OFFICE OF ADJUDICATIONS

IN THE MATTER OF	***:***	***APPLICATION NOS. 200001616 and 200001617***
QUINNIPIAC ENERGY, LLC	***:***	***SEPTEMBER 4, 2002***

PROPOSED FINAL DECISION

I

SUMMARY

Quinnipiac Energy, LLC (QE or the applicant) has applied to the Department of Environmental Protection (DEP) Bureau of Air Management for permits to construct and operate two existing deactivated boilers at the English Station facility in New Haven. The reactivation of these oil-fired boilers will allow English Station to be used as a peaking power facility to provide electricity when necessary to meet demand. The DEP has issued a tentative determination to approve the permit application.

The Commissioner of Environmental Protection determined that hearings should be held, and the prehearing process began in May 2001. A site visit was conducted on August 2 at the English Station facility. Hearings were conducted on the evenings of August 6 and 8 in New Haven, and continued in Hartford on twelve days between September 4 and October 18, 2001.

The record initially closed on October 31, 2001, with post-hearing briefs and replies filed by December 26, 2001. The record was reopened in May 2002 to receive input from the parties regarding the impacts, if any, of regulatory changes that became effective in March 2002 and were relevant to this application. Following the submittal of comments and responses, DEP staff confirmed that the application was complete on July 3, 2002, and offered attachments to the application and revised draft permits as exhibits. These new draft permits and the attachments to the application were entered into the record as exhibits on July 17, 2002, and the record finally closed.

The parties to this proceeding are the applicant, the DEP Bureau of Air Management (staff), and the following intervening parties: the Connecticut Fund for the Environment; the City of New Haven; and the New Haven Environmental Justice Network. Six individuals also intervened: Christopher Duffy Acevedo; Alain Dols; Stewart Hutchings; Christel Manning; Dwayne McDowell; and Mark Mininberg.

Upon review of the extensive record and consideration of the facts and applicable law in this matter, I find that the application meets the relevant statutory and regulatory criteria. I conclude that the proposed regulated activities, if conducted in accordance with the terms and conditions of the draft permits as modified in this decision, will be consistent with the legal standards for issuance.

There is no persuasive evidence in the record that the reactivation of the two existing boilers would be reasonably likely to result in unreasonable pollution. Even if an evaluation of possible alternatives was a condition for the issuance of these permits for a minor modification, none currently exist that are feasible or prudent. There was sufficient interaction with the community, including notice and opportunity for questions and comments on the application, fulfilling the purpose and intent of the DEP *Environmental Equity Policy.* DEP review and issuance of the tentative determination were also consistent with this environmental equity guidance. I therefore recommend that the permits be issued with the terms and conditions of the attached draft permits as modified herein. (See *Attachments I and II.)*

II
REGULATORY CHANGES DURING PENDENCY OF DECISION

Section 22a-174-3a of the Regulations of Connecticut State Agencies became effective on March 15, 2002 while this application was pending. Section 22a-174-3 was repealed on that date, and certain parts of §22a-174-1 were amended. These changes were relevant to this application because §22a-174-3a(a)(4) provides that §22a-174-3a applies to any application filed under former section 22a-174-3 for which a permit has yet to be issued or denied.

In a May 16, 2002 *Notice and Directive*, I advised the parties that §22a-174-3a and any relevant amendments to §22a-174-1 would apply to this decision and set out a schedule to receive their input.[1] I directed DEP staff to review §22a-174-3a and determine whether any additional information was required from the applicant. Staff was also told to indicate whether any amendments to §22a-174-1 or any other regulatory changes would impact the application.

Staff submitted its comments on June 10, 2002. Based on its review, staff concluded that the following sections of §22a-174-3a required the applicant to submit the information listed below to complete the application.

1. §22a-174-3a(c)(1)(D)(iv) – A proposed date for the commencement of construction.

2. §22a-174-3a(c)(1)(I) – A summary of potential emissions from the modification and actual emissions increases or decreases from existing stationary sources for deciding compliance with §22a-174-3a(6) and (7).

3. §22a-174-3a(c)(1)(K) – A certification in accordance with §22a-174-2a that authorizes signatory responsibilities. If the person who signed the application is different from the person given signatory responsibility, a new application certification form and conformance certification form are required with the correct signatures.

[1] Copies of all legal memoranda and correspondence associated with this issue are public documents and are included in the docket file in this matter.

Staff found that no new or amended relevant sections of §22a-174-1 would affect the application, and that although the new sulfur dioxide (SO_2) emission standards apply, the permit limits for the sulfur content of the fuel are well below the regulatory limits. §22a-174-19a(c)(1). Staff advised that the applicant no longer has to agree to incorporate the terms and conditions of the permit to construct into a permit to operate since a single permit to construct and operate will be issued for each of the two boilers. Staff also noted that since §22a-174-3a(h) provides that the applicant has a duty to comply with the permit, a construction certification is no longer needed. Also, the Commissioner may revoke a permit if a permittee[2] cannot meet emission limits or permit conditions. §22a-174-3a(e)(3) and (f).

In its June 20, 2002 response[3], the applicant addressed the information identified by staff as necessary to complete its application. The applicant first explained that it did not submit a proposed date for the start of construction because no construction is proposed. §22a-174-3a(c)(1)(D)(iv). QE did submit a new inventory of emissions, §22a-174-3a (c)(1)(I); a §22a-174-2a Registration Form regarding signatory responsibilities; and a signed Conformance Certification Form required by §22a-174-3a(c)(1)(K). The new inventory required the applicant to propose revisions to the draft permits to keep nitrogen oxide (NOx) emissions below 25 tons per year. These revisions would slightly decrease actual emissions and reduce annual hours of operation by four hours per year.

The applicant also outlined the sections of §22a-174-3a listed by staff in its response, noting the requirements of each, how they have been addressed, or why they are not relevant to this application. QE concluded that although sections of §22a-174-3a required the filing of additional forms, the revised and/or amended regulations did not substantively change any standards or rules that were not already applicable at the time of the hearing.

[2] When the permits are issued, the applicant will become the permittee.

[3]The intervenor Connecticut Fund for the Environment (CFE) also filed a response on June 20, 2002. CFE concluded that the issues raised by it and the City of New Haven remain unaffected by the revisions.

In a July 3, 2002 legal memorandum, DEP staff confirmed that the applicant had filed all necessary information to complete its application. Staff also indicated it had accepted the applicant's proposed revisions to the permit regarding NOx emissions and had incorporated them in the revised draft permits, but noted that the revisions proposed at the hearing were not included in the permits. Staff also outlined several administrative revisions to the permits that were made to be consistent with the revised regulations.

Staff proposed that the information submitted by the applicant be attached to the application as exhibits DEP 2a-2d and offered the revised draft permits as exhibits DEP-29aa and 29bb. These new exhibits were necessary as a result of the regulatory changes and acceptance of them would not prejudice the parties. They were therefore placed in the record as numbered by staff, and will be noted herein.

III

DECISION

A

FINDINGS OF FACT

1

Procedural History

1. On about May 16, 2000, the DEP Bureau of Air Management received an Application for Minor New Source Review Permits from Quinnipiac Energy, LLC. The DEP published notice of the application on May 23, 2000, and determined that the application was administratively sufficient on June 7, 2000. (Exs. DEP-2, 6, 8; test. R. Pirolli, 9/6/01 p. 256.)

2. In August 2000, the DEP asked the United States Environmental Protection Agency (EPA) to concur with its determination that this application to reactivate a shutdown source was not a new source, but was a modification to a major source. The EPA agreed with this conclusion. (Exs. DEP- 3a, 3b, 4a, 4b; test. R. Pirolli, 9/6/01, pp. 245-246.)

3. Following the DEP decision that the application would be reviewed as a major modification, QE submitted revisions to the application on September 5 and 11, 2000 that set fuel consumption and emission limits to avoid review as a major modification. The draft permits were subsequently revised to reflect these changes. (Exs. DEP-3a, 3b, 5a, 5b, 21a, 21b, 29a, 29b; test. R. Pirolli, 9/6/01, pp. 246-247.)

4. Following its technical review of the application as a minor modification, the DEP published a notice of its tentative determination to approve the application on March 23, 2001. Notice of this determination was sent to elected and appointed officials in the area and several citizen interest groups. (Exs. DEP-2, 8, 12-19, 22; exs. INT/CFE-NH-53, 54; test. R. Pirolli, 9/6/01 pp. 248-249, 256.)

5. The Commissioner of Environmental Protection ordered that a hearing take place and the hearing process began in May 2001. Notice of hearing was published in area newspapers in July 2001. (Ex. APP-29; exs. DEP-24, 25, 26a, 26b; exs. INT/CFE-NH-57a, 57b, 58, 59a, 59b.)

6. The following organizations and individuals were granted status as intervening parties on the listed dates: Connecticut Fund for the Environment, September 12, 2000; the City of New Haven, April 23, 2001; Christel Manning, Dwayne McDowell, and Stewart Hutchings, April 30, 2001; Christopher Duffy Acevedo and Alain Dols, May 7, 2001; New Haven Environmental Justice Network, June 7, 2001; and Mark Mininberg, July 13, 2001. To facilitate the hearing process, the intervenors agreed to consolidate as follows: the Connecticut Fund for the Environment and the City of New Haven (CFE/NH); the New Haven Environmental Justice Network (NHEJN), represented by Mark Mitchell, M.D., with Christel Manning, Stewart Hutchings and Dwayne McDowell; Christopher Duffy Acevedo with Alain Dols; and Mark Mininberg, individually.[4]

7. At the September 4, 2001 hearing session, the parties presented arguments on the threshold question of whether the proposed regulated activity is appropriately the subject of a permit application for a minor modification. The emission rates for the regulated pollutants in this application are less than the significance levels outlined in Regs., Conn. State Agencies §22a-173-3a, Table 3a (k)-1. I therefore found that this

[4] Copies of the rulings granting these requests for intervention and records of consolidation are public documents and are included in the docket files of the DEP Office of Adjudications.

application to reactivate the boilers at English Station was properly characterized and reviewed as a minor modification, and the hearing proceeded accordingly.[5] (Tr. 9/4/01, pp.5-33.)

2

The Application

8. The permits (herein, draft permits or permits) that are the subject of this application[6] would allow the reactivation of two existing oil-fired boilers at the English Station facility at 510 Grand Avenue in New Haven. When operating, these boilers would set in motion two steam turbines (Units #7 and #8) to generate electricity. The boilers have a total capacity of 75 megawatts, and were installed in 1948 (boiler #13) and 1953 (boiler #14). The boilers last operated in 1991; they were placed in deactivated reserve in 1992. (Exs. DEP-3a, 3b, 20, 29aa, 29bb; ex. INT/CFE-NH-22; test. M. Holzman, 9/4/01, pp. 44-45; test. R. Pirolli, 9/6/01, p. 245.)

9. The English Station facility is an existing, major stationary source. The application filed in May 2000 requested emission rates for significant pollutants that would classify the application as a major modification. These pollutants included CO (carbon monoxide), NOx (nitrogen oxide), SO_2 (sulfur dioxide) and PM_{10} (particulate matter).[7] The proposed emission rates were CO, 7.98 tpy (tons per year); NOx, 45 tpy; SO_2, 94.20 tpy; and PM_{10}, 4.47 tpy. (Ex. DEP-2; test. R. Pirolli, 9/4/01, pp. 12-15.)

10. In response to the DEP decision to review the application as a major modification, the applicant filed proposed revisions to its application in September 2000. These proposed revisions included limitations on the proposed operating capacity of the boilers through a fuel consumption restriction with resulting reductions in certain emissions to qualify the application as a minor modification to an existing source. (Exs. DEP-2, 3a, 3b, 5a, 5b, 20, 27, 28; ex. HO-3, exs. INT/CFE-NH-60a, 60b; test. M.

[5] If emission rates for regulated pollutants equal or exceed significance levels outlined in Table 3a (k) – 1, a modification is considered major. (Test. R. Pirolli, 9/4/01, pp. 9-14.)

[6] Exs. DEP-21a, 21b are the original draft permits. The second, revised per comments of the applicant, are Exs. DEP-29a, 29b. The currently revised permits that are relevant to this proceeding are Exs. DEP-29aa, 29bb.

[7] PM_{10} is particulate matter that is ten microns and smaller in diameter. (Test. L. Green, 10/10/01, pp. 1738-1741.)

Holzman 9/4/01, pp. 43-44, 80-81; test. R. Pirolli, 9/4/01, pp. 12-15, 9/6/01, pp. 245-247.)

11. The September 2000 revisions to the application proposed the following federally enforceable[8] emission limitations for significant pollutants: CO, 4.41 tpy; NOx, 24.9 tpy; SO_2, 6.27 tpy; and PM_{10}, 2.91 tpy. The applicant proposed further emission rate reductions in June 2002 as a result of the requirements of §22a-174-3a. The rates were CO, 4.36 tpy; NOx 24.58 tpy; SO_2 6.19 tpy; and PM_{10} 2.88 tpy. These revisions have been incorporated into the draft permits. Both sets of proposed revisions are below the significance levels set out in Table 3a (k) – 1 of §22a-174-3a(a)(3). (Exs. DEP- 5a, 5b, 29a, 29b, 29aa, 29bb; test. R. Pirolli, 9/4/01, pp. 12-14, 9/6/01, pp. 246-247.)

12. The two boilers will use low sulfur distillate oil, which is classified by a sulfur content of 0.05 percent. The boilers will only operate to meet peak electricity demands in the state. During peak demand, the maximum operating hours will be limited to sixteen hours per day, five days a week at 100 percent power generation and the remaining hours of the week on boiler warm standby at 15 percent power, with no electricity generation. The combined total hours of operation for the boilers will be limited to about 300 hours per year, based on an annual fuel limitation of approximately 1.7 million gallons of oil for both boilers. The boilers will be operated with low NOx burners. The permits also require that operational stack testing be conducted to determine if a lower level of NOx can be achieved on an on-going basis; this target emission rate is 0.15 lb/MMBtu.[9] The facility will also be required to do continuous emissions monitoring according to the procedures of the DEP Continuous Emissions Monitoring (CEM) Guideline. (Exs. DEP-5a, 5b, 27, 28, 29aa, 29bb, 33; test. M. Holzman, 9/4/01, pp. 45-56, 85-86, 134-138.)

13. Staff's technical review of the application included an evaluation of air quality impacts from the proposed reactivation of the boilers. As required pursuant to its status as a major modification at that time, the applicant prepared an initial modeling

[8] A permit issued pursuant to a state program approved by the U.S. EPA (i.e., meets federal requirements) is federally enforceable. 40 CFR §51.160. See Regs., Conn. State Agencies §22a-174-1 (38).
[9] Pounds per million British thermal units.

report in April 2000 that was based on the specifics of the May 2000 application, including the use of .5 percent sulfur oil. Although the application was subsequently revised and reviewed as a minor modification and air modeling was not required, the applicant performed a second modeling that was based on this revised application and the use of 0.05 percent sulfur oil. A report on this modeling was prepared in July 2001. The annual air modeling was based on a maximum rate of capacity between the hours of 6:00 am and 10 pm, and a rate of 15 percent of maximum rate of capacity between the hours of 10:00 pm and 6:00 am. (Exs. APP-7-10, 14-16; exs. DEP-10a, 10b, 11; test. D. Powell, 9/4/01, pp. 149-160, 9/6/01, pp. 197-200, 203-242; test. R. Pirolli, 9/6/01, p. 248; test. J. Catalano, 9/6/01, pp. 333-348.)

14. In the second modeling, the only pollutant above the significance level at several receptors was the 24-hour SO_2 concentrations. Therefore, modeling continued and other National Ambient Air Quality Standard (NAAQS) sources were modeled in addition to English Station. The July 2001 air quality report stated that the operation of the facility, plus twenty-eight NAAQS sources modeled, plus background, would not exceed any ambient air quality standard. The report also found that the facility, plus ten PSD (prevention of significant deterioration) sources, would not exceed the PSD increment[10] allowed under federal regulations. The reports were submitted to the DEP, and the modeling runs were approved. (Exs. APP-14-16; exs. DEP-10a, 10b, 11, 20, 30, 30a, 34; test. D. Powell, 9/4/01, pp. 159-184, 9/6/01, pp. 198-210; test. R. Pirolli, 9/6/01, p. 248; test. J. Catalano, 9/6/01, pp. 349- 352.)

15. The applicant performed a HAPS (hazardous air pollutants) analysis, which showed that actual stack concentrations would be less than the MASC (maximum allowable stack concentration). The applicant reported a misstatement in the application regarding the noted distance from the stacks to the property line. This error had no impact on the MASC calculation because the computation was based on the stack heights and not distance to the property line.[11] (Ex. APP- 18; Exs. DEP- 9a, 9b, 20, 29aa, 29bb;

[10] A PSD increment is the maximum increase in concentration that is allowed to occur above a baseline concentration for a pollutant. (Test. D. Powell, 9/4/01, pp. 165-167.)

[11] In a September 7, 2001 letter, QE consultant Michael Holzman provided revised calculations demonstrating compliance with MASC. The minimum distance from the stacks to the closest property line was changed from 1,010 feet (boiler #13) and 1,080 feet (boiler #14) to 110 feet for each stack. §22a-174-

test. M. Holzman, 9/4/01, pp. 66-69, 79-80; 131-132, 9/10/02, pp. 372-374; test. R. Pirolli, 9/6/01, pp. 252-253.)

16. A BACT (best available control technology) review was conducted to determine the most effective emission control device or technique that would result in a maximum degree of emission limitation for NOx and SO_2, the only potential emissions greater than 5 tpy.[12] BACT for NOx was determined to be operational modifications; for SO_2, BACT was the use of fuel oil with 0.05 percent sulfur content. (Exs. DEP-2, Attachment G, 7a-7g, 20; exs. INT/CFE-NH-15, 24, 26i, 63; test. M. Holzman, 9/4/01, pp. 55-66, 83-85, 89-96, 119-128; test. R. Pirolli, 9/6/01, p. 248.)

17. The applicant has proposed two revisions to the draft permits. The first proposes to eliminate the restricted hours of operation, and the second seeks to increase the amount of fuel that could be consumed if the applicant demonstrates that it has lowered the NOx emission rate. (Exs. DEP-5a, 5b, 27, 28; test. M. Holzman 9/4/01, pp. 69-72, 75-76.)

18. The information submitted by the applicant pursuant to §22a-174-3a included a new inventory of emissions as required by §22a-174-3a (c)(1)(I). As a result, QE proposed revised emission rates to keep NOx emissions below 25 tpy. These revisions reduced actual emissions as follows: NOx, 24.90 to 24.58 tpy; SO_2, 6.27 to 6.19 tpy; CO, 4.41 to 4.36 tpy; and PM_{10}, 2.91 to 2.88 tpy. These revisions have been incorporated into the draft permits. (Exs. DEP-2, 2a-d, 29aa, 29bb.)

3

Regulatory Requirements

19. DEP staff issued the Notice of Tentative Determination based on its conclusion that the applicant has either complied with, or there is a reasonable assurance that the applicant will comply with, all regulatory requirements that govern this application. (Ex. DEP- 22; ex. HO-3; test. R. Pirolli, 9/6/01, pp. 249-256.)

29(c)(1)(B). This correction is also proposed as a revision to the draft permits. (Ex. APP-18; Exs. DEP-29aa, 29bb; test. M. Holzman, 9/4/01, pp. 66-69.)

[12] Section 22a-174-3(b)(2)(B) required a BACT determination for each individual air pollutant with a potential to emit 5 tpy or more. The revised regulation, §22a-174-3a(j)(D), requires BACT only for individual pollutants with potential emissions of 15 tpy or more.

20. Although the pending application is not for a major modification, part of staff's review was an analysis to demonstrate that a major modification did not apply. Regs., Conn. State Agencies §22a-174-3a(a)(1)(B). (Exs. DEP-2, 3a, 3b, 4a, 4b, 5a, 5b, 20; ex. HO-3; test. R. Pirolli, 9/6/01, pp. 245-247.)

21. The applicant was required to apply for a permit because it seeks a modification of an existing emissions unit[13] that will increase potential emissions of any individual air pollutant from such unit by fifteen or more tpy. §22a-174-3a (a)(1)(E). The potential NOx emissions from the English Station facility are greater than fifteen tpy. (Exs. DEP-2, 2a-2d, 29aa, 29bb; test. R. Pirolli, 9/6/01, p. 249.)

22. As required by §22a-174-3a, the applicant submitted several documents that DEP staff appended to the application: a registration form certifying §22a-174-2a signatory responsibilities as required by §22a-174-3a(c)(1)(K); a Conformance Certification Form; and an application certification. To determine compliance with §22a-174-3a(a)(6) and (7), the applicant also filed a Major Premise Pollutant Summary form noting very slight increases in emission rates for NOx, SO_2, PM_{10} and CO[14] from the installation of five "Capstone" micro turbines.[15] §22a-174-3a(a)(3) and (c)(1)(I). As no construction is planned, the applicant did not file a proposed date for construction pursuant to §22a-174-3a(c)(1)(D)(iv). (Exs DEP-2, 2a-d; test. R. Pirolli, 9/6/01, pp. 250, 253.)

23. The following facts are necessary to determine the applicant's compliance with the relevant subsections of §22a-174-3a(d)(3).

- The applicant has suggested two revised permit conditions, but has not objected to any relevant regulations that govern this application. (Test. R. Pirolli, 9/6/01, pp. 249-256.)
- By satisfying the terms and conditions of the permits, the applicant will fulfill its duty to comply with the issued permits pursuant to §22a-174-3a(h). (Exs. DEP-29aa, 29bb; test. R. Pirolli, 9/6/01, p. 254.)

[13] An emissions unit is any part of a stationary source that emits or has the potential to emit any pollutant regulated under the federal Clean Air Act. 40 CFR 51.165 (a)(1)(vii).
[14] Potential emission rate increases are: .32 tpy NOx; .03 tpy SO_2; .11 tpy PM_{10}; and .87 tpy CO.
[15] Micro turbines are a power generation system. (Ex. DEP-2c.)

- The permits provide that the permittee has the responsibility to conduct, maintain and operate the regulated activity in accordance with the requirements of any relevant federal or state agency or the provisions of any state or federal law. (Exs. DEP-29aa, 29bb.)
- The permits provide that a representative of the DEP may enter on the premises at all reasonable times for the purpose of inspecting, monitoring and enforcing the conditions of the permits. (Exs. DEP-29aa, 29bb; test. R. Pirolli, 9/6/01, p. 254.)
- The applicant submitted an ambient air quality analysis that was approved by the DEP indicating that allowable emissions from the boilers would not have a significant impact on air quality. The analysis demonstrates that the applicant can operate the modification without preventing or interfering with the attainment or maintenance of any NAAQS standards or any PSD increments. (Exs. APP-14-16; exs. DEP- 10a, 10b, 11, 30, 30a; test. R. Pirolli, 9/6/01, p. 250.)
- The permits include various monitoring and record-keeping requirements, including continuous emissions monitoring. The permits require the installation and maintenance of a parametric monitoring system for NOx and SO_2, emissions, and fuel flow in accord with the requirements set out in the permits and according to the procedures of the DEP Continuous Emissions Monitoring (CEM) Guideline. The permits require that the permittee conduct regular stack testing and opacity[16] monitoring and report the results to the DEP to assure compliance with the permit terms and conditions. (Exs. DEP-29aa, 29bb, 33; test. R. Pirolli, 9/6/01, p. 251.)
- The permits require an initial stack test to demonstrate that the facility is meeting emission limits, and to determine the feasibility of reducing the emission limit for NOx. The permits, which establish minimum stack heights and exit temperatures, provide that good combustion practice will be established from the results of regular stack tests. The permits also call for the

[16] Opacity is the degree to which emissions reduce the transmission of light and obscure the view of an object in the background. §22a-174-1(77).

submission of regular opacity monitoring reports and the continuous monitoring of fuel flow. (Exs. DEP-2, 29aa, 29bb, 33; test. M. Holzman, 9/4/01, pp. 48-52; test. R. Pirolli, 9/6/01, p. 255.)

- The applicant has paid all required permit fees. (Ex. DEP-23; test. R. Pirolli, 9/6/01, p. 251.)
- The applicant conducted a BACT analysis for NOx and SO_2. The analysis was determined to be operational modifications for NOx and the use of low-sulfur 0.05 percent fuel for SO_2. The BACT determinations have been approved by the DEP and have been incorporated into the permits. (Exs. DEP-2, 7a-7g, 20, 29aa, 29bb; test. M. Holzman, 9/4/01, pp. 60-66, 84-85, 89-96; test. R. Pirolli, 9/6/01, pp. 248, 251.)
- The applicant has provided the Commissioner with current information regarding air pollutant emissions from the facility. This compliance includes responses to requests for information from the DEP and self-reporting when errors were identified. (Ex. APP-18; exs. DEP-5a, 5b; test. M. Holzman, 9/4/01, pp. 80, 132; test. R. Pirolli, 9/6/01, pp.252-253.)
- The applicant performed a HAPS analysis that demonstrated that all of the HAPS identified in §22a-174-29 and the emissions factors obtained from those pollutants satisfy the criteria that the actual stack concentration for each HAPS is less than the MASC. (Ex. APP-18; exs. DEP- 2, 9a, 9b, 20, 29aa, 29bb; test. M. Holzman, 9/4/01, pp. 66-69, 79-80; test. R. Pirolli, 9/6/01, pp. 252-253, 256.)
- The applicant will be sent a pre-inspection questionnaire prior to the issuance of the permits that will describe the equipment, processes and materials used. (Test. R. Pirolli, 9/6/01, pp. 255-256.)
- The permits provide that the permittee shall keep records on the premises indicating continual compliance with all permit conditions and shall make them available upon request by the DEP for the duration of the permit or for the previous five years, whichever is less. (Exs. DEP-29aa, 29bb.)

4

Proposed Modifications to the Permits

24. In an April 23, 2001 letter to the DEP, Michael Holzman, the applicant's air quality consultant, provided technical comments to the two draft permits. Some of these comments were incorporated into the draft permits that were the subject of the March 20, 2001 Notice of Tentative Determination. (Ex. APP-1; exs. DEP-21a, 21b, 22, 27, 28, 29a, 29b.)

25. Two comments that were not incorporated into the draft permits are offered as proposed modifications to the draft permits. The first seeks a modification of the permit that would allow QE to increase its fuel consumption limits if it is able to demonstrate to the DEP that it has achieved a NOx emission rate of less than 0.2 lb/MMBtu. The second would eliminate the 16-hour day, five days per week operating restriction. (Exs. DEP – 27, 28, 29aa, 29bb, 30, 30a; test. M. Holzman, 9/4/01, pp. 52 - 53, 71-72, 9/6/01, pp. 264-267; test. J. Catalano, 9/6/01, pp.332-335.)

26. The DEP would agree to the first proposal only if the permits require the installation and operation of a NOx analyzer that would continuously monitor NOx emissions. The DEP would not support the elimination of the restricted hours of operation unless the applicant submits a new modeling analysis that is approved by the DEP. (Exs. DEP-28, 30, 30a; test. M. Holzman, 9/4/01, p. 86; R. Pirolli, 9/6/01, pp. 264-268.)

27. Staff recommends that a condition be placed in the permits that restricts the hours of operation of the facility to maximum capacity between the hours of 6:00 am to 10:00 pm and 15 percent capacity from 10:00 pm to 6:00 am. These operating restrictions, which were assumed in the air modeling, would also keep SO_2 concentrations below the acceptable PSD increment. A modeling was done with the facility operating 24 hours per day; the result was a predicted value of 6 ug/m^3,[17] exceeding the federal standard of 5 ug/m^3. (Exs. DEP-30, 30a; test. J. Catalano, 9/6/01, pp. 333-342, 345-348.)

28. Holzman suggested several edits in a September 7, 2001 letter. He recommended that the definition of the sulfuric acid emission factor, note c. in Part VI of both draft permits, be changed from 3.4475(S) (98/90)lbs/1000 gallons to 2.45(S)lb/1000

[17] Micrograms per cubic meter.

gallons. He also found an apparent typographical error in the emission rate for benzene in Part VI of the draft permit for boiler #14. The rate should be 6.75E-04 lb/hr, not 6.75E-03 lb/hour. These edits are proposed permit modifications, as noted herein. (Ex. APP-18.)

29. Adam Chambers, a witness for the intervenors CFE and NH, found a discrepancy between the Nickel limitations listed in the draft permits. Chambers recommends, and DEP staff agrees, that the permit for boiler #14 should be changed to reflect the correct limitation listed in the permit for boiler #13, which is 3.74E-04 tons per year. This correction is a proposed modification of the permits, and noted herein. (Ex. INT/CFE-NH-69c.)

5

Unreasonable Pollution

30. The English Station facility is located in the center of a densely populated urban area, which includes the Fair Haven neighborhood to the east. According to census data and classifications, the area within two miles of the facility has a large percentage of minority residents and/or low and moderate-income households.[18] There are also a significant percentage of children and elderly in the population.[19] Within this two-mile radius are numerous public and private schools, hospitals, parks and playgrounds, elderly housing, and day care centers. (Exs. INT/CFE-NH- 7, 7a, 8, 9, 76; exs. INT/NHEJN-17, 18; test. D. Brown, 9/19/01, pp.1080-1097; test. M. Mitchell, 10/2/01, pp. 1477- 1484, 1490-1493.)

31. Certain studies and statistics show, and some experts, including public health officials, aver that there is an association between elevated levels of certain pollutants such as PM_{10} and SO_2 and impacts on health, particularly to what are classified as "sensitive populations" living or working near the source of the emissions. These

[18] Except for isolated parts of the neighborhood (where the minority population ranges from 0 to 50 percent), most areas have a significant minority population. The percentage of minority population is 75 to 100 percent in more than one-half of the total area of the neighborhood. Fifty to 100 percent of more than one-half of the households in the neighborhood are low and moderate income. (Ex. INT/CFE-NH-9.)

[19] Children comprise 25 to 50 percent of the population in about one-half of the neighborhood. About one-quarter of the neighborhood has a population of which 12 to 35 percent is over age 65. Most of these residents are grouped together in an area around I-95 and within two miles of the facility. (Ex. INT/CFE-NH-8.)

sensitive populations include children, the elderly, and, according to some studies, certain minority populations and persons at lower income levels. There is growing anecdotal evidence that certain environmental factors, including outdoor air pollution, may trigger or increase the incidents of these health problems. Asthma in particular seems to be on the rise, especially among children.[20] In addition to asthma, health risks of concern include heart attacks and other cardiac problems and certain chronic lung diseases. Other experts note that studies and statistics demonstrate that there are many potential causes of asthma and other health problems. These experts conclude there is not enough empirical evidence to conclude that a particular environmental factor such as the presence of particular pollutants in the air is a direct cause of an adverse impact on the health of a population or population group. (Exs. APP-17, 23, 33-35; exs. INT/CFE-NH- 11d, 11e, 12, 12a-12h, 70b; exs. INT/NHEJN-15, 16, 16a; test. 9/19/01, N. Eatough, pp. 968-1005, 1007-1055; test. D. Brown, 9/19/01, pp. 1064-1080, 1102-1131; test. M. Mitchell, 10/2/01, pp. 1486-1490, 1492-1496, 1503, 1507, 1510-1520, 1522-1523; test. L. Green, 10/10/01, pp. 1743-1842.)

32. Adam Chambers, an air quality witness for the intervenors CFE and NH, described New Haven as having a "non-attainment" classification for particulate matter, and said that the city is classified as "serious non-attainment" for ozone. He also reported his observation that approximately 80 percent of peak electricity demand days over the last several years coincided with days of high ozone levels in New Haven. Chambers' research shows that PM_{10} levels were high on these days as well. However, PM_{10} concentrations for New Haven and the state are below the NAAQS for this pollutant. (Exs. APP-19, 27; exs. INT/CFE-NH-7a, 13b, 13bb, 13c-d, 69a, 69b[21]; test. A. Chambers, 9/10/01, pp. 504-524, 531-563, 9/12/01, pp. 603-608, 611-640.)

[20] Several studies and surveys show that an estimated 8 to 10 percent of children under the age of 18 were reported to have asthma, with a slightly higher rate in black and Hispanic children. Approximately 18 percent of New Haven parents recently surveyed reported that within the preceding twelve months, their school-age child was either diagnosed with asthma by a physician or had wheezing or whistling in his or her chest. Data collected from New Haven schools show that asthma is a major reason for visits to the nurse. (Exs. INT/CFE-NH-11d, 11e, 12, 12a-12h; exs. INT/NHEJN-16, 16a; test. 9/19/01, N. Eatough, pp. 967-1005, 1007-1055, 1036-1046.)

[21] A review of the record reveals that this exhibit was offered and revisions were discussed and agreed on. There is no record that this exhibit was ever officially admitted into the record. This exhibit is a summary of Adam Chambers' testimony. As such, much of its contents are already in the record. It is noted as an

33. Ambient levels of air pollution throughout the State are measured by air monitoring network sites operated by the DEP. These receptor sites measure air pollution levels for criteria and non-criteria pollutants.[22] In New Haven, sites measure ozone, NO2, SO_2, $PM_{2.5}$ and PM_{10}. In 1999, measured $PM_{2.5}$ concentrations for the State exceeded the 15 ug/m^3 annual standards only at the Stiles Street site in New Haven, which measured a level of 17.9 ug/m^3. The 24-hour standards of 65 ug/m^3 were not exceeded at any time. There were no PM_{10} concentrations at any site that exceeded the 24-hour standards for PM_{10} in 1999. The Stiles Street site recorded the largest decrease in the state for that year. This report also noted that none of the air quality standards for SO_2 were exceeded in the state in 1999, but showed that New Haven reported exceeding the 8-hour ozone standard on twenty-six days in that same year. According to this report, the entire state is considered "non-attainment" for ozone. Because of this, the Clean Air Act requires the DEP to prepare an inventory of precursors of ozone (NOx, CO and VOCs) every three years as part of its state implementation plan. This inventory classifies sources of air pollution and compiles an inventory to track emissions from facilities. (Exs. APP-19, 28, 28a, 31, 32; ex. DEP-35; exs. INT/CFE-NH-13b, 13bb; test. C. Mulcahy, 10/17/01, pp.1887-1906.)

34. Dr. Bruce Egan, an air quality consultant and expert witness for the intervenors CFE and NH, modeled SO_2 and PM_{10} emissions from the English Station facility. He modeled the emissions as if the facility were operating under the proposed permit conditions (e.g., limited hours of operation) and measured the predicted impact at twenty-one "sensitive receptors", which included parks, playgrounds and elderly housing units. Short-term exposures to SO_2 and PM_{10} were measured to evaluate the intervenors' claim that the facility would effectively operate as a major source when emissions are calculated in this way. Hourly exposures, with 24-hour averages for each day, were measured at these receptors. Although these receptors recorded some noteworthy hourly exposures to SO_2 and PM_{10}, there were no violations of the NAAQS. These modeled exposures from the English Station facility were considered by the intervenors in the

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exhibit; however, because of its status, it was given the appropriate weight in my deliberations. (Tr. 9/10/01, pp. 506-511.)

[22] Criteria pollutants are those for which ambient standards have been set. §22a-174-1(27). The criteria pollutants monitored in Connecticut include ozone, NO2, SO_2, $PM_{2.5}$, and PM_{10}. (Ex. APP-19.)

context of other electricity generation projects in the state. (Exs. DEP-20, 21; exs. INT/CFE-NH- 7a, 7a(1) through 7a(3), 20, 21f, 52, 52a-c, 61, 61a, 62, test. B. Egan, 9/12/01, pp. 688, 695-728; 9/13/01, pp.782-798, 880-885.)

35. In setting the NAAQS, the EPA evaluates current scientific evidence on criteria pollutants, including SO_2 and PM_{10}, to determine standards for quality of outdoor air that are protective of the public health. These standards are based on 24-hour and annual periods. In setting these standards, the EPA calls upon a body of statistical and scientific evidence that is relevant to the question of health effects with respect to the inhaled pollutants. The NAAQS are intended to protect the entire population, including sensitive population groups such as asthmatics, children and the elderly. (Ex. APP-32; test. L. Green, 10/10/01, pp. 1731- 1767, 1796-1799.)

36. Denning Powell, an expert witness for the applicants, performed ambient air quality modeling using air quality computer models and inputs established and accepted by state and federal regulatory agencies. The model used eighty-five receptor points to predict ambient air concentrations for three criteria air pollutants: SO_2, NOx and PM_{10}. The model predicted concentrations at these points from twenty-eight other power plants or large sources in the area (NAAQS sources), and then predicted the concurrent cumulative impact of all plants on each point. This modeling was performed twice, first under the conditions of the first application and then under the conditions of the revised application. The first modeling was required when the application was considered a major modification; the second was not required as the application was being reviewed as a minor modification. According to the final report, the model outputs indicated that the ambient levels of the three air pollutants would increase only fractionally if English Station were operating. In addition, these levels, even when added to background and the contributions of the twenty-eight NAAQS sources, would not exceed this ambient air quality standard. (Exs. APP- 2, 7-10, 14-16, 32; exs. DEP-10a, 10b, 11, 20, 30, 30a; exs. INT/CFE-NH-14f, 14g; test. D. Powell, 9/4/01, pp. 149-184; test. J. Catalano, 9/6/01, pp. 333-349; test. L. Green, 10/10/01, pp. 1731-1736.)

37. The modeling performed for the applicant examined PSD sources against the PSD increments allowed under the federal Clean Air Act. Because the 24-hour concentrations for SO_2 were above the modeling significance level at several receptors,

twenty-eight NAAQS sources were modeled in addition to English Station. This modeling concluded that the PSD increment would not be exceeded, based on an operating restriction of sixteen hours per day. (Exs. APP-14-16; exs. DEP-10a, 10b, 11, 20, 30, 30a; test. D. Powell, 9/4/01, pp. 164-184, 9/6/01, pp. 197-210, 212-242; test. R. Pirolli, 9/6/01, p. 248; test. J. Catalano, 9/6/01, pp.333-352.)

38. Dr. David Brown, a public health toxicologist, was an expert witness for the intervenors CFE and NH. He performed a "place-based risk assessment" to evaluate the likelihood that unreasonable pollution might result from the operation of the English Station facility. His analysis, which also relied on various studies of the impact of pollutants on human health, sought to determine what the risk would be to a sensitive person when exposure occurs to that person. This assessment identified the population at potential risk as primarily children and the elderly, particularly those with lung diseases or disorders such as asthma. The current exposures potentially affecting this population were then assessed. These were measured by one-hour and 24-hour exposures for pollutants at various receptors in the area. Dr. Brown then looked at the physiology of potential responses to these exposures to determine the effect of additional exposures on the health of this sensitive population. Dr. Brown did not assess the specific types of particulates to be emitted by English Station in his "place-based risk assessment". He concluded, however, that susceptible people who live in the area and are impacted by the emissions of the English Station facility are reasonably likely to experience increased health risks due to the additional emissions of PM_{10} and/or SO_2 from the facility. This assessment also concluded that a standard of evaluation based on $PM_{2.5}$ would be more protective of public health.[23] (Exs. INT/CFE-NH- 7a, 7a(1) through (3), 8, 9, 13c, 13d, 52a, 52b, 70a, 70b, 73 – 76; test. D. Brown, 9/19/01, pp. 1056-1064, 1068-1131, 10/1/01, pp. 1139-1231, 10/18/01, pp. 1918-1974.)

39. Dr. Laura Green, the applicant's expert witness and a certified toxicologist, evaluated the modeling performed by Mr. Powell. She also conducted her own "place-based risk assessment", using studies referred to by Dr. Brown and using his

[23] DEP evaluates particulate material according to a PM_{10} standard, as per its regulations. In 1997, the U.S. EPA adopted standards for $PM_{2.5}$. $PM_{2.5}$, which is particulate matter 2.5 microns and smaller in diameter, was relevant in this proceeding only so far as it was applicable to the intervenors' claim of unreasonable pollution. (Ex. APP-19; exs. INT/CFE-NH-13b, 13bb.)

assumptions and conclusions based on those studies. Even though a risk-based assessment is not required when the NAAQS is not exceeded, Dr. Green performed a risk assessment to the populations identified by Dr. Brown as being at risk. Dr. Green found no measurable increased risk from the emissions to be emitted from the facility, and concluded that any impacts of the facility would be too small to be considered significant. Dr. Green concluded that these types of emissions were not of sufficient toxicological interest such that when the relatively benign quality of the emissions is combined with the small quantity of emissions, there is not a significant impact on air quality and health issues. (Exs. APP-3, 17, 32-35; exs. INT/CFE-NH-52, 52a, 52b, 70b, 74; test. L. Green, 10/10/01, pp. 1731-1736, 1742-1795, 1800-1843.)

6

Alternatives

40. Although there is no requirement that alternatives be assessed in the context of an application for a minor source, the applicant considered various options in the due course of its business that could be considered alternatives to the present application. Two of these alternatives are relevant here. The first would convert the boilers so they would burn natural gas rather than oil as fuel. The second would install two new 80-megawatt combined cycle gas turbines and supply steam to Simkins Industries, a paper production facility across the river from English Station. A third alternative was not considered as an option by the applicant, but was discussed in the context of testimony regarding alleged disparate impacts of the facility on area residents who are predominantly minority and/or low-income populations. This alternative would keep English Station closed and, if necessary, a regional power plant would be sited at another location. (Exs. APP- 4, 5; exs. INT/CFE-NH-14c, 16-18, 28a, 28b, 30-33, 41a, 41b, 43, 46, 71, 78a-78c, 79; test. D. Powell, 9/10/01, p. 378- 463; test. R. Pirolli, 9/10/01, p. 383; test. R. DeGeeter, 9/13/01, pp. 899-907, 916-917; test. S. DeGeeter, 10/2/01, pp. 1342- 1369; test. M. Mininberg, 10/2/01, pp. 1376-1386, 1390-1405; test. M. Mitchell, 10/2/01, pp. 1473-1486, 1489-1498, 1512, 1515-1522.)

41. In general, natural gas is a cleaner fuel. To assess the impact if the oil-fired boilers were converted to natural gas, a study was conducted on behalf of the

intervenors CFE and NH comparing emissions from English Station as specified in the revised draft permits with predicted emissions from boilers fueled by natural gas. This analysis, which was based on heat content requirements in the permits, showed that in general, emissions were reduced with gas fuel, however, carbon monoxide and benzene emissions increased. In addition, more tons per year (tpy) of certain pollutants would be generated by a gas-fueled facility. The reductions in emissions were not as notable when the calculations were based on the tpy of NOx requested under the permits. (Ex. DEP-29a, 29b; exs. INT/CFE-NH-69c, 69cc; test. A. Chambers, 9/10/01, pp. 525-531, 9/12/01, pp. 588-603, 628-630, 642-677; test. D. Powell, 9/10/01, pp. 458-459; test. B. Egan, 9/12/01, pp. 728-731, 734-740, 9/13/01, pp. 778-780; test. D. Brown, 10/1/01, pp. 1231-1237.)

42. In order to convert the boilers from oil to natural gas as an alternative fuel, gas would have to be available in sufficient quantities to supply fuel to the boilers. Natural gas service is presently available for heating the English Station building, but there is not an adequate supply to provide fuel to the boilers. The boilers would also have to be converted to accommodate gas fuel. The manufacturer of the boilers has no record of these types of boilers being converted, and will not warranty or guarantee their operational performance or the emissions pertaining to a conversion to gas. (Ex. APP-22; test. R. DeGeeter, 9/13/01, pp. 907-909, 938-940; test. B. Egan, 9/13/01, p. 773; test. M. Holzman, 10/3/01, pp. 1589-1591.)

43. The applicant publicly discussed the alternative of using natural gas as fuel and included the idea of eventually powering the facility with natural gas-fired turbines in its original permit application. Various proposals to convert the facility from oil to gas were determined not to be feasible at the present time for economic and/or technical reasons. Some proposals were rejected because they were for facilities that would operate for more hours than permitted for this peaking power facility. In addition, as part of the BACT analysis, the applicant's experts evaluated this alternative and concluded that it was not technically feasible for this application. (Ex. APP-22; ex. DEP-2; exs. INT/CFE-NH- 16 - 18, 21a-e, 22, 30-33, 41a, 41b, 43, 46, 48-50, 78a-c, 79; test. B. Egan, 9/12/01, pp. 684-687, 9/13/01, pp. 773-774; test. R. DeGeeter, 9/13/01, pp. 898-916, 918, 924-926, 938-941, 10/18/01, pp. 1975-2011; test. S. DeGeeter, 10/2/01, pp.

1342-1356; test. M. Mininberg, 10/2/01, pp. 1379-1380, 1383-1450; test. M. Holzman, 10/3/01, pp. 1588-1599, 10/10/01, pp. 1655-1660.)

44. The applicant also considered the option of installing two new 80-megawatt combined cycle gas turbines. Under this system, the exhaust from the gas turbines would be used to create steam, which would then be passed through a steam turbine to generate additional power. This steam could be used to supply power to Simkins Industries, which would then be able to shut down its own oil-burning boiler. (Exs. INT/CFE-NH-16-18, 28a, 28b, 30, 32, 33, 43, 48-50; test. D.Powell, 9/10/01, pp. 378-384, 386-387; test. R. DeGeeter, 9/13/01, pp. 916-949; test. S. DeGeeter, 10/2/01, pp. 1343-1369; test. M. Mininberg, pp. 1379- 1405, 1410-1450.)

45. To assess this alternative, a modeling was performed that compared ambient air quality impacts of Simkins' stack emissions with stack emissions from a new combined cycle turbine installation at English Station. The modeling, which based its conclusions on the assumption that Simkins would shut down its boiler, predicted a reduction in air pollutant concentrations and an improvement in ambient air quality. The modeling also demonstrates higher emission rates of pollutants such as PM_{10} on an annual basis and a substantial increase in tons per year of pollutants of concern. Two factors are essential to this alternative. First, Simkins must shut down its boiler (a factor over which the applicant has no control) and second, the English Station facility must be fueled by natural gas. This alternative would also require a new source review permit for a major power plant. In addition, the English Station transformer station would have to be substantially upgraded to accommodate the alternative 360-megawatt plant, instead of the proposed 75-megawatt facility. The alternative facility would also not be a peaking facility that would operate to meet electricity needs, but would be a base load operation that would produce steam and electricity, and could operate more than 8,000 hours per year. The fuel use for one 80-megawatt combined cycle unit would be much greater than the 1.7-million gallon limitation in the draft permits. The applicant concluded that this alternative is not financially or practically feasible at this time. (Exs. INT/CFE-NH-14b, 14c, 28a, 28b, 78c, 79; test. D.Powell, 9/10/01, pp. 379-463; test. B. Egan, 9/13/01, pp. 786-792; test. R. DeGeeter, 9/13/01, pp. 916-949; test. M. Holzman, 10/3/01, pp. 1595-1599, 10/10/01, pp. 1660-1661; test. R. DeGeeter, 10/18/01, pp. 2008-2011.)

46. Closing down English Station and locating a power plant elsewhere, perhaps as a regional power plant, was presented as an alternative to the present application in the context of testimony regarding alleged disparate impacts of the facility. This option is not prudent as it would involve siting and constructing a completely new facility in lieu of reactivating this existing facility. This option is not feasible as the DEP does not have jurisdiction over the siting of a new facility. The DEP would have to approve a new permit application following the approval of the site by the Connecticut Siting Council. (Test. M. Mitchell, 10/2/01, pp. 1509, 1521-1522; test. M. Holzman, 10/3/01, pp. 1588-1589.)

7

DEP Environmental Equity Policy

47. In 1993, the DEP issued its Environmental Equity Policy, which provides, in pertinent part, that "…no segment of the population should, because of its racial or economic makeup, bear a disproportionate share of the risks and consequences of environmental pollution or be denied equal access to environmental benefits."[24] The DEP created the Environmental Equity Program in response to this policy. The Program incorporates aspects of environmental equity into DEP program development, policy-making and regulatory activities, including: increasing public participation in the agency's decision-making process; enhancing public participation in administrative proceedings; and educating the public on DEP regulations, policies and procedures. The Department's effort to reach all segments of the population is fundamental to a fair administration of its programs and services. (Exs. HO-4, 4a; exs. INT/CFE-NH-34, 35; test. R. Pirolli, 9/6/01, pp. 256-258, 320-323; test. E. Pestana, 9/13/01, pp. 809-817.)

48. DEP staff notified the Environmental Equity Program about this permit application. Program staff attended a pre-application meeting with staff and QE, and encouraged the applicant to communicate with the residents in the area around English Station. Program staff advised DEP staff involved in the permit of the residents' concerns and told them that these residents wanted an opportunity to meet with them to

[24] *Environmental Equity Policy*, Connecticut Department of Environmental Protection, December 17,1993.

discuss issues such as the application process and to have their questions addressed. (Test. R. Pirolli, 9/6/01, p. 257; test. E. Pestana, 9/13/01, pp. 813.)

49. Throughout the application process, Program staff worked with air bureau staff and the applicant to facilitate meetings and communications to assure sufficient interaction with the community. Air Bureau staff met with members of the New Haven Environmental Justice Network and other individuals and groups in New Haven with an interest in this permit process. Working with Program staff, the acting director of Engineering and Technical Services in the DEP Air Bureau met with New Haven residents on February 28, 2001 and May 23, 2001 at the Fair Haven branch library to discuss the proposed project and to answer questions. Residents, including a community group, attended these meetings. The residents requested additional meetings, but the acting director felt he had held all necessary meetings. The acting director also attended the public hearings on the application held in New Haven. (Test. R. Pirolli, 9/6/01, p. 257; test. J. Pernell, 9/13/01, pp. 818-821; test. E. Pestana, 9/13/01, pp. 814-816, 844-845; test. G. Rose, 10/17/01, pp. 1874-1883.)

50. Notice of the permit application was published in *The New Haven Register* on May 23, 2000 pursuant to the requirements of General Statutes §22a-6g. The notice of tentative determination to approve the application was placed in *The New Haven Register* on March 23, 2001 pursuant to §22a-6h. The *Notice* was also sent to the mayors of New Haven, Hamden, North Haven, East Haven and West Haven, the Director of the New Haven Department of Health, and the Cooperative Citizens Monitoring Network. This *Notice* invited interested persons to submit written comments to staff objecting to the approval or requesting specific permit conditions. (Exs. DEP-6, 12-19, 22; test. R. Pirolli, 9/6/01, pp. 322-323, 248-249.)

51. The decision to hold a hearing on an application for a minor source permit is within the discretion of the Commissioner of Environmental Protection. Because of the public interest in this application and to facilitate public participation, the Commissioner directed that a hearing be conducted for this application. Notice of the hearings was published in July 2001 in *The New Haven Register*, *The Inner City News*, and *The New Haven Advocate*, and sent for publication to *La Voz Hispana De Connecticut*. Evening hearings were held in New Haven at which a Spanish interpreter

translated the presentations for the audience and was available to assist with public testimony. (Ex. APP-29; exs. DEP-24, 25, 26a, 26b; exs. INT/CFE-NH – 57a, 57b, 58, 59a, 59b; test. R. Pirolli, 9/6/01, p. 258; test. E. Pestana, 9/13/01, p. 871.)

52. The DEP required the applicant to do ambient air modeling and ambient impact analysis as part of this application process. This modeling and analysis showed no significant impact on ambient air quality. Accordingly, the DEP determined that the English Station facility would not cause a disproportionate or adverse impact on any population, including the residents near the facility. (Test. R. Pirolli, 9/6/01, pp. 312-319.)

B

CONCLUSIONS OF LAW

1

Regulatory Requirements

a

Criteria

The Commissioner has the power to promulgate regulations to control air pollution. General Statutes §22a-174. Section 22a-174-3a of the Regulations of Connecticut State Agencies implements this authority by prescribing the criteria for the issuance of permits to construct and operate stationary sources or modifications. The regulations, which must be consistent with federal law, incorporate certain federal standards such as the NAAQS. Section 22a-174-3a(d)(2) provides that a permit shall not be issued unless the Commissioner determines that the owner or operator of the subject stationary source or modification shall comply with the applicable provisions of §22a-174-3a(d)(3). The draft permits provide that the applicant (permittee) shall abide by the following applicable sections of subpart (3).

- *§22a-174-3a(d)(3)(A). Construct and operate such… modification in accordance with the permit, and operate such… modification in accordance with all applicable and relevant emission limitations, statutes, regulations, schedules for stack tests, and other order of the commissioner….*

The applicant has indicated it will comply with the relevant regulations that govern this application. The applicant has offered two revisions to the permit conditions, but has not indicated it would not comply with the present terms and conditions of the permits. As permittee, the applicant will have the responsibility to conduct, maintain and operate the regulated activity in accordance with the requirements of any relevant federal or state agency or the provisions of any federal or state law. The applicant has submitted evidence that it will construct and operate the regulated activity in accordance with the permits and according to all applicable and relevant emission limitations, statutes, regulations, schedules for stack tests and any other orders of the commissioner.

- *§22a-174-3a(d)(3)(B). Operate such… modification without preventing or interfering with the attainment or maintenance of any applicable ambient air quality standards or any Prevention of Significant Deterioration [PSD] increments under subsection (k) of this section.*

As part of the application process, the applicant submitted an ambient air quality analysis that was approved by the DEP. This analysis indicated that allowable emissions from the English Station facility would not have a significant impact on air quality. The analysis demonstrated that the applicant would be able to operate the facility without preventing or interfering with the attainment or maintenance of all applicable ambient air quality standards or any PSD increments.

- *§22a-174-3a(d)(3)(C). Operate such… modification without preventing or interfering with the attainment of maintenance of any National Ambient Air Quality Standard [NAAQS] in any other state and without interfering with the application of the requirements in any other state's implementation plan….*

The ambient air quality analysis that was conducted by the applicant indicated that allowable emissions from the facility would not have a significant impact on air quality. The analysis also demonstrated that the applicant would be able to operate the facility without preventing or interfering with the attainment or maintenance of any

NAAQS. Because the emissions would not have any significant impact on air quality, it is reasonable to conclude that the modification would not interfere with the attainment or maintenance of any NAASQ in this state or others, or with the implementation of any state's implementation plan.

- *§22a-174-3a(d)(3)(E). Install: (i) sampling ports of a size, number and location as the commissioner may reasonably require; (ii) instrumentation to monitor and record emission and other parameter data as the commissioner may require; and (iii) such other sampling and testing facilities as the commissioner may require.*

The draft permits specify the requirements for the installation, operation and maintenance of systems for the testing, monitoring and recording of emissions, opacity, fuel flow and any other required parameter data. The permits provide that all reporting requirements shall be completed according to the DEP CEM Guideline and 40 CFR §60.

- *§22a-174-3a(d)(3)(F). As the commissioner may require, conduct stack tests …in accordance with subsection (e) of this section, and in accordance with permit conditions and methods prescribed by the commissioner. Such stack tests shall demonstrate, to the commissioner's satisfaction, that the requirements of each and every applicable permit or order of the commissioner for such …modification are being met and that such…modification complies with [state regulations] and federal requirements.*

The draft permits require an initial stack test to demonstrate that the facility is meeting emission limits. Regular stack testing must be conducted to ensure that good combustion practice will be established and maintained. Regular opacity monitoring reports must be submitted, and fuel flow must be continuously monitored. The permittee must install, certify, maintain, record keep and make required reports of a parametric monitoring system for NOx and SO_2, emissions, and fuel flow. The DEP CEM Guideline and federal regulations govern monitoring systems and reporting requirements.

- *§22a-174-3a(d)(3)(G). Pay all fees required by the Department within forty-five days of receipt of a tentative determination of the commissioner.*

  The applicant has paid all required fees.

- *§22a-174-3a(d)(3)(H). Incorporate Best Available Control Technology (BACT), as directed by the commissioner, for each individual air pollutant subject to, and in accordance with, subsection (j) of this section.*

The DEP technical analysis included a BACT review for NOx and SO_2, the only pollutants with potential emissions greater than five tons per year (tpy), the standard under the regulations that were in effect at the time the application was reviewed. The applicable provision of subsection (j) now provides that an owner or operator shall incorporate BACT for potential emissions of fifteen tons of more per year of any individual pollution. §22a-174-3a(j)(1)(D). The applicant submitted a BACT analysis for NOx that was determined to be operational modifications and an analysis for SO_2, which was the use of 0.05 percent sulfur fuel oil. Even though BACT for SO_2 is no longer required, the BACT for both NOx and SO_2 have been and remain incorporated into the draft permits and will remain in the issued permits.

- *§22a-174-3a(d)(3)(K). As required by the commissioner, install monitoring equipment and perform monitoring to demonstrate compliance with any permit provision. Such monitoring may include, but not be limited to, continuous emission monitoring (CEM).*

The applicant shall submit a continuous emission-monitoring plan before starting its commercial operations. As permittee, the applicant shall install monitoring devices to continuously monitor fuel feed, and NOx testing shall be performed at least every five years. The permittee shall install, certify, maintain and make required reports of a parametric monitoring system for NOx and SO_2, emissions, and fuel flow.

- *§22a-174-3a(d)(3)(L). Provide the commissioner with current information regarding air pollutant emissions from such… modification, and in accordance with the commissioner's request, submit updated and current information regarding air pollutant emissions from any other stationary sources located on the applicable premises.*

The draft permits provide that for the duration of the permit, the permittee shall keep records on the premises indicating continual compliance with all permit conditions and shall make these records available upon request to the commissioner. These permit conditions include allowable emission limits. During the application process, the applicant has provided the commissioner with current information on air pollutant emissions from the facility. The applicant has responded to additional requests for information from the DEP and has reported its own errors when they were identified.

- *§22a-174-3a(d)(3)(M). Comply with any applicable maximum allowable stack concentrations or other emission limitation of …§22a-174-29….*

Section 22a-174-29 lists the hazardous air pollutants (HAPS) that are used to derive the maximum allowable stack concentration (MASC) for a source. The emissions of any listed hazardous air pollutant from any stationary source shall not exceed the MASC. The applicant performed a HAPS analysis that demonstrated that all of the identified hazardous air pollutants and emissions factors obtained from those pollutants satisfy the criteria that the actual stack concentration for each pollutant is less than the MASC. In addition, as a minor source, English Station is not a major source of HAPS.

- *§22a-174-3a(d)(3)(N). Demonstrate that the emission limitation required of such …modification for the control of any air pollutant shall not be affected by that portion of the stack height …that exceeds good engineering practice stack height or by any other dispersion technique.*

The application outlines the height and diameter requirements of the two stacks, and other stack parameters in conformance with good engineering practice. The stack emission rates for listed pollutants for each stack are also listed. The draft permits establish minimum stack heights and exit temperatures, and provide that good combustion practice will be established from the results of regular stack tests. The permits also call for the submission of regular opacity monitoring reports and the continuous monitoring of fuel flow. No required emission limitation will be affected by any portion of stack height exceeding good engineering practice or by any dispersion technique.

- *§22a-174-3a(d)(3)(P). Have completed and submitted, on forms prescribed by the commissioner, a pre-inspection questionnaire, if requested to do so by the commissioner, which describes the equipment, processes and materials used.*

The DEP will send the applicant a pre-inspection questionnaire prior to the issuance of the permits that will describe the equipment, processes and materials used.

- *§22a-174-3a(d)(3)(Q). Make the permit available at the subject premises throughout the period that such permit is in effect.*

The permits provide that records indicating continual compliance with all permit conditions must be kept on site at all times and made available upon the request of the DEP Air Bureau for the duration of the permit or the previous five years, whichever is less. There is no express requirement that the permit itself be available on site. It is not unreasonable to revise this condition to include a provision that a certified copy of the permit must be kept on the premises throughout the same period, to assure compliance with this regulation. This copy must be made available to the DEP upon request. It is also not unreasonable that this copy be made available to the public for review upon request, within a reasonable time and during regular business hours. Any sections or attachments to the permits that contain proprietary information or trade secrets may be redacted from the copy available for public review.

- *§22a-174-3a(d)(3)(R). Comply with the applicable provisions of this section and any other applicable regulations, permits or orders of the commissioner for such… modification.*

The applicant, as permittee, has the duty to comply with the permits pursuant to §22a-174-3a(h). The permits provide that the permittee has the responsibility to conduct, maintain and operate the regulated activity in accordance with the requirements of any relevant federal or state agency or the provisions of any state or federal law. The applicant has not indicated it will not comply with any relevant regulations that govern this application or to any permit conditions. The commissioner may also impose conditions on any permit to ensure regulatory compliance. Regs., Conn. State Agencies §22a-173-3a(d)(1) and (2).

b

Compliance

The intervenors CFE and NH assert that the applicant has not proven that it has complied with these regulatory requirements. However, these intervenors do not argue that the applicant has failed in its proof of regulatory compliance. Instead, they allege that the applicant's use, or misuse, of an "administrative device", known as a "PSD non-attainment review avoidance procedure", allowed it to qualify English Station as a "fictitious minor source" and avoid the more stringent control technology requirements of a major source review. The intervenors claim that even with the operating controls obtained as a result of the review avoidance procedure, English Station barely falls under the threshold for NOx emissions. The application, they conclude, "passed by a hair's breadth" into the category of a minor modification. The intervenors claim that this result does not comply with the regulations, particularly in the case of an oil-fueled peaking facility.

The term "minor modification" is not specifically defined in the Regulations of Connecticut State Agencies. Section 22a-174-1(55) refers to federal law to describe a "major modification" as "any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any

[regulated] pollutant". 40 CFR 51.165 (a) (1) (v). Net emissions increases or potential increases are "significant" when they equal or exceed rates set out in federal law. This State, as all states may do, has set emission rates that equal or exceed federal law. The rates set out in the Connecticut regulations include: CO, 100 tpy; NOx, 25 tpy; SO_2, 40 tpy; and PM_{10}, 15 tpy. §22a-174-3a, Table 3a (k) – 1. The following emission limits are in the draft permits: CO, 4.36 tpy; NOx, 24.58 tpy; SO_2, 6.19 tpy; and PM_{10}, 2.88 tpy.

Therefore, whether a new source or a modification is major depends on whether that source or modification has or will have the potential to emit significant amounts of a regulated pollutant. Section 22a-174-1(86) of the Regulations of Connecticut State Agencies defines "potential to emit" as "the maximum capacity of a stationary source, *including all* physical and *operational limitations*, to emit any air pollutant…." (Emphasis added.) Subparagraph (B) of this section specifically includes restrictions on hours of operation and production in the definition of *operational limitations*.

In *United States v. Louisiana-Pacific Corporation,* 682 F. Sup. 1122 (D. Colo. 1987), 682 F. Sup. 1141 (D. Colo. 1988), the federal court found that restrictions on hours of operation or fuel consumption are proper considerations in determining the potential to emit. These conditions, the court noted, satisfy the requirement that permit conditions be federally and practically enforceable. Comparing these restrictions to other types of permit conditions, the court said: "Restrictions on hours of operation or on the amount of material which may be combusted… are, relatively speaking, much easier to 'federally enforce.' Compliance with such conditions could be easily verified through …[evidence such as] production records." 682 F. Sup., p. 1133. See also *Alabama Power v. Costle*, 636 F. 2d 323 (D.C. Circuit 1979) (discussion of proper permit restrictions on potential to emit).

The restrictions on the hours that English Station may operate and the fuel it may consume are federally and practically enforceable conditions that will keep its emissions below the levels of significance. Under state and federal law, the rate at which NOx emissions would become significant is 25 tpy. The allowable NOx emission rate for

English Station is 24.58 tpy. If the intervenors allege that the standard of 25 tpy is not sufficient to protect the public health, they are in the wrong forum to do so. An administrative hearing is not an opportunity for regulatory revisions. See *Taft v. Wheelabrator Putnam, Inc.*, 55 Conn. App. 359 (1999), citing *Young v. Chase*, 18 Conn. App. 85 (1989) (declaratory judgment proceedings are appropriate for determining validity of regulations of an administrative agency).

There is no merit to the intervenors' claim that this application should not qualify as a minor modification because it is for a peaking facility. Section 22a-174-3a does not make a distinction between base load utility boilers and peaking units. Each falls within the definition of "fuel burning equipment" found in §22a-174-1 (40) and described as "any furnace, boiler, apparatus, stack, and all appurtenances thereto, used in the process of burning fuel for the primary purpose of producing heat or power."

The applicant has complied with the regulatory requirements to qualify its application as a minor modification to an existing major source. The operational modifications, monitoring systems, and reporting requirements in the draft permits, and the additional permit conditions recommended herein, will ensure continued compliance with these requirements.

2

Proposed Modifications to the Permits

a

Increase in Fuel Consumption Limits

The fuel consumption limit in the draft permits is based on the amount of fuel that could be combusted to achieve an annual NOx emission limit of 24.9 tpy at a NOx emission rate of 0.2 lb/MMBtu. QE asks for a modification of this limit if it can demonstrate to the DEP that it has achieved a target NOx emission rate of less than 0.2 lb/MMBtu.[25] QE asks that the permits be modified to increase its fuel consumption limit

[25] The applicant is required to perform operational modifications during initial stack emission testing to meet a target NOx emission rate of 0.15/MMBtu.

to achieve an annual NOx emission limit of 24.9 tpy according to a formula that will increase the limitation by 12,450 MMBtu per 0.01 lb/MMBtu reduction.

The BACT operational modifications set a target NOx emission rate of 0.15 lb/MMBTU. The permits allow a NOx emission limit of 24.9 tpy, now revised by the applicant to 24.58 tpy. The fuel consumption limit in the draft permits is based on the amount of fuel that could be combusted to achieve that emission limit at a NOx emission rate of 0.2 lb/MMBtu. It is not unreasonable to allow QE to increase its fuel consumption limits to achieve the approved NOx emission limit of 24.58 tpy if it is able to reduce the target emission rate to less than 0.15 lb/MMBtu.

The DEP would agree to this proposal only if the permits require the installation and operation of a NOx analyzer that would continuously monitor NOx emissions. Such a condition should be placed in the permits as this NOx analyzer will help assure that any increase in the fuel consumption limitation does not put at risk the allowable NOx emissions limit of 24.58 tpy.

I recommend that this proposed revision to the fuel consumption limitation be included in the permits, with the requirement that the applicant install a NOx analyzer to continuously monitor NOx emissions. (See Part IV, *Recommended Permit Conditions*.)

b

Restricted Hours of Operation

The applicant asks for a permit modification to eliminate the 16-hour day, five days per week operating restriction. The applicant claims that this restriction is unnecessary as it was based on its original proposal to use residual oil rather than 0.05 percent sulfur distillate oil.

According to DEP staff, the restrictions have been placed in the draft permits because limited hours of operation were assumed in the modeling performed for this application. In addition, staff recommends that a condition be placed in the permits that

not only restricts the operation of the facility to sixteen hours per day, five days per week, but also restricts its hours of operation as follows. The facility could run at maximum capacity between the hours of 6:00 am to 10:00 pm and 15 percent capacity from 10:00 pm to 6:00 am. These specific operating restrictions were assumed in the modeling. Limiting hours of operation to 16-hours per day would also keep SO_2 concentrations below the allowable PSD increment that would be exceeded if the facility operated 24 hours per day.

The limited hours of operation cannot be eliminated without an entirely new modeling analysis submitted and approved by the DEP. I therefore cannot recommend the elimination of the limited hours of operation in the draft permits that are the subject of this application. The controlled hours of maximum operation of the facility of 6:00 am to 10:00 pm were assumed in the modeling. Restricted hours of operation will keep SO_2 concentrations below the allowable PSD increment (and not violate NAAQS). I therefore recommend that these defined hours of operation be included in the permits. (See Part IV, *Recommended Permit Conditions*.)

c

Minimum Distance to Property Line

The draft permits list the minimum distance to the property line as 1010 feet (permit #117-0320) and 1080 feet (permit #117-0321). The distance, as corrected by the applicant, is 110 feet. The MASC is not affected by this change. I recommend both permits be revised to reflect this information. (See Part IV, *Recommended Permit Conditions*.)

3

Unreasonable Pollution

The intervenors CFE, NH and NHEJN claim that the granting of these permits will result in unreasonable pollution because the emissions from the English Station facility will cause adverse health impacts to people who live, work, play or seek medical care and other services in an area with existing high levels of air pollution. This claim is

the basis of their intervention in this proceeding under the provisions of §22a-19(a), commonly referred to as the Connecticut Environmental Protection Act (CEPA).

The intervenors CFE and NH present three major arguments to support their claim. First, they claim that the quality of the ambient air in the area around English Station already has high levels of certain pollutants such as PM_{10} and ozone. Second, the intervenors maintain that because the facility would be a peaking plant, English Station would operate like a major source when it is providing power. Finally, the intervenors contend that the emissions from English Station will unreasonably increase the probability of adverse health impacts to exposed persons, particularly sensitive populations such as children and the elderly.

Dr. Mark Mitchell, representing the NHEJN, testified that the area already has high levels of air pollution and is densely populated with a high percentage of persons of color and/or low-income households, population groups he characterized as sensitive to environmental health hazards. Mitchell testified that the increase in pollution from the operation of English Station will impact health, particularly persons with or disposed to developing asthma.

I will address these and associated arguments seriatim. As the claims of the NHEJN are in accord with the position of CFE and NH, those claims will be included in my responses to the intervenors CFE and NH.

The intervenors presented documentary and testimonial evidence to show that the area in which the facility is located, particularly the Fair Haven neighborhood, is a place with already high levels of certain pollutants. However, the evidence that was presented to demonstrate that the quality of the ambient air in the area is poor was not persuasive.

Three main pollutants were of primary concern to the intervenors: ozone; PM_{10}; and SO_2. Overall, measured data to support testimony on the levels of these pollutants and their potential impacts was sparse or at odds with other sources of information,

including published state and federal statistics. Even data developed by arithmetic calculations was subject to several interpretations, depending on what numbers were used and how they were used and where they were placed at what part of the equations. Information presented was often perplexing and frequently did not establish or even confirm the information or proof it was offered to support.

It is undisputed that the entire state is non-attainment for ozone. However, the intervenors' expert on air quality found coincidence, not correlation, regarding ozone and the prevalence of high levels on days when the facility is likely to be in operation. Even if this expert had established a correlation, a causal relationship cannot necessarily be inferred by showing a correlation between two factors. In addition, the intervenors did not overcome the fact that the ozone emission rates in the permits are not at a level of significance.

The testimony presented on exposures from one-hour PM_{10} levels is of no consequence, as this standard does not exist under current state regulations. PM_{10} concentrations for New Haven are in compliance with the NAAQS 24-hour and annual standards for PM_{10}. No witness contested the fact that there would be no violation or contribution to a violation of NAAQS. The evidence on levels of $PM_{2.5}$ is not relevant to an assessment of air quality in the context of regulatory compliance; the standard, and the standard on which this application was evaluated, is PM_{10}.

The intervenors' expert testified that the PSD increment for PM_{10} is consumed in the East Rock area of New Haven. However, air modeling performed by the applicant and approved by the DEP indicates that any increment consumption in this area due to operation of the English Station facility is insignificant. Section 22a-174-3a(k) provides that a source contributing a modeled amount of less than a specific threshold for 24-hour and annual concentrations does not contribute to a modeled exceedance of a PSD increment and therefore will not significantly deteriorate air quality. The English Station facility will contribute amounts below these levels, and will therefore not make a

significant contribution to any worsening of air quality. If the intervenors seek to change the standard for this assessment, this proceeding is not the forum in which to do so.

Air quality modeling performed by the applicant revealed that 24-hour SO_2 concentrations were above the modeling significance level at several receptors. However, additional modeling that included NAAQS sources showed that the operation of the facility, plus the twenty-eight NAAQS sources, plus background would not exceed any ambient air quality standard. In addition, the restrictions on hours of operation in the permits will further assure that the PSD increments are not exceeded.[26]

As a peaking facility, English Station will operate for approximately 300 hours per year. The intervenors maintain that this limitation will result in emission rates during operation at levels equivalent to a major source. As discussed, supra, significant emission rate thresholds are outlined in Table 3a (k) – 1, §22a-174-3a of the Regulations of Connecticut State Agencies. If emission rates for regulated pollutants equal or exceed these significance levels, a source is considered "major". Because the rates for this application are below those levels of significance, this application is for a minor modification. These emission rate thresholds are evaluated on a "tons per year" basis, not an hourly basis as suggested by the intervenors. Similarly, §22a-174-1(57) defines "major stationary source" according to emission rates on a "tons per year" basis. There is no emission rate standard that determines a major source based on hourly rates rather than annual standards.

The intervenors also argue that comparing these permits to permits for certain major sources demonstrates that English Station will operate, on an hourly basis, as a major source. As discussed, there are no regulations to support any argument based on

[26] The modeled exceedance of the 24-hour SO_2 PSD increment is also affected by the operation of the New Haven Harbor Station. As of January 1, 2002, this plant was required to reduce the sulfur content of its fuel oil by 50 percent, which should eliminate the modeled PSD exceedance.

an hourly operation. In addition, a review of the evidence presented on this argument reveals a flawed analysis by the intervenors. A comparison of the hourly emission limits in permits for major sources with the same limitations in the draft permits for English Station, shows that English Station will not act as a major source of pollution on a per hour basis. English Station is a minor modification; it compares favorably with the major sources offered for comparison by the intervenors.

The third contention of the intervenors is that the emissions from English Station will unreasonably increase the probability of adverse health impacts to exposed persons, particularly sensitive populations such as children and the elderly. The intervenors offered evidence to demonstrate that this area includes a significant number of children and the elderly. They also presented extensive testimony and exhibits to show that these populations suffer adverse impacts to their health, especially higher rates of respiratory disease and disorders such as asthma.

It is undisputed that the area in which the English Station facility is located is a densely populated, urban setting. The intervenors offered credible evidence that this area includes a relatively large percentage of children, the elderly, and population groups described in census data as minority and low to moderate-income households. The intervenors also demonstrated that the area includes concentrated areas of housing, and numerous parks, playgrounds, schools, hospitals, elderly housing and other similar facilities.

The intervenors focused a great deal of their argument on their claim that exposures from these polluting emissions, particularly one-hour exposures, would have an adverse impact on the health of the people in the area. One expert for the intervenors performed what he called a "place-based risk assessment" to demonstrate that the emissions from English Station would impact health problems, especially to sensitive populations such as children and the elderly. There was also testimony and information on asthma and other respiratory diseases and disorders and the connection between the

onset or aggravation of these problems if the English Station facility is permitted to operate.

The evidence presented by the intervenors, while extensive, does not support a finding that the operation of English Station would result in adverse impacts to health. The intervenors did not present persuasive or credible evidence that emissions from the English Station will significantly add to any ambient air pollution in the area such that adverse impacts to health would result from the operation of the facility. Critical to their argument is their assessment of risk based on hourly exposures. This, as has been discussed, is not the measurement of risk on which regulations are based.

The intervenors did not establish a causal link or nexus between the operation of English Station and adverse impacts on health. The testimony and information on asthma and other health problems demonstrated that health impacts are a serious concern and that environmental factors probably contribute to the problem, but did not establish a sufficient connection between potential health problems in the area and the emissions from English Station. The evidence showed that asthma is a growing problem, and that it has impacted residents of New Haven. However, much of the evidence regarding this issue in general is still in the anecdotal stage. In this case, there was no quantitative or even persuasive anecdotal evidence to show how the emissions from this source would impact health.

It is reasonable to conclude that environmental factors – such as indoor and outdoor pollution – could have an impact on health problems such as asthma. However, the intervenors did not present sufficient evidence to show how the operation of this minor modification, with no measurable increased risks from its emissions, would cause adverse impacts to health. There are many causes of health problems such as those examined in the context of this proceeding. The intervenors have not presented convincing evidence of a causal connection between these problems and the impacts of particular environmental hazards.

The intervenors CFE and NH claim that the restarting of the English Station facility under these circumstances poses a health hazard meeting the "legal definition" of unreasonable pollution. In considering claims of "unreasonable pollution" in the context of a CEPA claim, Connecticut's courts have not presented a per se legal definition of the term. The courts have interpreted the term "unreasonable" as a requirement to prevent claims based on persecution or retaliation. See, e.g., *Manchester Environmental Coalition v. Stockton*, 184 Conn. 51, 58 n. 10 (1981)(use of unreasonableness standard intended to prevent suits brought simply for harassment purposes).

Until recently, when assessing a claim of "unreasonable pollution, impairment or destruction", the courts, in considering this question of fact, have set out their reasoning on a case-by-case basis. For example, in *Manchester*, the court found that a review of the record showed that the plaintiffs presented a prima facie case by demonstrating that a protected natural resource would be impaired by the defendants' action. "Since the plaintiffs showed that the project would add more pollution, they presented a prima facie case". Id. at 59.

In a July 2002 opinion evaluating a CEPA claim of "unreasonable impairment", the Connecticut Supreme Court linked "unreasonable impairment" to statutory or regulatory criteria. The Court held that the claim in that case should be evaluated "through the lens of the entire statutory scheme, if any, that the legislature has created to regulate the conduct underlying the impairment". *City of Waterbury v. Town of Washington*, 260 Conn. 506, 549 (2002). In that case, applicable statutes and regulations set out a statutory scheme defining minimum flow requirements. That CEPA claim was therefore to be evaluated under those standards.

In the present proceeding, the intervenors have not presented a prima facie case of unreasonable pollution. They have also not presented adequate evidence to overcome an appraisal of their claim of unreasonableness "through the lens of the entire statutory scheme" created to regulate and control air pollution in the State. The application meets

the standards set out by the applicable statutes and regulations. The reactivation of the English Station boilers will not cause unreasonable pollution.

The intervenors also argue that the issue of whether the operation of English Station will pose a health hazard is specifically addressed in General Statutes §22a-186a, and should be addressed under the provisions of that statute.[27] The intervenors claim that §22a-186a does not allow the Commissioner to grant a permit if a proposed regulated activity will pose a health hazard. Section 22a-186a provides that "[n]o permit under section 22a-174 …shall be granted…unless the commissioner considers air pollution emitted from all sources on the land where the activity requiring the permit is located and he determines that *each source* conforms to regulations adopted under section 22a-174 and *does not pose a health hazard*." (Emphasis added.)

A careful reading of 22a-186a, and a review of the legislative history surrounding its passage, confirm that this statute does not apply to this application. The statute was intended to prevent the issuance of a permit at a site on which there are other sources of air pollution that are not in compliance with the regulations and present a health hazard. The statute was specifically passed to prevent the permitting of another source at a non-compliant site.

The intervenors' claim of unreasonable pollution cannot overcome the fact that the proposed activity meets or exceeds federal air regulatory standards, and would not violate or contribute to a violation of the NAAQS. The application also meets the regulatory standards of the DEP, which incorporate federal standards.

Even though this is a minor modification, air quality analyses were performed that showed no significant impacts to ambient air quality. Operational modifications, including restricted hours of operation and use of low sulfur fuel, are included in the permits. BACT has been incorporated for NOx and SO_2. Actual stack concentrations

[27] Query whether this issue is properly raised at this time. See *Mystic Marinelife Aquarium v. Gill*, 175 Conn. 483, 490 (1978) (verified pleading sets the parameters of the issues that can be raised on appeal).

will be less than MASC, as shown by the HAPS analysis. Continuous emissions monitoring is required as a condition of the permits, and will be performed according to the DEP CEM Guideline. The operation of the English Station facility will not significantly contribute to PSD increment consumption in the area. The operation of the English Station facility will not result in unreasonable pollution.

The protection of the public health is one of the primary goals that state and federal regulations are designed to meet. The federal Clean Air Act, which mandated the setting of NAAQS, declares as its purpose: "to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare…." 42 USCS §7401 (2001). When setting standards such as the NAAQS, regulators assess scientific evidence to determine safe levels of certain substances in the ambient air. Standards, which take sensitive populations into account, are routinely set with a margin of safety to add another level of protection.

The DEP is charged with the responsibility and mission to protect the environment, and to safeguard human health, safety and the general welfare. The Department is sensitive to concerns about health and environmental risk, and sets statutory and regulatory standards to guide it in meeting its responsibility to protect the health and safety of its residents while conserving, protecting and preserving the State's natural resources. In setting its air quality standards, the DEP looks to the federal law for guidance. Its regulations meet or exceed federal standards. This application meets the standards set by the DEP to qualify as a minor modification. As such, according to these regulations and standards, it will not constitute a significant source of pollution.

I am bound by the statutes and regulations that reflect the Department's determination of the standards that are necessary to protect the State's ambient air quality. This application meets those standards. An administrative hearing is not an opportunity to revise or promulgate regulations. If the intervenors believe the current standards are inadequate to protect human health, they need to pursue other avenues to seek regulatory change.

4

Alternatives

Recommended Permit Condition

Section 22a-174-3a(l)(2) of the Regulations of Connecticut State Agencies does not require an analysis of alternatives in an application for a minor modification. Under General Statutes §22-19(b), however, feasible and prudent alternatives to the proposed regulated activity are considered if there is a finding of unreasonable pollution. *Paige v. Town Plan & Zoning Commission,* 235 Conn. 448 (1995).

The intervenors CFE and NH maintain that alternatives must be considered because a determination of unreasonableness may turn on the question of whether feasible and prudent alternatives exist. Citing *Gardiner v. Conservation Commission*, 222 Conn. 98 (1992), these intervenors argue that "even minimal environmental harm is to be avoided if 'considering all relevant surrounding circumstances and factors, there is a feasible and prudent alternative consistent with the reasonable requirements of the public health, safety and welfare.' General Statutes §22a-19(b)." Id. at 109. In the *Gardiner* case, the Connecticut Supreme Court reversed the trial court's determination that a local conservation commission was not required to consider alternatives where it had found no unreasonable pollution would result from a proposed wetlands activity. In *Gardiner*, however, that commission's own regulations required consideration of all relevant issues, including alternatives, when making a decision on an application. In addition, in that case, §22a-41(a) of the *Inland Wetlands and Watercourses Act* was applicable, which requires that the commissioner consider feasible and prudent alternatives. The holding of the *Gardiner* case is limited by these facts, and, in any case, it is no longer controlling law. Cases since *Gardiner* and recent cases support the position that alternatives are considered only if there is a finding of unreasonable pollution or impairment. See, e.g. *Paige v. Town Plan & Zoning Commission,* supra (no requirement of alternatives analysis per §22a-19(b) absent a determination of unreasonable pollution); *Concerned Citizens of Willington v. Department of Environmental Protection*, 234 Conn. 913 (1995) (where proof of unreasonable pollution, §22a-19(b) requires consideration of alternatives).

Even if I were to consider alternatives in deciding whether to recommend that the commissioner grant the permits that are sought in this matter, the evidence presented at the hearing demonstrated that none currently exist that are either prudent or feasible. "'Prudent alternatives are those which are economically reasonable in light of the social benefits derived from the activity.' *Manchester Environmental Coalition v. Stockton*, supra, 63. 'Cost may be considered in deciding what is "prudent".' Id. Likewise, 'feasible' has been defined as 'capable of being done or carried out.' Webster, Ninth New Collegiate Dictionary; which is within the construction applied in the Environmental Protection Act. *Manchester Environmental Coalition v. Stockton*, supra, 62." *Fromer v. Boyer-Napert Partnership*, 42 Conn. Sup. 57, 70 (1990). The evaluation of costs is more than a mere showing of expense. *Manchester Environmental Coalition v. Stockton*, supra, 63.

The applicant considered converting the two existing boilers to natural gas or replacing the boilers with two new combined cycle gas turbines. An inadequate supply of gas on site and insufficient technical support and information on converting the boilers to accommodate gas, render the first option not feasible at this time. The second alternative is not feasible because the Simkins facility would have to shut down its boiler, a condition beyond the control of the applicant. Questions must also be raised as to whether this option is a prudent alternative. Instead of a minor modification, English Station would operate fulltime as a base load facility, and could run more than 8,000 hours per year. It would also be a 360-megawatt and not the proposed 75-megawatt facility.

It is not clear that any "social benefits" that would result from either of these alternatives would outweigh the considerations of the feasibility or prudence of either. The first alternative would result in an overall reduction in emissions, however, carbon monoxide and benzene emissions would increase. Also, more tons per year of certain pollutants would also be generated by a gas-fueled facility. The second alternative would result in a more powerful facility, which would operate as a major source and consume

more fuel. A major aspect of its social benefit, the shutdown of the Simkins facility, is not an outcome that the applicant can guarantee.

These alternatives must also be evaluated in view of what they are an alternative to. The reactivation of English Station facility is a minor modification. No alternatives are considered under the regulations governing minor sources or modifications because, by definition, they will not cause unreasonable pollution. The argument, therefore, comes back to the reasons why no alternatives are considered when issuing a permit for a minor source.

Through the testimony of Dr. Mitchell, the intervenor NHEJN presented a third alternative. This "alternative" would shut down English Station and locate a power plant elsewhere. This alternative is neither feasible nor prudent. Siting and constructing a completely new facility is not considered an alternative to the modification of an existing facility. In addition, the DEP has no jurisdiction over siting a new facility. The DEP would approve a new permit application following the approval of the site by the Connecticut Siting Council.

Although none of the alternatives considered herein are currently feasible or prudent, the alternative of conversion to natural gas is, in and of itself, worthy of further consideration. There was evidence, including testimony and documents, that the applicant gave serious consideration to an eventual conversion to natural gas. As discussed herein, this consideration led to the reasonable conclusion that this option is not currently feasible or prudent, and should not impede the granting of these permits for a minor modification.

The Commissioner, however, has the responsibility "to carry out the environmental policies of the state and shall have all powers necessary …to faithfully discharge this duty. In addition to, and consistent with the policy of the state, the Commissioner shall (a) promote and coordinate management of …air resources to assure their protection, enhancement and proper allocation and utilization…." General Statutes

§22a-5. The provisions of General Statutes Ch. 446c, *Air Pollution Control*, §§22a-170 through 22a-196, and relevant regulations, §§22a-174-1 through 22a-174-200, set out the comprehensive body of laws that allow this duty to be fulfilled. Section 22a-174c provides that the Commissioner may modify, revoke or suspend a permit at any time for causes that include impacts on public health.

Natural gas is an alternative fuel. In general, it is a cleaner fuel. In light of these facts and the responsibility of the Commissioner to protect and enhance the air resources of this state, I recommend that these permits provide an opportunity for further consideration of use of this alternative fuel through future re-evaluation of the feasibility of converting the English Station facility to natural gas. (See Part IV, *Recommended Permit Conditions*.)

5

DEP Environmental Equity Policy

The concept of environmental equity means that all people should be treated fairly under environmental laws regardless of race, ethnicity, culture or economic status. As evidence of its commitment to this principle, the DEP issued a statement on environmental equity on December 17, 1993. This Environmental Equity Policy provides in pertinent part that "…no segment of the population should, because of its racial or economic makeup, bear a disproportionate share of the risks and consequences of environmental pollution or be denied equal access to environmental benefits." The DEP created the Environmental Equity Program to incorporate these principles into aspects of its program development, policy-making and regulatory activities.

The DEP Environmental Equity Policy is, as it is titled, a policy. A policy statement is distinguished from a substantive rule of an agency, which is reflected in a law or regulation of that agency. "[A] policy statement 'is neither a rule nor a precedent but is merely an announcement to the public of the policy which the agency hopes to implement in future rule-makings or adjudications.' " *Panhandle Eastern Pipe Line Company v. Federal Energy Regulatory Commission*, 198 F. 3d 266, 269 (D.C. Cir.

1999), citing *Pacific Gas & Electric Power Commission*, 506 F. 2d 33, 38 (D.C. Cir. 1974). "In other words, a policy statement has neither the force of a substantive rule adopted pursuant to rulemaking nor the binding effect of an order following an adjudication." Id. The DEP Environmental Equity Policy serves as a guide to assist the Department in its decision-making process.

The record clearly demonstrates that Staff understood the implications of the DEP Environmental Equity Policy and took the necessary actions to insure that it would be implemented in this case and that its guidance would be part of the staff review of the application. The evidence demonstrates that residents participated in the process, and sufficient actions were taken by the DEP and the applicant to inform them of the application and the proposed permits. Staff of the Environmental Equity Program worked with bureau staff and the applicant to assure that area residents were informed and had an opportunity to interact with the applicant and DEP staff to receive information, ask questions, and provide comments at meetings and public hearings. There was sufficient interaction with the community.

The DEP is charged with the duty to protect the environment and safeguard human health, safety and the general welfare. Protection of the health, safety and general welfare of citizens of the state is inherent in its Environmental Equity Policy that "…no segment of the population should, because of its racial or economic makeup, bear a disproportionate share of the risks and consequences of environmental pollution…."

The statutory and regulatory standards set out in the environmental laws of this State guide this agency in meeting its responsibility to the state's citizens while conserving, protecting, and preserving the state's natural resources. These environmental laws are, by their very nature, protective of the public's health, safety and general welfare.

This protection is ensured by the implementation of the DEP permit review process. Section 22a-174-3a provides that the commissioner cannot issue a permit if he

determines that a significant impact on air quality will result. As the evidence has demonstrated, the proposed regulated activity that is the subject of this application will not significantly impact air quality. Accordingly, the people who live, work, play or otherwise spend time in the vicinity of English Station will not bear a disproportionate risk or consequence of any environmental pollution.

IV
RECOMMENDED PERMIT CONDITIONS

Copy of Permit On-Site

Part V. Monitoring, Reporting and Record Keeping Requirements
B. Record Keeping Requirements

Add the following sentence to Paragraph 3.

"The permittee shall keep a certified copy of the permit on the premises at all times, and shall make this copy available upon request of the commissioner for the duration of this permit. This copy shall also be available for public inspection upon request during regular business hours. The permittee may redact sections of the permit that contain proprietary information or trade secrets prior to public review."

Increase in Fuel Consumption Limitations

Part I. Operational Conditions.

Amend Paragraph #2 as follows.

"2a. Should DEP-approved test data demonstrate a NOx emission rate less than 0.2 lb/MMBtu, the allowable fuel consumption limit shall be appropriately adjusted up by 12,290 MMBtu[28] per 0.01 lb/MMBtu reduction. If the NOx emission rate below 0.2 lb/MMBtu subsequently increases, the allowable fuel consumption limit shall be re-

[28] The language suggested by the applicant calls for an adjustment of 12,450 MMBtu per 0.01 lb/MMBtu reduction. Because the new emission limit for NOx is 24.59, this figure has been adjusted accordingly.

adjusted downward by 12, 290 MMBtu per 0.01 lb/MMBtu increase. If another rate of increase or reduction is warranted, the DEP shall establish this rate as appropriate."

Part V. Monitoring, Reporting and Record Keeping Requirements.

A. Monitoring Requirements

Add the following as Paragraph #5.

"Prior to operation under any approved adjustment in the fuel consumption limit, the permittee shall install a NOx analyzer pursuant to specifications provided by the DEP. These specifications shall be appended to the permit in Appendix E."

Restricted Hours of Operation

Part IV. Operating Requirements.

Amend Paragraph #2 as follows:

"2. The permittee shall operate the boilers only to meet peak electricity demands in Connecticut. Therefore, during peak electricity demand, the permittee shall limit the maximum operating hours to 16 hours per day, 5 days a week, *between the hours of 6:00 am and 10:00 pm EST/EDT,* at 100% power generation and the remaining hours of the week on boiler warm standby at 15% power, that is, no electricity generation."

Minimum Distance to Property Line

Part I. Operational Conditions.

Design Specifications, Paragraph #6

"#6. Minimum Distance from Stack to Property Line (ft): *110 feet.*"

Permit Expiration Date

"*This permit shall expire five years from the date of its issuance. Regs., Conn. State Agencies §22a-174-3a (d)(4). Within two years of the expiration date, the permittee may submit a report to the Commissioner on the feasibility of natural gas conversion or*

the use of other alternative fuels. The Commissioner may prescribe the information required in this report. If the Commissioner determines that such conversion or use of other alternative fuels is feasible, he may prescribe a process by which the permit may be modified to require the use of natural gas or an alternative fuel. If the permit is so modified, the Commissioner may determine a new expiration date."

Typographical Corrections

(1) Allowable Emission Limits

Change the Emission Factor calculation for sulfuric acid (Part IV, note c.) in both permits from 3.4475(S) (98/80) lbs/1000 gallons to 2.45 (S) lb/1000 gallons.

(2) Emission Rate for Benzene

Revise the emission rate for benzene (Part VI.) in permit #117-0321 to 6.75E-04 lb/hr, not 6.75E-03 lb/hr.

(3) Nickel Limitation

The Nickel limitation for both permits is 3.74E-04 tons per year. Revise permit #117-0321 to reflect this change.

V

CONCLUSION

The applicant has demonstrated by a preponderance of the evidence presented that it has complied, or will comply, with the relevant requirements of Regs., Conn. State Agencies §22a-174-3a. The draft permits provide that the applicant shall abide by the applicable sections of subdivision (3) of §22a-174-3a. The applicant has complied with the regulatory requirements to qualify its application as a minor modification to an existing major source.

The intervenors did not present sufficient evidence to prove that the minor modification that will allow the reactivation of the boilers at English Station is reasonably likely to cause unreasonable pollution. Therefore, no alternatives need be analyzed. Of those alternatives that were assessed, none currently exist that are feasible or prudent. However, future consideration should be given to the option of eventually converting English Station's fuel to natural gas or another alternative fuel.

The permitting process complied with the guidance of the DEP Environmental Equity Policy. There was sufficient interaction among the applicant, the DEP and the residents of the area around English Station. In addition, because these permits will be for a minor modification, their issuance will not cause any population to bear a disproportionate risk or consequence of environmental pollution.

I recommend the issuance of the draft permits as modified by the recommended permit conditions outlined herein.

September 4, 2002
Date

/s/ Janice B. Deshais
Janice B. Deshais, Hearing Officer