

OFFSITE DOSE CALCULATION MANUAL

REVISION 17

Where:

$\left[\sum_g C_g \right]_S$ = The isotopic concentration of the Steam Generator Blowdown effluent as obtained from the sum of the measured concentrations determined by the analysis required in ODCM Table 1.1-4, in uCi/ml.

CF_S = The Steam Generator Blowdown Effluent Concentration Factor from equation (29).

*See GENERAL NOTE under 2.1.

CO3+ 2.1.4.4 Turbine Building Sump (Abnormal Conditions)

Provided circulating water is available, 1 to 3 circulating water pumps, effluent exceeding 0.5 MPC may be released from the Turbine Building sump to the industrial and sanitary waste system, using the setpoint in this section, provided the following conditions are met:

- 1) Instantaneous release rate limits of ODCM Specification 1.1.2.1 are not exceeded in the circulating water discharge canal.
- 2) The average radionuclide concentration in the industrial and sanitary waste system (Pond 6B or 008) will not exceed 1.0 MPC when averaged over one year.
- 3) The limits of ODCM specification 1.1.4.1 will not be exceeded with actual liquid effluent releases over a 31 day period.
- 4) Average discharge flow does not exceed values used in setpoint determination.

In addition, the source of radioactivity should be identified and isolated. Radionuclide concentration in Turbine Building sump effluent should be restored to <0.5 MPC as soon as possible and normal setpoint reestablished. Radionuclide concentration in Pond 6B and 008 should be restored to < LLD using dilution as necessary (normal flow from the TBS would normally be adequate). Turbine Building sump samples should be obtained and analyzed every eight hours while the alternate setpoint is being used to ensure that the setpoint remains conservative with respect to the isotopic mixture and to ensure offsite doses are within ODCM limits.

Alternate setpoint methodology for Turbine Building sump (RM-L8) is available to ensure operational flexibility in the event radioactivity is

detected in the Turbine Building sump > 0.5 MPC and release would result in minimal offsite dose. The alternate setpoint methodology is not intended to be used continuously. To remove restrictions on operation of circulating water, pond concentrations should be restored to < LLD as soon as possible. The setpoint methodology follows:

2.1.4.4.1 For RM-L8, Turbine Building Sump (alternate methodology) (57)

$$C_T \leq \frac{\sum_g C_g}{CF_T} \times \frac{1}{F_k}$$

where,

$$F_k = \begin{aligned} & \text{The near field dilution factor for } C_i \text{ during release} \\ & \text{from Turbine Building sump.} \\ & = \frac{(\text{average undiluted waste flow})}{(\text{average flow from discharge structure})} \end{aligned}$$

For purpose of implementing section 2.1.4.4 release condition 2, the following must be satisfied.

$$\frac{\sum_{j=1}^n \left[\left| \sum_{i=1}^x \left(C_i / MPC_i \right) \right|_{T_j} * V_j \right]}{\sum_{j=1}^n V_j} \leq 1.0 \quad (58)$$

where $[\sum(C_i / MPC_i)]_{T_j}$ = the sum of the ratios of the measured concentration of nuclide i to its limiting value MPC_i for the Turbine Building sump effluent for release permit j , including proposed permit,

V_j = Release volume for Turbine Building sump release permit j (gal), and

j = index for batch release permits during the calendar year.