



OREGON FIRE CODE Interpretations and Technical Advisories

A collaborative service by local and state fire professionals, along with our stakeholders, and customers, to provide consistent and concise application of Oregon's fire prevention and life safety regulations.

Date: August 24, 2005

Ruling: Technical Advisory No. 05-02 (Revised Interp. #96-13)

Subject: Waste Water and Water Treatment Facilities

Code Reference: 2004 Oregon Fire Code, based on the 2003 International Fire Code, Chapters 27 (Hazardous Materials) and 37 (Highly Toxic and Toxic Materials)

Content: The location and proximity of chlorine treatment facilities to populated areas have caused concern for both industry and communities. The current fire and life safety requirements for chlorine treatment facilities were developed when pressurized systems were prevalent. New installations using vacuum systems may, in some cases, require less stringent requirements.

Chlorine is classified in the OFC as a toxic compressed gas and therefore falls under Chapter 37. As such, various systems are required to handle fire and accidental release of gases.

Alternatives to OFC section 3704.2.2.7 should be considered when evaluating installations of treatment systems or methods that are located other than at the point of discharge. Such evaluations must be based on the prevailing conditions for each installation.

OFC section 104.8 and ORS 476.035 allow the State Fire Marshal to make adjustments, variances or exceptions to specific requirements of the OFC when the State Fire Marshal determines that application of the requirements are impossible, impractical or create unnecessary hardship or consequences inconsistent with the general purpose of this code. The manner to accomplish this is specified in section 104.9 as an alternate materials and methods approval process.

If an adjustment, variance or exception to the OFC is granted, the agreement between the requesting party and the State Fire Marshal shall list and define the conditions and agreements of the specific variance.

Failure on the part of the requesting party to comply with any of the conditions and agreements for the life of the variance shall immediately void the agreement, and all OFC requirements in effect at that time shall be satisfied.

RESCINDED SEE TA# 11-04

General: The purpose of treatment systems is to provide a system which will maintain toxic gases within a designated area until dissipation below the ½ I.D.L.H. (Immediate Danger to Life and Health) level is reached, the system must also prevent conditions developing from a release of gases which would endanger responders as well as the general public and the environment. Installations involving the storage, use, and handling of chlorine are regulated by the OFC in Chapters 27 and 37.

Treatment Systems: Section 3704.2.2.7.2 specifies the performance of treatment systems in order to meet the required safety parameters of the OFC. In order to evaluate a request for exclusion of treatment systems from chlorine system designs, the State Fire Marshal requires a 360 degree plume analysis be performed by a specialist as specified in section 104.7.2 of the OFC.

When using plume analysis models, the State Fire Marshal does not indicate specific models to follow; however, it is highly recommended that more than a single model be used. All models used must consider prevailing ambient conditions of the installation including wind, temperature, relative humidity, topography, etc.

The technical opinion and report shall be prepared by a qualified engineer, specialist, and laboratory or fire-safety specialty organization acceptable to the fire code official. The report shall analyze the fire-safety properties of the design, operation or use of the building or premises and the facilities and appurtenances situated thereon, and recommend necessary changes.

Gas/Smoke Detection: These systems shall be signed to insure that individuals understand what the emergency light/alarm is indicating. If treatment systems have been modified using the plume analysis, signage shall be provided at gates, fence lines, and other locations as required by the fire code official, to prevent individuals from entering an area that is maintained for gas dissipation.

While gas detection is the only system required to be transmitted to a constantly monitored control station, it is advisable to provide additional monitoring of fire extinguishing and smoke detection systems.

Other References: None