STATE OF NEW HAMPSHIRE
SITE EVALUATION COMMITTEE
SEC Docket No. 98-01

Application of Newington Energy, L.L.C.

DECISION

Newington Energy, L.L.C., filed an application for a Certificate of Site and Facility to construct and operate a 525 megawatt electric production facility in the Town of Newington, Rockingham County. Known as the Newington Power Facility, the facility will consist of two General Electric 7FA combustion turbines, two heat recovery steam generators and one steam turbine generator. A salt water mechanical draft, plume abated, cooling tower will be used to cool the plant condenser's circulating water.

The proposed facility is to be located on a 24-acre parcel located in the industrial zone of the Town of Newington. The site is on the east side of Newington approximately 1000 feet from the Piscataqua River. In addition to the site proper, the proposed facility includes a pipeline and intake structure in the Piscataqua River, and also includes a transmission line from the site proper to the substation at the PSNH Newington Power Station and a gas pipeline from the PNGTS and Maritime & Northeast (Joint Facilities) main transmission pipeline.

Appearances:

Parties

Newington Energy, L.L.C
Gallagher, Callahan & Gartrell, PA
by Donald Pfundstein, Esq.
214 North Main Street
Concord, NH 03305-1420

Public Counsel
Justin Richardson, Esq
NH Department of Justice
3 Capital Street,
Concord, NH 03301

Town of Newington
Donahue, Tucker & Ciandella
by John J. Ratigan, Esq.
Susan W. Chamberlin, Esq.
225 Water Street
Exeter, NH 03833-0630

Public Service Company of New Hampshire
by Christopher J. Allwarden, Esq.
1000 Elm Street
Manchester, NH 03105-0330

Site Evaluation Committee
Brennan, Caron, Lenehan & Iacopino
by Vincent J. Iacopino, Esq.
Michael J. Iacopino, Esq.
85 Brook Street
Manchester, NH 03104

Limited Appearances:
Rockingham County Planning Commission
145 Water Street
Exeter, NH 03837

International Association of Bridge,
Structural & Ornamental Iron Workers
Local 474
by Ronald E. Cook
Cook & Molan
100 Hall Street
Concord, NH 03302-1465

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I. INTRODUCTION

Brief summary of the requirements for siting electric generation facilities in New Hampshire

RSA 162-H was enacted in 1974 to address the need for new energy facilities caused by the oil embargos that existed during that period of time. The declaration of purpose in the statute contains the legislature's finding that "the present and predicted growth in electric power demands in the State of New Hampshire requires the development of a procedure for the selection and utilization of sites for generating facilities and the identification of a state position with respect to each proposed site." RSA 162-H:1II. An application filed with the Site Evaluation Committee is filed in lieu of separate applications normally filed with various state agencies. RSA 162-H:7 VII. The Site Evaluation Committee provides a single forum for the consideration of all issues which arise in the siting of generating facilities.

In 1996, the New Hampshire legislature enacted Chapter 374-F to restructure the electric utility industry:

> The most compelling reason to restructure the electric utility industry is to reduce costs for all consumers of electricity by harnessing the power of competitive markets. The overall policy goal of restructuring is to develop a more efficient industry structure and regulatory framework that results in a more productive economy by reducing costs to customers while maintaining safe and reliable electric service with minimum adverse impacts on the environment. Increased customer choice and the development of competitive markets for wholesale and retail electricity services are key elements in a restructured industry.

RSA 374-F:1. The legislature recognized a need for a transition from a regulated market to a competitive market to achieve its goal and in RSA 374-F:1 II stated, " . . . Competitive markets should provide electricity suppliers with incentives to operate efficiently and cleanly, open markets for new and improved technologies, provide electricity buyers and sellers with appropriate price signals, and improve public confidence in the electric utility industry."

RSA 374-F:2 defines "Electrical suppliers" to mean suppliers of electrical generation services and includes actual electric generators and brokers, aggregators, and pools that arrange for the supply of electricity generation to meet retail customer demand. The statute declares that competitive energy suppliers, and aggregators of electricity load are not public utilities pursuant to RSA 362:2. This legislation would permit non-utility electric generation companies to gain access to the electric grid.

Consistent with its restructuring efforts the legislature amended RSA 162-H in 1998. The amendments provide that electric generating equipment and associated facilities, not subject to rate regulation by the Public Utilities Commission would no longer be considered to be "Bulk Power Facilities," rather, they are "Energy Facilities." The siting and construction of new energy facilities designed for, or capable of, operation at greater than 30 megawatts is subject to the

jurisdiction of the Site Evaluation Committee. Similarly, all transmission lines which would otherwise be considered bulk power supply facilities under RSA 162-H:2 and which are necessary to interconnect one electric generating facility or group of energy facilities to the transmission grid are now considered to be energy facilities. The adoption of the 1998 amendments to RSA 162-H and the enactment of RSA 374-F allows entities which are not public utilities to construct, operate and maintain electric generation facilities in the State of New Hampshire.

Newington Energy L.L.C. ("Applicant") filed an application with the Site Evaluation Committee to construct and operate a 525-megawatt electric production facility in the Town of Newington, Rockingham County. Newington Energy L.L.C. is not a public utility and its rates are not regulated by the Public Utilities Commission.

Known as the Newington Power Facility, the proposed facility will consist of two General Electric 7FA combustion turbines, two heat recovery steam generators and one steam turbine generator. A salt water mechanical draft, plume abated, cooling tower will be used to cool the plant condenser's circulating water.

II.. CRITERIA FOR PROJECT APPROVAL

Pursuant to the Declaration of Purpose set forth in RSA 162-H: 1, the public interest requires the Site Evaluation Committee ("Committee") to maintain a balance between the environment and the need for new energy facilities; to avoid undue delay in construction of any needed facilities; to ensure that operation of energy facilities is consistent with the state's least cost energy policy; and to ensure that the construction and operation of energy facilities is treated as a significant aspect of land-use planning in which all environmental, economic and technical issues are resolved in an integrated fashion.

In exercising its authority, RSA 162-H: 16 IV charges the Committee with the obligation to review Energy Facilities such as the one proposed by Newington L.L.C. In reviewing such applications the Committee must consider available alternatives, fully review the environmental impacts of the proposal, and consider all other factors relevant to the objectives of the statute. In order to issue a Certificate of Site and Facility the Committee must find that the site and facility:

(a) Applicant has adequate financial, technical, and managerial capability to assure construction and operation of the facility in compliance with the terms and conditions of the Certificate.

(b) Will not unduly interfere with the orderly development of the region with due consideration having been given to the views of municipal and regional planning commissions and municipal governing bodies.

(c) Will not have an unreasonable adverse effect on esthetics, historic sites, air and water quality, the natural environment and public health and safety.

(d) Operation is consistent with the state energy policy established in RSA 378:37.

RSA 162-H:16.

The relevant inquiry under the statute, regarding environmental and other impacts, is whether the proposed facility will have an unreasonable impact on the natural environment, public health and safety, and the orderly development of the region. Whether the impacts are unreasonable depends on the assessment of the environment in which the facility will be located, an assessment of statutory or regulatory constraints, or prohibitions against certain impacts on the environment, and determination as to whether the proposed facility exceeds those constraints or violates those prohibitions. In Re: New England Electric Transmission Corp, 67 NHPUC 910, p. 923; Public Service Company of New Hampshire, SEC Report issued Dec. 15, 1992.

The Committee's certificating process subsumes separate permitting procedures under several other state statutes. Ordinarily, the Department of Environmental Services is responsible for excavating and dredging permits, air operating permits, wetlands permits, water quality certification, waste management permits, and a Section 401 water quality certificate, the Office of State Planning for a federal certificate of consistency under the Coastal Zone Management Act, the Department of Resources and Development for a natural heritage inventory permit, and the State Historical Preservation Office for a historic resources review; See Application Section C Permits. Because of the integrated process under RSA 162-H, such permits, if issued for the project, will be incorporated in the Energy Facility Certificate.

III. SUMMARY OF CERTIFICATING PROCESS AND PUBLIC PARTICIPATION

The Legislature recognized that the selection of energy facilities has a significant impact upon the welfare of the population, the economic growth of the state and the environment of the state. The legislature established a procedure for the review, approval, monitoring and enforcement of compliance in the planning, siting, construction and operation of energy facilities. RSA 162-H:1. The Site Evaluation Committee consists of members who are Commissioners, Directors or key personnel in various state agencies. RSA 162-H:3. RSA 162-H:6 creates time frames which provide for informational hearings, public adversarial hearing and a final decision not later than nine months after acceptance of the application.

In this case the public was represented throughout the proceeding by Public Counsel appointed by the Attorney General pursuant to RSA 162-H:9. Assistant Attorney General Justin Richardson was appointed as Public Counsel in this docket. Public Counsel's obligation is to represent the public "in seeking to protect the quality of the environment and in seeking to assure an adequate supply of energy." RSA 162-H:9 I. In this case Public Counsel fully participated by submitting exhibits and witness testimony, cross examining witnesses and making recommendations and argument to the Committee. Members of the public were encouraged to attend hearings, file written comments, and present oral statements. Written comments were accepted before, during and after the public hearings until the evidentiary hearings were closed.

The Application was filed on July 2, 1998. Requests to intervene in the proceedings were received from the Town of Newington (Newington), Public Service Company of New Hampshire (PSNH), United Association of Plumbers and Pipefitters, Local 131(Local131), International Association of Bridge, Structural and Ornamental Iron Workers, Local 474, AFL-CIO (Local 474), and the Rockingham County Planning Commission. On August 13, 1998, the Committee, pursuant to its authority under RSA 541-A: 33 II, granted general appearances and full intervenor status to the Town of Newington and PSNH. Local 131 and Local 474 were granted limited appearances and limited intervenor status on August 13, 1998.[1] On August 26, 1998, the Committee granted a limited appearance and limited intervenor status to the Rockingham County Planning Commission. T. 8/26/98, p. 4.[2] The written Order allowing limited intervention was issued on August 27, 1998.

The Committee held a public meeting on August 26, 1998. At that meeting the Committee determined that the Application contained sufficient information to satisfy the Committee's requirements and the requirements of each state agency with jurisdiction. See, RSA 162-H:7. T. 8/26/98 p. 49. In accordance with the vote of the Committee a written Order on Acceptance of Application was issued on August 28, 1998. The Order accepted the Application as complete with respect to the footprint of the plan but advised the Applicant and the public that the granting of a Certificate of Site and Facility may be conditioned upon or withheld "until such time as gas and electrical infrastructure requirements are more clearly known and evaluated."

On September 17, 1998, the Committee held an Informational Hearing, pursuant to RSA 162-H:10 I, at the Town Hall in the Town of Newington, Rockingham County. Notice of the Informational Hearing was published in The Union Leader (published at Manchester, Hillsborough County), and The Portsmouth Herald (published at Portsmouth, Rockingham County) on August 29, 1999 and in the Foster's Daily Democrat (published at Dover, Strafford County) on September 1, 1998.[3] Immediately preceding the Informational Hearing the

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[1] RSA 541-A: 33 (III), the New Hampshire Administrative Procedure Act, permits an agency to limit the scope of participation by an intervenor. The limited appearances granted by the Committee are defined in the Committee's Draft Rules at Site 203.04. Limited intervenors are permitted to "state their position either orally or in writing" prior to the formal close of the record. However, a limited intervenor does not become a party to the proceedings. Site 203.04(b) (Draft). A general appearance allows an intervenor to become a party to the proceedings. Site 203.04(a) (Draft). Although the Committee's Draft Rules are not formally promulgated all intervenors were advised by Order of the Committee to acquaint themselves with the Committee's Draft Rules and RSA 162-H.

[2] References to transcripts of proceedings will be referenced as "T." followed by the date of the hearing and the page number. Reference to the Application of Newington Energy, LLC will be referenced as "Application" followed by the page or section reference as appropriate. References to Exhibits admitted during the proceedings will be referred to as "Exhibit" followed by the appropriate numerical or alphabetical designation. References to pre-filed testimony will be referred to as "PT" followed by the name of the witness and page designation. References to responses to record requests will be referred to as "RR" followed by the party, date and page or appendix designation.

[3] Each of the newspapers which published notice of the Informational Hearing has regular circulation in Rockingham County.

Committee performed an on-site inspection of the proposed site. At the Informational Hearing the Applicant presented information regarding the Application and the proposed site. Pursuant to RSA 162-H: 10, the Committee and members of the public obtained information by submitting questions to the Applicant's representatives.

On September 17, 1998, the Committee also issued a procedural schedule which allowed ample time for the parties to conduct discovery but also permitted the Committee to complete its proceedings and issue a final Order within the nine month time frame required under RSA 162-H:6 VII.

By letters dated October 9, 1998 and October 22, 1988, Local 131 requested a change in its status from limited intervenor to a general intervenor with a general appearance. On October 22, 1998, by written Order, the Committee granted the request of Local 131 and permitted it to file a general appearance as a party to the proceedings.

On January 13, 1999, some six months after the acceptance of the Application and one month prior to the scheduled commencement of adversarial hearings, Local 474 moved to change its status from limited intervenor to a general appearance. The Applicant objected to the motion on January 22, 1999. By order dated February 1, 1999, the Committee, finding that Local 474 failed to demonstrate any substantial interest affected by the proceedings, and that the grant of a general appearance at such a late date would impede the orderly and prompt conduct of the proceeding, denied the motion. Local 474 subsequently filed a motion for rehearing, which was denied by the Committee on February 16, 1999. T. 2/16/99 p. 39.

On February 10, 1999, Local 131, withdrew its appearance because its environmental and public safety concerns had been addressed through the discovery process. Local 131 indicated that since its concerns had been addressed further participation would not contribute toward its concerns. See, Letter dated February 10, 1999, from James Bianco, Esq. to the Committee.

A public adversarial hearing was held before the Committee on February 16 and February 17, 1999. Public notice of the hearing was published in the Portsmouth Herald on January 14, 1999 and in The Union Leader and Fosters Daily Democrat on January15, 1999. At the public adversarial hearing the Applicant, Public Counsel, and Newington presented witness testimony and exhibits. All parties participated in the cross examination of witnesses and oral argument. At the conclusion of the adversarial hearing the Committee ordered that the record of the proceeding would remain open until March 15, 1999, so that the parties could file responses to record requests made during the course of the proceedings. The Chairman invited members of the public and limited intervenors to submit questions that the Committee would pose to the Applicant or other witnesses. No person submitted any such questions. Counsel for limited intervenor Local 474 submitted comments after the hearing in the form of a letter dated March 10, 1999, in which Local 474 proposed certain conditions to be required of the Applicant.

On March 16, 1999, the limited intervenor, Local 474, filed a motion to temporarily suspend deliberations pending an appeal to the New Hampshire Supreme Court. The motion was denied by Order dated April 7, 1999. On May 18, 1999, Local 474, by letters, withdrew its limited

appearance in the matter and its appeal to the NH Supreme Court.

On April 19, 1999, the Committee issued an additional set of record requests concerning the financial, technical and managerial capabilities of the Applicant in light of a change in the ownership interest of the Applicant. The Applicant responded to the additional record requests on April 29, 1999. Although permitted to do so, the other parties did not respond to the additional record requests or offer any comment.

IV. POSITION OF THE PARTIES

Applicant:

The Applicant applied for a Certificate of Site and Facility for the construction and operation of a 525 megawatt (MW) combined cycle natural gas generating facility with associated electric transmission and gas pipeline facilities in the Town of Newington. The facility is proposed to burn low sulfur distillate as a backup fuel whenever natural gas is either not available or is prohibitively expensive. The facility will operate as a merchant power facility and will generate low cost power to supply to the New England Regional transmission grid. The Applicant advises that the 525 MW power facility will utilize the latest state of the art natural gas fired technology. The facility will have extremely high operational efficiency and low air emissions. The Applicant maintains that its facility is consistent with the objectives of electric industry restructuring in that it will provide reliable and cost competitive electricity to wholesale purchasers in New England, which will benefit the residents of New Hampshire. Application,Vol. III Section F-7. The Applicant submits that the facility will not unduly interfere with the orderly development of the region, will not have an unreasonable adverse effect on the environment and public health and safety, and that its operation is consistent with the state energy policy. The facility will fully comply with the applicable environmental standards and other guidelines of the New Hampshire Department of Environmental Services and other reviewing agencies. Based upon the foregoing representations the Applicant submits that the proposed project meets the criteria for the issuance of a Certificate of Site and Facility.

In support of its position the Applicant presented the testimony of Norman E. Cowden, former Project Manager for the Applicant; Ronald H. Bozgo, vice president for engineering at Consolidated Edison Development Corporation; and a panel of engineers from TRC Environmental Corporation.

On the first day of the adversarial hearing, February 16, 1998, the Applicant informed the Committee of a change in its ownership. The Applicant reported that one hundred percent of the ownership interest in Newington Energy, LLC had been transferred from SEI New England Inc. (an indirect subsidiary of Southern Company) and SEI New England Holdings Corp. (an indirect subsidiary of Southern Company) to CED/SCS Newington, LLC. T. 2/16/99 p. 68. As a result of the change in ownership of the Applicant on the eve of the adversarial hearing the Committee issued a final record request on April 19, 1999. The Applicant replied to that request on April 29, 1999.

Public Counsel:

Public Counsel participated fully at every stage of the proceeding. He took an active role in the proceedings through the presentation of witnesses and exhibits and vigorous cross examination of witnesses sponsored by other parties. Public Counsel raised specific concerns regarding the noise impact of the proposed facility and its impact on local fire and safety issues. In addressing these concerns Public Counsel sponsored the testimony of James Barnes of Acentech, a multi-disciplinary acoustical consulting firm and Henry Renfrew, a safety consultant who analyzed the fire and safety issues relative to the construction and operation of the proposed facility. Through Mr. Renfrew and Mr. Barnes Public Counsel proposed and recommended that the Committee adopt specific conditions concerning the noise and safety impacts of the proposed facility. Those conditions, which were generally unopposed by the other parties, are addressed below.

Town of Newington:

The Town of Newington intervened in the proceedings. The Town supports the granting of a Certificate of Site and Facility, but addressed concerns about the impacts the proposed power plant would have on the development of the industrial area of the town, including traffic problems caused by the proposed truck staging area; safety issues regarding the amount of propane stored in a small area; impacts on the town sewer system; the routing of the electric transmission connection; the creation of the industrial road; and various safety issues regarding gas leakage detection systems and Fire Hazard Risk Assessment Plans, as well general impacts on the residents of the Town.

In addressing its concerns, Newington presented the testimony of the Town Fire Chief, Larry Wahl and Dennis Hebert, a member of the Town Planning Board.

Public Service Company of New Hampshire:

PSNH participated in the proceedings under a general appearance. Although PSNH cross examined witnesses and presented its position on various issues through its counsel, PSNH did not present any testimony at the adversarial hearings.

Local 131:

Prior to the adversarial hearing Local 131 raised issues concerning impacts on air quality and water quality. After extensive discovery and negotiations Local 131 was satisfied that its concerns were responded to and incorporated in the conditions recommended by the Department of Environmental Services, Air Resources Division and Water Division and withdrew its appearance. See Letter of James Bianco, Esq. dated February 10, 1999.

Local 474:

By letter dated March 10, 1999, limited intervenor Local 474 proposed that the Applicant be required to meet three proposed conditions, intended to address Local 474's

concerns that economic development, quality construction, workforce training needs, employee retirement income security, employee medical care security, and fair competition between employers will be adversely affected by the Applicant's intended use of "low bid" construction contracts .

V. ANALYSIS AND FINDINGS

This project is the first application that comes before the Site Evaluation Committee as a direct consequence of changes in the electric production and generation industry resulting from legislative action providing for competition in the generation of electricity in the State of New Hampshire through market facilities. These market facilities are not utility companies and are not subject to price regulation by the Public Utilities Commission. Consideration of these projects involve detailed analysis of the site-specific impacts as well as thorough consideration of the overarching questions of public safety, the natural environment, and orderly development. RSA 162-H:16. The Committee has fully considered all of the issues raised by the Application and the evidence. In this Order the Committee will discuss, in detail, only those issues which require expanded analysis. For uncontested and less complex matters, the Committee will adopt by reference filings and conditions suggested or agreed to by the various parties. Pursuant to RSA 162-H:16 I, the Certificate of Site and Facility will incorporate, without significant discussion, the certificate conditions recommended by the individual agencies that would, in the absence of RSA 162-H, have had jurisdiction over various portions of the application.

A. Requirements for an Energy Certificate

At the outset the Site Evaluation Committee must determine whether the facility proposed by the Application requires a Certificate of Site and Facility.

RSA 162-H:2 VII defines "energy facility" as follows:

> "Energy facility" means any industrial structure, other than bulk power supply facilities, as defined in paragraph II, that may be used substantially to extract, produce, manufacture, transport or refine sources of energy, including ancillary facilities as may be used or useful in transporting, storing or otherwise providing for the raw materials or products of any such industrial structure. This shall include but not be limited to industrial structures such as oil refineries, gas plants, equipment and associated facilities designed to use any, or a combination of, natural gas, propane gas and liquified natural gas, which store on a site a quantity to provide 7 days of continuous operation at a rate equivalent to the energy requirements of a 30 megawatt electric generation station and its associated facilities, plants for coal conversion and onshore and offshore loading and unloading facilities for energy sources. Energy facility shall also include energy transmission pipelines, storage tanks, or any other facility which the Applicant or 2 or more petition categories as defined in RSA 162-H:2 XI request and the Committee agrees, or which the Committee determines requires a certificate, consistent with the findings and purposes set forth in RSA 162-H:1. Energy

facility shall include electric generating station equipment and associated facilities only if they are designed for, or capable of, operation at a capacity of greater than 30 megawatts."

The proposed facility is a 525 MW natural gas fired combined cycle co-generation plant and is to be located on a 24 acre parcel located in the industrial zone of the Town of Newington. The plant and its associated facilities are designed to produce, manufacture and transport electrical energy. In doing so the plant will use natural gas as its main fuel. The proposed site is on the east side of Newington approximately 1000 feet from the Piscataqua River. It is in close proximity to an existing power plant, two proposed power plants, a major river and a heavy industrial area. The impact of the proposed facility on the region can be significant. The impact must be examined to determine the effect on environmental and other conditions that will be caused by this project. In addition to the site proper, the proposed facility includes a pipeline and intake structure in the Piscataqua River, and also includes a transmission line from the site proper to the substation at PSNH's Newington Station and a gas pipeline from PNGTS and Maritime & Northeast (Joint Facilities) main transmission pipeline.

The Committee finds that the proposed facility's size, 525 MW, brings this application within the requirements of 162-H requiring a Certificate of Site and Facility.

B. Available Alternatives

RSA162-H:16 IV imposes on the Committee the obligation to consider available alternatives in addition to a full review of the environmental impact of the site, and other relevant factors bearing on whether the objectives of the statue would best be served by the issuance of the certificate.

The Applicant reviewed three alterative sites. Application Vol. III Sec. F1 p. F-4. The sites were identified as the Gosling Road site, the Simplex site, and the Mareld site. The possibility of siting the proposed facility on the former Pease Air Force base was also examined and considered by the Applicant. The Applicant's basic criteria for selection of a site were the availability of a sufficiently large industrially zoned tract of land, access to the high voltage transmission grid, access to sufficiently large supplies of natural gas, access to a large supply of cooling water, favorable local property taxes, and a favorable community attitude to business development. Of the available sites reviewed, Newington was found by the Applicant to most closely match the basic criteria used in the selection process. For a more detailed description of the selection process see, Application Vol. III Sec. F1.

The proposed site, the Mareld site, was chosen because the natural gas pipeline lateral will run across the site; river access can be secured with an easement from only one company; the proposed transmission line is accessible to nearby PSNH facilities; the location of the River near the site where the intake and discharge will be located has no thermal plumes to interfere with the mixing zone; and the property is industrially zoned. See, PT Norman E. Cobden, Exhibit 22, p. 9.

The Applicant also reviewed three alternative routes for the location of the transmission line. The alternatives were identified as Woodbury Avenue, the proposed Industrial Road and the Railroad corridor. See, PT Norman E. Cobden, Exhibit 22, pp 12-14. The Application identifies the Railroad as its preferred route. However, after discovery and negotiations, the Applicant and the Town of Newington agreed to submit the proposed industrial road as the best route to provide for the orderly development of the area.

The Committee has considered the alternative sites and is satisfied that the Mareld site, as set forth in Section F of Volume III of the Application, with the conditions attached hereto, is an appropriate site for the proposed plant and associated facilities.

C. Statutory Criteria

1. Applicant's Capability

The first statutory factor the Committee must consider is whether the Applicant has adequate financial, technical, and managerial capability to assure construction and operation of the facility in compliance with the terms and conditions of the Certificate. RSA 162-H: 16, IV(a).

Newington Energy L.L.C., at the time the application was filed, was an indirect subsidiary of the Southern Company. Through Southern Energy and its subsidiaries such as SEI New England, the Southern Company develops, builds, owns and operates power production and delivery systems across the United States and internationally. The Southern Company has operating revenues of $12.6 billion in 1997. Consolidated net income for the company was $0.972 billion. Corporate assets at the end of 1997 totaled $35.3 billion.

On February 16, 1999 the Applicant informed the Committee that on February 14, 1999, the Southern Company and its subsidiary entered into an agreement to convey all of its interest in the proposed project to CED/SCS Newington, L.L.C. Newington Energy L.L.C. will be owned 100% by CED/SCS Newington, L.L.C. ("CED/SCS"), a limited liability company formed in the State of Delaware. CED/SCS is owned approximately 95% by Consolidated Edison Development, Inc., a New York corporation, and 5% by SCS Energy, L.L.C., ("SCS") a limited liability company organized in the State of Delaware. Consolidated Edison Development, Inc. (CED) is the energy project development and acquisition subsidiary of Consolidated Edison, Inc., which is the holding company for one of the largest investor-owned utilities in the United States. SCS develops, finances and owns independent power and merchant power plant projects in northeastern United States and Latin America. SCS is managed by its three members, Frank W. Smith, James L. Croyle and Joseph C. Swift, all of whom have extensive experience in the energy industry. See, Application, Replacement Section A, Applicant Information, p. A-1 through A-3 and Attachment A-1 and Attachment A-2 and Replacement Section F.2, pages F-6 and F-7.

CED/SCS represents that it will honor and implement the commitments made by the previous owners of Newington Energy, L.L.C. See, PT Ronald H. Bozgo, Exhibit 5; T. 2/16/99 p. 157.

The transfer of project ownership occurred, literally, on the eve of the adversarial hearing process. Understanding the complexities involved in such a transfer and the possibility that the parties might wish to supplement the record on this issue the Committee issued additional record requests. The requests addressed the financial, technical and managerial capabilities of the Applicant under its new ownership and the role that its indirect parent company, Consolidated Edison Development Inc., would have in the financial, technical and managerial aspects of the proposed facility. The Applicant responded to the requests on April 29, 1999. On May 10, 1999, the Town of Newington filed a letter with the Committee supporting the new ownership of the Applicant.

The Applicant itself is a limited liability company created in and formed under the laws of the State of Delaware on June 1, 1998. PT Norman E. Cobden, Exhibit 22 p. 3. The Applicant is now owned by CED/SCS which is also a Delaware limited liability company. CED/SCS is governed by the terms of a limited liability company agreement. Pursuant to that agreement CED/SCS is governed by a management committee which initially consists of three members, two of whom are appointed by CED. The remaining member is appointed by SCS. The management committee may eventually consist of five members, four of whom are appointed by CED. RR Applicant, 4/29/99, p. 8. Management decisions are made by a simple majority of the members of the management committee. RR Applicant, 4/29/99, p. 8. Under this management structure it is clear that CED maintains the ability to control management decisions effecting the Applicant.

The Applicant, under its present ownership, has been funded, to date, by CED. Through April 29, 1999, CED has funded the Applicant by injecting approximately $ 3.2 million to fund development costs associated with the Application and development of the project. RR Applicant, 4/29/99, p. 2; RR Applicant, 4/29/99, app. 5. The Applicant estimates that its short term development costs before financing will be approximately $10 million. RR Applicant, 4/29/99, p. 3. The Applicant seeks to finance $ 185 million of the proposed project and estimates that additional equity of $ 120 million will be necessary to complete construction. RR Applicant, 4/29/99, p. 3. CED has made a considerable investment in the project to date and based upon its representations appears to be ready to continue to make substantial contributions to and investments in the Applicant and its proposed facility.

The Applicant through CED suggests that as a member of the Con Edison family of companies it has strong relationships throughout the banking and finance community. RR Applicant 4/29/99, p. 10. In support of this suggestion CED advises this Committee that it has obtained $ 133.8 million in project financing for other projects in the United States, Central America and Europe. RR Applicant, 4/29/99, p. 10. According to the Applicant there are presently at least sixteen merchant power facilities in the United States that have obtained total financing in excess of $ 3 billion. The Applicant also advised the Committee that, if for some reason financing is unavailable, it is possible that CED would finance the project from its own assets. RR Applicant, 4/29/99, p. 10.

The ownership relationship between the Applicant and CED as well as the significant investment of CED to date support the finding that the Applicant is financially capable of constructing and

operating the proposed facility.

During the course of the adversarial hearing the Applicant indicated that both construction and operation of the proposed facility may be contracted to third parties. In response to record requests the Applicant demonstrated that it had already undertaken the drafting of an extensive Engineering Procurement and Construction (EPC) contract and extensive Project Specifications with the assistance of Burns and Roe, an experienced power plant engineering and design firm. RR Applicant, 4/29/99, p. 4-5. The Applicant also identified the criteria which it will use in selecting construction and equipment contractors and has contacted a number of the leading power plant construction and equipment firms in the nation. RR Applicant, 4/29/99, p. 4-5. The Applicant also asserts that its affiliation with CED and, indirectly, with Consolidated Edison Company of NY (CECONY) provides a wealth of experience in the development, construction and management of the proposed facility. Id.

Similarly, the Applicant relies upon its relationship with CED and the ConEd Family of companies to demonstrate its ability to manage the operation and maintenance of the proposed facility. ConEd companies presently operate over 8000 MW of nuclear, gas and oil fired plants. CED itself operates several smaller generation facilities. RR Applicant, 4/29/99, p. 6. The Applicant indicates that, amongst other criteria, "experience in operating excellence including a history of plants that are kept in well maintained and efficient condition" is one criteria that it will use in selecting a contractor to operate and maintain the proposed facility. RR Applicant, 4/29/99, p. 7.

Based on the information submitted, the Committee concludes that the Applicant Newington Energy, L.L.C. as an affiliate of CED, a member of the ConEd family of companies has sufficient financial, technical, and managerial capability to assure construction and operation of the facility in compliance with the terms and conditions of the Certificate.

Of course, this finding is based in large part upon the relationship between the Applicant, CED and the ConEd organization. CED has provided all capital, to date, for the Applicant and significantly relies on its affiliation with CECONY and the other ConEd companies to establish its financial, technical and managerial capabilities. Any change in the ownership interest of the Applicant, Newington Energy, LLC, may significantly affect the findings of this Committee and its obligation to monitor the construction and operation of energy facilities. RSA 162-H: 4 I (c). The Certificate of Site and Facility will be granted to the entity, Newington Energy, LLC, as it is presently owned and exists. Any change in ownership of Newington, LLC , without the approval of this Committee, shall render the Certificate subject to revocation. The Certificate itself shall not be transferred or assigned to any other person or entity without the approval of the Committee. RSA 162-H:5 I.

In its letter dated March 10, 1999, counsel for limited intervenor Local 474 proposed certain conditions to require the Applicant to use construction workers who have received certified apprenticeship training, and who are covered by retirement and medical insurance. In addition to citing economic development concerns, Local 474 argues that such conditions are needed to counter the risk that a "low-bid" approach to construction

will necessarily produce poor quality construction, with attendant environmental and safety consequences. We discuss these proposed conditions here, under Applicant's qualifications, because they do not all fit squarely into the categories of issues we must consider under the statute.

To the extent Local 474's concerns are with workforce development, economic fairness, and general economic development in New Hampshire, these issues are beyond the scope of an appropriate review under the siting statute. To the extent the proposed workforce conditions are intended to assure safe construction, we note that health and safety conditions required in this Order, as discussed below, will address many of the concerns raised by Local 474. And consistent with our findings of managerial, technical and financial qualification, we expect that the Applicant, which is associated with a utility with a long track record of power plant construction, will pursue quality construction, and the health and safety of the construction workforce. See, RR of April 29, with construction criteria and draft construction contract.

2. Orderly Development

RSA 162-H: 16, IV (b) requires the Committee to consider whether the proposed project will "unduly interfere with the orderly development of the region with due consideration having been given to the views of municipal and regional planning commissions and municipal governing bodies."

The Town of Newington through its Board of Selectmen, its Planning Board and its attorneys support the grant of a Certificate of Site and Facility to the Applicant subject to certain conditions that are addressed later in this Order. Newington indicates that the proposed facility is consistent with the orderly development of the area and is consistent with the Town's Master Plan, Exhibit, Newington 2, and its Zoning Ordinance, Exhibit, Newington 3.

As part of the proposed generation facility, the Applicant plans associated facilities including an electric transmission line and a gas pipeline. The Applicant plans to build an overhead radial interconnecting electric transmission line. The line will interconnect the proposed Newington Power Facility to the 345 kV regional substation located adjacent to the PSNH Newington Station approximately 1.25 miles from the facility site proper. In the application, the Applicant originally proposed the line to travel from the B & M rail road property and enter PSNH property where it will connect to the 345 kV substation. The Town of Newington, through its witness, Planning Board member, Dennis Hebert, recommended the transmission line leave the substation on the project site then follow a proposed industrial service road. The Town submitted that placing the line along the proposed industrial service road creates an industrial corridor where all local industry infrastructure can be placed. Mr. Hebert, on behalf of the Town, further recommended that the transmission line be designed and built with the capacity to hold an additional line.
T. 2/17/99, p. 25 - 34.

The Applicant does not object to the Town's recommendation and has proposed using the

industrial corridor for the transmission line. However, the Applicant is concerned that it may not be able to obtain the necessary easements for the required right of way. It must be recognized that the proposed plant, a market power facility, is not a public utility and, therefore, the Applicant does not possess powers of eminent domain or condemnation. See generally, RSA 371. As a result, the Applicant requests the Committee to approve the route along the industrial road along with an alternative route along the railroad property if the preferred route easements cannot be obtained.

After the adversarial hearing the Applicant and the Town submitted a stipulation setting forth conditions governing the site selection for the transmission line.

The Rockingham County Planning Commission participated throughout the proceedings as a limited intervenor and received copies of all filings. The Committee did not receive any objections or comments regarding the site itself or the electric transmission line route from the Rockingham County Regional Planning Commission. The Committee finds the proposed project and associated facilities, with the conditions imposed by the Committee, is consistent with the orderly development of the region and does not impose any unreasonable impact to the orderly development of the area. In fact, the development of the proposed facility on the proposed site is consistent with the Town's Zoning Ordinance and its Master Plan. See Exhibit, Newington 2, 3. However the Committee will address the electric transmission line route issue in more detail.

The Committee has reviewed and examined the industrial road route and the railroad route and finds that both routes are acceptable to accommodate the electric connection for the proposed power plant to the electrical grid and both are consistent with the orderly development of the region. However, the Committee finds the industrial road is the more preferable route as it alleviates congestion along the river and provides for future water front development. Recognizing there is a possibility that the Applicant will not be able to obtain the necessary easements, the Committee will adopt a condition which will provide for an alternate route to be available for the power plant's associated facilities. However, to insure that the Committee can determine that the Applicant has adequately pursued the right of way for the proposed industrial corridor route the Committee's conditions differ slightly from the conditions proposed by the parties.

The conditions proposed by the parties require that the Applicant use its "due diligence" and "best efforts," short of instituting legal proceedings, to acquire rights to a right of way along the proposed industrial corridor ("Option 1") on "commercially reasonable terms" and within three months of the issuance of a Certificate of Site and facility. RR 3/15/99, Joint Condition . The proposed conditions permit the Applicant to file a request with this Committee to proceed with "Option 2" (the railroad route) if it is unable to acquire the right of way along the proposed industrial corridor. If a party does not object within 20 days of the request the Applicant may proceed to develop Option 2, the railroad route. RR 3/15/99. The parties also agree that this Committee shall retain jurisdiction over the Applicant's request to proceed with Option 2.

In order to insure that meaningful information is made available to this Committee in the event that the Applicant is unable to secure a right of way over the proposed industrial corridor -

Option 1, the Committee adopts the conditions stipulated to by the Applicant and Newington. However, in the event that a request to proceed with the railroad route - Option 2 - is filed, that request must include the following:

1. A written record of all negotiations with landowners along the route designated as Option 1. This record must be sufficient to establish that the Applicant has used due diligence and its best efforts, short of instituting legal proceedings, to obtain the required right of way.

2. Copies of all offers, counteroffers and other correspondence concerning the efforts of the Applicant to secure the required right of way.

3. A detailed explanation of how the Applicant determined and decided that the right of way could not be secured on commercially reasonable terms including the definition of "commercially reasonable" used by the Applicant.

Additionally, the Applicant shall not proceed with the development of the railroad route until such time as this Committee has approved the request. The Committee will respond to the request within 60 days of receipt of all materials and information set forth above.

The application also proposes a natural gas pipeline from a proposed tap on the PNGTS and Maritime & Northeast Pipeline main transmission line to the Newington Power facility which the Committee finds does not adversely affect the orderly development of the region.

3. No Unreasonable Adverse Effect

In order to issue a Certificate, RSA 162-H: 16 IV (c) requires the Committee to find that the site and facility will not have an unreasonable adverse effect on 1) aesthetics, 2) historic sites, 3) air and water quality, 4) the natural environment, and 5) public health and safety.

It must be noted at the outset of this discussion that there are few, if any human endeavors, which can be undertaken without some impact to the environment. Recognizing this, the Legislature sensibly charged the committee to "maintain a balance between the environment and the possible need for new energy facilities in New Hampshire." RSA 162-H:1. The statute requires this inquiry to determine whether the impact is "unreasonably adverse." This phraseology assumes there will be an impact, and calls for an assessment of the impact. State and federal statutes and regulations provide the framework for this assessment. They establish constraints or prohibitions against certain environmental impacts. If the proposed project complies with those constraints or prohibitions, it is reasonable to assume that the impacts created can be considered reasonable. Re: Tennessee Gas Pipeline. SEC 89-01 p. 8.

Each of the five categories set forth in RSA 162-H: 16 IV (c) are discussed as follows:.

a. Impact on Aesthetics

The construction of the proposed project will be in an existing industrial area and in a heavily developed area bounded by the Spaulding Turnpike and the Piscataqua River adjacent to a number of other industrial facilities. The area is located in an industrial zoned area and per the Town of Newington's Zoning Ordinance, Town of Newington Exhibit 3 and Master Plan, Town of Newington Exhibit 2, is in compliance with the Town's objectives for industrial development.

In addressing the potential visual impacts of the proposed facility, the Applicant submitted a field program designed to evaluate the visibility of the facility components. Application, Vol III F-19. The program utilized a computer graphic software program which superimposed viewshed photographs from different locations and showed that the aesthetic impacts of the plant were minimal from all locations. The views incorporated the main turbine building having a height of 105 feet; the exhaust gas stack standing at a height of 150 feet; the twelve cells comprising the cooling tower having a height of 60 feet; a water storage tank and two fuel oil storage tanks with heights of 48 and 36 feet respectively. The visual impact of the electric transmission interconnection was also considered. Although the transmission line structures will be somewhat taller than the existing 115 kV transmission structures, the use and view will be comparable.

In addition to the evidence presented by the Applicant, the Committee visited and inspected the site on September 17, 1998.

No competing evidence was offered by any party concerning the impact of the project on aesthetics.

The Committee finds the presence of the proposed energy facilities conforms to the visual and aesthetic characteristics of the area and does not impose any unreasonable impact to aesthetics.

b. Impact On Historic Sites

The Applicant presented an evaluation of the cultural and historic resources found on or near the facility site. Application, Vol. III F-17; Exhibit 22, p. 10 - 12. Information was collected from the New Hampshire Historical Society library, and the New Hampshire State Historic Preservation Office was contacted. The evaluation confirmed that no known archeological or historic resources are situated on the site. To further assure that there are no historic or cultural resources on the site the Applicant proposes that a Phase I archeological investigation be performed on a three acre undisturbed forested section of the site prior to any groundbreaking. Application, Vol. III F-18; Exhibit 22 p. 12. In the event that any archeological artifact, questionable artifact or unidentified burial is uncovered or discovered during construction the Applicant shall immediately report same to the appropriate state or federal agency. No evidence was submitted suggesting that the facility, as proposed, will have any impact on cultural or historical artifacts or sites.

With the safeguard of the aforementioned Phase I archeological investigation, the committee finds the proposed facility will have no unreasonable impact on historic sites in the area.

c. Impacts On Air And Water Quality:

i) Air Quality

The Applicant's witnesses suggest that the facility will have insignificant impacts on the ambient air quality, as defined by the United States Environmental Protection Agency ("EPA"), and as a new major stationary source, will have to comply with numerous state and federal regulations. These include the prevention of significant determination ("PSD") regulations, non-attainment new source review for emissions of nitrogen oxides ("NOx") and volatile organic compounds ("VOCs"), and the National Ambient Air Quality Standards ("NAAQS") for criteria pollutants. These regulatory programs require that the facility apply the lowest achievable emission rate ("LAER") for non-attainment pollutants such as NOx and the best available control technology ("BACT") for carbon monoxide, particulate matter, and sulfur dioxide. In addition to the foregoing regulatory programs the Applicant must also demonstrate that the proposed facility will not cause or contribute to a violation of the PSD Class II increments or the New Hampshire Ambient Air Limits ("AALs") for toxic air pollutants and will not have a negative impact on local visibility; damage local vegetation; or degrade visibility in Class I areas.

To achieve these regulatory limitations, the Applicant submits that the proposed facility will use high technology control strategies for air pollution. These strategies include the use of advanced combustion technology to reduce carbon monoxide emissions. The project will also use natural gas and very low sulfur number 2 distillate fuel oil as primary and back up fuels for the combustion turbines, respectively. The use of this combustion technology and fuel sources will limit the emissions of sulfur dioxide and particulate matter.

To assure that the facility meets the LAER limits for NOx, the Applicant proposes to use two General Electric 7FA combustion turbines and install a SCR system. In addition, oil firing will be limited to 29.2 million gallons per year, which is equivalent to 30 days per year of fuel oil usage. The facility also proposes to install a conservation vent on the fuel oil storage tank to reduce evaporated VOC emissions.

In addition to these emissions controls, the facility will obtain emission offsets from existing sources equal to 1.2 times its proposed allowable emissions of NOx. These emission offset credits will be obtained pursuant to state and federal regulations.

The Applicant, after conducting extensive study and modeling, concludes that the facility will not cause or contribute to violations of the NAAQS for any criteria pollutant; that the facility will meet LAER and BACT control technology requirements; that the facility will not have an adverse impact on visibility in any Class I areas; the facility will not have an adverse impact on local vegetation; and that the facility will not cause adverse impacts to visibility; and, that the facility will comply with all other applicable state and federal air quality requirements. The Applicant suggests that the facility will be a model for using high-technology and careful site design to minimize impacts to air quality, and will have no adverse effects on the air quality of the State of New Hampshire. The use of natural gas reduces emissions of air pollutants and provides the opportunity to lower energy costs and economically meet strict, new environmental

requirements. The Applicant has prepared illustrations and air quality studies on how natural gas can provide direct air quality benefits to the northeast, which are set forth in its Application, Section C, Appendix B.

The New Hampshire Department of Environmental Services, Air Resources Division ("DES") has examined the impacts on air quality and has issued a Final Determination and Temporary Permit. Exhibit #67; see, Attachment G. All of the parties acknowledge that the Air Resources Division's examination and study of the Applicants plans is detailed and addresses all of the significant impacts required by the state and federal requirements. The Final Permit, Section III, includes General Operating Limitations and Conditions which the Committee adopts and incorporates as part of the Certificate of Site and Facility. The Conditions included in the Final Permit provide for the necessary action to prevent or mitigate air quality impacts and keep the operation of the proposed facility within the current state and federal air quality standards.

DES also anticipates that the construction and operation of the Newington Energy facility may result in a direct benefit to regional air quality. This benefit would be realized if the facility commences operation and displaces other facilities currently operating in the region. The current fleet of power generating facilities in the region include oil-fired, coal-fired, nuclear fueled and some limited hydro. The coal and oil units in the region emit air pollutants at a rate significantly higher than Newington Energy. The table below compares the regional average emission rates for fossil fuel (coal and oil) facilities in the region to Newington Energy:

Pollutant	Average Fossil Plant [4]	Newington on Gas	Newington on Oil
NOx	4.4 lb/MW-hr	0.03 lb/MW-hr	0.14 lb/MW-hr
SO2	8.3 lb/MW-hr	0.012 lb/MW-hr	0.18 lb/MW-hr
CO2	2339 lb/MW-hr	1070 lb/MW-hr	1500 lb/MW-hr

The table above clearly demonstrates that the Newington Energy facility will emit pollutants at a rate significantly below the average fossil fuel plant in the region. If each MW of power produced by Newington Energy were to displace a MW of power currently being produced by an average fossil plant in the region, the net emission reductions of NOx, SO2 and CO2 in the region would be as follows:

Pollutant	Annual Emissions from Newington[5]	Annual Emissions From Average Fossil Plant	Net Reduction of Pollutants

[4] Source: NESCAUM GPS Workgroup.

[5] All emissions estimates are based on Newington Energy producing 4,599,000 MW-hr on an annual basis.

NOx	205 TPY	10,118 TPY	9,912 TPY
SO2	125 TPY	19,086 TPY	18,961 TPY
CO2	2,460,465 TPY	5,378,531 TPY	2,918,066 TPY

The construction and operation of facilities like Newington Energy could produce significant regional benefits if older, dirtier plants are displaced. These benefits would likely lead to regional reductions in air pollution which would help protect public health, improve environmental quality and reduce regional haze.

The Committee finds that the proposed facility constructed and operated, as conditioned by the DES, will not impose any unreasonable adverse impact to air quality. Said conditions will be attached to the Certificate of Site and Facility, as Attachment G.

ii) Water Quality

Through the pre-filed testimony of David Schafer, Exhibit 22 pages 18-22 and the testimony of its engineering panel, T. 2/16/99 p. 199 - 239, the Applicant submits that the construction and operation of the facility will have minimal adverse effects of water quality. Three major areas of concern were identified. These areas include the cooling water demands for the facility, impacts resulting from thermal discharge from the facility, and impacts resulting from the discharge of cooling tower blowdown.

The cooling water demands for the facility will be satisfied through construction of a new intake in the river. The remainder of the facility's water requirements, including potable water, will be satisfied through an interconnect with the City of Portsmouth's municipal distribution system.

The Applicant submits that the volume of water intake represents the principal controlling mechanism governing potential ecological impacts associated with the entrainment and impingement of aquatic life. As a result, several operational characteristics of the facility have been directed at minimizing to the greatest extent practicable, the cooling water requirements of the facility. Exhibit 22, p 19.

First , the Applicant proposes to use combined cycle technology. Only one-third of the electric output from the facility will rely on the steam cycle. The remaining two-thirds of the electric output will be generated by the combustion turbines. Since less excess heat is generated, combined cycle technology is more than twice as efficient with respect to water usage than facilities using simple cycle technology. Exhibit 22, p. 19.

Second, the Applicant plans to use salt water cooling tower to dissipate excess heat rather than rely on the more traditional "once through" cooling systems used by most electric plants in coastal locations. This method will represent a reduction in cooling water needs of nearly 95% when compared with a "once through" cooling water system for a facility in the 525 megawatt size range. Exhibit 22, p. 20.

To reduce the potential for aquatic resource impacts, the Applicant will install two intake pumps which will be located behind a traveling screen so that marine life is protected from the pump suction. The traveling screens will be of the modified Ristroph design which has been determined by the EPA to represent the best technology available for the protection of fish and marine life. Exhibit 22, p. 20.

Third, cooling tower blowdown will be discharged through a new multi-port diffuser designed to minimize any negative environmental effects. The discharge is also subject to the new source performance standards contained in 40 CFR 423. Exhibit 22, p. 21.

In addition, the Applicant represents that the discharge of process waste water to the Newington sanitary sewer system will be in compliance with the pretreatment standards for new sources and the Town of Newington industrial discharge requirements. Exhibit 22, p. 22.
The NHDES Water Division has reviewed the application, including various concerns raised by the intervenors and found that the application limited by conditions attached hereto will not have any unreasonable adverse impacts on water quality.

The Committee finds there are no unreasonable adverse impacts on air and water quality caused by the construction, operation or maintenance of the proposed, facility limited by the appropriate conditions that will be attached to the Certificate of Site and Facility, as Attachment G and H.

d. Impact On The Natural Environment:

The Applicant asserts that it has taken extensive measures as outlined in the application to reduce impacts on sensitive environmental areas. Wetland resources on the site were identified and mapped. The Applicant's construction plans are to fully restore and replace any wetland resources affected by the project. Construction in wetlands will comply with the State's rules and regulations. The Applicant will preserve the majority of wooded sections on the site by leaving them in their natural state. Exhibit No. 22, p. 22 & 23.

Correspondence with the New Hampshire Heritage Program and ecological surveys of the site indicated that no threatened or endangered plant or animal species were found on the site. Exhibit No. 22, p. 24; Application, Vol. II, Historic Resources Review.

The Applicant has met with the DES, the U.S. Fish and Wildlife Service, the U.S. Environmental Protection Agency, the New Hampshire Fish & Game Department and the New Hampshire Coastal Program to discuss the NPDES permit application and to confirm that the various methods and models used were appropriate. The National Marine Fisheries Service has also been fully informed on the project and been provided with updates on the project status. No information indicating the presence of unique ecosystems has been received as a result of these contacts. Concerns raised relative to fishery and other estuarine communities will be addressed through the NPDES permit process to ensure no significant impacts. A decision by the U.S. Environmental Protection Agency on the NPDES permit application is expected in the immediate future. Vol. III, National Heritage Inventory Program.

The use of a traveling screen on the intake port will minimize the number of marine species which will be attracted to the intake. Exhibit 22 p. 24. The NHDES has issued conditions to ensure that cooling water dispersed into the river will be constrained to a small area of the river and will not impact on the fishery stock or on the river. See, Attachment G and H.

As in any project of this size, considerable analysis, examination and study of the effects on the natural resources of the state has been performed. The various agencies have examined and studied the Applicant's Environmental Construction Plan and have advised, informed and directed the Applicant to take certain measures to eliminate or mitigate, environmental impacts. The areas reviewed included, state fisheries; impacts on the river; threatened, endangered, and rare plant and animal species; sensitive and wetland habitats. The New Hampshire Natural Heritage Program, the NHDES and other state agencies have all participated in developing suitable mitigation measures for these areas at risk.

The Committee finds that the proposed facility will not cause any unreasonable adverse impacts on the natural environment so long as the Applicant complies with the conditions set forth in Attachment H to the Certificate.

e. Impact on Public Health and Safety

The Applicant asserts its commitment to safety, both in the work place and in the surrounding community. Exhibit 22, p.18. It claims to have used state of the art technology to design a safe facility and assert that it is of fundamental importance that the facility be constructed and operated in a safe manner. The Applicant maintains that the facility is designed with the most up to date safety features available. It will comport to all applicable state and federal regulations and statutes regulating the safe design, construction and operation of electrical generation facilities. The gas interconnection will also be designed in consultation with the pipeline operator to minimize any associated dangers. The Applicant has also developed specific procedures for certain activities including the handling of toxic chemicals, exposures to dangerous noise levels and live electrical work. In addition the Applicants will develop training programs to provide emergency health care, emergency training programs and safety programs. The Applicant also maintains that the proposed facility is designed to maintain an operational noise level of no more than 5 dBAs above the current background noise level. The Applicant maintains the construction and operation of the facility will not have an unreasonable adverse effect of public health and safety.

i) Fire Safety and Emergency Response

The Newington Fire Chief Larry Wahl, testified about the Applicant's emergency response plans and handling of hazardous materials. PT Larry Wahl, Exhibit 48, p 8. Public Counsel presented Henry Renfrew, an independent safety expert, who testified, " based on the information received and evaluated during the fire and safety assessment, the proposed facility will not have an unreasonable or adverse impact on public safety provided that the recommendations identified in (his) report are part of the conditions for approval of the facility by the EFSEC and the Applicant complies with these recommendations." PT Henry Renfrew, Exhibit 56. He further testified that:

> . . . the EFSEC should ensure that the State Fire Code is enforced and the National Fire Protection Association (NFPA) standard #850. NFPA 850 contains specific recommendations for fire protection at electrical generating plants including a requirement for a Fire Risk Evaluation. Various OSHA and EPA regulations mandate requirements which will significantly promote public safety and the safety of local emergency responders. These regulations require a review of the hazards at the facility, a pre start-up safety review, training for employees and development of emergency plans and coordinating emergency responses with local responders. The EFSEC should ensure compliance with these federally mandated requirements. Enforcement of the State Fire Code is at a local level with technical assistance available from the State Fire Marshal. Local emergency responders need to have direct input in the evaluation of the hazards on site and emergency response procedures and plans for the proposed facility. Given the size and complexity of electric generating plants the EFSEC should ensure that the Applicant provide technical assistance.

PT Henry Renfrew, Exhibit 56.

Both Mr. Renfrew and Fire Chief Wahl recommend many conditions based on public safety considerations. The Applicant agreed to the recommended conditions. Those conditions include compliance with the NFPA Standard No. 850 which contains recommendations for fire protection at electric generating plants and high voltage direct current converter stations. NFPA Standard No. 850 has not been adopted by the State Fire Marshall but contains a stricter standard than the code presently adopted in New Hampshire. The safety conditions which were recommended by Mr. Renfrew and Chief Wahl also include compliance with a host of state and federal agency codes and standards, which are set forth in Attachment B. The conditions also include a requirement of consultation and approval by local authorities and designates the State Fire Marshall as the final arbiter of any disputes concerning fire safety. The conditions also address construction of the facility in such a manner as to identify, avoid and/or contain chemical spills or gas leaks. Pursuant to the conditions the Applicant has also agreed to provide technical and financial support to the Town in the areas of training, emergency planning, and the purchase of specialized safety equipment.

The Committee recognizes that the proposed facility which uses natural gas to produce electricity presents unique public safety issues. The Committee takes these issues extremely seriously. The Committee finds that the proposed conditions are necessary to ensure that there is no adverse or unreasonable impact on public safety. Even in the absence of the parties' agreement the Committee would have required similar conditions for the benefit of the safety of the public. Pursuant to its obligation to monitor a facility which is the subject of a Certificate of Site and Facility, RSA 162-H: 4 I (c), the Committee will not hesitate to revoke the Certificate if it finds that the safety conditions are ignored. The safety conditions that were agreed upon by the parties and are attached to the Certificate as Attachment B are adopted as part of the Certificate of Site and Facility.

ii) Noise

The proposed site is located in a heavily industrialized area in proximity to the Spaulding Turnpike and other well traveled thoroughfares, the commercial district of Newington which contains a number of shopping plazas and at least two large shopping malls, and a heavily industrialized section of the Piscataqua River. There are two small residential neighborhoods in the area on Avery Road and Patterson Lane. Background noise in this area is louder than one would normally expect in a residential neighborhood. Newington and Public Counsel both addressed the noise impact of the construction and operation of the proposed facility on the surrounding area.

Public Counsel presented an acoustical engineer, James Barnes of Accentech, a multi-disciplinary acoustical engineering firm, who stated that "Based on our review and on our experience with the construction of other power facilities, we judge that the construction of this facility will not likely result in an unreasonable adverse noise impacts on the community." PT James Barnes, Exhibit 55. Mr. Barnes initially made the following recommendation to assure that construction noise be limited:

1. The Applicant maintain a telephone hot line service and respond to individual noise complaints from community residents.

2. Limit construction work to weekday hours of 7:00 AM to 7:00 PM, with additional hours by special permit only.

3. Utilize mufflers on all engine driven equipment.

4. Utilize mufflers for the steamblow activity.

5. Notification to the Community in advance of driving and blasting activities.

PT James Barnes, Exhibit 55. Subsequent to the filing of Exhibit 55 and prior to the adversarial hearing the Town of Newington, Public Counsel, and the Applicant pursued a stipulation concerning construction noise. Eventually the parties reached agreement on the majority of issues concerning construction noise levels. The Committee adopts the conditions contained in Attachment C (I).

Mr. Barnes also testified about operational noise levels of the facility. Mr. Barnes commented, "Based on our review, we judge that significant effort will be necessary to design, construct, and operate a facility that will not result in an unreasonable adverse noise impact on the community. Our experience indicates that the facility design should include appropriate margins and allowance for potential additional treatments in order to ensure that the overall project goals can be attained." Mr. Barnes recommended that the Site Evaluation Committee require certain conditions for the design and operation of the facility in order to avoid any unreasonable adverse noise impact. Exhibit 55.

During the adversarial hearings all of the recommendations presented by Mr. Barnes were examined and reviewed by the parties. As a result of that process the parties presented a list of proposed conditions pertaining to noise impacts stemming from the design and operation of the proposed

facility. On March 18, 1999 Public Counsel informed the Committee that the recommended noise design condition agreed to by the Applicant and the Town did not assure that the facility would operate without adverse impact on the community. Public Counsel presented a proposed condition to provide such assurance. See, Letter from Public Counsel, March 18, 1999. The Applicant responded and claimed that Public Counsel's proposed condition is unworkable and unnecessary. See, Letter from Counsel for Applicant and Counsel for Town March 23, 1999. Each party claims support for its position in the testimony of Mr. Barnes.

During the adversarial hearings all of the recommendations presented by Mr. Barnes were examined and reviewed by the parties. As a result of that process the parties presented a list of proposed conditions pertaining to noise impacts stemming from the design and operation of the proposed facility. RR 3/15/99. The committee has examined all of the proposed conditions and accepts and adopts those conditions as Attachment C to the Certificate of Site and Facility.

The Committee finds that the proposed facility with the conditions imposed by the Committee, as Attachments B and C, will not have any unreasonable adverse effect of the public health and safety.

iii) Public Health Benefits

The Committee finds that the technology proposed by the applicant is capable of reducing the amounts of pollutants released to the air resulting from the generation of electricity. Specifically, the ARD projects that if built and dispatched, this facility could potentially reduce the amount of Nox , SO2 and CO2 emitted in new Hampshire by 9,912 tons, 18,961 tons, and 2,918.066 tons per year respectively. While it is not possible to predict the exact decrease in respiratory illness rates expected to result from this decrease in pollutant loading, it is a basic tenet of public health that primary prevention (that is, avoiding the conditions that lead to illness before the illness occurs) reduces societal costs both in terms of human suffering and health care costs. Thus, the Committee finds that this facility will not have any unreasonable adverse effect on public health and in fact, could yield a net public health benefit by reducing the burden of lung disease mortality.

4. Consistency with State Energy Policy

RSA 162-H:16 V (d) requires that the construction, operation and siting of a proposed generation facility be consistent with state energy policy as set forth in RSA 378:37:

> The general court declares that it shall be the energy policy of this state to meet the energy needs of the citizens and businesses of the state at the lowest reasonable cost while providing for the reliability and diversity of energy sources; the protection of the safety and health of the citizens, the physical environment of the state, and the future supplies of nonrenewable resources; and consideration of the financial stability of the state's utilities.

The Applicant asserts that the proposed facility will meet the energy needs of the citizens and businesses of the state at the lowest reasonable cost while providing a diverse energy resource to

the state and region. Specifically, the Applicant states that through use of state-of-the-art technology and equipment, and the use of low-cost natural gas, the facility will produce reliable lower cost power in New England, which will benefit New Hampshire consumers.

In assessing whether the proposed project is consistent with the state's energy policy, the Committee notes that this energy policy statement comports with the balancing of interests set forth in the Site Evaluation Committee's enabling legislation. In crafting RSA 162-H, the legislature was both mindful of the need to address "the present and predicted growth in electric power demands in the State of New Hampshire," and also careful to assert that "the public interest requires that it is essential to maintain a balance between the environment and the need for new power sources...." RSA 162-H:1II. Under our mandate to consider compliance with state energy policy, the Committee must focus on whether the proposed facility will meet the need for new power in a fashion that fosters reliability, source diversity, environmental improvement, and lower costs for New Hampshire customers.

The Applicant has presented evidence that this facility introduces generating technology to New Hampshire that is significantly more energy-efficient and environmentally friendly than existing fossil fuel plants in the region. The applicant has also presented evidence that development of this gas-fired combined cycle facility will enhance the diversity of energy sources in New Hampshire. The Committee also determines that the facility will foster system reliability, including during peak periods that create capacity shortages, such as those New Hampshire and the region have experienced in recent summers. Indeed, this facility may well reduce the likelihood that dirtier "mothballed" generating units will need to be reactivated to avert capacity shortages, thus further contributing to reduced emissions and improved air quality as well as lower power costs. Further findings regarding this project's compliance with environmental protection, as well as public safety and health goals, are addressed more fully elsewhere in this decision.

With the advent of competitive wholesale and retail power markets in New England, the Committee's inquiry as to need for new power facilities has of course broadened beyond the immediate and long term capacity needs to serve projected increases in native consumption and demand, to include the degree to which new, more efficient facilities will benefit New Hampshire customers by helping to foster regional market development. The Committee finds that the proposed plant will increase the number of wholesale producers in New England, and that such new, efficient generating capacity will serve the interests of New Hampshire customers by fostering competition as a means to bring lower cost power to New Hampshire and the region.

In light of the above, the Committee finds that the proposed facility is consistent with the state energy policy.

VI. CONCLUSION

The Site Evaluation Committee, pursuant to RSA 162-H:2 VII and RSA 162-H:1 finds that the proposed Newington Power Production Facility requires a Certificate of Site and Facility to construct and operate the natural gas electric production facility and its associated facilities in the Town of Newington, New Hampshire.

After having considered available alternatives and having fully reviewed the environmental impacts of the proposed facility and other factors bearing on whether the objectives of Chapter 162-H would be best served by the issuance of a certificate the Committee will issue a Certificate of Site and Facility to the Applicant for the proposed facility.

The Committee finds the Applicant Newington Energy, L.L.C. has adequate financial, technical, and managerial capability to assure construction and operation of the facility in compliance with the terms and conditions of the Certificate.

After due consideration having been given to the views of municipal and regional planning commissions and municipal legislative bodies, the Committee finds the proposed project will not unduly interfere with the orderly development of the region.

Upon compliance with the conditions attached to the Certificate the project will not have an unreasonable adverse effect on aesthetics, historic sites, air and water quality, the natural environment or public health and safety.

The proposed Facility is consistent with the state energy policy established in RSA 378:37.

The Site Evaluation Committee finds that the construction and operation of the proposed facility complies with the criteria of RSA 162-H. The Committee will approve the application for a Certificate of Site and Facility for Newington Energy L.L.C. to construct and operate a 525 megawatt electric production facility in the Town of Newington, New Hampshire. The facility will consist of two General Electric 7FA combustion turbines, two heat recovery steam generators and one steam turbine generator. A salt water mechanical draft, plume abated, cooling tower will be used to cool the plant's circulating water. A Certificate and of Site and Facility with appropriate conditions attached will be issued by Order of the Site Evaluation Committee.

The Application and Petitions are referred to the Air Division, Water Division, and Waste Management Division, of the Department of Environmental Services, The Office of State Planning and the Public Utilities Commission for the issuance of such permits and licenses as required by law to be included in the Certificate of Site and Facility.

Dated this 25th Day of May, 1999, at Concord, New Hampshire.

Robert W. Varney, Chairman
Commissioner, Dept. of
Environmental Services

Douglas L. Patch, Chairman
Public Utilities Commission

Harry Stewart, Director
Water Division, Dept of
Environmental Services

Wayne Vetter, Director
Fish and Game Dept.

Jeffrey H. Taylor, Director
Office of State Planning

Kenneth A. Colburn, Director
Air Resources Division, Dept.
of Environmental Services

Deborah Schachter, Director
Governor's Office of Energy &
Community Services

Philip Bryce, Director
Division of Forest & Lands, Dept. of
Resources & Economic Development

Leon S. Kenison, Commissioner
Dept. of Transportation

Brook Dupee, Office of Community &
Public Health, Dept of Public Health &
Human Services

Richard McLeod Dir.
Division of Parks,
Dept. of Resources & Economic
Development

George Bald, Commissioner
Dept. of Resources & Economic
Development

Susan S. Geiger, Commissioner
Public Utilities Commission

Nancy Brockway, Commissioner
Public Utilities Commission

Michael D. Cannata Jr.,
Chief Engineer
Public Utilities Commission

STATE OF NEW HAMPSHIRE
SITE EVALUATION COMMITTEE
SEC Docket No. 98-01

Application of Newington, L.L.C.

Application of Newington, L.L.C., An affiliate of Consolidated Edison Corporation, for a Certificate of Site and Facility to construct and operate a 525 megawatt electric production facility in the Town of Newington, Rockingham County, known as the Newington Power Facility, which facility will consist of two General Electric 7FA combustion turbines, two heat recovery steam generators and one steam turbine generator. A salt water mechanical draft, plume abated, cooling tower to cool the plant's condenser circulating water and associated facilities..

The proposed facility is to be located on a 24 acre parcel located in the industrial zone of the Town of Newington. The site is on the east side of Newington approximately 1000 feet from the Piscataqua River. In addition to the site proper, the proposed facility includes a pipeline and intake structure in the Piscataqua River, and also includes a transmission line from the site proper to the substation at the PSNH Newington Power Station and a gas pipe line from the PNGTS and Maritime & Northeast (Joint Facilities) main transmission pipeline.

O R D E R

CERTIFICATE OF SITE AND FACILITY

Upon Consideration of the foregoing Decision, the findings of the Energy Facility Site Evaluation Committee, with conditions imposed by the Department of Environmental Services, Air Resources Division, Water Division, Waste Management Division, the Office of State Planning, and the Public Utilities Commission, all of which are made part of this order, it is hereby

ORDERED, That the application of Newington Energy, L.L.C. (an affiliate of the Consolidated Edison Development, Inc.) for a certificate of site and facility to construct and operate a 525 megawatt electric production facility in the Town of Newington, Rockingham County, known as the Newington Power Facility, which facility will consist of two General Electric 7FA combustion turbines, two heat recovery steam generators and one steam turbine generator, and a salt water mechanical draft, plume abated, cooling tower, is approved subject to compliance with the terms and conditions imposed by the Site Evaluation Committee as attachments to the report and decision issued this date.

The proposed facility is to be located on a 24 acre parcel located in the industrial zone of the Town of Newington. The site is on the east side of Newington approximately 1000 feet from the Piscataqua River. In addition to the site proper, the proposed facility includes a pipeline and intake structure in the Piscataqua River, and also includes an electric transmission line from the

site proper to the substation at the PSNH Newington Power Station and a gas pipe line from the PNGTS and Maritime & Northeast (Joint Facilities) main transmission pipeline to the site.

FURTHER ORDERED, that the proposed Energy Facility is of sufficient character and environmental impact to require a Certificate of Site and Facility; and it is hereby

FURTHER ORDERED, that the requisite good cause exists to permit issuance of this Certificate of Energy Facility to permit construction of the proposed facility and associated facilities; and it is hereby

FURTHER ORDERED, that all licenses and/or permits issued by the New Hampshire Department of Environmental Services, Air Resources Division, Water Division, and Waste Management Division, the Office of State Planning[1], and the Public Utilities Commission under RSA Chapter 371, are granted, with the conditions attached thereto and pursuant to RSA 162-H:16 VII and VIII. All permit conditions imposed by the state agencies and conditions imposed by the Site Evaluation Committee shall be complied with, and all state standards and requirements shall be met by the Newington Energy, L.L.C., as a condition of granting this Certificate of Site and Facility; and it is

FURTHER ORDERED, pursuant to RSA 162-H:4 III (a), the Committee delegates authority to the New Hampshire Department of Environmental Services Air Resources Division to specify the use of any appropriate technique, methodology, practice or procedure associated with the air emissions of the facility including authority to approve minor modifications to the facility's emission sources and control equipment, so long as such modifications do not substantially modify the design of the facility, as determined by the Air Resources Division.

FURTHER ORDERED, pursuant to RSA 162-H:4 III (a), the Committee delegates to the New Hampshire Department of Environmental Services authority to specify minor modifications in the natural gas pipeline interconnection alignment to the extent that such modifications are necessary as a result of information that was unavailable due to conditions which could not have been reasonably anticipated prior to the issuance of the certificate, including, but not limited to, information regarding various environmental resources, alignment requests from property owners, alignment modifications necessitated by compliance with either State or Federal law, and alignment modifications requested by the Town of Newington

FURTHER ORDERED, pursuant to RSA 162-H:4 III, III (a), the Public Utilities Commission is authorized to monitor the construction safety aspects of the natural gas pipeline, and the Department of Environmental Services is authorized to monitor and enforce environmental standards as well as the authority to specify minor changes in the route alignment to the extent that such changes are authorized by the certificate for those portions of the electric transmission line or natural gas pipeline for which information was unavailable due to conditions which could not have been reasonably anticipated prior to the issuance of the certificate.

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1 Office of State Planning removes its earlier Coastal Zone Management Act objection and now concurs with the Applicant's certification that the proposal for the construction and operation of the Newington Energy Facility complies with New Hampshire's federally-approved coastal management program. Further, that if operated according to the terms of the New Hampshire Site Evaluation Committee Order, the facility will be conducted in a manner consistent with the program.

FURTHER ORDERED, Pursuant to RSA 162-H:4 III) (a), the Committee delegates to the New Hampshire Department of Environmental Services authority to specify minor modifications in the water intake and discharge structures alignment to the extent that such modifications are necessary as a result of information that was unavailable due to conditions which could not have been reasonably anticipated prior to the issuance of the certificate, including, but not limited to, information regarding various environmental resources, alignment requests from property owners, alignment modifications necessitated by compliance with either State or Federal law, and alignment modifications requested by the Town of Newington.

FURTHER ORDERED, The Site Evaluation Committee hereby adopts and incorporates the conditions which are attached as part of the Certificate of Site and Facility. Said conditions shall remain in full force and effect unless otherwise further ordered by the Committee.

By Order of the Energy Facilities Site Evaluation Committee of New Hampshire this 25th day of May, 1999, at Concord, New Hampshire.

Robert W. Varney, Chairman
Commissioner, Dept. of
Environmental Services

Douglas L. Patch, Chairman (cd)
Public Utilities Commission

Harry Stewart, Director
Water Division, Dept of
Environmental Services

Wayne Vetter, Director
Fish and Game Dept.

Jeffrey H. Taylor, Director
Office of State Planning

Kenneth A. Colburn, Director
Air Resources Division, Dept.
of Environmental Services

Deborah Schachter, Director
Governor's Office of Energy &
Community Services

Philip Bryce, Director
Division of Forest & Lands, Dept. of
Resources & Economic Development

Leon S. Kenison, Commissioner
Dept. of Transportation

Brook Dupee, Office of Community & Public Health, Dept of Public Health & Human Services

Richard McLeod Dir.
Division of Parks,
Dept. of Resources & Economic Development

George Bald, Commissioner
Dept. of Resources & Economic Development

Susan S. Geiger, Commissioner
Public Utilities Commission

Nancy Brockway, Commissioner (ed)
Public Utilities Commission

Michael D. Cannata Jr.,
Chief Engineer
Public Utilities Commission

ATTACHMENT A

GENERAL CONDITIONS:

1. All conditions placed on Applicant as conditions for Site and Facility Certification shall become conditions of sale and apply to any subsequent owners of the power facility.

2. The facility shall at all times be operated in a safe manner and consistent with prudent electric generating and transmission practices.

3. Applicant shall commence construction within 18 months of receipt of all approvals, permits and clearances, including, but not limited to, any such approvals, permits and clearances as may be necessary for interconnection with the transmission grid, and shall diligently prosecute construction within the terms provided by such approvals, permits and clearances, within 48 months.

4. Applicant shall certify through the Town, NHDES or an independent consultant that the Town's sewer system will have adequate capacity to manage all of the waste water flows of the Applicant facility and that any system modifications proposed by Applicant will accommodate the Town for reasonably projected future usage.

5. Newington Energy and the Town of Newington have reached an agreement which sets forth their expectations with respect to Newington Energy's obligation to work with Newington to achieve construction of an industrial service road.

6. Any change in ownership of the Applicant, Newington Energy, LLC , without the approval of this Committee, shall render the Certificate subject to revocation. The Certificate itself shall not be transferred or assigned to any other person or entity without the approval of the Committee. RSA 162-H:5 I.

7. To assure that there are no historic or cultural resources on the site the Applicant shall cause a Phase I archeological investigation be performed on a three acre undisturbed forested section of the site prior to any groundbreaking. In the event that any archeological artifact, questionable artifact or unidentified burial is uncovered or discovered during construction the Applicant shall immediately report same to the appropriate state or federal agency.

ATTACHMENT B

SAFETY CONDITIONS:

1. Applicant shall comply with the following codes and Federal regulations:

a. Compliance with the National Fire Protection Association (NFPA) Standard No. 850 (1996 Edition) entitled "Recommended practice for fire Protection for Electric Generating Plants and High voltage Direct Current Converter Stations";

b.	U.S. Dept. of Labor Health & Safety Administration (OSHA) Emergency Action Plan Regulations	29 CFR 1910.38(a)
c.	OSHA Process Safety Standard	29 CFR 1910.119
d.	OSHA Hazardous Waste Management (HAZWOPER) Regulations	29 CFR 1910.120
e.	Environmental Protection Agency (EPA) Oil Pollution Prevention Regulations (SPCC and Facility Response Plan Requirements)	40 CFR Part 112.7(d); 112.0; 112.21
f.	USCG Facility Response Plan Regulations	33 CFR Part 154, Subpart F
g.	EPA Risk Management Programs	40 CFR Part 68
h.	EPA Resource Conservation and Recovery Act Contingency Planning Requirement	40 CFR Part 264, Subpart D; 40 CFR Part 264, Subpart D; and 40 CFR Part 279.52

2. Applicant's compliance with the regulations identified in Paragraphs 1, 3 and 4 must be developed in consultation with and acceptable to the public safety officials of the Town of Newington, the State Fire Marshall and the Dept. of Safety and Dept. of Environmental Services, as required by each Code or Regulation; provided that no condition shall be construed to confer or expand jurisdiction not provided by applicable law; and provided further that the Applicant shall nevertheless comply with NFPA 850.

3. Applicant shall comply with the State of New Hampshire Fire Code with recognition of the authority granted to State and local officials through the following State statutes:

RSA 21-P	RSA 154 et seq.
RSA 153 et seq.	RSA 158 et seq.
SAF-C6000 et seq.	

4. Applicant shall comply with the codes adopted by reference to the State Fire Code:

a. National Fire Protection Association (NFPA) 1, Fire Prevention Code (1992 ed.) (replaces the BOCA Fire prevention Code [1990 ed.], SAF-C6008.1)

b. NFPA 10, Portable Fire Extinguishes (1994 ed.) SAF-C6016.01

c. NFPA 13, Installation of Sprinkler Systems (1994 ed.) SAF-C6017.1

d. NFPA 25, Maintenance of Water-based Fire protection Systems (1995 ed.) SAF-C6017.04

e. NFPA 30, Flammable and Combustible Liquids (1993 ed.) SAF-C6009.1

f. NFPA 70, National Electrical Code (1996 ed.) SAF-C6010.02

g. NFPA 72, National Alarm Code (1993 ed.) SAF-C6018.02

h. NFPA 101, Life Safety Code (1994 ed.) SAF-C6008.03

i. BOCA National Building Code (1996 ed.) Sections relative to fire protection and structural integrity, SAF-C6008.04

5. Agreement by the Town as to its responsibilities for each plan submitted;

6. Pursuant to Paragraphs 1 through 5, the Applicant shall consult with the Town regarding the implementation of various Safety Codes and Regulations. Any disagreements over requirements not specified in the Codes and Regulations or the application thereof, will be resolved by the State Fire Marshall. The town identifies the following conditions as necessary for public safety and will consult with Applicant regarding the scope, application and associated budget. Any disagreements regarding the implementation of the condition will be resolved by State Fire Marshall:

    a. Applicant shall provide blast walls on at least two sides of each transformer, specifically the sides adjacent to other transformers and

facing SEA-3. These blast walls should be made of concrete block with steel reinforcement or other substantial material;

b. Applicant shall provide transformer pits with a surface membrane and oil/water separator or sump pump for each transformer, or, at a minimum, a common drain pit;

c. Applicant shall provide a separator dike for each oil distillate tank with impervious membrane liners, a collection sump and oil/water separators;

d. Applicant shall provide information so the Town has complete and accurate knowledge of all the chemicals stored on site, their location, and the safety systems in place to respond to chemical leaks, explosions, or other hazards;

e. Applicant shall provide training by the Applicant or a qualified designee for the Seacoast Technical Assistance Response Team for responding to emergency situations at the Applicant facility;

f. Applicant shall provide for the development by a qualified expert of a notification and emergency evaluation plan for the industrial and commercial community adjacent to the Applicant facility;

g. Applicant shall provide adequate financial support for any additional training of Town personnel; any disagreements over training needed will be resolved by the State Fire Marshall;

h. Applicant shall provide adequate financial support for any specialized safety equipment required by the Town; any disagreements over training needed will be resolved by the State Fire Marshall;

i. Applicant's personnel shall be trained in emergency management on site so they may provide temporary assistance until the appropriate authorities arrive;

j. Applicant shall consult with the Town's Fire Chief regarding the design of the proposed propane truck staging area

k. Applicant shall identify and communicate to the Town, prior to finalizing the facility design and construction materials, the intended service for each pipe used for the transportation of natural gas or hazardous materials, the piping material used, the inspection type required and the testing that applies in accordance with applicable industry standards. This will provide the Town with adequate assurance that the materials used and the tests performed protect the neighboring industries and commercial establishments from any potential malfunction;

l. Applicant shall install remotely operated valves in addition to manual operated valves at the interface to the gas pipeline lateral and the branch to each CT/HRSG Unit. This redundancy provides a greater margin of safety;

m. Applicant shall provide copies of all fire protection audits so that a technical safety expert can review it and inform the Town of its efficiency.

7. Applicant shall provide a canopy over the truck unloading area for the bulk oil storage;

8. Applicant shall provide technical assistance regarding fire protection to the Town of Newington and the State Fire Marshall for plan reviews, code compliance and inspection requirements of the above-stated codes and regulations; any disagreements over technical assistance required will be resolved by the State Fire Marshall; provided that such technical assistance shall continue after the first year of operations only by mutual agreement.

9. Applicant shall provide technical assistance regarding hazardous materials storage use and transportation to the Town of Newington Fire and Police Departments, Department of Safety and Department of Environmental services regarding compliance with the State and Federal requirements identified above; the budget and scope of such assistance will be developed in consultation with Applicant; any disagreements over technical assistance required will be resolved by the State Fire Marshall; the Applicant must develop or provide for the development of a traffic flow pattern to avoid certain populated areas when transporting hazardous materials through the community consistent with Department of Transportation regulations.

10. Applicant shall install a gas leakage detection system which includes the interior of the buildings.

ATTACHMENT C

NOISE CONDITIONS:

I. Construction

1. Applicant shall maintain a telephone hotline service and respond to individual noise complaints from community residents. Applicant shall retain records of such complaints and the manner in which the complaint was resolved. Applicant shall provide records of such complaints and their resolution to the town of Newington or the state of New Hampshire upon request.

2. Applicant shall limit noise producing construction to work hours of 7:00 AM to 6:00 PM, excluding Sundays and holidays. Construction at other hours shall occur only upon written approval of the Board of Selectman of the Town of Newington. The intent of this restriction is to permit work at other hours which does not disturb the quiet time of nearby residents.

3. Applicant shall utilize mufflers on all engine driven equipment.

4. Applicant shall utilize mufflers for all steam blow activity.

5. Applicant shall notify nearby residents, including those located near the receptors identified in table 5-1 (page F-18) of the Noise Assessment in Applicant's application for a certificate of energy facility, at least 24 hours in advance of pile driving and blasting activities.

II. Design & Operation

1. Applicant shall develop a final design which shall clearly demonstrate that:

(A) The facility will produce noise levels no greater than those predicted in table 5-1 of the Noise Assessment in Applicant's application (as shown corrected below) for a certificate of energy facility, at all existing residences, with the exception of Location 1 and in the community across the Piscataqua River in Maine, where the level shall not exceed 48 dBA;

Receptor	Predicted Facility Noise Level (dBA)	Existing Ambient Noise Level (dBA)
1-Beebe Residence	50	47
2-Patterson lane at Railroad Tracks	45	43
3-Summer Camp	50	50
4-Libby Residence	48	45
5-Avery Road	54	50

(B) The facility will produce noise levels no greater than 70 dBC at all existing residences;

(C) The facility shall not produce any prominent pure tones as defined in Appendix A of ANSI S1.13 - 1971 (Revised 1986) that are noticeable in the community.

2. The final design shall include information on the steam vent systems, including the sound power levels from each vent, the vent mufflers, including the attenuation provided by each muffler, and the estimated sound levels for each vent at the community locations identified in the application and the community across the Piscataqua River in Maine.

3. Applicant shall develop the final design required by these conditions in cooperation and consultation with the Planning Board of the town of Newington. Applicant shall provide funding for a mutually agreed upon qualified consultant to assist the Planning Board with its review of the final design required by these conditions

4. During the building design phase, after consultation with the Planning Board for the town of Newington, Applicant shall submit its final design, which shall clearly demonstrate compliance with these conditions, to the Site Evaluation Committee, as an informational filing.

5. After initial plant operation, in consultation w`with the Planning Board of the town of Newington, Applicant shall provide funding for a mutually agreed independent noise consultant to measure facility noise at the locations identified in its application and the community across the Piscataqua River in Maine. Such measurements shall be taken within three months of commencement of operations. The facility noise shall produce an average predicted response rating of "sporadic complaints" or less by use of the Modified CNR method at each location identified in the application. The background noise level data presented in the application will be used in any analysis required by these conditions, including, but not limited to, the calculation of the modified CNR and the calculation of the total sound level increase required by Condition 6. Measurements of noise levels across the Piscataqua River in Maine shall be

conducted only to confirm that the facility noise level does not exceed 48 dBA at this community.

6. Applicant's plant design shall incorporate a 3db increase above ambient sound levels at residential locations, obligating Applicant to take all reasonable steps to achieve the goal of a 5 db total sound level increase during operation of the plant.

7. The facility shall produce noise levels no greater than 70 dBC at all existing residences;

8. The facility shall not produce any prominent pure tones as defined in Appendix A of ANSI S1.13 - 1971 (Revised 1986) that are noticeable in the community.

ATTACHMENT D

TRANSMISSION CONDITIONS:

1. The Facility's generators, transformers and the 345 KV transmission line connecting the Facility with the PSNH Newington Station Substation shall be constructed and operated in accordance with the standards of PUC 306 and in accordance with the National Electric Safety Code and the National Electric Code as contained therein.

2. The transmission line connecting the Facility with the PSNH Newington Station Substation shall not be connected to the substation until the Applicant has either: (1) received and filed with the Committee all documentation and approvals required by NEPOOL Agreement Section 18.4, including as necessary, a completed System Impact Study, an Interconnection Agreement approve by ISO-New England, and a Facilities Study if such study is deemed necessary by the System Impact Study; or, (2) if as a result of regulatory changes or changes in the structure of ISO - New England the requirements of NEPOOL Section 18.4 are changed or eliminated, the Applicant shall submit such other documentation as may be required by NEPOOL, ISO - New England or their successors showing that the Facility is approved by NEPOOL, ISO - New England or their successors to connect to the regional electric transmission grid through the PSNH Newington Station Substation.

3. The Applicant's 345 kV transmission line interconnecting the Applicant Facility to the PSNH 345 kV substation at PSNH's Newington Generating Station will be constructed along a route generally in or paralleling the Town of Newington's proposed industrial road corridor, as described in Option 1 of Applicant's response to the Town's Data Request III.1. (November 16, 1998), and as shown in plans submitted to EFSEC on February 8, 1999 and on Applicant's Exhibit No. 5-B.

4. It is recognized that Applicant's construction of the transmission line along the Option 1 route is dependent upon the Applicant's ability to acquire rights and/or right-of-way from all affected landowners and land interest holders along the route suitable for construction and future operation and maintenance of the line. Applicant shall proceed diligently to use its best efforts (it being understood that "best efforts" shall not be construed as requiring Applicant to institute legal proceedings) to acquire such rights, either singly or in conjunction with the Town of Newington's efforts, if any, to establish the industrial road corridor location, within 3 months after the issuance of Applicant's certificate of site and facility.

5. If, despite Applicant's due diligence and best efforts, Applicant is unable to acquire such rights for Option 1 on commercially reasonable terms within said time frame, the Applicant may file with EFSEC a request to proceed with Option 2 (as defined below), indicating in such filing all relevant considerations

evidencing its inability to acquire such rights. Any request to the committee under the terms of this condition shall contain, at a minimum, the following information:

(a) A written record of all negotiations with landowners along the route designated as Option 1. This record must be sufficient to establish that the Applicant has used due diligence and its best efforts, short of instituting legal proceedings, to obtain the required right of way.

(b) Copies of all offers, counteroffers and other correspondence concerning the efforts of the Applicant to secure the required right of way.

(c) A detailed explanation of how the Applicant determined and decided that the right of way could not be secured on commercially reasonable terms including the definition of "commercially reasonable" used by the Applicant.

The Applicant shall not proceed with the development of Option 2 unless it has received written authorization to do so from the Committee. The Committee shall retain jurisdiction over the Applicant's request to proceed with Option 2.

6. If authorized to proceed pursuant to Section 5 above, Applicant may construct its transmission line along the route as described in Option 2 of Applicant's response to the Town's Data Request III.1. (November 16, 1998), provided the following conditions are complied with:

(a) Applicant shall have the obligation to secure all necessary easement rights for its line and PSNH's 115 kV line from all affected landowners between the point where Applicant's line leaves the proposed industrial road and the B&M Railroad, such rights to be reasonably satisfactory to PSNH; provided that if PSNH has rights that are sufficient for Applicant's line, it shall make them available to the Applicant on commercially reasonable terms to the extent it may legally do so.

(b) Applicant shall have the obligation to secure and shall be responsible for the cost of securing a suitable license agreement with the B&M Railroad for the Applicant's line and PSNH's 115 kV line jointly located in the Railroad bed, with an appropriate allocation of costs between Applicant and PSNH for the purpose of maintaining such license agreement, to the extent said allocation does not exceed the amount that PSNH already pays for such license.

(c) Applicant's line from the B&M Railroad crossing PSNH's Newington Generating Station property to PSNH's 345 kV substation shall be routed

as the Applicant and PSNH shall agree, with the intent of routing the line in a location along either the easterly or westerly sides of the property which while not interfering with any existing or any future planned Station facilities, or impeding future development of the Station, will be done in accordance with good engineering practices commonly utilized for substation expansions and connections, with due consideration being given to the circumstances existing at the site and the need to maintain the integrity of the PSNH transmission system.

(d) Applicant and PSNH shall have entered into an agreement establishing mutually satisfactory terms and conditions regarding the operation and maintenance of PSNH's 115 kV line which is double-circuited with Applicant's line.

(e) Applicant shall pay all costs associated with the construction of Option 2 except to the extent said costs are limited herein.

(f) The parties to this proceeding agree to deal in good faith with each other with respect to those matters subject to, or associated with, the Certificate of Site and Facility, provided that this provision shall not be construed to otherwise limit the exercise of any legal rights by any of the parties.

(g) Applicant agrees to construct Option 2 in a manner designed to minimize impacts to the natural environment and aesthetics to the maximum extent reasonably practicable and in compliance with all State and Federal laws and regulations, including, but not limited to, the Shoreland Protection Act, to the extent applicable.

7. Pursuant to RSA 162-H:4 (III-a), the Committee delegates to the New Hampshire Department of Environmental Services authority to specify minor modifications in the electric transmission line route alignment to the extent that such modifications are necessary as a result of information that was unavailable due to conditions which could not have been reasonably anticipated prior to the issuance of the certificate, including, but not limited to, information regarding various environmental resources, alignment requests from property owners, alignment modifications necessitated by compliance with either State or Federal law, and alignment modifications requested by the Town of Newington.

8. Any electric transmission line developed along the route identified as Option 1 shall be designed and built with the capacity to hold an additional transmission line if another Facility will, at the time of final design, pay an appropriate allocation of costs.

ATTACHMENT E

NATURAL GAS CONDITIONS:

1. The natural gas pipe connecting the Facility with the PNGTS and Maritimes & Northeast ("Joint Facilities") Newington lateral shall be constructed and maintained in accordance with all applicable federal and state regulations including the federal safety standards for natural gas pipelines in 49 CFR 191 & 192 and the rules applicable to private natural gas lines in the New Hampshire Pipeline Safety Standards (PUC 500) and (PUC 506).

2. The natural gas pipe connecting the Facility with the Joint Facilities Newington Lateral shall not be connected to a tap on said lateral until the Applicant files with the Committee proof that the tap to which the line will be connected has been approved by FERC pursuant to the Natural Gas Act.

3. The connection to the Joint Facilities Newington lateral shall be of such character and materials so the high level of reliability/safety required by the site evaluation committee is not degraded.

4. In the event the pipeline company does not own the service to the facility the owner of the facility shall have the responsibility for the operation and maintenance of the service line for the life of the facility. Responsibilities shall include cathodic protection and leakage surveys.

ATTACHMENT F

OTHER TRANSMISSION AND NATURAL GAS CONDITIONS:

1. Applicant shall file with the PUC the Applicant's electric system and natural gas line safety inspection program for the construction phase of the project prior to commencing construction.

2. Applicant shall file with the PUC the Applicant's construction standards protocol prior to commencing construction, and the electrical and natural gas operations and maintenance plan and emergency plan prior to commencing operations.

UNITED STATES
Environmental Protection Agency
Region I
Air Permits Program

STATE OF NEW HAMPSHIRE
Department of Environmental Services
Air Resources Division

Temporary Permit And Prevention of Significant Deterioration Permit

State Permit No: **FP-T-0036**
EPA PSD Permit No: **044-121NH10**
County: **Rockingham**
Date Issued: **April 26, 1999**

This certifies that:

Newington Energy, L.L.C.

has been granted a Joint **Federal Prevention of Significant Deterioration (PSD) Permit and a State of New Hampshire Temporary Permit** for a 525 MW Combustion Turbine Facility.

The New Hampshire DES has an EPA-approved nonattainment New Source Review (NSR) permit program and herein issues the LAER and offset permit provisions regarding the nonattainment pollutant NOx. In addition, New Hampshire has EPA-approved procedures to ensure new construction or modifications of stationary sources do not violate control strategies or interfere with attainment or maintenance standards. These procedures authorize the DES to regulate non-significant increases for all criteria and regulated pollutants. New Hampshire does not, however, have full authority to issue PSD permits. EPA has partially delegated the PSD program to New Hampshire, allowing the state to do the administrative and technical work on the permit, but has retained the authority for EPA to make the final decision and issue the final permit. Consequently, EPA herein issues the permit provisions requiring BACT for such attainment pollutants as carbon monoxide, sulfur dioxide and particulate matter. Rather than issuing to the source two different permits (PSD and nonattainment NSR), EPA and the New Hampshire DES have arranged the issuance of this joint permit that clearly delineates the EPA and the DES provisions.

The joint PSD/Temporary permit is for a facility which emits air pollutants into the ambient air as set forth in equipment registration forms (ARD 1-6), filed with this Division under the date of July 2, 1998 in accordance with RSA 125-C of the New Hampshire Laws. The PSD provisions of this permit are effective indefinitely or until such time that the facility applies and receives a temporary permit or a PSD permit that modifies the terms and conditions of this permit. The Temporary provisions of this permit are valid until **October 31, 2000**. Request for temporary permit provision renewal prior to the expiration of the Temporary provisions of this permit is subject to Division requirements and must be accompanied by the appropriate permit application forms.

Newington Energy, L.L.C.
525 MW Combustion Turbine Facility
State Permit # FP-T-0036
EPA PSD Permit # 044-121NH10

SEE ATTACHED SHEETS FOR ADDITIONAL PERMIT CONDITIONS

The owner or operator of the devices covered by this permit shall submit a written request for a permit amendment to the Director at least 90 days prior to the implementation of any proposed change to the physical structure or operation of the devices covered by this permit which increases the amount of a specific air pollutant emitted by such devices or which results in the emission of any additional air pollutant. The change shall not take place until a new permit application is submitted and acted upon by the Director pursuant to Env-A 600.

Any unavoidable malfunction, breakdown, or upset of the devices, which results in emissions greater than those stipulated in this permit, must be reported to the Division within 8 working hours of the occurrence.

New Hampshire Department of Environmental Services Signature Page

Kenneth A. Colburn
Director, Air Resources Division

Authority for Sections I
through IV, Inclusive and
Sections VI through XXII, Inclusive

Newington Energy, L.L.C.
525 MW Combustion Turbine Facility
State Permit # FP-T-0036
EPA PSD Permit # 044-121NH10

U.S. Environmental Protection Agency, Region I Signature Page

John P. DeVillars
Administrator, EPA Region I

Authority for Section I through III,
Inclusive, Section IV.B, V,
IX through XV, Inclusive, and
XVII through XXII, Inclusive

This permit is valid provided the facility is operated in accordance with all the legally enforceable conditions specified below:

I. The owner or operator of the facility as specified by this permit shall be subject to the New Hampshire Rules Governing the Control of Air Pollution and Federal rules governing the permitting of major stationary sources of air pollution as codified in 40 CFR 52.21 and 40 CFR Part 124.

II. All equipment, facilities and systems installed and used to achieve compliance with the terms and conditions of this permit shall at all times be maintained in good working order and be operated as efficiently as possible to minimize air pollutant emissions.

III. General Operating Limitations and Conditions:

A. The Newington Energy Facility shall consist of the following major components: GE Frame 7FA Combustion Turbine #1, GE Frame 7FA Combustion Turbine #2, Heat Recovery Steam Generators ("HRSGs"), Selective Catalytic Reduction ("SCR") Systems, Cooling Tower and Fuel Oil Storage Tanks.

B. Combustion Turbines #1 and #2 shall each be limited to 1,751 MM BTU/hour gross heat input while firing Natural Gas or 1,932 MM BTU/hour gross heat input while firing low sulfur distillate fuel oil.

C. Supplemental fuel firing in each HRSG for power augmentation purposes shall be limited to 161.5 MM BTU/hour gross heat input.

D. Supplemental fuel firing in the HRSGs shall be limited to the combustion of natural gas.

E. Power augmentation shall be limited to periods when ambient temperatures exceed 60 F and shall not exceed 1,800 hours during any 12 month period.

F. Combustion Turbine #1 and #2 shall not fire natural gas and fuel oil simultaneously except during periods of transition from one fuel to the other. Such transition periods shall, to the extent practical, be minimized.

G. The sulfur content of natural gas shall be limited at all times to a maximum sulfur content of 2.5 grains/100 SCF. Monitoring of sulfur content and fuel quality of the natural gas shall be conducted in accordance with the provisions of 40 CFR 60.334 (Subpart GG).

H. The sulfur content of low sulfur distillate fuel oil shall be limited at all times to a maximum sulfur content of 0.05 percent by weight. Monitoring of sulfur content in the fuel oil shall be conducted in accordance with the provisions of 40 CFR 60.334 (Subpart GG).

I. The combustion of low sulfur distillate fuel oil in Combustion Turbine #1 and #2 combined shall be limited to 19,850,000 gallons during any 12 consecutive month period.

J. The hours of operation for this facility shall be unlimited.

K. Newington Energy shall establish and maintain a program of best management practices for the minimization of fugitive particulate matter during any period of construction, reconstruction, or

operation which may result in fugitive dust.

L. Newington Energy shall submit upon request by DES a copy of the program required by Condition III.K. above.

M. Newington Energy shall develop and submit to DES for review and approval a catalyst management plan for the SCR systems. Such plan shall be submitted to DES no later than 180 days prior to the start-up of the facility. Minimum elements of the plan shall include:

1. Schedule of planned maintenance;

2. Expected minimum catalyst life;

3. Detailed monitoring plans, i.e. pressure drop, ammonia flow, ammonia to fuel flow ratios, temperatures, etc.

N. Newington Energy shall at all times operate the SCR systems to reduce NOx emissions from Combustion Turbine #1 and #2, except during periods of start-up or shutdown.

O. Newington Energy shall, to the extent practical, minimize emissions from Combustion Turbine #1 and #2 during start-up, shutdown or during initial combustion turbine commissioning.

P. Combustion Turbine start-up shall be defined as the period of time from initiation of turbine firing until steady state load operation is achieved. Each start-up shall be achieved as soon as practical and in no case shall exceed 180 minutes.

Q. Newington Energy shall maintain records of each Combustion Turbine start-up and shall include a written explanation of each start-up that exceeds 180 minutes in duration.

R. Combustion Turbine shutdown shall be defined as the period from steady state operation to cessation of fuel combustion in the Turbine. Each shutdown period shall be achieved as soon as practical and in no case shall exceed 60 minutes.

S. Newington Energy shall maintain records of each Combustion Turbine shutdown and shall include a written explanation of each shutdown that exceeds 60 minutes in duration.

T. Newington Energy shall submit an application for an initial Title V Operating Permit within 12 months of the commencement of operation in accordance with Part Env-A 609.05(e)(3).

U. Newington Energy shall provide written notification to DES of the commencement of construction of this facility within 15 days after such date.

V. Newington Energy shall provide written notification to DES of the anticipated date of initial start-up of this facility no later than 30 days prior to such date.

W. Newington Energy shall provide written notification to DES of the actual start-up date of the facility no later than 15 days after such date.

X. The Cooling Tower shall be equipped with High Efficiency Drift Eliminators to minimize water

drift losses and plume visibility.

Y. Cooling Tower drift shall be limited to 0.0005 % of the circulating water flow rate.

Z. During any period of transition between gas and fuel oil the emission limits for fuel oil firing shall apply.

AA. Within one year of startup of this facility, Newington Energy shall propose and DES shall establish emission limits for CO, NOx and opacity during periods of startup and shutdown.

BB. Within one year of startup of this facility, Newington Energy shall propose and DES shall establish a maximum fuel change over period. The change over time period shall be based on specific criteria including but not limited to turbine ramp rate, combustor temperature and unit stability.

CC. This permit maybe reissued in accordance with the provision of Env-A 607.09 *Permit Reissuance.*

DD. Ammonia injection into the catalyst bed shall be initiated only when the bed temperature meets the minimum manufacture's recommendation. This minimum temperature shall be established in accordance with Condition III.M.

IV. State Implementation Plan (SIP) Limitations

A. Non-Attainment Emission Limitations: Emissions of Non-Attainment regulated air pollutants from each Combustion Turbine and shall be limited in accordance with Table 1. below:

Table 1. Non-Attainment Emission Performance Standards

Pollutant	Emission Limitation	Control Technology BACT/LAER	Averaging Time
Nitrogen Oxides (Gas Firing)	2.5 ppmdv @ 15 % O2	Low NOx Burner with SCR LAER	3 hour block average
Nitrogen Oxides (Oil Firing)	9.0 ppmdv @ 15 % O2	Low NOx Burner with Water Injection and SCR LAER	1 hour block average

B. Minor Source Limitations: Emissions of minor source regulated air pollutants from each Combustion Turbine and shall be limited in accordance with Table 2. below:

Table 2. SIP Performance Standards

Pollutant	Emission Limitation	Control Technology BACT/LAER	Averaging Time
Volatile Organic Compounds (Natural Gas)	0.002 lb/MM BTU	Good Combustion Practices N/A	1 hour block average
Volatile Organic Compounds (Fuel Oil)	0.0038 lb/MM BTU	Good Combustion Practices N/A	1 hour block average

Pollutant	Emission Limitation	Control Technology BACT/LAER	Averaging Time
Opacity	20 %	Good Combustion Practices N/A	6 minute block average
Ammonia (See Condition VI.D. Below)	10 ppmdv @ 15 % O2	N/A	24 hour block average

V. Prevention of Significant Deterioration (PSD) Emission Limitations:

A. Emissions of PSD regulated air pollutants from each Combustion Turbine and shall be limited in accordance with Table 3. below:

Table 3. PSD Emission Performance Standards

Pollutant	Emission Limitation	Control Technology BACT/LAER	Averaging Time
Sulfur Dioxide (Gas Firing)	0.0036 lb/MM BTU	Low Sulfur Fuels BACT	3 hour rolling
Sulfur Dioxide (Oil Firing)	0.0505 lb/MM BTU	Low Sulfur Fuels BACT	3 hour rolling
Carbon Monoxide (Gas Firing) @ All Loads	15 ppmdv @ 15 % O2	Low NOx Burner with Good Combustion Practices BACT	1 hour block average
Carbon Monoxide (Oil Firing) @ 75 to 100 % Load	20 ppmdv @ 15 % O2	Low NOx Burner with Good Combustion Practices BACT	1 hour block average
Carbon Monoxide (Oil Firing) @ 50 to 74 % Load	30 ppmdv @ 15 % O2	Low NOx Burner with Good Combustion Practices BACT	1 hour block average
TSP/PM-10 (Gas Firing)	0.015 lb/MM BTU	Low Sulfur Fuels BACT	1 hour block average
TSP/PM-10 (Oil Firing)	0.040 lb/MM BTU	Low Sulfur Fuels BACT	1 hour block average
Opacity	20 %	Good Combustion Practices N/A	6 minute block average
Sulfuric Acid Mist (H2SO4)	22.35 lb/hr	Low Sulfur Fuels BACT	1 hour block average
Nitrogen Oxides (Gas Firing)	2.5 ppmdv @ 15 % O2	Low NOx Burner with SCR BACT	3 hour block average
Nitrogen Oxides (Oil Firing)	9.0 ppmdv @ 15 % O2	Low NOx Burner with Water Injection and SCR BACT	1 hour block average

VI. Maximum Hourly and 12 Month Rolling Emission Limitations:

A. Maximum hourly emissions of regulated pollutants from each Combustion Turbine shall be limited

as specified in Table 4. below:

Table 4. Maximum Hourly Emission Rates

Pollutant	Maximum Rate lb/hr on Natural Gas	Maximum Rate lb/hr on Fuel Oil
Nitrogen Oxides	17.28 [1]	74.25
Sulfur Dioxide	6.3	97.6
Carbon Monoxide	53.0	75.0
Particulate Matter (TSP/PM-10)	11.0	20.0
Volatile Organic Compounds	3.75	7.5
Ammonia [2]	28.0	30.5

1 - 3 Hour Average
2 - Subject to Revision in Accordance with Condition D. Below

C. Maximum 12 month rolling emissions of regulated pollutants from Combustion Turbine #1 and Combustion Turbine #2 combined shall be limited as specified in Table 5. below:

Table 5. Maximum 12 Month Rolling Emissions

Pollutant	Maximum Rate TPY on Natural Gas	Maximum Rate TPY on Fuel Oil	Maximum Rate TPY Combined Fuels
Nitrogen Oxides	135.5	69.4	204.9
Sulfur Dioxide	55.2	70.2	125.4
Carbon Monoxide	414.7	70.1	484.8
Particulate Matter (TSP/PM-10)	86.1	18.7	104.8
Volatile Organic Compounds	29.3	7.0	36.3
Ammonia [1]	219.1	28.5	247.6

1- Subject to Revision in Accordance with Condition D. Below

D. The ammonia limitations shall be reviewed by DES after one year of commercial operation. After completion of this review, DES may establish a new lower ammonia slip limitation for the facility.

VII. Emission Offset Requirements:

A. Newington Energy shall prior to commencing operation demonstrate that NOx offsets have been obtained in a ratio of 1.2 to 1.0. Such emission offsets shall be real, surplus, quantifiable, permanent

and federally enforceable and shall be certified by DES in accordance with all applicable state and federal regulations.

B. NOx Budget Allowances obtained in accordance with Condition VIII. of this permit may be used as Emission Offsets at a 1.0 to 1.0 ratio (i.e. one ton of NOX allowances shall equal one ton of NOx emission offset) however the overall emission offset ratio must remain at 1.2 to 1.0 in accordance with A. above.

VIII. NOx Budget Allowances:

A. Newington Energy shall comply with applicable requirements of Chapter Env-A 3200 *NOx Budget Trading Program.*

B. Newington Energy shall obtain sufficient NOx Budget Allowances to cover all ozone season (May 1 through September 30 of each calendar year) NOx emissions.

C. Newington Energy may utilize NOx Budget allowances to satisfy the Emission Offset Requirements of Condition VII. above.

IX. New Source Performance Standards (NSPS):

A. Newington Energy shall comply with all applicable requirements of 40 CFR Part 60 Subpart A *General Provisions.*

B. Combustion Turbine #1 and #2 shall comply with all applicable requirements of 40 CFR Part 60 Subpart GG *Standards of Performance for Stationary Gas Turbines.*

C. The Fuel Oil Storage Tanks shall comply with all applicable requirements of 40 CFR Part 60 Subpart Kb *Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984.*

X. Federal Acid Rain Requirements:

A. In accordance with 40 CFR Part 72 , *Federal Acid Rain Requirements*, Newington Energy shall be designated as a Phase II New Affected Unit, effective January 1, 2000, or within 90 days after commencement of commercial operation, whichever is later.

B. Newington Energy submitted its Phase II Acid Rain Application as part of Application for Certificate to the New Hampshire Energy Facility Site Evaluation Committee filed on July 2, 1998.

C. Newington Energy shall acquire SO2 allowances in the amount of one allowance for each ton of SO2 emitted in accordance with 40 CFR Part 72.

D. Newington Energy shall install, maintain and operate continuous emission monitoring systems that meet the applicable requirements of 40 CFR Part 75.

E. Newington Energy shall comply with all applicable requirements of 40 CFR Part 72, 73, 75, 77 and 78.

XI. Federal Accidental Release Requirements:

A. Newington Energy shall comply with all applicable requirements of 40 CFR Part 68.

B. In accordance with 40 CFR 68.10 Newington Energy shall submit a Risk Management Plan no later than the latest of the following dates:

1. June 21, 1999;

2. Three years after the date on which a regulated substance is first listed under 40 CFR 68.130; or

3. The date on which a regulated substance is first present above a threshold quantity in a process.

XII. Continuous Emission and Periodic Monitoring Requirements:

A. Newington Energy shall install and maintain continuous monitoring equipment for the following pollutants or operational parameters:

Pollutant/Operational Parameter	Averaging Time
Fuel Flow	Continuous
Exhaust Flow	Continuous
Ambient Temperature	Continuous
Opacity	6 minute block
NOX	3 hour block
SO2 *	1 hour block
CO	1 hour block
O2	1 hour block
NH3	24 hour block

* If required by 40 CFR Part 75

B. For each required emission or operational monitor Newington Energy shall submit to DES for review and approval a plan detailing monitor specifications, monitor location, operation and calibration procedures and quality assurance procedures no later than 180 days prior to the anticipated start-up of the facility. Such plan shall include at a minimum the following:

1. A complete description of the emission monitoring system including, but not limited to :

a. The CEM system vendor, including the company name, address and phone number;

b. The manufacturer, model number, measurement method employed, and range of each of the major components or analyzers being used;

c. A description of the sample gas conditioning system;

d. A description and diagram showing the location of the monitoring system, including sampling probes, sample lines, conditioning system, analyzers and data acquisition system;

e. A description of the data acquisition system including sampling frequency, and data averaging methods;

2. The mathematical equation used by the data acquisition system, including the value and derivation of any constants, to calculate the emissions in terms of the applicable emission standards;

3. A description of the instrument calibration methods, including the frequency of calibration checks and manual calibrations, and path of the sample gas through the system;

4. The means used by the data acquisition system of determining and reporting periods of excess emissions, monitor downtime and out-of-control periods;

5. A description of the means used to provide for short-term and long-term data storage; and

6. A description of all quality assurance/control procedures to be followed on the CEM system.

C. Newington Energy shall not commence the installation of any emission or operational monitoring system until DES has issued a written approval of the plan submitted in accordance with Condition B. above. Newington Energy shall not commence operation of this facility until all approved monitoring systems have been installed.

D. Newington Energy shall ensure that all CEMs and recording equipment comply with the monitoring specifications in 40 CFR Part 60.13 and 40 CFR Part 60 Appendices B. And F., all applicable portions of 40 CFR Parts 72 and 75, 40 CFR Part 52.1020(c)(24) and Part Env-A 805 *Continuous Emission Monitoring.*

E. Newington Energy shall comply with all applicable monitoring requirements of 40 CFR Part 60 Subpart GG *Standards of Performance for Stationary Gas Turbines.*

F. DES shall establish catalyst management monitoring requirements based upon review of the catalyst management plans submitted in accordance with Condition III.M.

XIII. Stack Criteria:

A. The emission exhaust stacks for the following devices at the Newington Energy facility shall meet the following criteria:

Emissions Device	Minimum Stack Height (Feet)	Maximum Stack Diameter (Feet)
Combustion Turbine #1	150	16.75
Combustion Turbine #2	150	16.75
12 Cooling Tower Exhaust Fans	58.5	28

B. Each of the aforementioned exhaust stacks shall have an unobstructed, vertical discharge to the ambient air.

XIV. Performance Testing:

A. Newington Energy shall conduct an initial performance test as specified in this section within 60 days of achieving maximum operation of this facility but no later than 180 days after initial start-up of this facility.

B. Testing shall be conducted and the results reported in accordance with 40 CFR 60, Sections 60.8 (a), (b), (d), (e), and (f), Appendix A, the Division's Policy "Procedures and Minimum Requirements for Stack Tests". The following test methods or Division approved alternatives shall be used:

1. Compliance testing for stack flow, moisture, oxygen and carbon dioxide shall be conducted using EPA Methods 1 through 4;

2. Compliance testing for NOx shall be conducted using EPA Method 20;

3. Compliance testing for CO shall be conducted using EPA Method 10;

4. Compliance testing for VOCs shall be conducted using EPA Method 18 for methane and Method 25A for total gaseous organic concentration.

5. Visual emissions testing for opacity shall be conducted using EPA Method 9;

6. Compliance testing for TSP/PM-10 shall be conducted using EPA Method 201; and

7. Compliance testing for Ammonia shall be conducted using a DES approved method.

8. Compliance testing for Cooling Tower drift shall be conducted using a DES approved method.

C. Compliance testing shall be planned and carried out in accordance with the following schedule:

1. At least 30 days prior to the commencement of testing, Newington Energy shall submit to the Division a pretest report presenting the following information:
   a. Calibration methods and sample data sheets;
   b. Description of the test methods to be used;
   c. Pre-test preparation procedures;
   d. Sample collection and analysis methods;
   e. Process data to be collected; and

f. Complete test program description.

2. At least 15 days prior to the test date, Newington Energy and any contractor that Newington Energy retains for performance of the test, shall participate in a pretest conference with a Division representative.

3. Emission testing shall be carried out under the observation of a Division representative.

4. Within 30 days after completion of testing, Newington Energy shall submit a test report to the Division.

D. Any compliance stack test results determined following 40 CFR 60 paragraph 60.8, which show violations of any permit requirement shall be considered violations of this permit.

XV. Recordkeeping and Reporting Requirements:

A. Newington Energy shall maintain records of each fuel oil shipment received by the facility. The shipping receipt for each fuel oil delivery to the facility shall certify the type of fuel in the shipment and the weight percent sulfur in the fuel. The shipping receipt shall also include the name of the oil supplier, the sulfur content of the fuel oil and the method used to determine the sulfur content of the oil.

B. Newington Energy shall record, maintain and report all information required by 40 CFR Part 60 Subpart GG *Standards of Performance for Stationary Gas Turbines* and 40 CFR Part 60 Subpart Kb *Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984.*

C. Newington Energy shall maintain records of all items required to be recorded in accordance with Section XII. of this permit.

D. Newington Energy shall maintain records of the following information by device on a 24-hour calendar day basis:

1. Hours of operation, including any startup, shutdown, malfunction or periods of power augmentation;

2. The total daily fuel consumption for each device (in cubic feet for natural gas and in gallons for fuel oil).

3. The total daily consumption of ammonia in gallons used in the SCR Systems.

4. The running totals of D.2. and D.3. above for the previous thirty-day period.

E. Newington Energy shall submit a monthly report containing all information required under Condition D.3. above for the previous calendar month and the previous 11 calendar months. Such monthly reports shall be submitted to DES at the address stated below no later than 30 days following the end of each calendar month.

New Hampshire Department of Environmental Services
Air Resources Division
64 North Main Street
P.O. Box 2033
Concord, NH 03302-2033
ATTN: Compliance Bureau

F. Newington shall submit quarterly excess emission reports in accordance with 40 CFR Part 75 and Part Env-A 805. Such reports shall include all excess emissions and daily averages for all monitored pollutants or operational parameters and shall be submitted to the address specified in Condition E. above. All reported daily averages shall be provided in an electronic spreadsheet-compatible format.

G. Billing tickets from the natural as supplier for each month shall be kept on file in a form suitable for inspection and shall be made available to the Division upon request. Each billing ticket shall indicate the name, address and telephone number of the natural gas supplier and the quantity of natural gas used.

H. Newington Energy shall maintain records documenting time frames and ambient conditions when power augmentation is utilized.

I. Newington Energy shall be subject to the NOx recordkeeping and reporting requirements of Chapter Env-A 900.

J. Copies of all records shall be retained by the owner or operator for a minimum of five years and shall be made available to the Director and EPA upon request. However, these records shall not be discarded, removed or destroyed thereafter without the express written approval of the Director in accordance with Env-A 900.

XVI. Emission-Based Fee Requirements:

A. The facility shall pay an emission-based fee annually as calculated each calendar year pursuant to Env-A 704.03 for all devices emitting a regulated air pollutant

B. The facility shall determine the total actual annual emissions from all devices emitting a regulated air pollutant for each calendar year in accordance with the methods specified in Env-A 620.

C. The facility shall calculate the annual emission-based fee for each calendar year in accordance with the procedures specified in Env-A 704.03 and the following equation:

$$\mathbf{FEE = E * DPT * CPIm * ISF}$$

Where:

FEE =	The annual emission-based fee for each calendar year as specified in Env-A 704.
E =	The emission-based multiplier is based on the calculation of total annual emissions as specified in Env-A 704.02 and the provisions specified in Env-A 704.03(a).
DPT =	The dollar per ton fee the Division has specified in Env-A 704.03(b).
CPIm=	The Consumer Price Index Multiplier as calculated in Env-A 704.03(c).
ISF =	The Inventory Stabilization Factor as specified in Env-A 704.03(d).

D. The facility shall contact the Division each calendar year for the value of the Inventory Stabilization Factor.

E. The facility shall contact the Division each calendar year for the value of the Consumer Price Index Multiplier.

F. The facility shall submit, to the Division, payment of the emission-based fee and a summary of the calculations referenced in Conditions XVI.B. and XVI.C. of this permit for each calendar year by October 15th of the following calendar year in accordance with Env-A 704.04. The emission-based fee and summary of the calculations shall be submitted to the following address:

New Hampshire Department of Environmental Services
Air Resources Division
64 North Main Street
P.O. Box 2033
Concord, NH 03302-2033
ATTN: Emissions Inventory

G. The Division shall notify the facility of any under payments or over payments of the annual emission-based fee in accordance with Env-A 704.05.

XVII. Malfunction:

The Division shall be notified by telephone or FAX within 8 working hours following any failure of air pollution control equipment, process equipment, or of a process to operate in a normal manner, which results in an increase in emissions above any allowable emission limit stated in this permit. In addition, the Division shall be notified in writing within 15 (fifteen) days of any such failure. This notification shall include a description of the malfunctioning equipment or abnormal operation, the date of the initial failure, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed, and the corrective actions taken to restore normal operations. Compliance with this malfunction notification provision shall not excuse, or otherwise constitute a defense to, any violation of this permit or of any laws or regulations, which such a malfunction may cause. All notifications, whether by telephone, FAX or in writing, shall be sent directly to the Air Resources Division, Compliance Bureau at the following:

New Hampshire Department of Environmental Services
Air Resources Division
64 North Main Street
P.O. Box 2033
Concord, NH 03302-2033
ATTN: Compliance Bureau
(603) 271-1370

XVIII. Inspection and Entry:

Pursuant to Env-A 614.01 and Section 114 of the Clean Air Act, EPA and DES personnel shall be granted access to the facility covered by this Permit, in accordance with RSA 125-C:6,VII for the purposes of: inspecting the proposed or permitted site; investigating a complaint; and assuring compliance with any applicable requirement or state requirement found in the NH Rules Governing the Control of Air Pollution and/or conditions of any Permit issued pursuant to Chapter Env-A 600.

XIX. Enforcement:

Newington must comply with all conditions of this permit. Any noncompliance with a permit condition constitutes a violation of RSA 125-C:15 and the Clean Air Act, and, as to the conditions in this permit which are federally enforceable, a violation of the Clean Air Act, 42 U.S.C. section 7401 et seq., and is grounds for enforcement action, for permit termination or revocation, or for denial of an operating permit renewal application by the Division and/or EPA. Noncompliance may also be grounds for assessment of administrative, civil or criminal penalties in accordance with RSA 125-C:15 and Sections 113 and 120 of the Clean Air Act. This Permit does not relieve the Permittee from the obligation to comply with any other provisions of RSA 125-C, the New Hampshire Rules Governing the Control of Air Pollution, or the Clean Air Act, or to obtain any other necessary authorizations from other governmental agencies, or to comply with all other applicable Federal, State, or Local rules and regulations, not addressed in this Permit.

XX. Duty To Provide Information

In accordance to RSA 125-C and Section 114 of the Clean Air Act, Newington Energy shall upon the DES's or EPA's written request, shall furnish, within a reasonable time, any information necessary for determining whether cause exists for modifying, revoking and reissuing, or terminating the Permit, or to determine compliance with the Permit. Upon request, the Permittee shall furnish to the DES or EPA copies of records that the Permittee is required to retain by this Permit. The Permittee may make a claim of confidentiality as to any information submitted pursuant to this condition in accordance with Part Env-A 103 at the time such information is submitted to the DES or EPA. The DES shall evaluate such requests in accordance with the provisions of Part Env-A 103.

XXI. Severability Clause

The provisions of this Permit are severable, and if any provision of this Permit, or the application of any provision of this Permit to any circumstances is held invalid, the application of such provision to other circumstances, and the remainder of this Permit, shall not be affected thereby.

XXII. Property Rights

This Permit does not convey any property rights of any sort, or any exclusive privilege.

FINAL DETERMINATION

To Grant a

Prevention of Significant Deterioration Permit

and

Non-Attainment Permit

for

Newington Energy, L.L.C.

To construct a

525 MW Combustion Turbine Facility

in

Newington, NH

Prepared by the

United States Environmental Protection Agency
Region I

and

New Hampshire Department of Environmental Services
Air Resources Division

April 26, 1999

I. Applicant's Name and Address:

Newington Energy, L.L.C.
111 Broadway
16th Floor
New York, NY 10006

The Applicant's Address above has been revised to reflect the change in ownership of the Newington Energy Project. At the time the Preliminary Determination was prepared the owner of Newington Energy, L.L.C. was Southern Company of Atlanta, GA. Ownership of the Newington Energy, L.L.C. project has been acquired by Consolidated Edison Development, Inc. A revised Form ARD-1 and a revised Certificate of Representation for the Title IV Acid Rain Program were submitted on April 1, 1999.

II. Physical Address of the Proposed Facility:

Avery Road
Newington, NH

County: Rockingham
USGS Map Coordinates: Easting 353.2 Northing 4773.7

III. Background:

A new major source of air pollution seeking to locate in an attainment area is subject to review in accordance with the provisions of 40 CFR Section 52.21, *Prevention of Significant Deterioration* ("PSD"). The PSD program in New Hampshire is administered by the New Hampshire Department of Environmental Services, Air Resources Division ("DES"). Under the New Hampshire PSD Operating Plan, DES is responsible for completing the Preliminary Determination and Draft Permit, while EPA Region I ("EPA") issues the PSD permit.

Likewise, a new major source of air pollution seeking to locate in a non-attainment area is subject to review in accordance with the provisions of New Hampshire Rules Governing the Control of Air Pollution Part Env-A 622 *Additional Requirements in Non-Attainment Areas and the New Hampshire Portion of the Northeast Ozone Transport Region.* Unlike the PSD Permit Program, DES is fully delegated by EPA with respect to Non-Attainment Review. Therefore, the Non-Attainment permit is issued by DES.

On July 2, 1998, Newington Energy, L.L.C. ("Newington Energy") submitted an Application for Certificate of Site and Facility to the New Hampshire Energy Facility Site Evaluation Committee ("EFSEC"). Included in the application to EFSEC, Newington Energy identified the need to obtain a PSD and Non-Attainment Permit to construct and operate a 525 MW Combined-Cycle Combustion Turbine facility in Newington, NH.

On January 20, 1999 a Public Notice was published in the Union Leader, Foster Daily Democrat and the Portsmouth Herald Newspapers indicating that DES hade made a Preliminary Determination to grant a PSD/Non-Attainment Permit to Newington Energy. On February 11, 1999 DES held a Public Hearing at the Newington Town Hall to receive public comment on the Preliminary Determination for Newington Energy. Public comments received during the hearing and subsequent comment period have been reviewed by DES and EPA and have been taking into consideration in making this Final Determination.

The issuance of this Final Determination is done jointly and concurrently by DES and EPA. The New Hampshire DES has an EPA-approved nonattainment New Source Review (NSR) permit program and will issue the LAER and offset permit provisions regarding the nonattainment pollutant NOx. In addition, New Hampshire has EPA approved procedures to ensure new construction or modifications of stationary sources do not violate control strategies or interfere with attainment of maintenance standards. These procedures authorize the DES to regulate non-significant increases for all criteria and regulated pollutants. New Hampshire does not, however, have full authority to issue PSD permits. EPA has partially delegated the PSD program to New Hampshire, authorizing the state to do the administrative and technical work on the permit, but has retained the authority for EPA to make the final decision and issue the final PSD permit. Consequently, EPA is issuing the permit provisions requiring BACT for such attainment pollutants as carbon monoxide, sulfur dioxide and particulate matter. Rather than issuing to the source two different permits (PSD and nonattainment NSR), EPA and New Hampshire DES have arranged the issuance of a joint permit that clearly delineates the EPA and DES provisions.

Since EPA is the issuing authority for the PSD provisions of the permit, any petitions to the PSD provisions should be made to EPA in accordance with 40 CFR Part 124. Since DES is the issuing authority for the nonattainment NSR provisions and the non-significant emissions provisions, any petitions related to these provisions should be made to the Air Resource Council in accordance with NH Code of Administrative Rules Env-A 205.10 *Appeals*.

As mentioned, EPA has final authority for the issuance of the PSD provisions of the permit. However, the DES is authorized to administer the PSD program and as the PSD administrator is responsible for the following actions: 1) receiving PSD applications, 2) developing preliminary technical findings including air impact analysis and BACT limit findings, 3) drafting preliminary determinations and PSD permit and 4) providing public notice and opportunity for public comment on draft determinations and permits. As the final PSD authority, EPA provided comments and recommendations during the public comment period and adopted the final PSD determination and permit provisions based upon those comments. The following final determination and permit contain both EPA's recommendations and findings.

IV. Project Description:

Newington Energy is proposing to construct and operate a nominal 525 MW (at 95 F) combined cycle combustion turbine facility in Newington, NH. The Newington Energy facility will consist of two combustion turbines with two heat recovery steam generators ("HRSGs") and a single steam turbine. The Newington Energy facility would be classified as a "combined cycle" plant as it intends to produce electrical power with both a gas turbine and a steam turbine. Each combustion turbine is rated at approximately 160 MW (at 95 F). The exhaust gas from each turbine will pass through separate HRSGs connected to a single steam turbine producing approximately an additional 205 MW. At lower ambient temperatures (0 F) the turbine output ratings would increase to approximately 190 MW each, producing a plant capacity of 585 MW (190 + 190 + 205). During limited summer hours the Newington Energy facility will operate in a power augmentation mode. During the power augmentation mode, steam is injected into the combustion turbine to supplement mass flow. The steam for power augmentation is generated by the combustion of additional fuel in the HRSGs. Auxiliary equipment at the Newington Energy facility will include a wet mechanical draft cooling tower, and a water treatment system. Air pollution control at the facility will include a NO_x reduction system, a CO control system and monitors to continuously record CO, NO_x, opacity and certain operational parameters.

V. General Information:

A. PSD/Non-Attainment Applicability Determination & Attainment Status:

Newington Energy is proposing to construct and operate a nominal 525 MW Combined Cycle Combustion Turbine facility in Newington, NH. The proposed facility will be located in Rockingham County which is classified as an attainment area for Carbon Monoxide ("CO"), Sulfur Dioxide ("SO_2"), Nitrogen Oxides ("NO_x") and Particulate Matter ("PM"), including Particulate less than 10 microns in diameter ("PM-10"), and therefore, a PSD area for these pollutants. Rockingham county is also classified as a non-attainment area for Ozone, and therefore, a non-attainment area for Ozone precursors, namely, NO_x and Volatile Organic Compounds ("VOCs"). In addition, the entire state is part of the Northeast Ozone Transport Region ("OTR") and is required to implement at a minimum ozone nonattainment NSR requirements equivalent to the moderate ozone nonattainment NSR requirements for all parts of the state. The Region has proposed to remove the ozone nonattainment designation based on the last three years of data meeting the one-hour standard National Ambient Air Quality Standard. When EPA finalizes this action, the nonattainment requirements of OTR would still apply.

The Newington Energy facility will have emissions of regulated attainment

pollutants in excess of major source PSD thresholds and therefore is subject to PSD review and will require a PSD Permit. As noted in Section III, PSD permits in New Hampshire are issued by EPA. In addition, the proposed facility will also have emissions of regulated non-attainment pollutants in excess of major source non-attainment thresholds and therefore is subject to non-attainment review and will require a non-attainment Permit. Non-Attainment Permits in New Hampshire are issued by DES.

B. Site Information:

The facility will be located on a parcel of land within 1500 feet of the Piscataqua River in Newington, NH. The town of Newington is located in Rockingham County in the seacoast region of New Hampshire. The site is located in the vicinity of several industrial and manufacturing facilities along the river and is a little more than 1 mile from the Pease International Tradeport. To the west just 2 miles beyond the Tradeport is an arm of the Great Bay while the city of Portsmouth is 3 miles to the southeast. The area is dotted with a number of marshes and bisected by several small streams. The topography surrounding the project site is mostly flat, with lightly rising terrain to the west as well as across the river in Maine to the east. The only significant hills are to this direction and to the north, with elevations only up to 120 feet. The facility is to be located at an elevation of approximately 50 feet above mean sea level.

C. Operation Information:

The Newington Energy facility will provide approximately 525 MW of electricity to the regional electric transmission grid. The Newington Energy facility will operate on a base-loaded basis, i.e. up to 100 % of rated output for up to 24 hours per day, 365 days per year. Depending upon electrical demand in the region, the combustion turbines may operate at 50 to 100% of rated capacity. The only periods of downtime are expected to be periods of maintenance and repair services.

Primary fuel for the facility will be natural gas supplied through a lateral pipeline from the Portland Natural Gas Transmission System Pipeline. Backup fuel for the facility will be distillate fuel oil with a sulfur content of 0.05 % by weight. Newington Energy has proposed limiting fuel oil combustion to 936 hours during any twelve month rolling period, which is equivalent to approximately 39 days per year or approximately 25,800,000 gallons of low sulfur distillate fuel oil. DES originally concluded in the Preliminary Determination that this level of fuel oil combustion was acceptable. However, EPA concluded that fuel oil, as a backup, should be limited to 30 days (720 hours). EPA notes that other facilities in the region had accepted such a limitation on fuel oil as part of the BACT determination. Thirty

days of fuel oil combustion would be equivalent to approximately 19,846,150 gallons of fuel oil. This limitation has been incorporated in the permit, see Condition III.I.

D. Quantification of Emissions:

The Newington Energy project is classified as a new major source. Air emissions form the facility are limited in the permit to the following levels:

Table 1. Emission Limitations for Newington Energy

Pollutant	Maximum Emissions (TPY)	PSD Threshold (TPY)	PSD Significance Threshold (TPY)	Non-Attainment Threshold (TPY)
Nitrogen Oxides (NOx)	205	100	40	50
Carbon Monoxide (CO)	485	100	100	N/A
Volatile Organic Compounds (VOCs)	49	N/A	N/A	50
Total Particulate (PM)	105	100	25	N/A
PM-10	105	100	15	N/A
Sulfur Dioxide (SO_2)	125.4	100	40	N/A
Sulfuric Acid Mist	20.9	N/A	7	N/A
Ammonia	247.6	N/A	N/A	N/A
Total HAPs	3.6	N/A	N/A	N/A
Lead	0.10	100	0.6	N/A

The above emissions were estimated based upon the following assumptions:

1). The plant is operated at a load that would produce the worst case emissions;

2). Annual emissions are based on a maximum of 720 hours per year of distillate firing;

3). The sulfur content of distillate fuel oil is 0.05 % by weight; and

4). The BACT and LAER limitations identified in this Final Determination.

Based on the above emission levels, the Newington Energy facility is subject to PSD and BACT for Sulfur Dioxide, Nitrogen Oxides, Particulate Matter (including PM-10), Carbon Monoxide and Sulfur Acid Mist. The facility is also subject to non-attainment review and LAER for Nitrogen Oxides.

VI. Additional Regulatory Air Pollution Requirements

A. Federal NSPS Standards for Stationary Gas Turbines:

The combustion turbines at the Newington Energy facility will be subject to the New Source Performance Standard ("NSPS"), 40 CFR 60 Subpart GG, *Standards of Performance for Stationary Gas Turbines* ("Subpart GG") which sets performance standards for NO_x and SO_2. In addition, Subpart GG also specifies certain monitoring, recordkeeping and reporting requirements. The turbines at the Newington Energy Facility will have emissions rates that are below the NO_x and SO_2 performance standards and the permit for the facility contains the applicable monitoring, recordkeeping and reporting requirements of the Subpart GG. DES is delegated by EPA to enforce Subpart GG as it pertains to stationary gas turbines.

B. Federal NSPS Standards for Volatile Organic Liquid Storage Vessels:

Fuel oil for the Newington Energy Facility will be stored on-site in fuel oil storage vessels which are subject to the NSPS, 40 CFR 60 Subpart Kb *Standards of Performance for Volatile Organic Liquid Storage Vessels (including Petroleum Liquid Storage Vessels) for which Construction, Reconstruction or Modification Commenced after July 23, 1984* ("Subpart Kb"). Due to the low vapor pressure of distillate fuel oil, the facility is only required to maintain records of the tank dimensions and the maximum capacity of the tanks. DES is delegated by EPA to enforce Subpart Kb as it pertains to volatile organic liquid storage vessels.

C. Federal Acid Rain Program:

In accordance with 40 CFR Part 72 , *Federal Acid Rain Requirements*, Newington Energy shall be designated as a Phase II New Affected Unit, effective January 1, 2000, or within 90 days after commencement of commercial operation, whichever is later. Newington Energy submitted a Phase II Acid Rain Application as part of the application filed with EFSEC on July 2, 1998. A revised Certificate of Representation was submitted on April 1, 1999 to reflect a change in the Designated Representative for Newington Energy.

Newington Energy is required to acquire SO_2 allowances in the amount of one allowance for each ton of SO_2 emitted in accordance with 40 CFR Part 72. In addition, Newington Energy will be required to install continuous emission monitoring systems that meet the applicable requirements of 40 CFR Part 75.

D. Federal Accidental Release Requirements - Clean Air Act Section 112(r):

Newington Energy has identified that the facility will be subject to the provisions of 40 CFR Part 68 or the Federal Accidental Release Program. Newington Energy is planning on storing anhydrous ammonia in quantities above the applicability threshold of 40 CFR 68. As such, Newington Energy must prepare and submit a Risk Management Plan ("RMP") no later than the latest of the following dates:

1. June 21, 1999;

2. Three years after the date on which a regulated substance is first listed under 40 CFR 68.130; or

3. The date on which a regulated substance is first present above a threshold quantity in a process.

Considering the potential impacts of an ammonia release, EPA originally recommended that Newington Energy consider two possible pollution prevention steps: either substitute a lower ammonia concentration or to reexamine ammonia free control technologies. It was EPA's opinion that these recommendations would decrease or eliminate impacts of a catastrophic release. However, DES prefers that Newington Energy not simply avoid the 112(g) RMP requirement by slipping below the 20% applicability threshold. In fact, DES encourages Newington Energy to prepare a RMP plan even if they fell below the regulatory threshold. DES expects that Newington Energy will prepare and submit a timely and complete RMP that will address potential impacts of a catastrophic release. In addition, the requirements of 112(r) are contained as permit condition XI in the permit. DES also points out that decreasing the ammonia concentration will not lower the quantity of ammonia trucked over public roadways. In fact, decreasing the concentration of ammonia used in the SCR systems would increase the number of tanker truck deliveries that would be needed to supply aqueous ammonia

E. Maximum Achievable Control Technology Requirements for New Sources - Clean Air Act Section 112(g):

The Newington Energy facility is not subject to Section 112(g) requirements since electric utility steam generating facilities are exempt in accordance with 40 CFR Part 63.40 (c) unless and until such time as these units are added to the source category list pursuant to section 112(c)(5) of the Act. In addition, potential Hazardous Air Pollutant ("HAP") emissions from the proposed facility are below the applicability thresholds (10 tons of any single HAP or 25 tons of all HAPs combined) of Section 112(g).

F. State Standards:

DES has a number of air pollution regulations that would be applicable to the Newington Energy facility. These applicable regulations are adopted under authority of RSA 125-C, 125-I and 125-J and are codified in the New Hampshire Rules Governing the Control of Air Pollution. The substantive portions of these state requirements include, but are not limited to, the sections listed below:

1. Chapter Env-A 200 - *Procedural Requirements.*

2. Chapter Env-A 600 - *Statewide Permit System.*

3. Part Env-A 622 - *Additional Requirements in Non-Attainment Areas and the New Hampshire Portion of the Northeast Ozone Transport Region.*

4. Chapter Env-A 700 - *Permit Fee System*

5. Chapter Env-A 800 - *Testing and Monitoring Procedures*

6. Chapter Env-A 900 - *Recordkeeping and Reporting Requirements*

7. Chapter Env-A 1400 - *Toxic Air Pollutants Standards*

8. Chapter Env-A 3200 - *Special Temporary Rule on NO_x Budget Trading Program*

VII. PSD Control Technology Review:

This portion of the Final Determination is made by EPA as noted in Section III.

In accordance with PSD regulations, the Newington Energy facility is subject to Best Available Control Technology ("BACT") for emissions of Particulate Matter, Sulfur Dioxide, Carbon Monoxide and Nitrogen Oxide. Both State and Federal regulations and policies define BACT as an emission limitation based on the maximum degree of reduction for each regulated pollutant taking into consideration technical, economic and environmental factors. In no case shall the BACT emission limitation result in emissions of any pollutant in excess of any applicable standard under 40 CFR Part 60 *Standards of Performance for New Stationary Sources of Air Pollution* and 40 CFR Part 61 *National Emission Standards for Hazardous Air Pollutants*.

In its application, Newington Energy conducted their BACT analysis by first identifying technically feasible control options, which included a search of the EPA RACT/BACT/LAER Clearinghouse ("RBLC"). Secondly, Newington Energy took into consideration any environmental and energy impacts of a particular control option. Thirdly, Newington Energy performed an economic analysis where appropriate. Finally, Newington Energy made a proposal of BACT for each pollutant taking into consideration the factors above. Newington Energy also conducted a search of the RBLC in order to propose the LAER limits for NO_x.

In conducting the Preliminary Determination for BACT, the New Hampshire DES went through the same process for proposing BACT. In the Final Determination, EPA has also used this methodology in arriving at the final BACT determination.

A. Availability of SCONOx Technology

In determining BACT for several pollutants, EPA and DES carefully considered whether SCONOx is an available technology for purposes of the BACT determination. While SCONOx is primarily aimed at controlling NO_x emissions, the manufacturer of SCONOx has also cited its ability to reduce carbon monoxide, sulfur dioxide, and particulate matter, among other pollutants. Consequently, the availability of this technology is an important threshold question for the following BACT determinations. EPA is today acting upon a permit for AES Londonderry for a project that raises similar issues concerning the availability of SCONOx with respect to BACT. EPA has incorporated the information supplied by AES Londonderry's application into this analysis.

During the comment period for the AES Londonderry permit, a commentor did request that the DES and EPA evaluate SCONOx technology as a control for CO based on the technology's ability to limit CO emissions while achieving LAER for NO_x. The commentor asserted that SCONOx does not use ammonia and, consequently, will have less secondary environmental impact as compared with other controls. In comments to the Preliminary Determination prepared by DES, EPA also urged that the DES verify the current availability of SCONOX before determining LAER for the non-attainment pollutant and developing BACT terms for EPA's PSD portion of the permit.

EPA's procedures for performing a top-down BACT analysis are set forth in EPA's Draft New Source Review Workshop Manual (Manual), dated October 1990. One critical step in the BACT analysis is to determine if a control option is technically feasible. If a control is determined to be infeasible, it is eliminated from further consideration. The Manual applies several criteria for determining technical feasibility. The first is straightforward. If the control has been installed and operated by the type of source under review, it is demonstrated and technically feasible.

For controls not demonstrated using this straightforward approach, the manual applies a more complex approach that involves two concepts for determining technical feasibility: availability and applicability. A technology is considered available if can be obtained through commercial channels. An available control is applicable if it can be reasonably installed and operated on the source type under consideration. A technology that is available and applicable is technically feasible.

The manual provides some guidance for determining availability. For example, a control is generally considered available if it has reached the licensing and permitting stages of development. However, the manual further provides that a source would not be required to experience extended time delays or resource penalties to allow research to be conducted on new techniques. In addition, the applicant is not expected to experience extended trials learning how to apply a technology on a dissimilar source type. Consequently, technologies in the pilot scale testing stages of development are not considered available for BACT.

In addition, as mentioned before, the manual also requires available technologies to be applicable to the source type under consideration before a control is considered technically feasible. For example, deployment of the control technology on the existing source with similar gas stream characteristics is generally sufficient basis for concluding technical feasibility. However, even in this instance, the manual would allow an applicant to make a demonstration to the contrary. For example, the applicant could show that unresolved technical difficulties with applying a control to the source under consideration

(e.g., size of the unit, location of the proposed site and operating problems related to the specific circumstances of the source) make a control technical infeasible.

EPA believes that SCONOx holds substantial promise for the reduction of pollutants from power plants. However, at this time, after considering the information received from the applicant and from other sources including the manufacturer and licensee of the SCONOx technology, EPA concludes that SCONOx is not yet technically feasible for large combined cycle plants today.

In reaching this conclusion, EPA relies upon technical uncertainties about the application of this control technology to the large combined cycle turbines proposed by the applicant. While SCONOx has been successfully utilized on a 32-megawatt gas turbine at the Federal Cogeneration facility in Vernon, California, the Newington applicant will use a 190-megawatt turbine. Given the very substantial difference in scale (about 6 times) and the resulting need to modify the equipment in order to "scale up" the equipment, EPA is not able to determine that the equipment has been installed and operated on the type of source under review. EPA has consequently considered whether the equipment is both "available" and "applicable" in order to determine whether it is technically feasible. The Londonderry applicant has pointed to a number of unresolved technical issues in applying SCONOx to larger turbines, related to both the scale up of the technology and other differences between the demonstrated SCONOx equipment and the equipment which would be installed on the applicant's plant. While minor technical issues about application of control technology equipment to a different or larger facility should not result in a conclusion of lack of availability or applicability, EPA has concluded that several of the technical issues raised are sufficiently serious as to warrant such a conclusion. As noted in the Manual, an applicant is not expected to experience substantial commercial risk or extended trials to work out how to apply technology on a dissimilar source type.

In the following paragraphs, EPA notes certain significant unresolved technical issues about application of SCONOx to the larger combustion turbines. EPA is optimistic that these issues can and will be worked out, and before long SCONOx should be considered available technology for BACT determinations. However, at this moment, these issues raised by this applicant and the Londonderry applicant are legitimate. While any one concern may not be conclusive, combined they lead EPA to conclude that it cannot deem SCONOx technically feasible yet.

Increased Gas Flow: Based upon the applications and EPA and DES investigation, EPA believes that SCONOx has only been demonstrated on a 32-MW gas turbine. The applicant's proposed GE 7FA gas turbine would have a nominal rating of 190

MW. The exhaust gas flow for the applicant's turbine will be about six times greater than the turbine on which SCONOx has been demonstrated. The Londonderry applicant has argued that this substantially increased gas flow raises significant scale up issues, including possible adverse impacts from gas flow distribution and disturbances from the SCONOx system. The SCONOx technology relies upon periodic blockage of the gas flow in order to allow for regeneration of the catalyst modules. The Londonderry applicant notes that gas flow distribution and blockage may impact the operation and performance of the heat recovery steam generator. Goal Line, on the other hand, believes that SCONOx can accommodate this scale up. EPA believes that the use of the equipment in a turbine with nearly six times the gas flow do raise legitimate concerns about the effect of the equipment on the performance of the turbine.

Louver System Scale-Up: SCONOx technology uses a louver system to alternately close off sections of the catalyst to allow for the regeneration of the catalyst. The Londonderry applicant indicates that proper louver operation is critical to successful operation of the system. As mentioned, SCONOx has been installed on a significantly smaller unit than the GE unit. In addition, the Federal facility's SCONOx system was designed and installed for the "cold end" (300-350F) portion of the flue.

For larger turbine application, Goal Line is designing a larger louver system that can accommodate the larger flue stream. Goal Line also envisions installing the system and louvers in the hot end of the flue (500-700 F). The applicant does not believe Goal Line's federal facility has sufficiently demonstrated the long term reliability or performance of Goal Line's new louver design and location. In conversations with Goal Line, Goal Line indicated the new louver design has been completed and evaluated and that no significant issues exist. EPA also notes that Goal Line's licensee, ABB, is currently testing the scaled-up louver design. However, the fact that the results from ABB is currently testing the design and the results of these tests are not yet final or available, and that the system has not been installed and operated on larger units, does raise legitimate questions about whether the new louver design is available for large turbine projects today.

Sulfur Removal: The Londonderry applicant indicates that Goal Line intends to use a different sulfur scrubbing technology, referred to as SCOSOx, from the technology operating at the Federal Cogeneration facility. The Londonderry applicant indicates the use of the new and untried technology raises reliability issues. Goal Line has indicated that the SCOSOx technology has been demonstrated on smaller oil firing

engines and that scale up should be feasible. In addition, Goal Line notes sulfur removal only improves the systems performance but is not a prerequisite for its use.

Most of Goal Line's experience is with the Federal Cogeneration facility that combusts natural gas only. The Newington project would be allowed to combust distillate oil up to thirty days per year. Goal Line indicated that for large turbines burning distillate, sulfur removal would be needed for commercial operation. For these projects, EPA believes the lack of operating experience with SCOSOx on larger distillate burning turbines does raise legitimate concerns about its availability.

Methane Use for Regeneration: The Federal Cogeneration facility currently employs diluted hydrogen gas for catalyst regeneration. Goal Line currently recommends a dilute methane for regeneration. The Londonderry applicant indicates the new design has not been demonstrated. Goal Line indicates the new design is an improvement over the current design but in any case the old design could be used for larger units. Again, EPA is concerned about the lack of operational experience that Goal Line has on its current design.

The validity of these concerns about the technical feasibility of SCONOx on larger facilities is supported by the actions and statements of Goal Line's SCONOx licensee, ABB, a world leader in turbine design and pollution control technologies. Goal Line has entered into a licensing agreement with ABB for commercial marketing rights for SCONOx for gas turbine plants over 100 megawatts. ABB has made clear that it does not believe that the technology is sufficiently demonstrated on larger facilities yet. Vendor and licensee statements should not determine the availability or lack thereof of a particular technology. However, the concerns of the licensee of equipment, which has a financial stake in its use, about the readiness of the product for use on larger combined cycle turbines do provide additional support for the validity of the technical concerns raised by the Newington and Londonderry applicants.

Specifically, ABB has stated in letters to state regulators that a large scale SCONOx design confirmed suitable for integration into ABB's large combined cycle plants does not exist at this time. ABB confirms its intent to eventually commercialize a SCONOx design for large scale combined cycle plants with reliability, availability and maintainability profiles comparable to existing SCR-based plants. To that end, ABB states that it is designing and testing a prototype system to ensure SCONOx is compatible with large combined cycle plant operations. ABB anticipates the testing program will be completed shortly. Until testing is completed, ABB has indicated that it will not guarantee the performance of the system, including shouldering liquidated damages (i.e., lost revenue) in

the event the equipment fails to obtain a promise level of availability. ABB's conclusion that SCONOx does require testing on larger facilities before it can be offered as part of its package for such plants supports the applicant's concerns about unresolved technical issues in the application of SCONOx to its facility.

In conclusion, EPA believes the operational uncertainties with regard to the scale up of the technology and the lack of demonstrated experience with the proposed design show that SCONOx is not yet an available technology. Nevertheless, EPA believes that SCONOx, as a non-ammonia control system, does have great potential and any future BACT determinations on combined-cycle gas turbines will need to consider whether, at that time, the current technical issues have been adequately resolved.

B. Particulate Matter (PM and PM-10)

As noted above, the Newington Energy facility is subject to BACT requirements for emissions of PM. Emission sources of PM from the Newington Energy facility include the combustion of fuel in the Combustion Turbines and emissions from the Cooling Tower. In general, there are several control technologies that can be utilized for the control of PM from combustion devices. These control technologies include add-on controls such as fabric filters, wet scrubbers, electrostatic precipitators or limitations on fuel type. The Newington Energy facility proposed that the combustion of natural gas, as the primary fuel, and low sulfur distillate fuel, as backup fuel, be regarded as BACT for PM.

It has been concluded that the combustion of natural gas, as the primary fuel, and low sulfur, low ash diesel fuel, as the backup fuel, would be considered BACT for the Newington Energy facility. This determination is consistent with recent determinations made for the following plants as noted in Table 2:

Table 2. Recently Proposed Combustion Turbine Facilities

Facility	Location	Permit Status	Date
Gorham Energy	Gorham, ME	Issued	Dec. 1998
Westbrook Energy	Westbrook, ME	Issued	Dec. 1998
Blackstone Energy	Blackstone, MA	Proposed	March 1999
Milford El-Paso	Milford, CT	Proposed	Dec. 1998

It was concluded that add-on controls would not be technologically feasible due to high exhaust flows and very low concentrations of PM in the exhaust stream. EPA is not aware of any combustion turbine facility that has been required to install add-on PM controls.

PM emissions from the Cooling Towers is caused by the presence of small solid particles within the circulating water of the Cooling Tower. A percentage of the circulating water exists the Cooling Tower and is commonly referred to as "drift". Newington Energy has proposed and it has been concluded that the use of High Efficiency Drift Eliminators would be considered BACT for the Newington Energy facility. Drift from the Cooling Towers will be limited to 0.0005% of the circulating water.

C. Sulfur Dioxide and H_2SO_4

As noted above, the Newington Energy facility is subject to BACT requirements for emissions of SO_2. Emissions of SO_2 from the Newington Energy facility is the result of oxidation (combustion) of sulfur contained in the fuel. The most practical and effective means of limiting SO_2 emissions is by minimizing the sulfur content of fuel. The NSPS (40 CFR 60) requirements of Subpart GG limit sulfur content of the fuels to 0.8 percent sulfur in fuel. While natural gas is inherently low in sulfur content, fuel oil in New Hampshire may contain up to 2 percent by weight of sulfur. The Newington Energy facility has proposed limiting the sulfur content of natural gas and fuel oil to 2.5 grains/100 SCF and 0.05 percent sulfur by weight, respectively. The sulfur level of the natural gas and fuel oil to be combusted at the Newington Energy facility is significantly below the Subpart GG limitation.

It has been concluded that the combustion of natural gas, as the primary fuel, and low sulfur diesel fuel, as the backup fuel, would be considered BACT for the Newington Energy facility. This determination is consistent with recent BACT determinations for similar plants, as noted in Section VII. A., above.

The Preliminary Determination originally concluded that back up fuel oil combustion would be limited to 39 days. However, in consideration of comments received, fuel oil combustion will be limited to 30 days as noted in Section V.C.

D. Carbon Monoxide (CO)

As noted above, the Newington Energy facility is subject to BACT requirements for emissions of CO. Emissions of CO from combustion processes is the result of incomplete combustion of fuel. Emissions of CO can be minimized by ensuring adequate fuel residence

time and high combustion temperatures in the combustion zone. However, controlling CO in this manner will have the negative impact of increasing thermal NO_x formation. Water and steam injection in the combustion zone or the use of Dry-Low NO_x ("DLN") combustors can be utilized to minimize NO_x formation while maintaining low CO emissions, thus creating a balance between NO_x and CO emissions. In general, other than controlling CO from the combustion process the only other option is to reduce CO emissions by the use of an add-on CO Oxidation Catalyst control system. EPA notes that a comment was received that indicated that the use of SCONOx technology could also reduce CO and other emissions from the facility. The use of SCONOx technology for this facility is discussed in further in this Section and in Section VIII.A.

In accordance with PSD regulations, other considerations such as energy, economic, and environmental impacts of a particular control option may be considered in determining BACT for a particular source. As part of its application, Newington Energy reviewed the economic impact of installing a CO Oxidation Catalyst System capable of achieving an 80% reduction of CO. The results of the economic impact analysis revealed that the cost of the 80% CO Catalyst System would be $2,055/ton CO removed. Newington Energy has stated that the costs associated with the CO Catalyst System would be prohibitive and therefore should not be considered BACT for this project. In addition, Newington Energy has identified several energy and environmental impacts associated with the installation of a CO Catalyst System that should be considered in determining whether such a CO Catalyst System should be considered BACT.

The installation of the CO oxidation catalyst could increase PM emissions from the Newington Energy facility. The potential increases in PM emissions results from an increase in oxidation of SO_2 to SO_3 by the CO catalyst. Increased concentrations of SO_3 may in turn increase ammonium particulate matter and sulfuric acid mist formation. Therefore, the environmental benefits of reducing CO emissions at the potential environmental cost of increasing PM emissions and sulfuric acid mist should be considered in determining BACT for the facility. While it is difficult to estimate the exact amount of PM emission increases, it is allowable and reasonable to take into consideration the potential increase of PM emissions in determining whether a CO catalyst would be BACT for the Newington Energy facility. In addition, a CO oxidation catalyst could increase ammonium salts which could lead to increased buildup within the HRSGs leading to increased pressure drop thus decreasing turbine performance. Therefore, based on energy, economic and environmental impacts, the installation of a CO oxidation catalyst is not supported as BACT for the Newington Energy facility.

Recent CO BACT determinations for other projects have in some cases supported

the use of CO Catalysts systems, while other have not. Newington Energy is proposing the use of DLN combustors to minimize NOx formation during the combustion process. The utilization of DLN combustors will achieve low CO emissions over the anticipated operating range of the Newington Energy facility. In several cases where a CO catalyst has been required (or proposed) CO emission levels are actually higher at several operating ranges than the proposed rate of Newington Energy across the entire operating range. The use of this technology will achieve CO emission levels similar to other projects within the Northeast. Consideration has also been given that the maximum CO emission rate would occur during the limited periods that the facility would be combusting fuel oil and that the ambient air impacts of CO emissions from the facility are insignificant, while the ambient air impacts of PM are significant, as noted in Section X. Therefore, it has been concluded that BACT for the project will be a CO emission limitation of 15 ppm on natural gas across the entire operating range and 20 ppm on fuel oil for 75 to 100 % load and 30 ppm for 50 to 74% load.

F. Nitrogen Oxides (NOx)

As noted above, Newington Energy is subject to BACT requirements for emissions of Nox. In addition, Newington Energy is subject to nonattainment NSR LAER requirements for emissions of NOx. NO_x emissions from the combustion turbines is the result of the oxidation of nitrogen contained either in the fuel ('fuel NOx") or combustion air ("thermal NOx"), respectively. Since fuel bound nitrogen in natural gas (the primary fuel for the Newington Energy facility) is negligible, reducing NO_x from the combustion process must focus on limiting the formation of thermal $_{NOx}$.

Considering that SCR is the only technically feasible NOx control today that can achieve LAER, EPA has concluded that BACT for the Newington Energy project would be 2.5 ppm NO_x (3 hour rolling basis) on natural gas and 9.0 ppm (1 hour rolling basis) on fuel oil. Further information about this limit can be found in Section VIII.A of this determination.

VIII. Non-Attainment Control Technology Review:

This portion of this Final Determination has been prepared by DES as noted in Section III.

State and Federal regulations and policies define LAER as the most stringent emission limitation contained in the implementation plan of any State for a particular source category or the most stringent emission limitation which is achieved in practice by a

particular source category, whichever is more stringent. As a new major source seeking to locate in a Non-Attainment area Newington Energy is required to install LAER for NOx.

A. Nitrogen Oxides (NOx)

As noted above, Newington Energy must meet LAER requirements for NO_x emissions. NO_x emissions from the combustion turbines is the result of the oxidation of nitrogen contained either in the fuel ('fuel NOx") or combustion air ("thermal NOx"). respectively. Since fuel bound nitrogen in natural gas (the primary fuel for the Newington Energy facility) is negligible, reducing NO_x from the combustion process must focus on limiting the formation of thermal NO_x. The utilization of dry Low NO_x combustors eliminates high flame temperatures and thermal NO_x formation and is state-of-art combustion technology for combustion turbines. Newington Energy has proposed the installation of dry LNB as a first step in meeting the LAER requirement for NO_x. In addition to minimizing NO_x formation, Newington Energy has evaluated several add-on control options to further reduce NO_x emissions. Newington Energy focused its review on Selective Catalytic Reduction (SCR) and SCONOX, a relatively new technology.

SCR technology has been available for a number of years and has been utilized in virtually every recent NO_x LAER determinations for combustion turbines. SCR systems require the injection of ammonia in the turbine exhaust which in turn reacts with nitrogen oxides, in the presence of a catalyst, to form nitrogen and water. Newington Energy has identified seven recent LAER/BACT NO_x determinations that all utilized SCR technology. Over the last several years there has been a downward trend in NO_x emissions for combustion turbines. The first LAER determinations for combustion turbines that utilized SCR where 9 ppm or higher. In recent years, LAER determinations have been lowered to 3.5 ppm with various averaging times (most determinations in the Northeast have been based on a one-hour averaging time). Newington Energy originally proposed the installation of an SCR system, with a NO_x limit of 3.5 ppm (at 15 % O2) on natural gas and 10.0 ppm (at 15 % O2) on fuel oil as LAER for this project. Newington Energy has indicated that water injection will be utilized during fuel oil combustion to minimize thermal NO_x formation during fuel oil combustion. Newington Energy has estimated that NO_x emissions prior to add-on controls would be 9 ppmvd on natural gas and 42 ppmvd on fuel oil.

As noted stated above, Newington Energy also considered the use of SCONOx technology as part of the NOx LAER analysis. SCONOx is an oxidation catalyst technology marketed by Goal Line Technologies as noted in Section VII.C.. SCONOx oxidizes NO to NO_2 and CO to CO_2. The NO_2 is subsequently absorbed onto a potassium carbonate absorber. The absorber must periodically be regenerated by taking a portion of the system

offline and utilizing a regeneration process. The use of the SCONOx technology has two potential benefits over traditional SCR systems. First, the SCONOx technology requires no ammonia to achieve NO_x reductions, therefore ammonia emissions are eliminated. Secondly, there exists the potential for lower NO_x emissions, as NO_x emissions as low as 2.5 ppm or lower have reportedly been achieved. Newington Energy has presented a number of reasons why it believes that the SCONOX technology is not a commercially available technology at this time. The main focus of Newington Energy assertion is the lack of demonstration of this technology on a plant the size and nature of the Newington Energy facility and concerns over reliability of the technology.

DES would note that there has been conflicting opinions about the commercial availability of SCONOx technology for plants of the size and nature of Newington Energy. In a January 18, 1999 letter to Connecticut DEP, ABB Power Generation, the licensee of the SCONOx technology, concluded that the SCONOx technology was not commercially available for this type of application at this time. However, Goal Line Technologies, the proprietor of the SCONOx technology, has disputed this claim. In making this determination, DES is not excluding the use of SCONOx technology as a mechanism to achieving the LAER determination. In fact, DES would encourage the use of a non-ammonia based NOx control system, such as SCONOx.

Shortly after issuing the Preliminary Determination for Newington Energy, DES issued a similar Preliminary Determination for a similar facility. DES received comments on the other Preliminary Determination, that DES failed to consider two other NOx control technologies, namely, XONON and Ozone Injection in making its NOx LAER determination. The XONON technology is under development by General Electric and Catalytica, Inc. The technology consists of combusting fuel in the presence of a catalyst, thus allowing for a lower flame temperature. This lower flame temperature minimizes thermal NOx formation. Similar to SCONOX, the XONON technology achieves low NOx emissions without the need for ammonia injection, thereby eliminating ammonia emissions. At the time DES made its Preliminary Determination, DES was aware of this technology, however the technology was dismissed based upon information DES had obtained at the NECA conference in September 1998. Based on statements made at the conference by a representative of XONON, DES concluded that the technology was not commercially available at this time for plants similar in size and nature of Newington Energy. DES recognizes that this finding should have been noted in the Preliminary Determination.

In response to comments, DES has conducted a follow up review of the XONON technology. Based on this review DES still concludes that this technology is not commercially available at this time for facilities of the size and nature of Newington Energy.

This conclusion is based on discussions DES had with a representative of Catalytica, Inc. DES was informed that there only exists a single small turbine (1.5MW) in Monterey, CA that is currently operating with the XONON technology. The system has operated approximately 1200 hours and routinely operates at less than 3 ppm during "normal operations". Commercial operation of the Monterey Turbine is expected to begin by June 1, 1999. Although it appears that the technology is promising, the technology is not demonstrated in practice nor is it commercially available for turbine projects the size and nature of Newington Energy.

DES has also conducted further research on the Ozone Injection technology. The Ozone Injection system is a joint program by Cannon Technology, Inc ("Cannon") and BOC Gases ("BOC"). This technology is being developed and commercialized as the LTO System for NOx Control by Cannon for industrial applications and by BOC as LoTOX System for NOx Reductions in larger industrial and utility applications. This technology uses oxygen or air to produce ozone in an ozone generator. The ozone is injected into the flue gases where a chemical reaction with the flue gas NOx takes place. The NOx is converted to N_2O_5, which is highly soluble in water. The N_2O_5 is removed from the flue where it is neutralized in a wet scrubber. It is the understanding of DES that this technology has undergone several demonstration projects including: A slip stream test conducted on flue gas stream from a coal-fired boiler at Duquesne Light's Elrama Power Station and a 400 HP Cleaver Brooks natural gas-fired boiler at Alt Dena Dairy in Industry, CA. Based on discussions with representatives of Cannon and BOC, DES has concluded that although the Ozone Injection Technology is theoretically practical and demonstrated on a limited scale, the technology is not demonstrated in practice on a plant the size and nature of Newington Energy.

Recently there has been increased focus on whether SCR systems can achieve ultra-low NO_x emission levels (less than 3.5 ppmvd). It has been generally indicated that NO_x emissions lower than 3.5 ppmvd can be achieved with SCR technology. In order to achieve lower NO_x levels, additional catalyst may be need and an enhanced ammonia injection system may be required to ensure proper NO_x/NH_3 molar ratios.

In the Preliminary Determination for Newington Energy, DES concluded that LAER for the Newington Energy project would be 2.5 ppm NO_x (3 hour rolling basis) on natural gas and 9.0 ppm (1 hour rolling basis) on fuel oil. In making the Preliminary Determination DES took into consideration that several other similar facilities using SCR had been proposed in the Northeast at this level of NO_x control. In addition, the Maine Department of Environmental Protection had recently issued permits for the Gorham Energy Facility and Westbrook Power with a NO_x limit (on natural gas) of 2.5 ppmvd @ 15 % O2 on a 3 hour

rolling average.

During the public comment period, DES received comments from EPA and others on the above 2.5 ppmvd NOx limitation. In summary, DES received comments suggesting that the NOx LAER limit should be lowered to 2 ppmvd for natural gas firing. The comments were in part based on the pending issuance of a permit to the PDC-El Paso Milford ("Milford") facility in Connecticut. In the proposed permit to Milford, a NOx limit of 2.0 ppmvd @ 15 % O2 (3 hour basis) has been proposed. As of the writing of this Final Determination, the permit to Milford facility has not been issued. In addition, on March 3, 1999, the Massachusetts Department of Environmental Protection ("Mass DEP") issued its preliminary findings on the ANP Blackstone Energy Company. The Blackstone plant is similar in size and nature to the Newington Energy Facility. The Mass DEP concluded that LAER in this case would be an emission limit of 2.0 ppmvd @ 15 % O2. DES would note that this proposal has not gone through public review and obviously the permit has not been issued. DES further notes that the proposed 2.5 ppmvd limit is as stringent as any NOx permit limitation in a permit issued to a facility similar to Newington Energy.

B. Ammonia

Newington Energy has proposed the use of a SCR system to control NO_x emissions. The SCR system will utilize ammonia as a reagent to reduce NO_x emission from the turbines to nitrogen (N_2), which is the major component of ambient air. In order to maximize NO_x reductions, the molar ratio of ammonia to NO_x must exceed the stoichiometric ratio needed to fully consume the ammonia. The unreacted ammonia is commonly referred to as "ammonia slip" and would be emitted through the exhaust stacks for the turbines. Ammonia slip is generally very low for new units, however the slip rate will generally increase over time. This increase of slip overtime occurs as portions of the catalyst become deactivated due to chemical and physical poisoning. In order to compensate for the deactivation of portions of the catalyst, the amount on ammonia injected must be increased to maintain high levels of NO_x reductions.

In the Preliminary Determination for Newington Energy DES proposed an ammonia slip rate of 10 ppm. DES noted that it expects that ammonia slip levels will be significantly below the proposed limit of 10 ppm during the initial operation period of this project. Based on discussions DES had with a representative of Peerless Mfg (a supplier of SCR equipment), DES would expect that ammonia slip rates will normally be in the 2 to 3 ppm range for the first three years of operation. DES has further concluded that the 10 ppm limitation was acceptable for the first year of commercial operation. At the conclusion of one year of operation, DES proposed that it would review the ammonia slip data and re-

evaluate this limitation and establish, if appropriate, a new lower limitation of ammonia slip. DES further notes that the proposed 10 ppm limit is consistent with a number of permits recently issued for similar combined cycle gas plants.

DES received a number of comments regarding the proposed ammonia slip level of 10 ppm. One comment, received on the Preliminary Determination for a similar facility, questioned whether DES had undertaken an adequate study of whether the proposed 10 ppm limit was protective of public health. The comment compared the 10 ppm slip limit to several Health Effect Data Thresholds as noted in the Table 3 below:

Table 3. Ammonia Standards

Health Effect Data Thresholds	Threshold in Parts Per Million (PPM)
EPA Chronic RfC	0.14 ppm
CAPCOA Acute REL	3.00 ppm
CAPCOA Chronic REL	0.14 ppm
NIOSH	50 ppm for 5 minutes
OSHA	35 ppm of 15 minutes

DES notes that comparing the 10 ppm slip rate to the above thresholds is inappropriate as air dispersion effects have not been considered. The ambient air impacts of ammonia slip have were evaluated by DES and it was determined that the worst case impact for ammonia was 7.2 ug/m3 on a 24 hour basis, which is equivalent to 0.01 ppm, and 0.3 ug/m3 on an annual basis, which is equivalent to 0.0004 ppm. DES again concludes that the 10 ppm slip rate is in compliance with the Ambient Air Limits ("AAL") established under Env-A 1400, *Regulated Toxic Air Pollutants*. As noted in Section X the AALs for ammonia are 100 ug/m3, which is equivalent to 0.14 ppm, on both a 24 hour and annual basis.

C. Volatile Organic Compounds (VOCs)

Emissions of VOCs from the proposed Newington Energy facility will be below the non-attainment major source threshold for VOCs. Therefore the proposed project will not be subject to non-attainment review for VOC emissions as originally stated in the July 2, 1998 application to EFSEC. Emission of VOCs from the proposed Newington Energy facility were originally estimated to be 132 tons per year by the applicant. Information

received from the applicant has since revised the VOC emission estimate to less than 50 tons per year, the non-attainment significance threshold. DES will require that Newington Energy perform EPA Method tests to verify VOC emissions from the facility.

IX. Summary Table of Proposed BACT/LAER Limitations

Table 4. below provides a summary of proposed BACT/LAER limitations:

Table 4. Summary of Proposed BACT/LAER Limitations

Pollutant	Limitation	Technology BACT/LAER	Averaging Time
Nitrogen Oxides (Gas Firing)	2.5 ppmdv @ 15 % O2	Low NOx Burner with SCR LAER	3 hour block average
Nitrogen Oxides (Oil Firing)	9.0 ppmdv @ 15 % O2	Low NOx Burner with Water Injection and SCR LAER	1 hour block average
Sulfur Dioxide (Gas Firing)	0.0036 lb/MM BTU	Low Sulfur Fuels BACT	3 hour rolling
Sulfur Dioxide (Oil Firing)	0.0505 lb/MM BTU	Low Sulfur Fuels BACT	3 hour rolling
Carbon Monoxide (Gas Firing) @ All Loads	15 ppmdv @ 15 % O2	Low NOx Burner with Good Combustion Practices BACT	1 hour block average
Carbon Monoxide (Oil Firing) @ 75 to 100 % Load	20 ppmdv @ 15 % O2	Low NOx Burner with Good Combustion Practices BACT	1 hour block average
Carbon Monoxide (Oil Firing) @ 50 to 75 % Load	30 ppmdv @ 15 % O2	Low NOx Burner with Good Combustion Practices BACT	1 hour block average
TSP/PM-10 (Gas Firing)	0.015 lb/MM BTU	Low Sulfur Fuels BACT	1 hour block average
TSP/PM-10 (Oil Firing)	0.040 lb/MM BTU	Low Sulfur Fuels BACT	1 hour block average
Volatile Organic Compounds (Natural Gas Firing)	0.002 lb/MM BTU	Good Combustion Practices N/A	1 hour block average

Pollutant	Limitation	Technology BACT/LAER	Averaging Time
Volatile Organic Compounds (Fuel Oil Firing)	0.0038 lb/MM BTU	Good Combustion Practices N/A	1 hour block average
Opacity	20 %	Good Combustion Practices N/A	6 minute block average
Sulfuric Acid Mist (H2SO4)	22.35 lb/hr	Low Sulfur Fuels BACT	1 hour block average
Ammonia	10 ppmdv @ 15 % O2	N/A	24 hour block average

X. AIR QUALITY IMPACT ANALYSIS

A. Modeling Overview

An ambient air quality impact analysis was performed to assess predicted air quality concentrations from the Newington Energy facility against applicable state and federal standards and guidelines. Standard modeling procedures were followed in the evaluation, using EPA-approved models and procedures. First, modeling was performed in all three terrain regimes (simple, intermediate and complex) for all operating load conditions to determine whether the source is expected to produce significant impacts. For those pollutants shown to be significant, namely SO_2 and PM10, refined modeling incorporating impacts from additional sources in the area was performed using the worst-case load for the facility. The proposed Newington Energy facility was shown not to cause or contribute to violations of Ambient Air Quality Standards (AAQS) or PSD increments. Other analyses as required by state and federal regulations were also done, including a cavity analysis, evaluation of Class I area impacts, a toxic air pollutant impact assessment and additional PSD analyses. All dispersion modeling was performed assuming 936 hours per year on oil backup and 7824 hours per year on natural gas (worst-case condition).

B. Model Input Data

Modeling for simple, intermediate and complex terrain was performed using the ISCST3 dispersion model, version 98356. For the cavity analysis, the SCREEN3 model (version 96043) was used. Both models were run with regulatory default options and all modeling was performed in accordance with all applicable DES and EPA guidelines. Shoreline fumigation was not modeled with SCREEN3 due to the facility's distance from the coast as per model guidance.

The ISCST3 modeling was done for over 2200 receptors located in both the nearfield to address downwash and local impacts and at distances further downwind. The receptor grid extended across the border into Maine and also included some sensitive receptor locations, namely on the Piscataqua River Bridge which connects Maine and New Hampshire. Rural dispersion coefficients were used based on EPA guidance. The model was run using refined, sequential meteorological data in both the simple and complex mode in order to make use of the nearby meteorological tower at Pease International Tradeport in Newington which is located within 2 miles of the proposed site. Given the proximity of the Newington Energy site to the monitoring station and the generally flat terrain in the surrounding area, the Pease data were considered representative of conditions at the proposed site and appropriate for use as on-site meteorology in this analysis.

The data set consists of 5 years of hourly meteorological data collected at a height of 13 feet at the former New Hampshire Air National Guard facility during the period 1979-1983. The upper air data were taken from the nearest National Weather Service upper air station at Portland, Maine for the same time period.

Stack parameters and emission rates for the various combustion turbine load conditions are listed in Table 5 for natural gas and in Table 6 for distillate oil (0.05% sulfur). The stack will be constructed to enclose two flues for the two turbine units. Since the singular stack is below GEP height, the modeling analysis accounted for the potential for building downwash wake effects on emissions from the stack. The BPIP program was used in the determination of GEP stack height and direction specific building dimensions.

The input data used in the modeling of the cooling tower are presented in Table 7. For the criteria pollutant analysis, the cooling tower drift was treated as PM10 and was modeled in conjunction with the PM10 emissions from the turbine stack. The cooling tower was also modeled for its potential effects on local visibility as is required under the PSD regulations.

Table 5
Combustion Turbine Emissions and Stack Parameters (both turbines)
Natural Gas

Plant Load	%	100			75			50		
Ambient Temp	° F	0	65	95	0	65	95	0	65	95
Stack Height	ft	150	150	150	150	150	150	150	150	150

Stack Diam. (a)	ft	23.7	23.7	23.7	23.7	23.7	23.7	16.8	16.8	16.8
Base Elevation	ft	62	62	62	62	62	62	62	62	62
Exit Temp	° K	421	419	406	411	411	413	401	402	419
Gas Velocity	m/s	28.4	26.1	24.1	22.6	21.4	21.1	28.4	26.1	24.1
NOx	g/s	6.1	5.8	5.4	4.9	4.5	4.3	3.8	3.6	3.4
CO	g/s	13.4	12.1	11.3	10.6	9.8	9.3	8.6	8.1	7.8
PM10	g/s	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
SO_2	g/s	3.3	3.0	2.9	2.7	2.5	2.3	2.1	2.0	1.9

(a) represents an equivalent diameter for two flues (100% and 75% load) and a single flue diameter for 50% load (only one unit operating)

Table 6
Combustion Turbine Emissions and Stack Parameters (both turbines)
Distillate Oil

Plant Load	%	100			75			50		
Ambient Temp	° F	0	65	95	0	65	95	0	65	95
Stack Height	ft	150	150	150	150	150	150	150	150	150
Stack Diam. (a)	ft	23.7	23.7	23.7	23.7	23.7	23.7	16.8	16.8	16.8
Base Elevation	ft	62	62	62	62	62	62	62	62	62
Exit Temp	° K	421	419	406	411	411	413	401	402	419
Gas Velocity	m/s	28.4	26.1	24.1	22.6	21.4	21.1	28.4	26.1	24.1
NOx	g/s	20.8	18.9	17.4	16.4	15.5	14.2	12.6	11.8	11.2
CO	g/s	17.4	16.1	14.6	12.9	12.4	11.8	16.4	16.4	18.9
PM10	g/s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
SO_2	g/s	24.6	22.6	20.6	19.8	18.4	16.9	15.4	14.5	13.4

Pb (b)	g/s	0.01	0.01	0.01	0.01	0.01	<.01	<.01	<.01	<.01

(a) represents an equivalent diameter for two flues (100% and 75% load) and a single flue diameter for 50% load (only one unit operating)
(b) maximum emission rate = 0.014 g/s

Table 7
Cooling Tower Exhaust Characteristics (per cell)

Stack Height	58.5 ft
Cell Diameter	27.9 ft
Base Elevation	62 ft
Exit Temp	305 °K
Exit Velocity	0.9 m/s
Number of Cells	10
PM10	0.023 g/s

C. Single-Source Criteria Pollutant Impact Analysis

Using the input parameters and modeling procedures described above, the dispersion modeling analysis predicted significant impacts for SO_2 for the 3-hour and 24-hour averaging periods and for PM10 for the 24-hour and annual averaging periods (see Table 8 below). These impacts were predicted for the facility when burning oil as a backup fuel. Both NO_2 and CO were shown to have insignificant impacts while maximum lead impacts were predicted to be several orders of magnitude below the AAQS. The worst-case load conditions for the significant pollutants were determined to be 75% at an ambient temperature of 65° F for SO_2 and 75% at 65° F for PM10. These conditions were used to determine significant impact areas as well as compliance with AAQS and increments.

Table 9 presents the facility's impacts in comparison to PSD Class II increment levels and AAQS for the significant pollutants. The maximum impacts were predicted to occur primarily in the cavity region of the buildings on the Newington Energy property, while the maximum simple terrain impacts were shown to be just beyond the property line. The impacts for the proposed source alone are predicted to be in compliance with all AAQS and Class II increments.

Table 8
Single-Source Maximum Impacts
Compared to Significant Impact Levels

Pollutant	Avg. Time	Maximum Conc. (ug/m^3)	Significant Impact Level (ug/m^3)
SO_2	Annual	0.6 (a)	1
	24-Hour	41.8	5
	3-Hour	334.4	25
PM10	Annual	5.8	1
	24-Hour	23.0	5
NO_2	Annual	0.6 (a)	1
CO	8-Hour	96.4	500
	1-Hour	385.6	2000

(a) highest monthly average - remaining tables conservatively use monthly averages in place of annuals

Table 9
Single-Source Maximum Impacts
Compared to Ambient Air Quality Standards

Pollutant	Avg. Time	Maximum Conc. (ug/m^3)	Class II Increm. (ug/m^3)	AAQS (ug/m^3)
SO_2	24-Hour	41.8	91	365
	3-Hour	334.4	512	1300
PM10	Annual	5.8	17	50
	24-Hour	23.0	30	150

1. *Cavity Analysis*

An analysis was performed to determine the potential for impacts within the cavity region

of the buildings on-site. The analysis determined that the turbine building caused emissions from the 150 ft stack as well as the cooling towers to be captured in its cavity region. The cooling tower itself also caused cavity impacts for PM10 coming from the tower cells. To address these impacts, the SCREEN3 model algorithms were used with the Brode regulatory default option. All load conditions shown in Tables 5 and 6 were investigated.

For the cooling tower structure, SCREEN3 showed PM10 impacts below AAQS and increment levels using the default screening meteorology. For the larger turbine building, the model predicted impacts in the cavity only when the wind is blowing perpendicular to the long side of the building. Using the lowest wind speed which produced an impact in the cavity for any load condition, the applicant reviewed the hourly meteorological data set used in the refined modeling and determined that a limited number of hours had wind speeds over this critical value. Further, only 4 hours in the five-year period from 1979-1983 had these high wind speeds at directions which would produce a cavity impact. Using additional worst-case assumptions, impacts of all pollutants were shown to be in compliance.

C. Class I Area Analysis

Under the Prevention of Significant Deterioration provisions of the Clean Air Act, certain national parks and wilderness areas have been given special protection against adverse air quality impacts. To assess these impacts, DES, in conjunction with the National Forest Service (NFS), has developed a procedure which applies to all applicants for PSD permits. This procedure looks at the source's impacts on Class I area increment, visibility, sulfur deposition, nitrogen deposition, acid neutralizing capacity and ozone formation, using criteria established by the NFS. The modeling requirements follow recommendations made in the *Interagency Workgroup on Air Quality Modeling (IWAQM) Phase 1 Report: Interim Recommendation for Modeling Long Range Transport and Impacts on Regional Visibility.* For this project, impacts were evaluated at various elevations at the closest points to the Great Gulf and Dry River Wilderness Class I areas in New Hampshire (located more than 110 km to the north-northwest) and the Lye Brook Class I area in Vermont (located more than 175 km to the west).

Initial modeling by the applicant using ISCST3 showed impacts well below the Class I increments, though above the significant impact level for short-term SO_2 (3-hour average) when the facility is operating on distillate oil backup. To address this issue, the applicant performed a more refined, single-source modeling analysis using the CALPUFF model to better simulate the long distance transport of the plume to the Class I areas.

The CALPUFF modeling analysis was performed using the CALPUFF transport and dispersion model and the CALPOST post-processor (Version 5.0, Level 990228). The CALMET

meteorological processor was not used since the applicant chose to run one year (1980) of on-site, ISC-formatted data as was used in the simple/complex terrain modeling. Default options were used for the most part, with exceptions being that no chemical transformation or deposition of SO_2 was assumed for sake of conservatism.

A composite worst-case operating scenario was modeled using the minimum stack gas temperature and flow and the maximum SO_2 emission rate for any oil burning load condition. Since only one receptor was found to have a significant impact using the ISCST3 model, only this receptor was modeled with CALPUFF.

The proposed source's maximum impacts in the Class I areas are shown in Table 10 in comparison to the increment levels. All impacts are shown to be insignificant using the combination of ISCST3 and CALPUFF.

Table 10
Maximum Increment Impacts in Class I Areas

Pollutant	Avg. Time	Contrib.	Increment	Significant Impact Level (ug/m^3)
SO_2	Annual	0.03	2	0.08
	24-Hour	0.18	5	0.2
	3-Hour	0.66 (a)	25	1.0
PM10	Annual	0.01	4	0.16
	24-Hour	0.05	8	0.32
NO_2	Annual	0.03	2.5	0.1

(a) based on CALPUFF modeling

For the other impact criteria established by the NFS, known collectively as Air Quality Related Values (AQRVs), the proposed facility has demonstrated impacts well below the minimum threshold levels and is predicted to have little probable effect on these values. One important part of the AQRV analysis is the assessment of the degradation of visibility in the Class I areas due to the proposed facility. To determine the effects of the Newington Energy facility on visibility, the EPA VISCREEN model was used (Version 1.01). A Level-I assessment was performed and it was found that impacts were well below the thresholds of plume contrast and perceptibility.

D. Interactive-Source Criteria Pollutant Impact Analysis

In accordance with DES guidance, an interactive modeling analysis must be performed and include existing, nearby major sources for all pollutants and averaging periods which have been shown to be significant. The results of this analysis are compared to AAQS, once ambient background is considered, as well as Class II increment levels which apply to all new and modified permitted sources. Based on the applicant's significant impact area analysis, the following sources were included in the interactive modeling.

- Georgia Pacific Gypsum - Newington
- New Hampshire Air National Guard - Newington
- Public Service of New Hampshire Newington Station - Newington
- Public Service of New Hampshire Schiller Station - Newington
- SEA-3 - Newington
- Simplex - Portsmouth
- Sprague Energy - Portsmouth

These sources were modeled in conjunction with the proposed Newington Energy facility at their permitted SO_2 and PM10 emission rates. No gas pipeline compressor stations were modeled since none are anticipated for the project. As in the single-source analysis, the same 5-year meteorological data set was used for the ISCST3 modeling.

The maximum impacts for the pollutants and averaging periods for which the proposed facility is significant are shown below in Table 11 and Table 12. The tables reflect the total air quality impacts in the area, assuming the Newington Energy facility is operating under worst-case conditions. All impacts are predicted to be below the allowable state and federal limits and show that the proposed source does not cause or contribute to any air quality violations.

Table 11
Interactive Source Maximum
Impacts Compared to AAQS

Pollutant	Avg. Time	Contrib.	Bckg.	Impact	AAQS	Pass/Fail
SO_2	24-Hour	187.6	48	235.6	365	PASS
	3-Hour	656.0	146	802.0	1300	PASS
PM10	Annual	11.1	18	29.1	50	PASS

	24-Hour	88.2	34	122.2	150	PASS

Table 12
Interactive Source Maximum Impacts
Compared to Class II Increment

Pollutant	Avg. Time	Contrib.	Increment	Pass/Fail
SO_2	24-Hour	81.8	91	PASS
	3-Hour	214.0	512	PASS
PM10	Annual	3.2	17	PASS
	24-Hour	15.7	30	PASS

The background (Bckg.) air quality data shown in Table 11 were taken from Portsmouth from 1996-1998 and have been updated since the original application submittal. The Portsmouth monitoring site was determined to be representative of the air quality in the project area due to its proximity (within 3 miles of the proposed site).

E. Additional PSD Impact Analyses

1. *Local Visibility Impairment*

The potential effects of the proposed project on visibility in the immediate area surrounding the site were assessed through a detailed modeling analysis using the SACTI model. The model was used to estimate parameters such as amount of fogging and icing, plume height, plume length and radius of the plume. The amount of salt deposition was also calculated since the cooling tower water supply will contain sea salt. This model assumes a saturated plume, though the source proposes to use a method to produce an abated "dry" plume. The technology that produces this type of plume combines evaporative cooling with tube heat exchangers which reduce the relative humidity of the air leaving the tower, thus greatly reducing the visible plume. Since this effect cannot be incorporated into SACTI, the use of this model is conservative in its prediction of a more visible plume extending for longer distances.

Since SACTI requires humidity variables in its meteorological data set, the Newington data were supplemented with data from Logan Airport in Boston, Massachusetts for the period 1979-1983. For consistency with the ISCST3 modeling, Portland upper air data from the same time

period were used. The model predicted that a maximum of 8 hours per year could result in fogging in the immediate area of the plant, while approximately 1½ hours per year may see the plume extend to a distance of one-half mile. No icing was predicted to occur by the model.

2. *Impacts Due to Growth and Construction*

There are not expected to be significant impacts from the construction phase of this project due to use of best management practices on site and also due to the fact that construction will be temporary and short-lived. The plant expects to hire only a limited number of new employees which will largely come from the available local work force, therefore residential growth is not expected to be significant. Once constructed, the proposed facility will consume little in terms of raw materials and supplies so construction of new industries and businesses will not likely be needed.

The facility will generate electricity which will be sold throughout eastern New England via transmission through the regional grid, therefore the increased power supply is not expected to attract new industry to any specific area. However, any new facility wishing to locate nearby and which emits air pollutants is subject to DES' *Rules Governing the Control of Air Pollution* and, depending on which sections of the Rules are applicable, may need to be modeled to demonstrate compliance with the appropriate standards. This modeling may include Newington Energy and other nearby sources, again depending on the applicable regulations, so any future growth will be accounted for.

3. *Soils and Vegetation*

A quantitative analysis was performed to evaluate the effects of the proposed facility on soils and sensitive vegetation, using criteria established by EPA as contained in *A Screening Procedure for the Impacts of Air Pollution Sources on Plants, Soils and Animals*. As stated in the EPA guidance document, AAQS are protective against vegetative damage, except possibly for the 3-hour and annual SO_2 standards. Since AAQS, and the lower Class II increment levels, are not exceeded by the proposed facility, there are not expected to be any adverse effects on vegetation due to the plant's impacts. This is also the case for the 3-hour and annual SO_2 screening criteria since the modeled single-source impacts are seen to be well below the screening levels.

F. Toxic Air Pollutant Evaluation

Chapter Env-A 1400 of the Rules requires an evaluation of the potential impacts of toxic air pollutants. For this facility, it was determined that air toxics emissions are possible due to ammonia slip from the SCR system on the combustion turbine stack. The maximum impacts due to ammonia slip are shown below in Table 13 and were compared against New Hampshire Ambient Air Limits

(AALs) for both 24-hour and annual averaging periods. These values are based on an assumed slip rate of 10 ppm and may result from ammonia which does not completely react with NOx in the catalytic reduction process. Emissions of ammonia nitrate and ammonia sulfate are possible as by-products of this process but these compounds are not regulated by DES under Chapter Env-A 1400.

Table 13
Maximum Impacts Due to Ammonia Slip

Pollutant	24-Hour Impact	24-Hour AAL	Annual Impact	Annual AAL
Ammonia	7.2	100	0.3	100

G. Fine Particulate Matter Analysis:

DES received several comments on potential impacts of fine particulate matter ($PM_{2.5}$) impacts from the AES Londonderry facility. Although this comment was not directed toward the Newington Energy facility, DES has chosen to include its analysis on this matter in this case. DES has determined that an meaningful analysis of impacts of fine particulate matter ($PM_{2.5}$) was not possible for this project for a number of reasons. First, though $PM_{2.5}$ ambient air quality standards are in place, there is currently no EPA guidance on how to model this pollutant from individual point sources. Since much of $PM_{2.5}$ production is expected to come from secondary particle formation, it cannot be modeled as a non-reactive pollutant using traditional continuous release or puff models. It is expected that compliance determinations using the new $PM_{2.5}$ standard will be done on a regional modeling basis, similar to current efforts on ozone. Second, since $PM_{2.5}$ monitoring programs are in their infancy there is no way to establish a background for comparison to these standards. Significant impact levels have also not yet been established. Third, $PM_{2.5}$ emission factors are not yet available and little testing has been done on this pollutant, making establishing an accurate emission rate very difficult. For these reasons, we believe that a modeling analysis for this pollutant is not warranted or even possible at this time.

XI. Emissions Offset Requirements:

The proposed Newington Energy Facility is subject to the NO_x emission offset requirement of non-attainment review. Since the proposed facility will be located in a serious non-attainment area for ozone, the emissions of NO_x must be offset at a ratio of 1.2 to 1.0. As such, the proposed Newington Energy Facility must obtain 246 tons (205 tons multiplied by 1.2) of NO_x offsets. DES has determined that NO_x Budget Allowances held by Newington Energy may be utilized on a 1.0 to 1.0 ratio towards the offset requirements, however the overall offset ratio must remain at 1.2 to

1.0. DES has estimated that Newington Energy will be assigned approximately 85 tons of NO_x Budget Allowances from the NO_x budget set aside account established by the NO_x Budget Program. Therefore, the balance of the NO_x offset requirement is estimated to be approximately 161 tons (246 tons of offsets less 85 tons of allowances).

At this time, the balance of offsets will be obtained by Newington Energy from State-owned Discrete Emission Reductions ("DERs"). The State of New Hampshire obtained approximately 1,000 tons of DERs as part of an agreement signed between DES and Public Service Company of New Hampshire ("PSNH"). The DERs were generated at PSNH's Schiller Station in Portsmouth, New Hampshire and PSNH's Newington Station in Newington, New Hampshire. Both Schiller and Newington Stations are regulated by Env-A 1211, NOx RACT. In accordance with Env-A 1211 these facilities must meet certain NOx emission standards. By achieving greater than required NOx emission reductions, these two facilities were able to generate the above referenced DERs.

WATER QUALITY, WASTEWATER AND WETLANDS CONDITIONS ATTACHMENT "H"

I. NPDES/State Surface Water Permit Conditions

1. Applicant shall provide information necessary for DES to complete the antidegradation review for the new discharge pursuant to Env-Ws 430:31 through 430.45 including the range and maximum anticipated concentrations of all substances added to the cooling tower blowdown and the range and maximum concentrations for the same pollutants found in the Piscataqua River. Based on the information in Env-Ws 430.37 and other evaluations or modeling, the applicant shall provide DES with an estimate of the impact of the discharge on the acceptable loading of phosphorus and nitrogen in the Piscataqua River, Little Bay, and Great Bay estuaries.

2. Applicant shall treat discharges to surface waters as necessary to ensure that all state water quality statutes (RSA 485-A) and regulations (Env-Ws 430 and Env-Ws 401-405), and the federal Clean Water Act and federal water quality (40CFR131) and National Pollutant Discharge Elimination System (NPDES) (40CFR122) regulations are met.

3. Applicant shall treat discharges to the Newington wastewater treatment facility as necessary to ensure that the local Sewer Use Ordinance, local discharge limitations, local industrial discharge permit conditions, and state pretreatment statutes (RSA 485-A) and regulations (Env-Ws 904), and the federal Clean Water Act and federal pretreatment regulations (40CFR403) are met.

4. Applicant shall submit all plans and specifications for installations of systems and devices for handling, treating or disposing of sewage, industrial and other wastes to DES at least 30 days prior to the beginning of construction as required in RSA 485-A:4.

5. Applicant shall provide DES with any supplemental information provided to the U.S. Environmental Protection Agency (EPA) as part of the federal NPDES permit application as required in Env-Ws 405.01(b)(1).

6. Applicant shall provide DES with either building floor plan sketches or a schematic accompanied by a detailed narrative description of each floor as required in Env-Ws 405.01(c).

7. Applicant shall file federal applications for all discharges of stormwater associated with industrial activity and prepare all required stormwater pollution prevention plans such that they will be implemented prior to the beginning of construction and the start-up of the operation of the facility. The construction and the operation of the facility shall not result in water quality standards violations due to contaminants contained in stormwater.

8. Applicant shall design, operate, and maintain the intake and discharge structures so as to comply with Sections 316(a) and 316(b) of the federal Clean Water Act and all state surface water quality statutes and regulations. The applicant shall comply with all NPDES permit conditions, such as

biological monitoring, that are deemed necessary to ensure compliance.

9. Applicant shall obtain DES approval for the final design of the effluent diffuser prior to beginning construction.

10. Additional permit conditions and data requests may be necessary based on final plan review.

II. Site-Specific Permit Conditions

1. Applicant shall not degrade water quality as a result of this project.

2. Applicant shall submit revised plans which adequately provide for stormwater treatment of runoff in accordance with Administrative Rules Env-Ws 415. Any other changes in construction details or sequences shall also require submission of revised plans for permit amendment.

3. Applicant shall notify the Department in writing within ten days of a change in ownership.

4. Applicant shall notify the Department in writing prior to the start of construction.

5. The approved plans and supporting documentation in the permit file shall be part of this approval.

6. The permit will expire two years from the date of issuance.

7. Other permits from the local municipality, the State of New Hampshire, and the federal government may be required for this project.

8. Additional permit conditions and data requests may be necessary based on final plan review.

III. Standard Dredge and Fill Permit Conditions

1. Applicant shall construct the facility in accordance with the following:

(A) Fill 11,783 sq. ft. of forested, scrub-shrub and emergent wetlands for the construction of an energy facility, access roads, and cooling towers in accordance with revised plans received on 02/16/99.

(B) Dredge and fill 12,000 sq. ft. of intertidal zone (mudflat) for the construction of a water intake structure on piers on the Piscataqua River in accordance with revised plans received on 02/16/99.

(C) Temporarily disturb, by dredging 2,000 sq. ft. of river bottom for the installation of piping. Dredge material will be replaced upon completion of the installation in accordance with revised plans received on 02/16/99.

(D) Temporarily disturb, by excavating 2,700 sq. ft. of undisturbed, upland, tidal buffer zone for the installation of piping. The disturbed area shall be regraded to the original contours and allowed to revegetate upon completion of the installation in accordance with revised plans received on 02/16/99.

(E) Construct 12,095 sq. ft. of scrub-shrub, emergent wetlands in accordance with revised plans received on 02/16/99 to mitigate for the functions and values lost by filling 11,783 sq. ft. of forested, scrub-shrub, and emergent wetlands for lot development on the same parcel of land.

(F) Coastal staff shall be notified in writing prior to and upon completion of construction.

(G) No further alteration of wetlands shall occur for lot development, driveways, culverts, or for septic system setback.

(H) Proposed impacts to areas within the DES Wetlands Bureau's jurisdiction associated with the connection to the PNGTS and Maritime & Northeast Pipeline main transmission line shall be considered under a separate wetlands application.

(I) Dredged material shall be used in accordance with the approved plan; otherwise, disposal shall be out of DES Wetlands Bureau jurisdiction.

(J) Dredged material shall be properly disposed of if further testing reveals the presence of contaminants.

(K) Dredging shall not occur outside of the November 15 - May 15 "dredging window."

(L) Construction of wetland mitigation areas shall coincide with the construction of the energy facility, access roads and cooling towers.

(M) A qualified wetland scientist shall supervise the construction of the wetland mitigation areas to verify that proper hydrology will be established, the areas are seeded and planted correctly, and the areas are stabilized to prevent erosion and siltation.

(N) A qualified wetland scientist shall submit monitoring reports to the DES Wetlands Bureau on the success of the wetland mitigation areas in the spring and fall for three years following the completion of their construction. A failure response strategy shall be submitted to the DES Wetlands Bureau if the bureau deems that corrective action is necessary.

(O) Wetlands mitigation areas shall have at least a 75% successful establishment of wetlands vegetation after two growing seasons, or it shall be replanted and re-established until a functional wetland is replicated in a manner satisfactory to the DES Wetlands Bureau.

(P) Three years after the construction of the wetland mitigation areas or when the DES Wetlands Bureau had determined that a functional wetlands has been established, a qualified wetlands

scientist shall delineate the constructed wetlands and have them depicted on a plan. This plan shall be recorded with the registry of deeds with the condition that there shall be no filling of these wetlands for lot development.

(Q) Orange construction fencing shall be placed at the limits of construction and siltation/erosion/ turbidity controls shall be installed prior to construction, be maintained during construction, and shall remain until the area is stabilized.

(R) Within three days of final grading in an area that is in or adjacent to wetlands or surface waters, all exposed soil areas shall be stabilized by seeding and mulching during the growing season, or if not during the growing season, by mulching and pinning netting on slopes steeper than 3:1.

(S) Culverts shall have proper head walls.

(T) The decking of the pier shall have a minimum of five feet clearance from the surface of the tidal marsh and shall have three-quarter inch spacing between the decking planks.

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APPEAL PROCESS

Any person or party aggrieved by this decision or order may appeal this decision or order to the New Hampshire Supreme Court by complying with the following provisions of RSA 541:1.

541:3 Motion for Rehearing: Within 30 days after any order or decision has been made by the commission, any party to the action or proceeding before the commission, or any person directly affected thereby; may apply for a hearing in respect to any matter determined in the action or proceeding; or covered or included in the order; specifying in the motion all grounds for rehearing; and the commission may grant such rehearing if in its opinion good reason for the rehearing is stated in the motion.

541:4 Specifications: Such motion shall set forth fully every ground upon which it is claimed that the decision or order complained of is unlawful or unreasonable. No appeal from any order or decision of the commission shall be taken unless the appellant shall have made application for rehearing as herein provided, and when such application shall have been made, no ground not set forth therein shall be urged, relied on, or given any consideration by the court, unless the court for good cause shown shall allow the appellant to specify additional grounds.

541:5 Action on Motion. Upon the filing of such motion for rehearing, the commission shall within ten days either grant or deny the same, or suspend the order or decision complained of pending further consideration, and any order of suspension may be upon such terms and conditions as the commission may prescribe.

541:6 Appeal. Within thirty days after the application for a rehearing is denied, or, if the application is granted, then within thirty days after the decision on such rehearing, the applicant may appeal by petition to the supreme court.