

## Appendix 12A. Tables

**Table 12-1. Parameters Used for Shielding Analyses**

|   |   |
|---|---|
| Core Thermal Power                      | 2568 MWt                                |
| Effective Core Diameter                 | 128.9 in.                               |
| Active Fuel Length                      | 144 in                                  |
| Thickness of Core Liner                 | 0.75 in.                                |
| Thickness of Core Barrel                | 2 in.                                   |
| Thickness of Thermal Shield             | 2 in.                                   |
| Reactor Vessel I.D.                     | 171 in.                                 |
| Reactor Vessel O.D.                     | 188 in.                                 |
| Volume of Reactor Coolant               | 11,478 ft <sup>3</sup>                  |
| Normal Letdown Flow                     | 1 reactor coolant system volume per day |
| Time Between Shutdown and Fuel Handling | 100 hrs.                                |
| Coolant Transit Times (Seconds):        |   |
| Core Inlet to Core Exit                 | 0.8                                     |
| Core Exit to S.G. Inlet                 | 2.8                                     |
| S.G. Inlet to S.G. Outlet               | 5.2                                     |
| S.G. Outlet to Core Inlet               | 4.0                                     |
| Total Loop Time                         | 12.8                                    |

**Table 12-2. Principal Shielding**

| <b>Reactor Building</b>                        |                                |
|--|--------------------------------|
| <b>Component</b>                               | <b>Concrete Thickness (ft)</b> |
| Primary Shield (Below Flange)                  | 5                              |
| (Above Flange)                                 | 4.5                            |
| Secondary Shield                               | 4                              |
| Reactor Building Vertical Walls                | 3.75                           |
| Reactor Building Dome                          | 3.25                           |
| Side Walls of Fuel Transfer Canal              | 4.5                            |
| End Walls of Fuel Transfer Canal               | 2.5,4                          |
| Floor of Fuel Transfer Canal                   | 4                              |
| Nominal Water Over Active Fuel During Transfer | 9                              |
| <b>Auxiliary Building</b>                      |                                |
| <b>Component</b>                               | <b>Concrete Thickness (ft)</b> |
| Spent Resin Tanks                              | 4                              |
| Evaporator Equipment                           | 3.0-4.0                        |
| Purification Demineralizers                    | 4                              |
| Deborating Demineralizers                      | 4                              |
| Component Drain Pump                           | 1.5-4.0                        |
| Spent Resin Transfer Pump                      | 2-4                            |
| Spent Resin Sluicing Pump                      | 2-4                            |
| Waste Transfer Pump                            | 1-4                            |
| Low Pressure Injection Pumps                   | 2.5-3.5                        |
| High Pressure Injection Pumps                  | 1.5-4.0                        |
| Coolant Bleed Holdup Tanks                     | 1.5-4.0                        |
| Concentrated Boric Acid Storage Tank           | 1.5-2.0                        |
| Waste Drumming Area                            | 1.5-2.0                        |
| Low Pressure Injection Coolers                 | 3                              |
| Letdown Storage Tanks                          | 4                              |
| Waste Holdup Tank                              | 2.0                            |
| Waste Gas Tank                                 | 3.0-3.5                        |
| Waste Gas Compressors                          | 3.0-3.5                        |
| Bleed Evaporator Feed Tank                     | 2.0-3.0                        |

|                                    |         |
|------------------------------------|---------|
| Spent Fuel Coolant Pumps & Coolers | 2.5-3.5 |
| Side Walls of Storage Pool         | 3.5     |
| End Walls of Storage Pool          | 5.5     |

**Table 12-3. Area Radiation Monitors**

| <b>RIA</b>          | <b>Detector Type</b> | <b>Location</b>  | <b>Range</b>                          | <b>Nominal Sensitivity</b>      |
|---------------------|----------------------|--|---------------------------------------|---------------------------------|
| RIA-1               | G-M                  | Control Room Unit 1&2, Unit 3                            | 1E-1 to 1E4 mR/hr                     | 100 cpm/mR/hr                   |
| RIA-3<br>High Range | G-M<br>Ion Chamber   | Reactor Building Refueling Deck Shield Wall Unit 1, 2, 3 | 1E-1 to 1E4 mR/hr<br>1E2 to 1E7 mR/hr | 100 cpm/mR/hr<br>1.2E-10 A/R/hr |
| RIA-4<br>High Range | G-M<br>Ion Chamber   | Reactor Building Entrance Unit 1, 2, 3                   | 1E-1 to 1E4 mR/hr<br>1E2 to 1E7 mR/hr | 100 cpm/mR/hr<br>1.2E-10 A/R/hr |
| RIA-5               | G-M                  | Incore Instrument Handling Area Unit 1, 2, 3             | 1E-1 to 1E4 mR/hr                     | 100 cpm/mR/hr                   |
| RIA-6<br>High Range | G-M<br>Ion Chamber   | Spent Fuel Building Wall Unit 1&2, Unit 3                | 1E-1 to 1E4 mR/hr<br>1E2 to 1E7 mR/hr | 100 cpm/mR/hr<br>1.2E-10 A/R/hr |
| RIA-7               | G-M                  | Hot Machine Shop   | 1E-1 to 1E4 mR/hr                     | 100 cpm/mR/hr                   |
| RIA-8               | G-M                  | Hot Laboratory   | 1E-1 to 1E4 mR/hr                     | 100 cpm/mR/hr                   |
| RIA-10              | G-M                  | Sample Area Unit 1, 2, 3                                 | 1E-1 to 1E4 mR/hr                     | 100 cpm/mR/hr                   |

Security Related Information

Table withheld Under 10 CFR 2.390

| RIA  | Detector Type | Location | Range | Nominal Sensitivity |
|--|---------------|----------|-------|---------------------|
| <p>Security Related Information<br/>                     Table withheld Under 10 CFR 2.390</p> |               |          |       |                     |
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|  |               |          |       |                     |
|  |               |          |       |                     |
|  |               |          |       |                     |
|  |               |          |       |                     |

Note:

1. These G-M/Ion Chamber detectors are used as Process Radiation Monitors, but are functionally similar to the Area Monitors and are contained in the same cabinets.
2. These beta scintillation detectors are process type RIAs, however they are used in an area monitoring situation.
3. Radwaste Facility Area Monitor. Because the Radwaste Facility is not used as originally designed, these monitors are not used in a personnel radiation protection capacity as originally intended. Therefore, only the number and location are provided for these RIAs.
4. Radwaste Facility Area Monitor. Area Monitors have been statused as inactive. Power has been removed and these area monitors are not in service.