# PALISADES

## ANNUAL OPERATING REPORT - OCCUPATIONAL EXPOSURE

## OCCUPATIONAL PERSONNEL RADIATION EXPOSURE

The following is a list of personnel radiation exposure by job breakdown for 1982.

The radiation exposure accumulated during the entire period appears in this section and meets the Technical Specification reporting requirement of 6.9.1.b.

The exposures were tabulated from pocket ion chamber data and then adjusted by a factor which corrects the ion chamber dose so that the total plant dose is equal to the primary thermoluminescent dosimeter dose.

The correction is applied to each category in the following table. The correction factor calculation is shown in Attachment I.

APPENDIX A

STANDARD FORMAT FOR REPORTING NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

| | Number of Personnel (>100 mrem) | | | Total Man-Rem | | |
|---|---|---|---|---|---|---|
| Work & Job Function | Station | Utility | Others | Station | Utility | Others |
| Reactor Operations & Surveillance | | | | | | |
| Maintenance Personnel | 1 | 0 | 0 | 0.299 | 0.000 | 0.000 |
| Operating Personnel | 25 | 0 | 0 | 7.132 | 0.048 | 0.013 |
| Health Physics Personnel | 51 | 2 | 45 | 20.262 | 0.560 | 20.310 |
| Supervisory Personnel | 5 | 0 | 0 | 1.770 | 0.060 | 0.051 |
| Engineering Personnel | 5 | 2 | 2 | 0.986 | 0.415 | 0.550 |
| Routine Maintenance | | | | | | |
| Maintenance Personnel | 80 | 3 | 17 | 26.442 | 0.824 | 3.512 |
| Operating Personnel | 0 | 0 | 0 | 0.000 | 0.007 | 0.000 |
| Health Physics Personnel | 0 | 0 | 0 | 0.053 | 0.004 | 0.060 |
| Supervisory Personnel | 4 | 0 | 0 | 1.063 | 0.007 | 0.134 |
| Engineering Personnel | 2 | 0 | 1 | 0.467 | 0.039 | 0.162 |
| Inservice Inspection | | | | | | |
| Maintenance Personnel | 0 | 0 | 2 | 0.000 | 0.000 | 0.521 |
| Operating Personnel | 0 | 0 | 0 | 0.000 | 0.000 | 0.000 |
| Health Physics Personnel | 0 | 0 | 0 | 0.014 | 0.000 | 0.000 |
| Supervisory Personnel | 0 | 0 | 0 | 0.039 | 0.000 | 0.032 |
| Engineering Personnel | 0 | 0 | 1 | 0.053 | 0.000 | 0.243 |
| Special Maintenance | | | | | | |
| Maintenance Personnel | 69 | 34 | 358 | 16.845 | 12.618 | 112.836 |
| Operating Personnel | 0 | 0 | 1 | 0.000 | 0.000 | 0.113 |
| Health Physics Personnel | 0 | 0 | 0 | 0.000 | 0.000 | 0.000 |
| Supervisory Personnel | 0 | 1 | 7 | 0.123 | 0.162 | 1.248 |
| Engineering Personnel | 3 | 0 | 20 | 1.341 | 0.63 | 5.151 |
| Waste Processing | | | | | | |
| Maintenance Personnel | 1 | 1 | 0 | 0.099 | 0.099 | 0.000 |
| Operating Personnel | 0 | 0 | 2 | 0.000 | 0.000 | 1.543 |
| Health Physics Personnel | 1 | 0 | 0 | 0.099 | 0.000 | 0.025 |
| Supervisory Personnel | 0 | 0 | 0 | 0.000 | 0.000 | 0.000 |
| Engineering Personnel | 0 | 0 | 0 | 0.011 | 0.042 | 0.032 |
| Refueling | | | | | | |
| Maintenance Personnel | 0 | 0 | 0 | 0.000 | 0.000 | 0.000 |
| Operating Personnel | 0 | 0 | 0 | 0.046 | 0.000 | 0.000 |
| Health Physics Personnel | 0 | 0 | 0 | 0.000 | 0.000 | 0.000 |
| Supervisory Personnel | 0 | 0 | 0 | 0.000 | 0.000 | 0.000 |
| Engineering Personnel | 0 | 0 | 0 | 0.000 | 0.000 | 0.000 |
| Total | | | | | | |
| Maintenance Personnel | 151 | 38 | 377 | 43.685 | 13.541 | 116.869 |
| Operating Personnel | 25 | 0 | 3 | 7.178 | 0.058 | 1.669 |
| Health Physics Personnel | 52 | 2 | 45 | 20.428 | 0.564 | 20.395 |
| Supervisory Personnel | 9 | 1 | 7 | 2.995 | 0.229 | 1.465 |
| Engineering Personnel | 10 | 2 | 24 | 2.858 | 0.559 | 6.138 |
| GRAND TOTAL | 247 | 43 | 456 | 77.144 | 14.951 | 146.536 |

TOTAL = 238.631 PERSON-REM

ATTACHMENT I

1. Correction Factor Calculation (CF)

$$CF = \frac{SS - (N \times .05)}{PR}$$

SS = Total plant dose from a summary report which is based on primary dosimetry (TLD) data generated by the corporate office

= 288.925 rem

N = Number of individuals in the 0 to 100 mrem range of the Range Summary Report

= 1,006

PR = Total plant dose from the Annual Exposure Report (pocket ion chamber dose data) submitted by Big Rock Point Plant

= 338.952 rem

$$CF = \frac{288.925 - (1006 \times .05)}{338.952}$$

$$= 0.704$$

2. Check for reasonableness

a.

| Range midpoint | Frequency | Dose |
|---|---|---|
| 0.175 | 227 | 39.725 |
| 0.375 | 149 | 55.875 |
| 0.625 | 74 | 46.250 |
| 0.875 | 34 | 29.750 |
| 1.5 | 54 | 81.000 |
| 2.5 | 8 | 20.000 |
| 3.5 | 2 | 7.000 |
| | Total | 279.600 |

b. $$\text{Ratio} = \frac{\text{Annual Report Total Dose}}{\text{Range Summary Report Total Dose}}$$

$$= \frac{238.631}{279.600}$$

$$= 0.853$$

The ratio (0.853) meets the acceptance criteria of RSD-X-05 ($0.80 \leqq 0.853 \leqq 1.20$) and is therefore deemed reasonable.