

Section 2.7 – System of Heat Dissipation

WAC 463-60-175

Proposal – System of heat dissipation.

The application shall describe both the proposed and alternative systems for heat dissipation from the proposed facilities.

(Statutory Authority: RCW 80.50.040 (1) and (12). 04-21-013, amended and recodified as § 463-60-175, filed 10/11/04, effective 11/11/04. Statutory Authority: RCW 80.50.040(1) and Chapter 80.50 RCW. 81-21-006 (Order 81-5), § 463-42-175, filed 10/8/81. Formerly WAC 463-42-430.)

Section 2.7 System of Heat Dissipation

The Facility is not an electrical generating facility, and therefore does not require or incorporate the large heat dissipation systems (i.e., cooling towers or ponds) that are associated with using water or air to cool combustion equipment.

As noted in section 2.3.6, the Facility will be equipped with boilers fueled with natural gas to provide steam used to heat the crude oil in order to facilitate its conveyance during the rail car unloading, storage, and vessel loading operations. The Facility will include two boiler systems: the Area 600 system will include three boilers, each with a rated capacity of 62 MMBTU/hr and the Area 300 system that will include two boilers, each with a rated capacity of 13.2 MMBTU/hr.

Both systems will be field-erected with a watertube design, where water circulates through the inside of heat transfer tubes while the outside of the tubes is heated by direct contact with the hot boiler combustion gases and radiant heat transfer. The steam produced through this heating process is circulated in a closed system to the location where the heat carried by the steam is needed, where the steam is released in closed-system manifolds in the heated tank cars and the bottoms of two of the storage tanks. As the steam releases its heat content, the steam condenses, and the water is piped back to the boiler. Excess heat is dissipated with the exhaust gases that exit the boiler building through the vent to the environment; therefore, a heat dissipation system is not required. Small amounts of steam will also be released periodically from the boiler systems. The steam that will be lost to atmosphere from the storage area boiler system will be low pressure steam, and in such quantities that no visual sign of steam loss will be noticeable. The steam that will be lost to atmosphere at the rail unloading area boiler system will be discharged to atmosphere within the rail unloading area and will not result in a visual plume.

To maintain the quality of water used in the closed system, a small amount of water from the closed steam system will be purged from the system and replaced with fresh water treated to the appropriate quality (see section 2.3.6). In order to meet the temperature discharge limits, the blowdown will be cooled by the addition of wastewater generated at the Facility or potable water that is cooler than the discharge.