

April 29, 1977

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From: W. C. Young

Subject: EPA Vinyl Chloride Compliance Status - HCl Emissions
Island Powerhouse Boiler Furnaces

Compliance tests conducted at the subject location, April 20, 1977, revealed an absence of vinyl chloride in flue gas exhaust. EPA Test Method 106 was used to examine No. 12 Boiler exhaust gas (currently being used to incinerate vinyl chloride vent emissions from the SVR Unit) and also that from No. 15 and 16 Boilers.

Fuel used in No. 12 Boiler during the three-hour test period included odor gas from the odor abatement header, vinyl chloride vent emissions, natural gas, and coal. In addition to coal and natural gas, fuel burned in No. 15 and 16 Boilers during the test period included ethyl hexoic acid heads (residues) from Acetic Esters Unit and residues from Specialty Resins Unit containing acetone, styrene, and methyl acetate.

A report that vinyl chloride could be generated as a combustion product from various combustible materials, e.g., VCl has reportedly been isolated in tobacco smoke, prompted testing No. 15 and 16 boilers. Then too, concern has been expressed, both, internally and by the WAPCC, about HCl emissions from the IPH. As the compliance testing was conducted for vinyl chloride emissions, the same boiler exhausts were simultaneously analyzed for chlorides and calculated as hydrogen chloride. (1) HCl emission rate from No. 12 boiler at ~~these~~ conditions *STF* was 0.2 lbs/hr. The total rate from No. 15 and 16 Boilers exhausting through a common duct was ~~0.2~~ lbs/hr.

Hence, our conclusion is that:

1. Thermal destruction of vinyl chloride is complete at the high temperatures in the boiler furnaces, and,
2. HCl emissions resulting from incineration of vinyl chloride appears to be negligible, compared to "background" emissions from combustion of the various forementioned fuels containing no vinyl chloride.

ACKNOWLEDGEMENT

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(1) Volume 11-18, Gas Handbook, Chlorides and Sulfur Compounds, Determination by Electronic Turbidimeter, Method 13-9A-V5A

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