



Global Risk Advisors

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Mr. Ethan Parsons  
Planning Director  
Town of Ipswich  
25 Green Street  
Ipswich, MA 01938  
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**Subject: Initial Review Findings for New England Biolabs Special Permit Application for the Storage and Use of Toxic and Hazardous Materials**

Dear Mr. Parsons:

At the request of the Town of Ipswich Planning Board (Ipswich), Chubb Global Risk Advisors (CGRA) completed a review of the Special Permit Application that New England Biolabs submitted to the Planning Board seeking approval to store and use toxic and hazardous materials at 240 County Road in Ipswich, Massachusetts. CGRA reviewed and compared the permit application to the terms and intent of Section IX, Subsection N of the Ipswich Protective Zoning Bylaw.

**Summary of Findings and Recommendations**

CGRA has prepared the following observations and recommendations for consideration and use by the Ipswich Planning Board.

1. The chemical inventory listed in the permit application appears to under report and downplay the amount and volume of chemistry likely to be stored on site. In its permit application, New England Biolabs (NEB) proposed the following inventory:

**Based on the activities listed above, the following are a list of commonly used hazardous materials and typical quantities on hand:**

- Acids & Bases (acetic acid (20 gal), sulfuric acid (20 gal), hydrochloric acid (10 gal) sodium hydroxide (20 gal))
- Alcohols (ethanol, isopropanol, methanol (30 gal each))
- Mass Spec Mobile Phase (acetonitrile (20 gal))
- DNA Extraction (phenol, chloroform (5 gal each))
- Several research chemicals in gram quantities only

The inventory listed in the permit application does not appear to accurately reflect the volume of chemistry stored and used on site to support the research and production activities outlined in the air permit issued by the Massachusetts Department of Environmental Protection (DEP) to NEB for this location. The DEP permit identifies the existing facility as being composed of 150,000 square

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feet (sf) including 28 research labs, 18 development labs, 4 production suites, 24 product formulation labs, 4 quality control labs, and 3 packaging suites. The inventory provided by NEB does not list: any compressed gases stored on site; hazardous materials utilized in the wastewater treatment plant; fuels for the emergency generator; or facility maintenance chemicals. In addition, the number, type, volume or hazard associated with “research” chemicals has not been summarized.

Recommendation: NEB should provide a detailed chemical inventory of all chemicals stored on site. Note: NEB is required by OSHA under the Hazard Communication Standard to maintain an accurate and complete inventory of the chemicals stored/used on site, and to assess the hazard of these materials. The inventory should list the following: chemical name, hazard(s) associated with the chemical, size of the chemical container, total amount stored on site, storage location for the material, and special safety/response concerns. The inventory spreadsheet should include searchable filters that will enable the Fire Department to search by chemical name, hazard, or storage location. NEB should provide an electronic copy of the inventory in MS Excel format to maximize the usefulness of this information by the Fire Department.

2. NEB should provide a detailed summary that outlines how the chemical inventory will expand or change with the proposed 100,000 sf expansion of the research/production facility.
3. NEB should provide a copy of the last Tier II report and/or Chemical Facility Anti-Terrorism Standard (CFATS) Topscreen submitted for the facility.

Recommendation: The Town should review and compare these reports to the updated chemical inventory provided by NEB, to ensure that all high-hazard and reportable materials have been properly reported as required by the applicable federal standards.

4. NEB should provide a current inventory of all processes and vessels subject to the Massachusetts Hazardous Materials Processing standard pursuant to the Massachusetts Fire Code 527 CMR 1 Chapter 60.

Recommendation: This information should be reviewed and evaluated to ensure that all regulated processes have been identified, evaluated and properly permitted or licensed in accordance with the regulatory classification of each regulated vessel and process.

5. NEB has requested permit waivers to not provide the Planning Board with: 1) environmental reports; 2) a hazardous materials management plan; and 3) groundwater certification for a private well operated by NEB on the property.

CGRA recommends that Ipswich seek or require the submittal of copies of all correspondence between NEB and state/federal environmental and health and safety agencies for the past 5 years. This would enable the Town to note the frequency of agency review of the facility, and to determine if any compliance issues have occurred during that time.

The special permit NEB is seeking relates specifically to hazardous materials management – it is unclear why NEB would not want to provide Ipswich with a copy of NEB’s hazardous materials management plan. The intent of the permit is to ensure that the hazardous materials have been properly identified and managed, and that this information is effectively communicated to site employees, local emergency responders, and municipal officials. CGRA recommends that the Town seek and review a copy of the NEB hazardous materials management plan.

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The intent of Section IX, Subsection N of the Protective Zoning Bylaw is to support the protection of local groundwater quality. The permit application indicates that NEB operates a private well on site. The use of the well is not described.

Recommendation: Ipswich should seek a completed copy of the groundwater certification form and water quality test results for the past 3 years. NEB should provide information that answers the following: How is the private well used? What is the rate of groundwater withdrawal? Is the well cross-connected to any buildings or processes on site. What control measures have been implemented to prevent a cross-connection between the private well and the public water supply? What is the construction of the well? Is the withdrawal subject to state regulation, and has NEB complied with these requirements?

CGRA recommends that the Planning Board not approve the waivers requested by NEB. These data are needed to verify compliance with the intent of the zoning bylaw.

6. NEB should provide a detailed analysis prepared and signed by a Massachusetts Professional Engineer that outlines how the proposed 100,000 sf expansion will impact future water use/withdrawal by the facility. In addition, the analysis should review and describe how the expanded water use will impact the site wastewater treatment system. Can the existing treatment system manage the increase, or will the treatment system need to be expanded?
7. Depending on the rate and volume of withdrawal from the private well located on site, it may be advisable to request NEB to provide a geotechnical assessment that estimates the recharge area for the private well utilized by NEB. This may be needed to determine if the recharge area for the well at NEB overlaps with any existing or pending municipal recharge areas.
8. NEB uses radioactive materials on site. Currently, there are few disposal options for radioactive wastes. Many facilities in Massachusetts store radioactive waste on site to decay over time. This is allowed and supported by the Massachusetts Department of Public Health (MADPH) Radiation Control Program.

Recommendation: NEB should confirm how it is managing its radioactive waste. If NEB is storing waste on site for decay, then NEB should provide information that describes where and how this waste is being stored/managed. NEB should describe the rate and volume of waste generation, the maximum amount to be stored on site, safety controls utilized to prevent cross-contamination or to alert emergency responders of a potential breach of containment. Note: The application package provided by NEB included a copy of the most recent inspection report prepared by the MADPH Radiation Control Program. MADPH last inspected the facility in November 2015.

9. The Planning Board should require NEB to provide a copy of its hazardous, radioactive and biological waste disposal records for the past 2 years for review. This will enable the Town to review and evaluate the rate, volume and type of waste generated by site operations, and how these items are being managed.
10. The Planning Board should direct NEB to provide a figure(s) that identifies the following: where all hazardous materials/wastes are stored; location of utility shut offs; spill supplies; ASTs; location of process safety controls, alarms/emergency signalization or other critical hazards. The

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figure(s) should be provided in both hard copy and electronic formats that can be used by the Fire Department.

11. NEB provided wastewater sampling results with its permit application. The Planning Board should seek a copy of the current NEB wastewater treatment and discharge permit so that the Town can review and compare the sampling results to the permit sampling requirements and discharge limits. It is not possible to determine if the discharge meets the applicable permit limits without this information.
12. The Planning Board should consider requesting that NEB draft a written Pre-Plan for the facility. The intent of the Pre-Plan is to help identify critical conditions to avoid and key response measures to be implemented in the event of a fire, chemical spill, or release of radioactive materials. Pre-Plans often identify the three highest hazard scenarios related to on-site chemical processes that a facility should avoid to prevent a fire/explosion or atmospheric release. The Pre-Planning process is an opportunity to conduct realistic hazard analysis during a non-emergency, and to potentially initiate hazard mitigation measures to prevent or lessen the impact of a potential event. Pre-Planning is a proactive hazard prevention strategy the Town should promote. Once NEB has prepared an initial Pre-Plan, it should be reviewed with the Fire Department and the Local Emergency Planning Committee to ensure the information is objectively reviewed and amended as needed, and to support the sharing of critical information with local emergency responders.
13. CGRA recommends that the entrances to all bulk chemical or hazardous/radioactive waste storage areas should be labeled to alert emergency responders to the presence of hazardous materials. NEB should work with the Fire Department to develop a standard labeling convention to use, based on either the OSHA Globally Harmonized System or NFPA 704. CGRA suggests that each space be labeled to identify the highest hazard material stored in the space. Where appropriate, the label may need to be expanded if high-hazard or reactive materials (e.g., water reactive, pyrophoric materials or toxic gases) are present. The intent is to alert responders to site hazards.

Chubb Global Risk Advisors appreciates the opportunity to support the Town of Ipswich Planning Board in reviewing the Special Permit Application submitted by New England Biolabs. Should you have any questions about the comments or recommendations provided, please do not hesitate to contact me at [Todd.Dresser@Chubb.Com](mailto:Todd.Dresser@Chubb.Com), or 603.921.0193.

Sincerely,

*Todd Dresser*

Todd Dresser, CHMM, CEA  
Practice Leader  
Chubb Global Risk Advisors

Reviewed by:

*James D. Jones*

James D. Jones, MS, CHMM  
Vice President  
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