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Files November 3, 1964

THRU : Saul Levine, Chief, Test & Power Reactor Safety Branch
Division of Reactor Licensing
J. E. McEwen, Test & Power Reactor Safety Branch
Division of Reactor Licensing

HTGR (PEACH BOTTOM), CALCULATION OF BONE DOSE FOLLOWING MAXIMUM ACCIDENT

I received a telephone call from Mr. V. S. Boyer of Philadelphia Electric Company reporting the results of bone dose calculations following the maximum accident at the Peach Bottom site. These calculations were made by Bechtel Corporation and were in reply to our request for such calculations.

Case I - 30 days at a distance of 3 miles parallel to Conowingo Pond

Assumptions: (1) dilution parallel to pond, $X/Q = 3 \times 10^{-4}$ sec/m^3
(2) all bone dose comes from Sr^{89}, Sr^{90}, Sr^{91}, and Ba^{140}
(3) all fission products released to the containment any time during the 30 days (as determined by the General Atomic fission product release model) are released immediately
(4) containment building leaks at a constant 0.2%/day for duration of accident

Calculated dose: 66.4 Rem

Case II - 30 days at a distance of 3 miles perpendicular to Conowingo Pond

Assumptions: (1) dilution perpendicular to pond, $X/Q = 2 \times 10^{-6}$ sec/m^3
(2) same as Case I
(3) same as Case I
(4) same as Case I

Calculated dose: 3.3 Rem

Case III - 2 hours at nearest site boundary

Assumptions: (1) dilution at nearest site boundary $X/Q = 3 \times 10^{-4}$ sec/m^3
(2) same as Case I
(3) same as Case I
(4) same as Case I

Calculated dose: 2.1 Rem

OFFICE ▶	DRL	DRL		E. G. Case Suppl.✓		
SURNAME ▶	JEMcEwen/ias	SLevine		DRL Reading T&PRSB Reading		
DATE ▶	11/3/64	11/ 18 /64				

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