The applicant requested to reopen Docket Number 470 due to "Changed Conditions." The Docket submission notes that this project proposes to obtain up to 400,000 gallons per day of process water and drinking water from the Connecticut Water Company (CWC) Crystal Division (PWSID# CT0690011). The DWS submitted the attached comments for Docket No. 470 on October 20, 2016. The DWS has reviewed Exhibits 1, 2 and 3 submitted in support of Docket No. 470B to ascertain whether NTE appropriately addressed the DWS's previous comments. The following is a summary of the DWS's comments:

- **DWS Comment #1 Level A Aquifer Protection Area mapping for the CWC's KIP Wellfield:** The final Level A Aquifer Protection Area (APA) mapping that would designate the regulated area surrounding the wells is still not completed. Comment #1 from the DWS's October 20, 2016 letter remains valid.
- **DWS Comment #2 Water Supply Analysis:** The DWS reviewed a letter dated December 14, 2016 from David Radka of the Connecticut Water Company to Mark Mirabito, Chief Operating Officer of NTE Energy that was posted to Docket No. The letter contains water supply demand and margin of safety analyses for the CWC's Crystal Division projected out to the year 2060.



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The available potable water analysis included accounting for system demands, functional limitations of the distribution system and CWC's existing commitments to sell water to other entities in addition to the registered and permitted diversion amounts for the sources of supply. The analysis was performed for average day, peak day and maximum month demands. The analysis indicated that with the planned interconnection between CWC's Crystal System and Plainfield system (PWSID# CT1090081), CWC would be able to maintain an adequate margin of safety to serve the KEC and CWC's other water supply commitments.

- **DWS Comment #3 Interconnection between CWC's Crystal and Plainfield Systems:** Since CWC's water supply analysis includes use of an interconnection between the Crystal and Plainfield systems to demonstrate an adequate margin of safety, then water supply infrastructure improvements must be constructed and approved for use prior to construction of the KEC plant. On page 4 of the Testimony of Timothy Eves, Senior Vice President of NTE Energy (the applicant) dated January 14, 2019, Mr. Eves states the following:
 - "NTE entered into a Water Supply Agreement with the Connecticut Water Company (CWC)."
 - "NTE also entered into two separate Construction Agreements with the CWC through which NTE has committed to pay all costs associated with (i) the installation of a new water service line connecting the KEC facility to the local CWC system, and (ii) the interconnection between CWC's Plainfield and Crystal Water Company System"
- **DWS Comment #4:** Components of the proposed water supply infrastructure improvements may require DPH review and approval remains valid and needs to be addressed.
- **DWS Comments #5 through 8** regarding the regulatory requirements of cross connection control and backflow prevention remain valid and need to be addressed.

Thank you for the opportunity to comment on this Docket. If you have any questions, you may contact Pat Bisacky at (860)509-7333.

Sincerely,



Lori J. Mathieu
Public Health Section Chief
Drinking Water Section

Attachment

Cc w/attachment: Craig Patla, Connecticut Water Company
Brian Lynch, Putnam Water Pollution Control Authority

STATE OF CONNECTICUT

DEPARTMENT OF PUBLIC HEALTH



Raul Pino, M.D., M.P.H.
Commissioner

Daniel P. Malloy
Governor
Nancy Wyman
Lt. Governor

Drinking Water Section

October 20, 2016

Melanie Bachman
Acting Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Re: Docket No. 470 NTE Connecticut, LLC application for a Certificate of Environmental Compatibility and Public Need (CECPN) for the construction, maintenance and operation of a 550-megawatt dual fuel combined cycle electric generating facility and associated electrical interconnection and switchyard located at 180 and 189 Lake Road, Killingly, Connecticut.

Dear Ms. Bachman:

The Drinking Water Section (DWS) of the Department of Public Health (DPH) has reviewed the CECPN application for the above noted Docket Number for the Killingly Energy Center (KEC). The Docket submission notes that this project proposes to connect to the Connecticut Water Company (CWC) Crystal Division (PWSID# CT0690011) public water system to obtain up to 400,000 gallons per day of process water and drinking water, therefore the DWS offers the following comments:

- This project is located approximately 4,000 feet from the Killingly Industrial Park Wellfield (KIP), a source of public drinking water for the customers of the (CWC) Crystal Division. It is not located within the source water protection area as delineated by the DWS; however the final Level A Aquifer Protection Area (APA) mapping that would designate the regulated area surrounding the wells is not completed. If the proposed facility falls within the Level A APA and is not constructed prior to completion of the Level A mapping, the DWS requests an opportunity to review the project for potential impacts to the sources of public drinking water.
- A water supply analysis was provided by the applicant, however it does not sufficiently document that the CWC Crystal Division has adequate water available with the appropriate margin of safety to supply the KEC plant. The available water analysis needs to account for system demands, functional limitations of the distribution system and CWC's existing commitments to sell water to other entities in addition to the registered and permitted diversion amounts for the sources of supply. The analysis must also be performed for average day, peak day and maximum month demands. This analysis should be provided to the DWS for review and concurrence prior to construction of the facility.
- If the available water analysis indicates that interconnection with the CWC Plainfield system is necessary to ensure that the CWC Crystal Division maintains an adequate margin of safety under the KEC maximum demand scenario, then water supply infrastructure improvements must be constructed and approved for use prior to construction of the KEC plant.



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Ms Bachman
October 20, 2016
Page 2

- Components of the proposed water supply infrastructure improvements may require DPH review and approval.
- Because the proposed facility will receive water from CWC, it will be required to be constructed in compliance with the backflow prevention requirements specified in the Regulations of Connecticut State Agencies (RCSA) Section 19-13-B38a: "Permissible Arrangements for Connection to Public Water Supply Lines".
- CWC, per RCSA Section 19-13-B37, is prohibited from providing new water service to any site, which is not in compliance with RCSA Section 19-13-B38a.
- Note that per RCSA Section 19-13-B38a(f)(7) the owner and CWC will be required to have annual tests performed on reduced pressure principle backflow preventers, double check valve assemblies and pressure vacuum breakers that are installed at this site and that these tests shall only be performed by a person who is actively certified as a CT DPH Backflow Prevention Device Tester.
- Note that per RCSA Section 19-13-B102(f), CWC will be required to perform inspections for cross connections, should any of the five categories of concern be known to exist at this site, and that these inspection must be performed by a person who is certified as a CT DPH Cross Connection Survey Inspector.

Thank you for the opportunity to comment on this Docket. If you have any questions, you may contact Pat Bisacky at (860)509-7333.

Sincerely,



Lori J. Mathieu
Public Health Section Chief
Drinking Water Section

Cc: David Radka, Connecticut Water Company
Gerard Beausoleil, Putnam Water Pollution Control Authority

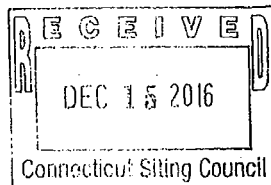
Connecticut Water Company
93 West Main Street
Clinton, CT 06413-1600

Office: 860.669.8636
Fax: 860.669.9326
Customer Service: 800.286.5700



December 14, 2016

Mark Mirabito, Chief Operating Officer
NTE Energy
24 Cathedral Place Suite 300
Saint Augustine, FL 32084



Re: Proposed Killingly Energy Center
180/189 Lake Road, Killingly

Dear Mr. Mirabito:

I am enclosing demand and margin of safety analyses for the Connecticut Water Crystal System. These tables, which include available supply, demand and margin of safety calculations, conform to methodologies promulgated in Sec 25-32d of the Regulations of Connecticut State Agencies (individual water supply planning regulations).

Briefly, available water is the maximum amount of water a system can dependably supply from its active, approved sources, taking into account hydraulic, treatment or other limitations. Quantities of available water are assessed based on 24-hour and 18-hour pumping days for all groundwater supplies. These supply quantities are compared to system demand in order to assess each system's ability to satisfy various demands over the full fifty-year planning period and plan for additional supply development needs. Demands realized over the most recent five years are averaged and used as the basis for future projections, with the historical ratios of Maximum Month Average Day Demand (MMADD) and Maximum Day Demand (MDD) to Average Day Demand (ADD) remaining constant for demand projection purposes. ADD growth is estimated based on historical growth, known projects in the service area having significant demand consequences, or other factors, and generally ranges from 0.5 to 1.0 percent. Finally, Margin of Safety values are obtained by dividing available water by demand and are shown as decimal equivalents.

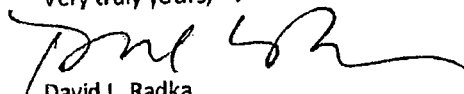
As shown in Table 1.0, available supply in the Crystal System is sufficient to meet projected water demands for the entire 50-year planning period (at the end of the period MOS remains some 89%, 49% & 35% above projected ADD, MMADD & MDD, respectively). As noted above, this analysis is based on historical demand, which includes all water used for residential, commercial, industrial and public use, as well as non-revenue water losses. While Table 1.0 does not include any demands associated with the KEC project, it does include demands realized by all other customers, including the Town of Putnam.

In order to assess the MOS with anticipated KEC demands, several modifications were necessary, and are shown in Table 2.0. First, system available supply was increased to reflect the planned interconnection with the Plainfield system. This augmentation adds some 0.54 mgd over a 24-hour pumping period (0.40 mgd on an 18-hour basis). Second, projected average day demands were increased by 0.40 mgd to reflect peak plant use when operating on distillate, while projected maximum day and maximum month average day demands were increased by 0.10 mgd to reflect plant demands when operating on natural gas and with higher ambient air temperatures, such as would be anticipated during summer peak demand periods. These potential demands are consistent with the water needs described in your letter of July 21, 2016. Note that while the ADD would not actually increase by 0.4 mgd over a full calendar year, the projection was done in order to assess the impact such a demand would have during off-peak months.

Lastly, projected MMADD and MDD figures were adjusted upward to reflect potential Putnam water demands. This was done because transfers to the Putnam system have historically tended to be less than the maximum quantity (0.8 mgd) identified in our agreement. Actual use by the Town was averaged over the historical period of record and the difference between their actual use (0.12 mgd MMADD and 0.22 MDD) and 0.8 mgd was conservatively added to future MMADD and MDD projections. Table 2.0 suggests the system would be able to maintain an adequate MOS through 2060 with both KEC as a customer and increased transfers to Putnam.

If you have any questions, please feel free to contact me at 860.664.6059.

Very truly yours,



David L. Radka

Director of Water Resources & Planning

Encs: Tables 1.0, 2.0
Cc: C. Patla

CWC Crystal System Demand Margin of Safety

DEMAND/MARGIN OF SAFETY TABLE 1.0

CRYSTAL SYSTEM											
HISTORICAL DEMAND (MGD)											
Year	ADD	MMADD	MDD	MMADD/ADD	MDD/ADD	MOS	MMAD, 18hr	MOS	MMAD, 18hr	MOS	AVAILABLE SUPPLY (MGD)
							ADD, 18hr		ADD, 18hr		
2011	1.24	1.66	2.42	1.33	1.95	2.01	1.50	1.37	1.50	1.37	3.320
2012	1.14	1.56	2.30	1.37	2.02	2.18	1.60	1.44	1.60	1.44	
2013	1.23	1.49	2.48	1.21	2.02	2.03	1.67	1.34	1.67	1.34	
2014	1.11	1.32	1.76	1.19	1.59	2.25	1.89	1.88	1.89	1.88	
2015	1.25	1.54	2.22	1.23	1.77	1.99	1.62	1.50	1.62	1.50	
5 Yr Mean	1.19	1.51	2.24	1.27	1.87	2.09	1.65	1.49	1.65	1.49	
Maximum	1.25	1.66	2.48			1.99	1.50	1.34	1.50	1.34	
PROJECTED DEMAND (MGD)											
Year	ADD	MMADD	MDD	MMADD/ADD	MDD/ADD	MOS	MMAD, 18hr	MOS	MMAD, 18hr	MOS	AVAILABLE SUPPLY (MGD)
							ADD, 18hr		ADD, 18hr		
2020	1.21	1.53	2.26	1.27	1.87	2.06	1.63	1.47	1.63	1.47	
2030	1.23	1.56	2.30	1.27	1.87	2.02	1.60	1.44	1.60	1.44	
2060	1.32	1.67	2.47	1.27	1.87	1.89	1.49	1.35	1.49	1.35	

ADD = AVERAGE DAY DEMAND
 MMADD = MAX. MONTH AVERAGE DAY DEMAND
 MDD = MAX. DAY DEMAND
 MOS = MARGIN OF SAFETY

NOTES:
 HISTORICAL PRODUCTION DATA FROM TABLE 4.1.1
 AVAILABLE SUPPLY VALUES FROM TABLE 4.6.1 - CRYSTAL SYSTEM ONLY
 PROJECTED DEMANDS FROM TABLE 4.5.5

CWC Crystal System Demand Margin of Safety

TABLE 2.0

DEMAND/MARGIN OF SAFETY

CRYSTAL SYSTEM											
HISTORICAL DEMAND (MGD)						AVAILABLE SUPPLY (MGD)					
Year	ADD	MMADD	MDD	MMADD/ADE	MDD/ADD	ADD,18hr	MMAD,18hr	MOS	MOS	MOS	MOS
2011	1.24	1.66	2.42	1.34	1.95	2.33	1.74	1.74	1.59	1.59	1.59
2012	1.14	1.56	2.30	1.37	2.02	2.54	1.85	1.85	1.68	1.68	1.68
2013	1.23	1.49	2.48	1.21	2.02	2.36	1.94	1.94	1.56	1.56	1.56
2014	1.11	1.32	1.76	1.19	1.59	2.61	2.19	2.19	2.19	2.19	2.19
2015	1.25	1.54	2.22	1.23	1.77	2.31	1.88	1.88	1.74	1.74	1.74
5 Yr Mean	1.19	1.51	2.24	1.27	1.87	2.42	1.91	1.91	1.72	1.72	1.72
Maximum	1.25	1.66	2.48			2.31	1.74	1.74	1.56	1.56	1.56
PROJECTED DEMAND (MGD)											
Year	ADD	MMADD	MDD	MMADD/ADE	MDD/ADD	ADD,18hr	MMAD,18hr	MOS	MOS	MOS	MOS
2020	1.61	2.31	2.94	1.43	1.83	1.80	1.25	1.80	1.31	1.31	1.31
2030	1.63	2.34	2.98	1.44	1.83	1.77	1.24	1.77	1.29	1.29	1.29
2060	1.72	2.45	3.15	1.42	1.83	1.68	1.18	1.68	1.22	1.22	1.22

NOTES:
 ADD = AVERAGE DAY DEMAND
 MMADD = MAX. MONTH AVERAGE DAY DEMAND
 MDD = MAX. DAY DEMAND
 MOS = MARGIN OF SAFETY
 HISTORICAL PRODUCTION DATA FROM TABLE 4.1.1
 AVAILABLE SUPPLY VALUES FROM TABLE 4.6.1 - INCLUDES CRYSTAL/PLAINFIELD INTERCONNECTION
 PROJECTED DEMANDS FROM TABLE 4.5.5
 PROJECTED DEMAND INCLUDES KEC ADD OF 0.4 MGD, MMADD OF 0.1 MGD, & MDD OF 0.1 MGD.
 MMAD & MD PROJECTED DEMAND ADJUSTED FOR 0.8 MGD TRANSFER TO PUTNAM SYSTEM.



April 1, 2019

Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

RE: Killingly Energy Center
NTE Connecticut, LLC
Killingly, Connecticut
Docket No. 470-B

Dear Members of the Connecticut Siting Council:

Staff of this department have reviewed the submittals made in the above-referenced proceeding, which is a reopening of the Docket 470 application of 2016. Modifications to the proposed natural gas-fired powerplant since the initial application include the incorporation of a newer technology turbine-generator which increases the output of the facility from the previous rating of 550 MW to approximately 650 MW within substantially the same footprint on the host site at 189 Lake Road in Killingly.

Consistent with the 2016 Docket 470 proposal, the Killingly Energy Center facility would have dual-fuel capability, with ultra-low sulfur diesel (ULSD) for a back-up fuel. A switchyard to connect the generating facility with the 345-kV Eversource transmission line constructed under Docket 424, the Interstate Reliability Project, would be constructed across Lake Road from the generating facility.

DEEP asks that the Council take administrative notice of DEEP's Docket 470 comments of November 7, 2016 in its evaluation of the current proposal. No additional site visit has been conducted other than the field review of October 19, 2016 but we assume that the description of the site from that visit remains relevant.

DEEP notes and concurs with the cited system benefits that the Killingly Energy Center would bring to the electricity supply capacity and security in Connecticut and the New England region. These benefits flow from the dual-fuel capacity of the Killingly Energy Center (KEC) and from its firm gas supply contract. Particularly at times of peak natural gas demand during extreme cold weather, these two features of the KEC will provide substantial enhancement of the reliability of the electric supply system to the state and the region and will diminish the likelihood of older, less efficient and higher emitting generation assets being called into service and of price spikes as those types of assets are dispatched.

Air Permit Issues

DEEP issued a New Source Review Permit to NTE for the Killingly Energy Center on December 10, 2018. DEEP affirms the claims made on page 25 of Mr. Paul Hibbard's testimony that the KEC will operate at a CO2 emissions level as low as any natural gas plant in the northeast. The Mitsubishi turbine's particulate matter emissions rates are also significantly cleaner than those of the previously proposed Siemens turbine and are well below those of the CPV Towantic plant. The KEC as currently proposed will have one of the lowest PM emissions rates nationally.

One emissions rate in Table 4 of Exhibit 3 that is puzzling is the rate shown for lead emissions, which that table shows to be five times higher for the Mitsubishi turbine than for the Siemens turbine, at 18 pounds per year for the Mitsubishi turbine vs. 3.6 pounds per year for the Siemens turbine. Given that the lead emissions rate would be chiefly a function of the lead content of the fuel consumed, which would be the same for either the Siemens or Mitsubishi turbines, the 18% increase in turbine rating for the Mitsubishi should not yield a fivefold increase in lead emissions.

Diversion Permit

A Diversion Permit was issued to Connecticut Water Company on March 15, 2018 for the diversion of up to 540,000 gpd between Connecticut Water's Plainfield and Crystal Divisions. Authorization for this diversion runs through January 17, 2027. The Docket 470-B submittals note that NTE has committed to fund the construction of the two connections necessary to convey water from the Plainfield system to the KEC. The 540,000 gpd volume is in excess to the water needs stated in the Docket 470 application of up to 400,000 gpd when the powerplant is firing ultra low sulfur diesel fuel.

Natural Diversity Data Base Review

By letter of March 11, 2019 from the DEEP Natural Diversity Data Base Program to Lynn Gresock of Tetra Tech, DEEP has concurred with NTE's proposed bat and turtle avoidance measures and with the Upland Lepidoptera Habitat Plan proposed for a site just north of Lake Road. Reference to the lepidoptera habitat enhancement is contained on page 14 of Exhibit 3 of the Docket 470-B submittal.

Stormwater Permits

The Killingly Energy Center will require approval from DEEP for its stormwater discharges. As this project falls under the Locally Exempt classification, its stormwater permits would be issued by DEEP. To date, no registration has been received under either the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities or the General Permit for the Discharge of Stormwater Associated with Industrial Activities. For projects where one to twenty acres of land will be disturbed by construction activity, the registration must be submitted at least 60 days prior to the commencement of construction activities. For projects disturbing in excess of twenty acres, the registration must be received at least 90 days in advance of the commencement of construction activities. Thus, it is not unexpected that the stormwater general permit registrations would not have been submitted as of this time. More detail on these permits is available at deep.stormwater@ct.gov.

Wastewater Discharge Permit

The wastewater from the Killingly Energy Center will likely require an Individual Permit to discharge to the Killingly wastewater treatment plant. The permit would be issued by DEEP but would incorporate Killingly's local limits for discharges to its treatment plant. The original application notes (p. 51) that discharges from equipment drains and floor drains will be directed to an oil/water separator prior to discharge from the plant. The applicant may contact Michelle Gore of the DEEP Water Protection and Land Reuse Bureau at (860) 424-4160 in regard to the discharge permit requirements.

Wetland Mitigation Plan, Water Quality Certification

As noted in our 2016 comments, the switchyard construction will directly impact 0.287 acres of Wetland D which is immediately adjacent to the Eversource transmission line right-of-way. That application did not contain specific details as to the location of the wetlands replication area proposed for mitigation or of the areas slated for invasive species control efforts. Conceptually, the creation of 0.39 acres of inland wetland in the immediate vicinity of the impacted wetland, the removal of invasive species including Asiatic bittersweet, Japanese barberry, multiflora rose and glossy buckthorn elsewhere on the Killingly Energy Center property, and a five-year monitoring period for the invasive species removal effort is an appropriate mitigation plan for the switchyard's wetland impacts. Assuming that review of the mitigation plan will be an element of the project's Development and Management Plan should the project receive the Council's approval, DEEP would be willing to offer its assistance in the review of the mitigation plan.

Because the wetland impact of the project is less than 0.5 acres, the Corps of Engineers will likely find it eligible for a Pre-Construction Notification rather than requiring an individual permit. If that proves to be the case, the project would qualify under DEEP's Section 401 Water Quality Certification General Permit.

Noise Impacts

Noise generated by the KEC is likely to be the foremost impact from the facility as experienced by residents in the proximal area. As noted in DEEP's 2016 comments for Docket 470, a visit to the nearby Lake Road Generating Facility confirmed that the air-cooled condensers are indeed the major noise emitter for this type of facility. The property value guarantee agreement mentioned on page 23 of Exhibit 3 for property owners within 2,500' of the plant is, at least for Connecticut, a novel mechanism to address noise and other impacts which may affect property values. The Council may wish to investigate the specifics of such an agreement in more detail.

For noise generated during facility construction, the last two noise mitigation measures on page 17 of Appendix D to Exhibit 3, the Sound Survey and Analysis Report, would be particularly worthwhile measures. The first of these stipulates that, prior to the start of construction, a procedure for addressing noise complaints from residents be established. This, of course, assumes that the residents will be informed of this procedure such as, for instance, by providing residents with a phone number to call with any noise complaints or questions. The second measure, communicating with the community in advance to give residents a heads-up concerning any scheduled events, such as steam blows, which may be expected to generate significant noise levels, would address one of the major issues that neighbors of the CPV Towantic powerplant complained

about in the latter phases of its construction. Communications with neighbors is always a beneficial strategy.

Fuel Supply Questions

The DEEP Bureau of Energy and Technology Policy would like the Council to flesh out the specifics of the firm natural gas contract for KEC, specifically how far upstream does the commitment for a firm supply of gas extend? Is this commitment only firm for the local distribution company, in this case Eversource, or is it also binding upon Algonquin and its suppliers? Also, what conditions could conceivably result in a curtailment of the natural gas supply to KEC despite the firm supply contract?

Regarding the supply of the ultra low sulfur diesel fuel, what measures would be feasible and available to extend the length of time that the facility can operate on ULSD beyond the 45.7 hours of supply that is stored on site? How much can this operating time be extended via deliveries of additional supply during the 45.7 hours when the on-site supply is being used? Is the delivery of ULSD covered by any contract to ensure continuous delivery? What factors determined the proposed size of the on-site fuel oil storage tanks? What are the constraints on incorporating more on-site storage?

Thank you for the opportunity to review this application and to submit these comments to the Council. Should you, other Council members or Council staff have any questions, please feel free to contact me at (860) 424-4110 or at frederick.riese@ct.gov.

Respectfully yours,



Frederick L. Riese
Senior Environmental Analyst

cc: Commissioner Katie Dykes

STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH

Renée D. Coleman-Mitchell, MPH
Commissioner

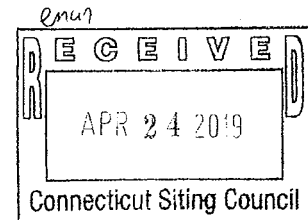


Ned Lamont
Governor
Susan Bysiewicz
Lt. Governor

DRINKING WATER SECTION

April 24, 2019

Melanie Bachman, Esq.
Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06021

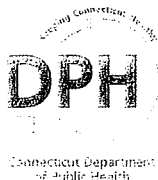


RE: Docket No. 470B—Application of NTE Connecticut, LLC for a Certificate of Environmental Compatibility and Public Need for the Construction, Maintenance, and Operation of a 550-Megawatt Dual-Fuel Combined Cycle Electric Generating Facility and Associated Electrical Interconnection Switchyard Located at 180 and 189 Lake Road, Killingly, Connecticut—Reopening of this application based on changed conditions pursuant to Connecticut General Statutes §4-181a(b)

Dear Attorney Bachman:

This is in regards to a letter dated April 8, 2019, that NTE Connecticut, LLC (“NTE”) sent to the Department of Public Health (“the DPH”) regarding the above-referenced docket. In its April 8, 2019 letter, pursuant to a request made to NTE by the Connecticut Siting Council at its April 4, 2019 evidentiary hearing regarding the above-referenced docket, NTE asked that the DPH modify Comment # 3 of its March 14, 2019 letter to the Connecticut Siting Council and provide a response regarding such modification directly to the Council. Specifically, NTE requested that the DPH change the requirement that CWC construct the water system improvements, including the interconnection of the Crystal and Plainfield Systems, and obtain approval for use of such improvements, from “prior to construction of the KEC plant” to “prior to operation of the KEC plant. According to NTE, the DPH’s Comment # 3 is problematic given the anticipated sequencing for the on-site and off-site project improvements.

By way of background, the DPH submitted comments to the Connecticut Siting Council regarding NTE’s application for a certificate of environmental compatibility and public need for the construction, maintenance, and operation of an electric generating facility and associated electrical interconnection switchyard in Killingly, Connecticut, on October 20, 2016, with respect to the



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Affirmative Action/Equal Opportunity Employer

Melanie Bachman, Esq.
Executive Director
April 24, 2019
Page 2 of 2

original docket, and on March 14, 2019, with respect to the above-referenced docket. In both the October 20, 2016 and the March 14, 2019 comments, the DPH stated that CWC must construct the water supply improvements and obtain approval for their use prior to the construction of the KEC plant. The DPH provided this comment to the Connecticut Siting Council because both NTE and CWC made clear that if CWC is to serve the KEC plant, which is necessary for the KEC plant's operation, an interconnection of the Crystal and Plainfield Systems is necessary in order for CWC to maintain an adequate margin of safety.

In its April 8, 2019 letter to the DPH, NTE explained that, while it is understandable and acceptable that restrictions on KEC's operations would be contingent upon the interconnection of the Crystal and Plainville systems, waiting until that interconnection is completed to start construction of the KEC plant would not allow NTE to complete facility construction in time to meet its in-service obligations to Independent Systems Operator-New England ("ISO-NE"). Understanding the time constraints under which NTE is for completion of the construction of the KEC plant and recognizing that as long as CWC completes construction of the water supply improvements, and obtains DPH approval for use of such improvements, prior to operation of the KEC plant, CWC, based on its December 14, 2016 letter to NTE, will maintain its margin of safety even with the addition of the KEC plant as a consumer, the DPH hereby modifies Comment # 3 of its March 14, 2019 letter as follows:

Since CWC's water supply analysis includes use of an interconnection between the Crystal and Plainfield systems to demonstrate an adequate margin of safety, then water supply infrastructure improvements must be constructed and approved for use prior to operation of the KEC plant.

In addition, the DPH requests that the Connecticut Siting Council make such certificate of environmental compatibility and public need conditioned on CWC's completion of the water supply improvements, including the interconnection of the Crystal and Plainville systems, and approval for such improvements by the DPH.

Thank you for the opportunity to provide additional comments regarding the above-referenced docket. If you have any questions or would like additional information, please do not hesitate to contact Patricia Bisacky, Environmental Analyst 3, at (860) 509-7333.

Sincerely,



Lori J. Mathieu
Public Health Section Chief

Copy to:

Kenneth C. Baldwin, Esq., Robinson + Cole
Mr. Craig Patla, Connecticut Water Company