

Docket No. 50-354

OCT 24 1985

Mr. R. L. Mittl, General Manager
Nuclear Assurance and Regulation
Public Service Electric & Gas Company
P. O. Box 570, T22A
Newark, New Jersey 07101

Dear Mr. Mittl:

SUBJECT: OFFSITE DOSE CALCULATION MANUAL

By letter dated April 26, 1985, you transmitted the Hope Creek Offsite Dose Calculation Manual (ODCM) for staff review. Review of this document has resulted in the enclosed comments. You are requested to review the enclosed comments and submit for staff review a revised ODCM which resolves these comments.

Please respond to this request within 3 weeks from the date of this letter. Feel free to call the NRC Licensing Project Manager, Dave Wagner (301) 492-8525, if you have any questions regarding this request.

Sincerely,

Walter R. Butler, Chief
Licensing Branch No. 2
Division of Licensing

Enclosure:
As stated

cc: See next page

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

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Sincerely,

A handwritten signature in cursive script that reads "Walter R. Butler".

Walter R. Butler, Chief
Licensing Branch No. 2
Division of Licensing

Enclosure:
As stated

cc: See next page

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Public Service Electric & Gas Co. - 2 -

Hope Creek Generating Station

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COMMENTS ON THE HOPE CREEK ODCM (REV. 0)

Page	Comment
2.0-12	In two locations, the sigma sign is missing.
	In the equation, the division sign is not clear; it resembles a plus sign.
2.0-17	The division sign resembles a plus sign.
2.0-19	Add the units (mrem/hr or uCi/m) to the heading of Table 2 2-1.
2.0-21	Add the correct reference for the bio-accumulation factors for silver.
3.0-2	A line of text has been omitted at the top of page 3.0-2. "monitor setpoints. That is, setpoint adjustments are not"
3.0-4	The top line on page 3.0-4 duplicates the last line on page 3.0-3.
3.0-4	The parameter (X/Q) is defined to be "the highest annual relative concentration at the site boundary in any sector", with a numerical value of 2.65×10^{-6} sec/m ³ at the exclusion area boundary (901m) in the northwest sector. Staff calculations indicate an annual average X/Q value of 8.7×10^{-6} sec/m ³ in the northwest sector at a distance of 901m. Slightly higher (10-15%) values are calculated in the southeast and south sectors for the same exclusion area boundary distance.
	Provide justification for the use of 2.65×10^{-6} sec/m ³ as the "highest annual relative concentration at the site boundary," considering specifically the appropriateness of the assumption of straight-line airflow without modification for spatial and temporal variations in trajectories.
3.0-8 and throughout	In the RETS, in Technical Specifications 3.11.2.1 and 4.11.2.1.2, I-133 is included with I-131, tritium and all radionuclides in particulate form with half-lives greater than 8 days. I-133 must be included in the ODCM Section 3.2 and correspondingly throughout the ODCM.

Page

Comment

3.0-12

Numerical values of 9.9×10^{-8} sec/m³ and 4.4×10^{-10} m⁻² are presented for $\overline{X/Q}$ and $\overline{D/Q}$, respectively, on page 3.0-12, with a cross reference to Table 3.2-4. The value for $\overline{X/Q}$ apparently was calculated at a distance of 8 km in the northwest sector, and this value is the maximum of all the $\overline{X/Q}$ values presented in Table 3.2-4. However, the corresponding $\overline{D/Q}$ at that location is exceeded by $\overline{D/Q}$ values in the west-northwest sector and in the northwest sector at 6.4 km. Provide justification for the use of 4.4×10^{-10} m⁻² as the value for $\overline{D/Q}$ to be assumed "for other pathways and non-tritium nuclides" (as described on page 3.0-12).

3.0-46

Generally, the $\overline{X/Q}$ and $\overline{D/Q}$ values presented in Table 3.2-4 (page 3.0-46) are in reasonable agreement ($\pm 30\%$) with the values calculated by the staff. However, some significant differences (over a factor of 3) are noted in several $\overline{D/Q}$ values. For example, the staff has calculated a value of 8.3×10^{-10} m⁻² in the east sector at a distance of 5.3 km, compared to the value of 2.2×10^{-10} m⁻² presented in the table. Similar discrepancies are noted for the east-northeast sector at 5.5 km and for the west-northwest sector at 5.5 km. Provide corroboration that the $\overline{D/Q}$ values presented in Table 3.2-4 accurately reflect calculations. Also, provide $\overline{X/Q}$ and $\overline{D/Q}$ values for site boundary distances.

3.0-51

The atmospheric dispersion model described in general in Section 3.3 (Page 3.0-51) is simple enough to be fully described in two pages. Cross-referencing to tables and sections in the FSAR is cumbersome, and could result in inconsistencies if the FSAR is amended without also amending the ODCM.

- In Section 3.3 of the ODCM, provide a complete description of the atmospheric dispersion model used for calculation of annual average relative concentration ($\overline{X/Q}$) and relative deposition ($\overline{D/Q}$) values presented in the ODCM. Also, provide a description of the meteorological data used in the dispersion model (i.e., period of record, heights of measurement, and atmospheric stability indicator).
- 4.0-5 Show on these figures the location and identity of the effluent radiation monitors, i.e., the liquid radwaste discharge line monitor, the cooling tower blowdown effluent line monitor, the filtration, recirculation, and ventilation system noble gas monitor, the south plant vent noble gas monitor, and the north plant vent noble gas monitor.
- 4.0-6
- 4.0-7
- 4.0-17 It is recommended that this section be revised to state that, in the event that the annual land use census or other information should indicate that individual members of the public may be inside the site boundary more than a few hours each year, doses to such members of the public shall be calculated according to the methods of Sections 2.2 and 3.2.
- 4.0-18 We do not object to the elimination of the integrated population dose calculation.
- 5.0-3 In accordance with the RETS, samples for radioiodines and for particulates should be collected at the same locations; thus station 1F1 should be included in Table 5.1-1, section I.(b) as an iodine sampling station.
- 3.0-46 In accordance with the RETS and with ODCM Table 3.2-4 ("The real receptor with the highest exposure is an infant consuming the milk of a cow pastured at 4.9 miles in the W sector."), one sampling station collecting particulates and iodines should be located in the W sector at about 4.9 miles. At the time of the site visit,
- 5.0-2
- 5.0-3

a list of sampling stations was provided the NRC/NRR/RAB representative; this list included a milk sampling station identified as 13E3, 4.9 miles W of vent, local farm. Such a sampling location 13E3 also appeared on Figure 6.1-2 of the HCGS EROL. A sampling station in the vicinity of 13E3 is needed.

5.0-6

In Table 5.1-1, provide a legible sampling station identifier for the station at 7.4 miles NNE of the vent.

5.0-7

5.0-8

The information on these pages of Table 5.1-1 should be put in the correct order; this involves both the page number and the designation "Page 6 of 9" and "Page 7 of 9."

5.0-7

In section VI.(a) correct the typo in the note on I-131 analysis.

5.0-8

In Table 5.1-1, section IV.(c), "gamma isotopic analysis on quarterly composite" must be changed to "gamma isotopic analysis on monthly composite."

5.0-11

5.0-12

Provide clear Figures 5.1-1 and 5.1-2. These maps are illegible.

5.0-11

Sampling stations 4S1 and 6S1 are shown on Figure 5.1-1; identify in Table 5.1-1 what samples will be taken at these stations.

5.0-11

In Figure 5.1-1, in sector 6, one of the two sampling station identifiers is illegible.