Commonwealth of Massachusetts
Executive Office of Environmental Affairs ■ MEPA Office

ENF Environmental Notification Form

For Office Use Only
Executive Office of Environmental Affairs
EOEA No.: 14064
MEPA Analyst: Bill Gage
Phone: 617-626-1025

The information requested on this form must be completed to begin MEPA Review in accordance with the provisions of the Massachusetts Environmental Policy Act, 301 CMR 11.00.

Project Name: Test Cell No. 2 and 5 Modification		
Street: 1000 Western Ave		
Municipality: Lynn	Watershed: North Coastal	
Universal Tranverse Mercator Coordinates: 4,701,656mN; 337,758mE; 19N	Latitude: 42° 27' 08" N Longitude: 70° 58' 23" W	
Estimated commencement date: Feb. 2008	Estimated completion date: Feb. 2009	
Approximate cost: $15 million	Status of project design: 10 % complete	
Proponent: General Electric Company		
Street: 1000 Western Ave		
Municipality: Lynn	State: MA	Zip Code: 01910
Name of Contact Person From Whom Copies of this ENF May Be Obtained: Amy Wong		
Firm/Agency: General Electric Company	Street: 1000 Western Ave MD164X9	
Municipality: Lynn	State: MA	Zip Code: 01910
Phone: 781-594-2382	Fax: 781-594-6284	E-mail: amy.wong1@ge.com

Does this project meet or exceed a mandatory EIR threshold (see 301 CMR 11.03)?
☐Yes ☒No

Has this project been filed with MEPA before?
☐Yes (EOEA No._____) ☒No

Has any project on this site been filed with MEPA before?
☒Yes (EOEA No. 9068) ☐No

Is this an Expanded ENF (see 301 CMR 11.05(7)) requesting:

a Single EIR? (see 301 CMR 11.06(8))	☐Yes	☒No
a Special Review Procedure? (see 301CMR 11.09)	☐Yes	☒No
a Waiver of mandatory EIR? (see 301 CMR 11.11)	☐Yes	☒No
a Phase I Waiver? (see 301 CMR 11.11)	☐Yes	☒No

Identify any financial assistance or land transfer from an agency of the Commonwealth, including the agency name and the amount of funding or land area (in acres): None

Are you requesting coordinated review with any other federal, state, regional, or local agency?
☐Yes (Specify_____) ☒No

List Local or Federal Permits and Approvals:
City of Lynn Building Permits (various) (Local)
Prevention of Significant Deterioration (PSD) Air Permit (Federal)

Which ENF or EIR review threshold(s) does the project meet or exceed (see 301 CMR 11.03):

☐ Land	☐ Rare Species	☐ Wetlands, Waterways, & Tidelands
☐ Water	☐ Wastewater	☐ Transportation
☐ Energy	☒ Air	☐ Solid & Hazardous Waste
☐ ACEC	☐ Regulations	☐ Historical & Archaeological Resources

Summary of Project Size & Environmental Impacts	Existing	Change	Total
LAND			
Total site acreage	7.0		
New acres of land altered		0	
Acres of impervious area	7.0	0	7.0
Square feet of new bordering vegetated wetlands alteration		0	
Square feet of new other wetland alteration		0	
Acres of new non-water dependent use of tidelands or waterways		0	
STRUCTURES			
Gross square footage	156,900	0	156,900
Number of housing units	None	None	None
Maximum height (in feet)	36 ft (Cell 2) 32 ft (Cell 5)	0 ft (Cell 2) 0-3 ft (Cell 5)	36 ft (Cell 2) 32-35 ft (Cell 5)
TRANSPORTATION			
Vehicle trips per day	Not applicable	Not applicable	Not applicable
Parking spaces	Not applicable	Not applicable	Not applicable
WATER/WASTEWATER			
Gallons/day (GPD) of water use	0	Negligible	Negligible
GPD water withdrawal	Not applicable	Not applicable	Not applicable
GPD wastewater generation/ treatment	Not applicable	Not applicable	Not applicable
Length of water/sewer mains (in miles)	Not applicable	Not applicable	Not applicable

State Permits & Approvals

- ☐ Order of Conditions
- ☐ Superseding Order of Conditions
- ☐ Chapter 91 License
- ☐ 401 Water Quality Certification
- ☐ MHD or MDC Access Permit
- ☐ Water Management Act Permit
- ☐ New Source Approval
- ☐ DEP or MWRA Sewer Connection/ Extension Permit
- ☒ Other Permits (*including Legislative Approvals*) – Specify: Massachusetts Major Comprehensive Plan Approval (CPA)/Non-attainment New Source Review (NSR) Permit

CONSERVATION LAND: Will the project involve the conversion of public parkland or other Article 97 public natural resources to any purpose not in accordance with Article 97?

☐Yes (Specify_____) ☒No

Will it involve the release of any conservation restriction, preservation restriction, agricultural preservation restriction, or watershed preservation restriction?

☐Yes (Specify_____) ☒No

RARE SPECIES: Does the project site include Estimated Habitat of Rare Species, Vernal Pools, Priority Sites of Rare Species, or Exemplary Natural Communities?

☐Yes (Specify_____) ☒No

HISTORICAL /ARCHAEOLOGICAL RESOURCES: Does the project site include any structure, site or district listed in the State Register of Historic Place or the inventory of Historic and Archaeological Assets of the Commonwealth?

☐Yes (Specify_____) ☒No

If yes, does the project involve any demolition or destruction of any listed or inventoried historic or archaeological resources?

☐Yes (Specify_____) ☐No

AREAS OF CRITICAL ENVIRONMENTAL CONCERN: Is the project in or adjacent to an Area of Critical Environmental Concern?

☐Yes (Specify_____) ☒No

PROJECT DESCRIPTION: The project description should include **(a)** a description of the project site, **(b)** a description of both on-site and off-site alternatives and the impacts associated with each alternative, and **(c)** potential on-site and off-site mitigation measures for each alternative (*You may attach one additional page, if necessary.*)

Facility and Project Description

The General Electric Aviation River Works Facility is an industrial complex located in the City of Lynn, Massachusetts, at 1000 Western Avenue. The complex consists of 3.4 million square feet of buildings on 221 acres. GE Aviation is a world leader in the production of jet engines for commercial and military use, and the River Works has been the site of jet engine manufacturing and testing since the 1940s.

GE Aviation was recently awarded a major, multi-year contract by Sikorsky Inc. to provide engines for the new CH53K, the U.S. Marine Corps Heavy Lift Replacement Helicopter. The CH53K is scheduled to achieve its Initial Operating Capability (IOC) in 2015. The GE38-1B engine is the 8000 shaft horsepower (shp) turbo-shaft/turboprop (TS/TP) engine slated to power the CH53K.

The Aviation River Works Facility currently has a total of 17 permitted test cells available for various modes of operation for engine and component development, testing and production. An engine test cell essentially is a "room" consisting of a frame or cartridge into which an engine or component is mounted and connected to an array of links including exhaust stack, fuel, and extensive mechanical, instrumentation and controls. In the cell, the engine is run under a range of operating conditions simulating the engine's mission while engineers and operators observe and control the test run from a nearby control room.

In order to meet the demands of the GE38 turbo-shaft engine development testing program, GE Aviation will need to modify existing Test Cells 2 and 5, both of which are located within Building 29, a 156,900 square-foot facility which is near the northwest corner of the property adjacent to the Saugus River and Rte. 107. Test Cells 2 and 5 were originally constructed in the mid 1950s, but due to changing product mixes, have seen minimal use in the last 10 years. Therefore, the modifications to Cells 2 and 5 and the intended future use of these cells for the GE38-1B engine development program will constitute an increase over past actual emissions that triggers New Source Review (air quality) permitting.

The test cell modifications will largely be internal to Building 29, with the exception of a replacement stack for Test Cell 5, replacement air inlet ductwork for Test Cell 2 and installation of hush houses for both cells to control noise. The principal changes will include new digital data management systems, engine mounting arrangements and power absorption facilities. At this point in design, GE Aviation is considering two different power absorption facilities: one using air as the absorption media, the other using water. The hush house will be installed only for the air option. For the water option, a closed loop cooling system will be used. The closed loop system will employ a small cooling tower and will have minimal blowdown and minimal supplemental water requirements. The blowdown will be recirculated back into the system and reused, so there will be no wastewater stream.

During engine qualification testing, the new GE38 will burn JP5 jet fuel under a range of operating conditions simulating the extremes of the engine's mission. Pollutant emission estimation rates for the two test cells undergoing modification are presented in the Air Quality section of this ENF.

The annual potential emissions have assumed operation for a total of 3000 hours per year per test cell; this is a standard number of operating hours used in worst-case test cell emissions calculations across the GE Aviation business. Due to the "batch" nature of testing and long periods of downtime while the cell must undergo extensive reconfigurations to accommodate engine changeovers, test cells are normally used far less than 3000 hours per year. Annual emission rates assume the operation of the engine under a weighted average testing profile estimated from the testing of similar engine components. Hourly emission rates assume both test cells operating simultaneously with the engines operating at a "worst case" operating level of maximum power.

On- and Off-site Alternatives

GE Aviation management reviewed its assembly and test capacities worldwide and determined that the highly-trained workforce and world-class facilities at the River Works Facility were best suited for the GE38-1B engine development program. The River Works Facility is a world leader in the design, development and production of TS/TP engines and currently produces the T700/CT7 engine for the Blackhawk and Apache helicopters in the 3000 shp range. Moreover, the GE38-1B is a derivative of the GE738 engine that was previously designed and developed at the River Works Facility. From a corporate strategic perspective, the River Works Facility is the best and the preferred site to develop, test and produce the GE38 engine.

Within the River Works Facility itself, various combinations of the existing 17 test cells were considered for the GE38 program. For a number of reasons – maintenance of existing engine programs, capacity, capability, efficiency, optimization, among others -- GE Aviation management determined that a rehabilitation/upgrade of Test Cells 2 and 5 constitutes the best combination of the 17 test cells for this purpose. Given that there are few environmental impacts associated with this project, and those of air and noise could be addressed in the rehabilitation of the test cells, environmental considerations were not major factors in the siting of the final location of the GE38 engine development/testing program.

On- and Off-site Mitigation

Test Cells 2 and 5 will be upgraded with state-of-the-art monitoring and instrumentation. GE acoustics engineers will determine if the existing sound insulation within Test Cells 2 and 5 will be sufficient to meet all applicable noise ordinances; where such insulation is deemed insufficient, additional insulation and/or other noise-reducing/muffling measures will be installed. Other than minor air and noise impacts (to be mitigated), there are no other environmental impacts associated with this project.