Oregon
Tina Kotek, Governor

Department of Environmental Quality
Agency Headquarters
700 NE Multnomah Street, Suite 600
Portland, OR 97232
(503) 229-5696
FAX (503) 229-6124
TTY 711

January 17, 2025
By email to
Mark.Soleta@alaskaair.com

To: PDX Fuel Company, LLC
From: Fuel Tank Seismic Stability Program
Subject: PDX Fuel, LLC Seismic Risk Mitigation Implementation Plan Phase I Fuel Facility approval

Dear Mr. Soleta,

Background

The Fuel Tank Seismic Stability program regulates the large-capacity oil and liquid fuel storage and distribution facilities in Lane, Multnomah and Columbia counties. The program requires the facilities to assess their vulnerability to earthquakes and develop a plan to minimize risk of damage from earthquakes and secondary effects to employees, surrounding communities and the environment. PDX Fuel Company, LLC was the first facility to submit a Seismic Vulnerability Assessment and Risk Mitigation Implementation Plan. DEQ engaged Degenkolb Engineers, New Albion Geotechnical, Portland State University's Institute for Sustainable Solutions and Department of Civil Engineering, and Oregon Department of Geology and Mineral Industries to conduct the reviews. DEQ received ten comments during the 45-day public comment period and the November 25, 2024, public hearing. Most commenters encouraged DEQ to approve PDX Fuel's RMIP for the construction of new tanks. Some commenters expressed concerns about the hydrant fuel distribution system and the emergency response water supply source. The facility assessment related to the hydrant system is the subject of an ongoing conversation with PDX Fuel and will be submitted to DEQ and reviewed separately and is not the subject of this approval.

Project Description

The PDX Fuel Facility is owned by Portland International Airport and leased to and operated by PDX Fuel Company, LLC. PDX Fuel Facility is both a bulk oil and liquid fuel terminal. The PDX Fuel Facility receives jet fuel via pipeline from Kinder Morgan that is filtered at the Hydrant Pump Pad and stored in a series of above-ground storage tanks for later transmission to the PDX airport via the underground hydrant system.

The PDX Fuel Facility provides reliable jet fuel to PDX airport and must remain operational during construction. The plan indicates that most of the existing fuel facility infrastructure will be removed after new facility infrastructure is installed in approximately four years.

Risk Mitigation Implementation Plan Key Points

a. The existing tank 1 and 2 construction and foundation are not sufficiently designed to prevent a spill that is less than the Maximum Allowable Uncontained Spill resulting from a design-level earthquake. The differential and lateral movement placed on the existing tanks will likely compromise the tank nozzles resulting in a release greater than the Maximum Allowable Uncontained Spill. Tanks 1 and 2 will be replaced with a tank system designed to comply with Oregon Law and ASCE 7 within the next four years as part of the PDX Fuel Facility Improvements project.

b. The existing tank 3 construction and foundation are not sufficiently designed to prevent a spill that is less than the Maximum Allowable Uncontained Spill resulting from a design-level earthquake. The differential and lateral movement placed on the existing tank will likely compromise the tank nozzles resulting in a spill. Tank 3 will be replaced with a system designed to meet Oregon Law within the next four years as part of the PDX Fuel Facility Improvements project.

c. The existing dike walls for tanks 1 and 2 are not sufficiently designed to prevent a spill that is less than the Maximum Allowable Uncontained Spill resulting from a design-level earthquake. The Concrete Masonry Unit (CMU) block cannot handle differential settlement and vertical stair-step cracks will likely form because of a design-level event, compromising secondary containment. Failure at the attachment point between the flexible membrane liner and the CMU block wall is also likely, which would compromise containment. Dike containment walls for tanks 1 and 2 will be replaced with a system designed to meet Oregon Law within the next four years as part of the PDX Fuel Facility Improvements project outlined in the Mitigation Drawings.

d. The existing dike walls for tank 3 are not sufficiently designed to prevent a spill that is less than the Maximum Allowable Uncontained Spill resulting from a design-level Earthquake. Dike containment walls for tank 3 will be replaced with a system designed to meet Oregon Law within the next four years as part of the PDX Fuel Facility Improvements project outlined in the Mitigation Drawings.

e. The new storage tanks 5, 6, and 7 replacing tanks 1, 2, and 3 will be 110 feet in diameter and 36 feet in overall height. The storage tanks will be designed to have adequate space above the safe tank fill height to accommodate the Risk Category IV sloshing height of 7’-3” as determined by API 650 and ASCE7.

Peer Review Process and Methodology

DEQ engaged Degenkolb Engineers, the New Albion Geotechnical, PSU and DOGAMI to conduct the reviews. The reviews were conducted in an iterative process and all comments are documented in an engineering comment log. All comments were addressed in the log by PDX Fuel representatives. A final RMIP was submitted on October 17, 2024, and presented for public comment. DEQ did not request any modifications to the RMIP due to the 10 comments received and summarized in the Public Hearing Officer's report.

Summary and Recommendation

The review of the final draft of PDX Fuel Phase I SVA and RMIP submitted to DEQ on October 17, 2024, to satisfy the requirements of OAR 340-300-0003 and 0004 determined that PDX Fuel and their contractors characterized subsurface conditions and proposed risk mitigation plans sufficiently to proceed with the new facility construction.

DEQ approves the 10/17/24 mitigation plan to build three new jet fuel storage tanks that meet the current ASCE7 Risk Category IV seismic resilience standards design. As part of this approval, PDX Fuel must submit:

1) The deferred tank design details to DEQ as specified in the City of Portland permit approval process and required by OAR 340-300-0003(2).
2) The proposed plans of future facility modification by the installation of a fourth future tank mentioned in this proposed RMIP per OAR 340-300-0003(2).
3) Annual implementation plan status reports by June 1st of each year per OAR 340-300-0005.

Subsequent phases of the Seismic Vulnerability Assessment, including the hydrant system, will be addressed in a separate Phase II assessment. This approval letter signifies the start of the ten-year Risk Mitigation Implementation Plan timeline for the entire facility.

Sincerely,

Mike Kortenhof

Michael H Kortenhof, RG, PE, Fuel Tank Seismic Stability Program Manager
971-563-0111
mike.kortenhof@deq.oregon.gov

Cc:
Blake Hamalainen, Environmental Manager, Port of Portland
Amit Kumar, PE, SE, Engineering Plan Review Manager, City of Portland