

CHARLES D. BAKER
GOVERNOR

KARYN E. POLITO
LT. GOVERNOR

TERRENCE M. REIDY
ACTING SECRETARY

The Commonwealth of Massachusetts
Executive Office of Public Safety and Security
Fire Prevention Regulations Appeals Board
P.O. Box 1025 ~ State Road

Stow, Massachusetts 01775
(978) 567-3181 Fax: (978) 567-3121

ANTHONY P. CAPUTO
CHAIRMAN

Docket # 2021-04
194-196 West Central Street
Natick, Massachusetts

FIRE PREVENTION REGULATIONS APPEALS BOARD

A) Statutory and Regulatory Framework

This matter is an administrative appeal filed in accordance with Massachusetts General Laws Chapter 22D, section 5. The Appellant is seeking the Board of Fire Prevention Regulation's review of a decision of the Massachusetts State Fire Marshal's Office to deny the Appellant's application to change the stored product in an Aboveground Storage Tank from # 2 fuel oil to a dual fuel use (biofuel or #2 fuel oil) in accordance with 527 C.M.R. 1.00, NFPA 1, Paragraph 66.22.4.2 and Table 66.22.4.2.1 at a property located at 194-196 West Central Street, Natick, Massachusetts. The Appellant is Coan, Inc. (hereinafter referred to as the Appellant).

B) Procedural History

By notice dated June 23, 2021 and received by the Appellant on or about that date, H. Jacob Nunnemacher of the Massachusetts State Fire Marshal's Office provided a written determination regarding Appellant's Application to change the stored product in an aboveground storage tank from # 2 fuel oil to a dual fuel use (biofuel or #2 fuel oil) at 194-196 West Central Street, Natick, Massachusetts. The letter notified the Appellant "since the required minimum distance is 3'8" and the provided distance is only 3' (before the addition of the tank's insulation), your request to change the tank contents to a dual fuel use (biofuel or # 2 fuel oil) is unfortunately DENIED."

On August 5, 2021, the Appellant filed a timely appeal of the determination of Massachusetts State Fire Marshal. The Board held a video conference hearing on this matter on August 26, 2021.

Appearing on behalf of the Appellant was: Kevin Coan, Owner, Coan Oil and Robert P. Coluccio, P.E., Vice President of Engineer, Web Engineering Associates, Inc. Appearing on behalf of the Massachusetts State Fire Marshal was H. Jacob Nunnemacher.

Present for the Board were: John Cox, Presiding Panel Member; Dr. Paul Scheiner; and Alfonso Ibarreta. Glenn M. Rooney, Esq., was the Attorney for the Board.

C) Issue(s) to be Decided

Whether the Board should reverse, affirm, or modify the Massachusetts State Fire Marshal's denial of Appellant's application for a permit to change the stored product in an Aboveground Storage Tank from # 2 fuel oil to a dual fuel use (biofuel or #2 fuel oil) at 194-196 West Central Street, Natick, Massachusetts.

D) Evidence Received

1. Application for Appeal by Appellant
2. Statement in Support of Appeal with attached Appendices (dated 8/3/2021)
- 2A. State Fire Marshal Denial Letter (dated 6/23/2021)
- 2B. Approved Site Plan and Mechanical Layout
- 2C. 1996 Natick Fire Department Approval Letter (Subject: Coan, Inc., Natick, MA – Bulk Fuel Oil Storage Facility (dated 4/23/1996) and Correspondence from Natick Fire Department (Subject: Bulk Distillate Oil Storage Facility Upgrade) (dated 2/22/1996)
3. MSDS Sheet from Newport Biodiesel (B99.9) SDS (dated 1/1/2015)
4. Notice of Hearing to Appellant (dated 8/12/2021)
5. Notice of Hearing to Mass. Office of the State Fire Marshal (dated 8/12/2021)
6. Memorandum regarding Remote Hearing Procedures (dated 5/7/2020)
7. Copy of Guidance Document that accompanies Hearing Notices (dated 5/1/2020)
8. Additional Materials submitted by the Appellant
- 8A. Photos of tanks located at 194-196 West Central Street, Natick
- 8B. Copy of 527 CMR 9.00 (dated 10/6/1995)
- 8C. Department of Public Safety – Aboveground Storage Tank Construction Permit Application (dated 4/29/1996)
- 8D. Fire Prevention and Control Risk Assessment Report – Bulk Fuel Oil Storage Facility (dated 4/24/1996)
- 8E. Copy of NFPA 30 Handbook (Undated)
- 8F. Copy of NFPA 30 (1996 Edition)
- 8G. Copy of 2008 Massachusetts State Building Code 780 CMR (7th Edition – effective 9/1/2008)
- 8H. Application for Construction and Installation – Coan, Inc. (undated)
9. Submission of the State Fire Marshal's Office
- 9A. Application for Construction and Installation – Coan, Inc. (dated 2/16/2021)
- 9B. Coan Submittal Letter (dated 1/6/2020)
- 9C. Coan Submittal Drawing #1
- 9D. Coan Submittal Drawing #2
- 9E. State Fire Marshal Denial Letter for Change of Use (dated 6/23/2021)
- 9F. 527 CMR 1.00, 66.21.9 (2015 Edition)
- 9G. 527 CMR 1.00, 66.22.4.2 (2015 Edition)
- 9H. 527 CMR 1.00, Table 66.22.4.2.1 (2015 Edition)
- 9I. 527 CMR 9.00 – Tanks and Containers (dated 12/16/1994)
- 9J. Natick Fire Department Approval Letter (Subject: Coan, Inc., Natick, MA – Bulk Fuel Oil Storage Facility (dated 4/23/1996)
- 9K. Coan Oil Corp., Fire Prevention and Control Risk Assessment Report – Bulk Fuel Oil Storage Facility (dated 4/24/1996)
- 9L. Mass. State Building Code - 780 CMR (5th Ed) 1003 - 1016 Fire Protection Systems
- 9M. Google Earth Photo of Coan Oil - March 1995
- 9N. Google Earth Photo of Coan Oil - December 2001
- 9O. 527 CMR 1.00, 66.21 to 66.25
10. E-mail from H. Jacob Nunnemacher, Office of the State Fire Marshal to the Fire Prevention Regulations Appeals Board (2 pages) (dated 8/20/2021)

E) Findings of Fact

1. The Appellant sought this Board's review of the decision of H. Jacob Nunnemacher of the Massachusetts State Fire Marshal's Office pursuant to the provisions of M.G.L. c. 22D, s. 5. Mr. Nunnemacher's letter, dated June 23, 2021 and received by Appellant on or about that date, provided a written determination regarding Appellant's Application to change the stored product in an aboveground storage tank from # 2 fuel oil to a dual fuel use (biofuel or #2 fuel oil) at 194-196 West Central Street, Natick, Massachusetts.
2. That letter notified Appellant of the "since the required minimum distance is 3'8" and the provided distance is only 3' (before the addition of the tank's insulation), your request to change the tank contents to a dual fuel use (biofuel or # 2 fuel oil) is unfortunately DENIED." Pursuant to 527 C.M.R. 1.00: 12.2.2, "If an application for a permit is rejected by the AHJ, a written notification shall be sent to the applicant as to the reasons for such rejection." The sole reason for rejection provided by the Massachusetts State Fire Marshal's Office was the required distances between the tanks did not meet the minimum prescribed distance(s) as provided for in 527 CMR 1.00, 66.22.4.2 and 527 CMR 1.00: Table 66.22.4.2.1.
3. The Appellant, Coan, Inc., has owned and operated its business located at 194-196 West Central Street, Natick, Massachusetts since the 1940s and currently has storage for 245,000 gallons of product. In 1996, out of a concern for impending changes in environmental regulations, the Appellant upgraded their entire facility consisting of a complete replacement of an array of mounded underground and aboveground tanks with new aboveground storage tanks, which are contained in a concrete containment dike and covered by a weather protection canopy.
4. According to the Appellant's engineer, the 1996 tank replacement was subject to the requirements of 527 CMR 9.00, the regulations in effect at that time. That regulation allowed for reduced tank spacing for replacement projects, subject to the approval of the local fire department and a determination that the reduced spacing did not present a fire hazard. At the time of the replacement in 1996, the Appellant received the necessary approvals for the reduced spacing from the Natick Fire Department.
5. In early 2021, the Appellant filed an application with the Massachusetts Office of the State Fire Marshal for permission to convert one of their tanks from # 2 fuel oil to a dual fuel use (biofuel or #2 fuel oil). As stated in paragraph 1 above, the application was denied "since the required minimum distance is 3'8" and the provided distance is only 3' (before the addition of the tank's insulation)."
6. The Appellant's engineer testified that the change of use from #2 fuel oil to biofuel would be safer, as the flashpoint for #2 fuel oil is 140 degrees vs. 266 degrees for biofuel and according to the National Fire Protection Agency, biofuel, considered a Class IIIB liquid "are rarely involved in fire" (See Exhibit 8E). The engineer further testified that the change in use will not impact the original determination, as the original spacing presents no fire impact and that the tanks currently meet the specifications of NFPA 30 with minimum spacing requirements for maintenance, painting, and access for suppression of fires, if needed. He further stated that the tank to be converted, was chosen specifically because it could be isolated away from the manifold and did not change the containment capacity of the dike.
7. The Appellant's engineer further indicated that biofuel must be maintained at room temperature and that a bayonet heater would be used to maintain that temperature, stating that it would have no direct contact with fluid. The aim would be to keep the product at 70-80 degrees and that it would have a runaway temperature guard on the heater.

8. When asked by Board members about the presence of insulation on the tanks, the Appellant's engineer could not provide exact details but testified that the proposed insulation thickness would be 2 inches, which is typical for a horizontal biofuel tank.
9. In support of the denial of the application for change in product, H. Jacob Nunnemacher, Fire Protection Engineer for the Massachusetts State Fire Marshal's Office, testified that the application had to be denied based upon the requirements in the State Fire Code that the distance between tanks needed to be 3 feet, 8 inches. The current distance between the tanks is only 3 feet.
10. Mr. Nunnemacher testified that the State Fire Code requires an evaluation to be done if the contents of tank are going to be changed and that while he that he agreed with the Appellant's engineer that biofuel is a safer product, the distance requirements in the State Fire Code still exist and that the Office was unwilling to grant the permit by an equivalency, alteration, or modification.
11. Mr. Nunnemacher stated that the Massachusetts State Fire Marshal's Office was not provided information on the insulation for the tanks, which would drop the distance on one side of the tank to 2 feet, 10 inches when the insulation is factored in.

F) Ultimate Findings of Fact and Conclusions of Law

1. 527 CMR 1.00, NFPA 1, Paragraph 66.22.4.2 and Table 66.22.4.2.1:

66.22.4.2 Shell-to-Shell Spacing of Adjacent Aboveground Storage Tanks.

66.22.4.2.1* Tanks storing Class I, Class II, or Class IIIA stable liquids shall be separated by the distances given in Table 66.22.4.2.1. [30:22.4.2.1]

Table 66.22.4.2.1 Minimum Shell-to-Shell Spacing of Aboveground Storage Tanks

Tank Diameter	Floating Roof Tanks	Fixed or Horizontal Tanks	
		Class I or II Liquids	Class IIIA Liquids
All tanks not over 150 ft (45 m) in diameter	$\frac{1}{6} \times$ sum of adjacent tank diameters but not less than 3 ft (0.9 m)	$\frac{1}{6} \times$ sum of adjacent tank diameters but not less than 3 ft (0.9 m)	$\frac{1}{6} \times$ sum of adjacent tank diameters but not less than 3 ft (0.9 m)
Tanks larger than 150 ft (45 m) in diameter:			
If remote impounding is provided in accordance with 66.22.11.1	$\frac{1}{6} \times$ sum of adjacent tank diameters	$\frac{1}{4} \times$ sum of adjacent tank diameters	$\frac{1}{6} \times$ sum of adjacent tank diameters
If open diking is provided in accordance with 66.22.11.2	$\frac{1}{4} \times$ sum of adjacent tank diameters	$\frac{1}{3} \times$ sum of adjacent tank diameters	$\frac{1}{4} \times$ sum of adjacent tank diameters

Note: The "sum of adjacent tank diameters" means the sum of the diameters of each pair of tanks that are adjacent to each other. See also A.66.22.4.2.1. [30: Table 22.4.2.1]

2. The Board finds that the spacing requirements of 527 CMR 1.00, NFPA 1, Paragraph 66.22.4.2 and Table 66.22.4.2.1 apply, given the requested change of use for the subject above ground storage tank.
3. The subject above ground storage tank fails to meet the minimum spacing requirements of 3'8" as set forth in 527 CMR 1.00, NFPA 1, Paragraph 66.22.4.2 and Table 66.22.4.2.1.
4. The Appellant did not offer a sufficient factual or legal basis that would support a variance or waiver of the spacing requirements set forth in 527 CMR 1.00, NFPA 1, Paragraph 66.22.4.2 and Table 66.22.4.2.1

G) Decision and Order

Based upon the evidence received and testimony presented, the Board hereby **affirms** the Order of Office of the State Fire Marshal denying the application to change the stored product in tanks located at the Coan, Inc. facility located at 194-196 West Central Street, Natick, MA.

H) Vote of the Board

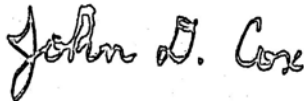
John Cox, Presiding Panel Member
Dr. Paul Scheiner
Alfonso Ibarreta

In Favor
In Favor
Opposed

I) Right of Appeal

You are hereby advised you have the right, pursuant to section 14 of chapter 30A of the General Laws, to appeal this decision, in whole or in part, within thirty (30) days from the date of receipt of this order.

SO ORDERED,



John D. Cox, Presiding Panel Member
Fire Prevention Regulations Appeals Board

Dated: September 9, 2021

A COPY OF THIS DECISION AND ORDER WAS FORWARDED BY E-MAIL AND CERTIFIED MAIL, RETURN RECEIPT REQUESTED TO:

Kevin B. Coan
Coan, Inc.
194-196 West Central Street
Natick, MA 01760
KCoan@coanoil.com

Robert Coluccio, P.E.
Web Engineering Associates, Inc.
111 Summer Street
Scituate, MA 02066
RPColuccio@aol.com

H. Jacob Nunnemacher
Office of the State Fire Marshal
P.O. Box 1025 – State Road
Stow, Massachusetts 01775
jacob.nunnemacher@mass.gov