Gas Turbine Water Wash
Discharge Summary

Description of Discharge

How is this discharge generated? Gas turbine water wash consists of water periodically discharged while cleaning internal and external components of propulsion and auxiliary gas turbines.

Which vessels generate this discharge? Approximately 155 Armed Forces vessels use gas turbines for either propulsion or auxiliary power generation.

How often and where is this discharge generated? Gas turbine water wash is generated within 12 n.m. and varies by the type of gas turbine and the amount of time it is operated. Because the drain collecting system is limited in size, discharges may occur within 12 n.m. On most Navy and MSC gas turbine ships, gas turbine water wash is collected in a dedicated collection tank and is not discharged overboard within 12 n.m. On ships without a dedicated collection tank, this discharge is released as a component of deck runoff, welldeck discharges, or bilgewater.

Analysis

Nature of Discharge: Expected constituents of gas turbine water wash are synthetic lubricating oil, grease, solvent-based cleaning products, hydrocarbon combustion by-products, salts from the marine environment, and metals leached from metallic turbine surfaces. The concentration of naphthalene (from solvents) in the discharge is expected to exceed State acute water quality criteria. The following table lists the concentration of napthalene and its resulting annual mass loading.

Constituent	Maximum Estimated Concentration (µg/L)	Annual Mass Loading (lbs)
Naphthalene	800000	75400

Discussion and Discharge Determination

Discussion: To limit the impacts of gas turbine water wash discharge while operating in coastal areas, most vessels direct the discharge to a dedicated holding tank for shore disposal. This containment procedure demonstrates the availability of controls for this discharge.

Determination: A marine pollution control device is required.