Question 1-13

Please provide an estimate of effluent discharge values of all expected constituents, specific to the proposed Unit 3 discharge, including wastewater treatment plant effluent, cooling tower blowdown with any attendant treatment processes, and from any other effluent sources.

RESPONSE

Table 1 summarizes the estimated amounts of effluents to be discharged to the Chesapeake Bay from normal operation of Unit 3. As can be seen from the table, cooling tower blowdown dominates all other discharges, contributing over 94% of the total discharge. The only other significant contributor is the desalination plant effluent, which releases about 5.4% of the total effluent. The remaining effluent streams, miscellaneous low volume waste, treated sanitary waste, and treated liquid radwaste, contribute less than 0.5%. As a result, the constituents in the blowdown and desalination plant effluents are the only ones that significantly affect the constituents of the total effluent. The constituents of these waste streams are driven by their original source of water, the Chesapeake Bay. The constituents of the other waste streams will be diluted by a factor of from about 250 to over 19,000. Nevertheless, we have generated estimates of the concentrations of expected constituents in the total effluent based on currently-available design data. Those concentrations are shown in Table 2. More precise determinations of the amounts of these constituents will be made as part of the NPDES permitting process.

Table 1 Effluent Discharge to Chesapeake Bay during Normal Operations

Wastewater Stream	Flow gpm (lpm)	Percent of Total Flow
CWS Cooling Tower Blowdown	17,355 (65,695)	89.3
ESWS Cooling Tower Blowdown	940 (3,558)	4.8
Total Cooling Tower Blowdown	*18,295 (69,253)*	*94.2*
Desalination Plant Waste	1,055 (3,994)	5.4
Miscellaneous Low Volume Waste	55 (208)	0.3
Treated Sanitary Waste	20 (76)	0.1
Waste Water Retention Basin Discharge	*19,425 (73,531)*	*99.995*
Treated Liquid Radwaste	1 (4)	0.005
Total Effluent	*19,426 (73,535)*	*100.0*

Key:
gpm – gallons per minute
lpm – liters per minute