Section 1.0
Introduction

1.0 INTRODUCTION

1.1 Project Overview

Braintree Electric Light Department (BELD), a municipal utility serving the Town of Braintree, proposes to construct and operate an approximately 116 MW quick-start, simple-cycle, dual-fuel generating facility at its Potter Road facility in East Braintree. The new facility has been named the Thomas A. Watson Generating Station ("Watson Station" or the "Project") in honor of BELD's founder.

BELD's Potter Road facility has been used for power generation for nearly fifty years. The 23-acre site currently houses Potter II, an operating dual-fuel (natural gas or No. 2 distillate) combined-cycle power plant with a nominal rating of 95 MW, a 2.25 MW diesel generator set, and a 115 kV switchyard. BELD's administrative offices, the operations center, and equipment storage areas are also located at the Potter Road facility. Figure 1-1 provides an aerial view of BELD's existing Potter Road facilities.

In developing the proposed Watson Station, BELD has worked closely with Braintree's State Representatives and Senator, Town of Braintree officials, Braintree's Representative Town Meeting and the citizens of Braintree. In two separate votes, Town Meeting has given overwhelming approval to the project concept and has authorized the necessary bonding.[1] Of equal importance, the Braintree state legislative delegation sponsored a successful home rule petition which enables BELD to use an Engineering, Procurement and Construction (EPC) firm to build the new plant. This legislation was signed into law in March 2006.[2]

The Watson Station will consist of two quick-start, simple-cycle Rolls-Royce Trent 60 combustion turbines, and the necessary ancillary facilities, including interconnections of approximately 300 feet of 115 kV overhead transmission line, a short run of high pressure gas (to be installed by Algonquin Gas Transmission Company ("AGT"))[3] line and an upgrade of an existing oil pipeline that runs from the adjacent CITGO terminal to the Potter II station. The Watson Station will be rated at 116 MW and will have the ability to go from a cold start to full load in ten minutes or less on either natural gas or Ultra Low Sulfur Distillate (ULSD) oil. In its recent system planning studies, the New England Independent System Operator (ISO-NE) has identified a need for several hundred MWs of Future Locational Forward Reserve Market Requirements by 2010, some of which needs to be met by quick-start facilities.[4]

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1 Braintree Town Meeting votes were held on October 24, 2005, (Special Town Meeting) and on May 9, 2006 (Annual Town Meeting).

2 St. 2006, c. 43.

3 A Unit of Spectra Energy.

4 ISO New England 2006 Regional System Plan, October 26, 2006, page 6 and page 11.

Figure 1-1
Project Site Area

Thomas A. Watson Generating Station
Braintree, Massachusetts

Source: Windows Live Local, 2006

Epsilon ASSOCIATES INC.

1.2 Regulatory Summary

The air related regulatory requirements applicable to the proposed facility include:

U.S. Environmental Protection Agency (EPA) New Source Performance Standards (NSPS) (40 CFR 60)

New Source Review (NSR) which includes a demonstration of compliance with National Ambient Air Quality Standards (NAAQS) (40 CFR 51)

Prevention of Significant Deterioration (PSD) Regulations including Best Available Control Technology (BACT) (40 CFR 52)

Clean Air Act Amendments of 1990 (Public Law 101-549)

Massachusetts Department of Environmental Protection (DEP) Non-Major Comprehensive Plan Approval (310 CMR 7.02 - BWP AQ 02)

DEP Emission Limits (310 CMR 7.02, 7.09)

DEP Requirements for BACT, (310 CMR 7.02)

DEP Air Toxics Policy (August, 1989 – Air Toxics Implementation Update and Revised Air Guidelines, December, 1995)

DEP Noise Control Regulations and Policy (310 CMR 7.10 and DEP Noise Policy 90-001)

1.3 Outline of Application

The remainder of this application is organized in six additional sections.

Section 2 provides a detailed description and estimate of emissions for the proposed Watson Station.

Section 3 describes the Federal, state and local air quality regulations applicable to the project.

Section 4 is the BACT/Lowest Achievable Emission Rate (LAER) Analysis for the project.

Section 5 describes the project site characteristics including background meteorological data and the good engineering practice (GEP) stack height analysis.

Section 6 describes the air quality modeling methodology and results for compliance demonstration.

Section 7 describes the sound level assessment, including existing conditions and future operational sound levels.

Section 8 contains proposed permit conditions.

The Appendices include the permit forms, vendor information, supporting calculations, RACT/BACT/LAER Clearinghouse Determinations, noise data and air quality modeling inputs.