

**Date:** May 18, 2023

**To:** Environmental Quality Commission

**From:** Leah Feldon, Director  
Lydia Emer, Land Quality Division Administrator

**Subject:** Item D: Fuel Tank Seismic Stability Rulemaking (Informational)  
May 18-19, 2023, EQC meeting

**Purpose of item** This is an informational briefing for the commission on the Fuel Tank Seismic Stability rulemaking.

**Background** In early 2020, Multnomah County’s Office of Sustainability and the City of Portland Bureau of Emergency Management commissioned a study of the Critical Energy Infrastructure Hub located along the Willamette River in Portland, Oregon. The study’s purpose was to characterize and quantify the anticipated damages from a fuel release at the hub in the event of the Cascadia Subduction Zone earthquake. The last Cascadia event occurred in January 1700 and the likelihood of the next event occurring in the next 50 years is 37 percent.

The CEI Hub is a six-mile stretch of industrial development along the west shore of the Willamette River. More than 90% of all liquid fuel in Oregon is stored at facilities in the hub. This includes the gas and diesel supply for the Portland metro area, as well as all the jet fuel for Portland International Airport. Other hazardous materials are also stored at the hub.

The study, released in January 2022, found that:

- The average year the tanks were built at the CEI Hub is 1954.
- The total potential release of materials stored at the hub as a result of a Cascadia Subduction Zone earthquake was estimated to range from 94.6 million to 193.7 million gallons.
- The resulting monetized costs could range up to \$2.6 billion.
- Releases from the tanks at the hub could potentially spread downstream through the Willamette and Columbia Rivers to the Pacific Ocean.

Following the release of this study in 2022, the Oregon Legislature adopted Senate Bill 1567 (2022) which required:

- Owners or operators of bulk oils and liquid fuel terminals to conduct and submit seismic vulnerability assessments to the Department of Environmental Quality by June 1, 2024.

- DEQ to review and approve seismic vulnerability assessments.
- DEQ to submit a report on seismic vulnerability assessments to interim committees of the Legislative Assembly by Nov. 1, 2024.
- Owners or operators of bulk oils or liquid fuels terminals to properly implement seismic risk mitigation implementation plans approved by DEQ.
- Environmental Quality Commission to adopt a seismic risk mitigation program for bulk oils or liquid fuels terminals by rule.
- Oregon Department of Energy to develop an energy security plan and report on the plan to interim committees of the Legislative Assembly by Jan. 1, 2024.

## Overview

In early 2020, Multnomah County's Office of Sustainability and the City of Portland Bureau of Emergency Management commissioned a study of the Critical Energy Infrastructure Hub located along the Willamette River in Portland, Oregon. The study's purpose was to characterize and quantify the anticipated damages from a fuel release at the hub in the event of the Cascadia Subduction Zone earthquake. The last Cascadia event occurred in January 1700 and the likelihood of the next event occurring in the next 50 years is 37 percent.

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SB 1567 (2022) gives DEQ the authority to develop the program to evaluate the seismic vulnerability of bulk oils or liquid fuels terminals in Columbia, Lane and Multnomah counties and minimize the risk to people and the environment. The program will require facilities that store more than two million gallons of fuel to develop a plan to mitigate the seismic vulnerability risks. These criteria are expected to apply to 17 specific facilities, including one in Eugene and two in Columbia County.

DEQ assembled a 13-member Rules Advisory Committee to help with this rulemaking. DEQ held RAC meetings on Oct. 26, 2022, Dec. 16, 2022, March 3, 2023, and April 21, 2023. The committee members represent neighborhood, local emergency response, community groups and regulated party perspectives. DEQ is aiming to present the rules to EQC for adoption in fall 2023 to meet the statutory deadline requiring the facilities to complete their Seismic Vulnerability Assessments by June 1, 2024.

Under the new rules, facilities will develop Risk Mitigation Implementation Plans that include actions to protect public health, life safety and environmental safety within the facility, in areas adjacent to the facility and in other areas that may be affected because of damages to the facility. The plans must consider the impacts of a magnitude 9.0 Cascadia Subduction Zone earthquake, the potential consequences of that event, the resources needed to implement the mitigation plan and the implementation schedule. DEQ is developing the program in consultation with the Oregon Department of Geology and Mineral Industries and Oregon Department of Energy. This law requires facilities to meet current seismic standards, rather than the standards at the time of construction.

The proposed draft Fuel Tank Seismic Stability Program rules outline the required elements and criteria for facility assessments and risk mitigation plans, implementation, program administration, compliance fees and enforcement.

Facility-wide Seismic Vulnerability Assessments will be required to address ground shaking, liquefaction and lateral ground movement, earthquake induced landslides and domino effect due to fire, etc.

Risk Mitigation Implementation Plans will be required to address equipment retrofit or replacement, ground stabilization, facility spill containment preparation and operation, backup systems to maintain facility systems, etc.

The mitigation plan must show the applicant is using the current standards available at the time the mitigation plan is submitted to DEQ, taking into consideration risk mitigation techniques currently in use anywhere in the world. Mitigation technology effectiveness, engineering feasibility, technological achievability and implementation resources needed must be considered in the plans.

Program Administration and Compliance Fees will be set to cover the costs of seismic vulnerability assessments and mitigation plans reviews, inspections and technology. SB1 567 authorized the General Fund for three permanent DEQ positions to support this work and directed DEQ to assess fees to pay for specialized engineering assistance reviewing assessments and plans.

Enforcement will be conducted throughout the implementation of activities outlined in the risk mitigation implementation plans. DEQ or its contractors will have access to the regulated facilities with or without notice of inspections. Onsite special inspections by the geotechnical and structural engineers will verify that design criteria are met. Operation and maintenance inspections will also be conducted.

Public Involvement will be incorporated before approving or modifying a mitigation plan, through a public notice and public comment period.

**Public involvement**

RAC meetings on Dec. 16, 2022, March 3, 2023 and April 21 included a 30-minute public input period. On Dec.16, six members of the public provided input relating to communities' right to know, confidential versus proprietary information, potential public hearing requests, offsite impact studies, performance and evidence based designed standards, risk perception and severity literature, meaning of "risk" in this rulemaking context, equity, inspections, downstream impacts, among other issues. On March 3, two members of the public provided input relating to centralization of fuel facilities in one location and associated risk, alternative locations, out of service tanks removal and relocation, sufficiency of fees to fund DEQ's oversight role, independent peer review of assessments and plans submitted to DEQ and integration of equity into the rule. A public comment period of 30 days and a public hearing are planned for June, 2023.

To notify people about the RAC meetings, DEQ sends [GovDelivery](#) bulletins, a free email subscription service. All information about the rulemaking process and meetings materials is posted on DEQ's [Fuel Tank Seismic Stability Rulemaking](#) website.

**Next steps**

DEQ plans to present the proposed Fuel Tank Seismic Stability rule for commission action at a September 2023 EQC meeting.

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**Non-discrimination statement**

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