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OFFICE MEMORANDUM

TO : OWR Committee

DATE: 12/16/71

FROM : C. L. Warner

SUBJECT: Potassium Dichromate Entrainment in OWR Cooling Tower Drift

SYMBOL : P-2

As requested by the Committee and H-8, a materials balance test was conducted on the OWR Main Cooling Tower to determine the quantity of potassium dichromate entrained in the drift from the tower.

During the test period, 15 to 20 November 1971, 67.6 pounds of potassium dichromate ($K_2Cr_2O_7$) were consumed in the secondary cooling water treatment procedure. Initial, interim and final samples of the secondary cooling water, as well as a composite sample of the blowdowns, were collected and sent to H-7 for analysis. The blowdowns were manually controlled and the effluent quantities were measured. The tower was operated continuously for a total of 117.9 hours during the test period. The spray throttle valve was maintained at its normal position, slightly more than one-half open, at a spray pump discharge pressure of 18 psig and the fan was operated on high speed.

From these data it was determined that 16.5 pounds of potassium dichromate were lost from the tower through entrainment in the drift. This is equivalent to about 0.05 pounds of hexavalent chromium per hour of operation of the tower at normal conditions and 100 ppm potassium dichromate concentration in the secondary cooling water.

C. L. Warner
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CW:ct

cc: H. Motz, P-DO
RSC Members
H. Williams
H. Jordan, H-8
C. W. Christiansen, H-7 ✓
File

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