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MEMORANDUM FOR: Albert Schwencer, Chief
Licensing Branch No. 2, DL

FROM: Frank J. Congel, Chief
Radiological Assessment Branch, DSI

SUBJECT: COMMENTS ON THE PROPOSED OFFSITE DOSE CALCULATION MANUAL FOR RIVER BEND

We have completed our first round review of the Offsite Dose Calculation Manual submitted in a letter from J. E.Booker to H.R. Denton, dated January 7, 1985. Our specific comments on the ODCM are Enclosure 1. The applicant should submit for a final review a revised ODCM that resolves the attached comments. If you or the applicant have any questions concerning these comments, contact Ed Branagan (x27614).

This review was performed by Ed Branagan and Tin Mo, RAB; and Bob Fell and Joe Levine, METB.

Original signed by
F. J. Congel
Frank J. Congel, Chief
Radiological Assessment Branch
Division of Systems Integration

Enclosure:
As stated

cc: w/o encl.
R. Bernero
D. Muller

cc: w/encl.
S. Stern
J. Swift

Concur for
DSI:METB
WPGammill
03/26/85

DSI:RAB
FJCongel
03/ /85

OFC	:DSI:RAB	:DSI:RAB	:DSI:RAB	:DSI:METB	:DSI:METB	:DSI:METB	:DSI:METB
NAME	:Branagan:sj	:TMo	:WMMeinke	:JLevine	:RFell	:ISpickler	:CAWillis
DATE	:03/27/85	:03/25/85	:03/22/85	:03/25/85	:03/25/85	:03/25/85	:03/26/85

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COMMENTS ON THE PROPOSED
OFFSITE DOSE CALCULATION MANUAL
FOR RIVER BEND STATION

1. General

   (a) The title page should contain a date for the latest revision of the ODCM.

   (b) Although Section 4.1 entitled, "Deviations from the RBS Environmental Operating License Stage," is listed in the Table of Contents, it is not contained in the report. Either delete § 4.1 from the Table of Contents, or provide the section.

2. Section 2.0, "Liquid Effluent Methodology"

   (a) Eq. 2.4.2-1 on p. 2-4 does not contain a term for near field average dilution. If appropriate, credit for near field dilution (up to 1000 cfs) may be used in this equation provided that the basis for the dilution factor is either given in the ODCM or referenced to another document.

3. Section 3.0, "Gaseous Effluent Methodology"

   (a) In § 3.3.1.2.3 (p. 3-4 & 5) equations are given for evaluating doses from exposure via three pathways to show compliance with 10 CFR 20. To show compliance with 10 CFR 20 the inhalation pathway is most limiting. Consequently, the discussion (and accompanying Tables G-2 & 3) on exposure via the ground plane, and cow milk pathways may be deleted from this section.

(b) In Eq. 3.3.2-4 a summation over the index "i" is used to determine the set point value for the noble gas monitor. It appears that a summation is not needed in this equation; verify this equation.

4. Section 4.0, "Radiological Environmental Monitoring"

(a) Provide a copy of the latest land use census that was used to determine the locations for collecting milk and produce samples. Provide the date of the land use census.

5. Appendix B

(a) The liquid effluent dose parameters $A_{i\tau}$ presented in Table B-1 of the ODCM are about a million times or more (0.8 to 2 x 10^6 times) lower than the values calculated by the NRC staff. Check the $A_{i\tau}$ values in Table B-1 and briefly explain the basis for these values. Presumably these values were calculated using the methodology described in some of the Appendices in Regulatory Guide 1.109, Rev. 1 (October 1977) and site-specific values for a few parameters. List the site-specific values used to estimate $A_{i\tau}$ (e.g., the quantities of water, fish and invertebrates ingested).

If a dose calculation method other than Regulatory Guide 1.109 was used to estimate $A_{i\tau}$, then briefly describe that method, and the bases for values different than those in Regulatory Guide 1.109.

6. Appendix F

(a) The X/Q values listed in Table F-1 for evaluating the air dose are less than the highest values listed in Table E-1 for the site boundary. Resolve this apparent inconsistency.

7. Appendix G

(a) The P_i values in Table G-1 are too low by several orders of magnitude. Recheck these values.

8. Appendix I

(a) The environmental pathway dose conversion factors R_i presented in Tables I-3, I-5, I-9 and I-19 of the RBS-ODCM for the principal pathways of exposures of the maximally exposed individual to airborne radioiodine and particulates are about 3 orders of magnitude (1 to 3 x 10^3 times) lower than the values calculated by the NRC staff. This may be due in part to a typographical error in the units used in the above tables for $R_{(i)}$ (i.e.,

"rem/yr" should be used instead of "mrem/yr"). However, there are additional discrepancies between the R_i values calculated by the NRC staff and those presented in these tables for several radionuclides (e.g., I-131, I-133 and C-14). Check the R_i values in the tables in Appendix I and briefly explain the basis for these values in the next revision of the ODCM. Presumably these values were calcu- lated using the methodology described in some of the Appendices in Regulatory Guide 1.109, Rev. 1 (October 1977) and site-specific values for a few parameters. List the site-specific values used to estimate the pathway dose factors (e.g., the fraction of the year that animals graze on pasture, the fraction of daily feed that is pasture grass when the animals graze, the humidity). If a dose calculation method other than Regulatory Guide 1.109 was used to estimate R_i, then briefly describe that method, and the bases for values different than those in Regulatory Guide 1.109.

9. Figures

(a) Figure 1, 3 & 5 are illegible. Provide foldout figures. Discharge points for liquid and airborne effluents should be clearly indicated on Figures 1 and/or 3. The site boundary, which is used as a basis to control airborne effluents, should be clearly indicated on Figure 3. The unrestricted area boundary, which is used as a basis to control liquid effluents, should be clearly indicated on Figure 1.

10. Section 6.0, "Interlaboratory Comparision Studies". The second sentence of subsection 6.2.1 states that the River Bend Station Environmental Services Group or a qualified contracting laboratory will participate at least annually in a nationally recognized interlaboratory comparsion study. This statement should be revised to conform with the NRC's Radiological Assessment Branch Technical Position (BTP) (revision 1, October 1979). The BTP states that the licensee and licensee's contractor laboratories should participate in EPA's Environmental Radioactivity Laboratory Intercomparsion Studies (Crosscheck) Program or an equivalent program. The BTP also states that this participation shall include all of the determinations (sample-radionuclide combinations) that are offered by EPA and that also are included in the licensees

environmental monitoring program. In addition, results of the Interlaboratory Program should be included in the annual environmental monitoring report to NRC. Revise § 6.2.1 accordingly.