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SUBJECT: Forwards Amends 3,4,& 5 to offsite dose calculation manual.

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WASHINGTON PUBLIC POWER SUPPLY SYSTEM

P.O. Box 968 • 3000 George Washington Way • Richland, Washington 99352

April 19, 1989
G02-89-065

Docket No. 50-397

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station P1-137
Washington, D.C. 20555

Gentlemen:

Subject: NUCLEAR PLANT NO. 2
TECHNICAL SPECIFICATIONS
ADMINISTRATIVE CONTROLS SECTION 6.14.2.a

Reference: 1) Letter, G02-89-021, CM Powers (SS) to NRC,
"Semi-Annual Effluent Report July 1, 1988 -
December 31, 1988 and Amendment No. 6 to the
Offsite Dose Calculation Manual", dated 2/15/89
2) Letter, G02-89-040, GC Sorensen (SS) to NRC,
"Amendment No. 6 to the Offsite Dose Calculation
Manual - Supplemental Information", dated 3/15/89
3) Letter, G02-84-465, JD Martin (SS) to NRC,
"Semi-Annual Effluent Report July 1 to December 31,
1984 (Attached)", dated 2/26/85
4) Letter, G02-85-105, JD Martin (SS) to NRC,
"Semi-Annual Effluent Report July 1 to
December 31, 1984 (Attached)", dated 2/26/85

On March 6, 1989, Alan Hosler of the Supply System participated in a telecon with Bob Samworth of the NRC to discuss the above subject. Specifically, NRR pointed out that Reference 1) for ODCM Amendment No. 6 did not respond to the three items specified in Technical Specification 6.14.2.a.

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Administrative Controls Section 6.14.2.a requires that for each ODCM revision, for licensee initiated changes the Supply System must include in the Semi-Annual Radioactive Effluent Release Report:

- 1) Detailed information to support the rationale for each change.
- 2) A determination that the change will not reduce the accuracy or reliability of dose calculations or setpoints.
- 3) Documentation of POC approval.

Reference 2) provided this information for Amendment 6.

Subsequently, the Supply System has reviewed all previous amendments to the ODCM, and has identified that the transmittals for Amendments 3-5 also did not directly respond to the three items as specified. For Amendments 1 & 2 this information was contained in Section 7.0 of the Semi-Annual Radioactive Effluent Release Report transmittals, as noted in References 3) & 4). This information was not provided in this section of the Semi-Annual Report starting with Amendment No. 3

Therefore, attached for your information is the supporting rationale for the changes in Amendments 3, 4 and 5 to the Offsite Dose Calculation Manual. Changes made do not reduce the accuracy or reliability of dose calculations or setpoint determinations.

All pages comprising these amendments were reviewed and approved as agenda items at the POC meetings listed with each attachment.

Should you have any question, please contact Mr. R. G. Graybeal, Manager, WNP-2 Health Physics/Chemistry.

Very truly yours,


G. C. Sorensen, Manager
Regulatory Programs

SIS/bk
Attachments

cc: JB Martin - NRC RV
NS Reynolds - BCP&R
RB Samworth - NRC
DL Williams - BPA/399
NRC Site Inspector - 901A

ATTACHMENT 1

AMENDMENT NO. 3 OF THE OFFSITE DOSE CALCULATION MANUAL

During the semi-annual reporting period, six revisions were made to the Offsite Dose Calculation Manual (ODCM). These changes were approved in POC meeting 86-04 and 86-05 on January 29, 1986 and February 5, 1986 respectively. A description of each change is included below:

SCN-85-142

This change deletes one milk sampling station due to the closure of the dairy.

SCN-86-003

This change updates the ODCM to reflect gaseous effluent radiation monitor response changes, identifies the relocation of the Visitor's Center as being within the Site boundary and occupied by a "Member of the Public" and provides an overall review and updating of Section Three of the ODCM.

SCN-86-004

This change provides a total dose evaluation to show conformance to 40CFR190 and revises Section 4 to provide an administrative method of assuring compliance with 40CFR190 in the future.

SCN-86-005

This change deletes the reference to Pressurized Ion Chambers (not required by Plant Technical Specifications) in Table 5-1 and provides other administrative changes of environmental monitoring activities to assure dose due to direct radiation is covered.

SCN-86-006

This change adds Section 6 to the ODCM which delineates the requirements and content of the Semi-Annual Radioactive Effluent Release Report.

SCN-86-002

The ODCM change provides a clarified presentation primarily of the liquid effluent radiation monitor setpoint and total activity in liquid waste tanks. It has been reviewed in accordance with 10CFR50.59 and determined that no unreviewed safety questions exist.

ATTACHMENT 2

AMENDMENT NO. 4 TO THE OFFSITE DOSE CALCULATION MANUAL

During the semi-annual reporting period, 2 revisions were made to the Offsite Dose Calculation Manual (ODCM). These changes were approved in POC meeting 86-32 on August 13, 1986. A description of each change is included below.

SCN-86-049

This change updates tables in Section 2 to concur with Radiological Programs calculations; provides additional information in Section 4 with regard to the documentation requirements for direct radiation contribution(s); and revises sample point locations as defined in Section 5. These changes were required for clarification and updating of the ODCM.

SCN-86-050

This change adds information on the intercomparison of Environmental Dosimeter (TLD) Program to Amendment 4 of the ODCM. This information is necessary to correct/remedy a Quality Assurance Audit concern.

ATTACHMENT 3

AMENDMENT NO. 5 TO THE OFFSITE DOSE CALCULATION MANUAL

Amendment No. 5 consisted of major changes incorporated to include a change in the near field dilution factor to relate to actual operating data, the addition of several radionuclides to various tables, a reference to the latest NUREG covering computer code LADTAP II, and the addition of a method of projecting 31 day doses due to gaseous effluent releases.

1. Refer to IOM from G.V. Oldfield to V.E. Shockley, subject "Applicable Factor for Use in Calculating Near Field Average Dilution Factor," which is attached.
2. Transit time instead of time to consumption is used and it had been noted that 24 hours should have been 12 hours for the transit time to Richland.
3. The change on page 8 for Dw value is to be changed from 200 to 120. If the 20,000 dilution factor obtained by dividing 6 cfs into 120,000 cfs (average river flow) and the average blowdown flow is 1.8 cfs, then the river dilution becomes 66,666 (use 60,000). The Dw "dilution factor from near field area to the nearest potable water intake" was obtained by dividing 20,000 by 100. If we now use 500 as the applicable factor for calculating the Near Field Dilution Factor, then Dw would become 500 divided into 60,000, which is equal to 120.

As the Dw factor is used in the equation (7) for determining Aij value in Table 2-2, these values were changed as required.

4. Section 2.7 refers to RPI 2.3 as having computer code and program listing. This is not in the revised RPI 2.3 and with the latest NUREG covering LADTAP II and having this information, the NUREG should be referenced.
5. Al Davis, Senior Radiochemist, requested that additional radionuclides be included in the ODCM. The addition required changes to Tables 2-1, 2-2, 3-4 and Tables 3-5 a-d. These changes have been included in this Amendment Number 5.
6. Section 3 of the ODCM did not previously have the method for projecting the 31 day dose due to gaseous effluents. This item was noted during an internal audit. This change will provide a method for projecting doses due to gaseous effluent releases.
7. Milk sample relocation was necessary due to the Bumpaous farm north of Pasco stopping milk production. Sampling was changed to the Johnson Dairy which is nearby.

8. The footnote 6 for Table 5-1 was changed because of the definition of a downstream water sample. As stated in the WNP-2 Technical Specifications is a sample "taken in an area beyond but near the mixing zone." The 300 Area sample (station 28) which is approximately 7.0 miles downstream does not qualify as a downstream sample because of its distance from the thermal mixing zone. The approximate downstream boundary of the mixing zone, as estimated in the Final Environmental Statement (NUREG 0812), is 90 meters or 300 feet. Since no samples are currently taken near the mixing zone, the samples collected from the discharge line are used to satisfy the requirement for the downstream sample.
9. The additional fruit sampling location was noted during the recent land use census. There is an apple orchard located in the ESE meteorological sector, approximately 4.5 miles from WNP-2. Apple samples were taken at harvest this year and will continue to be taken during future harvests. The location of this orchard is designated as Station 91.

These changes were approved in POC meeting 88-14 on April 6, 1988.

WASHINGTON PUBLIC POWER
SUPPLY SYSTEM
INTEROFFICE MEMORANDUM

GVO-87-011

DISTRIBUTION: MAIL DROP:

DATE: August 31, 1987

TO: V. E. Shockley, Supervisor, Health Physics Support (927S)

FROM: G. V. Oldfield, Supervisor, Rad Assessment (1020)

SUBJECT: APPLICABLE FACTOR FOR USE IN CALCULATING NEAR FIELD
AVERAGE DILUTION FACTOR

| | | |
|--------------------------|------------|-------|
| <input type="checkbox"/> | WNP-1 FILE | _____ |
| <input type="checkbox"/> | WNP-2 FILE | _____ |
| <input type="checkbox"/> | WNP-3 FILE | _____ |
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| <input type="checkbox"/> | PKWD FILE | _____ |
| <input type="checkbox"/> | LEGAL FILE | _____ |
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REFERENCE:

TE Chapman (1020)
AI Davis (927S)
RG Graybeal (927S)
DE Larson (1020)
File 962.2.3
GVO/LB

The "applicable factor" currently specified in the Offsite Dose Calculation Manual (ODCM) was calculated prior to licensing using NUREG-0133 methodology and assumed average blowdown flow of 6 cfs. NUREG-0133 states that "For plants with cooling towers, onsite ponds or lagoons, the factor shall be a number such that the product of the average blowdown flow to the receiving water body, in cfs and the applicable factor, is 1000 cfs or less."

Using this method of calculation, the factor was calculated to be $1000 \text{ cfs} / 6 \text{ cfs} = 167$. It was apparently reduced to 100 for conservatism. The factor can be recalculated using actual average blowdown flow. The attached table shows blowdown flow for the previous four calendar quarters. Using that data, the factor is calculated to be 555. We are initiating an ODCM revision to change the factor to 500.

pm

Attachment

ATTACHMENT A

WNP-2 Blowdown Flow 7/1/86 - 6/30/87

| <u>Time Period</u> | <u>Total Blowdown Volume (L)</u> | <u>Avg. Blowdown Flow (cfs)</u> |
|----------------------|--------------------------------------|-------------------------------------|
| 7/1/86 - 9/30/86 | 7.6E8 | 3.4 |
| 10/1/86 - 12/31/86 | 4.0E8 | 1.8 |
| 1/1/87 - 3/31/87 | 2.5E8 | 1.1 |
| 4/1/87 - 6/30/87 | 2.0E8 | 0.9 |
| Total for 4 Quarters | 1.6E9L | --- |
| Average | 4.0E8L/qtr. | 1.8 cfs |

Applicable Factor = 1000/avg. blowdown flow (cfs)
Applicable Factor = 555

