COMMONWEALTH OF MASSACHUSETTS
Energy Facilities Siting Board

In the Matter of the Petition of Sithe West Medway Development LLC for Approval to Construct a Bulk Generating Facility in the Town of Medway, Massachusetts	)))))	EFSB 98-10

FINAL DECISION

Denise L. Desautels
Hearing Officer
April 13, 2000

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LIST OF ABBREVIATIONS

Abbreviation	Explanation
AALs	Allowable Ambient Limits
ACEC	Area of Critical Environmental Concern
Algonquin	Algonquin Gas Transmission Company
ANP Blackstone Decision	ANP Blackstone Energy Company, 8 DOMSB (1999)
ANP Bellingham Decision	ANP Bellingham Energy Company, 7 DOMSB (1998)
AQIP	Air Quality Improvement Plan
background	Ambient air concentrations as measured at nearby monitoring stations
BACT	Best available control technology
BECo	Boston Edison Company
Board of Selectmen	Town of Medway Board of Selectmen
Brockton Decision	Brockton Power LLC, EFSB 99-1 (2000)
BVW	Bordering vegetated wetland
CO	Carbon monoxide
CO_2	Carbon dioxide
Company	Sithe West Medway Development LLC
CTGs	Combustion Turbine Generators
dBA	Decibel (A-weighted)
Dighton Power Decision	Dighton Power Associates, 5 DOMSB (1997)
DOMSB	Decisions and Orders of Massachusetts Energy Facilities Siting Board

Earth Tech	Earth Tech, Inc.
EMF	Electric and magnetic fields
EPA	United States Environmental Protection Agency
EPC	Engineering, procurement, and construction
EUA	Eastern Utilities Associates
FEMA	Federal Emergency Management Agency
GE	General Electric
GEP	Good engineering practice
gpd	Gallons per day
HAPs Study	"Study of Hazardous Air Pollutant Emissions from Electric Utility Steam Generating Units-Final Report to Congress" (1998)
Hz	Hertz
I-495	Interstate Highway Route 495
IDC	IDC Bellingham, LLC
IDC Bellingham Decision	IDC Bellingham, LLC, 9 DOMSB (1999)
ISCST3	Industrial Source Complex Short-term [air dispersion model]
kV	Kilovolt
kV/m	Kilovolt per meter
L_{90}	The level of noise that is exceeded 90 percent of the time
L_{dn}	EPA's recommendation of a maximum day-night noise levels incorporating a 10 dBA penalty for noise at night
L_{eq}	Equivalent sound level

LAER	Lowest Achievable Emission Rate
lbs	Pounds
LOS	Levels of service – a measure of the efficiency of traffic operations at a given location
m	Meter
MAAQS	Massachusetts Ambient Air Quality Standards
MADEM	Massachusetts Department of Environmental Management
MADEP	Massachusetts Department of Environmental Protection
MADFA	Massachusetts Department of Food and Agriculture
MADPH	Massachusetts Department of Public Health
MassGIS	Massachusetts Geographic Information System
MEPA	Massachusetts Environmental Policy Act Unit
mG	Milligauss
mgd	Million gallons per day
Millennium Power Decision	U.S. Generating Company, 6 DOMSB (1997)
MW	Megawatt
MWH	Megawatt-hour
NAAQS	National Ambient Air Quality Standards
NEES	New England Electric System
NEPCo	New England Power Company
NEPOOL	New England Power Pool
NHESP	Natural Heritage and Endangered Species Program

1985 MECo/NEPCo Decision	Massachusetts Electric Company, et al., 13 DOMSC (1985)
NML	Noise measurement locations
NO_2	Nitrogen dioxide
NO_X	Nitrogen oxides
NPDES	National Pollution Discharge Elimination System
NRC	National Research Council
NSPS	New source performance standards
NSR	New source review
O_2	Oxygen
PCB	Polychlorinated biphenyl
PM_{10}	Particulates
ppm	Parts per million
PSD	Prevention of significant deterioration
PTE	Potential to emit
Request for Comments	Requests for Comments issued by Energy Facilities Siting Board on March 14, 1999, on proposed standards of review
Restructuring Act	Chapter 164 of the Acts of 1997
ROW	Right-of-way
seven-acre site	site of proposed facility
SILs	Significant impact levels
Silver City Decision	Silver City Energy Limited Partnership, 3 DOMSB (1994)
Siting Board	Energy Facilities Siting Board

SO_2	Sulfur dioxide
Sithe	Sithe West Medway Development LLC
Sithe Edgar	Sithe Edgar Development LLC
Sithe Edgar Decision	Sithe Edgar Development LLC, EFSB 98-7 (2000)
Sithe Energies	Sithe Energies, Inc.
Sithe Mystic Decision	Sithe Mystic Development LLC, 9 DOMSB (1999)
SPCC Plan	Spill Prevention, Control, and Countermeasure Plan
STGs	Steam Turbine Generators
TELs	Threshold Effects Exposure Limits
Tennessee	Tennessee Gas Pipeline
Town	Town of Medway
TPS	Technology Performance Standards
tpy	Tons per year
TSP	Total suspended particulates
UK	United Kingdom
USGS	United States Geological Survey
VOC	Volatile organic compounds

The Energy Facilities Siting Board ("Siting Board") hereby APPROVES subject to conditions the petition of Sithe West Medway Development LLC to construct a net nominal 540 megawatt simple-cycle electric generating facility at the proposed site in Medway, Massachusetts.

I. INTRODUCTION

A. Description of Proposed Facility, Site, and Interconnections

Sithe West Medway Development LLC ("Sithe" or "Company") has proposed to construct a natural gas-fired, simple-cycle peaking electric generating facility with a net nominal electrical output of 540 megawatts ("MW") in Medway, Massachusetts ("peaking facility" or "proposed facility") (Exh. SWM-1, at 1-1). Sithe proposes to locate the peaking facility on approximately seven acres ("seven-acre site") within the 94-acre parcel that is the existing West Medway Station, south of the existing Sithe units (id. at 1-1, 1-6). In May 1998, Sithe New England LLC, of which Sithe was an affiliate, purchased the West Medway Station from Boston Edison Company ("BECo") (id. at 1-1). Sithe currently operates a 180 MW peaking facility, consisting of three dual-fueled, simple-cycle combustion turbines, at the West Medway Station (id.).[1] BECo reserved an easement on approximately 54 acres of the 94-acre parcel for the ownership, operation, and maintenance of the existing 345 kilovolt ("kV") and 115 kV substations and transmission lines (id. at 1-1, 1-4).[2]

The seven-acre site for the proposed facility will be located on land zoned industrial in Medway and is generally bordered on the north by land abutting Route 109 (Milford Street), on the east by Route 126 (Summer Street), on the south and west by West Street, consisting predominately of forest, residential uses, and limited commercial uses (Exh. SWM-1, at 1-4, 1-6,

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[1] Sithe proposes to voluntarily restrict the operating hours of both the existing and new units to no more than 2,500 hours annually (Exh. SWM-1, at 1-2). Although the existing Sithe facility is permitted to operate year-round, historically, this facility operates no more than 100 hours per year (id. at 1-1).

[2] The Petition reads, in pertinent part, that "[BECo] maintains a long-term lease" on 50 acres of the 94-acre parcel (Exh. SWM-1, at 1-1). The record indicates BECo retained an easement on 54 acres of the 94-acre parcel (Exhs. EFSB-44-28(a) Att.; EFSB-RR-28(b) Att.; EFSB-RR-28(c) Att.).

4-33, 34 (fig. 4.7-1). Directly east of and abutting the proposed seven-acre site is a day care center (Exh. EFSB-RR-2-S Att., at sheet 7). The seven-acre site upon which the three new units are proposed is currently vegetated, primarily with grass, with an access road extending through the seven-acre site (Exh. SWM-1, at 1-6)(figs. 1.4-1, 1.4-2). A small portion of the seven-acre site is surfaced with concrete; the storage buildings currently located there would be removed (id.). Sithe proposes to deliver natural gas to the generating facility via the existing Algonquin Gas Transmission Company ("Algonquin") pipeline to the facility absent any upgrade (Exh. EFSB-L-11). BECo would deliver electric power generated by the proposed facility through its existing switchyards located immediately adjacent to the seven-acre site and into its transmission system (Exh. SWM-1, at 1-9, 1-15). The electrical interconnection will take place within the 94-acre parcel (id., at 1-15).

The peaking facility would include the following major components and structures: three General Electric ("GE") F-class combustion turbine generators ("CTGs"), each with an exhaust housing and 65-foot stack, and buildings to house the administration, warehouse, and ancillary systems (id. at 1-6). Structures associated with the existing units include: three dual-fueled combustion turbines, each comprised of four jet engines, two stacks, and one generator; two fuel oil storage tanks with containment areas, two power transformers, miscellaneous buildings, and a detention basin (id. at 1-4).

Sithe New England Holdings LLC is a wholly-owned subsidiary of Sithe Northeast Generating Company, Inc., which in turn is a wholly-owned subsidiary of Sithe Northeast Holdings, Inc., which is a wholly-owned subsidiary of Sithe Energies, Inc. ("Sithe Energies"). Sithe Letter of January 4, 2000; Sithe Edgar Development LLC, EFSB 98-7, at 3 (2000) ("Sithe Edgar Decision").[3] Sithe Energies owns and operates electric power generation and cogeneration

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[3] Sithe Pennsylvania Holdings LLC, Sithe New Jersey Holdings LLC, and Sithe Maryland Holding LLC acquired certain of the generating assets of General Public Utilities, Inc., which resulted in a corporate reorganization undertaken among certain affiliates of Sithe New England LLC. Prior to the above referenced acquisition, Sithe was a wholly-owned subsidiary of Sithe New England Development LLC, which was a wholly-owned subsidiary of Sithe New England, Inc., which was a wholly-owned subsidiary of Sithe Energies. As a result of the reorganization, Sithe is now a wholly-owned subsidiary of

(continued...)

facilities throughout the world and is one of the largest independent electric power generating companies in the United States (Exh. SWM-1, at 1-3).

B. Procedural History

On December 17, 1998, Sithe filed with the Siting Board a petition to construct and operate a net nominal 540 MW natural gas-fired, single-cycle generating facility in Medway, Massachusetts. The Siting Board docketed the petition as EFSB 98-10.

On February 10, 1999, the Siting Board conducted a public hearing in Medway. In accordance with the direction of the Hearing Officer, Sithe provided notice of the public hearing and adjudication.

Representative Barbara Gardner, BECo, Mr. Robert Knoerk, Concerned Citizens of Bellingham, Inc., and Selectman Raphaela Rozanski of the Town of Medway filed timely petitions to intervene. The Board of Selectmen of the Town of Medway ("Board of Selectmen") filed an untimely petition to intervene.[4] IDC Bellingham, LLC, and U.S. Generating Company filed timely petitions to participate as interested persons; in addition, New England Power Company and Massachusetts Electric Company jointly filed a timely petition to participate as interested persons. Sithe filed an opposition to the petitions of the Concerned Citizens of Bellingham, Inc. and Mr. Robert Knoerk.

The Hearing Officer granted the petitions to intervene filed by Representative Barbara Gardner, BECo, and the Board of Selectmen. Sithe West Medway Development LLC, EFSB 98-10, Hearing Officer Procedural Order, March 15, 1999, at 6-7. The Hearing Officer denied the petitions to intervene of the Concerned Citizens of Bellingham, Inc., and Mr. Robert Knoerk, but admitted Mr. Knoerk as an interested person. The Hearing Officer also denied Ms. Rozanski's petition to intervene, but designated her as spokesperson for the Board of Selectmen for the

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[3] (...continued)
Sithe New England Holdings LLC (Sithe Letter of January 4, 2000).

[4] The Hearing Officer subsequently ruled that the Board of Selectmen had shown good cause for its late filing. Sithe West Medway Development LLC, EFSB 98-10, Hearing Officer Procedural Order, March 15, 1999, at 7.

Town of Medway (id.). The Hearing Officer granted the petition to participate as interested persons of IDC Bellingham, LLC, U.S. Generating Company, and New England Power Company/Massachusetts Electric Company (id. at 7). Mr. Knoerk and the Concerned Citizens of Bellingham, Inc. filed motions for reconsideration which were denied. Sithe West Medway Development LLC, EFSB 98-10, Hearing Officer Procedural Order, March 26, 1999, at 3-4.

The Siting Board conducted six days of evidentiary hearings, commencing on July 27, 1999, and ending on August 24, 1999. Sithe presented the testimony of the following witnesses: James P. McGowan, Vice President of Development, Sithe Energies, who testified as to the Company's site selection process and general facility matters; Ann F. Hueston, Project Manager for the Medway Project, Sithe Energies, who testified as to facility description, noise, hazardous waste, water resources, solid waste, and land use impacts; Susan F. Tierney, Ph.D., partner at Lexecon Inc., who testified as to site selection, technology performance standards, and alternative technology comparison; Frederick M. Sellars, Vice President of Environmental Science and Planning, Earth Tech, Inc. ("Earth Tech"), who testified as to air impacts, site selection, and alternative technology comparison; Lynn Gresock, Senior Program Director, Earth Tech, who testified as to water, wetlands, traffic, noise, land use, solid waste, safety, visual, and health impacts; Wayne E. Bradley, Senior Engineering Specialist, Stone & Webster, who testified as to noise impacts, and Peter A. Valberg, Ph.D., Senior Scientist, Cambridge Environmental, Inc., who testified as to electric and magnetic fields ("EMF") and health impacts.

On September 14, 1999, Sithe submitted its brief. The record includes 333 exhibits consisting primarily of information request responses and record request responses.

C. Scope of Review

1. Background

On November 25, 1997, the Governor signed into law Chapter 164 of the Acts of 1997, entitled "An Act Relative to Restructuring the Electric Utility Industry in the Commonwealth, Regulating the Provision of Electricity and Other Services, and Promoting Enhanced Consumer Protection Therein" ("Restructuring Act"). 1997 Mass. Acts 164. Sections 204 and 210 of the Restructuring Act altered the scope of the Siting Board's review of generating facility proposals

by amending G. L. c. 164, § 69H and by adding a new section, G. L. c. 164, § 69J¼, which sets forth new criteria for the review of generating facility cases.

On March 19, 1999, the Siting Board issued a request for comments on Siting Board staff's four draft standards of review for generating facility cases ("Request for Comments"). The draft standards of review addressed the four major elements of the generating facility review set forth in G. L. c. 164, §§ 69H and 69J: the site selection process, the environmental impacts of the proposed facility, consistency with the policies of the Commonwealth, and the generating technology comparison (required only in cases where the expected emissions from a proposed generating facility exceed the levels specified in 980 CMR, § 12.03).

In its Request for Comments, the Siting Board stated that parties in pending generating facility cases would have an opportunity to brief the standards of review the Siting Board would apply in their specific case (Request for Comments at 2). On June 14, 1999, Siting Board staff issued revised standards of review. On August 24, 1999, parties and interested persons in EFSB 98-10 were invited to submit comments on both versions of the standards of review. Sithe West Medway Development LLC, EFSB 98-10, Hearing Officer Memorandum, August 24, 1999, at 1.

2. Position of Sithe West Medway

Sithe supports the Siting Board's staff revised proposed standards of review for generating facility petitions filed pursuant to G. L. c. 164, § 69J¼ (Company Brief, at 5, n.2).

3. Analysis

The Siting Board finds that the revised standards of review with respect to the site selection process, environmental impacts, and consistency with the policies of the Commonwealth issued on June 14, 1999, comply with the requirements of G. L. c. 164, §§ 69H

and 69J¼ and will govern the scope of the review in this proceeding.[5,6]

In Section II, below, the Siting Board considers Sithe's site selection process; in Section III, below, the Siting Board considers the environmental impacts of the proposed facility; in Section IV, below, the Siting Board reviews alternative generating technology for the proposed facility; and, in Section V, below, the Siting Board addresses whether the plans for construction of the proposed facility are consistent with the current health and environmental protection policies of the Commonwealth, and with such energy policies as are adopted by the Commonwealth for the specific purpose of guiding the decision of the Siting Board.

II. SITE SELECTION

A. Standard of Review

G. L. c. 164, § 69J¼ requires the Siting Board to determine whether an applicant's description of the site selection process used is accurate. An accurate description of an applicant's site selection process shall include a complete description of the environmental, reliability, regulatory, and other considerations that led to the applicant's decision to pursue the project as proposed at the proposed site, as well as a description of other siting and design options that were considered as part of the site selection process.

The Siting Board also is required to determine whether a proposed facility provides a reliable energy supply for the Commonwealth with a minimum impact on the environment at the lowest possible cost. G. L. c. 164, § 69H. To accomplish this, G. L. c. 164, § 69J¼ requires the Siting Board to determine whether "plans for the construction of a proposed facility minimize the environmental impacts consistent with the minimization of costs associated with the mitigation, control, and reduction of the environmental impacts of the proposed generating facility." G. L. c.

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[5] Parties and interested persons in generating facilities cases pending before the Siting Board at the time of the issuance of the Request for Comments either have been or will be afforded an opportunity to comment on the standards of review applicable under the statutory mandate.

[6] The Siting Board also reviews in this decision the traffic, safety, and EMF impacts of the proposed facility.

164, § 69J¼. Site selection, together with project design and mitigation, is an integral part of the process of minimizing the environmental impacts of an energy facility. The Siting Board therefore will review the applicant's site selection process in order to determine whether that process contributes to the minimization of environmental impacts of the proposed project and the costs of mitigating, controlling, and reducing such impacts. In making this determination, the Siting Board also will consider, consistent with its broad mandate under G. L. c. 164, § 69H, the reliability, regulatory, and other non-environmental advantages of the proposed site.

B. Description

Sithe is an affiliate of Sithe Energies (Exh. SWM-1, at 1-2). Sithe Energies is involved in the development, financing, construction, operation, and ownership of generating facilities worldwide (id. at 1-2 to 1-3). Decisions regarding the development of the entire portfolio of the BECo properties, including the West Medway Station site, were made by Sithe Energies. Sithe Edgar Decision at 6.

The Company indicated that Sithe Energies initially narrowed its area of investment to New England and then to Massachusetts in order to meet its development objectives (Exh. SWM-1, at 2-6). Specifically, Sithe Energies listed the following positive development considerations associated with Massachusetts: (1) the negotiated restructuring settlements executed by various Massachusetts electric companies, legislative proposals, and associated incentives which were more attractive than those in other New England states; (2) the announced plans and subsequent solicitations of three utilities to sell their generating assets; (3) a streamlined permitting process; and (4) favorable environmental policies pertaining to brownfield development and gas-fired projects (id. at 2-6 to 2-7).

The Company stated that between July, 1997, and December, 1997, Sithe Energies submitted bids to purchase the existing generating assets of three companies: New England Power Company, BECo, and Eastern Utilities Associates ("EUA") (id. at 2-7; Exh. EFSB-SS-3). The BECo assets for which Sithe Energies bid included five sites: (1) West Medway Station in Medway; (2) Mystic Station in Everett; (3) Edgar Station in Weymouth; (4) New Boston Station

in South Boston; and (5) Framingham Station in Framingham (Exh. SWM-1, at 2-9).[7,8] The Company indicated that the BECo assets had characteristics that were compatible with Sithe Energies' development objectives, including available land for development, proximity to load centers, proximity to fuel supply, available transmission infrastructure, ability to share infrastructure and operations personnel with existing units, and consistency with the Commonwealth's policy of encouraging brownfield development (id. at 2-7).

The Company stated that prior to submitting its bid, Sithe Energies conducted a half-day visit to each site, evaluated the properties based on environmental impacts as well as economics, and prepared summaries describing the strengths and weaknesses of each property (Exh. EFSB-SS-7). Based on the listed strengths and weaknesses, Sithe Energies identified base and alternative development configurations and potential development risks for each site (id.).[9] Sithe Energies stated that the strengths of the West Medway Station site included: its location at a transmission hub with interconnecting 345 kV, 230 kV, and 115 kV transmission lines; availability of land for a medium to large project that is buffered from residential areas; and gas supply present on site via Bay State Gas Company and proximity to an Algonquin pipeline less than one mile from the site (id.). Sithe Energies noted that the potential development risks for West Medway Station included the cost of transmission upgrades, environmental liability, and

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7 Three combustion turbine units totaling 126 MW (summer rating) currently are located at the West Medway Station (Exh. SWM-1, at 3-8). Two combustion turbine units totaling 24 MW currently are located at Edgar Station (id.). Five generating units currently are located at Mystic Station: three oil-fired units totaling 388 MW, one 592 MW dual-fueled unit and a 10-MW oil-fired combustion turbine (id.). Two dual-fueled steam turbine units totaling 760 MW and an 18 MW combustion turbine currently are located at the New Boston Station (id.). Three combustion turbine units totaling 33 MW currently are located at Framingham Station (id.).

8 In addition to the five generation sites listed above, the purchased BECo assets include an ownership interest in 36 MW of Wyman 4 in Yarmouth, Maine (Exh. SWM-1, at 2-8).

9 Sithe stated that although a combined-cycle facility was identified for both base case and alternative configurations for four of the five sites, it was always understood that a simple-cycle configuration could be an option at any of the sites (Tr. 2, at 85). The New Boston Station initial site review identified a simple-cycle facility as an alternative case (id.; Exh. EFSB-SS-7).

possible negative community reaction to visual, noise, and water impacts (id.).[10]

Sithe Energies indicated that it based its bid for the BECo assets on a target development figure of 2,800 MW (Exhs. SWM-1, at 3-8; EFSB-SS-5). Sithe Energies indicated that this figure represented the combined development potential for all the sites, and that Sithe Energies' internal economic and reliability analyses indicated that the New England market would benefit from at least an additional 2,800 MW of efficient generating capacity (Exh. EFSB-SS-5).[11] The Company stated that the figure reflected a dynamic analysis of how much capacity it could add to the sites, and what revenues it could expect under a range of scenarios (Exh. EFSB-SS-35, at 454).

On December 10, 1997, BECo announced that it had selected Sithe Energies to purchase its generating assets (Exhs. SWM-1, at 2-7; EFSB-SS-3). Sithe Energies then conducted the second phase of its site review, which built upon the initial pre-bid analyses (Exh. SWM-1, at 2-9). The second phase included the evaluation of each site based on three categories of criteria: (1) consistency with Sithe Energies' development objectives; (2) environmental impacts; and (3) community issues (id. at 2-9). Consistency with development objectives encompassed the following sub-criteria: (1) availability of land; (2) proximity to electric load; (3) availability of

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[10] Sithe Energies noted that the potential development risks for the remaining four sites included: Mystic Station - (1) permitting once-through cooling; and (2) renegotiating property taxes; Edgar Station - (1) permitting and construction of a gas pipeline; (2) cost of transmission upgrades; (3) environmental liability; and (4) negative community reaction to possible visual, noise, and water issues; New Boston Station - (1) negative community reaction; (2) lack of on-site or reasonably accessible transmission; (3) major gas line not accessible; and (4) stack height limitations due to proximity to Logan Airport; Framingham Station - (1) cost and availability of raw water and sewer; (2) negative community reaction to major power plant located in the community; and (3) potentially prohibitive cost of electric transmission upgrades (Exh. EFSB-SS-7).

[11] The Company stated that in the beginning of the process of moving into Massachusetts, its goal was to diversify its portfolio through the acquisition of existing units as well as through new development (Exhs. EFSB-SS-5; Tr. 2, at 80). Sithe Energies explained that originally it was looking for base load capacity; however, based on its analysis of the site-specific opportunities and constraints, the Company considered different options (Exh. SWM-1, at 2-9).

natural gas; (4) electric transmission;[12] (5) availability of water for cooling purposes; and (6) compatibility with planned and existing uses (id. at 2-9 to 2-10). Environmental impacts encompassed the following sub-criteria: (1) air quality impacts; (2) water consumption;[13] (3) wastewater impacts; (4) wetlands; (5) noise;[14] (6) land use; (7) historical and cultural resources; (8) visual impacts; (9) traffic impacts; (10) solid and hazardous waste; (11) safety; and (12) EMF effects (id. at 2-10 to 2-11; Exh. EFSB-SS-15). Community issues criteria encompassed the following sub-criteria: (1) compatibility with surrounding land uses; (2) zoning; (3) local support or opposition; (4) valuation of surrounding property; (5) taxation; and (6) the impact of ancillary facilities on property owners (Exhs. SWM-1, at 2-11; EFSB-SS-16).

The Company explained that it did not use a formal weighted scoring system to rank the five sites based on these identified criteria; rather, it analyzed how important each criterion was on a case-by-case basis (Tr. 2, at 107). Sithe Energies indicated that it relied heavily on

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[12] The Company stated that the Framingham site was the most constrained with regard to transmission interconnection, and therefore would have the greatest costs associated with interconnection (Tr. 2, at 92). The Company further indicated that although BECo has not yet completed the system interconnection studies, it would be feasible to interconnect new generation at Mystic Station, Edgar Station, and the West Medway Station in an economical manner (Exh. EFSB-SS-35, at 466).

[13] Sithe Energies stated that it initially identified the Mystic, Edgar, and New Boston Stations as having the potential for once-through cooling (Exh. EFSB-SS-15; Tr. 2, at 76). The Company explained that the opportunity for once-through cooling at both Medway and Framingham did not exist due to their lack of proximity to a large water body (Tr. 2, at 77). Further, the Company noted that the lack of a sufficient municipal water source in Medway and Framingham would make it difficult to support a combined-cycle facility in those locations even if it were to be air-cooled (id. at 78; Exh. SWM-SS-36, at 247).

[14] The Company reported that it classified the Mystic Station site as the site raising the fewest noise concerns with Edgar Station and New Boston Station ranked second, and West Medway and Framingham ranked third (Exh. EFSB-SS-35, at 470 to 471). The Company explained that it made these classifications based on the industrial nature of the Mystic, Edgar, and New Boston sites and on the extent of demolition necessary at each site (id.).

judgment in reviewing the criteria (Exh. EFSB-SS-36, at 271 to 272). The Company stated that all of the criteria were important, and explained that the application of any one criterion could have identified a fatal flaw for development at any of the five sites (Tr. 2, at 107 to 108). The Company defined a fatal flaw as an aspect of the project that could not be mitigated due either to prohibitive cost or technical difficulties, as opposed to a negative feature that lends itself to the required mitigation (id. at 108; Exh. EFSB-SS-36, at 273 to 274).[15] Sithe Energies provided information which tracked the general application of its environmental and community issues criteria (Exhs. EFSB-SS-38; EFSB-SS-39).

The Company noted that while Mystic Station and Edgar Station are excellent sites for combined-cycle units, the West Medway Station site had deficiencies in infrastructure and water supply that rendered combined-cycle development uneconomic (Exhs. EFSB-SS-6; EFSB-SS-35, at 527). In addition, the Company stated that the West Medway site would be an appropriate site for a peaking facility due to its proximity to the West Medway substation (Tr. 2, at 90). Sithe Energies explained that building a relatively limited amount of peaking capacity, relative to baseload capacity, is practical and meets its business objectives (Exh. EFSB-SS-34). The Company stated that the peaking capacity proposed for the West Medway Station, together with the Company's existing peaking capacity, would provide adequate peaking capacity for a diverse generating portfolio (Exh. EFSB-SS-35, at 527).

Sithe Energies explained that it determined the capacity to be developed at each site and the configuration of each facility based on an analysis of available infrastructure and the physical space available to locate the generation equipment (Exh. SWM-1, at 2-15; Tr. 2, at 112-113). For the simple-cycle facility at West Medway, Sithe selected the GE 7FA combustion turbine, which is available in simple-cycle mode in blocks of 180 MW (Tr. 2, at 101). The Company explained that it selected the 540 MW configuration for the West Medway proposed facility in order to approximate the size of its Mystic 7 unit, which is approximately 580 MW, and the use

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[15] Sithe noted that all three of the sites it proposed for development -- West Medway Station, Edgar Station, and Mystic Station -- have a relatively negative feature (Tr. 2, at 108). However, the Company explained that all of the sites are attractive for development since each site has the opportunity for mitigation to counter the relatively negative feature (id.).

of the 180 MW block configuration (Tr. 2, at 102). Sithe Energies stated that, in addition to the physical size requirements of the equipment, it also considered the mix of abutters and surrounding land uses in determining the configuration of the units at each site (Exh. EFSB-SS-35, at 524).

The Company argued on brief that its site selection process contributes to the minimization of environmental impacts, as well as the minimization of costs associated with the mitigation, control, and reduction of such environmental impacts (Company Brief at 12). Sithe Energies described its development plans and subsequent site selection as a "brownfield approach", which focused on identifying and evaluating appropriate sites with land uses already committed to power generation and transmission (Exh. SWM-1, at 2-3). The Company argued that it achieved the minimization goals, listed above, by (1) adopting the brownfield strategy for development, and (2) evaluating the five sites and selecting the West Medway, Mystic, and Edgar Stations for initial development (Company Brief at 19). The Company asserted that the environmental benefits of brownfield development arise from the use of existing infrastructure on or near the site for the development, construction, and operation of the proposed facility (Exh. EFSB-SS-20). In addition, the Company noted that brownfield development largely avoids disturbing the features at or near a pristine site, and affords opportunities to provide environmental improvements at the existing sites (id.). In particular, Sithe Energies noted the specific opportunities to mitigate the noise impacts of the existing generating units at West Medway Station; reduce visual impacts and remediate hazardous waste problems at Edgar Station; and reduce air quality impacts at Mystic (Exhs. EFSB-SS-19; EFSB-SS-20).

In regard to costs for mitigation and development, the Company discussed the offsetting costs of brownfield and greenfield sites (Tr. 2, at 109). Sithe Energies explained that sites where electric transmission or generation previously have been located generally have lower costs for interconnection, site clearing, and construction, or enhancement of the road system (id.; Exh. EFSB-SS-20). However, the Company indicated that such sites may require additional expenditures for site remediation or demolition (Tr. 2, at 109-110).

C. Analysis

Sithe Energies has presented a site selection process which resulted in a decision to develop generating facilities on three separate sites: West Medway Station, Mystic Station, and Edgar Station. The Company described its development process and the objectives which it used to determine the level of development for each site. Sithe Energies provided information on all five of the sites which it acquired from BECo, detailing their infrastructure strengths and weaknesses, and identifying base and alternative configurations and potential development risks. Sithe Energies applied criteria to assess each site's consistency with its development objectives, environmental impacts, and community impacts. The Siting Board notes that the Company provided information that it developed based on site visits, engineering, and environmental analyses specific to each site, and economic and reliability analyses. The Siting Board finds that the Company's description of the site selection process used is accurate.

Sithe Energies asserted that its proposal minimizes environmental impacts in part through the use of a "brownfield approach" to development. The Siting Board notes that the redevelopment and reuse of previously disturbed sites and the use of existing infrastructure can limit many of the environmental impacts that may be associated with industrial development. Additionally, where an industrial character and the presence of industrial support infrastructure are already evident, there often is the potential to develop additional facilities such as a generating plant, consistent with considerations of land use compatibility for such development. The Siting Board encourages such "brownfield" development where appropriate. However, the Siting Board notes that the benefits of such an approach are necessarily site and facility-specific. A review of any such site must take into account the scale, nature, and physical attributes of any existing or recent use on the site, the existing character of the surrounding area, and the impacts which the specific proposed use will have on the surrounding area.

In this case, the Company has identified the advantages to brownfield development at the West Medway Station site including existing infrastructure, on-site transmission capacity, and on-site gas supply. The West Medway facility is proposed as a peaking facility, which is consistent with the current use of the site for peaking generation facilities. The Company's decision to propose a single-cycle peaking facility, rather than a combined-cycle facility, also appropriately responds to the constraints of the site, particularly the identified deficiency in water

supply. However, because the proposed facility likely will operate more frequently than the existing unit, and because it is located in close proximity to a residential area, there is a potential for increased noise and visual impacts.

The record reflects the advantages and disadvantages of brownfield redevelopment at the West Medway Station site. On balance, the advantages contribute to the minimization of environmental impacts; however, the disadvantages create the potential for environmental impacts which the Company will need to minimize, through design or mitigation. These issues are discussed in Sections III.F and III.G. below. Accordingly, the Siting Board finds that the Company's site selection process resulted in the selection of a site that contributes to the minimization of environmental impacts and the costs of mitigating, controlling, and reducing such impacts.

III. ENVIRONMENTAL IMPACTS

A. Standard of Review

G. L. c. 164, § 69J¼ requires the Siting Board to determine whether the plans for construction of a proposed generating facility minimize the environmental impacts of the proposed facility consistent with the minimization of costs associated with the mitigation, control, and reduction of the environmental impacts of the proposed generating facility. In order to make this determination, the Siting Board assesses the impacts of the proposed facility in eight areas prescribed by its statute, including air quality, water resources, wetlands, solid waste, visual impacts, noise, local and regional land use, and health, and determines whether the applicant's description of these impacts is accurate and complete. G. L. c. 164, § 69J¼.

The Siting Board also assesses the costs and benefits of options for mitigating, controlling, or reducing these impacts, and determines whether mitigation beyond that proposed by the applicant is required to minimize the environmental impacts of the proposed facility consistent with the minimization of costs associated with the mitigation, control, and reduction of the environmental impacts of the proposed generating facility. Compliance with other agencies' standards does not establish that a proposed facility's environmental impacts have been minimized.

Finally, the Siting Board assesses any tradeoffs that need to be made among conflicting environmental impacts, particularly where an option for mitigating one type of impact has the effect of increasing another type of impact. An assessment of all impacts of a facility is necessary to determine whether an appropriate balance is achieved both among conflicting environmental concerns and between environmental impacts and cost. A facility proposal which achieves this balance meets the Siting Board's statutory requirement to minimize environmental impacts consistent with minimizing the costs associated with the mitigation, control, and reduction of the environmental impacts of the proposed generating facility.

B. Air Quality

This section describes emissions and impacts of the proposed facility, compliance with existing regulations, and emission offsets proposed by the Company.

1. Applicable Regulations

The Company indicated that regulations governing the air impacts of the proposed facility include National Ambient Air Quality Standards ("NAAQS") and Massachusetts Ambient Air Quality Standards ("MAAQS");[16] New Source Review ("NSR") requirements; Prevention of Significant Deterioration ("PSD") requirements; and New Source Performance Standards ("NSPS") for criteria pollutants (Exh. SWM-2, at 6-3). The Company indicated that all areas of the country are classified as "attainment," "non-attainment," or "unclassified" with respect to NAAQS for six criteria pollutants: sulfur dioxide ("SO_2"), particulates ("PM_{10}"), nitrogen dioxide ("NO_2"), carbon monoxide ("CO"), ground level ozone, and lead (Exh. EFSB-A-2-S Att. at 1-2). According to the Company, NSR applies to non-attainment criteria pollutants exceeding certain emission thresholds (id. at 1-3; see Table 1, below); PSD applies to attainment (and unclassified) pollutants exceeding certain emission thresholds (id. at 1-4; see table below); and NSPS apply to pollutants on the basis of process or source category (id. at 3-2).

The Company stated that Massachusetts regulations for Air Plans Approval require Best

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[16] The Massachusetts Department of Environmental Protection ("MADEP") has adopted the NAAQS limits as MAAQS (Exh. EFSB-A-2-S Att. at 1-2).

Available Control Technology ("BACT")[17] for each regulated pollutant (id. at 1-4). The Company stated that volatile organic compounds ("VOC") and nitrogen oxides ("NO_X") emissions are regulated as precursors to ozone by MADEP (id. at 1-3 and 3-1). As described in Section III.B.4, below, the Company stated that MADEP requires the facility to have Lowest Achievable Emissions Rate ("LAER")[18] technology for NO_X. The Company stated that the Technology Performance Standards ("TPS") established by the Siting Board require new facilities either to demonstrate that emissions comply within the TPS emissions criteria or to provide data showing that the proposed facility will contribute to a reliable, low-cost, diverse, regional energy supply with minimal environmental impacts (Exh. SWM-1, at 3-1). The Company stated that, under the Acid Rain Program, the EPA requires owners of new plants to hold or acquire SO_2 emission allowances to offset their actual annual SO_2 emissions (Exh. EFSB-A-2-S Att. at 3-3).

The Company described several other air quality requirements including: a MADEP prohibition on dust or odor-causing emissions from construction or operation of a fossil-fuel plant; an additional limitation on particulate matter emissions from new fossil-fuel facilities in Massachusetts; and the MADEP air toxics policy (id. at 3-4 and 3-5).[19] The Company also

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[17] The Company stated that the U.S. Environmental Protection Agency ("EPA") defines BACT as "an emissions limitation . . . based on the maximum degree of reduction for each pollutant subject to regulation . . . which would be emitted from any proposed major stationary source or major modification which the Administrator, on a case-by-case basis, taking into account energy, environmental and economic impacts and other costs, determines is achievable . . . through application of production processes or available methods, systems and techniques . . . for control of such pollutant." (Exh. EFSB-A-2-S Att. at 4-10).

[18] The Company stated that EPA defines LAER as "the most stringent emission limitation contained in the implementation plan of any state for such category of source, unless the owner or operator of the proposed source demonstrates that such limitations are not achievable, or the most stringent limitation achieved in practice by such class or category of source" (Exh. EFSB-A-2-S Att. at 4-1).

[19] The Company also described the MADEP short-term ambient NO_2 policy applicable to sources emitting over 250 tons per year ("tpy") of NO_2; however, the Company stated that (continued...)

discussed the Siting Board's policy relative to offsetting carbon dioxide ("CO_2") emissions (Exh. EFSB-A-5).

2. Baseline Air Quality

The Company indicated that the closest MADEP air quality monitoring stations to the West Medway Station are 16 to 21 miles from the site, in Worcester, Sudbury, Waltham, and Easton (Exh. EFSB-A-2-S Att. at 5-5 and 5-7). The Company indicated that the air data from these locations represent a conservative estimate of regional air quality because urban locations were selected for most monitoring locations (id. at 5-5). The Company presented data from these air monitoring stations for 1995, 1996, and 1997 (id. at 5-8).[20] The Company indicated that the regional air quality measurements were below NAAQS concentrations for all criteria pollutants each year except 1995, when the ozone levels exceeded NAAQS (id.).[21] From a regulatory standpoint, the Company indicated that the Medway area was "unclassified" (treated as attainment) for SO_2, NO_2, CO, and lead, and estimated to be in attainment for PM_{10}, but that the entire Commonwealth of Massachusetts was classified as a "serious" non-attainment zone for ozone (id. at 1-3, 1-4).

The Company stated that the three existing turbines at West Medway Station are capable of running on No. 2 fuel oil or natural gas (id. at 1-1). According to the Company, MADEP has indicated that visible emissions have been observed from the existing units during start-up;

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19 (...continued)
the proposed facility would not be subject to the policy because the NO_2 emissions would be less than this emissions threshold (Exh. EFSB-A-2-S Att. at 3-5).

20 Observed concentrations were presented for SO_2, NO_2, CO, PM_{10}, and ozone (Exh. EFSB-A-2-S Att. at 5-8).

21 The Company provided air quality data from MADEP monitoring stations in Worcester, Sudbury, Waltham, and Easton that indicate that: (1) the maximum concentration of ozone observed at Easton in 1995 was 104 percent of the 1-hour NAAQS; (2) concentrations of CO (at Worcester in 1996) were 59 percent of the 8-hour NAAQS and less than 50 percent of the annual standard; (3) concentrations of NO_2, SO_2, and PM_{10} (at Worcester, Sudbury, and/or Waltham) were 50 percent or less of the respective standards (Exh. EFSB-A-2-S Att. at 5-7 to 5-8).

however, the Company stated that it has not been able to confirm that visible emissions occur during start-up (Exh. SWM-2, at 6-20). The Company stated that the existing turbines are considered a "major source" for NO_X and VOC, based on volumes that would be emitted if the facility were to operate full-time, year-round (8,760 hours per year) as permitted (id. at 6-4). However, the Company stated that the existing turbines operate as peaking units, and actual operations have typically been in the range of 80 hours per year (Exh. EFSB-A-2-S Att. at 1-1; Tr. 1, at 54).

3. Proposed Restrictions on the Existing Facility

The Company stated that it proposes to incorporate into West Medway Station's permit an enforceable restriction limiting use of the existing turbines to 2,500 hours per year (Exh. EFSB-A-2-S Att. at 4-16). The Company stated that with this restriction, potential VOC emissions would be reduced to below 50 tpy and the existing facility would be reclassified as a minor source for VOC (id. at 1-4). In addition, the Company proposes: (1) to switch the existing units to a lower sulfur distillate fuel than is currently used; and (2) to use only natural gas as fuel during the "ozone season," as long as natural gas is available (id. at 1-1).

4. New Facility Emissions, Impacts, and Compliance

The Company stated that the proposed facility would emit CO_2, particulate matter, SO_2, CO, NO_X, VOC, sulfuric acid mist, and lead (Exhs. EFSB-A-5; EFSB-A-2-S Att. at 4-3). The Company indicated that it plans to seek a permit to operate the proposed facility a maximum of 2,500 hours per year (Exh. EFSB-A-2-S Att. at 6-10). The Company tabulated maximum potential annual emissions for the proposed facility, based on worst-case load conditions and operating at 2,500 hours per year, and compared these maximum emissions against NSR and PSD significant emission rates (Exh. EFSB-A-2-S Att. at 3-2). Maximum annual emissions which the new equipment would have the potential to emit ("PTE"), as calculated by the Company, are as follows:

Table 1

Emission Parameter [a]	PTE Maximum Annual Emissions (tpy) [b,c]	Significant Emission Rates (tpy)	
		NSR [d]	PSD [e]
Carbon dioxide (CO_2)	750,000 [f]	N/A	N/A
Nitrogen oxides (NO_X/NO_2)	232	25 [g]	40
Carbon monoxide (CO)	109.6	N/A	100
Volatile organic compounds (VOC)	14.8	25 [g] /50 [h]	40
Particulates (PM_{10})	73.9	N/A	15
Sulfur dioxide (SO_2)	19.4	N/A	40
Sulfuric acid mist (H_2SO_4)	2.7	N/A	7
Lead (Pb)	0.1	N/A	0.6

Values that exceed applicable thresholds are underlined.

N/A Not applicable

a. No emissions are expected for these additional PSD pollutants: vinyl chloride, asbestos, fluorides, hydrogen sulfide, total reduced sulfur, and reduced sulfur compounds (Exh. EFSB-A-2-S Att. at 3-2).

b. Annual potential to emit from new units at 2,500 hours per year (Exhs. EFSB-A-2-S Att. at 3-2; EFSB-A-5-1 Att.). The Company stated that actual operation of the facility is anticipated to be significantly less than 2,500 hours per year (Exh. SWM-2, at 6-16).

c. See Exh. EFSB-A-2-S Att. at 3-2 for additional notes.

d. Non-attainment New Source Review thresholds apply to VOC and NO_X as ozone precursors (Exh. SWM-2, at 6-4).

e. Prevention of Significant Deterioration thresholds for a major source (Exh. EFSB-A-2-S Att. at 3-1).

f. Carbon dioxide emissions data are from Exh. EFSB-A-5-1 Att.

g. NSR threshold for a modification to a major source (Exh. EFSB-A-2-S Att. at 3-1).

h. NSR threshold for a modification to a minor source (Exh. EFSB-A-2-S Att. at 3-1).

The Company stated that BACT would be demonstrated: (1) by use of natural gas as the only fuel for the new units, thus reducing SO_2, PM_{10}, VOC, sulfuric acid mist, and lead emissions compared to other fuels; and (2) by the particular model of turbine selected, which the Company asserted minimizes incomplete combustion, thus reducing emissions of VOC and CO (id. at 1-4 and 4-11). The Company stated that compliance with LAER meets BACT for NO_X emissions (id. at 4-10). The Company stated that the only practical means of controlling SO_2 emissions from combustion turbine projects is to limit the sulfur content of the fuel and that the very low

emission rate from the use of natural gas represents the top level of SO_2 control for a combustion turbine (id. at 4-11). On this basis, the Company asserted that the use of natural gas as the facility fuel meets or exceeds BACT for SO_2 (id.).

The Company stated that non-attainment NSR review for NO_X, an ozone precursor, is required because the new units would have the potential to emit NO_X above the NSR threshold of 25 tpy applicable to a modification to a major source of NO_X (id. at 1-3). The Company stated that NSR for NO_X requires application of LAER technology and acquisition of emissions offsets (id. at 3-1). Further, the Company stated that LAER for NO_X for a simple-cycle peaking facility would be demonstrated by the use of "dry low-NO_X combustion," limiting emissions to 9 parts per million ("ppm") (id. at 1-4). The Company stated that NSR review for VOC is not required because the projected emissions would be below the NSR threshold for a modification to a minor source (id. at 1-3).

Relative to NSPS, the Company presented limits for new electric utility gas turbine emissions of NO_X and SO_2 (id. at 3-2 to 3-3). The Company stated that emissions of NO_X would be limited to 9.0 ppm[22] and thus would be well below the nominal 75 ppm[23] NSPS for NO_X from gas turbines (id. at 3-3). The Company also stated that fuel sulfur fractions and flue gas SO_2 concentrations would be below NSPS standards for sulfur (id.).[24]

As noted above, proponents of new facilities must either demonstrate that the TPS are met or provide data comparing the proposal to other fossil-fuel generating technologies. The Company presented tables comparing TPS against expected facility emission rates, expressed in pounds ("lbs") per megawatt hour ("MWH") at 100 percent load (Exh. SWM-1, at 3-4 and 3-5).

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22 The stated limit is 9.0 ppm dry volume, corrected to 15 percent oxygen ("O_2") (Exh. EFSB-A-2-S Att. at 3-3)

23 The Company stated that the NSPS is a nominal value of 75 ppm NO_X, corrected to 15 percent O_2, with allowance for a heat rate correction for efficient turbines and a correction for fuel-bound nitrogen (Exh. EFSB-A-2-S Att. at 3-2).

24 The Company stated that NSPS limits fuel sulfur content to 0.8 percent by weight and SO_2 emissions to 150 ppm (dry volume, corrected to 15 percent O_2) (Exh. EFSB-A-2-S Att. at 3-3).

The Company presented the following data for criteria pollutants:

Table 2

Pollutant	Performance Standard (lbs/MWH)	Project Emission Rate (lbs/MWH)
SO_2	0.021	0.030
NO_X	0.120	0.344
TSP[a]/PM_{10}	0.081	0.104
CO	0.077	0.210
VOC	0.035	0.016

Source: Exh. SWM-1, at 3-4
a. TSP is total suspended particulates.

The Company indicated that the facility's emissions meet TPS thresholds for non-criteria pollutants but exceed TPS thresholds for most criteria pollutants (id. at 3-4). The Company asserted that the exceedances exist because TPS thresholds are based on combined-cycle technology appropriate for base-loading facilities, as distinguished from a peaking plant (id.). Since TPS thresholds would not be met, the Company presented a comparison of costs, emissions, and other factors for natural gas-fired combustion turbine technology and alternative technologies, including base load combined-cycle technology and selected alterative peaking technologies, which is described in Section IV, below. The Company asserted that natural gas-fired combustion turbine technology would be an appropriate choice over combined-cycle technology and would have lower emissions and otherwise be the appropriate choice over alternative peaking technologies (id. at 3-17 to 3-19).

The Company described its atmospheric dispersion modeling that predicts ground-level ambient pollutant concentrations at receptor locations within a radius of 16 kilometers (10 miles) of the proposed facility, based on projected facility emissions and on the proposed 65-foot stack

height (Exh. EFSB-A-2-S Att. at 1-6 and 5-9).[25] The Company then compared modeled concentrations to significant impact levels ("SILs")[26] defined by EPA and MADEP for criteria pollutants, and MADEP Allowable Ambient Levels ("AALs") and Threshold Effects Exposure Limits ("TELs") for air toxics[27] (id. at 5-9). Based on this comparison, the Company predicted that facility-related ambient pollutant concentrations would not exceed SILs, AALs, or TELs (id. at 5-9 to 5-10).[28]

The Company used atmospheric dispersion modeling of criteria pollutants to compare the air quality impacts of the proposed facility at two different stack heights: with three 65-foot stacks, as proposed, and with three 100-foot stacks, the height which is considered good engineering practice ("GEP") for the facility (id. at 5-12). The concentrations presented for the 65-foot stacks are 16 to 77 percent higher than concentrations presented for the 100-foot stacks, but in either case the modeled impact of the facility would be less than SILs (id.).

The Company also presented results of cumulative impact modeling for SO_2, NO_2, PM_{10}, and CO, which are the sum of ambient concentrations measured at nearby MADEP monitoring locations ("background") and concentrations modeled for the subject facility along with

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[25] The Company indicated that the EPA-approved Industrial Source Complex Short-Term ("ISCST3") model was used to predict ambient concentrations of four criteria pollutants (NO_2, SO_2, CO, and PM_{10}), sulfuric acid, formaldehyde, and five trace metals (arsenic, cadmium, hexavalent chromium, lead, and mercury) (Exh. EFSB-A-2-S Att. at 5-9 and 5-10).

[26] EPA and MADEP established SILs as an additional set of criteria for NO_2, SO_2, CO, and PM_{10} at a level of emissions from a new source or a modification to an existing source low enough so that emissions below SILs would not significantly affect modeled air quality; a detailed evaluation of compliance with the NAAQS is not required if SILs are not exceeded (Exh. EFSB-A-2-S Att. at 1-5).

[27] Massachusetts regulates non-criteria toxic air pollutants by assessing compliance with short-term exposure guidelines (maximum 24-hour impact) known as TELs and by assessing compliance with long-term exposure guidelines (averaged over one year) known as AALs. IDC Bellingham, LLC, 9 DOMSB, 260, at 26 (1999).

[28] Projected maximum concentrations from the facility range from 0.024 percent to 12 percent of the SILs, TELs, and AALs (as calculated from Exh. EFSB-A-2-S Att. at 5-10).

20 existing and proposed sources in the area including the IDC Bellingham, ANP Blackstone, and ANP Bellingham facilities (id. at 5-12 to 5-16). The results indicate that the proposed facility would increase cumulative concentrations by no more than one quarter of one percent ($\leq$0.25 percent) at the locations of maximum impacts from the combined sources of SO_2, NO_2, PM_{10}, and CO (id. at 5-16).[29] The Company concluded that maximum combined concentrations from the proposed facility, interactive sources, and background are all below the NAAQS and MAAQS for the modeled criteria pollutants (id. at 5-16).[30]

The Company stated that the new facility would meet MADEP requirements for limiting dust and odor, as well as particulate matter limits for new fossil-fuel facilities (id. at 3-4). In addition, the Company stated that good engineering and good construction practices will be used to minimize air contamination from construction vehicles and dust (Exh. EFSB-H-10).

The Company provided a displacement analysis based on 2,500 hours of operation per year replacing marginal units in the New England Power Pool ("NEPOOL"), and asserted that the proposed facility could result in emissions reductions of 1,523 tpy of NO_X, 6,259 tpy of SO_2, and 252,000 tpy of CO_2 (Exh. EFSB-RR-10).

5. Offset Proposals and Marketable Allowances

As noted in Section III.B.4, above, NO_X offsets are required for NO_X emissions, under NSR requirements. The Company stated that Massachusetts regulations require NO_X offsets at a ratio of 1.26 to 1 (Exh. EFSB-A-2-S Att. at 4-14). The Company stated that the Air Quality Improvement Plan ("AQIP") for the Mystic Station in Everett includes a plant-wide reduction in NO_X emissions of 1,762 tpy, and that it will petition MADEP to credit approximately 292 tpy of that total reduction as an offset for NO_X emissions from the proposed facility in Medway (Exh. EFSB-A-4). The Company stated that SO_2 emission allowances are "available" and would be secured in the amount required (Exh. EFSB-A-2-S Att. at 3-3).

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[29] Percentage is based on Siting Board staff calculation from cited exhibit.

[30] The maximum combined concentrations range from 30 percent to 65 percent of the NAAQS for SO_2, NO_2, PM_{10}, and CO (as calculated by Siting Board staff from Exh. EFSB-A-2-S Att. at 5-16).

With respect to the Siting Board requirement that a generator offset one percent of CO_2 emissions from a project, the Company proposes to offset one percent of the CO_2 to be emitted by the proposed facility by reducing operations at existing Units 4, 5, and 6 at Mystic Station (Exh. EFSB-A-5).[31]

6. Analysis

The record shows that the proposed facility would have the potential to emit a maximum of 750,000 tpy of CO_2. The facility would release lesser amounts of NO_X, particulates, and CO, along with small quantities of other pollutants. The record indicates that these emissions would not cause local or regional air quality to significantly worsen, as compared to established air quality standards. To the extent that the facility produces electric power that meets new demand for power, these emissions would represent an incremental increase in regional air pollution. However, the Company has shown through a displacement analysis that the proposed facility also has the potential to reduce regional emissions of CO_2, NO_X, and SO_2 by substituting for power from existing plants. Locally, the record indicates that the facility is not expected to have a significant deleterious effect on air quality, as modeled ambient impacts are below SILs, TELs, and AALs.

The modeled ambient impacts were calculated assuming a sub-GEP stack height of 65 feet, thereby reducing visual impacts. Because the modeled emissions are below SILs, the Siting Board finds that the proposed 65-foot stack height would minimize air quality impacts consistent with the minimization of visual impacts. (See Section III.F, below).

The record shows that the proposed facility would increase cumulative concentrations of SO_2, NO_2, PM_{10}, and CO by less than one percent at the locations of maximum impacts from the combination of the subject facility, measured background concentrations, and existing and proposed sources in the region. These maximum combined concentrations are all projected to be

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[31] The Company stated that its AQIP at Mystic Station in Everett will result in a reduction of CO_2 emissions equivalent to about 970,000 tpy; that new units at Mystic Station will emit 5,400,000 tpy; and that the Medway Station expansion would emit 750,000 tpy (Exh. EFSB-A-5-1).

below the NAAQS.

The record indicates that lower sulfur oil will be used at the existing facility when oil is used, that natural gas will be preferentially selected over oil during specified conditions, and that the operation of the existing facility will be formally limited. While actual hours of operation may not be affected by the formal limitation on hours, the commitments on fuel substitution may reduce emissions of air pollutants at the existing facility. Fuel substitution could have the effect of counteracting or mitigating the additional emissions from the proposed facility.

The record shows that the proposed facility is expected to meet air quality standards, including ambient air standards, new source standards, performance standards, and design standards. The MADEP Air Plans Approval process will evaluate compliance with LAER and BACT, and overall compliance with air regulations. Projected emissions are greater than the levels set in the TPS; consequently, in Section IV, below, the Siting Board reviews the facility's overall compliance with the TPS.

The record shows that the Company would meet NO_X offset requirements for the proposed facility by instituting a plant-wide NO_X emissions cap that is lower than recent historical emissions of NO_X as part of its AQIP for Mystic Station in Everett. The record indicates that the Company intends to purchase SO_2 emission allowances to meet the SO_2 offset requirements.

Sithe also proposes to use emissions reductions from the Mystic Station AQIP to comply with the Siting Board's CO_2 mitigation requirement. The Siting Board recently considered a similar proposal in its review of the Sithe Edgar Station project. In that review, the Siting Board considered the consistency of the proposal by Sithe Edgar Development LLC ("Sithe Edgar"), with its recent precedent regarding CO_2 mitigation, and concluded that, if Sithe Edgar established that it would make no collateral use of that portion of the AQIP curtailment on which the CO_2 offsets for the Sithe Edgar Station facility were based, Sithe Edgar's proposal would conform with the Siting Board's requirement for CO_2 mitigation. Sithe Edgar Decision, EFSB 98-7, at 28-32. The Siting Board therefore directed Sithe Edgar, prior to or within the first year of operation, to provide it with evidence establishing that Sithe Edgar would make no collateral use of the portion of the AQIP curtailment on which the CO_2 offsets for the Sithe Edgar Station

facility were based. Id. at 31.

Consistent with its analysis in the Sithe Edgar Decision, the Siting Board finds that, if Sithe establishes that it will make no collateral use of that portion of the AQIP curtailment on which the CO_2 offsets for the proposed facility are based, Sithe's proposal would conform with the Siting Board's requirement for CO_2 mitigation.[32] Consequently, the Siting Board directs Sithe, prior to or within the first year of the proposed facility's operation, to provide it with evidence of agreements or arrangements relating to the proposed AQIP emissions reductions that establish that Sithe will make no collateral use, for purposes of providing emissions offsets for other pollutants and/or other sources, of the portion of the AQIP curtailment on which the CO_2 offsets for the proposed facility are based.

Alternatively, consistent with the precedent established in the Dighton Power Decision, Sithe may elect to offset one percent of its twenty-year CO_2 emissions through a monetary contribution to one or more cost-effective CO_2 offset programs to be selected in consultation with Siting Board staff. This contribution may be made as five annual installments during the first five years of facility operation totaling $238,911[33] or as a single first-year contribution of

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[32] As in the Sithe Edgar Decision, the Siting Board has considered the consistency of Sithe's proposed CO_2 mitigation with the requirements set forth in Dighton Power Associates, 5 DOMSB (1997) ("Dighton Power Decision"), which provided for a monetary contribution for CO_2 mitigation based on a offset level of one percent of facility emissions and an assumed mitigation cost of $1.50 per ton. In a recent case, the Siting Board reviewed evidence of recent transaction prices and has held that the assumed value of $1.50 per ton is reasonably consistent with the current cost range for acquiring CO_2 offsets. Sithe Mystic Development LLC, 9 DOMSB, at 139 (1999) ("Sithe Mystic Decision").

[33] The contribution is based on offsetting one percent of facility CO_2 emissions, over 20 years, at $1.50 per ton. The 20-year amount is first distributed as a series of payments to be made over the first five years of project operation, then adjusted to include an annual cost increase of three percent. See Brockton Power LLC, EFSB 99-1 at 28 (2000) ("Brockton Decision"); ANP Blackstone Energy Company, 8 DOMSB, at 128 (1998); U.S. Generating Company, 6 DOMSB 128-129, at 117-118 (1997) ("Millennium Power Decision").

$194,461.[34]

Accordingly, the Siting Board finds that, with implementation of the foregoing CO_2 mitigation, the air quality impacts of the proposed facility would be minimized.

C. Water Resources

In this section, the Siting Board addresses the water-related impacts of the proposed facility including: (1) the water supply requirements and related impacts on water supply systems, on surface and subsurface water levels and flow, and on wetlands; and (2) the water-related discharges from the facility, including wastewater and stormwater discharges, and their related impacts on wastewater systems, on wetland hydrology, and on other water resources.

1. Water Supply

The Company stated that the proposed facility would use an average of 324,921 gallons of water per year, or an average of 890 gallons per day ("gpd"), with a maximum daily use of 7,350 gpd during major maintenance overhauls (Exhs. SWM-2, at 3-8 and 10-1; EFSB-WR-1-1(R) Att.). The Company indicated that the facility's water requirements would include 400 gpd of demineralized water under normal operations, which it may obtain from an off-site source (Exhs. EFSB-WR-1-1(R) Att.; SWM-2, at 3-9; EFSB-WR-6). The Company considered water for firefighting as an additional water use, but did not estimate the quantity of water that might be used in the event of a firefighting emergency (Exh. SWM-1, at 1-11).

The Company indicated that it would use the existing Medway municipal water system to meet the water needs of the proposed facility and stated that the Town of Medway ("Town") indicated that Medway could accommodate the additional demand (Exhs. SWM-2, at 10-1; SWM-11, at 2-12; EFSB-WR-5). The Company provided information regarding current demands on the Medway municipal water system. Specifically, the Company stated that in 1998

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[34] The single first-year contribution for CO_2 offsets is based on the net present value of the five annual payments totaling $238,911, discounted at 10 percent per year. See Brockton Decision, EFSB 99-1, at 28; ANP Blackstone Energy Company, 8 DOMSB, at 128; Millennium Power Decision, 6 DOMSB, at 128-129. The single up-front payment would be due by the end of the first year of operation.

the Town was registered with MADEP for withdrawal of an average of 0.72 million gpd (Exh. EFSB-WR-15). Actual average daily water demand in 1998 for the Town was reported as 1.115 million gpd (Exh. EFSB-WR-14). The Company presented information obtained from the Town, indicating that mandatory water bans were in effect for four months in 1998 and six months in 1999 (Exh. EFSB-WR-4-1 Att.). The Company determined that additions to Medway water supplies are not expected for several years (Exh. EFSB-WR-11). The Company asserted that water consumption at the West Medway Station on a typical day would be equivalent to the water demand associated with two four-bedroom homes (Exh. SWM-2, at 10-1). Compared to consumption at the existing West Medway Station, the Company anticipated no increase in demand for domestic water uses including drinking fountains, showers, toilets, and sinks (Exh. SWM-1, at 1-11).

The Company indicated that it would construct an extension of the existing water main on its property (Exh. EFSB-WR-17). The Company stated that it would use a 7,500-gallon water storage tank to store demineralized water that may be delivered to the site by tanker truck (Exh. EFSB-WR-6). The Company also identified delivery of water by truck as a backup means of obtaining water for general use (Exh. SWM-1, at 1-11).

Citing United States Geological Survey ("USGS") data, the Company stated that a low yielding aquifer is located south and west of the site (id. at 4-21). The Company stated that the site does not overlie a high yield aquifer nor is it located within a MADEP approved Zone II Protection Area where it would affect recharge to a public drinking water well (id.). The Company also stated that it knows of no private wells in the same hydrologic area (Tr. 3, at 225). Furthermore, the Company contended that only low yields would be expected from any on-site wells and stated it has no plans to use on-site groundwater sources (Exh. SWM-1, at 4-23).[35]

2. Discharge Impacts

The Company stated that, when operating under normal conditions, the proposed facility

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[35] The Company indicated that the site is primarily mapped as till, which is normally unsuitable for water supply wells, with a margin of sand and gravel which the Company suggests is both narrow and thin (Exh. SWM-1, at 4-23).

would generate a wastewater stream of 450 gpd, of which 150 gpd would be sanitary waste that would discharge to an on-site septic system (id. at 1-14). The Company stated that there would be no increase in the flow of sanitary waste associated with the operation of the proposed facility, but added that a new leaching field would be created due to site layout constraints (Exhs. SWM-1, at 1-14 and 4-25; SWM-11, at 2-12). The Company indicated that a wastewater holding tank of approximately 7,500 gallons would be used for wastewater other than sanitary wastes (Exh. EFSB-WR-7). The Company indicated that during normal operations, 300 gpd of wastewater would be generated from equipment washdown activities (Exh. SWM-1, at 1-12). The Company also indicated that up to 7,350 gpd of wastewater consisting of turbine wash water, equipment washdown water, and external flushing of the closed loop cooling system would be discharged to the wastewater collection tank during periodic plant maintenance overhauls, with subsequent off-site disposal at an approved disposal facility (id. at 1-13 and 4-25; Exhs. SWM-2, at 10-2; EFSB-WR-7; Tr. 2, at 235). The Company stated that there would be no wastewater residual from on-line washes of the combustion turbines (Exh. SWM-1, at 1-14).

The Company indicated that motor oil, waste oil, various solvents, insecticides, aerosol cans, paint, gasoline, diesel fuel, and a drying agent would be used at the site during construction and that oxygen, carbon dioxide, hydrogen, propane, acetylene, turbine cleaning solution, and various oils contained within operating equipment would be used during operation of the proposed facility (Exh. EFSB-HZ-1; Tr. 3, at 230). The Company indicated that refueling of construction equipment may occur on-site (Exh. EFSB-RR-24). The Company indicated that it would need to make only minor modifications to the Spill Prevention, Control, and Countermeasure Plan ("SPCC Plan") for the existing facility in order to accommodate the proposed facility (Exh. EFSB-SF-1). However, the Company stated that controlling spillage during construction would be the responsibility of its engineering, procurement, and construction ("EPC") contractor (Tr. 3, at 227). The Company has stated that lubricating oils and chemicals required for facility operation would be stored in covered containment areas, with chemicals stored indoors on a paved surface with curbs and/or dikes to contain any spills (Exh. SWM-2, at 9-26).

The Company indicated that stormwater flows would be modified by the facility,

principally by adding impervious surfaces such as roofs and pavement, and slightly by changing the areas of small drainages (id. at 9-21 and 9-25). The Company stated that facility engineering design would identify the existing peak stormwater runoff volume, which would be used as a design target maximum limit for peak post-development runoff conditions (Exh. SWM-1, at 4-27). The Company indicated that it would construct a stormwater detention basin to allow sediments in runoff to settle and to limit peak runoff rates (Exh. SWM-2, at 9-25). All potentially contaminated stormwater from the outdoor catchbasins, secondary containment under CTG/turbine lube oil coolers, transformer containment, and general site areas would be directed through an oil/water separator prior to discharge to a detention basin, according to the Company (Exh. SWM-1, at 1-14 and 4-30). The Company indicated that it would provide for periodic maintenance of this detention basin, including removal of accumulated sediments (Exh. EFSB-RR-26). The Company stated that oil collected in the oil/water separator would be disposed of off-site at an approved disposal facility (Exh. SWM-1, at 1-14). The Company stated that sediment and erosion controls would be employed to "prevent sediment-laden runoff from affecting nearby wetlands" (id.).

With regard to existing contamination of soils or groundwater, the Company indicated that some contaminants had been detected in association with the existing facility but stated that there is no known condition at West Medway Station that would be of concern (Exh. EFSB-HZ-2 Att. at 5-1; Tr. 3, at 223-225).[36]

3. Analysis

The record shows that the proposed facility would use modest volumes of water which would be obtained from off-site sources. Municipal water supplies are limited; in fact, the Town

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[36] The Company provided a copy of a 1997 Environmental Site Assessment report prepared for the previous site owner, BECo (Exh. EFSB-HZ-2 Att.). This site assessment work followed known releases of fuel oil and oil contaminated with polychlorinated biphenyls ("PCBs") and detection of petroleum hydrocarbons and PCBs at the site of the existing facility (Exh. EFSB-HZ-2 Att. at 5-1). Sampling and analysis conducted in 1997 found detectable concentrations of petroleum hydrocarbons in soil and groundwater in the vicinity of the existing facility (id. at 5-2). The Company stated that the area investigated in the 1997 study did not extend to the footprint of the proposed facility (Tr. 3, at 223).

regularly withdraws more groundwater than it is registered for by MADEP. However, with its minimal average water use (estimated to be only 890 gpd, compared to an average system delivery of 1.115 million gpd of water in 1998), the facility would not significantly increase the demand on the municipal system. The record shows that any water obtained from the municipal system and not returned to the local watershed (i.e., due to trucking of wastewater off-site and/or evaporation) would be small in volume and would not represent a significant loss to the watershed. Accordingly, the Siting Board finds that the water supply impacts of the proposed facility would be minimized.

The record shows that the proposed facility would discharge modest volumes of wastewater. The record shows that on-site discharge would be limited to sanitary wastewater and handling of stormwater runoff. While there is evidence that subsurface contaminants are present at the existing facility, the record shows no evidence of contamination at the site of the proposed facility. No evidence was presented that would indicate that changes in stormwater flow associated with facility development would affect or mobilize contaminants previously detected at the West Medway Station. The record shows that provisions have been made for the prevention and control of spills to minimize contamination of groundwater and surface water. Accordingly, the Siting Board finds that the water resources impacts of the proposed facility would be minimized.

D. Wetlands

This section describes the wetland impacts of the proposed facility and its interconnections and the mitigation proposed by the Company.

1. Description

The Company stated that two intermittent streams are located in the vicinity of the project (Exh. SWM-2, at 9-5). The Company identified bordering vegetated wetland ("BVW") and banks along these streams which are regulated as wetland resource areas in accordance with the Massachusetts Wetland Protection Act (Exhs. SWM-2, at 9-5 to 9-6; SWM-11, at 2-12). The Company stated that there is no mapped habitat of special status wetland wildlife species at the

site (Exh. SWM-2, at 9-3).

The Company provided a copy of a 1997 Environmental Site Assessment report prepared for the previous site owners (Exh. EFSB-HZ-2 Att.). The 1997 report stated that there was a 1988 report of a release of oil contaminated with PCBs into an intermittent stream southwest of the property and surrounding wetlands, but the 1997 report did not specify residual concentrations of hydrocarbons and PCBs in on-site or off-site wetlands (id. at 5-1).

The Company indicated that the proposed facility would be located outside of any wetlands and also outside of the 100-foot wetland buffer zone (Exh. SWM-11, at 2-7). The Company stated that there would be no construction or clearing in the wetlands, but that there may be some clearing of vegetation in the buffer zone (Tr. 3, at 257).

The Company stated that a temporary roadway for delivery of heavy equipment would extend into the buffer zone (Exh. EFSB-W-1). The Company anticipated that, as part of the 345 kV interconnect to the BECo substation, directly west of the facility, three support structures for overhead wires would be constructed within a 100-foot wetland buffer zone (id.). The Company stated that a small part of the permanently relocated perimeter driveway would extend into the buffer zone and that a water supply line extension may extend into the buffer zone as well (id.). The Company stated that no upgrades to the gas pipeline interconnect would be required (Exh. EFSB-L-11). The Company stated that it filed a Notice of Intent under the Massachusetts Wetlands Protection Act with the Medway Conservation Commission (Exh. EFSB-W-2-S). The Company indicated that the Medway Conservation Commission had approved the project, subject to an Order of Conditions (Exh. EFSB-RR-26-S).

The Company stated that site hydrology would be modified, principally by adding impervious surfaces, thereby increasing surface runoff, and stated furthermore that to minimize effects from changes in runoff, potentially contaminated runoff would be directed through an oil/water separator and a detention basin would be constructed to allow sediments in runoff to settle and to limit peak runoff rates (see Section III.B, above) (Exh. SWM-2, at 9-21 and 9-25). The Company stated that chemicals required for facility operation would be stored indoors on a paved surface with curbs and/or dikes to contain any spills (id. at 9-26). The Company also stated that sediment and erosion controls would be employed during construction to prevent

sediment-laden runoff from affecting nearby wetlands (Exh. SWM-1, at 1-14).

2. Analysis

The Siting Board notes that wetlands are considered to be potentially sensitive to direct construction impacts, changes in site hydrology, surface water contamination, and groundwater contamination. The record shows that the Company has designed the facility layout so that only a small portion of roadways, plus three transmission support structure bases, and a water line would be within 100 feet of wetlands and no work would be conducted within wetland areas. While it might be possible to move the footprint of the facility further away from the buffer zone, this would effectively widen the area affected by power facilities because it would move the new units further from the existing units. The record demonstrates no significant anticipated change to site hydrology that would affect wetlands. Finally, the record shows that measures would be taken to prevent spillage of potentially damaging chemicals into the environment at the site.

The record shows that the quantity and quality of water flowing into on-site and off-site wetlands is not expected to change appreciably as a result of the proposed facility. Any residual hydrocarbon or PCB contamination in the wetlands southwest of the facility is not expected to be affected by the proposed facility and its interconnections. The record indicates that project work in wetland buffer zones would be conducted so as to minimize effects on nearby wetlands. Accordingly, the Siting Board finds that the wetlands impacts of the proposed facility would be minimized.

E. Solid Waste

This section describes the solid waste impacts of the proposed facility on the site and the mitigation proposed by the Company.

1. Description

Sithe asserted that it would implement a program to minimize solid waste and encourage recycling (Exh. SWM-1, at 1-16). The Company indicated that the program could include: (1) the disposal of clearing and grubbing waste at local composting facilities; (2) the segregation

of metal and scrap wood for salvage on a regular basis; (3) the use of excess excavation material as fill in the final grading plan; (4) the minimization of spills during transfer of fluids and refueling of vehicles; and (5) the evaluation of reuse and recycling capabilities as one of the criteria used to select and purchase construction materials and aids (id.; Exh. SWM-2, at 3-14).

The Company stated that the amounts of solid waste generated during construction and during operation would be similar (Exhs. EFSB-SW-1; EFSB-SW-2). The Company indicated that, over a ten-week period of operation, the proposed facility would generate approximately: (1) eight containers of garbage; (2) nine containers of recyclable metals and wood; (3) two containers of paper; and (4) one container of controlled waste including used oils, chemical/oily rags, and other cleaning agents (Exh. EFSB-SW-1).

The Company explained that, during both construction and operation, solid waste that cannot be recycled, reused, or salvaged would be collected in a dumpster on-site and removed by a licensed contractor, as is currently the case (Exhs. EFSB-SW-2; SWM-1, at 1-17). The Company stated that it would develop processes to ensure that potentially hazardous wastes are separated from non-hazardous waste, including the proper segregation and labeling of all non-hazardous and hazardous solid waste at the source (Exhs. SWM-1, at 1-17; SWM-2, at 1-17).

2. Analysis

The record indicates that the proposed facility would produce approximately 20 containers of solid waste, including one container of hazardous wastes, every ten weeks. The Company has stated that it would reduce, reuse, and recycle solid waste to the maximum extent possible during construction and operation, and would encourage recycling through the separation of solid waste and the development of processes to facilitate solid and hazardous waste plans and management. The record shows that all remaining waste would be removed by licensed waste contractors and disposed of at appropriate disposal sites for hazardous and non-hazardous waste.

The Siting Board notes that the proposed facility is a gas-fired peaking facility, and that the Company's choice of fuel contributes considerably to the minimization of solid waste

impacts, when compared to a coal fired plant. See, e.g., Silver City Energy, 3 DOMSB at 173-174. The Company's commitment to recycle both construction and operational waste, where possible, contributes to minimizing the solid waste impacts of the proposed facility. Accordingly, the Siting Board finds that the solid waste impacts of the proposed facility would be minimized.

In making this finding we note that although natural gas-fired generating facilities produce significantly less solid waste than facilities which are fueled by coal, the levels of solid waste produced from natural gas-fired facilities are not necessarily insubstantial or minimal. Consequently, the Siting Board concludes that further review of measures to minimize solid waste impacts of gas or oil-fired facilities is warranted. The Siting Board, therefore, will require future applicants of proposed generating facilities, regardless of fuel type or size, to demonstrate that they have minimized solid waste impacts by characterizing the estimated waste stream from the proposed facility, describing the solid waste minimization and recycling strategies proposed for the facility, and as applicable, providing comparisons with statewide policy initiatives and/or governmental or industry guidelines or averages.

F. Visual Impacts

This section describes the visual impacts of the proposed facility on nearby areas and describes proposed mitigation of the impacts.

1. Description

According to the Company's viewshed analysis demonstrated that the facility stacks would be partially visible through the trees from along Summer Street to the east, near the intersection of Summer Street and Main Street to the south, and along West Street to the west (Exh. SWM-2, at 5-7 to 5-17). One of the facility's stacks would also be visible from near the intersection of Hartford Avenue and Beech Street to the south (id.). However, the Company asserted that the existing trees and vegetation would screen the proposed facility from view in most directions and that, at those locations where the facility would be visible, its effect generally would be limited by the existing vegetation and other industrial structures in the area (Exh.

SWM-2, at 5-10). In addition, the Company asserted that because the height of the proposed sub-GEP stacks would be equal to or lower than the existing 65 to 68 foot stacks, the proposed project would not cause significant visual impacts (id. at 5-2; SWM-2, at 6-17 to 6-18; Tr. 2, at 198).

The Company indicated that, to avoid visual impacts, it would preserve the hedgerows to the east of the access road and to the south of the proposed facility footprint (Exhs. EFSB-V-6; EFSB-RR-25). The Company stated that it would also preserve the hedgerow further to the south along a portion of the property line and in the area partially separating the site from the BECo 115 kV substation (Exh. EFSB-V-6).[37] In addition, the Company has proposed to plant a new hedgerow that would run along the southern property line, turn northward, and run parallel to the eastern property line along the back side of the abutting day care center (Exh. SWM-EFSB-V-2). The Company stated that this new hedgerow would buffer views from the southeast (id.). To document the extent of its proposed tree plantings, the Company submitted a detailed landscape plan (Exh. RR-EFSB-27-S, Landscape Site Plan - Sheet 11). In addition to the hedgerow proposed, the landscape plan indicated that the Company would add plantings around the facility parking area, along the side of the administration building/warehouse, and on the northern side of the access road at the point where the access roadway curves (id.). Finally, the Company stated that it would consider requests for off-site mitigation on a case-by-case basis from owners of properties within 1,500 feet of the site that would have unobstructed views of the new facility (Tr. 2, at 240 to 242; Tr. 5, at 394 to 395; Exh. RR-Medway-3).

The Company asserted that because of the high temperature of the exhaust gases, there would not be a visual plume from the facility (Tr. 5, at 376). In addition, the Company indicated that it reviewed the Massachusetts Landscape Inventory, and determined that no "distinctive" or "noteworthy" landscapes are in the vicinity of the project (Exh. EFSB-RR-40). The Company therefore concluded that the project would not affect such areas (id.). The Company stated that it

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[37] The Company noted that its construction work may affect the hedgerows immediately to the south of the project footprint and further to the south near the property line, but that the Company would work to preserve mature trees and would replant trees in the hedgerows as necessary (Exh. EFSB-V-6).

would paint the facility structures a neutral color selected in consultation with the Town to minimize visual impact (Tr. 5, at 378).

With respect to exterior lighting, the Company stated that while it would light the facility at night, it does not anticipate any visual impacts or glowing in the sky caused by facility lighting (id.). The Company stated it would direct lighting downward to illuminate only the facility grounds and asserted that existing vegetation on the site would block views of the illuminated areas from nearby residences (id.).

2. Analysis

The record demonstrates that while existing trees and vegetation would screen the proposed facility from view in some areas, the proposed facility may be visible from the east along sections of Summer Street, from the south near the intersection of Summer Street and Main Street, and near the intersection of Hartford Avenue and Beech Street, and from the west along West Street. The Company's analysis indicates that views of the facility from these areas would be at least partially screened by existing on-site vegetation. The record shows that the Company would: (1) preserve the entire hedgerows to the east and south of the proposed facility footprint; (2) plant a new hedgerow running along the southern property, and extending northward parallel to the eastern property line along the back side of the existing day care center; and (3) place plantings around the facility parking area, along the side of the administration building/warehouse, and on the northern side of the access road at the point where the access roadway curves. The record shows that the existing and new hedgerows would help buffer views of the facility from the south and east.

With regard to the general appearance of the facility and related structures, the Company has agreed to paint the facility a neutral color to be selected in coordination with the Town. In addition, the record indicates that the facility emissions would not create a visible plume, and that the project would not affect viewing of landscapes identified in the Massachusetts Landscape Inventory.

In past reviews, the Siting Board has required proponents of generating facilities to provide selective tree plantings in residential areas up to one mile from the proposed stack

location to mitigate the visibility of the facility and the associated stack. IDC Bellingham Decision, 9 DOMSB, at 298 to 300; ANP Blackstone Decision, DOMSB 8, at 142 to 143; Berkshire Power Decision, 4 DOMSB at 395. Here, the Company has expressed a willingness to consider mitigation of visual impacts at locations within 1,500 feet of the proposed site that have unobstructed views of the facility. The proposed mitigation would include provision of shrubs, trees, or other reasonable forms of screening, if local residents request them.

The Siting Board notes that the 65-foot stacks proposed for this facility are significantly lower (and consequently less visible) than the stacks required for the combined-cycle plants typically reviewed by the Siting Board. Based on this lower stack height and our review of the Company's viewshed analysis, we see no reason to require the Company to provide off-site mitigation to residents within one mile of the proposed facility. However, we also conclude that off-site visual mitigation should extend beyond the 1,500 foot radius proposed by the Company to include residences to the east, south, and west that would have views of the facility. Consequently, the Siting Board directs the Company to provide reasonable off-site mitigation of visual impacts, including shrubs, trees, window awnings, or other mutually-agreeable measures, that would screen views of the proposed facility at properties within one-half mile of the proposed facility, as requested by residents or appropriate municipal officials. We note that reasonable requests are not necessarily limited to those which would block clear views of the stacks, but could also include requests for plantings that would obscure partial views of a stack or another component of the plant.

In implementing this off-site mitigation, the Company: (1) shall provide shrub and tree plantings, window awnings, or other reasonable mitigation on private property, only with the permission of the property owner, and along public ways, only with the permission of the appropriate municipal officials; (2) shall provide written notice of this requirement to appropriate municipal officials and to all potentially affected property owners, prior to the commencement of construction; (3) may limit requests for mitigation measures from local property owners and municipal officials to a specified period ending no less than six months after initial operation of the plant; (4) shall complete all agreed-upon mitigation measures within one year after completion of construction, or if based on a request filed after commencement of construction,

within one year after such request; and (5) shall be responsible for the reasonable maintenance and replacement of plantings, as necessary, to ensure that healthy plantings become established.

Accordingly, the Siting Board finds that, with the implementation of the foregoing condition, the visual impacts of the proposed facility would be minimized.

G. Noise Impacts

This section describes the noise impacts of the proposed facility, the mitigation proposed by the Company, and the costs and benefits of any additional mitigation options.

1. Description

The Company asserted that the projected noise impacts of the proposed facility would not adversely affect neighboring residences or properties and would be minimized in accordance with Siting Board requirements (Exhs. SWM-1, at 4-55; SWM-2, at 7-11 to 7-13). The Company asserted that noise impacts from the operation of the proposed facility would: (1) comply with the MADEP 10-decibel ("dBA") limit on noise increases at all residential receptors; (2) cause no pure tone condition as defined by MADEP;[38] (3) comply with Medway's noise standards of 50 dBA daytime and 45 dBA nighttime; and (4) comply with EPA's 55 dBA noise guideline for residential areas (Exh. SWM-1, at 4-50 and 4-55). The Company stated that it proposes to provide additional noise mitigation for the existing facility, as well as mitigation for noise from the proposed facility (Exh. SWM-2, at 7-1; Tr. 1, at 11). The Company asserted that following construction, the combined noise of the proposed and existing facilities would be less than the current noise level of the existing facility (Exh. SWM-2, at 7-1; Tr. 1, at 11). The Company asserted that construction noise would be intermittent, temporary in nature, and that while traffic during the construction phase would increase, the noise from this traffic would likely not be significant compared to that from the 2,500 vehicles per day that currently use the road near the facility (Exh. SWM-1, at 4-53).

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[38] The Company indicated that MADEP defines a pure tone condition as a noise level for any octave band level which exceeds levels in adjacent octave bands by 3 dBA or more (Exh. SWM-1, at 4-49).

The Company indicated that the MADEP limits allowable noise increases at residences and property lines to 10 dBA above the ambient L_{90} noise level, where L_{90} is a measure of noise that is essentially equal to background conditions that are observed in the absence of louder transient noises (Exh. SWM-2, at 7-1).[39] To define the environmental impacts of the proposed project with respect to noise, the Company provided analyses of existing noise levels in the vicinity of the proposed site and the expected changes in noise levels resulting from both construction and operation of the proposed facility (id. at 7-4 to 7-13).[40] To establish existing background noise levels, the Company conducted surveys at six distinct noise monitoring locations ("NML") at various distances and directions from the proposed site (id. at 7-6). The Company selected NMLs that represent the nearest noise-sensitive locations in several directions. The monitoring locations included: (1) along Sithe's northeastern property line at One Burrill Road; (2) the intersection of Old Summer Street and Ardmore Circle; (3) behind the day care center at the site's entrance road; (4) along the southern property line behind the residence located at Two West Street; (5) on the western property line across from the residence at 37 West Street; and (6) on Milford Street at Nelson Tire (id. at 7-4 to 7-7). For each NML, the Company provided a set of L_{90} noise measurements taken during daytime and nighttime hours when the existing units were not in operation (id. at 7-6). Nighttime measurements ranged from 31 to 44 dBA and daytime measurements ranged from 40 to 46 dBA (id.).

To analyze the noise impacts of facility operation at residential and property line receptors, the Company provided estimates of facility noise, and combined facility noise and background noise, by receptor, for nighttime periods (Exh. SWM-2, at 7-12). Based on its analysis, the Company stated that the new facility operating alone would result in L_{90} increases ranging from 0 to 9 dBA over nighttime ambient at the receptor locations (Exh. SWM-1, at 4-54). The Company stated that, with simultaneous operation of the new facility and the modified

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[39] The Company stated that the identified background level is defined as that level of noise that is exceeded 90 percent of the time during the measurement period (Exh. SWM-2, at 7-2).

[40] The Company indicated that generally an increase of 3 dBA is the minimum increase that is noticeable in a typical residential community environment (Tr. 1, at 29).

existing units, nighttime L_{90} noise levels would range from 35 to 46 dBA, resulting in cumulative increases of from 2 to 10 dBA over ambient nighttime conditions at the receptors (Exh. SWM-2, at 7-12).[41] The Company noted that currently, the noise from operation of the existing units results in increases of 7 to 21 dBA over ambient nighttime L_{90} conditions (Exh. EFSB-RR-1).

The Company also provided an analysis of the noise impacts of operating the peaking facility during the day (Exh. EFSB-N-3). The Company stated that operation of the proposed facility would result in an increase over current daytime L_{90} levels of from 1 to 4 dBA at the three closest receptors (R2, R3, and R4) and that the combined operation of both the proposed facility and existing facility would result in an increase over current daytime L_{90} levels of 3 to 5 dBA at the three closest receptors (id.). The Company stated that it expects to operate the existing and proposed facility primarily during the daytime, with nighttime operation accounting for 20 percent of operating hours, taking place primarily between 6 p.m. and 8 p.m. before the demand for electricity drops back in the early evening (Exhs. SWM-2, at 7-4 to 7-7; EFSB-N-4; Tr. 1, at 53).[42] The Company stated that the facility would be permitted to operate for a maximum of 2,500 hours per year but that it was more likely to operate for 1,200 to 1,500 hours per year (Exh. EFSB-A-2-S at 6-10; Tr. 2, at 142 to 148).

The Company also provided existing day-night sound levels ("L_{dn}") at all receptors and L_{dn} noise level produced by the facility at the closest receptor (Exhs. EFSB-N-1, at 2; SWM-1, at 4-55). The Company determined that the existing L_{dn} at the six receptors ranged from 49 to 65 dBA.[43,44] The Company noted that at receptor R-1 on Burrill Road, the location where facility

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41 The Company stated that since the proposed and existing facilities, operating together, would have a maximum increase of 10 dBA over L_{90}, the project would comply with MADEP's 10 dBA noise guideline (Exh. SWM-2, at 7-12 to 7-13). The Company noted that the existing facility only operates 60 to 80 hours a year, and thus the new facility would operate at the same time as the existing facility only for a limited period (Exh. EFSB-RR-6, at 4; Tr. 1, at 54).

42 The Company stated it would be extremely unlikely for it to operate the facility after about 10:00 p.m. (Tr. 4, at 338).

43 The Company's measurements showed that the ambient L_{dn} was below EPA's 55 dBA (continued...)

noise would be the loudest, the L_{dn} of the facility noise would be 51 dBA, and asserted that this would be consistent with the 55 dBA noise guideline (Exh. SWM-1, at 4-55).

The Company stated that its acoustical design for the proposed facility includes the application of the following noise mitigation strategies: (1) construction of a secondary turbine and skid enclosure and transition shroud using heavy duty acoustical panels; (2) installation of acoustical insulation at the air intake duct; (3) use of a low frequency resonator and exhaust silencer at the turbine exhaust; (4) design of the transformers and fin fan cooler for lower noise levels; and (5) an increase in the size of the silencer in the combustion air intake (Exh. SWM-2, at D-7). The Company stated that its acoustical re-design for the existing facility would include: (1) installation of silencers on the generator air intakes, turbine air coolers, generator air exhaust, lube oil coolers, servo coolers, combustion air intakes, roof vents, and possibly in the exhaust stacks; and (2) installation of double wall construction in the building walls and roof (id.). The Company stated that its proposed noise mitigation plan would cost $12.6 million above the normal facility cost (approximately 10 percent of the project's cost) and that this level of mitigation would be necessary to comply with MADEP's 10 dBA criteria (Exhs. SWM-2, at D-2; EFSB-RR-6, at 4).

The Company investigated the cost of additional noise mitigation to limit noise from both facilities to a 7 dBA increase and a 3 dBA increase over ambient nighttime L_{90} conditions and found that these options would cost an additional $5,158,000 and $11,856,000, respectively (Exh. SWM-1, at D-2).[45,46] The Company stated that these additional costs were significant for

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[43] (...continued)
noise guideline at receptors R-1, R-3, R-4, and slightly above that guideline (by 1 to 2 dBA) at receptors R-2, and R-5 (Exh. EFSB-N-1, at 2). At receptor R-6, the ambient L_{dn} was 65 dBA (id.). The Company noted that the 55 dBA guideline was recommended by EPA as "requisite to protect public health and welfare with an adequate margin of safety" at residential locations (Exh. SWM-1, at 4-55).

[44] The Company's noise monitoring locations (NML 1 to 6) correspond to the Company's receptor locations (R-1 to R-6) (Exh. SWM-1, at 4-47 to 4-49).

[45] The Company provided a detailed breakdown of the cost of its proposed noise mitigation (continued...)

the amount of noise reduction that they would provide, and argued that further mitigation would not be cost effective or necessary given that the proposed facility would achieve compliance with MADEP's noise policy (Exh. SWM-2, at D-8).

With respect to construction noise, the Company provided estimates of maximum levels of construction noise on site, and equivalent levels of such noise at the closest residence, located at the intersection of Summer Street and Old Summer Street (id. at 7-10). The Company estimated that the maximum level of construction noise would be an equivalent sound level ("L_{eq}")[47] of 68 dBA at the closest residence and that such level likely would occur during both the excavation and finishing stages of the project (id. at 7-10). The Company asserted that during the ground clearing, foundation and steel erection phases, L_{eq} noise levels at the nearest residence generally would range from 57 to 64 dBA (id.).[48]

The Company stated that it would take the following measures to minimize construction noise: (1) concentrate construction activity in a limited on-site area; (2) perform noise-intensive

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45 (...continued)
as well as the +7 dBA and +3 dBA noise mitigation alternatives (Exh. EFSB-RR-60). In addition, the Company provided detailed information from vendors to document the noise equipment required to achieve the Company's targeted noise levels (id.).

46 The Company stated that to limit noise to a 7 dBA increase it would have to make the following changes to the proposed facility: (1) increase the length of the exhaust silencers; (2) add a wrap-around noise barrier over the combustion air inlet; and (3) make design improvements to reduce the transformer and fin fan cooler noise levels (Exh. EFSB-RR-60).

47 The equivalent level is the level of continuous sound which has the same energy as the measured fluctuating sound observed. The equivalent level represents the time average of the fluctuating sound and is strongly influenced by occasional loud intrusive noises (Exh. SWM-2, at 7-4).

48 The Company asserted that its estimated construction noise levels were conservative because they were calculated using EPA's standard noise levels for industrial projects, which provided results that would be more appropriate for a combined-cycle facility than a peaking unit (Tr. 1, at 21). The Company asserted that: (1) excavation noise would be of a shorter duration than for other types of power plant facilities and industrial facilities because of the small size of the structures; and (2) noise from erection and finishing would likely be less than the estimates because the facility is largely prefabricated (id.).

construction work during daylight hours to the extent possible; (3) comply with Federal regulations regarding truck noise; and (4) use and maintain sound muffling devices on construction equipment (id. at 7-11).

2. Analysis

In past decisions, the Siting Board has reviewed the noise impacts of proposed facilities for general consistency with applicable governmental regulations, including the MADEP's 10 dBA standard. Brockton Decision, EFSB 99-1, at 52; Sithe Edgar Decision, EFSB 98-7; Altresco-Pittsfield Decision, 17 DOMSC at 401. In addition, the Siting Board has considered the significance of expected noise increases which, although lower than 10 dBA, may adversely affect existing residences or other sensitive receptors. IDC Bellingham Decision, 9 DOMSB, at 311-315; Millennium Power Decision, 6 DOMSB, at 163; NEA Decision, 16 DOMSC at 402-403. In general, the Siting Board considers noise increases at an already noisy location more significant than noise increases in areas with a low ambient noise level.[49] IDC Bellingham Decision, 9 DOMSB, at 311; ANP Bellingham Decision; 7 DOMSB at 190, NEA Decision, 16 DOMSC at 402-403. In addition, the Siting Board has previously recognized that a large facility

[49] In several of its recent reviews, the Siting Board has included the level of existing background noise as a factor in assessing whether expected noise increases from a proposed generating facility would be acceptable. Most commonly, in cases where background and calculated facility L_{dn} noise at the most affected residential receptors has not significantly exceeded the EPA's 55-dBA guideline, the Siting Board has accepted or required mitigation which was sufficient to hold residential L_{90} increases to maximums of 5 to 8 dBA. IDC Bellingham Decision, 9 DOMSB, at 311; ANP Bellingham Decision, 7 DOMSB at 190, Berkshire Power Decision, 4 DOMSB at 404; Silver City Decision, 3 DOMSB, at 331, 367-368, 413. NEA Decision, 16 DOMSC at 402-403. In cases where existing background levels were high at the most affected residential receptors, as evidenced by L_{dn} levels significantly exceeding the EPA's 55-dBA guideline, the Siting Board has accepted or required mitigation to hold residential L_{90} increases to maximums of 2 to 7.5 dBA. Sithe Mystic Decision, 9 DOMSB, at 164-166; Millennium Power Decision, 6 DOMSB, at 163; BECo Decision, 1 DOMSB, at 213; Enron Decision, 23 DOMSC, at 200. Conversely, in two cases where background noise was quiet and, in particular, L_{90} levels at the most affected residential receptors were very low, the Siting Board has accepted residential L_{90} increases of up to 10 dBA. ANP Blackstone Decision, 8 DOMSB, at 171, Dighton Power Decision, 5 DOMSB, at 48-58.

can in general support larger expenditures for mitigation of environmental impacts, where such expenditures are cost effective. IDC Bellingham Decision, 9 DOMSB, at 315; ANP Blackstone Decision, 8 DOMSB, at 171.

The Company's noise modelling indicates that at the six receptors, operation of the proposed facility would result in nighttime L_{90} increases ranging from 0 to 9 dBA, and operation of the proposed and modified existing facility together would result in nighttime L_{90} increases ranging from 2 to 10 dBA. Thus, the proposed facility meets the MADEP Standard. Furthermore, the record shows that the Company's estimates of noise impacts are conservative because: (1) nighttime operation is expected to account for only about 20 percent of the proposed and existing facility's operation (even though the Company used a nighttime L_{90} for its noise analysis); (2) when the proposed and existing facility do operate at night, they are expected to operate in the early evening hours from 6 p.m. to 8 p.m. to capture the limited peaking demand at nighttime; (3) the new facility would operate at the same time as the existing facility for limited periods only, and thus the combined increase of 10 dBA above L_{90} would seldom occur; and (4) the highest increase in noise resulting from the new facility (9 dBA above nighttime L_{90}) would occur at the day care facility which would be unlikely to operate during the nighttime hours (the next highest increase would be 8 dBA above L_{90} at two different receptors).

The record shows that operation of the proposed facility would result in an L_{90} noise increase of 1 to 4 dBA above daytime levels at the three closest receptors (R2, R3, R4) and that the combined L_{90} noise impact of both the proposed and existing facilities operating at once would range from 3 to 5 dBA above daytime levels at the three closest receptors. The record shows that as a result of its noise mitigation efforts, the combined noise levels from both the proposed and modified existing facilities would be less than those from the existing facility operating in its current condition. The record shows the Company expects to operate its proposed facility between 1,200 to 1,500 hours in most years, and has stated it would limit its hours of operation to at most 2,500 hours per year in the event it needs to operate more than expected.

The record shows that the ambient L_{dn} is within or slightly above EPA's 55 dBA noise guideline for five of the six monitoring locations. At the remaining location, on Route 109, the

L_{dn} is currently 65 dBA, but as a result of the high background noise and the distance from the project, the modeled increase over nighttime L_{90} at this location is only 3 dBA.[50] Conversely, at receptor R-1 on Burrill Road, the location where facility noise would be the loudest, L_{dn} noise level with facility operations would be 51 dBA or less and would be consistent with EPA's 55 dBA noise guideline. The Siting Board notes that the 51 L_{dn} estimate is based on the assumption that the plant would operate 24 hours a day.

With respect to cost, the record shows that the Company already has committed to an extensive noise mitigation package totaling $12.6 million and that the cost to reduce estimated facility noise at residences by another 3 dBA would be $5,158,000. This amount is much higher than previous cases involving more costly combined-cycle facilities where the Siting Board required further mitigation. IDC Bellingham Decision, 9 DOMSB, at 311. Millennium Power Decision, 6 DOMSB, at 167, Silver City Decision, 3 DOMSB at 367.[51] Given the significant cost associated with reducing the nighttime noise impacts of the proposed facility to 7 dBA, and the limited benefit of such reductions in light of the fact that the peaking facility will operate primarily during the day, the Siting Board finds that no further noise mitigation is warranted in this case. Consequently, the Siting Board finds that the operational noise impacts of the proposed facility would be minimized, consistent with minimizing cost.

The Siting Board notes that although the Company has estimated it would operate its proposed facility between 1,200 to 1,500 hours per year, with nighttime operation only about 20 percent of the time (during the hours of approximately 6 p.m. to 8 p.m.) the Company is

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50 The project would likely have no effect on daytime L_{90} at location No. 6 as the noise from the proposed facility (28 dBA) is small in relation to the daytime ambient L_{90} (46 dBA).

51 In the Millennium Power Decision, the Siting Board required additional mitigation to reduce the L_{90} increase at the most affected residences from 10 dBA to 7.5 dBA, at an additional cost of approximately $1.0 million. Millennium Power Decision, 6 DOMSB, at 167. In the Berkshire Power Decision, the Siting Board directed the proponent to hold L_{90} increases to within the MADEP standard on abutting vacant lands that would be suitable for nighttime occupancy, at a cost of approximately $156,000. Berkshire Power Decision, 4 DOMSB at 443. In the Silver City Decision, the Siting Board required the proponent to reduce L_{90} impacts at specified residential locations by 2 dBA at a cost of approximately $500,000. Silver City Decision, 3 DOMSB at 367.

uncertain as to the actual hours the new and existing facility may operate. Given this uncertainty, and that longer than expected hours of nighttime operation would have greater noise impacts, we request that the Company keep the Town and the Siting Board informed as to the actual hours of operation. This information may also help the Siting Board in review proposals for other peaking facilities. Accordingly, the Siting Board directs the Company to provide the following information to the Medway Board of Selectmen, Medway Board of Health, and the Siting Board, for the first three years of operation, with the first such submital to be provided after the end of the first full operating year: (1) the total number of hours the proposed facility operated that year; (2) the number of hours that year the proposed facility operated past: 6 p.m., 7 p.m., 8 p.m., 9 p.m., and 10 p.m; (3) the number of hours per year the existing facility operated before and after 6 p.m.; and (4) the number of hours per year the existing and proposed facility operated at the same time, before and after 6 p.m.

With respect to construction noise impacts, the Siting Board agrees that adherence to the Company's proposed construction site practices concerning machinery and hours of operation, would minimize construction-related noise impacts. The Siting Board notes that the proposed steps would be consistent with approaches to construction noise mitigation that it has reviewed in recent generating facility cases. Therefore, the Siting Board finds that the construction noise impacts of the proposed facility would be minimized.

Accordingly, the Siting Board finds that the noise impacts of the proposed facility would be minimized, consistent with minimizing cost.

H. Safety

This section describes the safety impacts of the proposed facility with regard to materials handling and storage, fogging, and icing, and the Emergency Response Plan.

Sithe stated that to help ensure safety at the proposed facility it would: (1) adhere to GEP (except GEP for stack height as discussed in Section III.B, above) and comply with federal, state, and local regulations in its design, construction, and operation activities; (2) incorporate into its construction contracts provisions that require contractors to adhere to safety and health requirements; and (3) monitor operations on a regular basis (Exhs. SWM-1, at 1-18; SWM-2, at

3-16). In addition, the Company stated that, at a minimum, the proposed facility design would include the following safety features: (1) storage areas with containment basins or dikes; (2) equipment and building layouts that incorporate provisions for safe access to and egress from the facility, as well as adequate access for fire-fighting vehicles and equipment;[52] (3) emergency lighting with a backup power supply; (4) automatic shutdown systems with a backup power supply for turbines, fuel supplies, and chemical systems; and (5) a self-sufficient fire protection system and the use of fire retardant building materials (Exhs. SWM-1, at 1-18 to 1-19; SWM-2, at 3-16 to 3-17). Further, the Company stated that the proposed facility would be enclosed by a security fence (Exh. SWM-1, at 1-19).

1. Materials Handling and Storage

The Company stated that operation of the proposed facility would require limited amounts of lubricating oils and other industrial chemicals (Exh. SWM-1, at 1-17). Sithe stated that any on-site chemical storage areas would be located indoors with appropriate containment consisting of curbs and drains (Exh. SWM-2, at 3-16).

The Company stated that employees would be trained to manage hazardous materials and respond to emergencies as appropriate (Exh. SWM-1, at 4-75). Sithe noted that Medway has a volunteer fire department (Exh. EFSB-SF-5). The Company indicated that each volunteer firefighter undergoes a state-mandated three-hour hazardous materials recognition and identification course, and has some training specific to occurrences at industrial sites (id.). The Company also noted that a Mutual Aid Agreement exists between the Town of Medway and the neighboring towns of Holliston, Bellingham, Milford, Franklin, and Millis to provide support for fire and police emergencies (Exh. EFSB-SF-4). The Company explained that emergency responses to major chemical and hazardous materials spills, and certain industrial fires would be undertaken by a team of firefighters who have undergone advanced training, that is certified and

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[52] The Company stated that it did not anticipate that any high-voltage lines located at the site entrance would need to be moved to allow for to the delivery of construction equipment (Tr. 5, at 366).

dispatched by the State Office of Fire Services (Exh. EFSB-SF-6).[53]

2. Fogging and Icing

The Company stated that the proposed facility would not produce on-site or off-site fogging or icing because it is a simple-cycle facility and does not use wet cooling technology (Exh. EFSB-SF-7; Tr. 5, at 375).

3. Emergency Response Plans

The Company provided a copy of the existing Sithe West Medway Station SPCC Plan, which it indicated would guide emergency response at the proposed facility (Exh. EFSB-RR-23(a) Att.). The Company stated that it would need to make minor modifications to the existing SPCC Plan to reflect the addition of new equipment associated with the proposed project, such as transformers and lube oil coolers (Exh. EFSB-SF-1). The Company also stated that the existing plans would be revised in coordination with local emergency services to ensure that appropriate safety measures would be in place to address the needs of the expanded facility (Exh. SWM-2, at 3-21).

The Company noted that its existing SPCC Plan covers only those areas and activities for which Sithe employees are responsible, and therefore does not cover construction activities (Exh. EFSB-RR-23). The Company stated that its EPC contractor would be responsible for addressing on-site safety issues during construction, and explained that it would develop a written safety and accident prevention plan for the construction period after the contractor was hired (Exh. EFSB-RR-23; Tr. 5, at 373-376). However, the Company noted that in general, a separate SPCC Plan for the proposed facility may not be necessary, because SPCC plans are usually associated with on-site oil use (Tr. 5, at 373-376).

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[53] Based on conversations with the Medway Fire Chief, the Company indicated that four Milford firefighters are members of the state certified team (one firefighter has 160-hour training and three firefighters have 40-hour training), all of Holliston's firefighters have received 12-hour training, categorized as the "operation level" of training, and the remaining firefighters from towns within the Mutual Aid Agreement have been trained to the mandated three-hour level (Exh. EFSB-SF-6).

4. Analysis

The record demonstrates that chemicals associated with the proposed facility would be properly managed and stored in accordance with applicable public and occupational safety and health standards. The record demonstrates that there would be no ground level fogging or icing resulting from operation of the proposed facility.

The record demonstrates that the Company has arranged for proper storage, use, and secondary containment of hazardous materials associated with construction and operation of the proposed facility, and that the operation of the proposed facility would be incorporated into existing emergency management protocols for the existing West Medway Station. The Siting Board notes that construction of the proposed facility will considerably increase both the on-site generating capacity and the number of operating hours, which may result in an increased volume of hazardous chemicals stored on site and an increased potential for hazardous material spills and fires. The Medway volunteer fire department has undergone the state-mandated minimum training for handling hazardous material spills and other industrial-related occurrences. However, while the record shows that the State Office of Fire Services is responsible for dispatching trained teams to major chemical spills and industrial fires, it may be appropriate for members of the volunteer fire department to receive additional training in responding to minor chemical spills and fires. Therefore, the Siting Board directs the Company to consult with the Medway volunteer fire department and appropriate officials, to determine if additional training of Medway or other fire personnel is necessary to ensure that adequately trained personnel are available to respond to reasonable contingencies, and if so to provide funding for such training.

The Siting Board notes that the Company intends to develop emergency procedures and response plans similar to those found acceptable in previous Siting Board decisions. The Company's proposal for emergency management plans includes measures for construction-related contingencies to be developed by the EPC contractor. However, the Company has not yet developed such plans. The Siting Board directs the Company to complete the construction section of its emergency response plan and file it with the Town of Medway before construction begins in order to address possible contingencies related to construction accidents.

Accordingly, the Siting Board finds that with the implementation of the foregoing

conditions, the safety impacts of the proposed facility would be minimized.

I. Traffic

1. Description

The Company asserted that it would minimize traffic impacts from the construction and operation of the proposed facility consistent with Siting Board standards (Exh. SWM-2, at 4-10). The Company stated that since a natural gas pipeline would deliver fuel to the site and since the Company would not require additional workers to operate the new facility beyond those who operate the existing facility, the operation of the proposed plant would not affect traffic (id. at 4-3). The Company stated that there would be an increase in traffic flow during construction and performed an analysis to quantify the expected increase in traffic (id. at 4-2).

The Company indicated that the majority of construction activity would occur in the daytime hours and that the normal construction shift would be from 6:00 a.m. to 3:30 p.m. to avoid non project-related peak traffic times (id.). The Company estimated that the project construction would generate as many as 91 employee round-trips per day and as many as 15 truck delivery round trips per day, but that most of the time a maximum of only 30 workers would be employed on site (id. at 4-3; Tr. 3, at 274).

The Company provided a timetable for construction of the proposed facility, and indicated that the most intensive construction activity would occur during the fifth and sixth months when equipment is brought to the site for installation (Exh. SWM-2, at 4-4 to 4-5). The Company stated that during this time, it may require more than 70 craft workers at the site, but that after the peak construction period ends, it would require only approximately 30 construction workers on site (Exhs. SWM-2, at 4-5; SWM-11, at 2-10). In addition, the Company stated that during the pouring of each of the three turbine building foundations, it would deliver concrete at a rate of one truck every six minutes over a ten-hour work day (Exh. SWM-2, at 4-4). The Company stated that since the effect of construction traffic would be of limited duration, with traffic demands rapidly decreasing after the peak construction period ends, traffic impacts from construction would be minor (id.).

In order to reduce the project's impact on traffic, the Company stated it would: (1) have a

person responsible for coordinating with the Medway Department of Public Works and Police Department to notify them of initiation of construction, and to keep them informed of progress throughout the effort; (2) time construction work shifts to avoid peak commuter periods and to avoid school bus travel times; (3) avoid peak commuter periods and notify Town officials when delivering major equipment; (4) post signs along Route 126, both north and south of the project access drive, to warn motorists approaching the work area; and (5) provide for uniformed officers to control traffic at the intersection of Interstate Highway Route 495 ("I-495") and Route 109 during peak commuter periods to ensure that construction work and truck trips do not adversely affect traffic flow or safety (Exh. SWM-2, at 4-9 to 4-10; Tr. 5, at 364).

With respect to construction vehicle routing, the Company said it would work to encourage drivers of construction vehicles exiting from I-495 to travel to the project site using Route 109 rather than West Street (Exh. SWM-2, at 4-9). The Company stated that this would avoid the more residential areas along West Street,[54] and also would help contain construction traffic within Medway (id.). The Company stated that it would be willing to insert language in its EPC Contract requiring its EPC contractor to use specific routes (e.g., Route 109) for delivering materials to the site and restricting the contractor from using other routes (e.g., West Street) (Exh. EFSB-RR-36). The Company stated that heavy equipment such as the generators and step-up transformers would arrive by train at Framingham and then would be routed along Route 126 to the site (Exh. SWM-2, at 4-9).

With respect to site access, the Company proposed that construction traffic would enter the site via the driveway to the existing facility off Summer Street, except for deliveries of heavy equipment which would use the construction access road near BECo's substation off West Street (id. at 4-1). The Company stated that the existing driveway off Summer Street is located within three feet of an outdoor playground area of a day care center (Tr. 5, at 350). The Company stated that the playground area is fenced and separated from the access road by a metal guardrail (Exh. EFSB-RR-35). The Company stated that it would be willing to install 42-inch high Jersey

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[54] Ms. Rosanski, Chair, Medway Board of Selectmen stated that the areas along West Street include bus stops and are residential in nature. Ms. Rosanski questioned how the Company could avoid problems from construction traffic in this area (Tr. 3, at 273).

barriers to ensure the day care center playground is adequately protected from construction vehicles (Tr. 6, at 439 to 440).[55] The Company explained that it would prefer not to use the site entrance off West Street for all construction traffic because: (1) it would require the use of BECo personnel to man the entrance gate;[56] (2) vehicles would have to travel further to the site and thus it would be less safe; (3) at that location, three roadways come together within a very short distance and roadway lines of sight would make it difficult for vehicles on West Street to see vehicles exiting from the construction site; (4) due to the busy traffic along West Street, there would be fewer gaps available for pulling out into traffic; and (5) the location of the construction site entrance at West Street may encourage workers to travel from Route I-495 to the site via West Street (instead of Summer Street, the preferred route) (Exh. EFSB-RR-41; Trs. 2, at 255 to 256; 355).

2. Analysis

The record indicates that construction of the proposed facility would generate approximately 91 employee trips per day and as many as 15 trucks per day during the two peak months of construction, but that most of the time the Company would require a maximum of 30 workers on site. In addition, the record shows that during the pouring of each of the three turbine building foundations, trucks would deliver concrete at a rate of one truck load every six minutes over a 10-hour work day.

To mitigate traffic concerns, the Company has committed to: (1) coordinating with the Medway Department of Public Works and Police Department to notify them of initiation of construction, and to keep them informed of progress throughout the effort; (2) timing construction work shifts to avoid peak commuter periods and to avoid school bus travel times;

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[55] The Company provided data from Roadside Design Guide stating that in one case a 42-inch high Jersey barrier was able to successfully redirect an 80,000 pound tractor trailer truck colliding with the barrier at an angle of 15 degrees and at a speed of 53 miles per hour (Exh. EFSB-RR-35).

[56] The Company stated that the access road off West Street is located on a BECo easement adjacent to the BECo substation (Tr. 5, at 352). The Company stated that BECo owns and operates a security gate that crosses the access road (id.).

(3) avoiding peak commuter periods and notifying Town officials when delivering major equipment; (4) posting signs along Route 126, both north and south of the project access drive, to warn motorists approaching the work area; and (5) providing uniformed officers to control traffic at the intersection of Route I-495 and Route 109 during commuter peak periods to ensure that construction work or truck trips do not adversely affect traffic flow or safety.

In addition, the Company stated it would be willing to insert language in its contract with its EPC contractor requiring the EPC contractor to use Route 109 and restricting the contractor from using West Street for deliveries of materials and equipment (with the exception of deliveries of heavy equipment such as the generators and step-up transformers). Therefore, in order to prevent traffic delays and keep trucks out of residential areas, the Siting Board directs the Company to include this truck delivery route requirement in its EPC contract.

With respect to the Company's plan for truck and vehicle access onto the site, the Siting Board is concerned that the existing metal guardrail and fence may not adequately protect children playing at the day care center playground from construction traffic. However, the Siting Board believes that use of the access road off Summer Street both would help to keep construction traffic off West Street (a residential road with school bus stops) and would avoid the line of sight problems that could occur if construction vehicles were to try to enter and exit the site at the access road off West Street. The record provides evidence that Jersey barriers are capable of stopping large trucks and that the Company is willing to install them to help provide further protection to drivers and children in the fenced playground. Accordingly, the Siting Board directs the Company to install, prior to construction, 42-inch high concrete Jersey barriers along the south shoulder of the access road at sufficient length to prevent a vehicle traveling on the access road from crashing into the playground area that surrounds the north and west sides of the day care center.

The Siting Board also is concerned about the project's affect on traffic during concrete deliveries. Accordingly, the Siting Board, therefore, directs the Company to coordinate with the appropriate authorities to place a uniformed traffic officer at the entrance to the property on Summer Street during the pouring of concrete and as needed.

With respect to traffic impacts during facility operation, the Company has demonstrated

that no adverse traffic conditions would result from operation of the proposed facility.

Accordingly, the Siting Board finds that, with implementation of the foregoing conditions, the traffic impacts of the proposed facility would be minimized.

J. Electric and Magnetic Fields [57]

This Section describes the electric and magnetic field impacts of the proposed facility and potential mitigation.

1. Description

The Company stated that the proposed project would be located immediately adjacent to BECo's West Medway 115 kV and 345 kV substations (Stations 65 and 446, respectively) and that there are five transmission line corridors that intersect at BECo's West Medway Station facilities including transmission line rights-of-way ("ROW") 4, 4A, 7, 13, and a New England Electric System ("NEES") ROW (Exh. SWM-1, at 4-65). The Company stated that ROW No. 4 includes transmission line Nos. 389, 325, and 344; ROW no. 4A includes transmission line Nos. 357 and 323; ROW No. 13 includes transmission line No. 336; ROW No. 7 includes transmission line Nos. 601 and 602, and the NEES ROW includes transmission line No. 303 (Exh. SWM-1, at 4-71).

With respect to the two substations located adjacent to the project site, the Company stated that Station 65 includes four 115 kV circuits (65-502, 65-508, 201-501, and 274-509) and one 13.8 kV circuit (65-H3) (id.). The Company stated that Station 446 includes seven 345 kV circuits (303, 323, 325, 336, 344, 357, and 389) and two 230 kV circuits (240-601 and 282-602) (id.). The Company stated that the two substations are not electrically interconnected and that one 115 kV circuit (201-502) passes through the property but does not connect into either substation (id.). The Company stated that electric power generated at the project would interconnect with the adjacent 345 kV Station 446 (id.).

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[57] Electric and magnetic fields are produced by the flow of electricity, with electric fields being proportional to voltage and magnetic fields being proportional to current. Both fields are collectively known as EMF.

With respect to the electric field strength, the Company stated that future electric field strength should remain unchanged because BECo does not intend to alter voltage on the transmission lines extending from the West Medway Substation (SWM-2, at 8-10). The Company noted that the existing maximum electric field strength at three feet above grade at the edge of the ROW is 1.2 kilovolts per meter ("kV/m"), below the 1.8 kV/m value previously accepted by the Siting Board (id.).

With respect to magnetic field strength, the Company measured existing EMF strength under the transmission lines entering and leaving the West Medway Substation that are immediately adjacent to the project site (id. at 8-2). The Company stated that because the analysis of the project showed that only ROW 4 would experience a significant increase in EMF due to loads from the proposed facility, it assessed existing EMF levels only for ROW 4 (id.). Here, the Company found that the existing magnetic fields ranged from a peak of 25 milligauss ("mG") to a low of 5 mG (id.).

The Company used a "Fields" computer program to calculate field strength associated with the proposed project (id. at 8-3).[58] The Company stated that 80 percent of the project's current would displace the incoming electric current, and hence, 80 percent of the project power would result in a reduction in magnetic field strength on the interconnecting lines to the West Medway Substation (id. at 8-6).[59] The Company explained that when the proposed facility operates, it would displace the need for electricity traveling from the south and west toward the substation on lines 336, 323, 357, and 303 and hence those lines would have less current and lower associated magnetic fields (id. at 8-6 to 8-7; Tr. 6, at 417).

However, the Company's modeling results show that on ROW 4 (extending out of the West Medway Substation toward the east) the 389, 325, and 344 lines would experience EMF

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[58] The Company stated that it obtained base case current flow information prior to the Project operating from NEPOOL's 715 FERC filing and then inserted projected current flows with the project on line during a summer peak condition in the year 2003 (Exh. SWM-2, at 8-3).

[59] The Company acknowledged that because the proposed project would add power to the system, there would be an overall increase in magnetic fields if one were able to assess magnetic field changes across the entire NEPOOL system (Tr. 6, at 425).

increases above the base case of 14 percent, 13 percent, and 33 percent, respectively (Exh. SWM-2, at 8-7). The Company's modeling results also show that there would be a small magnetic field increase of three percent on ROW 7 (lines 601/602) (id.). The Company stated that the proposed project would result in maximum magnetic field strength at the edge of the ROW 4 of 10.9 mG with the project on line and 8.7 mG with the project off-line (an increase of 2.2 mG) (id. at 8-6).[60,61] The Company noted that this field strength would be less than the 85 mG magnetic field strength found acceptable by the Siting Board in Massachusetts Electric Company et al.,13 DOMSC at 228-242 (1985) ("1985 MECo Decision") (id.). The Company emphasized the peaking facility would only operate a limited number of hours per year and thus the project would result in minimal exposure to increased magnetic fields (id. at 8-10).

The Company assessed a future worst-case scenario[62] for magnetic field strength (Exh. EFSB-RR-47). Under this scenario, the maximum calculated magnetic field strength on the edge of ROW 4 (lines 389, 325, 344) was 21.7 mG with the proposed Sithe West Medway facility on, and the maximum calculated magnetic field strength on the edge of ROW 7 (lines 601 and 602) was 13.0 mG with the proposed facility on (id.).

The Company provided a summary of the preliminary results of the system impact study for the project that determined BECo would not need to upgrade or reconfigure the transmission

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60 The Company stated that it did not quantify the magnetic field strength at ROW 7 if the project were on line (Tr. 6, at 426). The Company stated that there would be only a three percent increase over existing magnetic field levels and that this increase would be smaller than the increase at ROW 4 (id.).

61 The Company stated that magnetic field strength would decrease rapidly with distance from the edge of the ROW and that it expected few homes to be located directly on the edge of the ROW (Tr. 6, at 436).

62 The Company stated that operation of Sithe's West Medway facility would displace current that would otherwise flow toward the West Medway Substation on the 336 line from the proposed IDC Bellingham and ANP Blackstone facilities (Exh. EFSB-RR-47). The Company noted that the worst-case scenario would occur when Pilgrim is offline and West Medway supplies its load (id.). This would result in only six percent of the proposed project's output leading to a reduction in electric currents and the remaining 94 percent leading to a net increase of current flows of 788 amps (id.).

lines extending out of the proposed facility and substation in order to interconnect the proposed facility (Exh. RR-EFSB-47).

2. Analysis

In a previous review of proposed transmission line facilities, the Siting Board accepted edge-of-ROW levels of 1.8 kV/meter for the electric field and 85 mG for the magnetic field. 1985 MECo/NEPCo Decision. Here, off-site electric and magnetic fields would remain well below the levels found acceptable in the 1985 MECo/NEPCo Decision. The proposed project would result in no change in electric fields and a maximum magnetic field increase of 2.2 mG to a level of 10.9 mG at the edge of ROW 4. Under the worst-case scenario, the maximum magnetic field at the edge of ROW 4 would be 21.7 mG, which is still well below the 85 mG level previously approved by the Siting Board. The record shows that the peaking facility would only operate a limited number of hours per year and thus the project would result in minimal exposure to increases in magnetic fields associated with output from the project.

The record also shows that while the project would increase power flow on some lines, it also would displace the need for power traveling on transmission lines from the south and west toward the West Medway Substation, and hence those lines would have less current and lower associated magnetic fields. The Company estimated that 80 percent of the project's power would result in a reduction in magnetic fields in this way.

The Company acknowledged that if one were to assess magnetic field changes across the entire NEPOOL system, the proposed project would represent an added source of power to the system and over time likely would result in an increase in magnetic fields for the system as a whole. However, due to the limited operating hours of the proposed facility, the Siting Board notes that potential impacts from magnetic fields on these more distant lines would be minimal.

Accordingly, the Siting Board finds the environmental impacts of the proposed facility would be minimized with respect to EMF impacts.[63]

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[63] In previous cases, the Siting Board has asked facility proponents to work with transmission line companies to accomplish reduction in magnetic field levels where cost-

(continued...)

K. Land Use

This section describes the land use impacts of the proposed facility, including the impacts to wildlife species and habitat, and significant cultural resources.

1. Description

Sithe has proposed to construct its facility on approximately seven acres of a 94-acre industrial site, on a location south of the existing peaking units (Exhs. SWM-1, at 1-1; SWM-2, at 3-4). The Company explained that of the 94 acres, approximately 50 acres are used by BECo for its switchyard, and six acres are occupied by the existing 180-MW peaking facility (Exh. SWM-1, at 1-1). Sithe stated that the area controlled by BECo is located primarily to the west of the proposed new facility and consists of a substantial configuration of 345 kV and 115 kV transmission lines and substations (id.). The Company described the area where the proposed facility would be located as primarily open fields, previously developed areas, and hedgerows, noting that construction would require limited tree removal and limited relocation of existing structures (id. at 1-1 and 4-30). Sithe asserted that it has designed the layout of the proposed facility to avoid impact to wetlands, and to minimize impacts to wetland buffer zones and existing mature vegetation (Exh. EFSB-RR-27-S Att. at 2). The Company indicated that it would use approximately 7.7 acres of additional land during the construction period for construction laydown and parking (Exh. SWM-1, at 4-30).

The Company asserted that the proposed use is compatible with both existing land uses on the site, and planned land uses surrounding the site (id. at 4-36). Sithe stated that: (1) the site has been used as a utility transmission and generating facility for almost three decades; (2) there is sufficient buffering between the site and surrounding residential uses in the form of berms,

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[63] (...continued)
effective. Sithe Mystic Decision, 9 DOMSB, at 181; ANP Blackstone Decision, 8 DOMSB, at 188; Silver City Decision, 3 DOMSB at 353-354. Here, based on the preliminary results of the system impact study for the project, BECo would not need to upgrade or reconfigure the transmission lines extending out from the proposed facility or substation, and thus there would not be an opportunity to reduce magnetic fields through changes in the transmission line design.

vegetation, roadways and the existing BECo facilities; and (3) the Town has designated the property for industrial use (Exhs. EFSB-L-8; EFSB-RR-27-S Att. at 2).

The Company stated that the proposed site is located within an Industrial II district[64] under Medway's zoning by-laws and noted that a public utility is a permitted use in an Industrial II district (Exh. SWM-1, at 4-36).[65] The Company stated, based on correspondence with the Medway Building Inspector, that it anticipates that the proposed facility would not require a zoning variance for the stack height, as the Town does not consider the stack a structure under the zoning by-laws and it therefore is not subject to a maximum height requirement (Exh. EFSB-RR-27; Tr. 3, at 267).[66] The Company submitted a revised site plan to Medway in January 2000 which included a 30-foot green belt located along the south and southeast boundaries of the site (Exh. EFSB-RR-27-S2 Att.).[67]

Sithe stated that West Medway Station is generally bordered by roadways -- Route 109 to the north, West Street to the west and south, and Summer Street to the east (Exh. SWM-1, at 1-1, 4-33). The Company asserted that the area immediately proximate to the station is less densely developed than the station itself, and consists predominantly of residential uses and limited commercial uses (id. at 4-35). The zoning map indicated that the abutting areas are designated

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64 The Siting Board notes that according to the site plan submission by Sithe, a small portion of the entire 94-acre parcel, along the northern border, is zoned Agricultural and Residential District II (Exh. EFSB-RR-27-S2 Att.).

65 The Town of Medway zoning by-laws also allow the following uses as of right in an Industrial II district: (1) municipal, federal, or state use; (2) church or other religious institutions; (3) schools, colleges, and dormitories; (4) wholesale offices or showrooms, including indoor warehouses; and (5) general industrial uses including manufacturing, storage, processing, fabrication, etc. (Exh. EFSB-L-6-1, at 23).

66 The Company indicated that it would prepare a submittal to the Medway Zoning Board of Appeals to confirm this interpretation (Tr. 3, at 267-268).

67 The Medway zoning by-laws require that in an Industrial II district "a green belt not less than 30-feet wide shall be provided adjacent to residential district boundary lines . . ., [a] green belt is defined as a protective screen which shall be planted and maintained with evergreen trees or shrubs, not more than 15 feet apart or less than 6 feet high at the time of planting" (Exh. EFSB-L-6-1, at 23).

Agricultural and Residential (Exh. EFSB-L-6). The MassGIS map provided by Company shows that within both a one-half mile and one mile radius, industrial use is less than five percent of the total land use (Exh. SWM-1, at 4-34).

The Company indicated that the closest residence to the existing facility is located off Burrill Street, on land adjacent to the site to the northeast, and the nearest residence to the proposed facility would be located to the east, between Summer and Old Summer Streets (id. at 4-34, 4-47). The Company stated that a day care center is located to the south of the site, with the day care center property boundary directly adjacent to the project access road (Exh. EFSB-L-5). Specifically, the Company explained that at the closest point, the chain link fence that surrounds the day care center and the metal guardrail associated with the access road are three feet apart (Tr. 5, at 350). The day care center consists of the center itself, a number of outside play areas, and off-street parking (id. at 351; Exh. EFSB-RR-27-S2 Att.). The site plans for the proposed facility indicate that the day care center property line is approximately 300 feet from the closest facility component -- the administration building/warehouse -- and approximately 20 feet away from the area to be used as construction parking (Exh. EFSB-RR-27-S2 Att.).[68]

Sithe stated that the existing 12-inch Algonquin lateral is capable of providing expanded gas service to the proposed facility, and therefore no upgrades would be required (Exhs. EFSB-A-1-S at 2-2; EFSB-L-11). The Company indicated that all electric interconnections would be on-site, and that the close proximity to the existing switchyard and transmission lines would result in minimal impacts (Exh. SWM-1, at 1-15).

Sithe explained that it would use a seven-acre hay field located in the south of the site for construction laydown and parking (Exh. EFSB-L-4). The Company stated that the field would be restored, with soils tilled, seeded, and returned to the current use as a hay field (id.). The

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[68] The Siting Board notes that the site plan submitted by the Company to the Town of Medway shows the 30-foot vegetative buffer situated to the south and along a small portion to the southeast of the facility; however, due to the limited available land between the day care center fence and the construction parking, the 30-foot buffer becomes more narrow along the boundary of the day care center property near the access drive (Exh. EFSB-RR-27-S2 Att.).

Company indicated that it would continue to make the field available to the farmer who presently uses the area, consistent with its current use (Exh. SWM-11, at 3-10). In accordance with its no-net-loss-of-farmland policy, the Massachusetts Department of Food and Agriculture ("MADFA") requested permanent protection of the south field through an agricultural preservation restriction (id. at 3-9). The Company indicated it would determine the feasibility of the request during the local and state review process (id. at 3-10; Exh. EFSB-A-1-S-3).

With respect to impacts on wildlife species and habitats at the proposed site, the Company stated that, based on initial consultation and written confirmation from the Massachusetts Natural Heritage and Endangered Species Program ("NHESP"), there are no known rare plants or animals, or exemplary communities in the vicinity of the proposed site or its interconnects (Exh. EFSB-L-3-1 Att.). In addition, the Company stated, based on confirmation from the Massachusetts Historical Commission, that the proposed facility would not have an adverse impact on historical or archeological resources (Exh. EFSB-L-9, at 6.6-3).

2. Analysis

As part of its review of land use impacts, the Siting Board considers whether a proposed facility would be consistent with existing land uses, and state and local requirements, policies or plans relating to land use and terrestrial resources. Here, the record shows that the proposed site is zoned for industrial use and that the proposed facility is allowed under the Medway zoning by-laws. The Siting Board notes that the areas immediately surrounding the proposed site are predominantly residential, and are residentially/agriculturally zoned. However, construction of the proposed facility is consistent with the present use of the West Medway Station site, and operation of the proposed facility would not result in an additional incursion of industrial use beyond the existing West Medway Station property line.

As discussed in Section III.F. above, the stack heights are significantly lower than for facilities typically reviewed by the Siting Board, and there is existing vegetation on site as well as a planned vegetative buffer to the south. However, the day care center play areas are located in very close proximity to the construction parking area as well as the access road. The Siting Board notes that although the current landscape plan shows limited plantings proposed close to

the access road on the west side of the day care center, it would help obscure the view and mitigate land use impacts to continue the full 30-foot wide buffer along the border of the day care center property to the intersection with the access road. Further, solid wood fencing would provide effective screening, and could supplement the vegetative buffer thereby minimizing impacts on the play areas, such as airborne dust and debris, that may arise from the construction and operation of the proposed facility. Therefore, the Siting Board directs the Company to provide, in consultation with the owner of the day care center, effective screening such as solid wooden fencing and an expanded vegetative border, with the wooden fence to be installed prior to construction and the additional vegetation after construction has ended.

Consistent with the request by the MADFA for an agricultural preservation restriction on the south field as part of its no-net-loss-of-farmland policy,[69] the Company is discussing with the Town of Medway the possible steps to implement the request. The Siting Board directs Sithe to keep the Siting Board informed of the outcome of these discussions.

The Company has adequately considered the impacts of the proposed facility with respect to wildlife species and habitats, and historic and archaeological resources. Based on its review of information submitted by the Company, the Siting Board concludes that no such resource impacts are likely to occur as a result of the construction or operation of the proposed facility.

As discussed in the Sections III. F, G and I, above, the Company has proposed or been required to provide mitigation that minimizes impacts on the surrounding residential areas. Minimization of these impacts helps establish that the proposed facility will be compatible with existing land uses. Accordingly, with the implementation of the above conditions, the Siting Board finds that the land use impacts of the proposed facility would be minimized.

L. Cumulative Health Impacts

This section describes the cumulative health impacts of the proposed facility. The Siting

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[69] Although the no-net-loss-of-farmland policy of the MADFA was raised, the policy applies to state-owned land and projects using state funds and federal grants. See MADFA Agricultural Land Mitigation Policy, October 5, 1999 (Draft). It appears that no state funds are to be used in the proposed project (Exh. SWM-11, at 3-10).

Board considers the term "cumulative health" to encompass the range of effects that a proposed facility could have on human health through emission of pollutants over various pathways, as well as possible effects on human health unrelated to emissions of pollutants (e.g., health effects of noise). Cumulative health effects are considered in the context of existing background conditions, existing baseline health conditions, and, when appropriate, likely changes in the contributions of other major emissions sources.

The analysis of the health effects of a proposed generating facility is necessarily closely related to the analysis, in sections above, of specific environmental impacts which could have an effect on human health and any necessary mitigation measures. This section sets forth information on the human health effects that may be associated with air emissions, including criteria pollutants and air toxics, discharges to ground and surface waters, the handling and disposal of hazardous materials, EMF, and noise. In addition, this section describes any existing health-based regulatory programs governing these impacts and considers the impacts of the proposed facility in light of such programs.

1. Baseline Health Conditions

The Company provided information from a report published by the Massachusetts Department of Public Health ("MADPH") entitled Cancer Incidence in Massachusetts 1987-1994 (Exh. EFSB-H-2). The MADPH report compares the incidence rate of 22 types of cancer for each of the 351 Massachusetts cities and towns against state-wide average incidence rates, with separate comparisons for males, females, and total population, and noting statistically significant deviations (id.). Comparing cancer incidence in Medway to state-wide averages, the Company stated that the MADPH report found elevated incidence rates for cancers of the colon and rectum in males (statistically significant at $p \leq 0.01$),[70] stomach cancer in males (statistically significant at

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[70] The p-value is the probability that the observed difference or a greater difference between the observed number of cases and the expected number of cases would be obtained if, actually, the town-wide risk were equal to the state-wide risk. For "$p \leq 0.05$," the probability is at most one in twenty. For "$p \leq 0.01$," the probability is at most one in a hundred. The smaller the p-value is, the more evidence there is that the observed

(continued...)

$p \leq 0.05$), bladder cancer in males (statistically significant at $p \leq 0.05$), and "total" cancer in males (statistically significant at $p \leq 0.05$) (id.). The Company also noted that, as indicated in the MADPH report, a finding of statistical significance does not necessarily indicate biological or public health significance (id.).

In addition, the Company provided data on asthma hospitalization rates in Massachusetts from the Massachusetts Division of Health Care Finance and Policy that show hospitalization rates for asthma in Medway were below the statewide average in 1997 (Exh. EFSB-H-8).

2. Criteria Pollutants

As discussed in Section III.B.1, above, EPA and MADEP regulate the emissions of six criteria pollutants under NAAQS: SO_2, PM_{10}, NO_2, CO, ozone, and lead (Exh. EFSB-A-2-S Att. at 1-2). The Company stated that the NAAQS include standards which are intended to protect public health, referred to as primary standards (Exh. SWM-2, at 6-3). The Company indicated that EPA and MADEP established SILs as ambient concentration criteria low enough to allow a conclusion that emissions below SILs would not significantly affect modeled air quality, without a detailed evaluation of compliance with the NAAQS (Exh. EFSB-A-2-S Att. at 1-5). The Company reported that its dispersion modeling indicated that the proposed facility would produce concentrations below SILs (id. at 5-10).

The Company indicated that regional air quality measurements, from Worcester, Sudbury, Waltham, and Easton, were below NAAQS concentrations in 1995, 1996, and 1997 for all criteria pollutants each year except 1995, when the ozone level exceeded NAAQS at Easton (id. at 5-8).[71] To assess air impacts of the proposed facility and other existing sources of

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[70] (...continued)
disparity is not due to chance alone.

[71] The Company provided air quality data from MADEP monitoring stations in Worcester, Sudbury, Waltham, and Easton that indicate that (1) the maximum concentration of ozone observed at Easton in 1995 was 104 percent of the one-hour NAAQS; (2) concentrations of CO (at Worcester in 1996) were 59 percent of the eight-hour NAAQS and less than 50 percent of the annual standard; (3) concentrations of NO_2, SO_2, and PM_{10}
(continued...)

emissions, the Company conducted cumulative air modeling of the criteria pollutants (id. at 5-12 to 5-16). The maximum cumulative concentrations presented for the locations of maximum impact for NO_2, SO_2, PM_{10}, and CO are between 30 and 65 percent of the NAAQS (id. at 5-16). In addition, the modeling shows that the proposed Medway facility would contribute no more than one quarter of one percent ($\leq$0.25 percent) of the cumulative pollutant concentration at any of the points of maximum cumulative impact (id.).[72] The Company asserted that, insofar as the predicted sum of the facility impact and the ambient concentration for any particular chemical is below the applicable NAAQS, no health effects would be expected (Exh. EFSB-H-1).

The record indicates that EPA has set in place ambient air quality standards, called NAAQS, for six criteria pollutants – SO_2, PM_{10}, NO_2, CO, ozone, and lead. These standards are set based on an extensive review of the medical literature regarding the health effects of each pollutant, and are designed to be protective of human health, including the health of sensitive subgroups, with an adequate margin for safety.[73] Sithe Mystic Decision, 9 DOMSB, at 192. The Siting Board gives great weight to these standards as indicators of whether incremental emissions of criteria pollutants will have a discernable impact on public health. Id.; Brockton Decision, EFSB 99-1, at 88.

The record also shows that MADEP has set in place standards for reviewing the compliance of proposed new sources of criteria pollutants, such as the proposed facility, with NAAQS. New sources may not cause or contribute significantly to a violation of NAAQS. Sithe Mystic Decision, 9 DOMSB, at 192. In addition, as discussed in Section III.B above, MADEP requires major new sources to meet BACT (when the area is in attainment or is unclassified for a particular pollutant), or LAER (when the area is in non-compliance for a particular pollutant), and to obtain offsets for 100 percent or more of emissions when the area is in non-compliance for

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71 (...continued)
(at Worcester, Sudbury, and/or Waltham) were 50 percent or less of the respective standards (Exh. EFSB-A-2-S Att. at 5-7 to 5-8).

72 Percentage is based on Siting Board staff calculation from cited exhibit.

73 The record does not identify specific health effects of criteria pollutants or the specific health concerns which led to establishment of the NAAQS.

a particular pollutant. MADEP's new source program balances environmental impacts and costs when an area is in compliance with NAAQS, and requires stronger measures, including emissions offsets, when an area is in non-attainment. Id.; Brockton Decision, EFSB 99-1, at 88. The Siting Board finds that this approach is consistent with its own mandate to minimize both the environmental impacts and costs of proposed generating facilities. Sithe Mystic Decision, 9 DOMSB, at 192; Brockton Decision, EFSB 99-1, at 88. The Siting Board therefore gives great weight to compliance with MADEP air quality programs as an indicator of whether the Company has minimized the health impacts of the proposed facility. Sithe Mystic Decision, 9 DOMSB, at 192; Brockton Decision, EFSB 99-1, at 89.

In this case, the Company's air analysis showed that the Medway area in Norfolk County was unclassified or in attainment for SO_2, PM_{10}, NO_2, CO, and lead, but in serious non-attainment for ozone. In addition, the record indicates that regional background levels are less than 60 percent of the ambient standards for all criteria pollutants and averaging periods, except ozone, which was not in compliance with the standard. Thus, the Medway area levels of all criteria pollutants except ozone are well within the standards set for purposes of protecting public health. Also, the Company stated that the proposed facility's emissions of all criteria pollutants would be below the SILs. The Siting Board concludes that there is no evidence suggesting that the proposed facility's emissions of SO_2, PM_{10}, NO_2, CO, and lead would have a discernable impact on public health.

With respect to health impacts of multiple power plants in the Medway area, the cumulative air modeling of the proposed facility together with existing Sithe West Medway Station sources, two existing facilities in Bellingham, two in Milford, one in Framingham, plus the proposed IDC Bellingham, ANP Bellingham, and ANP Blackstone facilities, shows that the cumulative concentrations modeled for each criteria pollutant were well below NAAQS and that the proposed facility's contribution to the cumulative impact at the locations of the greatest modeled pollutant concentration would be well below one percent for SO_2, PM_{10}, NO_2, and CO. The Company has committed to meeting BACT or LAER, as applicable, and to obtaining offsets or allowances for its NO_X and SO_2 emissions as required. Based on the stated compliance with MADEP air quality standards, the Siting Board finds that the cumulative health impacts of

criteria pollutant emissions from the proposed facility would be minimized.

3. Air Toxics

The Company indicated that, for air toxics, MADEP has developed ambient air quality criteria which are intended to protect public health (Exh. EFSB-H-3). These criteria are presented as 24-hour TELs and annual average AALs (id.). The Company stated that these ambient air quality criteria were developed to ensure that contributions from any single emissions source would have an insignificant impact on public health (id.). As discussed in more detail in Section III.B, above, the Company reported that its dispersion modeling indicated that the proposed facility would not produce concentrations that exceed AALs or TELs (Exh. EFSB-A-2-S Att. at 5-9). In addition, the Company referenced a 1998 report by EPA entitled "Study of Hazardous Air Pollutant Emissions from Electric Utility Steam Generating Units – Final Report to Congress" ("HAPs Study"), which assessed emissions from 684 utility plants, including coal-fired, oil-fired, and natural gas-fired generators (Exh. EFSB-H-1). The Company stated that the HAPs Study concluded that the cancer risks for all gas-fired plants were well below one chance in one million, and that no noncancer hazards were identified (id.).

The record indicates in the general case that air emissions from gas-fired power plants do not pose substantial health risks and in this specific case that the proposed facility would not exceed applicable ambient limits for air toxics. Based on EPA's findings, the Siting Board concludes that, in the absence of project-specific evidence to the contrary, the emissions of non-criteria pollutants from a gas-fired generating facility should be considered to have no discernable public health impacts. Based on the stated compliance with MADEP AALs and TELs, the Siting Board finds that the cumulative health impacts of non-criteria pollutant emissions from the proposed facility would be minimized.

4. Discharges to Ground and Surface Waters

The Company stated that impacts related to water would be limited to indirect effects associated with stormwater runoff (Exh. EFSB-H-3).

As stated in Section III.C, above, the Company indicated that once the facility is

constructed, there would be stormwater discharges from non-process-related areas (id.). The Company stated that the stormwater runoff would comply with MADEP stormwater management guidelines and National Pollutant Discharge Elimination System ("NPDES") Construction General Permit Requirements (id.). The record does not identify any potential for humans to be exposed to any contaminants that might be discharged from the proposed facility to ground and surface waters. As stated in Section III.C, above, the Company indicated that the site is not located on a high yield aquifer and no wells were located in the immediate area (Exh. SWM-1, at 4-21; Tr. 3, at 225).

As stated in Section III.C, above, the facility would generate approximately 450 gpd of wastewater during normal operations (Exh. SWM-1, at 1-14). Of this amount, 150 gpd would be sanitary waste that would continue to be discharged to an on-site septic system (id.). The remaining 300 gpd, and also up to 7,350 gpd during periodic plant maintenance overhauls, would be discharged to a wastewater collection tank, with subsequent off-site disposal at an approved disposal facility facility (Exhs. SWM-1, at 1-13 and 4-25; SWM-2, at 10-2; EFSB-WR-7; and Tr. 2, at 235) (see Section III.C).

In Section III.C, above, the Siting Board found that the environmental impacts of the proposed facility would be minimized with respect to water resources. Consequently, the Siting Board finds that the health risks of the proposed facility, related to discharges to ground and surface waters, would be minimized.

5. Handling and Disposal of Hazardous Materials

As discussed in Section III.C, above, the Company has indicated that motor oil, waste oil, various solvents, insecticides, aerosol cans, paint, gasoline, diesel fuel, and a drying agent would be used at the site during construction and that oxygen, carbon dioxide, hydrogen, propane, acetylene, turbine cleaning solution, and various oils contained within operating equipment would be used during operation (Exhs. SWM-1, at 1-17 to 1-18; EFSB-HZ-1). The Company indicated that refueling of construction equipment may occur on site (Exh. EFSB-RR-24).

In Sections III.E and III.H, above, the Siting Board reviewed the Company's plans for minimizing and handling hazardous materials. As described in Section III.C, above, the

Company stated it would direct stormwater flow through an oil/water separator, with subsequent off-site disposal of the oil (Exh. SWM-1, at 1-14). The Company indicated that only minor modifications to the SPCC Plan for the existing facility would be needed (Exh. EFSB-SF-1), but that controlling spillage during construction would be the responsibility of the EPC contractor (Tr. 3, at 227). Further, the Company stated that chemicals would be stored inside enclosures or buildings in appropriate tanks or vessels, and that curbs and drains would be installed in all chemical treatment and storage areas (Exh. SWM-1, at 4-24).

In Section III.H, above, the Siting Board found that the Company has demonstrated that it has developed adequate procedures for the handling, storage, and disposal of hazardous materials during construction and operation of the proposed facility. Consequently, the Siting Board finds that the health risks of the proposed facility related to the handling and disposal of hazardous materials would be minimized.

6. EMF

As discussed in Section III.J, above, the Company predicted that magnetic field strengths would increase along two of the ROWs (ROW 4 and ROW 7) connecting to the West Medway Substation, with the higher magnetic field strength along ROW 4. The Company predicted that magnetic field strengths would decrease along the other ROWs; and that electric field strengths along the ROWs would not change. The Company estimated that, when the facility is in operation, worst-case magnetic field strengths along the edge of the ROW 4 could increase to 21.7 mG.

The possible health effects of exposure to EMF have been a subject of considerable debate. In a 1985 case involving the construction of the 345 kV overhead HydroQuebec line, the Siting Board heard expert testimony, reviewed the existing literature, and concluded that there was no affirmative evidence that the proposed facilities, which had edge-of-ROW levels of 85 mG, would produce harmful health effects. 1985 MECo/NECo Decision, at 240. In this case, the Company summarized some existing guidance regarding exposure to EMF, noting that there are no regulatory standards for such exposure (Exh. EFSB-H-3-S). The Company stated that the International Commission on Non-Ionizing Radiation Protection recommends that occupational

exposure be limited to magnetic fields below 4,200 mG for electrical workers and 830 mG for the general public (id.).

The Company asserted that available laboratory and human data have not demonstrated what, if any, magnitudes of power line electric and magnetic fields cause human health effects (id.). In support of this assertion, the Company provided a 1997 report by the National Research Council, which provides a comprehensive review of research up to that date on the biologic effects of exposure to power-frequency electric and magnetic fields, including cellular and molecular studies, animal studies, and epidemiological studies (Exh. EFSB-H-3(d)). The report concludes that the current body of evidence does not show that exposure to such fields presents a human health hazard (id. at 2). With respect to epidemiological studies, the report indicates that the aggregate evidence does not support an association between magnetic field exposure and adult cancer, pregnancy outcome, neurobehavioral disorders, and childhood cancers other than leukemia (id. at 3). With respect to in vitro studies, the report finds that exposure to 50-60 Hertz ("Hz") fields induces changes in cultured cells only at field strengths 1,000 to 100,000 times the levels typically found in residences (id. at 6). With respect to animal studies, the study finds no convincing evidence that exposure to power-frequency fields causes cancer or has any adverse effects on reproduction or development in animals (id. at 7). The report finds evidence of behavioral response when animals are exposed to fields that are considerably stronger than fields encountered in a residential environment; however, there was no demonstration of adverse neurological impacts (id.).

The Company also provided journal articles reporting on three recent case-control studies[74] that were conducted to assess the relationship between the risk of childhood leukemia and/or all cancers and residential exposure to magnetic and/or electric fields (Exhs. EFSB-H-3(a)

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[74] The articles provided were: (1) Green, L.M., A.B. Miller, et al., 1999, "A case-control study of childhood leukemia in Southern Ontario, Canada, and exposure to magnetic fields in residences;" (2) Green, L.M., A.B. Miller, et al., 1999, "Childhood leukemia and personal monitoring of residential exposures to electric and magnetic fields in Ontario, Canada;" (3) Linet, M.S., E.E. Hatch, et al., 1997, "Residential exposure to magnetic fields and acute lymphoblastic leukemia in children;" and (4) UK Childhood Cancer Study Investigators, 1999, "Exposure to power-frequency magnetic fields and the risk of childhood cancer."

Att.; EFSB-H-3(b) Att.; EFSB-H-3(c) Att.). Two separate articles describing Ontario study findings appear to suggest a relationship between leukemia risk and measured EMF but not between leukemia risk and proximity to power lines with a high current configuration (Exh. EFSB-H-3(a) Att.). The 1997 study conducted in several American states found "little evidence" of a relationship between acute lymphoblastic leukemia and either magnetic field levels or wire codes (Exh. EFSB-H-3(b) Att.). The British study of a large number of cases and controls found no evidence of a relationship between either childhood leukemia or other childhood cancer and power-frequency magnetic fields (Exh. EFSB-H-3(c) Att.).

Overall, although there are some epidemiological studies which suggest a correlation between exposure to magnetic fields and childhood leukemia, and some evidence of biological response to exposure to magnetic fields in animal studies, there is no clear evidence of a cause-and-effect association between magnetic field exposure and human health. Thus, the record in this case does not support a conclusion that any increases or decreases in EMF levels anticipated as a result of the proposed facility would pose a public health concern. In Section III.J, above, the Siting Board found that the EMF impacts of the proposed facility would be minimized. Accordingly, the Siting Board finds that the health effects, if any, of magnetic fields associated with the proposed facility would be minimized.

7. Noise

As discussed in Section III.G, above, the proposed facility would produce noise that would be noticeable in some surrounding areas during facility construction, and may also produce audible noise during operation of the facility. The record shows that as a result of its noise mitigation efforts, the combined noise levels from both the proposed and modified existing facilities would be less than the existing facility operating in its current condition.

The Company indicated that EPA has identified an L_{dn} sound level of 55 dBA as a level that would "protect the public health and welfare with an adequate margin of safety" at residential locations (Exh. SWM-1, at 4-55). The Company stated that the expected L_{dn} sound level from both power plants, combined, would be 51 dBA at the point along the property line

where the sound impact would be greatest (id.).[75] As discussed in Section III.G, above, the project also conforms to MADEP requirements that limit the increase above background sound levels in residential areas.

The Company's witness, Peter Valberg, PhD, stated that noise can disturb sleep or other physiological functions, but there is high variability in the characteristics of noise that are disturbing to different people, so there are no real health guidelines for such disturbances (Tr. 4, at 289). Dr. Valberg also noted that it would be extremely unlikely for these peaking facilities to operate after about 10 p.m., due to patterns in electricity demand (id., at 338).

The record indicates that noise levels from the proposed facility would be less than levels identified by EPA as protective of public health and welfare.[76] In addition, the record indicates that the facility is not expected to operate frequently at night, the time period when people tend to be more disturbed by noise and when sleep disruption would be most likely. The record shows that the Company has committed to decreasing the overall noise level by limiting noise from the proposed facility and reducing noise from the existing facility. Consequently, the Siting Board finds that health impacts, if any, of noise from the proposed facility would be minimized.

8. Summary

The record includes information about the health status of the population of Medway. The Siting Board has noted that the incidence of some specific types of cancer was statistically elevated, compared to statewide averages, within a recent eight-year period. The Siting Board has also noted that hospitalization rates for asthma were below statewide averages in 1997 in

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[75] The calculated 51 dBA sound level at the property line would occur if both the new and the existing facilities operated for a 24-hour period, and as a day-night sound level it incorporates a 10 dBA penalty to sounds occurring at night (Exh. SWM-1, at 4-44 and 4-55). The calculated 51 dBA sound level is a conservative estimate because the facilities are expected to operate considerably less than 24 hours a day.

[76] The Siting Board notes that measured ambient sound levels are within or close to the 55 dBA level at five of six monitoring locations (Exh. EFSB-N-1). The Siting Board notes that the higher sound level at the sixth monitoring location may represent a situation wherein typical noise levels from traffic disrupt conversation outdoors.

Medway. In the subsections above, the Siting Board has reviewed the proposed facility's potential for effects on human health resulting from emissions of criteria pollutants, emissions of air toxics, emissions to ground and surface waters, handling and disposal of hazardous materials, electric and magnetic frequencies, and noise. The Siting Board has found that: (1) the cumulative health impacts of criteria pollutant emissions from the proposed facility would be minimized; (2) the cumulative health impacts of non-criteria pollutant emissions from the proposed facility would be minimized; (3) the health risks of the proposed facility, related to discharges to ground and surface waters, would be minimized; (4) the health risks of the proposed facility related to the handling and disposal of hazardous materials would be minimized; (5) the health effects, if any, of magnetic fields associated with the proposed facility would be minimized; and (6) the health effects, if any, of noise from the proposed facility would be minimized.

The record provides no indication that health effects from the different types of potential exposures, however minimal, would combine to create an overall effect greater than the sum of the minimized effects; and the record provides no indication of an interaction of potential facility-related health effects with documented pre-existing health conditions in Medway. Consequently, the Siting Board finds that there is no evidence that the proposed facility would exacerbate existing public health problems in Medway. Accordingly, based on its review of the record, the Siting Board finds that the cumulative health impacts of the proposed facility would be minimized.

M. Conclusions

Based on the information in Sections II and III, above, the Siting Board finds that Sithe's description of the proposed generating facility and its environmental impacts is substantially accurate and complete.

In Section II, the Siting Board has found that Sithe accurately described its site selection process.

In Section III.B, the Siting Board has found that, with the implementation of CO_2 mitigation, the air quality of the proposed facility would be minimized.

In Section III.C, the Siting Board has found that the water supply impacts and water resource impacts of the proposed facility would be minimized.

In Section III.D, the Siting Board has found that the wetlands impacts of the proposed facility would be minimized.

In Section III.E, the Siting Board has found that the solid waste impacts of the proposed facility would be minimized.

In Section III.F, the Siting Board has found that, with the implementation of the conditions directing Sithe to provide reasonable off-site mitigation of visual impacts, including shrubs, trees, window awnings, or other mutually agreeable measures, that would screen views of the proposed facility within one-half mile of the proposed facility, as requested by residents or appropriate municipal officials, the visual impacts of the proposed facility would be minimized.

In Section III.G, the Siting Board has found that the noise impacts of the proposed facility would be minimized, consistent with minimizing cost.

In Section III.H, the Siting Board has found that, with the implementation of the conditions directing Sithe to work with the Town of Medway Fire Department and appropriate officials to determine if additional training of Medway or other fire personnel is necessary and, if so, to provide funding in order to obtain such training, and to complete the construction section of its emergency response plan, the safety impacts of the proposed facility would be minimized.

In Section III.I, the Siting Board has found that, with the implementation of the conditions directing Sithe to coordinate with the appropriate authorities to place a uniformed traffic officer at the entrance to the property on Summer Street during the pouring of concrete and as needed; to install, prior to construction, 42-inch high concrete Jersey barriers along the south shoulder of the access road; and to include language in its contract with its EPC contractor specifying a truck delivery route and restricting the EPC contractor from using West Street for deliveries of equipment and materials, the traffic impacts of the proposed facility would be minimized.

In Section III.J, the Siting Board has found that the EMF impacts of the proposed facility would be minimized.

In Section III.K, the Siting Board has found that, with the implementation of the conditions directing Sithe to provide effective screening and fencing, the land use impacts of the

proposed facility would be minimized.

In Section III.L, the Siting Board has found that: (1) the cumulative health impacts of criteria pollutant emissions from the proposed facility would be minimized; (2) the cumulative health impacts of non-criteria pollutant emissions from the proposed facility would be minimized; (3) the health risks of the proposed facility, related to discharges to ground and surface waters, would be minimized; (4) the health risks of the proposed facility related to the handling and disposal of hazardous materials would be minimized; (5) the health effects, if any, of magnetic fields associated with the proposed facility would be minimized, and (6) the health effects, if any, of noise from the proposed facility would be minimized.

Accordingly, the Siting Board finds that, with the implementation of the above-listed conditions, Sithe's plans for the construction of the proposed generating facility would minimize the environmental impacts of the proposed facility consistent with the minimization of costs associated with the mitigation, control, and reduction of the environmental impacts of the proposed generating facility. In addition, the Siting Board finds that an appropriate balance would be achieved among conflicting environmental concerns as well as between environmental impacts and costs.

IV. COMPLIANCE WITH REQUIREMENTS UNDER THE TECHNOLOGY PERFORMANCE STANDARDS

A. Standard of Review

G. L. c. 164, § 69J¼ requires the Siting Board to promulgate technology performance standards for generating facility emissions. These technology performance standards are to be used solely to determine whether a petition to construct a generating facility shall include information regarding fossil fuel generating technologies other than the technology proposed by the petitioner. G. L. c. 164, § 69J¼. If the expected emissions of the facility do not meet the technology performance standards in effect at the time of filing, the petitioner must include in his petition a description of the environmental impacts, costs, and reliability of other fossil fuel generating technologies, and an explanation of why the proposed technology was chosen. Id. The Siting Board must then determine whether the construction of the proposed generating

facility on balance contributes to a reliable, low-cost, diverse regional energy supply with minimal environmental impacts. Id.[77]

In Section III.B, above, the Siting Board determined that expected emissions from the proposed generating facility exceed the technology performance standard as set forth in 980 CMR, § 12.00 at the time of filing, and that the proposed generating facility therefore does not meet the Siting Board's technology performance standard. Therefore, in this section the Siting Board reviews the environmental impacts, costs, and reliability of the proposed generating facility and of other fossil fuel generating technologies in order to determine whether the construction of the proposed generating facility on balance contributes to a reliable, low-cost, diverse regional energy supply with minimal environmental impacts.

B. Description

The Company provided quantitative information on the cost, reliability, diversity, and environmental impact of its proposed gas-fueled combustion turbine technology as well as four other alternative peaking technologies including: oil-fueled reciprocating technology; oil-fueled combustion turbine technology; oil-fueled jet turbine technology; and gas-fueled jet turbine technology (Exh. SWM-1, at 3-17). In addition, the Company provided a general discussion of the costs and environmental impacts of a gas peaking unit versus a combined-cycle unit (id. at 2-14, 3-5, 3-6, 3-13, and 3-17). These data are provided on the following page.

1. Reliability

The Company asserted that the proposed project would improve the reliability of electricity in New England by providing electricity to meet peak loads and address system

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[77] In fulfilling its statutory mandate under G. L. c. 164, §69J, the Siting Board required a petitioner to demonstrate that its proposed project was superior to alternate approaches in the ability to address a previously identified need in terms of cost, environmental impact, and reliability. We note that the test set forth in G. L. c. 164, § 69J¼ differs from the test applied under § 69J in three significant ways: it does not reference a previously identified need; it encompasses the issue of diversity as well as the issues of cost, environmental impacts, and reliability; and it does not require a finding that the proposed generating technology is superior to other generating technologies.

contingencies (Exh. SWM-1, at 3-11). The Company stated that in New England, peak load occurs during the approximately five percent of the year when load varies between 18,500 MW and 22,000 MW, and noted that New England requires a substantial amount of capacity resources (about 4,000 MW) above and beyond the capacity called upon to serve load at lower non-peak levels of demand (id.). In comparison, New England has only 1,433 MW of simple-cycle peaking capacity and the majority of this capacity is between 20 and 30 years old (Exhs. EFSB-AT-15; SWM-1 at 3-8). The Company stated that peaking facilities help improve reliability through their ability to start up quickly and address peak electricity demand or system contingencies (Exh. SWM-1, at 3-13 to 3-14). The Company noted that combined-cycle technology is not an appropriate technology to serve peak loads, because the number of hours during which a facility can earn returns in the high peak energy market is insufficient to justify the higher capital costs of a combined-cycle facility (id.).

The Company stated that the location of the proposed facility would help ensure that the peaking unit improves system reliability (id.). Specifically, the Company stated that the facility would be located close to New England's load center[78] and at a juncture of eight different transmission line circuits on five different ROWs (id. at 3-13 to 3-14, 4-71). Consequently, the proposed peaking facility would be able to quickly handle increases in demand for electricity and or address contingencies in a variety of important subregions in the transmission grid (Exh. SWM-1, at 3-11; Tr. 2, at 90).

Finally, the Company stated that its proposed combustion turbine technology has a track record of reliability that is superior or similar to other peaking technologies and has the lowest forced outage rate of any peaking technology (Exh. SWM-1, at 3-18). Refer to Table 3 below for a comparison of forced outages.

2. Cost

The Company stated that its proposed use of gas fired combustion turbines was more cost effective than other fossil-fired peaking alternatives, including jet turbine technology,

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[78] The Company noted that only 35 percent of the peaking facilities in New England are located in Eastern Massachusetts (Exh. SWM-1, at 3-11).

reciprocating technology, and the oil-fired combustion turbines (Exh. SWM-1, at 3-16 to 3-17). To support this assertion, the Company provided the following cost data:

Table 3

Type of Peaking Technology	Fuel Type	Capital Cost ($/kW,net)	Fixed O&M ($/kW,yr)	Variable O &M ($/kWhr)	Total Levelized Cost ($/kWhr)	Effective Forced Outage Rate
Reciprocating Technology	Fuel Oil #2	780	14	0.003	0.305	3%
Combustion Turbine Technology	Fuel Oil #2 Natural Gas	270 270	6 5	0.007 0.006	0.146 0.123	1% 1%
Jet Turbine Technology	Fuel Oil #2 Natural Gas	610 610	12 10	0.009 0.007	0.259 0.235	2% 2%

Source: (Exh. SWM-1, at 3-17)

The Company noted that peaking facilities serve a much different function from combined-cycle facilities and hence have very different costs (id. at 3-5). The Company stated that as a result of the proposed peaking facility's limited operation, its capital cost must be lower than that of a combined-cycle facility, but that its heat rate (i.e., fuel and operating costs) is higher than that of a combined-cycle facility (id. at 3-5).

3. Diversity

The Company stated that 25 percent of New England's existing peaking capacity is dual-fueled, with the capability to run on both oil and gas, and that the remaining 75 percent of the peaking capacity in New England consists either of oil-only facilities, or pumped storage capacity (Exh. SWM-1, at 3-18). The Company stated that because the proposed facility would run only on natural gas, it would serve to diversify the fuel supply among New England's peaking units (id.). The Company noted that its proposed use of natural gas also would serve to diversify fuel supply if one were to take into account the fuel mix of New England's base load facilities (Exh. EFSB-AT-7). In addition, the Company stated that it has a diverse choice of gas providers as it is

located close to both Algonquin and Tennessee gas pipelines, and that this would help the Company minimize the potential for fuel shortages in the winter months (id.).

4. Environmental Impacts

The Company stated that the proposed facility has a number of environmental advantages over a combined-cycle facility of similar capacity including: (1) a smaller development footprint[79]; (2) a shorter construction period; (3) a shorter stack height; (4) limited operating hours; and (5) significantly lower water requirements (Exh. SWM-1 at 3-13). With respect to air impacts, the Company stated that while the facility does not meet the TPS, the emissions from its proposed gas-fired simple-cycle units are low when compared with those of other peaking technologies. In support of this statement, the Company provided the following air emissions data:

[79] The Company provided data showing that 540 MW of gas-fired combustion turbine technology requires a footprint of 3.5 acres, while similar generating capacity using reciprocating technology and jet turbine technology would require 6 and 9 acres, respectively (Exh. SWM-1, at 3-17). In addition, the Company noted that a peaking facility would have a small development footprint compared to a combined-cycle base load facility (Exh. SWM-1, at 2-14).

Table 4

Type of Peaking Technology	**SO_2 Lb/MMBTU**	**NOx ppmvd @ 15% O_2**	**Full-Load Net Heat Rate ISO (Btu/kWh, LHV)**
Reciprocating Oil Technology	0.052	900	8,095
Combustion Turbine Technology			
Gas	0.0031	9	9,360
Oil	0.052	42	9,630
Jet Turbine Technology			
Gas	0.0031	25	8,790
Oil	0.052	50	8,850

Source: (Exh. SWM-1, at 3-17).

The Company emphasized that even though the proposed facility does not meet the TPS emission standard, the facility would operate only a limited number of hours per year and that its total annual emissions therefore would be much lower than those of other proposed generating units reviewed by the Siting Board (Exh. SWM-1, at 3-6).

C. Analysis

Sithe has proposed construction of a natural gas fired peaking unit with per-megawatt emissions that exceed the levels set in 980 CMR, § 12.00. The Siting Board notes that the exceedances result primarily from the Company's decision to propose a simple-cycle peaking unit, rather than a more efficient combined-cycle plant. Therefore, as an initial matter, the Siting Board considers the desirability of additional peaking capacity in the New England region.

The Siting Board recognizes the value of peaking capacity generally, and its contribution to the reliability and cost-effectiveness of New England's electric system. The record shows that peaking facilities provide capacity with fast start-up times and an ability to handle system contingencies and peak electricity needs at a capital cost that is low enough to justify their limited use. The record also shows that peaking facilities generally have higher emissions of criteria pollutants than combined-cycle facilities on a per MWH basis. However, the Company

argued that this disadvantage is offset by the fact that peaking facilities operate only a limited number of hours per year.

The record shows that the majority of New England's fossil fuel peaking capacity is 20 to 30 years old, runs on oil (75 percent), and has a high heat rate (low thermal efficiency). Here, the Company has shown that the addition of new gas-fired peaking capacity would in general provide energy more efficiently, at a lower cost, with less air pollution and with a better fuel diversity than continued reliance on the existing fleet of oil-fired peaking facilities.

The record shows also that the Company's decision to use a gas-fired simple-cycle turbine technology provides significant advantages over other available peaking technologies. Specifically, the record shows that the total levelized cost (inclusive of fixed, capital, and operating costs) and the forced outage rates of the Company's proposed technology are one-half to one-third of the costs and forced outage rates of other available technologies, including reciprocating and jet turbine technologies. In addition, the Company's proposed technology has significantly lower per MW emissions of SO_2 and NO_x than the reciprocating technology, and lower NO_x emissions than the jet turbine technology.

In addition, there are a number of local advantages associated with the Company's decision to use the proposed peaking technology rather than combined-cycle technology. The proposed facility's small development footprint, short stack height, and short construction period help to minimize the local environmental impacts of the project. More important, the Company's proposed use of peaking technology at the site is appropriate given Medway's limited supply of municipal water. The proposed technology has annual water requirements that are approximately one percent of those of similar size combined-cycle facilities recently approved by the Siting Board. ANP Blackstone Decision, 8 DOMSB, at 116; ANP Bellingham Decision, 7 DOMSB, at 106. The Siting Board notes that the limited water supply of Medway likely would have prohibited the installation of a combined-cycle facility at the site.

Finally, the Siting Board notes that the West Medway Station is a particularly appropriate location for a peaking facility, in that it has access to eight different transmission line circuits on five different ROWs serving a number of important load centers. In addition, the proposed facility location, close to both the Algonquin and Tennessee gas pipelines, would improve the

facility's reliability in terms of obtaining natural gas during times of fuel shortages, which may coincide with peak load periods.

The Siting Board notes that it does not intend to suggest that a significant amount of the region's electricity should be provided by simple-cycle or similar technologies. The significant cost and environmental benefits of using the more efficient combined-cycle technology to meet baseload demands generally would outweigh the local benefits associated with smaller scale single-cycle units. However, the addition of limited clean peaking capacity is important in order to ensure the reliability of New England's electric system. The proposed facility is sited and designed in a manner that allows it to contribute to regional reliability at a low cost with minimal environmental impacts. Consequently, the Siting Board finds that the construction of the proposed facility on balance contributes to a reliable, low-cost, diverse, regional energy supply with minimal environmental impacts.

V. CONSISTENCY WITH THE POLICIES OF THE COMMONWEALTH

A. Standard of Review

G. L. c. 164, § 69J¼ requires the Siting Board to determine whether the plans for construction of a proposed generating facility are consistent with current health and environmental protection policies of the Commonwealth and with such energy policies of the Commonwealth as are adopted by the Commonwealth for the specific purpose of guiding the decisions of the Siting Board. The health and environmental protection policies applicable to the review of a generating facility vary considerably depending on the unique features of the site and technology proposed; however, they may include existing regulatory programs of the Commonwealth relating to issues such as air quality, water-related discharges, noise, water supply, wetlands or riverfront protection, rare and endangered species, and historical or agricultural land preservation. Therefore, in this Section, the Siting Board summarizes the health and environmental protection policies of the Commonwealth that are applicable to the proposed project and discusses the extent to which the proposed project complies with these policies.[80]

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[80] The Siting Board notes that its Technology Performance Standard at 980 CMR, § 12.00 (continued...)

B. Analysis

In Sections II and III, above, the Siting Board has reviewed the process by which Sithe sited and designed the proposed facility, and the environmental and health impacts of the proposed project as sited and designed. As part of this review, the Siting Board has identified a number of Commonwealth policies applicable to the design, construction, and operation of the proposed facility. These are briefly summarized below.

As discussed in Section III.B, above, the MADEP extensively regulates emissions of criteria and non-criteria pollutants from new sources such as the proposed facility. Sithe has demonstrated that it expects to comply with all MADEP standards.

As discussed in Section III.C, above, Sithe has demonstrated that it will comply with state and local requirements related to wastewater treatment and stormwater.

As discussed in Section III.D, above, Sithe has demonstrated that the wetlands impacts of the proposed facility would be minimized. In addition, Sithe has received an Order of Conditions for the proposed project from the Medway Conservation Commission, as required by the Massachusetts Wetlands Protection Act.

As discussed in Section III.G, above, Sithe has demonstrated that it will limit L_{90} noise increases at the nearest residence to 10.0 dBA, consistent with MADEP Policy 90-001.

As discussed in Section III.K, above, Sithe has demonstrated that it has complied with state programs protecting historical and archeological resource areas, and rare or endangered species.

Consequently, based on its review above, the Siting Board finds that plans for construction of the proposed facility are consistent with current health and environmental protection policies of the Commonwealth and with such energy policies of the Commonwealth as have been adopted by the Commonwealth for the specific purpose of guiding the decisions of the

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80 (...continued)
could be construed as an energy policy of the Commonwealth adopted for the purpose of guiding the decisions of the Siting Board. The proposed project's compliance with 980 CMR, § 12.00 is discussed in Section IV, above. The Commonwealth has not adopted any other energy policies pertaining to the Siting Board's review of generating facilities since G. L. c. 164, §69J¼ was enacted.

Siting Board.

VI. DECISION

The Siting Board's enabling statute directs the Siting Board to implement the energy policies contained in G. L. c. 164, §§ 69H-69Q to provide a reliable energy supply for the Commonwealth with a minimum impact on the environment at the lowest possible cost. G. L. c. 164, § 69H. Section 69J¼ requires that, in its consideration of a proposed generating facility, the Siting Board review inter alia the site selection process, the environmental impacts of the proposed facility, and the consistency of the plans for construction and operation of the proposed facility with the environmental policies of the Commonwealth.

In Section II, above, the Siting Board has found that the Company's description of the site selection process used is accurate and that the site selection process resulted in the selection of a site that contributes to the minimization of the environmental impacts of the proposed facility and the costs of mitigating, controlling, and reducing such impacts.

In Section III, above, the Siting Board has found that with the implementation of listed conditions relative to air quality, land use, visual, safety, and traffic impacts, the Company's plans for the construction of the proposed generating facility would minimize the environmental impacts of the proposed facility consistent with the minimization of costs associated with the mitigation, control, and reduction of the environmental impacts of the proposed facility.

In Section IV, above, the Siting Board has found that the construction of the proposed facility on balance contributes to a reliable, low-cost, diverse, regional energy supply with minimal environmental impacts.

In Section V, above, the Siting Board has found that the plans for the construction of the proposed facility are consistent with current health and environmental protection policies of the Commonwealth and with such energy policies of the Commonwealth as have been adopted by the Commonwealth for the specific purpose of guiding the decisions of the Siting Board.

Accordingly, the Siting Board finds that, upon compliance with the conditions set forth in Sections III.B, III.F, III.H, III.I, and III.K, above, and listed below, the construction and operation of the proposed facility will provide a reliable energy supply for the Commonwealth with a

minimum impact on the environment at the lowest possible cost.

Accordingly, the Siting Board APPROVES the petition of Sithe West Medway Development LLC to construct a 540 MW generating facility in Medway, Massachusetts, subject to the following conditions:

(A) In order to minimize/mitigate CO_2 emissions**,** the Siting Board directs the Company, prior to or within the first year of the proposed facility's operation, to provide it with evidence of agreements of arrangements relating to the proposed AQIP emissions reductions that establish that Sithe will make no collateral use, for purposes of providing emissions offsets for other pollutants and/or other sources, of the portion of the AQIP curtailment on which the CO_2 offsets for the proposed facility are based. Alternatively, consistent with the precedent established in Dighton Power Associates, Sithe may elect to offset one percent of its twenty-year CO_2 emissions through a monetary contribution to one or more cost-effective CO_2 offset programs to be selected in consultation with Siting Board staff. This contribution may be made as five annual installments during the first five years of facility operation totaling $238,911 or as a single first-year contribution of $194,461.

(B) In order to minimize land use impacts, the Siting Board directs the Company to provide, in consultation with the owner of the day care center, effective screening such as solid wooden fencing and an expanded vegetative border, with the wooden fence to be installed prior to construction and the additional vegetation after construction has ended.

(C) In order to minimize visual impacts, the Siting Board directs the Company to provide reasonable off-site mitigation of visual impacts, including shrubs, trees, window awnings, or other mutually-agreeable measures, that would screen views of the proposed facility at properties within one-half mile of the proposed facility, as requested by residents or appropriate municipal officials. In implementing this off-site mitigation, the Company: (1) shall provide shrub and tree plantings, window awnings, or other reasonable mitigation on private property, only with the permission of the property owner, and along public ways, only with the permission of appropriate municipal officials; (2) shall provide written notice of this requirement to appropriate municipal officials and to all potentially affected property owners, prior to the commencement of construction; (3) may limit requests for mitigation measures from local property owners and

municipal officials to a specified period ending no less than six months after initial operation of the plant; (4) shall complete all agreed-upon mitigation measures within one year after completion of construction, or if based on a request filed after commencement of construction, within one year after such request; and (5) shall be responsible for the reasonable maintenance and replacement of plantings, as necessary, to ensure that healthy plantings become established.

(D) In order to keep the Siting Board and the Town of Medway informed of the noise impacts, the Siting Board directs the Company to provide the following information to the Town of Medway Board of Selectmen, Town of Medway Board of Health, and the Siting Board, for the first three years of operation, with the first such submittal to be provided after the end of the first full operating year: (1) the total number of hours the proposed facility operated that year; (2) the number of hours that year the proposed facility operated past 6 p.m., 7 p.m., 8 p.m., 9 p.m., and 10 p.m.; (3) the number of hours per year the existing facility operated before and after 6 p.m.; and (4) the number of hours per year the existing and proposed facility operated at the same time, before and after 6 p.m.

(E) In order to minimize safety impacts, the Siting Board directs the Company to complete the construction section of its emergency response plan and to file it with the Town of Medway before construction begins.

(F) In order to minimize safety impacts, the Siting Board directs the Company to consult with the Medway volunteer fire department and appropriate officials, to determine if additional training of Medway or other fire personnel is necessary to ensure that adequately trained personnel are available to respond to reasonable contingencies, and if so, to provide funding for such training.

(G) In order to minimize traffic impacts, the Siting Board directs the Company to include a traffic delivery route requirement in its contract with its EPC contractor to use Route 109 and to restrict the contractor from using West Street for deliveries of materials and equipment (with the exception of deliveries of heavy equipment such as generators and step-up transformers).

(H) In order to minimize traffic impacts, the Siting Board directs the Company to install, prior to construction, 42-inch high concrete Jersey barriers along the south shoulder of the access road at sufficient length to prevent a vehicle traveling on the access road from crashing into the

playground area located on the north and west sides of the day care center.

(I) In order to minimize traffic impacts, the Siting Board directs the Company to coordinate with the appropriate authorities to place a uniformed traffic officer at the entrance to the property on Summer Street during the pouring of concrete as needed.

Because issues addressed in this Decision relative to this facility are subject to change over time, construction of the proposed generating facility must be commenced within three years of the date of this decision.

In addition, the Siting Board notes that the findings in this Decision are based upon the record in this case. A project proponent has an absolute obligation to construct and operate its facility in conformance with all aspects of its proposal as presented to the Siting Board. Therefore, the Siting Board requires the Company to notify the Siting Board of any changes other than minor variations to the proposal so that the Siting Board may decide whether to inquire further into a particular issue. The Company is obligated to provide the Siting Board with sufficient information on changes to the proposed project to enable the Siting Board to make these determinations.

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Denise L. Desautels
Hearing Officer

Dated this 13th day of April, 2000.