

REVISION 5

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
OFFSITE DOSE CALCULATION MANUAL (ODCM)

CHANGES TO TABLE 3.2-1, PiI VALUES FOR INFANTS

Errors resulted in this table when the NRC no longer required pathways other than inhalation to be considered in showing compliance with the 10 CFR Part 20 release rate limit for iodines, particulates and tritium.

The errors developed when this table was modified by removing the Pi columns for all pathways except inhalation. The correct process is to use Table E-10 of Regulatory Guide 1.109 and choose the largest dose factor for each isotope.

We have computed corrected PiI values. A revised Table 3.2-1 is attached.

Instructions for Entering Revision 5 to the
Prairie Island ODCM

1. Remove ODCM cover page and pages III, IV, V, VI, 3-10, and 3-11 and replace them with the attached pages.
2. Use ODCM page VI to page check your manual if desired.

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PRAIRIE ISLAND NUCLEAR GENERATING PLANT

OFFSITE DOSE CALCULATION MANUAL

(ODCM)

REV. 5

DOCKET NO. 50-282 and 50-306

NORTHERN STATES POWER COMPANY
MINNEAPOLIS, MINNESOTA

OPERATIONS COMMITTEE FINAL REVIEW DATE: 8-24-84

REVIEWED BY: *D. L. Larimus* DATE: 8-24-84

APPROVED BY: *D. A. Schulte* DATE: 8-24-84

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RECORD OF REVISIONS

<u>Revision No.</u>	<u>Date</u>	<u>Reason for Revision</u>
Original	June 7, 1979	-
1	April 15, 1980	Incorporation of NRC Staff comments and correction of miscellaneous errors
2	Aug 6, 1982	Incorporation of NRC Staff comments
3	Feb 21, 1983	Change in milk sampling location
4	Nov. 14 1983	Change in milk sampling location and change in cooling tower blowdown
5	March 27, 1984	Change Table 3.2-1

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Significant short-term batch releases of long-lived radioactive particulates and tritium will result from containment purges. Calculations will be made for these releases separately to further assure compliance with 10 CFR Part 20 prior to release. These calculations will be used only to determine whether or not the purge release will be allowed to occur. Source terms will be determined from the results of isotopic analyses of samples from containment prior to release. Equation 3.2.1 will be used in conjunction with the following relationship to demonstrate that the batch release does not exceed the dose rate limit:

$$BL = 1500 - (D_v - D_p) \quad (3.2-2)$$

where

- BL = limiting dose rate for the batch, mrem/yr;
- D_v = previous week's doses from all vent releases, mrem/yr;
- D_p = previous week's doses from all purge releases mrem/yr.

3.2.3 Critical Receptor Identification

The atmospheric dispersion parameters given in Appendix A will be used to identify the critical receptor. Compliance with Part 20 will always be shown at the site boundary location with the highest \bar{X}/Q . As discussed previously, weekly and batch dose calculations will be performed at this location. The critical site boundary location, based upon long term ground level releases \bar{X}/Q (Table A-3), is 0.36 miles in the WNW sector.

TABLE 3.2-1

 P_{iI} Values for Infant

Isotope	P_{iI} $\frac{\text{mrem/yr}}{\text{uCi/m}^3}$
H-3	6.47 E 2
Cr-51	1.28 E 4
Mn-54	1.00 E 6
Fe-59	1.02 E 6
Co-58	7.77 E 5
Co-60	4.51 E 6
Zn-65	6.47 E 5
Rb-86	1.90 E 5
Sr-89	2.03 E 6
Sr-90	4.09 E 7
Y-91	2.45 E 6
Zr-95	1.75 E 6
Nb-95	4.79 E 5
Ru-103	5.52 E 5
Ru-106	1.16 E 7
Ag-110m	3.67 E 6
Te-127m	1.31 E 6
Te-129m	1.68 E 6
Cs-134	7.03 E 5
Cs-136	1.35 E 5
Cs-137	6.12 E 5
Ba-140	1.60 E 6
Ce-141	5.17 E 5
Ce-144	9.84 E 6
I-131	1.48 E 7