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Killingly Energy Center (KEC) - NTE Energy Project

180 & 189 Lake Road
Killingly, Connecticut

Recommendations for CSC Conditions & Third Party Document Review

TRC Environmental Corporation
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September 22~~8~~, 2016 (Revision 1)

TRC Environmental Corporation (TRC) has been retained by the Town of Killingly to provide environmental and engineering technical support and review of the NTE Energy application to the Connecticut Siting Council (CSC) for the proposed 550-megawatt (MW) combined cycle power generating station to be located at 180 & 189 Lake Road. The comments provided in this document are based on TRC's technical expert review of documents furnished by NTE Energy on the Connecticut Siting Council website (http://www.ct.gov/csc/cwp/view.asp?a=962&Q=583908&PM=1) Docket No. 470 for this application for Certificate of Environmental Compatibility and Public Need filing. NTE Energy submitted the CSC application on August 17, 2016. The formal process for host community review and comment has begun. The Town of Killingly will have 65 days to provide written comment on the CSC application for the project.

CSC Docket No. 470 Documents Referenced and Covered in this Review

1) **VOLUME I – APPLICATION NARRATIVE**
2) **VOLUME II – APPENDIX A THROUGH F**
    a. Appendix A – Notice and Service Documentation
        i. A-1 – Legal Notice
        ii. A-2 – Certification of Service of Application on State and Local Officials
        iii. A-3 – Abutter Notice Letter and Attachments
    b. Appendix B – Analysis of Need and Economic & Environmental Impacts
        i. B-1 – Addendum to the Killingly Energy Center: An Analysis of Need and Economic &Environmental Impacts

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ii. B-2 – Killingly Energy Center: An Analysis of Need and Economic & Environmental Impacts
c. Appendix C – Geotechnical Engineering Report
d. Appendix D – Stormwater Pollution Prevention Plan
e. Appendix E – Wetland Information
i. E-1 – Wetland Report: Proposed Conditions
ii. E-2 – Wetland Report: Existing Conditions
f. Appendix F – Species Information
i. F-1 – Ecological Assessment Report
ii. F-2 – Invertebrate Survey
iii. F-3 – Bat Monitoring Survey Results
iv. F-4 – Agency Correspondence

3) VOLUME III – APPENDIX G

a. Appendix G – Air Permitting Information
i. G-1 – Updates and Clarifications Relevant to Air Analysis
ii. G-2 – Siemens Technology Selection Memo
iii. G-3 – Ambient Air Quality Assessment (Attachment L)
iv. G-4 – Air Permit Application

4) VOLUME IV – APPENDIX H THROUGH APPENDIX N

a. Appendix H – Water and Wastewater Information
i. H-1 – Correspondence with Connecticut Water Company
ii. H-2 – Correspondence Regarding Wastewater Interconnection
iii. H-3 – Hydrogeologic Water Evaluation
b. Appendix I – Traffic Impact Report
c. Appendix J – FAA Determination of No Hazard
d. Appendix K – Visual Impact Assessment
e. Appendix L – Sound Survey and Analysis Report
f. Appendix M – Electric and Magnetic Field Assessment
g. Appendix N – Cultural Resources Information
i. N-1 – Agency Correspondence
ii. N-2 – National Register of Historic Places Eligibility Report

TRC Recommendations for CSC Conditions

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Site Plan Conditions

1) 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. The location of the administration building, compressor station, main plant facility, tanks and other site features shall be moved to accomplish the required separation. Slopes should be no greater that 2 horizontal

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to 1 vertical and shall have turf established to stabilize the surface from erosion. 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.

2) 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 of Killingly. 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 have spill containment suitable to handle the largest tanker capacity used to offload fuel to the storage tank and shall conform to 40CFR112. A Spill Prevention, Control and Countermeasures Plan and Facilities Response Plan conforming to 40CFR112 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.
3) Provide a complete landscaping plan for the main plant site and the switchyard site prepared by a licensed landscape architect. The plan shall be submitted to the Town of Killingly for review and approval. The plan shall provide adequate tree and shrub plantings to provide and 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.
4) Engineering drawings for the widening and realignment of Lake Road shall be submitted to the Town of Killingly for review and approval. The design shall allow safe travelway and sight distance for large tractor trailer trucks/tankers (WB-62 design vehicles) and Town of Killingly fire trucks traveling east of the plant entrance. This work shal be completed before site work commences. Other signage needed to restrict truck traffic west of the site entrance shall be provided at the Town of Killingly's direction. Stone walls/fences disturbed by the road realignment shall be restored at a safe distance from edge of travelway to maintain the rural character of the road.
5) Water supply from Connecticut Water Company, involving the Killingly system interconnection with the Plainfield system, shall receive permit and other necessary approvals from the Connecticut Department of Energy and Environmental Protection and the Connecticut Department of Health before any work on the site shall commence. In addition the plans for installation of water mains shall receive all local and Connecticut Department of Transportation road disruption and restoration

permits, including detailed plans for maintenance and protection of traffic before site work shall commence.

6) 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 of Killingly for review and approval before any site work shall commence.
7) The owner/operator shall 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 of Killingly fire, police and emergency units and town officials that will be notified in the event of an emergency situation.

Stormwater and Inland Wetlands

1) Corrections and revisions to the stormwater system design and analysis shall be presented to the Town of Killingly for review and approval. Items to be addressed in the revised design shall at a minimum include the following:
    a) Runoff Curve Number for impervious surfaces shall be 98;
    b) Runoff from disturbed and regraded areas for the main plant and switchyard sites shall be based on Hydrologic Soil Group D and the existing condition analysis shall be based on Hydrologic Soil Group B;
    c) Rainfall design amounts need to be increased for each storm event to the updated Extreme Precipitation Estimates published by the Northeast Regional Climate Center.
    d) Drainage analysis needs to provide details of the existing and proposed conditions feeding the upper ends of Wetland Units A1 and A3, in addition to the overall runoff from the main plant site;
    e) Stormwater discharge from the main plant site needs to be routed and designed to feed surface runoff to individually distribute flow to Wetland Units A1/A2 and A3 with flows and volumes equivalent to existing conditions;
    f) In addition to the proposed main stormwater quality management basin, individual stormwater basins shall be provided to treat runoff feeding the upper ends of Wetland Units A1 and A3; and
    g) Stormwater management and design for the switchyard shall provide a means for water quality treatment prior to discharging to the adjacent wetlands and peak flow attenuation.
2) Stormwater quality management basins shall eliminate the wet pool portion of the basin and combine the wet pool and dry basin areas into a single bioretention system designed in accordance with the 2004 Connecticut Stormwater Quality Manual (CT WQM). The bottom of the bioretention media in each basin shall have a continuous non-woven filter fabric underlain by a minimum of 4 feet of crushed rock

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to increase the recharge capacity of the system. The underlying crushed rock shall also be enclosed with non-woven filter fabric and have overflow relief at just below the bottom of the bioretention media.

3) Rainfall recharge to groundwater feeding the wetlands will be significantly impacted by the project through the extensive loss of the forested loose understory layer, site regrading 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. The trench shall be a minimum of 3 feet wide by 5 foot deep and shall be completely enclosed with filter fabric and covered with 1 foot of topsoil. 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 upgradient from the wetland system. 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.
4) 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. The proposed grading, planting and monitoring plans and details associated with the wetland replication area has not yet been completed. However, 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 USACE. The New England District has detailed wetland creation plan submission requirements that should ensure that sufficient detail is provided in the future. The Town of Killingly shall be given an opportunity to review and approve this plan.

Erosion and Sediment (E&S) and Dust Control

1) Phasing and details of the grading activities shall 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 show 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 CDEEP standards for Residential Direct Exposure and GA Pollutant Mobility Criteria.
2) Temporary sediment basins shall be added upgradient of Wetlands A1 and A3 and shall be properly sized in accordance with the CT WQM.

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3) The Connecticut General Permit for Stormwater for Construction Activities requires that for site disturbances of 15 acres or more the Stormwater Pollution Prevention Plan (SWPPP) and stormwater system design must be reviewed and certified by a third-party independent Connecticut Licensed Professional engineer not connected to the project. This shall be a condition of approval.
4) A detailed plan for dust control and management for site grading and on-site soil/rock processing shall be required. Significant volumes of water will be required to prevent fugitive dust and tracking onto Lake Road. Provisions for water supply, water tankers, sprinklers and equipment water sprays shall be provided and in place before site work begins.

Air Quality

1) For the emergency generator and fire pump respectively, Tier 2 and Tier 3 emission standards are proposed. These comply with NSPS IIII. But for BACT, one must consider available and innovative technologies. It is reasonable to reject Tier IV engines, which would typically use SCR. But there are Tier III (less polluting) engines widely available at the rating specified for the emergency generator.
1) Emissions of formaldehyde from the CTG are based upon the MACT floor emission rate determined by USEPA for the National Emission Standard for Hazardous Air Pollutants (NESHAP) Subpart YYYY, as representative for a new CTG equipped with DLN combustors and an oxidation catalyst. Subpart YYYY applies to major sources of HAPs. The project is an area source. Subpart YYYY does not apply to duct burners. The application should either use vendor data for formaldehyde emissions, or use AP42 emission factors and performance guarantees for the oxidation catalyst[4]. Using AP42 emission factors and the heat input at 59F [2,871 MMBtu/hr (CTG) + 895 MMBtu/hr (DB)] the uncontrolled PTE of formaldehyde would be: (2,871+895)*8,760*0.00071/2000 =11.7 tpy Note that a source with a PTE of 10 tpy of a single HAP is a major source of HAPS. The actual stack concentration (ASC) of formaldehyde would be approximately twice the maximum allowable stack concentration (MASC) [i.e., it would not comply w/ CT air toxics regulations].
2) The Town of Killingly shall be given the opportunity to review Air Permit conditions imposed by the CTDEEP and if there are in changes to the plant design and operation, the Town of Killingly shall be given sufficient time to review and respond.

Noise

1) The State of Connecticut noise standard and Town of Killingly noise ordinance defines ambient/background sound as the L_{90} (not L_{eq}). 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

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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.

2) The modeling results shall be presented for discrete residential location property lines to show if compliance with the noise standards is achieved, since the ambient measurement locations are not necessarily at the actual residences. The standards apply at the residential property lines.
3) There is no analysis whatsoever of the potential impact that the modeled operational sound levels may result in. The analysis shall 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.
4) 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 measured anywhere was 26 dBA. However, the contours provided by NTE clearly show Project levels of greater than 30 dBA at Alexander Lake. Levels of 3dBA or more are considered perceptible.
5) It is stated that construction may occur 7 days per week, and that construction could last for 3 years. This would have the potential to result in an adverse impact. Some numerical analysis of construction noise levels shall be provided to support the assertion that no adverse or long-term impacts will occur.

Traffic

1) All project construction traffic shall be required to enter from the east and leave to the east toward Attawaugan Crossing Road/I-395 along Lake Road. Traffic shall not be permitted to travel west on Lake Road toward Route 101.
2) When traffic volumes and deliveries during construction create traffic issues, the contractor shall be required to comply with the Town of Killingly's request to provide manual traffic control support or modify activities to alleviate congestion and ensure public safety. Non-compliance will result in project shut-down until measures correct the issues to the Town's satisfaction. The contractor is required to alert the Town of any deliveries of oversize vehicles that may need traffic control.

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The comments provided by TRC as follows are broken into the major categories by Appendix as referenced above in the CSC application and in the other corresponding applicable sections contained in Volume I – Application Narrative

Appendix A – Notice and Service Documentation

No Comment.

Appendix B – Analysis of Need and Economic & Environmental Impacts

General Comments

1. The two economic models cited by PA Consulting Group (PA) in their report, IMPLAN and JEDI are commonly used to assess the employment and economic benefits for a variety of energy projects, including gas fired power plants. Both of these models rely on historic and regional information as the basis for the default inputs for the models. Both models allow the user to select input parameters different from the model defaults and require project specific input as well. The models come with vendor stated limitations, should not be relied upon as precise predictions of the project's economic impact and should only be used as a screening tool. Fuel and operating cost fluctuations can have a significant impact on the model predictions.
2. The PA report presents its findings of the project economic impact/benefit from these models in a much of a "black box" fashion. There is very little stated in the report regarding the model input assumptions that form the basis for the model outputs. There is no way to judge if the predictions are realistic without knowing the specifics of the data used as input to the models to generate the results presented in the report. There is no disputing that the KEC Energy project will generate direct and indirect jobs and revenue for Killingly and Connecticut during construction and operation of the plant. The hard numbers of construction and operation employment are the only reliable economic benefits that can be reasonably predicted. The other indirect and induced benefits are much less certain and the model predictions should be treated as possible "best-case" scenarios for these economic benefits. It is also worth noting that the input and resulting output from the IMPLAN model become the input for the JEDI model. The risk is that an unrealistic input assumption from one model can be compounded in the second model because of this interconnection.
3. With regard to the predications on the modeled environmental benefits and projected emission reductions, PA points out they relied solely on their proprietary model and information PA extracted from ISO-NE for input. There is absolutely no information provided by PA on their proprietary model, the methods it employs to

generate output, the inputs to the model, how assumptions can vary the results and its past use and acceptance by the Connecticut Siting Council for the predicting emission reductions. There is no way based on the information provided in the PA report to verify the projected emission reductions. There is no question that if the KEC Plant eventually replaces an older fossil fuel generating facility that there will be overall reductions in emissions, but until it is known which facility (ies) are being replaced the actual reductions can't be reliably predicted. It's also worth noting that while older fossil fuel plants are gradually being permanently mothballed, the current emissions from these facilities may be much less than their permitted potential to emit, because they are some of the least used more costly options for power in the New England grid.

Appendix C – Geotechnical Engineering Report

General Comments

1. The geotechnical report provide by the applicant is thorough and provides the basis for the evaluation and design of many other elements of the project. In particular, the boring logs, soil testing data, bedrock logging, groundwater data and soil hydraulic conductivity data are important components of the site/foundation design, storm water system design, wetland impact evaluation, site earthwork, dewatering and bedrock blasting/removal.
2. Temporary observation wells were installed in a total of five (5) of the eighteen (18) test boring locations, including one observation well in the area of the proposed dry basin portion of the storm water detention basin adjacent to the wetlands. The geotechnical report only provides water level measurements in these wells from one monitoring event immediately following the drilling activities, which ended on June 1, 2016. There is therefore no useful information to gauge seasonal water table fluctuations and the impact it may have on the storm water dry basin, excavation and dewatering activities. It is worth noting that the dry basin bottom elevation of 274.0 is approximately 4 feet above the ground water level measured in OW-1 at the basin location. Seasonal high water table level may raise this level to the bottom of the dry basin. The report does not provide any graphical representation of groundwater contours and flow direction based on the actual measurements, which is vital to assessing potential wetland impacts from the proposed major site regrading activities. In addition the two cross sections of the site that were provided show existing grade, proposed grade and bedrock surface do not show any of the groundwater level observation data.
3. Appendix D of the Geotechnical report contains a table from five (5) test boring locations showing hydraulic conductivity (in./hr.) using a Guelph permeameter. The Guelph permeameter was driven to depths ranging from 3.0 to 3.4 feet below the

surface. The in-situ measured hydraulic conductivities ranged from 0.009 in./hr. to 0.0~~17~~61 in./hr. The results are very consistent and in a very narrow range. These tests are very significant when compared with the values used in Appendix D – Stormwater Pollution Prevention Plan to compute the storm water recharge from the dry basin. The actual measured values are more than two orders of magnitude lower than the value of 2.5 in./hr. used to assess and design the recharge component of the dry storm water basin. Boring B-1, which is at the dry basin location had the lowest permeability of .009 in./hr. These values are not surprising considering the soil at these depths in the 5 test locations contained silt/clay fines ranging from 10% to 43.7%. In Table 2 of the Geotechnical report soil sample sieve analysis results at four additional locations at a sampling depth of 2ft. to 4ft. below grade show silt/clay fines ranging from 22.0% to 43.7%. Soils containing fines in this range typically have relatively low hydraulic conductivity, thus further supporting the Guelph permeameter test results. These lower hydraulic conductivities have a major impact on the storm water dry basin as an effective feature to recharge storm water to the adjacent inland wetland system. This will be discussed further in the storm water review comment section under Appendix D.

4. The geotechnical report consistently shows that the overburden soils lying below the upper few feet of the soil horizon are generally medium-dense to very dense glacial till. The major grading activities proposed for this site will have significant impact on destroying the existing in-situ soil structure and result in widespread reduction in the infiltrative and recharge capacity of the disturbed site, including areas that are used for temporary staging and laydown. The upper few feet of the stratum on this site with its vegetative cover provide a natural capacity to absorb and retain rainfall percolating through the surface. Once the vegetation is removed and that upper soil structure is disturbed the hydraulic conductivity will drop significantly. The re-grading of the in-situ glacial till across this site will be performed under controlled conditions to achieve 95% or greater optimum densities. With silt/clay fines in the 20% to 40% range the hydraulic conductivity of the uppermost layer of re-graded soils will drop an estimated one order of magnitude to ~~.000150~~0.0014 in./hr. (10^{-6} cm./sec.). The problem is that once the upper few feet of soil and vegetation is removed, the new surface will have no capacity to hold, retain, infiltrate and recharge rainfall. Hydraulic conductivity at this low value produces rainfall runoff nearly equivalent to non-pervious estimates for pavement and buildings. Impacts will be discussed further in the storm water comments provided under Appendix D.
5. The grading activities associated with the plant site and switchyard area are significant. The geotechnical report and other portions of the CSC filing don't provide any estimates of the quantities of cut and fill for soil material and the quantity of bedrock that will be removed. No discussion is provided on how these material will be managed on-site and the quantity of soil and blasted rock that will removed from the site. No discussion has been provided regarding the quantities of

soil and/or processed materials that may be imported to the site. Further no discussion is provided to assess if the applicant proposes to screen soil/rock material and crush rock material on-site. The implication of those potential operations will add significant fugitive dust, noise and nuisance to nearby residents and may require additional controls and permitting.

6. The high percentage of silt/clay fines in the native glacial till will present numerous challenges for sedimentation and erosion control, fugitive dust control from grading and equipment operation and moisture control during re-grading and compaction activities. Weather conditions will play a major role on the ability of the site contractor to manage these problems that will develop when 20 acres of the site are disturbed. It is reasonable to assume that Town of Killingly staff, or their independent appointed representative, needs to have the authority to inspect, direct, manage and enforce these issues during construction, to ensure that the residents and the environment are protected. State officials will have the ultimate enforcement authority, but are too distant from the site to effectively manage these ever changing conditions.

Appendix D – Stormwater Pollution Prevention Plan

General Comments

1. The Stormwater Pollution Prevention Plan (SWPPP) presents the applicant discussion and plans for implementation of sedimentation and erosion control measures during construction and other elements of construction site management required by the Connecticut General Stormwater Permit for Construction Activities. The SWPPP also presents engineering design calculations and assumptions for the major elements of the applicant's stormwater system design, stormwater management and assessment of impacts that the site design and stormwater management system will have on adjacent inland wetlands, watercourses, groundwater recharge, water quality and flooding.
2. The engineer responsible for preparing the SWPPP, Killingly Engineering Associates, relied upon the 2002 Connecticut Guidelines for Soil Erosion and Sediment (E&S) Control and the 2004 Connecticut Stormwater Quality Manual. These are the proper references applicable to the proposed site development and construction activities. Comments provided in this section will be based upon adherence to the requirements of these documents, the Connecticut General Stormwater Permit for Construction Activity requirements and good engineering practice.
3. The reviewer found no reference in the SWPPP to reliance on information contained in Appendix C – Geotechnical Report in preparation of the design and plans for E&S controls and the stormwater management system. It is unclear why the designer chose to ignore this important information, when the 2004 Connecticut Storwater

Quality Manual specifically requires reliance upon actual site test data to evaluate and design certain stormwater management systems, involving infiltration/recharge and runoff calculations. The designer instead relied upon non-site specific and general soil mapping data provided by the USDA in their Soil Survey Report for the county. The USDA reports are a broad attempt to map the upper (shallow) soil horizons over large areas of counties are based upon limited and generally non-site specific field soil testing data. The predictions for hydraulic conductivity for various soil types in the USDA report are only valid for undisturbed soil in the top 36 inches of the soil horizon. The designer indicates that the USDA mapped soil units were field verified by the soil scientist who performed the inland wetland delineation. Review of the Wetland Report: Existing Conditions by REMA Ecological Services, LLC, dated June 2016, provides no information on the extent and location of soil sampling performed. Wetland delineation typically involves a soil scientist using a small diameter hand coring devices to collect and visually examine soil in the upper two feet of the soil horizon, with no soil permeability measurements. Usually the soil scientist is collecting soil cores only in the immediate vicinity of suspected wetland areas. This type of data should never take precedence over actual site-specific deep test boring and soil hydraulic conductivity test data as is available for this site in the Geotechnical Report. For this site, reliance on the USDA Soil Survey Map data when compared to the actual site-specific data results in the under prediction of surface runoff for the proposed conditions from disturbed/regraded areas and the over prediction of groundwater infiltration/recharge in these areas and the stormwater dry recharge basin. Further discussion follows in subsequent comments.

Sedimentation & Erosion Control

1. The SWPPP discussion provided in Section 2 – Erosion and Sediment Control BMP's on the measures proposed for this site is very generic. The SWPPP incorporates the general guidance contained within the 2002 Connecticut Guidelines for Soil Erosion and Sediment (E&S) Control, but lacks details regarding the actual implementation of these measures as it relates to the proposed sequencing of the site disturbance and construction activities. This approach leaves the site contractor with little detail on what and when measures are expected to be implemented, where they should be installed and how this ties to the actual phasing of disturbances. This broad approach to E&S management is only effective when an independent E&S expert is involved directly with the site contractor in the planning of site disturbance activities and directing the use and placement of the BMP's.
2. The existing site grades show a south to north ridge that bisects the center of the plant site. The effect of this ridge is to channel surface runoff into Wetland A1/A2 and Wetland A3 on each side of the plant. The REMA Proposed Conditions report

also discusses the importance of this feature and the effect it has on groundwater and surface flow to these two wetlands. This natural feature will have a major impact on channeling most of the site surface runoff into the upper ends of each of these wetlands until most of the site grading activities are complete. This will cause a concentrated flow containing sediment toward these two wetlands. The only S&E controls proposed to check the concentrated flow is silt fence and staked haybale barriers. These measures are intended to manage sheet flow runoff and are not adequate to manage concentrated flow. The upper end of each of these wetlands should be protected with temporary sediment basins to slow the concentrated flow and remove most of the sediment before reaching the wetlands. The close proximity of the proposed fill slopes for each of these locations creates a problem to install adequately sized sediment basins. Shifting the entire plant south will increase the buffer needed to place sediment basins in these areas and leave adequate undisturbed buffer to protect these wetlands.

3. In general the proximity of the site grading activities and retaining wall construction to Wetland Units A1, A2, A3 and X is inadequate to insure protection of these features during construction. In the vicinity of Wetland A1 and X the toe of fill slope and retaining wall are within 10 feet of these wetland boundaries. Adequate protection for these wetlands can only be reasonably assured with adequate undisturbed buffer separation. The size of the proposed disturbed area and grading will result in significant sediment laden runoff and provide no room for error in the event of failure or poor maintenance of the S&E controls designed to protect the wetlands. It appears that shifting the entire plant southwest is easily achievable due to the large undeveloped southwest portion of the property. This shift would allow wetland buffers to be increased to at least 100 feet or more. The other accommodation that will allow this shift is the placement of the oil storage tank and the design of the secondary containment (Oil Berm). The Oil Tank and Oil Berm as shown on the drawings is forcing the grading impacts discussed above to occur. There is no reason the tank design can't changed to a double wall tank design, thus completely eliminating the need for the large Oil Berm feature. The tank could then be moved to a location that allows the plant shift more westerly away from Wetland Units A1 and X. While such a shift may increase noise along the westerly property boundary, this impact can be easily mitigated with addition sound proofing and/or sound barrier wall feature. Upon review of the noise study, it appears that the plant was pushed toward the wetland in the design to avoid additional noise suppression and achieve compliance along the westerly boundary. To sacrifice wetland protection for a noise compliance issue that can be resolved with additional noise suppression is not consistent with inland wetland protection having the highest priority.
4. The Plan does not includes a description of the location of the stormwater discharge including latitude and longitude.

5. While the Erosion and Sedimentation Control Narrative and Details drawing includes a description of the construction sequence it does not include the "…estimated timetable for all construction activities…" as required pursuant to Section 5(b)(1)(B)(iii) of the General Permit.
6. The dust control measures described in Section 2.10.1 of the plan do not include all the elements specified at 5(b)(2)(D)(iii) of the General Permit.
7. The SWPCP does not include the following contractor certification statement pursuant to Section 5(b)(1)(B)(viii) :

   The Plan shall include the following certification signed by each contractor and subcontractor identified in the Plan as described above:

   "I certify under penalty of the law that I have read and understand the terms and conditions of the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities. I understand that as a contractor or subcontractor at the site, I am authorized by this general permit, and must comply with the terms and conditions of this general permit, including, but not limited to, the requirements of the Stormwater Pollution Control Plan prepared for the site."

   The certification shall include the name and title of the person providing the signature; the name, address and telephone number of the contracting firm; the address (or other identifying description) of the site; and the date the certification is made.

8. Section 3.3 of the plan shall reference the Spill Prevention Control and Countermeasure (SPCC) plan which shall specify details regarding fuel unloading and/or the need for an oil unloading rack at the fuel oil tank.
9. If the facility is subject to the requirements for an industrial stormwater general permit due to the standard industrial classification (SIC) code of 4911 (steam power generation) then vehicle washing in exterior areas is prohibited.
10. The SWCP does not provide a narrative description of the "Other Controls" including waste disposal and washout areas as required by Section 5(b)(2)(D) of the General Permit.
11. The Plan does not require maintenance of a rain gauge on-site to document rainfall amounts as required under Section 5(b)(2)(B)(i).
12. Section 3.3 of the plan shall include the containment requirements for chemical and petroleum product containers specified in Section 5(b)(2)(D)(v) of the General Permit.
13. Correct CT DEEP emergency spill number in Section 3.5 of the plan to 866-3**3**7-7745.
14. Section 6.2 of the Plan indicates an example inspection report is provided as Attachment 7. No such report was included within Attachment 7.

15. The plan does not include signature elements specified in Section 5(b)(7) of the General Permit:

> The Plan shall be signed and certified as follows:
> (A) The Plan shall be signed by the permittee in accordance with the "Certification of Documents" section (subsection 5(*i*)) of this general permit.
> (B) The Plan shall include certification by all contractors and subcontractors in accordance with the "Contractors" section (subsection 5(*b*)(1)(B)(viii)) of this general permit.
> ~~3.~~ (C) The Plan shall include a copy of the certification by a professional engineer or landscape architect made in accordance with Section 3(*b*)(9) of this general permit.

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Storm Water and Groundwater Recharge

1. The storm drainage calculations ignore the fact that the drainage area feeding Wetland Unit A1/A2 is separate and distinct from the drainage area feeding Wetland Unit A3. The designer only provides calculations that combines the drainage areas for all three Wetland Units at the northeasterly property boundary, where runoff leaves the site. This approach does not allow an assessment of the impact of the site regrading and storm water management activities on the individual Wetland Units, and ignores the importance of maintaining surface flow and groundwater flow to the individual Wetland Units to sustain these separate wetlands. In fact the proposed storm water design directs all of the runoff collected in the proposed storm drain system to a single storm water quality basin located near the junction of Wetland Units A1/A2 and Wetland A3. The outflow from the basin is directed to a surface flow spreader that does not allow any of the treated runoff to reach the headwaters of Units A1/A2 and A3. This is a complete and drastic modification to the surface drainage feeding and sustaining these two Wetland Units. The net effect of the proposed design is to significantly reduce the surface area draining into the upper ends of Units A1/A2 and A3 and move the point of discharge approximately 500 feet past the upper ends of each wetland.
2. The storm water calculations for Sub-catchment 1S' (Main Plant Site) for the proposed conditions have an error for the Runoff Curve Number (CN) for the 6.40 acres representing the impervious roof and pavement area of the main plant portion of the site. The designer chose a CN of 65, when the SCS TR-20 method requires a value of 98 for this surface condition. The result is a significant under prediction of the runoff depth from these portions of the plant site. For the 2yr event the increase is from 0.6" of runoff to 3.1" of runoff depth (516%), for the 10yr event the increase is from 1.5" of runoff to 4.7" of runoff (313%) and for the 100yr. event the increase is from 3.1" to 6.8" of runoff (149%). The 6.40 acres miscalculated

represents approximately 40% of the total 16.3 acre Sub-catchment 1S'. The net result is a significant under prediction of the total site runoff, the peak flow discharge entering the storm water quality basin and the quantity of groundwater recharge.

3. In addition to the incorrect CN for the impervious roof and pavement areas mentioned above, the fact that the massive regrading and compaction of site soils will greatly reduce their infiltrative capacity, the designer should have chosen much higher curve numbers for both the crushed stone surface areas and the >75%grassed cover areas. The CN for these areas should have been based upon Type D soil conditions and not the Type B condition selected by the designer. The effect is again to raise the quantity of surface runoff and reduce the quantity of recharge significantly. The designer chose a CN of 72 for the crushed stone surface area where 89 is more appropriate for the proposed condition and a CN of 61 where a value of 80 is more appropriate for the proposed condition. When you combine these changes with the previous comment the composite CN for Sub-catchment 1S' goes from a weighted average of 66 to 89.5. The total runoff depth increases for Sub-catchment 1S' would therefore be:
    - 2yr Storm – 0.57" to 2.1" (368%)
    - 10yr storm – 1.44" to 3.7" (256%)
    - 100yr storm – 2.87" to 5.7" (199%)

   As a result of these changes the proposed condition peak flows and total runoff volumes entering the storm water quality basin will increase by an equal percentage as the increase in total runoff depth for each storm event represented above. The equation used in the TR-20 method to calculate peak flow is a straight 1:1 relationship of runoff depth and peak flow. The size of the currently proposed storm water quality basin is therefore greatly undersized to handle the required flows and reduce the peak flows to pre-construction levels.

4. Another factor that will increase the overall runoff estimates and the sizing/design of the water quality basin are the recent recommendations by the CTDEEP and CTDOT to use the more updated Extreme Precipitation Estimates published by the Northeast Regional Climate Center (NRCC) to design storm water management systems in Connecticut. For example, the site specific 24 hour – 100 year total rainfall amount recommended by NRCC is 8.31 inches. The designer used a 24 hour – 100 year total rainfall amount of 6.9 inches. The additional 1.41 inches of rainfall is a 20% increase and will result in a similar direct increase in runoff and require additional volumetric storage capacity needed in the storm water quality basin to control the peak flow resulting from the increased runoff.

5. The recharge component for both the overall site and the storm water quality dry basin are a significant concern based upon the information provided in the

geotechnical report and the assumptions used by the designer in the SWPPP. For the storm water basin recharge the 2.~~8~~5 in./hr. hydraulic conductivity value grossly overestimates the rate and volume of recharge achievable at this site (refer to previous discussion). The designer chose to ignore the recommendations in the Connecticut Water Quality Manual as follows:

Excerpts from Connecticut Water Quality Manual on Infiltration Basin Design Requirements

Soils: Underlying soils should have a minimum infiltration rate of 0.3 inches per hour, as initially determined from NRCS soil textural classifications. (**Table 11-P3-1**), and subsequently confirmed by a field investigation acceptable to the review authority.

Table 11-P3-1 Minimum Infiltration Rates of NRCS Hydrologic Soil Groups

Group	**Soil Texture**	**(in/hr)**
A	Sand, loamy sand, or sandy loam	0.30 – 0.45
B	Silt loam or loam	0.15 – 0.30
C	Sandy clay loam	0.05 – 0.15
D	Clay loam, silty clay loam, sandy clay, silty clay, or clay	0 – 0.05

Recommended soil investigation procedures include:

❍ *Infiltration rates can be determined through an appropriate field permeability test.*

❍ *Infiltration rates should be reduced by a safety factor to account for clogging over time. The recommended design infiltration rate is equal to one-half the field-measured infiltration rate (i.e., safety factor of 2).*

❍ *Test pits or soil borings should be used to determine depth to groundwater, depth to bedrock (if within 4 feet of proposed bottom of infiltration structure), and soil type.*

❍ *Test pits or soil borings should be excavated or dug to a depth of 4 feet below the proposed bottom of the facility.*

❍ *Infiltration tests, soil borings, or test pits should be located at the proposed infiltration facility to identify localized soil conditions.*

❍ *Testing should be performed by a qualified professional registered in the State of Connecticut. (licensed Professional Engineer, Professional Geologist, or Certified Soil Scientist).*

❍ *For infiltration basins, one field test and one test pit or soil boring should be performed per 5,000 square feet of basin area. A minimum of three field tests and test pits or soil borings should be performed at each basin. The design of the basin*

should be based on the slowest rate obtained from the field tests performed at the site.

Based on the information above from the Connecticut Water Quality Manual the designer should have relied upon the actual soil boring and field hydraulic conductivity measurements presented in the Geotechnical Report for design of the recharge capacity of the dry basin. Even in the absence of any field test data, the starting point recommended by the manual for Hydrologic Soil Group B is a hydraulic conductivity of 0.15 to 0.30 in./hr. and not the 2.5 in./hr. used by the designer.

6. Hydraulic conductivity field measured at the basin location in the Geotechnical Report is 0.009 in./hr. which is nearly two orders of magnitude less than the 0.3 in./hr. recommended as the lowest value permissible in the Connecticut Water Quality Manual for use of a infiltration/recharge basin. At these low hydraulic conductivities, there will be almost no infiltration/recharge to completely drain the dry basin within the 48 to 72 hours required by the Connecticut Water Quality Manual. This creates the twofold problem of having too little water storage volume for the next storm event and too little recharge of the groundwater system feeding the wetland. This approach to achieve recharge will not work at this site.
7. The other component of storm water recharge is the infiltration that occurs across the ground surface where there are no impervious areas. The problem is that in addition to the approximately 40% impervious surface being created by site development, the remaining plant area that is crushed stone surface and grass area are being completely regraded and compacted, which as previously discussed will greatly increase the surface runoff and reduce resulting infiltration in those areas as well. The design does not account for this infiltration reduction and the resulting impact on groundwater feeding the inland wetland systems.
8. The design recommends that one portion of the water quality basin be constructed as a wet basin that will retain a shallow pool of water at all times. The Connecticut Water Quality Manual cautions against the use of this type of feature where the basin is within 750 feet of a vernal pool or in areas where amphibians may be attracted to the pool for spawning. These constructed storm water basin pools are not suitable habitat to sustain the species that use it for breeding. Storm water wetlands and ponds that are placed near vernal pools can also threaten pool-breeding amphibian populations. Storm water wetland ponds and wetlands can serve as "decoy" pools, intercepting amphibians as they migrate in spring to their vernal pool breeding habitats. This is a concern due to the nearby vernal pool described in the REMA Wetland Report, but also because the REMA report points out the very near existing pond in Wetland Unit A1 currently presents a problem to amphibian eggs being scavenged by fish in that pond. The concern is that the

proposed wet pool would provide another nearby unacceptable habitat for amphibian spawning that would further degrade their population.

9. With regard to the areas that make up Sub-Catchment 2S that discharges to the East, there are similar concerns as described above regarding the estimates of surface runoff and infiltration/recharge from this area. The disturbances to the soil structure caused by regrading and compaction will greatly reduce the infiltrative capacity of the soil and increase runoff to levels much higher than is predicted. The two small infiltration basin depressions proposed will do little to infiltrate the collected surface runoff and result in much higher peak flow rates than predicted by the design. There is also concern that the overflow discharges from the two shallow basins on the steeper grades in these areas will in fact concentrate flows and not perform as true sheet flow discharges. The result will be erosion downgradient from the basin outlets and potentially on the adjacent high-voltage transmission right-of-way. The surface grade downgradient from the easterly most basin is approximately 10% or greater as it enters the transmission right-of-way.
10. With regard to Sub-Catchment 3S (Switchyard Area) there are similar concerns as described above regarding the estimates of surface runoff and infiltration/recharge from this area. The disturbances to the soil structure caused by regrading and compaction will greatly reduce the infiltrative capacity of the soil and increase runoff to levels much higher than is predicted. In addition to the removal of nearly 2.5 acres of natural grassy meadow and replacing it with crushed stone and pavement discharging directly into the altered wetland, there is no attempt with the proposed design to provide any secondary and primary treatment of the runoff from this completely re-graded area, which is not in conformance with the Connecticut Water Quality Manual. The design as it currently is configured will increase the peak runoff by 45% for the 2yr. storm, 23% for the 10yr. storm and 14% for the 100yr. storm. These peak flows will increase significantly when the proper runoff curve numbers are used. The design also assumes that the runoff leaving the switchyard will all be sheet flow, which is difficult to achieve at the predicted flow rates from a disturbed area.

Appendix E – Wetland Information

Appendix E-1 - Wetland Report: Proposed Conditions

Section 4.0

1. Alternative layouts for the electrical switchyard that avoided direct impacts to Wetland D were reported to be considered but ultimately rejected due to site constraints and required switchyard specifications. Although this may very well be

the case, the alternative layouts for the switchyard should be presented along with the features that resulted in their non-acceptance.

2. Disturbance associated with the construction of the facility is proposed in close proximity (20 feet) to wetlands on fairly steep grades. The Killingly Inland Wetlands and Watercourses Regulations specify a minimum no disturbance wetlands buffer of 25 feet although this distance can be increased by the Commission based on site-specific factors such as steep slopes which are present at the site. Alternative facility layouts that provide a greater undisturbed buffer (minimum of 50 feet although 100 foot minimum would be greatly preferred given the existing topography) need to be proposed and evaluated. The alternatives that provide greater wetlands protection through increased buffer areas should be diagrammed on a site plan and a discussion provided on how each alternative will affect the ecological communities and functions of the wetlands and why these alternatives were considered neither feasible nor prudent and were subsequently not selected by the applicant.
3. The proposed project represents a "significant activity" as defined by Killingly Inland Wetlands and Watercourses Regulations. Although direct impacts to wetlands for the generation facility have been avoided the primary concern is that the wetland hydrology to the inland wetlands (particularly to Wetlands WA1 and WA2) will be affected resulting in indirect impacts to these resource areas.
4. Storm water recharge via infiltration through the crushed stone surface where impervious areas are not proposed is assumed to provide sufficient hydrology to support the nearby wetlands WA1, WA2 and WA3. As discussed previously, the portions of the facility area that consists of a crushed stone surface or grass area are being completely regraded and compacted, which will greatly increase the surface runoff and reduce infiltration (i.e., increase curve numbers). The analysis does not account for this infiltration reduction and the resulting impact on groundwater discharging to the inland wetland systems. A more complete hydrological assessment should be conducted for WA1, WA2 and WA3 that compares the existing watershed sizes for each wetland and the proposed watershed sizes after development. The post-development analyses should include a breakdown of undisturbed areas, impervious surface areas, and disturbed areas where infiltration would be substantially reduced for each wetland watershed. The analysis should present a comparison of surface water runoff and groundwater discharge under pre- and post-development conditions. This assessment should also include an assessment of the proposed removal of soil/rock on the order of 27 feet in an area to the south of the wetlands. The effects of these cuts on the interception of groundwater and the discharge to the wetlands should be discussed.
5. It appears there is only one water quality management basin proposed for the entire site between Wetlands WA2 and WA3. The basin consists of a sediment forebay, a wet basin and a dry pool for recharge. The base of the dry pool is at Elevation 270. Boring B-01 (OW) from the geotechnical report indicates that the soil below

Elevation 270 to be medium dense glacial till, with a water elevation of 270.3. The low permeability (0.009 in./hr. hydraulic conductivity) soil type combined with the high water table elevation would appear to preclude this portion of the basin to function as a stormwater recharge basin.

6. The proposed water quality basin will be constructed as a wet basin and will retain a shallow pool of water at all times. The Connecticut Water Quality Manual cautions against the use of this type of feature where the basin is within 750 feet of a vernal pool or in areas where amphibians may be attracted to the pool for spawning. Constructed storm water basin pools are not suitable habitat for amphibians that may use it for breeding. Storm water wetlands and ponds that are placed near vernal pools can also threaten pool-breeding amphibian populations as they may function as "decoy" pools, intercepting amphibians as they migrate in spring to their vernal pool for breeding. Vernal pool habitat present within Wetland B may be within 750 feet of the wet basin (although the limits of the vernal pool are not depicted on the site plans). The concern is that the proposed wet basin would provide an unacceptable habitat for amphibian breeding that would impact the local amphibian populations.
7. Impacts to the floodflow alteration wetland function should be reassessed based on comments provided on Appendix D.
8. Development (permanent and temporary) is proposed in close proximity to wetlands on fairly steep grades. Erosion/sedimentation issues are another area of primary concern and the comments provided on Appendix D (SWPPP) need to be addressed.

Section 5.0

1. 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. The proposed grading, planting and monitoring plans and details associated with the wetland replication area has not yet been completed. However, 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 USACE. The New England District has detailed wetland creation plan submission requirements that should ensure that sufficient detail is provided in the future.

Appendix E-2 - Wetland Report: Existing Conditions

The descriptions and ecological characterization of the existing wetlands with respect to biological resources was thorough. Several comments as they pertain to the Killingly Inland Wetlands and Watercourses Regulations are provided below.

Section 4.0

1. The location of special aquatic sites such as the vernal pool present within Wetland B need to be identified and depicted on site plans. In addition, if located within 200 feet of any proposed site activities, the location of the off-site vernal pool needs to be depicted and impacts to this area evaluated.
2. The Wetland D Field Form indicates that the Natural Resource Conservation Service (NRCS) mapped this area as Charlton-Chatfield sandy loam. However, the NRCS map provided as Figure B in the report indicates this wetland is mapped as the poorly drained Ridgebury-Leister-Whitman soil association. The limits of this poorly drained soil type extend considerably above the delineated Wetland D and are depicted as wetlands on the Killingly Wetlands and Watercourses Map. If the field investigation concluded that this area was mapped incorrectly as poorly drained soils then soil documentation should be provided that supports the position that this area does not contain soil types classified as poorly drained.

Appendix F – Ecological Assessment Report, Invertebrate Survey and Bat Monitoring Survey

The descriptions and ecological characterization of the existing uplands with respect to biological resources including the invertebrate and bat surveys was thorough and well presented. Comments or confirmation from the natural resource trustees (USFWS, CTDEEP) that additional studies or mitigation measures are not warranted should be provided by the applicant as they become available.

Appendix G - Air Permit Application Information

The following review references the location in the air permit application where TRC's comment applies. Footnotes concerning the review immediately follow the table below.

Location	Application Information	Comment
pg. A-3 Table A-1	Proposed VOC BACT is 2.0 ppmvdc w/DF while firing natural gas	Table G-4 lists 8 facilities that have an identical or similar CTG that have VOC w/ DF permit limits between 1.0 and 1.9 ppmvdc while firing natural gas. The application should explain [provide technical, economic, environmental, or energy related justification] why these lower limits cannot be achieved at KEC[1,2].

Location	Application Information	Comment
pg. A-3 Table A-1	Proposed $PM_{10}/PM_{2.5}$ BACT limits are 0.0055 lb/MMBtu (w/o duct firing) and 0.0059 lb/MMBtu (w/ duct firing) while firing natural gas.	Table G-4 lists $PM_{10}/PM_{2.5}$ permit limits while firing natural gas for 15 projects. For more than half the listed projects, lower PM10/PM2.5 permit limits are indicated. The application should explain [provide technical, economic, environmental, or energy related justification] why these lower limits cannot be achieved at KEC[1,3].
pg. A-3 Table A-1	Proposed $PM_{10}/PM_{2.5}$ BACT limit is 0.0155 lb/MMBtu while firing ULSD.	Table G-4 lists $PM_{10}/PM_{2.5}$ permit limits while firing ULSD for 3 projects. A lower $PM_{10}/PM_{2.5}$ permit limit [0.014 lb/MMBtu] is indicated for one of the listed projects. The application should explain [provide technical, economic, environmental, or energy related justification] why this lower limits cannot be achieved at KEC[1,3].
pg. A-3 Table A-1	Proposed GHG BACT limit is 7,273 lb/MWh (net, annual, natural gas, w/o duct firing)	Table G-4 lists GHG permits limits for seven projects on the same basis (net, annual, natural gas, w/o duct firing). For two projects, lower GHG permit limits are listed. The application should explain [provide technical, economic, environmental, or energy related justification] why these lower limits cannot be achieved at KEC[1,2].
Appendix A	For the emergency generator and fire pump respectively, Tier 2 and Tier 3 emission standards are proposed.	These comply with NSPS IIII. But for BACT, one must consider available and innovative technologies. It is reasonable to reject Tier IV engines, which would typically use SCR. But there are Tier III (less polluting) engines widely available at the rating specified for the emergency generator.
Page E-4	Application states that the emergency generator and firewater pump engine will each be limited to a maximum of 300 operating hours per year of routine operation.	40 CFR 60 Subpart IIII limits operation of emergency and firewater engines to no more than 100 hours per year for non-emergency purposes. If more than 100 hours of routine (i.e., non-emergency) is desired, the engines would be subject to more stringent emission limits under the NSPS.

Location	Application Information	Comment
Page E-6	Emissions of formaldehyde from the CTG are based upon the MACT floor emission rate determined by USEPA for the National Emission Standard for Hazardous Air Pollutants (NESHAP) Subpart YYYY, as representative for a new CTG equipped with DLN combustors and an oxidation catalyst.	Subpart YYYY applies to major sources of HAPs. The project is an area source. Subpart YYYY does not apply to duct burners. The application should either use vendor data for formaldehyde emissions, or use AP42 emission factors and performance guarantees for the oxidation catalyst[4]. Using AP42 emission factors and the heat input at 59F [2,871 MMBtu/hr (CTG) + 895 MMBtu/hr (DB)] the uncontrolled PTE of formaldehyde would be: (2,871+895)*8,760*0.00071/2000 =11.7 tpy Note that a source with a PTE of 10 tpy of a single HAP is a major source of HAPS. The actual stack concentration (ASC) of formaldehyde would be approximately twice the maximum allowable stack concentration (MASC) [i.e., it would not comply w/ CT air toxics regulations].
Attachment E202 (CT)	NSPS applicability	NSPS TTTT is not evaluated.
pg. E-7 & L-11	SO_2 emission rates	Slight discrepancies between SO_2 emission rates in these two tables. 0.74 g/s VS 0.71 g/s Nat gas w/ DB 0.534 g/s VS 0.504 g/s ULSD
pg. L-12	Nat gas heater emissions	Nat gas heater to operate 8,760 hours. The annual emission rates appear to have been adjusted to fewer hours. Stipulate 4,000 hrs/yr operation
Appendix L-A	Ancillary Equipment	Exhaust velocity and temperature appear low for emergency generator and fire pump engines

1. The application BACT section includes statements that the Project is using the most stringent control practices [e.g., page G-23, last paragraph]. Note, however, that BACT is defined as an emission limitation [40 C.F.R. § 52.21(b)(12)], not a practice or technology.

2. For several pollutants, emission limits more stringent than those selected for the KEC are improperly rejected without an economic, environmental, or energy analysis. For example, on page G23 (See "Step 4") the applicant dismisses the projects which have limits on VOC with natural gas firing w/ duct firing less than 2.0 ppmvdc because, it asserts, these projects have not begun to operate, and hence the emission rates have not been achieved in practice. This logic is flawed for the following reasons:
   (a) With two exceptions, the projects listed in Table G-4 were issued permits in 2013 or later. Hence, very few of the projects listed are now in commercial operation. What is the point of listing dozens of projects, and then stating most of the limits for these projects do not apply because the projects have not begun commercial operation?
   (b) Connecticut follows NESCAUM BACT Guidelines (http://www.nescaum.org/activities/major-reports) (Guidelines). There is nothing in the Guidelines that suggest that one can dismiss limits in permits issued for similar projects which are currently under construction without evaluating economic, environmental, or energy impacts. In fact, the opposite is stated. See Section VI.A.2 and VI.A.3 of the Guideline.
3. The application states [see page G-26] that the variations in PM emissions are mostly due to differences in PM guarantee philosophies among CTG vendors. However, in Table G-4, all six of the projects using Siemens CTG for which PM emission rates are provided have PM emission rates lower than proposed for the KEC project.
4. Both CO and formaldehyde are products of incomplete combustion of natural gas. An oxidation catalyst that provides better CO emissions reduction would almost certainly provide better formaldehyde emissions reduction.

Appendix H – Water and Wastewater Information

Water Supply Comments

1. The main issue with water supply for the proposed plant is the need to provide a force main interconnect between the Connecticut Water Company Killingly water system with the Plainfield water system to meet the 400,000 gpd water demands during oil firing for the plant. A 12 inch main would run approximately 12,000 feet from the current Plainfield system terminus at the south end of Killingly to the Killingly distribution system. A booster pump station would also be required to make the interconnection functional. The July 29, 2016 letter from Connecticut Water Company indicates that they have adequate supply to meet the maximum demands of the plant with the system interconnection and booster station. Connecticut Water also indicates that upgrades to the existing water storage tank in the Killingly industrial park may be necessary. These upgrades including the 3,100 feet of water main extension along Lake Road will likely cost the plant developer over $2 million.
2. There is no mention in the CSC application or in the Connecticut Water Company letter regarding the need for a CTDEEP Water Diversion Permit for the system interconnection. CTDEEP guidance on water diversion indicates that water system interconnections exceeding 50,000 gpd require a diversion permit. The CTDEEP Diversion Permit Program has a General Permit that covers water system interconnections of up to 1,000,000 gpd. The need for the Water Diversion Permit

would be determined by CTDEEP in consultation with Connecticut Water. If the Water Diversion Permit is required the preparation, planning and permit issuance could take 6 months or more. The CSC approval for the project should be made contingent upon the CTDEEP Water Diversion Permit approval or waiver of permit need from the CTDEEP.

3. Water system interconnections are typically subject to Connecticut Department of Health (CTDPH) approval. CTDPH may impose requirements on Connecticut Water regarding testing, reporting and compliance for the water being fed from Plainfield to the Killingly system, especially if the water quality of the two systems are different. CTDPH approval or clearance for the water system interconnection should be made a condition of the CSC approval.
4. Interconnections of public water systems are generally a positive outcome because it strengthens the supply and distribution capabilities to manage water demand on a larger regional basis. This project will provide the capital to make an important system interconnection without affecting the system customers.

Wastewater Comments

1. There appears to be sufficient capacity in the Killingly Wastewater Treatment Plant to handle the anticipated 30,000 to 90,000 gpd wastewater discharge from the plant, which is confirmed in the August 11, 2016 plant operator (SUEZ) letter to NTE Energy. The report from NTE indicates the Killingly plant has a capacity of 8 mgd and is currently receiving an average daily flow of 3 mgd. The report does not indicate what the current peak daily flow is entering the plant. This information should be provided to properly evaluate the available capacity under peak flow conditions.

Appendix I – Traffic Impact Report

General

1. In general, the Traffic Report followed standard Traffic Engineering Methodologies and Analyses. The Study appropriately looked at impacts during construction and operation of the facility.

Background Traffic

1. The traffic counting methodology and the base traffic volumes utilized in the TIR appear appropriate.

2. The Town should determine whether there are any major developments in the area that could impact traffic. The Traffic Report did include traffic from the Questar Fueling Company expansion on Lake Road.

3. On the Traffic figures, the I-395 SB off ramp is mislabeled as NB.

4. The TIR should state up front the Roadway Peak Hours analyzed and the hours of construction as well as the number of shifts and their times.

Trip Generation

1. The trip generation appears appropriate in comparison to similar facilities.

2. Regarding the fuel trucks occurring at two deliveries per hour, is this for 24 hours a day and for how many days?

Distribution of Traffic/Assignments

1. The Study shows the majority of the project traffic entering from Attawaugan Crossing Road/Lake Road. The Town should require the Applicant to require the construction employees and trucks that are coming from I-395 to enter/exit along this route as opposed to using Route 101.

2. The Applicant should be required to alert the Town of any deliveries of oversize vehicles that may need traffic control. The Applicant states that this will be done.

3. The Applicant should state what the distributions were based on. The distributions do appear appropriate.

Analyses/Mitigation

1. FAH should further discuss the impact of the traffic on the railroad crossing along Lake Road. There is a limited discussion.

2. Additional Information regarding the traffic impact that will result from the transmission line installation should be provided including length of construction, locations, lane closures, hours work will be occurring, maintenance and protection of traffic, etc.

3. Additional information on the number of construction trucks as well as their schedule, size, weights with loads, and distribution patterns should be provided. There is some information on the number of trucks provided.

4. The amount of cut/fill should be provided as well as the number of trucks resulting from this.

5. If the number of trucks damage the pavement on the Town Roads, the Applicant should reimburse the Town for any necessary repairs.

6. Based upon the analyses provided, one location, the intersection of Attawaugan Crossing Road and the I-395 SB Ramps will have an unsignalized left turn movement increase from Level of Service "c" to Level of Service "e" during the Peak Construction Period during the AM Peak Hour. As this is only a temporary increase, this delay is not that significant. All other locations are shown to maintain the same Levels of Service. Thus, the overall traffic impacts from a Level of Service standpoint is not significant during construction and can be supported on the roadway network. During operation, the facility will not generate significant traffic and thus will not have a significant impact.

7. The construction analyses does not include the construction trucks in the capacity analysis. A few of these trucks could be travelling during the Peak Hours. However, there should be limited construction trucks during the Peak Hours and this would not significantly change the results.

8. More information should be provided regarding the modifications/widening of the curves along Lake Road. This should be coordinated with the Town and the work should be performed at the beginning of the construction process. It should be determined why the sign on Lake Road prohibiting trucks past a certain point was installed.

9. The Applicant will coordinate with the Town if manual traffic control is needed at any time during construction such as if queues get too long.

10. During standard operation, there will be not be a significant amount of traffic from the project. There will be an increase in site traffic during major maintenance periods and when ULSD will be used for fuel.

11. Information should be provided on how much and where parking will be provided during construction.

12. It is stated that there would be ten parking spaces provided on-site during operation. There should be more spaces to account for the employees who will be present during shift changes.

13. If desired, the Town could request that a monitoring count be performed during construction.

14. The Applicant states sufficient sight distance will be provided after clearance. This should be illustrated on the Site Plan.

The traffic counts and information provided to support the traffic impact analysis appear to be appropriate. The analysis is based on the critical period being the peak construction period. This analysis takes into account the projected workforce during the peak construction period. One area that requires further evaluation is the projected traffic that may be generated during the earth work phase of the project involving the major earth/rock cuts and fills. Depending upon the projections for importation of fill or removal of excess soil/rock, significant additional truck trips may be generated during this phase. Further analysis of the earth moving truck trips should be based on projections of the actual cut/fill volumes and suitability of the on-site materials for reuse.

The recommendation concerning the widening/realignment of curves on Lake Road east of the site entrance to accommodate WB-62 design vehicles is necessary and must be completed before site construction begins

Appendix K – Visual Impact Assessment

This review is an evaluation of a Visual Impact Assessment performed by Tetra Tech, Inc. (Tetra Tech) on behalf of NTE Connecticut, LLC (NTE) for the proposed Killingly Energy Center (KEC). It is a general review of the technical aspects and discussion of what should be typically included in visual assessments. This is not an in-depth review to determine if

the workflow of a technical analyses is correct nor is it a check on potential missing locations within the visual aesthetic resources inventory.
The Connecticut Siting Council generally has no set guidance policy or regulation for conducting visual assessments. Typically, assessments are comprised of analyses and site related issues that are determined suitable for the size and nature of the project. Usually, visual impact assessments will incorporate and provide some or all of the following:

- Inventory of publicly accessible sensitive visual resources within a defined study area
- Viewshed analyses incorporating the influence and effect of vegetation
- Photosimulations showing existing conditions and proposed conditions using a recently acquired photograph from an area of interest
- Balloon study for projects with components that have high aboveground offsets
- Line of Sight diagrams
- Distance Zones
- Landscape Similarity Zones
- Description of the character of the area
- Discussion of methodology and results of selected analyses
- Discussion of the impacts and change in quality of views or character of the area
- Discussion of mitigation

The proposed gas fired facility is considered a large and potentially impactful type of project. With a proposed stack height of 150 feet above ground there is the potential for having far reaching impacts. This review will be based against the points mentioned above:

- Study Area: a five-mile radius study area is a reasonable radius for this project based on the height of the highest offset (150-foot stack height) and based on the level of vegetative cover in the area in addition to surrounding topography
- An inventory of important visual and aesthetic resources has been provided along with GIS location mapping. Nearby residents have also been addressed.
- A discussion of the character of the area is included and provides a suitable understanding of the project area.
- Other important descriptions are included to offer an understanding of site changes: i) a suitable description of project elements are included as well as a rendering of the facility, ii) possible FAA lighting (pending), iii) site lighting, and iv) the report also clearly states the limits of disturbance and that a minimum 50 foot buffer of vegetation will be maintained.
- GIS viewshed analyses have been conducted and are sufficiently addressed along with caveats that are characteristic of the analysis. The assigned vegetative height of 60 feet appears to be reasonable and appropriate. Two analyses are provided. One analysis was performed without vegetative considerations. In this sense, one can ascertain the effects of topography has on vegetation. A second viewshed

analysis incorporates the effects of tree cover in the area and realistically reflects area conditions as best as possible. The two different analyses provide a complimentary understanding of potential areas of visibility over a regional area. Data sources used in the analyses are what are typically used in the GIS industry and are determined suitable.

- United States Forest Service (USFS) distance zones are provided in relation to the project location and that of aesthetic resources within the study area. These distance zones are defined by USFS and offer an understanding of the level of discernible detail of an object with distance. They are not always required but are often optionally included in visual assessments.
- Landscape similarity zones (LSZ) were identified. LSZs often are not always required and are often included in visual assessments. They are generalized areas of similar landscape/aesthetic character based on patterns of landform, vegetation, water resources, land use, and user activity. They help in understanding land use patterns and activity and locations of viewer group types.
- A methodical, fair, and adequate process was used to determine potential candidate locations for final photosimulations. Typically, the results of the viewshed analysis is used to assist in defining potential locations to take photographs for simulations. If an area of viewshed visibility overlaps an area listed in the visual resources inventory it could be considered in the first cut of possible viewpoint locations. Tetra Tech also considered the significance of viewpoints and level of viewer exposure. They further screened their candidate locations by creating lines of sight to confirm how much of the facility stack would be seen to warrant whether or not a photosimulation would be produced.
- Photosimulations were produced using sound industry-standard software. Photos for simulations were taken during leaf-off conditions. This strategy is typically utilized to show the greatest potential for visibility.
- Visual impacts were discussed for each individual photosimulation as well as quantitative impacts as a result of comparison viewshed analyses. Temporary impacts were also discussed.
- Although a separate section was not devoted to mitigation, aspects of proposed and natural mitigative features have been interspersed throughout the report. Proposed landscaping will occur at the facility entrance as well as other components such as buildings and the switchyard. However the report clearly demonstrates, through text descriptions, photosimulations, viewshed analyses, and lines of sight that the existing trees and topography within the study area will act as the major mitigative factor and will block most views of the lower parts of the facility as well as most of the stack.

This report is found sufficient and adequate. The report fully addresses the main visual analyses and issues that are commonly found in a comprehensive well-rounded visual impact analysis. Because there are no regulations and guidelines in Connecticut for visual analysis, Tetra Tech appears to have amalgamated several policy guidelines and regulations found in neighboring states who are in fact very stringent with regards to visual policy and regulation. They have also incorporated other non-compulsory analyses in addition to federal type policy documents and concepts that help shape and structure a visual assessment that is suitable for projects in the northeast.

Appendix L - Sound Survey and Analysis Report

General Comments

1. The analysis used the L_{eq} descriptor to quantify existing ambient/background conditions. However, both the State of Connecticut noise standard (22a-69) and the Killingly noise ordinance (Chapter 12.5, Article VI) clearly require that the L_{90} descriptor be used. The L_{eq} is the energy average of all the sounds that were present during measurements. The L_{90} is the sound level exceeded 90 percent of the time, which is the same as the lowest 10 percent of sound levels present. The L_{90} is always lower than the L_{eq}, and in an environment such as described in the report, with occasional vehicular traffic, the L_{90} may be much lower. Aside from being a regulatory requirement, this is an important distinction in evaluating potential noise impacts when assessing the increase in sound levels that will occur.
2. There is an existing residence located on the project site. It is unclear from the report if this residence will remain and if so, if it was included in the analysis.
3. A figure showing the project layout over an aerial map would be useful to give a reference as to where project sources will be located. This can easily be done through the noise model.
4. The Conclusion makes several statements that are not supported by any analysis.

Specific Comments

Executive Summary

- Disagree that a 51 dBA sound level is similar to a quiet office. A quiet office is lower, closer to a 40 dBA sound level.

Section 2.1

- The State of Connecticut noise standard defines ambient/background sound as the L_{90}. This should be stated in this section. The standard also has a numerical definition for prominent discrete tones that should 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.

Section 2.2

- The Town of Killingly noise ordinance also requires use of the L_{90} to define ambient/background sound.

Section 3.1

- The nighttime ambient measurements were conducted too early in the evening (9 pm till midnight). Nighttime ambient measurements are typically conducted from midnight on, when vehicular traffic volumes are lightest. This is important since ambient levels later at night are usually lower, and would lead to a more conservative assessment of the potential impacts that may occur due to project operation. This is further supported by review of the continuous data in Table 7, which shows that late night sound levels (2 am to 5 am) were up to 10 dBA lower than the sound level at midnight, when their late night measurements ended.

Section 3.3

- As discussed above, the report should include the measured ambient L_{90} sound levels. The report mentions that there was occasional vehicular traffic at night. Use of the L_{90} (in addition to being a regulatory requirement) acts to "strip out" occasional vehicular traffic noise and give a better indication of the background sound level.
- A graph of the continuous long-term data would be useful in order to better observe the trend in sound levels overnight.
- The data in Table 7 should show the dates as well. The report mentions that measurements were conducted from March 21, 2016 at 7 pm through March 23, 2016 at 8 am. It appears that not all of the measurement data were reported.

Section 4.0

- It is stated that construction may occur 7 days per week, and that construction could last for 3 years. This would have the potential to result in an adverse impact. Some numerical analysis of construction noise levels should be provided to support the assertion that no adverse or long-term impacts will occur.
- Nighttime construction is listed as a possibility. This should be avoided to the extent possible in order to avoid noise impacts.

Figure 15

- The report states that transformers were included in the modeling analysis. However, the contour map does not seem to show any sound contribution

from any sources in the switchyard. If no transformers are to be located in the switchyard, this should be made clear.

Section 5.4

- The modeling results should be presented for discrete residential location property lines to show if compliance with the noise standards is achieved, since the ambient measurement locations are not necessarily at the actual residences. The standards apply at the residential property lines.
- There is no analysis whatsoever of the potential impact that the modeled operational sound levels may result in. The analysis should 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 should also be provided.

Conclusion

- The conclusion states what increases in sound (over daytime conditions) are expected at the nearest residence, yet there is no analysis whatsoever of increases over ambient within the report.
- A statement is made that there would not be a perceptible change in sound at locations near Alexander Lake, yet, as above, there is no analysis of this within the report. Further, no ambient measurements were conducted near Alexander Lake to support this assertion.
- A statement is made regarding what the expected indoor sound levels will be due to project operation, yet there is no analysis within the report.

Appendix M – Electric and Magnetic Field Assessment

TRC has reviewed the report and the assumptions are spelled out clearly and the results of the EMF graphs look reasonable. The field readings along the right of way seem low but that is probably due to the low demand on the lines at the time the readings were taken. The 550 megawatts equates to a little over 1,000 amps at 345 KV so the results of the new section of line match pretty close to TRC's calculations for the EMF levels. Not knowing the exact configurations of the lines and the conductor sizes, spacing and phasing we cannot check much more. The results in the report seem reasonable and the graphs depict what we would anticipate for the cross sections. The results under high load condition would be higher for the existing lines but they would all still be in the same proportion as the graphs depict.

Appendix N – Cultural Resources Information

1. The Phase I Cultural Resources Reconnaissance Survey prepared by Tetra-Tech was not included in the CSC filing because it is currently under review by the Connecticut State Historic Preservation Officer (SHPO) and has not been released for public review.
2. The National Register of Historic Places (NRHP) Eligibility Report was provided with the CSC filing and in our opinion is a thorough assessment of the structures associated with both the main plant parcel and the switchyard parcel. This document has also been provided and is under review by the SHPO.
3. Both of the above documents have also been provided by the applicant to the Mohegan Tribe and the Mashantucket Pequot Tribal Nation for review.

Killingly Energy Center
an NTE Energy Project

9/16/2016

Dear Sean Hendricks, Town Manager:

In the pages that follow, NTE Energy and our team of professional consultants offer a detailed response to TRC's "Third Party Document Review" of our Connecticut Siting Council (CSC) application.

Our CSC application totals more than 2,000 pages of detailed, technical information covering all facets of our project, from air emissions to wetlands, economic impacts to traffic, and many more. The CSC process is designed to subject our application to rigorous scrutiny by technical experts, public officials and community members alike. That depth of analysis as well as the opportunity it provides us to evaluate and incorporate feedback from a diversity of groups and perspective helps make our application more technically exacting and more reflective of the host-community concerns. In particular, we appreciate the review conducted by TRC and the effort that entailed.

Our environmental consultants for this project are some of the most experienced in the industry and we are proud of the detailed analyses and technical rigor that went into our CSC application. However, we understand that different consultants can view topics in different ways. TRC raises some important issues and we have thoroughly evaluated their analysis, producing a point-by-point response. As you review our response you will see that our responses fall into three categories:

1. Where TRC's recommendations cause us to reconsider specific details in the design and layout of the facility, we are offering options for your consideration to address those areas identified by TRC. Upon your review and with your direction, we will incorporate those changes so requested by you.
2. Where TRC's recommendations can be addressed by recalculations, supplemental information or clarifications, we have provided the respective calculations, information and/or clarifications which we believe resolves the particular issue identified by TRC.
3. You will also see that there are several places where we disagree with TRC's opinion and have provided information supporting our position.

We hope that our detailed responses demonstrate the seriousness with which we take our responsibilities to the Killingly community.

I invite you to contact me with any questions about our analysis or any aspect of our project.

Sincerely,

Mark Mirabito
NTE Connecticut, LLC

Killingly Energy Center Response to Third-Party Document Review

September 16, 2016

The Killingly Energy Center (KEC) team has completed our detailed review of TRC's third-party review of NTE Connecticut's (NTE) application to the Connecticut Siting Council (CSC). We submit this response in support of the Planning & Zoning Commission (P&Z) and Inland Wetlands & Watercourses Commission (IWW) preparation of comments for submittal to the CSC. We have developed responses and clarifications to findings in TRC's Third-Party Document Review dated September 8, 2016. We look forward to continuing to work with the P&Z and IWW Commissions and the Town's consulting engineer as the Commissions prepare their regulate and restrict orders for submittal to the CSC. Through those orders, we will have the potential to make changes to respond to the Town's feedback, which could include various items discussed in this response, including:

- Potential redesign of the ultra-low sulfur distillate (ULSD) tank containment to eliminate the earthen berm and replace it either with a more compact steel containment or with a double walled tank.
- Relocation of the natural gas compressor building, which is currently the only structure that is within 75 feet of wetlands.
- Relocation of the administration building slightly toward Lake Road, increasing the separation distance between that building and Wetland A1.
- Addition of 6 to 10 more parking spaces adjacent to the control building.
- If the natural gas compressor building is relocated, relocation of the ring road could also occur to increase the distance from Wetland X and provide for greater grading separation in this area.
- Potential side slope adjustments to use steeper (1:1) rip-rap slopes, which would allow for greater distance from wetlands (but would eliminate the benefits associated with less steep vegetated side slopes).
- Addition of a barrier around the wet pool components of stormwater basins to prevent vernal pool amphibian access.
- Additional specificity relative to stormwater basin underdrain systems.
- Enhancement of the stormwater management system to add two additional stormwater basins directly feeding wetland headwaters.
- Additional details regarding soil amendment and gravel placement to clarify measures intended to allow for infiltration and rainfall storage.
- Additional details on stormwater management associated with the Switchyard Site.
- Additional specifics regarding anticipated placement of temporary construction erosion and sedimentation control measures, including temporary sediment traps.

Through considering your feedback and then incorporating change into the CSC process, NTE can be responsive to meaningful issues in a coordinated fashion.

The responses below correspond to the headings that were used in TRC's Third-Party Document Review. A version of the TRC document, with numbers corresponding to the responses, is provided in the Attachment.

Appendix A – Notice and Service Documentation

No comments by TRC were provided on this appendix.

Appendix B – Analysis of Need and Economic & Environmental Impacts

TRC's comments acknowledge the economic benefit and resulting emissions displacement that will result from KEC, but indicate that details of the model and model assumptions were not able to be independently verified in order to confirm the specific numerical results. Additional information is provided to respond to TRC's comments below:

Response B-1: As TRC notes, IMPLAN and JEDI are commonly used models to develop economic benefit forecasts. JEDI was developed specifically for the power industry by the National Renewable Energy Laboratory (NREL). The IMPLAN model has been used by both the public and private sectors in a wide variety of applications, including: the impact of the Baltimore Orioles' baseball stadium on the state economy, the impact of Tesla's Gigafactory on the state of Nevada's economy, and the impact of the meat and poultry industry on the U.S. economy. While not intended to be a precise prediction of future benefits, the models provide indications of the broad positive effects associated with economic developments such as KEC.

Response B-2: Although detailed input assumptions have not been provided due to their commercially and competitively sensitive nature, PA Consulting Group, Inc. (PA) would be willing to provide more detail regarding its inputs to TRC upon execution of a Non-Disclosure Agreement (NDA). In this way, detailed assumptions can further inform TRC as to the reasonableness of the forecast, following which TRC can provide an updated opinion to the Town. NTE can provide a draft NDA to TRC upon request of the Town.

TRC indicates its understanding is that the resulting output from the IMPLAN model became an input for the JEDI model. This is actually not the case. JEDI model input assumptions include KEC's construction and operating costs provided by NTE, and economic activity multiplier data derived from IMPLAN. (Note that this economic activity multiplier data is not an output of the IMPLAN model.) NREL populates the JEDI model with the economic activity multiplier data before making the JEDI model available for download by PA and others (i.e., a JEDI user is not required to manually transfer IMPLAN data into the JEDI model).

Response B-3: TRC notes that KEC will undoubtedly provide emission reduction benefits, but states that the specifics of the analysis could not be independently verified. As noted in response B-2, additional details could be provided to TRC upon execution of an NDA.

To evaluate environmental benefits of KEC, PA used a proprietary electricity market modeling process. PA's process has been scrutinized and vetted by financial lenders as part of PA supporting its clients in the purchase, sale and financing of numerous power plants. Since 2011, PA has used this process to support over 250,000 MW of power plant transactions nationwide, with over 25,000 MW located in New England.

At the heart of this process, PA uses an industry standard chronological dispatch simulation model, AURORAxmp, to forecast hourly energy prices. This production cost model simulates the hourly operations of the power plants within ISO-NE and the surrounding power markets. While PA power market assumptions are proprietary, PA utilizes the same AURORAxmp model that is widely used by electric utilities, power market regulators, independent system operators and other market consultants. For example, the North American Electric Reliability Corporation (NERC) – the non-profit organization that oversees electric reliability in New England – recently used AURORAxmp to assess impacts related to the United States Environmental Protection Agency's (USEPA's) Clean Power Plan. Similarly, ISO-NE is currently using AURORAxmp to forecast the operations of the New England electricity market in its current review of the Forward Capacity Auction. PA's modeling process was most recently vetted by the Rhode Island Office of Energy Resources (OER) in the application process of the proposed Clear River Energy Center. The OER found in its Advisory Opinion (dated September 12, 2016) that PA's emissions "*model supports a reasonable forecast of the Project's [Clear River's] impact on CO_2 emissions in the region.*"

AURORAxmp simulates the regional electricity system by dispatching the lowest cost power plants to meet projected electricity demand in a given hour. Since KEC's hourly dispatch cost will be less and its emissions lower than most other power plants currently in the region, the emissions savings due to KEC is largely attributable to KEC displacing the hourly generation of other higher cost and higher

emitting power plants. Such emissions displacement does not require older power plants to be retired or mothballed, only to operate less.

Appendix C – Geotechnical Engineering Report

TRC notes that the geotechnical report was thorough and provides important information for KEC's design basis. TRC asks several questions about the value of additional information gathering and indicates areas where additional information or use of the geotechnical data would be beneficial. Additional information is provided to respond to TRC's comments below:

Response C-1: We appreciate TRC's acknowledgement of the thoroughness of this report prepared by Haley & Aldrich (H&A). It is important to NTE to gather sound preliminary information as a basis for KEC's foundation design requirements, and to support the cut and fill calculations as well as the blasting requirements.

Response C-2: Groundwater monitoring completed to date was performed in the late spring, when groundwater is typically near seasonal high water level. The data collected in this effort, as well as the detail gathered during the wetland delineation and characterization effort, provide sufficient information from which flow direction and depths can be understood for the purpose of design. Because the intermittent stream systems and associated wetlands are fed by groundwater springs, the expected direction of groundwater flow can be illustrated as shown in Figure C-1.

As noted in the REMA Ecological Services LLC (REMA) *Wetlands Report: Existing Conditions*, the "dry" section of the proposed stormwater facility will be a bioretention basin with specialized media which will filter stormwater runoff and promote infiltration to underlying soil strata. The bottom of this cell is set at elevation 274.50, approximately 4.5 feet above the groundwater level measured in OW-1. To ensure infiltration during even the highest possible seasonal groundwater level, an underdrain system will be provided under the 2-foot thick filter media, set within a 1-foot thick layer of gravel. The invert of the underdrain will be slightly raised above the underdrain system (i.e., +/- 272.40) to ensure even distribution and infiltration of renovated runoff. The primary objective of the underdrain system, which would only function during an extreme high groundwater table condition, would be to keep the 2-foot thick filter media dry between storm events. NTE's soil scientist will verify high groundwater conditions at the location of the current bioretention basin (and any that may be added as a result of Town recommendation) via several hand-dug soil pits, developed to 4 feet from the soil surface.

Response C-3: NTE agrees with TRC's summary of the five test borings showing the results of hydraulic conductivity testing via Guelph permeameter; however, the hydraulic conductivity ranges from 0.009 to 0.061 inches per hour (0.017 inches per hour is not the upper end of the range). Killingly Engineering Associates, Inc. (KEA) has performed stormwater calculations using the more conservative hydraulic conductivity values from the geotechnical report, and has confirmed that the proposed stormwater design is adequate with the revised conductivity assumptions. However, as a result of additional TRC comments (discussed further in responses on Appendix D), additional refinements to the stormwater management system could be integrated that would also appropriately address peak rates of runoff.

Response C-4: TRC states that its review indicates that the overburden soils are "generally medium-dense to very dense glacial till." In fact, only about 10% of the samples are in the "medium-dense" category; predominant soils are considered to be dense to very dense. It is H&A's professional opinion that, even with further compaction that may occur as soils are replaced on the KEC Site, no significant change in ability to infiltrate stormwater will result. The hydraulic conductivity values recommended by TRC are, therefore, unrealistic and not supported by the geotechnical analysis. However, NTE acknowledges that a more conservative value would be prudent. Even assuming the lowest permeability value measured (0.009 inches/hour), KEA has verified that the current stormwater management system adequately addresses peak rates of runoff. H&A recommends that use of this value is unreasonably conservative, and that an average value of 0.03 inches/hour would be more

appropriate. As discussed in the responses on Appendix D, adjustments to the stormwater management system are presented for consideration by the Town; in updated documentation the adjusted values for permeability as recommended by H&A will be incorporated.

While it is true that hydraulic conductivity will drop once the upper layer of vegetation and topsoil is removed (due to due to freeze/thaw effects, roots, animal holes/borrow, etc.), H&A conducted the infiltration testing at a depth of 3 to 3.5 feet, which is below the zone impacted by such effects. As noted above, the glacial till layer is already dense to very dense, and will not significantly compact or reduce infiltration.

TRC also addresses the fines in the glacial till soil. Fines (i.e., silt and clay sized particles) in the glacial till soil are finely ground rock particles and, therefore, are silt rather than clay. TRC's estimated permeability may have incorporated a math error (10-6 cm/sec = 0.0015 inches/hour, not 0.00015 inches/hour); if this is the case, their estimate is still 6 to 40 times (about 1 order of magnitude) lower than the permeability measured in the field.

Response C-5: NTE has prepared an estimate of cut/fill/blasting/crushing/import, etc. quantities that will be used to achieve the proposed base elevations of the site, with input from the geotechnical report, site topographical survey, and proposed grading plan. NTE believes a balanced cut and fill is achievable with an estimated 20,000 cubic yards of rock blasting and crushing required. To that end, we have configured the site with a goal of reusing organic topsoil on site in areas that do not require load-bearing characteristics. Although some blasting will be required to achieve the required subgrade, the goal is reuse of this material on site, thereby substantially reducing the need to dispose of this material and reducing the attendant truck traffic.

NTE's CSC Application (Section 3.2) outlines the specific requirements that the licensed blasting contractor will be required to adhere to in regards to blasting management, including pre-blast and post blast surveying of nearby residences and wells, screening and dust mitigation, noise and vibration monitoring, and public outreach and notification of activities. Expected on-site grading activities would include excavating and distributing material on site, spreading and compacting, with all activities coordinated to occur simultaneously. Depending on soil conditions (and weather) compacting may require the addition of water.

Response C-6: Construction processes are dynamic by nature, and Best Management Practices (BMPs) will be established that will allow for adjustments to respond to weather, phase of construction activities, or other variables that will occur through the construction process. As noted, the Connecticut Department of Energy and Environmental Protection (DEEP) has the authority to conduct inspections and confirm that appropriate steps are being taken and logs maintained. NTE also expects that the CSC will require that a third-party inspector be hired to oversee the work implemented by the engineering, procurement and construction (EPC) contractor, which will be in addition to erosion and sedimentation (E&S) inspection and implementation staff associated directly with KEC. NTE is prepared to work with the Town, as well as the CSC, to identify an appropriate expert to fulfill that role in order to provide assurances that construction adjustments, if necessary, can be made that properly control dust, erosion, and sedimentation.

Appendix D – Stormwater Pollution Prevention Plan (SWPPP)

TRC notes concerns about whether appropriate input assumptions were utilized to support the stormwater management design, recommends more closely matching drainage sub-watersheds to more clearly feed the existing wetland systems, requests additional details regarding the use of various BMPs, and indicates that proximity of wetlands in one particular location could pose challenges during KEC's construction. In response to these issues, and as outlined in C-3 and C-4, NTE has revisited its stormwater calculations, using the more conservative assumptions suggested by TRC. Even using these very conservative assumptions (see C-3 for H&A's recommendation based on the geotechnical report), this exercise has

confirmed that the wetlands will be properly protected during construction and operation. In order to provide further protections, potential adjustments in the design (as discussed below) have also been identified that could be requested by the Town. Additional information is provided to respond to TRC's comments below:

Response D-1 and D-2: NTE agrees with TRC's summary of the SWPPP prepared by KEA. Compliance with standards, groundwater recharge, preservation of wetland functions and values, and avoidance of off-site impacts have been priorities throughout the design process.

Response D-3: TRC outlines, in more depth, its concern with utilizing non-site specific hydraulic conductivity data as designed a basis for the SWPPP. As noted in responses C-3 and C-4, NTE has revisited its stormwater calculations using the measured hydraulic conductivity values provided in the geotechnical analysis by H&A. In addition to the hydraulic conductivity values that are utilized, the revisited calculations now utilize runoff curve numbers for hydrologic soil group "C," consistent with H&A's recommendation that no further soils compaction will result in post-development conditions. The results of these revised calculations confirmed that the permanent stormwater system as designed will be adequate for the KEC facility; additional refinements to even further improve the stormwater management system are outlined in response D-6.

Response D-4: The BMPs were provided in a more generic fashion in the permitting documents to allow for flexibility throughout the dynamic construction process. However, additional detail can be provided to indicate typical locations of temporary sediment traps and other similar features that will be utilized and moved as appropriate to slow rates of runoff and prevent concentrated flow containing sediments from discharging offsite, including to wetlands. As noted in response C-6, the EPC contractor will have specific staff assigned to monitor and maintain erosion control devices and other BMPs, and NTE fully expects that the CSC will require that a third-party contractor provide oversight and direction to assure that the best possible measures are selected and in appropriate use at all times during the construction effort.

Response D-5: NTE is willing to adjust the stormwater management strategy to reflect providing four separate permanent basins (that can also be used as sediment traps during construction), as well as other temporary sediment traps, swales and infiltration areas, which will not only accommodate stormwater flows from the KEC site (as does the current design), but will more closely mirror the wetland hydrology and sub-watersheds on the KEC site during construction, as well as when KEC is complete. Additional protective measures for use during construction to check the potential for concentrated flow towards wetlands can also be implemented under the direction of a third-party E&S specialist, and were always intended to be selected during construction from the "menu" of BMPs identified in the current SWPPP. Although TRC suggests that construction proximity of proposed slopes to the wetlands do not provide room for adequately sized sediment basins, that statement does not recognize the nature of the construction process. Work will be sequenced to allow placement of these features within the KEC footprint while more interior work is ongoing, only removing them when those specific areas are required to be brought to final subgrade (at which point overall grades and stabilization would be achieved). Additional alternatives have also been considered that could enhance separation distance between the KEC site improvements and onsite wetlands, as further discussed in response D-6.

Response D-6: Considerable effort has been spent on selecting the location of the proposed KEC footprint on the site. The initial goal was to locate the KEC footprint in the center of the site, in order to take advantage of the substantial acreage available to buffer KEC from surrounding land uses. Once wetlands were delineated, it was evident this would result in filling well over an acre of wetland; this was determined to be an unacceptable approach. Engineering adjustments continued until the current layout was reached. This layout has avoided any direct wetland impact, including impacts to the lower-quality Wetland X. In fact, the 25-foot "no disturbance wetland buffer" identified in Section 6 of the IWWC regulations is met or exceeded with only two exceptions:

- The very tip of Wetland A3 (at Wetland Flag 3A-47) has grading (which would be the very toe of a vegetated slope) 20 feet away; and
- Approximately 275 linear feet adjacent to Wetland X (from Wetland Flag 1A-4 to 1A-22) has a retaining wall located approximately 10 feet away (added to the design to prevent impact to Wetland X). One corner of the retaining wall curves to come within 12 feet of Wetland A1, with other grading in this same area coming as close as 15 feet from Wetland A1.

Note that, in accordance with Section 6 of the IWWC regulations, all structures (irrespective of being main-use or accessory) are at least 75 feet away from wetlands with the exception of the natural gas compressor, which is just slightly closer to Wetland X (approximately 70 feet). As discussed further in this response, NTE could relocate the natural gas compressor to bring all structures into alignment with this standard.

Except for the two locations noted above, the KEC layout results in an undisturbed wetland buffer to Wetland A3 of 50 feet or more, with an average of about 80 feet (and an average *effective* wetland buffer to Wetland A3 following construction of approximately 190 feet in width, on average). The undisturbed buffer for the majority of Wetland A2 is more than 50 feet (with an *effective* buffer of more than 100 feet). The REMA *Wetland Report, Proposed Conditions*, discusses the effective buffer further on page 12. Nonetheless, we recognize that the on-site wetland system is particularly close to the proposed activities in those two locations and, as discussed below, have considered further plan modifications to address these concerns.

In considering potential changes to the layout that could shift activities further from the wetland, TRC's suggestion of moving the entire footprint was determined to be impractical. Shifting the KEC footprint farther south toward Lake Road would significantly increase visibility; retaining its position in the relative interior of the site allows KEC to be more compatible with other uses in the area. Shifting farther west is also a concern, due to the residential land uses in that direction. Maintaining as large a buffer as possible in that direction is a factor for both visibility and noise. A considerable amount of noise mitigation is already incorporated in KEC's design for compliance with nighttime noise standards consistent with residential zones; closer proximity would pose further challenge.

NTE, at the request of the Town, would be willing to implement the following alterations into the KEC site plan:

- The ULSD tank could be redesigned either with a more compact steel containment or with a double walled tank, instead of the earthen berm; this would then provide for additional space for relocating and consolidating other layout elements, as TRC suggests.
- The natural gas compressor building could be moved from its location near Wetland X to the vicinity of the ULSD tank, keeping all structures more than 75 feet from wetlands.
- The administration building can also be shifted slightly toward Lake Road, increasing the separation distance between that building and Wetland A1.
- With relocation of the natural gas compressor building, the ring road could then be shifted closer to the KEC facility to provide up to approximately 60 feet of separation from Wetland X. This would also have a beneficial effect on the grading required in this area in that it would allow for the toe of slope to be moved further west from Wetlands X and A1/A2 in most areas.
- Although the 2:1 side slopes currently incorporated have the advantage of their ability to be vegetated transitional natural features following construction, the side slopes in certain areas where greater distance from wetland was desired could be adjusted to be steeper (1:1) and reinforced with rip-rap.

Response D-7: NTE agrees with TRC's recommendation for maintaining sub-drainage areas, and had incorporated swale features that were intended to more directly infiltrate rainwater to the wetlands in addition to the single larger detention basin system. To the extent additional space is created through implementing layout adjustments as noted above, NTE could revise the site drainage design to provide

two additional larger stormwater ponds (one discharging to the headwaters of Wetland A1/A2 and one discharging to the headwaters of Wetland A3). Such a revised drainage design would more closely mimic the volumes and stormwater drainage characteristics of the site as it exists today. Sizing and design of the basins would reflect other input discussions addressed in this response document.

Response D-8: We appreciate TRC's identification of this inadvertent error. The Runoff Curve Number previously indicated in the SWPPP was a typographical error that then carried through the calculations. The calculations have now been updated with the correct value. The revised calculations demonstrate that the stormwater system will continue to function as necessary.

Response D-9: NTE disagrees with the hydraulic conductivity assumptions by TRC (as was discussed in response C-4). We do not believe that the glacial till can be compacted to any greater degree than what currently exists, and construction will not result in the extreme runoff increases as suggested. However, to allow for a more conservative measurement and peak runoff rates, the modeling has been adjusted utilizing conservative curve numbers corresponding to hydrologic soil type "C." Even using this approach, the existing stormwater management configuration adequately addresses rainfall; however, should the drainage approach be revised as described in D-6, these adjusted factors would be used in the adjusted design.

Response D-10: NTE has corresponded with the Connecticut Department of Transportation (CTDOT) on this issue and agrees with TRC. The National Oceanic and Atmospheric Administration (NOAA) Peak Point Precipitation Values provided by CTDOT District II has now been utilized to assess the existing and proposed peak runoff rates.

Response D-11 and D-12: Infiltration quantities have been recalculated maintaining the measured glacial till hydraulic conductivity assumptions provided and recommended by H&A, which demonstrate that the groundwater recharge volume (GRV) requirements can be met. Note that the third cell of the detention basin is intended as a bioretention basin, which is considered a "filtering practice" and not an "infiltration practice" (see II-P4-1 of the 2004 Connecticut Stormwater Manual). Although the design team (KEA, H&A and REMA) is confident that seasonal high groundwater table would not extend into the proposed filter media, an underdrain system will be incorporated such that function will be effective even under higher than anticipated groundwater conditions.

Response D-13: TRC's comment regarding the State of Connecticut's *recommended* lowest permissible hydraulic conductivity value for use of an infiltration/recharge basin is noted, and is a point that NTE has considered in this analysis. NTE is confident that the design of the stormwater system is adequate, based on the calculations for infiltration and recharge using the measured hydraulic conductivity values from H&A. NTE feels it has taken all necessary steps and protective measures, including identifying several potential refinements, to ensure the protection and preservation of the wetlands on site in accordance with the Town of Killingly and State of Connecticut regulations. As noted previously, the in-situ glacial till soil on-site (below the top 3 to 4 feet of soil horizon) is predominantly dense to very dense. Infiltration and recharge are presently limited below this upper layer of soil horizon. This concern can be properly mitigated during construction by amending the upper horizon of the finished grades to allow for water to infiltrate into the soils. For crushed stone surfaces, the underlying soils can first be amended prior to the application of the stone. Following this, NTE could install a minimum of 8 inches of stone to create additional water storage within the voids and allow for extended infiltration time.

Response D-14: As also noted in response E-6, the pool component of the detention basin is desirable and is at a sufficient distance (greater than 750 feet) from the vernal pool (see Figure D-1). If additional similar basins are added in response to Town request, one could be located within 750 feet of the vernal pool. Design of all such basins will incorporate dense vegetation and structures to discourage its ability to act as a "decoy" for amphibians and will include standard plastic fencing that will prevent access by such species.

Response D-15: Subject to the Town's request, NTE proposes to modify the shallow basin shown behind the administration building to include an underdrain that will discharge west in the direction of a potential drainage basin that would outlet to Wetlands A1/A2. Overflow from this basin would likewise flow in the same direction (west). The shallow basin would be raised slightly to be constructed essentially at grade, and the overflow from that basin will discharge to a grassed level spreader. As discussed several times in this document, H&A's measured permeability rates would be utilized in the design.

Response D-16: NTE proposes to re-evaluate the drainage design for the switchyard to provide runoff control and treatment as well as provisions for attenuation of stormwater. Surface runoff coefficients would be modified to assume conservative curve numbers corresponding to soil type "C." The finished surface would be amended as described in response D-13.

Appendix E – Wetland Information

TRC's focus in this section is on consideration of alternatives to increase distance from wetlands and demonstrate impact minimization, as well as on stormwater management issues. Additional information is provided to respond to TRC's comments below:

Response E-1: As discussed in response D-6, careful consideration for balancing impacts was integral to the alternative layouts considered. Although not provided in the application, iterative design drawings were developed as progress toward the current layout was made. For the Utility Switchyard, similar alternatives were developed. However, many of these drawings considered multiple changes at once, and therefore do not reflect the final location of the footprint. In addition, early alternative review was done with less formally delineated wetland boundaries (although the early wetland sketches are very close to the final delineated boundaries) and without grading contours (which were assumed based on existing topography). NTE will be developing additional mapping illustrating those prior alternatives as a part of its pending U.S. Army Corps of Engineers (USACE) Pre-Construction Notice (PCN). Important considerations were as follows:

- The Utility Switchyard position needed to be located to the eastern side of the layout (in order to be adjacent to the existing transmission line point of interconnection). On the Switchyard Site, this has been accomplished.
- The angles between the point of interconnection at the existing transmission line as well as the angles between the point of interconnection with the plant switchyard influence how much space is required between switchyard components (minimum safe separation). For the current configuration, those angles are favorable and allow the Utility Switchyard to be as narrow as possible. If the Utility Switchyard were moved onto the Generating Facility Site (e.g., in the location where the gas yard is currently shown), favorable angles could likely be obtained for one but not both of the points of interconnection, and the Utility Switchyard footprint would be wider.
- Grading for the Utility Switchyard in its current location is minimal, as the Switchyard Site (in the location selected) is relatively flat. On the Generating Facility Site, significant existing contours would result in much greater need for grading and/or extreme retaining walls in the design. Additional area would be required to accommodate associated stormwater management features. This would encroach closer to wetlands and closer to the property boundaries along Lake Road and to the east. The current design goal maintains a 50-foot setback, consistent with local zoning, which is likely to be difficult to achieve if the Utility Switchyard were on the Generating Facility Site. This would have implications to visibility as well and would preclude the ability to revegetate in this area to maintain the visual buffer along Lake Road.
- Placement of the temporary construction parking and laydown areas on the Generating Facility Site is more favorable from an efficiency, health and safety, and local traffic perspective. If the

Utility Switchyard were to be on the Generating Facility Site, a significant amount of this use would need to be relocated elsewhere, including the opposite side of Lake Road.

On the Switchyard Site, the constraints are fairly evident, consisting of the shape of the parcel, the presence of the cemetery, the location of the existing transmission line, and the location of wetlands. As discussed above, if the angles were changed, the Utility Switchyard would need to be wider. The current position allows for considerable set-back from Lake Road as well.

NTE feels that the current layout appropriately balances various environmental, engineering, and community issues.

Response E-2: As discussed in response D-6, careful consideration of wetlands and potential impacts was a key element of the KEC design and layout. Note that Wetland X has the least amount of undisturbed wetland buffer per the current plans. In NTE's initial site plan, this wetland was to be filled, since it provides negligible wetland functions and values and is disturbed in nature (i.e., an old farm roadbed). Nevertheless, NTE made the decision to not impact this wetland, and a retaining wall was proposed in order to avoid it.

Response E-3: We agree that maintaining wetland hydrology to Wetlands A1, A2, and A3 is a critical design element for KEC, and are confident that the existing design meets that requirement. However, adjustments in response to TRC comments on stormwater could be incorporated, as discussed above, which would even more closely reflect the sub-watershed areas of the site and direct flows toward individual wetlands.

Response E-4: Discussion of the appropriate recharge rates and treatment of gravel surfaces in the stormwater design are addressed in responses D-11, D-12, D-13. KEA has developed GRV calculations that confirm, per the Stormwater Quality Manual, that groundwater will continue to be supplied to support the existing wetland resources. If the refinements to the stormwater management system identified in response D-6 are implemented, the updated calculations will include updated information reflective of that scenario.

Response E-5: Note that the bottom elevation of the "dry" section of the basin is at 274.5 feet, and not at 270 feet, as TRC identifies. As discussed in responses C-2 and D-11, renovated runoff will infiltrate into the ground, and the proposed underdrain system would control even an extreme high groundwater table from adversely affecting the filter media.

Response E-6 and E-10: The current basin is more than 750 feet from the vernal pool in Wetland B (see Figure D-1). However, other basins – if added – could be closer. In order to retain the value of the wet basin design but prevent inadvertently attracting vernal pool amphibians, a simple barrier will be installed to encircle the basin (constructed of metal stakes and plastic netting, and reaching approximately 1 foot in height).

Response E-7: Floodflow function was considered in the wetland documentation and change was not identified. Should the re-design of the stormwater management system be implemented, this would provide additional value to maintaining floodflow wetland function.

Response E-8: Although work will occur near wetlands, BMPs have been established to allow for implementation of the work with care to prevent erosion and sedimentation. This will include the use of temporary sediment basins, berms, or other similar measures that will divert storm flows and prevent discharge of water during the specific work periods. The third-party reviewer, as well as EPC contractor specialists, will direct the changing needs for protection during the construction effort.

Response E-9: We assume that TRC is referencing the need to file for USACE General Permit coverage due to the proposed wetland fill within the Switchyard Site. A PCN will be submitted, and a detailed wetland creation plan will be developed as a part of the PCN.

Response E-11: The Natural Resources Conservation Service (NRCS) soil survey depiction of wetlands soils (i.e., Ridgebury-Leicester-Whitman soils series complex) shows up in Attachment A of the REMA *Wetland Report: Existing Conditions* (Figure B in that document). It is widely understood that the depiction of wetland soils in the NRCS soil surveys is generalized. It is for that reason that field delineations of wetland boundaries are necessary, and required by the Killingly Inland Wetlands and Watercourses Regulations. Within Attachment A of the REMA *Wetland Report: Existing Conditions* detailed information on wetland and upland soils is provided, and describes the wetland delineations. It not only confirms the presence of the well-drained Chatfield-Charlton (62) sandy loam, but also adds the moderately well drained Sutton (52), and the Walpole (13) soil series, not indicated by the NRCS Soil Survey. This shows that the mapping of soils associated with Wetland D, and its immediate surroundings, is at a higher level of accuracy than the NRCS soil survey. Field data collection, as documented in the application, is always considered more accurate than the more generalized mapping.

Appendix F – Ecological Assessment Report, Invertebrate Survey and Bat Monitoring Survey

TRC noted that the studies were appropriately completed. NTE will be pleased to provide agency correspondence in support of review of species documentation.

Appendix G – Air Permit Application Information

TRC had no comments on the air dispersion modeling component of the air quality documentation, and instead noted several details regarding the backup documentation. DEEP is actively engaged in an independent review of the KEC air permit application and will consider these and other issues to ensure that its decision is well-supported. Additional information is provided to respond to TRC's comments below:

Response G-1: Volatile organic compound (VOC) limits, particularly for duct-fired operation, can vary slightly between projects based on turbine vendor guarantees and maximum duct firing rates. The VOC limits proposed as Best Available Control Technology (BACT) for KEC reflect the Siemens guarantee and are identical to the limits approved by DEEP 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).

Response G-2 and G-3: Permitted rates for the projects cited in KEC's application regarding particulate ($PM_{10}/PM_{2.5}$) are consistent with precedent for both natural gas and ULSD firing and reflect the emission rates at full operating load. Higher pound per million British thermal unit (lb/MMBtu) rates occur at reduced operating loads. KEC's proposed rates are based upon the vendor specified rates across all operating loads and ambient conditions. Thus, the cited rates are not lower than those proposed by KEC.

Response G-4: The pounds per megawatt-hour (lb/MWhr) unit referenced by TRC for greenhouse gas (GHG) BACT is incorrect. Rather, the proposed BACT limit is expressed as a turbine heat rate (efficiency) of 7,273 Btu/kWh. Slight variations in heat rate can occur between specific turbines and due to site variables such as elevation and fuel composition. The proposed limit for KEC is consistent with that of the most recently permitted project in Connecticut (Towantic Energy – 7,220 Btu/kWh), as well as that proposed in the most recent application currently before the DEEP (Bridgeport Harbor – 7,412 Btu/kWh). USEPA has ruled that similar but marginally different emission rates satisfy BACT per the Environmental Appeals Board's March 14, 2014 decision regarding the La Paloma Energy Center.

Response G-5: TRC suggests that, while the KEC emergency generator and fire pump comply with applicable New Source Performance Standards, NTE should consider whether Tier III standards should be applied as a BACT measure. No Tier III standards have been promulgated for engines greater than 560 kilowatt (kW); the proposed KEC emergency generator for KEC is 1,500 kW. KEC's proposed fire pump engine (228 kW) meets the Tier III standard.

Response G-6: The KEC request for a 300-hour restriction on the emergency generator and for the fire pump is consistent with 40 CFR 50 Subpart IIII. The 300-hour total proposed for the KEC permit includes an allowance for emergency operation as well as the routine non-emergency engine operation (no more than 100 hours per year) associated with such activities as routine equipment testing.

Response G-7: TRC suggests the use of AP-42 or vendor information, rather than the Subpart YYYY National Emissions Standards for Hazardous Air Pollutants (NESHAP) used for the formaldehyde emission rate. However, AP-42 emission factors are based upon emissions testing conducted 20+ years ago on uncontrolled combustion turbine generators (CTGs) and are inappropriate to apply to a new state-of-the-art CTG equipped with dry low nitrogen oxide (NO_X) combustors and an oxidation catalyst. USEPA's MACT Floor evaluation involved significant testing of new state-of-the-art CTGs equipped with dry low NO_X combustors and oxidation catalysts. As a result, we believe the Subpart YYYY values represent the most applicable formaldehyde emission factor for KEC. The formaldehyde emission rates used by KEC are identical to the limits approved by DEEP 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).

Response G-8: NSPS Subpart TTTT does apply to KEC, but TRC correctly identified that this should have been noted in the application. This will be updated with DEEP as part of a recent data request associated with DEEP's technical permit application review. The GHG emission limit under NSPS Subpart TTTT is 1,000 lb/MWh, which will be readily achieved by the proposed combined cycle CTG.

Response G-9: The modeled sulfur dioxide (SO_2) emission rates were based upon rates provided by the turbine manufacturer (Siemens), while calculated rates based upon the specified fuel sulfur content limits are listed in Table E-2. The marginal differences in rates do not materially affect the modeling results, which are well below the SIL for all SO_2 averaging periods.

Response G-10: KEC submitted an addendum to the air permit application on August 8, 2016, limiting the operation of the natural gas heater to 4,000 hours per year.

Response G-11: KEC submitted an addendum to the air permit application on August 8, 2016, slightly adjusting the calculated annual emission rates and modeling to reflect maximum operation of the auxiliary boiler to 4,600 hours per year.

Response G-12: TRC notes that the exhaust velocity and temperature appear low for the emergency generator and fire pump engines. NTE used conservatively low exhaust temperatures in the modeling to predict the worst-case scenario. Assuming a higher exhaust temperature, as TRC suggests, would increase the exit velocity and reduce predicted impacts.

Appendix H – Water and Wastewater Information

TRC states that adequate water supply and wastewater infrastructure exists to support KEC. Additional information is provided to respond to TRC's comments below:

Response H-1 and H-4: We agree that the upgrades to the water storage tank and interconnection between the Plainfield and Brooklyn wellfields are beneficial to the local community in strengthening the supply and distribution capabilities to manage water demand. These measures, related to KEC, would be fully funded by NTE.

Response H-2 and H-3: NTE has held preliminary discussions with the Connecticut Water Company (Connecticut Water), as has TRC, regarding the potential permitting process Connecticut Water would need to undergo to support the contemplated upgrades. Implementation of those measures would not

occur without the appropriate DEEP and, if necessary, Connecticut Department of Public Health (CTDPH) approvals. As noted by TRC, Connecticut Water anticipates the required permitting should not be a lengthy process. As suggested by TRC, NTE would be willing to accept a condition requiring that those approvals be obtained.

Response H-5: NTE has reached out to the Wastewater Treatment Plant Operators and the Town to request information regarding peak daily flows currently discharged to the facility. We have been informed that peak flow for August 2016 was 3.4 million gallons per day.

Appendix I – Traffic Impact Report

TRC confirmed the traffic impact report – prepared by F.A. Hesketh & Associates, Inc. (Hesketh) – was appropriately completed, and has asked some clarification questions regarding the report and other potential traffic issues. Additional information is provided to respond to TRC's comments below:

Response I-1, I-2, I-6, and I-16: We appreciate the confirmation that the traffic report utilized appropriate methodologies and assessments, including appropriate traffic volumes, trip generation values, and Levels of Service during both construction and operation.

Response I-3: Hesketh and NTE both inquired of the Town as to whether other major developments are planned in the area that could impact traffic, and none were identified. The Questar expansion was noted to be uncertain, but was incorporated in order to reflect a maximum potential impact scenario.

Response I-4: This typographic error has been noted.

Response I-5: The observed morning peak hour occurred at the hour beginning at 7:00 a.m. or 7:15 a.m., depending on the intersection. The afternoon peak hour occurred between 3:30 and 4:30 p.m. We have assumed that the peak hour of the KEC traffic was coincident with the peak hour of the background traffic, although shift changes will avoid roadway peak usage times to the extent possible.

Response I-7: In the rare event that KEC would be called upon to operate firing ULSD, it is assumed that two trucks per hour would be required to maintain continuous operation of the power plant for the duration of the natural gas curtailment period, which itself is expected to be short (less than 24 hours).

Response I-8: NTE will specify in contracts with its EPC contractor and subcontractors that truck travel is required to be to and from I-395 via Attawaugan Crossing/Lake Road and that any truck traffic on Lake Road west of the KEC site (other than personal vehicles) is prohibited.

Response I-9: Oversize deliveries or vehicles will be coordinated with the Town, and appropriate traffic control utilized.

Response I-10: The distribution, which conservatively assumes 25% of traffic could travel west on Lake Road, is based on the proximity and ease of access to I-395, coupled with NTE's desire to minimize traffic on Lake Road west of the KEC Site.

Response I-11: The modeled Levels of Service at the intersections of Attawaugan Crossing Road with Upper Maple Street and Tracy Road indicate that these intersections will continue to operate at acceptable levels under the combined traffic volume conditions. It is, therefore, Hesketh's opinion that there will not be a significant impact on the railroad crossing.

Response I-12: The transmission line will extend from a structure located on the KEC Site to a structure located on the Switchyard Site. Therefore, the impact on travelers along Lake Road would be limited to approximately 1-hour periods of time associated with stringing the wires and adding conductor spacers. The work can be scheduled to be performed during non-peak travel periods.

Response I-13: The specific number of trucks, and their specific characteristics, will vary throughout the construction process. For the majority of the construction effort, truck traffic would be no different

than for any other construction project. Delivery of major equipment will involve larger transport vehicles with specialized weight requirements; these deliveries will be coordinated with CTDOT and Town officials.

Response I-14 and 1-25: The current plans indicate an approximately balanced cut and fill. To the extent the cut and fill balance can be maintained, this would eliminate the need for substantial traffic associated with materials movement. It is possible that, as detailed design progresses or field conditions during construction warrant, the cut and fill balance could change. NTE will work closely with the Town to provide information about any anticipated changes in truck traffic, and will continue to have all construction trucks access the KEC Site via I-395 to minimize the use of local roads.

Response I-15: Damage to Town roads is not anticipated. However, NTE will repair damage resulting from KEC's construction activity. Lake Road west of Forbes Street to the KEC entrance will be widened by NTE to better accommodate truck access and bring the road up to local industrial standards.

Response I-17: Although construction trucks were not specifically included as a part of the analysis, the volume of truck traffic during peak hours will be minimal. Hesketh's analysis assumed that 100% of the construction workers will arrive on site during the peak hour (which will be avoided to the extent possible via shift scheduling) and that no carpooling will occur. Therefore, the site volumes used in the analysis include an allowance adequate to account for the truck traffic.

Response I-18: NTE is working with the Town on the Lake Road improvement package. Preliminary drawings are being prepared and will be submitted to the Town in the near future. NTE has inquired of Town staff on the reason for the "No Through Trucks" sign. Staff was not aware of the reason for installation of the sign. Although we do not have confirmation, we expect that the sign was installed by Town staff or by the developer of the industrial sites on Forbes Road to discourage truck traffic west of that roadway.

Response I-19: NTE expects to have very active coordination with the Town throughout the construction period, and is committed to providing for manual control when circumstances warrant.

Response I-20: TRC correctly notes that, during major maintenance (anticipated to occur once per year for approximately 1 to 3 weeks depending on the type of maintenance being undertaken), traffic levels associated with the operational facility will be higher (but not as high as during peak construction). As evidenced by the ongoing acceptable Level of Service performance at key intersections even during peak construction, these periodic and limited increases are not expected to adversely affect local traffic.

Response I-21: Parking will be accommodated within the cross-hatched areas on the site plan that are designated for construction parking and laydown. Adequate area has been identified to meet KEC's peak construction needs.

Response I-22: Although the number of spaces provided were anticipated to be adequate, an additional 6 to 10 parking spaces be added at the Town's request adjacent to the control building.

Response I-23: Rather than counting vehicles, NTE will work closely with the Town to monitor the effect of construction traffic on local roadways and implement additional control measures, as warranted.

Response I-24: The available intersection sight distances are shown in Figure I-1.

Response I-26: NTE agrees that roadway adjustments would be completed prior to the start of major construction efforts. Note that early site preparation activities, such as clearing or blasting, and minimal truck traffic due to fill import/export, would not require substantial trucks and would be anticipated to begin prior to such roadway improvements.

Appendix K – Visual Impact Assessment

No comments requiring responses are noted for this section; we appreciate TRC's confirmation that methods and implementation of the assessment have been adequately completed.

Appendix L – Sound Survey and Analysis Report

TRC's comments do not identify issues with the operational model and the demonstration of compliance with the 51 A-weighted decibel (dBA) requirement. Its comments focus on construction sound levels, ambient data collection, and KEC's potential effect on existing sound levels. Additional information is provided to respond to TRC's comments below:

Response L-1 and L-7: Note that background levels are not utilized in the Connecticut or Killingly noise regulations for new projects; rather, project-specific noise levels are mandated at the property boundaries of certain types of land uses. However, because ambient measurements were conducted, the measured L_{90} sound levels are provided in the CSC Application in Section 7.4. As expected, L_{90} values are lower than the $L_{eq.}$ The L_{eq} provides an equivalent sound level reflecting the range of sound anticipated in a given location. The CSC has typically utilized the L_{eq} metric for evaluating sound level impacts, including for its most recent similar projects (the recently approved Towantic Energy and the pending Bridgeport Harbor).

Response L-2: The existing residence will be demolished as a part of early construction and site preparation activities.

Response L-3: Although the layout is not currently shown on the sound contour map, NTE has provided that information on Figure L-1. The layout does appear on other graphics within the CSC application overlain on aerial photography.

*Response L-*4: See responses to L-15 through L-17.

Response L-5: Various sources exist that characterize sound levels, which can be difficult to generalize. The sources utilized to prepare Table 7-4 of the CSC application (USEPA, various published acoustical books, and an established sound level database) indicate that 51 dBA is considered similar to a quiet office. Based on these references, a noise level of 40 dBA is similar to a bedroom or quiet living room.

Response L-6: A reference to the State of Connecticut noise standard regarding discrete tones is provided in Section 2.1 of the *Sound Survey and Analysis Report*. KEC is designed so that no prominent discrete tones will be generated.

Response L-8: All of the nighttime ambient measurements were conducted during the nighttime period as defined by the Town of Killingly's noise ordinance. To identify the full range of noise levels during later nighttime hours, a 24-hour noise monitor was deployed at property line adjacent to the nearest residence. Given the combination of long-term and short-term measurements, ambient conditions are adequately characterized.

Response L-9: As discussed, L_{90} measured sound level data are provided in the Section 7.4 of the CSC Application. However, because traffic noise along local roadways is an integral part of this location's existing background community noise (as opposed to an unusual occurrence), it is appropriate to maintain it within the measurement data.

Response L-10: Although the hourly data provided in Table 7 of the *Sound Survey and Analysis Report* is descriptive of the continuous long-term ambient sound data, a graphical depiction is provided in Figure L-2 for all of the data gathered by the long-term monitor.

Response L-11: Because the long-term monitoring was intended to reflect a 24-hour period, the 24-hour period report in Table 7 starts at midnight on March 22, 2016 and finishes at midnight on March

23, 2016. All collected data (collected from March 21 at 7:00 pm through March 23 at 8:00 am) are now provided in the graphical depiction requested in L-10.

Response L-12 and L-13: Although a representative analysis of construction noise can be prepared, the dynamic nature of the various construction phases results in this providing limited meaningful information. Past projects submitted to the CSC (e.g., Towantic Energy, Bridgeport Harbor) do not provide a numerical analysis of the construction noise levels. The CSC will evaluate the potential activities and will impose restrictions similar to those incorporated in the state and local noise regulations (which restrict construction to daytime periods). Nighttime construction will be limited as much as possible; however, there may be certain construction activities (e.g., concrete pours, which must be continuous) that will need to be conducted during the nighttime period. These will be evaluated by the CSC, and appropriate restrictions will be placed on nighttime construction activities to minimize and control potential impacts.

Response L-14: There are no transformers located within the switchyard, which is why they are not visually reflected in the sound contours.

Response L-15: KEC was designed to comply with the residential noise standard (51 dBA) at the nearest property lines with properties zoned for residential use (essentially at KEC's property lines) in compliance with state and local requirements. This results in even quieter sound levels at specific residential locations. The contours shown in Figure 7-5 of the CSC Application can be used to illustrate noise levels at specific offsite receptors, which will all be less than 51 dBA.

Response L-16 and L-17: The State of Connecticut and Town of Killingly regulations are based on absolute sound level limits. In other words, they are not established relative to ambient conditions, and conducting a baseline sound survey is not requisite to demonstrate project compliance. However, it is common in CSC applications to provide baseline measurements, and therefore, they were collected for KEC. Although changes in sound level were not formally assessed, the application provides a brief discussion regarding changes to the ambient noise levels consistent with the type of information provided in other recent applications (e.g., Towantic Energy, Bridgeport Harbor).

Response L-18: The statement that no perceptible change in sound at locations near Alexander Lake is made based on the noise contours shown in Figure 15 of the *Sound Survey and Analysis Report*. Based on the model and the presence of intervening structures (such as the large commercial building between Alexander Lake and KEC), KEC's sound levels at Alexander Lake are anticipated to be 27 dBA (or less with greater distance). While specific ambient measurements have not been conducted at Alexander Lake, the long-term ambient monitor located at the KEC Site provided a range of conditions. If sound levels at Alexander Lake are 26 dBA (the quietest L_{90} sound level measured at the long-term monitoring location), the combined sound level would be 29 dBA L_{90}. This is extremely quiet. A 3 dBA change in sound level is considered barely perceptible; a readily perceptible change typically requires a change of approximately 6 dBA.

Response L-19: As demonstrated in the *Sound Survey and Analysis Report*, KEC will fully comply with all applicable noise regulations, which are based on outdoor sound levels. The description of expected indoor sound levels was given for informational purposes only, because during late night hours residents tend to be indoors and additional noise attenuation can be attributed to the residential structure. The indoor sound levels discussed were based on information provided in the Handbook of Acoustical Measurements and Noise Control.

Appendix M – Electric and Magnetic Field Assessment

No TRC comments were provided.

Appendix N – Cultural Resources Information

TRC confirmed that the report reviewed provided a thorough assessment, and had no additional comments.

Figures

Figure C-1
Groundwater Flow

Killingly Energy Center
an NTE Energy Project

WETLAND A3

WETLAND A2

WETLAND X

WETLAND A1

WETLAND E

WETLAND D

WETLAND C

WETLAND B

RIVER

ESTIMATED DIRECTIONS OF SHALLOW GROUNDWATER FLOW BASED ON SOILS, GEOLOGY, AND WETLAND HYDROLOGY

N

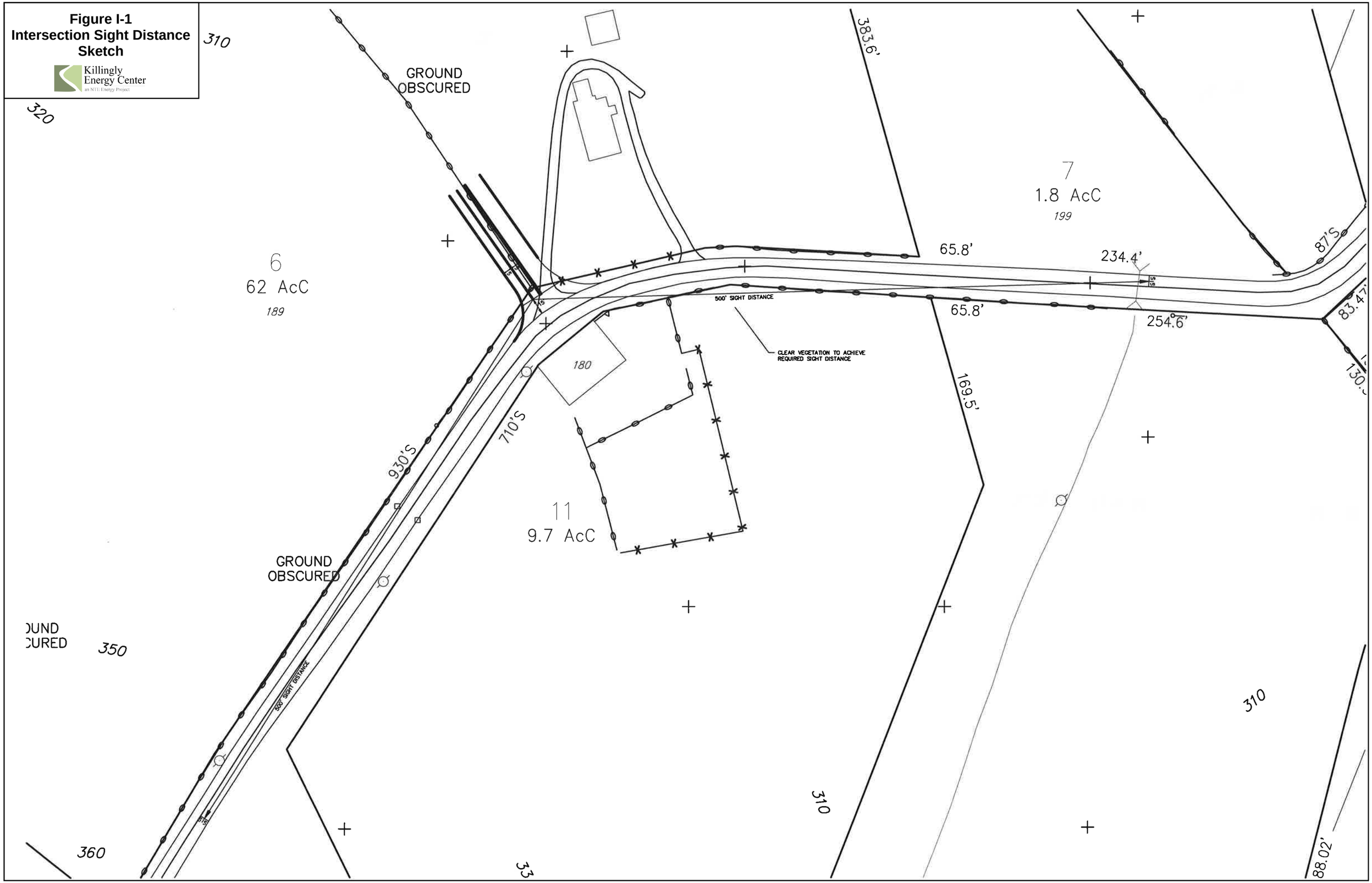
PRODUCED BY: REMA ECOLOGICAL SERVICES, LLC
DATE: 6-16-16 ***SCALE***: NTS

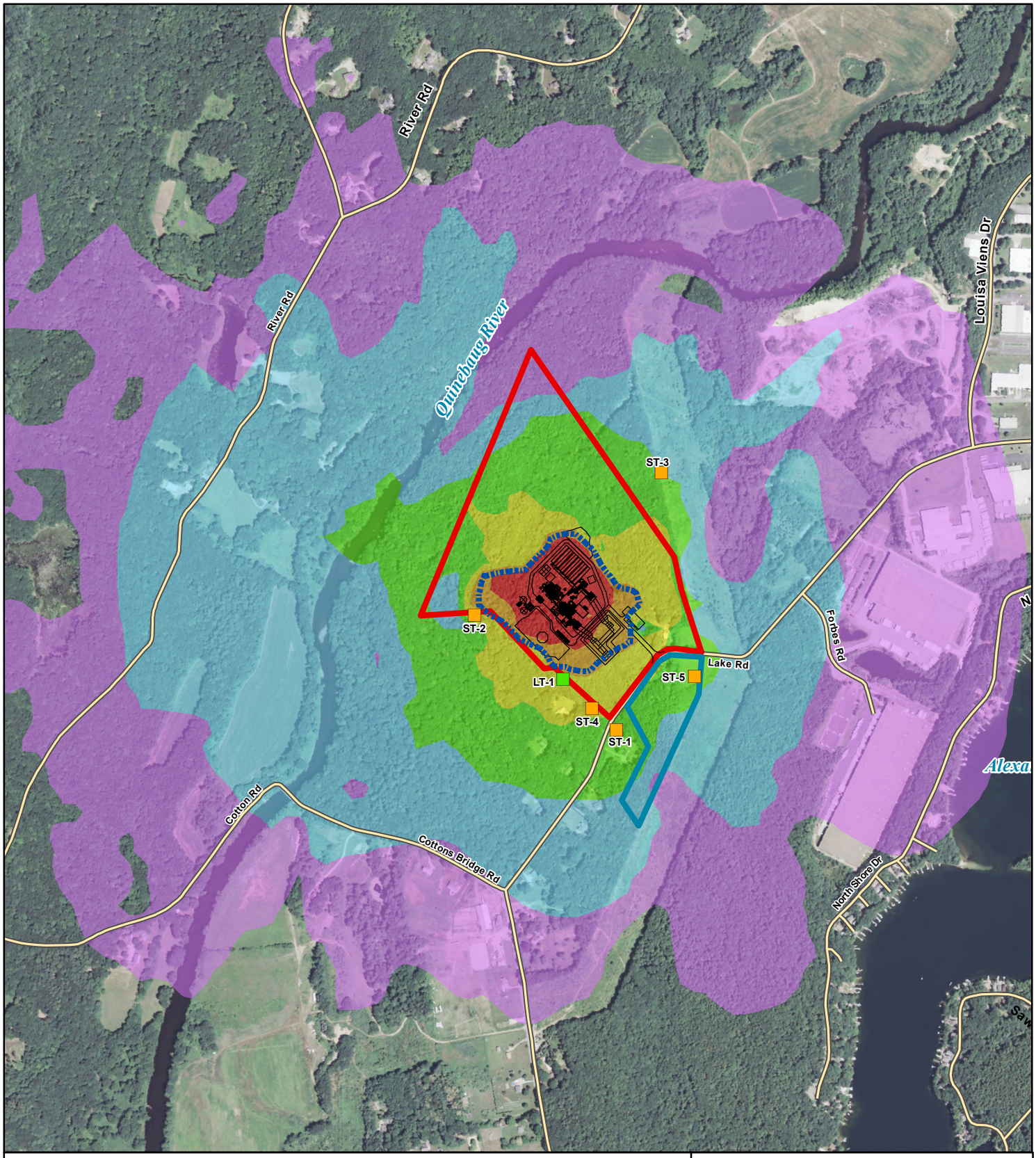
Figure D-1
Location of Vernal Pool

Killingly Energy Center
an NTE Energy Project

Figure I-1
Intersection Sight Distance Sketch

Killingly Energy Center
an NTE Energy Project





Legend

- General Facility Site
- Switchyard Site
- Short Term Monitoring Location
- Long Term Monitoring Location
- Noise Threshold Limit 51 dBA

Sound Level Contour Ranges (dBA):

- 30 - 35 dBA
- 35 - 40 dBA
- 40 - 45 dBA
- 45 - 50 dBA
- 50 - 55 dBA
- >55 dBA

Figure L-1
Results of Acoustical Modeling with Site Overlay

Killingly Energy Center
an NTE Energy Project

Z:\UtilServ\Killingly\Reports\Noise\Noise_Levels.mxd

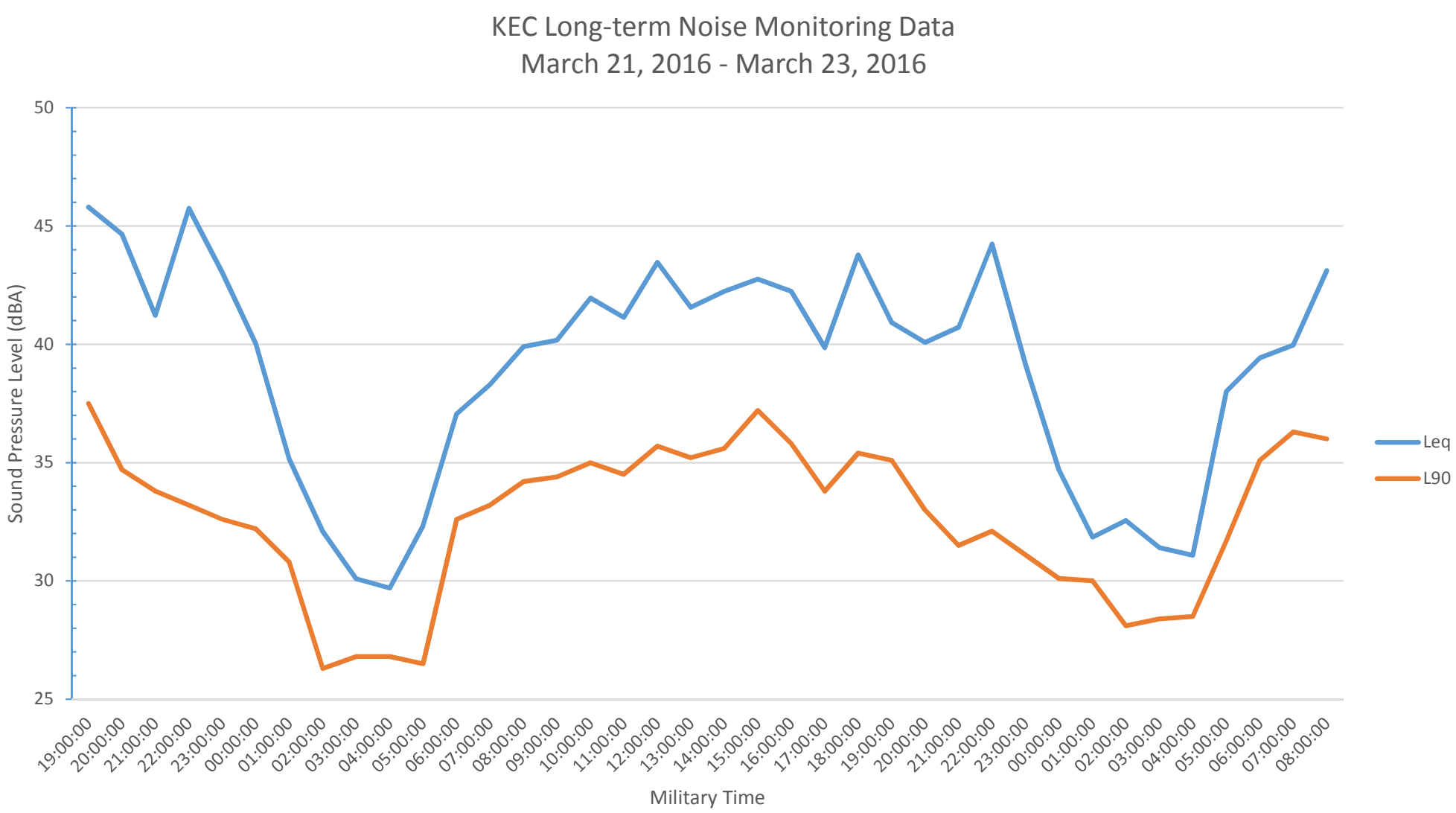


Figure L-2
Long-term Noise Monitoring Data

Killingly Energy Center
an NTE Energy Project

Attachment

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Killingly Energy Center (KEC) - NTE Energy Project

180 & 189 Lake Road
Killingly, Connecticut

Third Party Document Review

TRC Environmental Corporation
21 Griffin Road North
Windsor, CT 06095

September 8, 2016

TRC Environmental Corporation (TRC) has been retained by the Town of Killingly to provide environmental and engineering technical support and review of the NTE Energy application to the Connecticut Siting Council (CSC) for the proposed 550-megawatt (MW) combined cycle power generating station to be located at 180 & 189 Lake Road. The comments provided in this document are based on TRC's technical expert review of documents furnished by NTE Energy on the Connecticut Siting Council website (http://www.ct.gov/csc/cwp/view.asp?a=962&Q=583908&PM=1) Docket No. 470 for this application for Certificate of Environmental Compatibility and Public Need filing. NTE Energy submitted the CSC application on August 17, 2016. The formal process for host community review and comment has begun. The Town of Killingly will have 65 days to provide written comment on the CSC application for the project.

CSC Docket No. 470 Documents Referenced and Covered in this Review

1) **VOLUME I – APPLICATION NARRATIVE**
2) **VOLUME II – APPENDIX A THROUGH F**
   a. Appendix A – Notice and Service Documentation
      i. A-1 – Legal Notice
      ii. A-2 – Certification of Service of Application on State and Local Officials
      iii. A-3 – Abutter Notice Letter and Attachments
   b. Appendix B – Analysis of Need and Economic & Environmental Impacts
      i. B-1 – Addendum to the Killingly Energy Center: An Analysis of Need and Economic &Environmental Impacts

      ii. B-2 – Killingly Energy Center: An Analysis of Need and Economic & Environmental Impacts
   c. Appendix C – Geotechnical Engineering Report
   d. Appendix D – Stormwater Pollution Prevention Plan
   e. Appendix E – Wetland Information
      i. E-1 – Wetland Report: Proposed Conditions
      ii. E-2 – Wetland Report: Existing Conditions
   f. Appendix F – Species Information
      i. F-1 – Ecological Assessment Report
      ii. F-2 – Invertebrate Survey
      iii. F-3 – Bat Monitoring Survey Results
      iv. F-4 – Agency Correspondence
3) **VOLUME III – APPENDIX G**
   a. Appendix G – Air Permitting Information
      i. G-1 – Updates and Clarifications Relevant to Air Analysis
      ii. G-2 – Siemens Technology Selection Memo
      iii. G-3 – Ambient Air Quality Assessment (Attachment L)
      iv. G-4 – Air Permit Application
4) **VOLUME IV – APPENDIX H THROUGH APPENDIX N**
   a. Appendix H – Water and Wastewater Information
      i. H-1 – Correspondence with Connecticut Water Company
      ii. H-2 – Correspondence Regarding Wastewater Interconnection
      iii. H-3 – Hydrogeologic Water Evaluation
   b. Appendix I – Traffic Impact Report
   c. Appendix J – FAA Determination of No Hazard
   d. Appendix K – Visual Impact Assessment
   e. Appendix L – Sound Survey and Analysis Report
   f. Appendix M – Electric and Magnetic Field Assessment
   g. Appendix N – Cultural Resources Information
      i. N-1 – Agency Correspondence
      ii. N-2 – National Register of Historic Places Eligibility Report

The comments provided by TRC as follows are broken into the major categories by Appendix as referenced above in the CSC application and in the other corresponding applicable sections contained in Volume I – Application Narrative

Appendix A – Notice and Service Documentation

No Comment.

Appendix B – Analysis of Need and Economic & Environmental Impacts

General Comments

B-1

1. The two economic models cited by PA Consulting Group (PA) in their report, IMPLAN and JEDI are commonly used to assess the employment and economic benefits for a variety of energy projects, including gas fired power plants. Both of these models rely on historic and regional information as the basis for the default inputs for the models. Both models allow the user to select input parameters different from the model defaults and require project specific input as well. The models come with vendor stated limitations, should not be relied upon as precise predictions of the project's economic impact and should only be used as a screening tool. Fuel and operating cost fluctuations can have a significant impact on the model predictions.

B-2

2. The PA report presents its findings of the project economic impact/benefit from these models in a much of a "black box" fashion. There is very little stated in the report regarding the model input assumptions that form the basis for the model outputs. There is no way to judge if the predictions are realistic without knowing the specifics of the data used as input to the models to generate the results presented in the report. There is no disputing that the KEC Energy project will generate direct and indirect jobs and revenue for Killingly and Connecticut during construction and operation of the plant. The hard numbers of construction and operation employment are the only reliable economic benefits that can be reasonably predicted. The other indirect and induced benefits are much less certain and the model predictions should be treated as possible "best-case" scenarios for these economic benefits. It is also worth noting that the input and resulting output from the IMPLAN model become the input for the JEDI model. The risk is that an unrealistic input assumption from one model can be compounded in the second model because of this interconnection.

B-3

3. With regard to the predications on the modeled environmental benefits and projected emission reductions, PA points out they relied solely on their proprietary model and information PA extracted from ISO-NE for input. There is absolutely no information provided by PA on their proprietary model, the methods it employs to generate output, the inputs to the model, how assumptions can vary the results and its past use and acceptance by the Connecticut Siting Council for the predicting emission reductions. There is no way based on the information provided in the PA report to verify the projected emission reductions. There is no question that if the KEC Plant eventually replaces an older fossil fuel generating facility that there will be overall reductions in emissions, but until it is known which facility (ies) are being replaced the actual reductions can't be reliably predicted. It's also worth noting that while older fossil fuel plants are gradually being permanently mothballed, the current emissions from these facilities may be much less than their permitted

potential to emit, because they are some of the least used more costly options for power in the New England grid.

Appendix C – Geotechnical Engineering Report

General Comments

C-1

1. The geotechnical report provide by the applicant is thorough and provides the basis for the evaluation and design of many other elements of the project. In particular, the boring logs, soil testing data, bedrock logging, groundwater data and soil hydraulic conductivity data are important components of the site/foundation design, storm water system design, wetland impact evaluation, site earthwork, dewatering and bedrock blasting/removal.

C-2

2. Temporary observation wells were installed in a total of five (5) of the eighteen (18) test boring locations, including one observation well in the area of the proposed dry basin portion of the storm water detention basin adjacent to the wetlands. The geotechnical report only provides water level measurements in these wells from one monitoring event immediately following the drilling activities, which ended on June 1, 2016. There is therefore no useful information to gauge seasonal water table fluctuations and the impact it may have on the storm water dry basin, excavation and dewatering activities. It is worth noting that the dry basin bottom elevation of 274.0 is approximately 4 feet above the ground water level measured in OW-1 at the basin location. Seasonal high water table level may raise this level to the bottom of the dry basin. The report does not provide any graphical representation of groundwater contours and flow direction based on the actual measurements, which is vital to assessing potential wetland impacts from the proposed major site regrading activities. In addition the two cross sections of the site that were provided show existing grade, proposed grade and bedrock surface do not show any of the groundwater level observation data.

C-3

3. Appendix D of the Geotechnical report contains a table from five (5) test boring locations showing hydraulic conductivity (in./hr.) using a Guelph permeameter. The Guelph permeameter was driven to depths ranging from 3.0 to 3.4 feet below the surface. The in-situ measured hydraulic conductivities ranged from 0.009 in./hr. to 0.017 in./hr. The results are very consistent and in a very narrow range. These tests are very significant when compared with the values used in Appendix D – Stormwater Pollution Prevention Plan to compute the storm water recharge from the dry basin. The actual measured values are more than two orders of magnitude lower than the value of 2.5 in./hr. used to assess and design the recharge component of the dry storm water basin. Boring B-1, which is at the dry basin location had the lowest permeability of .009 in./hr. These values are not surprising considering the soil at these depths in the 5 test locations contained silt/clay fines

ranging from 10% to 43.7%. In Table 2 of the Geotechnical report soil sample sieve analysis results at four additional locations at a sampling depth of 2ft. to 4ft. below grade show silt/clay fines ranging from 22.0% to 43.7%. Soils containing fines in this range typically have relatively low hydraulic conductivity, thus further supporting the Guelph permeameter test results. These lower hydraulic conductivities have a major impact on the storm water dry basin as an effective feature to recharge storm water to the adjacent inland wetland system. This will be discussed further in the storm water review comment section under Appendix D.

C-4

4. The geotechnical report consistently shows that the overburden soils lying below the upper few feet of the soil horizon are generally medium-dense to very dense glacial till. The major grading activities proposed for this site will have significant impact on destroying the existing in-situ soil structure and result in widespread reduction in the infiltrative and recharge capacity of the disturbed site, including areas that are used for temporary staging and laydown. The upper few feet of the stratum on this site with its vegetative cover provide a natural capacity to absorb and retain rainfall percolating through the surface. Once the vegetation is removed and that upper soil structure is disturbed the hydraulic conductivity will drop significantly. The re-grading of the in-situ glacial till across this site will be performed under controlled conditions to achieve 95% or greater optimum densities. With silt/clay fines in the 20% to 40% range the hydraulic conductivity of the re-graded soils will drop an estimated one order of magnitude to .00015 in./hr. (10^{-6} cm./sec.). The problem is that once the upper few feet of soil and vegetation is removed, the new surface will have no capacity to hold, retain, infiltrate and recharge rainfall. Hydraulic conductivity at this low value produces rainfall runoff nearly equivalent to non-pervious estimates for pavement and buildings. Impacts will be discussed further in the storm water comments provided under Appendix D.

C-5

5. The grading activities associated with the plant site and switchyard area are significant. The geotechnical report and other portions of the CSC filing don't provide any estimates of the quantities of cut and fill for soil material and the quantity of bedrock that will be removed. No discussion is provided on how these material will be managed on-site and the quantity of soil and blasted rock that will removed from the site. No discussion has been provided regarding the quantities of soil and/or processed materials that may be imported to the site. Further no discussion is provided to assess if the applicant proposes to screen soil/rock material and crush rock material on-site. The implication of those potential operations will add significant fugitive dust, noise and nuisance to nearby residents and may require additional controls and permitting.

C-6

6. The high percentage of silt/clay fines in the native glacial till will present numerous challenges for sedimentation and erosion control, fugitive dust control from grading and equipment operation and moisture control during re-grading and compaction activities. Weather conditions will play a major role on the ability of the site

contractor to manage these problems that will develop when 20 acres of the site are disturbed. It is reasonable to assume that Town of Killingly staff, or their independent appointed representative, needs to have the authority to inspect, direct, manage and enforce these issues during construction, to ensure that the residents and the environment are protected. State officials will have the ultimate enforcement authority, but are too distant from the site to effectively manage these ever changing conditions.

Appendix D – Stormwater Pollution Prevention Plan

General Comments

D-1

1. The Stormwater Pollution Prevention Plan (SWPPP) presents the applicant discussion and plans for implementation of sedimentation and erosion control measures during construction and other elements of construction site management required by the Connecticut General Stormwater Permit for Construction Activities. The SWPPP also presents engineering design calculations and assumptions for the major elements of the applicant's stormwater system design, stormwater management and assessment of impacts that the site design and stormwater management system will have on adjacent inland wetlands, watercourses, groundwater recharge, water quality and flooding.

D-2

2. The engineer responsible for preparing the SWPPP, Killingly Engineering Associates, relied upon the 2002 Connecticut Guidelines for Soil Erosion and Sediment (E&S) Control and the 2004 Connecticut Stormwater Quality Manual. These are the proper references applicable to the proposed site development and construction activities. Comments provided in this section will be based upon adherence to the requirements of these documents, the Connecticut General Stormwater Permit for Construction Activity requirements and good engineering practice.

D-3

3. The reviewer found no reference in the SWPPP to reliance on information contained in Appendix C – Geotechnical Report in preparation of the design and plans for E&S controls and the stormwater management system. It is unclear why the designer chose to ignore this important information, when the 2004 Connecticut Storwater Quality Manual specifically requires reliance upon actual site test data to evaluate and design certain stormwater management systems, involving infiltration/recharge and runoff calculations. The designer instead relied upon non-site specific and general soil mapping data provided by the USDA in their Soil Survey Report for the county. The USDA reports are a broad attempt to map the upper (shallow) soil horizons over large areas of counties are based upon limited and generally non-site specific field soil testing data. The predictions for hydraulic conductivity for various soil types in the USDA report are only valid for undisturbed soil in the top 36 inches of the soil horizon. The designer indicates that the USDA mapped soil units were

field verified by the soil scientist who performed the inland wetland delineation. Review of the Wetland Report: Existing Conditions by REMA Ecological Services, LLC, dated June 2016, provides no information on the extent and location of soil sampling performed. Wetland delineation typically involves a soil scientist using a small diameter hand coring devices to collect and visually examine soil in the upper two feet of the soil horizon, with no soil permeability measurements. Usually the soil scientist is collecting soil cores only in the immediate vicinity of suspected wetland areas. This type of data should never take precedence over actual site-specific deep test boring and soil hydraulic conductivity test data as is available for this site in the Geotechnical Report. For this site, reliance on the USDA Soil Survey Map data when compared to the actual site-specific data results in the under prediction of surface runoff for the proposed conditions from disturbed/regraded areas and the over prediction of groundwater infiltration/recharge in these areas and the stormwater dry recharge basin. Further discussion follows in subsequent comments.

Sedimentation & Erosion Control

D-4

1. The SWPPP discussion provided in Section 2 – Erosion and Sediment Control BMP's on the measures proposed for this site is very generic. The SWPPP incorporates the general guidance contained within the 2002 Connecticut Guidelines for Soil Erosion and Sediment (E&S) Control, but lacks details regarding the actual implementation of these measures as it relates to the proposed sequencing of the site disturbance and construction activities. This approach leaves the site contractor with little detail on what and when measures are expected to be implemented, where they should be installed and how this ties to the actual phasing of disturbances. This broad approach to E&S management is only effective when an independent E&S expert is involved directly with the site contractor in the planning of site disturbance activities and directing the use and placement of the BMP's.

D-5

2. The existing site grades show a south to north ridge that bisects the center of the plant site. The effect of this ridge is to channel surface runoff into Wetland A1/A2 and Wetland A3 on each side of the plant. The REMA Proposed Conditions report also discusses the importance of this feature and the effect it has on groundwater and surface flow to these two wetlands. This natural feature will have a major impact on channeling most of the site surface runoff into the upper ends of each of these wetlands until most of the site grading activities are complete. This will cause a concentrated flow containing sediment toward these two wetlands. The only S&E controls proposed to check the concentrated flow is silt fence and staked haybale barriers. These measures are intended to manage sheet flow runoff and are not adequate to manage concentrated flow. The upper end of each of these wetlands should be protected with temporary sediment basins to slow the concentrated flow

and remove most of the sediment before reaching the wetlands. The close proximity of the proposed fill slopes for each of these locations creates a problem to install adequately sized sediment basins. Shifting the entire plant south will increase the buffer needed to place sediment basins in these areas and leave adequate undisturbed buffer to protect these wetlands.

D-6

3. In general the proximity of the site grading activities and retaining wall construction to Wetland Units A1, A2, A3 and X is inadequate to insure protection of these features during construction. In the vicinity of Wetland A1 and X the toe of fill slope and retaining wall are within 10 feet of these wetland boundaries. Adequate protection for these wetlands can only be reasonably assured with adequate undisturbed buffer separation. The size of the proposed disturbed area and grading will result in significant sediment laden runoff and provide no room for error in the event of failure or poor maintenance of the S&E controls designed to protect the wetlands. It appears that shifting the entire plant southwest is easily achievable due to the large undeveloped southwest portion of the property. This shift would allow wetland buffers to be increased to at least 100 feet or more. The other accommodation that will allow this shift is the placement of the oil storage tank and the design of the secondary containment (Oil Berm). The Oil Tank and Oil Berm as shown on the drawings is forcing the grading impacts discussed above to occur. There is no reason the tank design can't changed to a double wall tank design, thus completely eliminating the need for the large Oil Berm feature. The tank could then be moved to a location that allows the plant shift more westerly away from Wetland Units A1 and X. While such a shift may increase noise along the westerly property boundary, this impact can be easily mitigated with addition sound proofing and/or sound barrier wall feature. Upon review of the noise study, it appears that the plant was pushed toward the wetland in the design to avoid additional noise suppression and achieve compliance along the westerly boundary. To sacrifice wetland protection for a noise compliance issue that can be resolved with additional noise suppression is not consistent with inland wetland protection having the highest priority.

Storm Water and Groundwater Recharge

D-7

1. The storm drainage calculations ignore the fact that the drainage area feeding Wetland Unit A1/A2 is separate and distinct from the drainage area feeding Wetland Unit A3. The designer only provides calculations that combines the drainage areas for all three Wetland Units at the northeasterly property boundary, where runoff leaves the site. This approach does not allow an assessment of the impact of the site regrading and storm water management activities on the individual Wetland Units, and ignores the importance of maintaining surface flow and groundwater flow

to the individual Wetland Units to sustain these separate wetlands. In fact the proposed storm water design directs all of the runoff collected in the proposed storm drain system to a single storm water quality basin located near the junction of Wetland Units A1/A2 and Wetland A3. The outflow from the basin is directed to a surface flow spreader that does not allow any of the treated runoff to reach the headwaters of Units A1/A2 and A3. This is a complete and drastic modification to the surface drainage feeding and sustaining these two Wetland Units. The net effect of the proposed design is to significantly reduce the surface area draining into the upper ends of Units A1/A2 and A3 and move the point of discharge approximately 500 feet past the upper ends of each wetland.

D-8

2. The storm water calculations for Sub-catchment 1S' (Main Plant Site) for the proposed conditions have an error for the Runoff Curve Number (CN) for the 6.40 acres representing the impervious roof and pavement area of the main plant portion of the site. The designer chose a CN of 65, when the SCS TR-20 method requires a value of 98 for this surface condition. The result is a significant under prediction of the runoff depth from these portions of the plant site. For the 2yr event the increase is from 0.6" of runoff to 3.1" of runoff depth (516%), for the 10yr event the increase is from 1.5" of runoff to 4.7" of runoff (313%) and for the 100yr. event the increase is from 3.1" to 6.8" of runoff (149%). The 6.40 acres miscalculated represents approximately 40% of the total 16.3 acre Sub-catchment 1S'. The net result is a significant under prediction of the total site runoff, the peak flow discharge entering the storm water quality basin and the quantity of groundwater recharge.

D-9

3. In addition to the incorrect CN for the impervious roof and pavement areas mentioned above, the fact that the massive regrading and compaction of site soils will greatly reduce their infiltrative capacity, the designer should have chosen much higher curve numbers for both the crushed stone surface areas and the >75%grassed cover areas. The CN for these areas should have been based upon Type D soil conditions and not the Type B condition selected by the designer. The effect is again to raise the quantity of surface runoff and reduce the quantity of recharge significantly. The designer chose a CN of 72 for the crushed stone surface area where 89 is more appropriate for the proposed condition and a CN of 61 where a value of 80 is more appropriate for the proposed condition. When you combine these changes with the previous comment the composite CN for Sub-catchment 1S' goes from a weighted average of 66 to 89.5. The total runoff depth increases for Sub-catchment 1S' would therefore be:
    - 2yr Storm – 0.57" to 2.1" (368%)
    - 10yr storm – 1.44" to 3.7" (256%)
    - 100yr storm – 2.87" to 5.7" (199%)

As a result of these changes the proposed condition peak flows and total runoff volumes entering the storm water quality basin will increase by an equal percentage

as the increase in total runoff depth for each storm event represented above. The equation used in the TR-20 method to calculate peak flow is a straight 1:1 relationship of runoff depth and peak flow. The size of the currently proposed storm water quality basin is therefore greatly undersized to handle the required flows and reduce the peak flows to pre-construction levels.

D-10

4. Another factor that will increase the overall runoff estimates and the sizing/design of the water quality basin are the recent recommendations by the CTDEEP and CTDOT to use the more updated Extreme Precipitation Estimates published by the Northeast Regional Climate Center (NRCC) to design storm water management systems in Connecticut. For example, the site specific 24 hour – 100 year total rainfall amount recommended by NRCC is 8.31 inches. The designer used a 24 hour – 100 year total rainfall amount of 6.9 inches. The additional 1.41 inches of rainfall is a 20% increase and will result in a similar direct increase in runoff and require additional volumetric storage capacity needed in the storm water quality basin to control the peak flow resulting from the increased runoff.

D-11

5. The recharge component for both the overall site and the storm water quality dry basin are a significant concern based upon the information provided in the geotechnical report and the assumptions used by the designer in the SWPPP. For the storm water basin recharge the 2.8 in./hr. hydraulic conductivity value grossly overestimates the rate and volume of recharge achievable at this site (refer to previous discussion). The designer chose to ignore the recommendations in the Connecticut Water Quality Manual as follows:

    Excerpts from Connecticut Water Quality Manual on Infiltration Basin Design Requirements
    Soils: Underlying soils should have a minimum infiltration rate of 0.3 inches per hour, as initially determined from NRCS soil textural classifications. (**Table 11-P3-1**), and subsequently confirmed by a field investigation acceptable to the review authority.

    Table 11-P3-1 Minimum Infiltration Rates of NRCS Hydrologic Soil Groups

Group	Soil Texture	(in/hr)
A	Sand, loamy sand, or sandy loam	0.30 – 0.45
B	Silt loam or loam	0.15 – 0.30
C	Sandy clay loam	0.05 – 0.15
D	Clay loam, silty clay loam, sandy clay, silty clay, or clay	0 – 0.05

Recommended soil investigation procedures include:

- *Infiltration rates can be determined through an appropriate field permeability test.*
- *Infiltration rates should be reduced by a safety factor to account for clogging over time. The recommended design infiltration rate is equal to one-half the field-measured infiltration rate (i.e., safety factor of 2).*
- *Test pits or soil borings should be used to determine depth to groundwater, depth to bedrock (if within 4 feet of proposed bottom of infiltration structure), and soil type.*
- *Test pits or soil borings should be excavated or dug to a depth of 4 feet below the proposed bottom of the facility.*
- *Infiltration tests, soil borings, or test pits should be located at the proposed infiltration facility to identify localized soil conditions.*
- *Testing should be performed by a qualified professional registered in the State of Connecticut. (licensed Professional Engineer, Professional Geologist, or Certified Soil Scientist).*
- *For infiltration basins, one field test and one test pit or soil boring should be performed per 5,000 square feet of basin area. A minimum of three field tests and test pits or soil borings should be performed at each basin. The design of the basin should be based on the slowest rate obtained from the field tests performed at the site.*

Based on the information above from the Connecticut Water Quality Manual the designer should have relied upon the actual soil boring and field hydraulic conductivity measurements presented in the Geotechnical Report for design of the recharge capacity of the dry basin. Even in the absence of any field test data, the starting point recommended by the manual for Hydrologic Soil Group B is a hydraulic conductivity of 0.15 to 0.30 in./hr. and not the 2.5 in./hr. used by the designer.

D-12

6. Hydraulic conductivity field measured at the basin location in the Geotechnical Report is 0.009 in./hr. which is nearly two orders of magnitude less than the 0.3 in./hr. recommended as the lowest value permissible in the Connecticut Water Quality Manual for use of a infiltration/recharge basin. At these low hydraulic conductivities, there will be almost no infiltration/recharge to completely drain the dry basin within the 48 to 72 hours required by the Connecticut Water Quality Manual. This creates the twofold problem of having too little water storage volume for the next storm event and too little recharge of the groundwater system feeding the wetland. This approach to achieve recharge will not work at this site.

D-13

7. The other component of storm water recharge is the infiltration that occurs across the ground surface where there are no impervious areas. The problem is that in

addition to the approximately 40% impervious surface being created by site development, the remaining plant area that is crushed stone surface and grass area are being completely regraded and compacted, which as previously discussed will greatly increase the surface runoff and reduce resulting infiltration in those areas as well. The design does not account for this infiltration reduction and the resulting impact on groundwater feeding the inland wetland systems.

D-14

8. The design recommends that one portion of the water quality basin be constructed as a wet basin that will retain a shallow pool of water at all times. The Connecticut Water Quality Manual cautions against the use of this type of feature where the basin is within 750 feet of a vernal pool or in areas where amphibians may be attracted to the pool for spawning. These constructed storm water basin pools are not suitable habitat to sustain the species that use it for breeding. Storm water wetlands and ponds that are placed near vernal pools can also threaten pool-breeding amphibian populations. Storm water wetland ponds and wetlands can serve as "decoy" pools, intercepting amphibians as they migrate in spring to their vernal pool breeding habitats. This is a concern due to the nearby vernal pool described in the REMA Wetland Report, but also because the REMA report points out the very near existing pond in Wetland Unit A1 currently presents a problem to amphibian eggs being scavenged by fish in that pond. The concern is that the proposed wet pool would provide another nearby unacceptable habitat for amphibian spawning that would further degrade their population.

D-15

9. With regard to the areas that make up Sub-Catchment 2S that discharges to the East, there are similar concerns as described above regarding the estimates of surface runoff and infiltration/recharge from this area. The disturbances to the soil structure caused by regrading and compaction will greatly reduce the infiltrative capacity of the soil and increase runoff to levels much higher than is predicted. The two small infiltration basin depressions proposed will do little to infiltrate the collected surface runoff and result in much higher peak flow rates than predicted by the design. There is also concern that the overflow discharges from the two shallow basins on the steeper grades in these areas will in fact concentrate flows and not perform as true sheet flow discharges. The result will be erosion downgradient from the basin outlets and potentially on the adjacent high-voltage transmission right-of-way. The surface grade downgradient from the easterly most basin is approximately 10% or greater as it enters the transmission right-of-way.

D-16

10. With regard to Sub-Catchment 3S (Switchyard Area) there are similar concerns as described above regarding the estimates of surface runoff and infiltration/recharge from this area. The disturbances to the soil structure caused by regrading and compaction will greatly reduce the infiltrative capacity of the soil and increase runoff to levels much higher than is predicted. In addition to the removal of nearly 2.5 acres of natural grassy meadow and replacing it with crushed stone and pavement discharging directly into the altered wetland, there is no attempt with the proposed

design to provide any secondary and primary treatment of the runoff from this completely re-graded area, which is not in conformance with the Connecticut Water Quality Manual. The design as it currently is configured will increase the peak runoff by 45% for the 2yr. storm, 23% for the 10yr. storm and 14% for the 100yr. storm. These peak flows will increase significantly when the proper runoff curve numbers are used. The design also assumes that the runoff leaving the switchyard will all be sheet flow, which is difficult to achieve at the predicted flow rates from a disturbed area.

Appendix E – Wetland Information

Appendix E-1 - Wetland Report: Proposed Conditions

Section 4.0

E-1

1. Alternative layouts for the electrical switchyard that avoided direct impacts to Wetland D were reported to be considered but ultimately rejected due to site constraints and required switchyard specifications. Although this may very well be the case, the alternative layouts for the switchyard should be presented along with the features that resulted in their non-acceptance.

E-2

2. Disturbance associated with the construction of the facility is proposed in close proximity (20 feet) to wetlands on fairly steep grades. The Killingly Inland Wetlands and Watercourses Regulations specify a minimum no disturbance wetlands buffer of 25 feet although this distance can be increased by the Commission based on site-specific factors such as steep slopes which are present at the site. Alternative facility layouts that provide a greater undisturbed buffer (minimum of 50 feet although 100 foot minimum would be greatly preferred given the existing topography) need to be proposed and evaluated. The alternatives that provide greater wetlands protection through increased buffer areas should be diagrammed on a site plan and a discussion provided on how each alternative will affect the ecological communities and functions of the wetlands and why these alternatives were considered neither feasible nor prudent and were subsequently not selected by the applicant.

E-3

3. The proposed project represents a "significant activity" as defined by Killingly Inland Wetlands and Watercourses Regulations. Although direct impacts to wetlands for the generation facility have been avoided the primary concern is that the wetland hydrology to the inland wetlands (particularly to Wetlands WA1 and WA2) will be affected resulting in indirect impacts to these resource areas.

E-4

4. Storm water recharge via infiltration through the crushed stone surface where impervious areas are not proposed is assumed to provide sufficient hydrology to support the nearby wetlands WA1, WA2 and WA3. As discussed previously, the portions of the facility area that consists of a crushed stone surface or grass area are

being completely regraded and compacted, which will greatly increase the surface runoff and reduce infiltration (i.e., increase curve numbers). The analysis does not account for this infiltration reduction and the resulting impact on groundwater discharging to the inland wetland systems. A more complete hydrological assessment should be conducted for WA1, WA2 and WA3 that compares the existing watershed sizes for each wetland and the proposed watershed sizes after development. The post-development analyses should include a breakdown of undisturbed areas, impervious surface areas, and disturbed areas where infiltration would be substantially reduced for each wetland watershed. The analysis should present a comparison of surface water runoff and groundwater discharge under pre- and post-development conditions. This assessment should also include an assessment of the proposed removal of soil/rock on the order of 27 feet in an area to the south of the wetlands. The effects of these cuts on the interception of groundwater and the discharge to the wetlands should be discussed.

E-5

5. It appears there is only one water quality management basin proposed for the entire site between Wetlands WA2 and WA3. The basin consists of a sediment forebay, a wet basin and a dry pool for recharge. The base of the dry pool is at Elevation 270. Boring B-01 (OW) from the geotechnical report indicates that the soil below Elevation 270 to be medium dense glacial till, with a water elevation of 270.3. The low permeability (0.009 in./hr. hydraulic conductivity) soil type combined with the high water table elevation would appear to preclude this portion of the basin to function as a stormwater recharge basin.

E-6

6. The proposed water quality basin will be constructed as a wet basin and will retain a shallow pool of water at all times. The Connecticut Water Quality Manual cautions against the use of this type of feature where the basin is within 750 feet of a vernal pool or in areas where amphibians may be attracted to the pool for spawning. Constructed storm water basin pools are not suitable habitat for amphibians that may use it for breeding. Storm water wetlands and ponds that are placed near vernal pools can also threaten pool-breeding amphibian populations as they may function as "decoy" pools, intercepting amphibians as they migrate in spring to their vernal pool for breeding. Vernal pool habitat present within Wetland B may be within 750 feet of the wet basin (although the limits of the vernal pool are not depicted on the site plans). The concern is that the proposed wet basin would provide an unacceptable habitat for amphibian breeding that would impact the local amphibian populations.

E-7

7. Impacts to the floodflow alteration wetland function should be reassessed based on comments provided on Appendix D.

E-8

8. Development (permanent and temporary) is proposed in close proximity to wetlands on fairly steep grades. Erosion/sedimentation issues are another area of primary concern and the comments provided on Appendix D (SWPPP) need to be addressed.

Section 5.0

E-9

1. 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. The proposed grading, planting and monitoring plans and details associated with the wetland replication area has not yet been completed. However, 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 USACE. The New England District has detailed wetland creation plan submission requirements that should ensure that sufficient detail is provided in the future.

Appendix E-2 - Wetland Report: Existing Conditions

The descriptions and ecological characterization of the existing wetlands with respect to biological resources was thorough. Several comments as they pertain to the Killingly Inland Wetlands and Watercourses Regulations are provided below.

Section 4.0

E-10

1. The location of special aquatic sites such as the vernal pool present within Wetland B need to be identified and depicted on site plans. In addition, if located within 200 feet of any proposed site activities, the location of the off-site vernal pool needs to be depicted and impacts to this area evaluated.

E-11

2. The Wetland D Field Form indicates that the Natural Resource Conservation Service (NRCS) mapped this area as Charlton-Chatfield sandy loam. However, the NRCS map provided as Figure B in the report indicates this wetland is mapped as the poorly drained Ridgebury-Leister-Whitman soil association. The limits of this poorly drained soil type extend considerably above the delineated Wetland D and are depicted as wetlands on the Killingly Wetlands and Watercourses Map. If the field investigation concluded that this area was mapped incorrectly as poorly drained soils then soil documentation should be provided that supports the position that this area does not contain soil types classified as poorly drained.

Appendix F – Ecological Assessment Report, Invertebrate Survey and Bat Monitoring Survey

The descriptions and ecological characterization of the existing uplands with respect to biological resources including the invertebrate and bat surveys was thorough and well presented. Comments or confirmation from the natural resource trustees (USFWS, CTDEEP)

that additional studies or mitigation measures are not warranted should be provided by the applicant as they become available.

Appendix G - Air Permit Application Information

The following review references the location in the air permit application where TRC's comment applies. Footnotes concerning the review immediately follow the table below.

	Location	Application Information	Comment
G-1	pg. A-3 Table A-1	Proposed VOC BACT is 2.0 ppmvdc w/DF while firing natural gas	Table G-4 lists 8 facilities that have an identical or similar CTG that have VOC w/ DF permit limits between 1.0 and 1.9 ppmvdc while firing natural gas. The application should explain [provide technical, economic, environmental, or energy related justification] why these lower limits cannot be achieved at KEC[1/2].
G-2	pg. A-3 Table A-1	Proposed $PM_{10}/PM_{2.5}$ BACT limits are 0.0055 lb/MMBtu (w/o duct firing) and 0.0059 lb/MMBtu (w/ duct firing) while firing natural gas.	Table G-4 lists $PM_{10}/PM_{2.5}$ permit limits while firing natural gas for 15 projects. For more than half the listed projects, lower PM10/PM2.5 permit limits are indicated. The application should explain [provide technical, economic, environmental, or energy related justification] why these lower limits cannot be achieved at KEC[1/3].
G-3	pg. A-3 Table A-1	Proposed $PM_{10}/PM_{2.5}$ BACT limit is 0.0155 lb/MMBtu while firing ULSD.	Table G-4 lists $PM_{10}/PM_{2.5}$ permit limits while firing ULSD for 3 projects. A lower $PM_{10}/PM_{2.5}$ permit limit [0.014 lb/MMBtu] is indicated for one of the listed projects. The application should explain [provide technical, economic, environmental, or energy related justification] why this lower limits cannot be achieved at KEC[1/3].
G-4	pg. A-3 Table A-1	Proposed GHG BACT limit is 7,273 lb/MWh (net, annual, natural gas, w/o duct firing)	Table G-4 lists GHG permits limits for seven projects on the same basis (net, annual, natural gas, w/o duct firing). For two projects, lower GHG permit limits are listed. The application should explain [provide technical, economic, environmental, or energy related justification] why these lower limits cannot be achieved at KEC[1/2].

	Location	Application Information	Comment
G-5	Appendix A	For the emergency generator and fire pump respectively, Tier 2 and Tier 3 emission standards are proposed.	These comply with NSPS IIII. But for BACT, one must consider available and innovative technologies. It is reasonable to reject Tier IV engines, which would typically use SCR. But there are Tier III (less polluting) engines widely available at the rating specified for the emergency generator.
G-6	Page E-4	Application states that the emergency generator and firewater pump engine will each be limited to a maximum of 300 operating hours per year of routine operation.	40 CFR 60 Subpart IIII limits operation of emergency and firewater engines to no more than 100 hours per year for non-emergency purposes. If more than 100 hours of routine (i.e., non-emergency) is desired, the engines would be subject to more stringent emission limits under the NSPS.
G-7	Page E-6	Emissions of formaldehyde from the CTG are based upon the MACT floor emission rate determined by USEPA for the National Emission Standard for Hazardous Air Pollutants (NESHAP) Subpart YYYY, as representative for a new CTG equipped with DLN combustors and an oxidation catalyst.	Subpart YYYY applies to major sources of HAPs. The project is an area source. Subpart YYYY does not apply to duct burners. The application should either use vendor data for formaldehyde emissions, or use AP42 emission factors and performance guarantees for the oxidation catalyst[4]. Using AP42 emission factors and the heat input at 59F [2,871 MMBtu/hr (CTG) + 895 MMBtu/hr (DB)] the uncontrolled PTE of formaldehyde would be: (2,871+895)*8,760*0.00071/2000 =11.7 tpy Note that a source with a PTE of 10 tpy of a single HAP is a major source of HAPS. The actual stack concentration (ASC) of formaldehyde would be approximately twice the maximum allowable stack concentration (MASC) [i.e., it would not comply w/ CT air toxics regulations].
G-8	Attachment E202 (CT)	NSPS applicability	NSPS TTTT is not evaluated.
G-9	pg. E-7 & L-11	SO_2 emission rates	Slight discrepancies between SO_2 emission rates in these two tables. 0.74 g/s VS 0.71 g/s Nat gas w/ DB 0.534 g/s VS 0.504 g/s ULSD

	Location	Application Information	Comment
G-10	pg. L-12	Nat gas heater emissions	Nat gas heater to operate 8,760 hours. The annual emission rates appear to have been adjusted to fewer hours. Stipulate 4,000 hrs/yr operation
G-11	Appendix L-A	Ancillary Equipment	Exhaust velocity and temperature appear low for emergency generator and fire pump engines

1. The application BACT section includes statements that the Project is using the most stringent control practices [e.g., page G-23, last paragraph]. Note, however, that BACT is defined as an emission limitation [40 C.F.R. § 52.21(b)(12)], not a practice or technology.
2. For several pollutants, emission limits more stringent than those selected for the KEC are improperly rejected without an economic, environmental, or energy analysis. For example, on page G23 (See "Step 4") the applicant dismisses the projects which have limits on VOC with natural gas firing w/ duct firing less than 2.0 ppmvdc because, it asserts, these projects have not begun to operate, and hence the emission rates have not been achieved in practice. This logic is flawed for the following reasons:
   (a) With two exceptions, the projects listed in Table G-4 were issued permits in 2013 or later. Hence, very few of the projects listed are now in commercial operation. What is the point of listing dozens of projects, and then stating most of the limits for these projects do not apply because the projects have not begun commercial operation?
   (b) Connecticut follows NESCAUM BACT Guidelines (http://www.nescaum.org/activities/major-reports) (Guidelines). There is nothing in the Guidelines that suggest that one can dismiss limits in permits issued for similar projects which are currently under construction without evaluating economic, environmental, or energ impacts. In fact, the opposite is stated. See Section VI.A.2 and VI.A.3 of the Guideline.
3. The application states [see page G-26] that the variations in PM emissions are mostly due to differences in PM guarantee philosophies among CTG vendors. However, in Table G-4, all six of the projects using Siemens CTG for which PM emission rates are provided have PM emission rates lower than proposed for the KEC project.
4. Both CO and formaldehyde are products of incomplete combustion of natural gas. An oxidation catalyst that provides better CO emissions reduction would almost certainly provide better formaldehyde emissions reduction.

Appendix H – Water and Wastewater Information

Water Supply Comments

H-1

1. The main issue with water supply for the proposed plant is the need to provide a force main interconnect between the Connecticut Water Company Killingly water system with the Plainfield water system to meet the 400,000 gpd water demands during oil firing for the plant. A 12 inch main would run approximately 12,000 feet from the current Plainfield system terminus at the south end of Killingly to the Killingly distribution system. A booster pump station would also be required to

make the interconnection functional. The July 29, 2016 letter from Connecticut Water Company indicates that they have adequate supply to meet the maximum demands of the plant with the system interconnection and booster station. Connecticut Water also indicates that upgrades to the existing water storage tank in the Killingly industrial park may be necessary. These upgrades including the 3,100 feet of water main extension along Lake Road will likely cost the plant developer over $2 million.

H-2

2. There is no mention in the CSC application or in the Connecticut Water Company letter regarding the need for a CTDEEP Water Diversion Permit for the system interconnection. CTDEEP guidance on water diversion indicates that water system interconnections exceeding 50,000 gpd require a diversion permit. The CTDEEP Diversion Permit Program has a General Permit that covers water system interconnections of up to 1,000,000 gpd. The need for the Water Diversion Permit would be determined by CTDEEP in consultation with Connecticut Water. If the Water Diversion Permit is required the preparation, planning and permit issuance could take 6 months or more. The CSC approval for the project should be made contingent upon the CTDEEP Water Diversion Permit approval or waiver of permit need from the CTDEEP.

H-3

3. Water system interconnections are typically subject to Connecticut Department of Health (CTDPH) approval. CTDPH may impose requirements on Connecticut Water regarding testing, reporting and compliance for the water being fed from Plainfield to the Killingly system, especially if the water quality of the two systems are different. CTDPH approval or clearance for the water system interconnection should be made a condition of the CSC approval.

H-4

4. Interconnections of public water systems are generally a positive outcome because it strengthens the supply and distribution capabilities to manage water demand on a larger regional basis. This project will provide the capital to make an important system interconnection without affecting the system customers.

Wastewater Comments

H-5

1. There appears to be sufficient capacity in the Killingly Wastewater Treatment Plant to handle the anticipated 30,000 to 90,000 gpd wastewater discharge from the plant, which is confirmed in the August 11, 2016 plant operator (SUEZ) letter to NTE Energy. The report from NTE indicates the Killingly plant has a capacity of 8 mgd and is currently receiving an average daily flow of 3 mgd. The report does not indicate what the current peak daily flow is entering the plant. This information should be provided to properly evaluate the available capacity under peak flow conditions.

Appendix I – Traffic Impact Report

General

I-1

1. In general, the Traffic Report followed standard Traffic Engineering Methodologies and Analyses. The Study appropriately looked at impacts during construction and operation of the facility.

Background Traffic

I-2

1. The traffic counting methodology and the base traffic volumes utilized in the TIR appear appropriate.

I-3

2. The Town should determine whether there are any major developments in the area that could impact traffic. The Traffic Report did include traffic from the Questar Fueling Company expansion on Lake Road.

I-4

3. On the Traffic figures, the I-395 SB off ramp is mislabeled as NB.

I-5

4. The TIR should state up front the Roadway Peak Hours analyzed and the hours of construction as well as the number of shifts and their times.

Trip Generation

I-6

1. The trip generation appears appropriate in comparison to similar facilities.

I-7

2. Regarding the fuel trucks occurring at two deliveries per hour, is this for 24 hours a day and for how many days?

Distribution of Traffic/Assignments

I-8 1. The Study shows the majority of the project traffic entering from Attawaugan Crossing Road/Lake Road. The Town should require the Applicant to require the construction employees and trucks that are coming from I-395 to enter/exit along this route as opposed to using Route 101.

I-9 2. The Applicant should be required to alert the Town of any deliveries of oversize vehicles that may need traffic control. The Applicant states that this will be done.

I-10 3. The Applicant should state what the distributions were based on. The distributions do appear appropriate.

Analyses/Mitigation

I-11 1. FAH should further discuss the impact of the traffic on the railroad crossing along Lake Road. There is a limited discussion.

I-12 2. Additional Information regarding the traffic impact that will result from the transmission line installation should be provided including length of construction, locations, lane closures, hours work will be occurring, maintenance and protection of traffic, etc.

I-13 3. Additional information on the number of construction trucks as well as their schedule, size, weights with loads, and distribution patterns should be provided. There is some information on the number of trucks provided.

I-14 4. The amount of cut/fill should be provided as well as the number of trucks resulting from this.

I-15 5. If the number of trucks damage the pavement on the Town Roads, the Applicant should reimburse the Town for any necessary repairs.

I-16 6. Based upon the analyses provided, one location, the intersection of Attawaugan Crossing Road and the I-395 SB Ramps will have an unsignalized left turn movement increase from Level of Service "c" to Level of Service "e" during the Peak Construction Period during the AM Peak Hour. As this is only a temporary increase, this delay is not that significant. All other locations are shown to maintain the same Levels of Service. Thus, the overall traffic impacts from a Level of Service standpoint is not significant during construction and can be supported on the roadway network.

During operation, the facility will not generate significant traffic and thus will not have a significant impact.

I-17 7. The construction analyses does not include the construction trucks in the capacity analysis. A few of these trucks could be travelling during the Peak Hours. However, there should be limited construction trucks during the Peak Hours and this would not significantly change the results.

I-18 8. More information should be provided regarding the modifications/widening of the curves along Lake Road. This should be coordinated with the Town and the work should be performed at the beginning of the construction process. It should be determined why the sign on Lake Road prohibiting trucks past a certain point was installed.

I-19 9. The Applicant will coordinate with the Town if manual traffic control is needed at any time during construction such as if queues get too long.

I-20 10. During standard operation, there will be not be a significant amount of traffic from the project. There will be an increase in site traffic during major maintenance periods and when ULSD will be used for fuel.

I-21 11. Information should be provided on how much and where parking will be provided during construction.

I-22 12. It is stated that there would be ten parking spaces provided on-site during operation. There should be more spaces to account for the employees who will be present during shift changes.

I-23 13. If desired, the Town could request that a monitoring count be performed during construction.

I-24 14. The Applicant states sufficient sight distance will be provided after clearance. This should be illustrated on the Site Plan.

The traffic counts and information provided to support the traffic impact analysis appear to be appropriate. The analysis is based on the critical period being the peak construction period. This analysis takes into account the projected workforce during the peak construction period. One area that requires further evaluation is the projected traffic that may be generated during the earth work phase of the project involving the major earth/rock cuts and fills. Depending upon the projections for importation of fill or removal

of excess soil/rock, significant additional truck trips may be generated during this phase. Further analysis of the earth moving truck trips should be based on projections of the actual cut/fill volumes and suitability of the on-site materials for reuse.

The recommendation concerning the widening/realignment of curves on Lake Road east of the site entrance to accommodate WB-62 design vehicles is necessary and must be completed before site construction begins

Appendix K – Visual Impact Assessment

This review is an evaluation of a Visual Impact Assessment performed by Tetra Tech, Inc. (Tetra Tech) on behalf of NTE Connecticut, LLC (NTE) for the proposed Killingly Energy Center (KEC). It is a general review of the technical aspects and discussion of what should be typically included in visual assessments. This is not an in-depth review to determine if the workflow of a technical analyses is correct nor is it a check on potential missing locations within the visual aesthetic resources inventory.
The Connecticut Siting Council generally has no set guidance policy or regulation for conducting visual assessments. Typically, assessments are comprised of analyses and site related issues that are determined suitable for the size and nature of the project. Usually, visual impact assessments will incorporate and provide some or all of the following:

- Inventory of publicly accessible sensitive visual resources within a defined study area
- Viewshed analyses incorporating the influence and effect of vegetation
- Photosimulations showing existing conditions and proposed conditions using a recently acquired photograph from an area of interest
- Balloon study for projects with components that have high aboveground offsets
- Line of Sight diagrams
- Distance Zones
- Landscape Similarity Zones
- Description of the character of the area
- Discussion of methodology and results of selected analyses
- Discussion of the impacts and change in quality of views or character of the area
- Discussion of mitigation

The proposed gas fired facility is considered a large and potentially impactful type of project. With a proposed stack height of 150 feet above ground there is the potential for having far reaching impacts. This review will be based against the points mentioned above:

- Study Area: a five-mile radius study area is a reasonable radius for this project based on the height of the highest offset (150-foot stack height) and based on the level of vegetative cover in the area in addition to surrounding topography
- An inventory of important visual and aesthetic resources has been provided along with GIS location mapping. Nearby residents have also been addressed.

- A discussion of the character of the area is included and provides a suitable understanding of the project area.
- Other important descriptions are included to offer an understanding of site changes: i) a suitable description of project elements are included as well as a rendering of the facility, ii) possible FAA lighting (pending), iii) site lighting, and iv) the report also clearly states the limits of disturbance and that a minimum 50 foot buffer of vegetation will be maintained.
- GIS viewshed analyses have been conducted and are sufficiently addressed along with caveats that are characteristic of the analysis. The assigned vegetative height of 60 feet appears to be reasonable and appropriate. Two analyses are provided. One analysis was performed without vegetative considerations. In this sense, one can ascertain the effects of topography has on vegetation. A second viewshed analysis incorporates the effects of tree cover in the area and realistically reflects area conditions as best as possible. The two different analyses provide a complimentary understanding of potential areas of visibility over a regional area. Data sources used in the analyses are what are typically used in the GIS industry and are determined suitable.
- United States Forest Service (USFS) distance zones are provided in relation to the project location and that of aesthetic resources within the study area. These distance zones are defined by USFS and offer an understanding of the level of discernible detail of an object with distance. They are not always required but are often optionally included in visual assessments.
- Landscape similarity zones (LSZ) were identified. LSZs often are not always required and are often included in visual assessments. They are generalized areas of similar landscape/aesthetic character based on patterns of landform, vegetation, water resources, land use, and user activity. They help in understanding land use patterns and activity and locations of viewer group types.
- A methodical, fair, and adequate process was used to determine potential candidate locations for final photosimulations. Typically, the results of the viewshed analysis is used to assist in defining potential locations to take photographs for simulations. If an area of viewshed visibility overlaps an area listed in the visual resources inventory it could be considered in the first cut of possible viewpoint locations. Tetra Tech also considered the significance of viewpoints and level of viewer exposure. They further screened their candidate locations by creating lines of sight to confirm how much of the facility stack would be seen to warrant whether or not a photosimulation would be produced.
- Photosimulations were produced using sound industry-standard software. Photos for simulations were taken during leaf-off conditions. This strategy is typically utilized to show the greatest potential for visibility.

- Visual impacts were discussed for each individual photosimulation as well as quantitative impacts as a result of comparison viewshed analyses. Temporary impacts were also discussed.
- Although a separate section was not devoted to mitigation, aspects of proposed and natural mitigative features have been interspersed throughout the report. Proposed landscaping will occur at the facility entrance as well as other components such as buildings and the switchyard. However the report clearly demonstrates, through text descriptions, photosimulations, viewshed analyses, and lines of sight that the existing trees and topography within the study area will act as the major mitigative factor and will block most views of the lower parts of the facility as well as most of the stack.

This report is found sufficient and adequate. The report fully addresses the main visual analyses and issues that are commonly found in a comprehensive well-rounded visual impact analysis. Because there are no regulations and guidelines in Connecticut for visual analysis, Tetra Tech appears to have amalgamated several policy guidelines and regulations found in neighboring states who are in fact very stringent with regards to visual policy and regulation. They have also incorporated other non-compulsory analyses in addition to federal type policy documents and concepts that help shape and structure a visual assessment that is suitable for projects in the northeast.

Appendix L - Sound Survey and Analysis Report

General Comments

L-1
1. The analysis used the L_{eq} descriptor to quantify existing ambient/background conditions. However, both the State of Connecticut noise standard (22a-69) and the Killingly noise ordinance (Chapter 12.5, Article VI) clearly require that the L_{90} descriptor be used. The L_{eq} is the energy average of all the sounds that were present during measurements. The L_{90} is the sound level exceeded 90 percent of the time, which is the same as the lowest 10 percent of sound levels present. The L_{90} is always lower than the L_{eq}, and in an environment such as described in the report, with occasional vehicular traffic, the L_{90} may be much lower. Aside from being a regulatory requirement, this is an important distinction in evaluating potential noise impacts when assessing the increase in sound levels that will occur.

L-2
2. There is an existing residence located on the project site. It is unclear from the report if this residence will remain and if so, if it was included in the analysis.

L-3
3. A figure showing the project layout over an aerial map would be useful to give a reference as to where project sources will be located. This can easily be done through the noise model.

L-4
4. The Conclusion makes several statements that are not supported by any analysis.

Specific Comments

Executive Summary

L-5
- Disagree that a 51 dBA sound level is similar to a quiet office. A quiet office is lower, closer to a 40 dBA sound level.

Section 2.1

L-6
- The State of Connecticut noise standard defines ambient/background sound as the L_{90}. This should be stated in this section. The standard also has a numerical definition for prominent discrete tones that should 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.

Section 2.2

L-7
- The Town of Killingly noise ordinance also requires use of the L_{90} to define ambient/background sound.

Section 3.1

L-8
- The nighttime ambient measurements were conducted too early in the evening (9 pm till midnight). Nighttime ambient measurements are typically conducted from midnight on, when vehicular traffic volumes are lightest. This is important since ambient levels later at night are usually lower, and would lead to a more conservative assessment of the potential impacts that may occur due to project operation. This is further supported by review of the continuous data in Table 7, which shows that late night sound levels (2 am to 5 am) were up to 10 dBA lower than the sound level at midnight, when their late night measurements ended.

Section 3.3

L-9
- As discussed above, the report should include the measured ambient L_{90} sound levels. The report mentions that there was occasional vehicular traffic at night. Use of the L_{90} (in addition to being a regulatory requirement) acts to "strip out" occasional vehicular traffic noise and give a better indication of the background sound level.

L-10
- A graph of the continuous long-term data would be useful in order to better observe the trend in sound levels overnight.

L-11
- The data in Table 7 should show the dates as well. The report mentions that measurements were conducted from March 21, 2016 at 7 pm through March 23, 2016 at 8 am. It appears that not all of the measurement data were reported.

Section 4.0

L-12
- It is stated that construction may occur 7 days per week, and that construction could last for 3 years. This would have the potential to result in an adverse impact. Some

numerical analysis of construction noise levels should be provided to support the assertion that no adverse or long-term impacts will occur.

L-13
- Nighttime construction is listed as a possibility. This should be avoided to the extent possible in order to avoid noise impacts.

Figure 15

L-14
- The report states that transformers were included in the modeling analysis. However, the contour map does not seem to show any sound contribution from any sources in the switchyard. If no transformers are to be located in the switchyard, this should be made clear.

Section 5.4

L-15
- The modeling results should be presented for discrete residential location property lines to show if compliance with the noise standards is achieved, since the ambient measurement locations are not necessarily at the actual residences. The standards apply at the residential property lines.

L-16
- There is no analysis whatsoever of the potential impact that the modeled operational sound levels may result in. The analysis should 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 should also be provided.

Conclusion

L-17
- The conclusion states what increases in sound (over daytime conditions) are expected at the nearest residence, yet there is no analysis whatsoever of increases over ambient within the report.

L-18
- A statement is made that there would not be a perceptible change in sound at locations near Alexander Lake, yet, as above, there is no analysis of this within the report. Further, no ambient measurements were conducted near Alexander Lake to support this assertion.

L-19
- A statement is made regarding what the expected indoor sound levels will be due to project operation, yet there is no analysis within the report.

Appendix M – Electric and Magnetic Field Assessment

Comments Not Completed

Appendix N – Cultural Resources Information

N-1
1. The Phase I Cultural Resources Reconnaissance Survey prepared by Tetra-Tech was not included in the CSC filing because it is currently under review by the Connecticut State Historic Preservation Officer (SHPO) and has not been released for public review.

N-2
2. The National Register of Historic Places (NRHP) Eligibility Report was provided with the CSC filing and in our opinion is a thorough assessment of the structures associated with both the main plant parcel and the switchyard parcel. This document has also been provided and is under review by the SHPO.

N-3
3. Both of the above documents have also been provided by the applicant to the Mohegan Tribe and the Mashantucket Pequot Tribal Nation for review.