

**Enclosure 2**

**MFN 15-023**

**GEH Response to RAI 11.04-1**

**ABWR DCD DRAFT Revision 6 Markups**

radwaste system. Leakage is prevented from entering unmonitored and nonradioactive systems and ductwork in the area.

Radiation exposures are minimized according to Regulatory Guide 8.8 as described in Subsection 12.1.1.3.1.

The liquid radwaste system vessels, piping, welding and testing meet the quality assurance provisions as described in Subsection 11.2.1.2.1.

#### **11.2.1.2.1 Quality Classification, Construction, and Testing Requirements**

Equipment and piping are designed and constructed in accordance with the applicable codes listed in Table 11.2-1. The equipment and piping will comply with the requirements of Regulatory Guide 1.143.

Regulatory position C.1.2.1 of Regulatory Guide 1.143 requires that high level in the condensate storage tank be alarmed. Activities which send water to the condensate storage tank are controlled either in the radwaste building control room or the main control room. The location of alarms is interpreted to be in the radwaste building control room and the main control room.

#### **11.2.1.2.2 Seismic Design**

The buildings housing the liquid radwaste processing equipment are designed in accordance with the Uniform Building Codes. These buildings are not designated as Seismic Category I. Per regulatory position 1.1.3 of Regulatory Guide ~~1.43~~ 1.143, the base mat and outside walls are Seismic Category I to a height necessary to retain spilled liquids within the building.

#### **11.2.1.3 Occupational Exposure**

Design features to minimize occupational exposure include:

- (1) Design of equipment to minimize service time
- (2) Location of instruments requiring calibration in a central station outside of equipment cells
- (3) Arrangement of shield wall penetrations to avoid direct exposure to normally occupied areas
- (4) Piping design to minimize crud traps and plateout (there are no socket welds in contaminated piping systems)
- (5) Provision for remote pipe and equipment flushing
- (6) Utilization of remote viewing and handling equipment as appropriate

Proportional amounts of wastes and fixative are incorporated into the solid radwaste matrix to assure that no free water accumulates in the waste container in compliance with the Branch Technical Position ETSB 11-3.

Packaging and transporting radioactive wastes will be in conformance with 10CFR61. Packaged wastes will be shipped in conformance with 49CFR173, Subpart I, limits. Sufficient onsite storage is provided to hold at least six months production of radwaste. The radiation monitoring of the solid product generated for shipment offsite (GDC 64) is accomplished by providing monitoring devices at the solids container so that, as the container is filled, the waste accumulation is measured to prevent the container from exceeding acceptable radiation levels.

Other criteria that are also applicable to the solid waste portion of the Radwaste System have been discussed previously in Section 11.2.1.2. [This includes compliance with Regulatory Guide 1.143.](#)

## 11.4.2 System Description

### 11.4.2.1 General Description

The major Solid Waste System equipment consists of the following:

- (1) Thin-film dryer
- (2) A waste supply tank and a waste supply pump
- (3) A moisture separator, a condenser and a vent blower
- (4) A pelletizer
- (5) A powder hopper and a binder measuring hopper
- (6) A pellet filling machine
- (7) A particle filter, HEPA filter and a filter blower
- (8) A mixing tank
- (9) A solidification agent measuring hopper and an additive water tank
- (10) A drum conveyor assembly
- (11) A capping machine
- (12) A cleaning water tank and a cleaning water pump
- (13) A cleaning water receiving tank and a decant pump

Table 3.2-1 Classification Summary (Continued)

Principal Component <sup>a</sup>	Safety Class <sup>b</sup>	Location <sup>c</sup>	Quality Group Classification <sup>d</sup>	Quality Assurance Requirement <sup>e</sup>	Seismic Category <sup>f</sup>	Notes
<b>N12 Extraction System</b>	N	T	—	E	—	
<b>N13 Turbine Bypass System</b>						
1. Turbine bypass piping including supports up to the condenser	N	T	D	E	—	(r)
<b>N14 Reactor Feedwater Pump Driver</b>	N	T	—	E	—	
<b>N15 Turbine Auxiliary Steam System</b>	N	T	—	E	—	
<b>N16 Generator</b>	N	T	—	E	—	
<b>N17 Hydrogen Gas Cooling System</b>	N	T	—	E	—	
<b>N18 Generator Cooling System</b>	N	T	—	E	—	
<b>N19 Generator Sealing Oil System</b>	N	T	—	E	—	
<b>N20 Exciter</b>	N	T	—	E	—	
<b>N21 Main Condenser</b>	N	T	—	E	—	
<b>N22 Offgas System</b>	N	T	—	E	—	(p)(q) (v)
<b>N23 Circulating Water System</b>	N	T	D	E	—	
Notes and footnotes are listed on pages 3.2-52 through 3.2-59						

3. All inspection records shall be maintained for the life of the plant. These records shall include data pertaining to qualification of inspection personnel, examination procedures, and examination results.
- p. A quality assurance program meeting the guidance of Regulatory Guide 1.143 will be applied during design and construction.
- q. Detailed seismic design criteria for the offgas system are provided in Subsection ~~H.3.4.8~~[11.3.8](#).
- r. See Subsection 3.2.5.3.
- s. The recirculation motor cooling system (RMCS) is classified Quality Group B and Safety Class 2 which is consistent with the requirements of 10CFR50.55a. The RMCS, which is part of the reactor coolant pressure boundary (RCPB) meets 10CFR50.55a (c)(2). Postulated failure of the RMCS piping cannot cause a loss of reactor coolant in excess of normal makeup (CRD return or RCIC flow), and the RMCS is not an engineered safety feature. Thus, in the event of a postulated failure of the RMCS piping during normal operation, the reactor can be shutdown and cooled down in an orderly manner, and reactor coolant makeup can be provided by a normal make up system (e.g., CRD return or RCIC system). Thus, per 10CFR50.55a(c)(2), the RMCS need not be classified Quality Group A or Safety Class 1, however, for plant availability, the system is designed, fabricated and constructed in accordance with ASME Boiler and Pressure Vessel Code, Section III, Class 1 criteria as specified in Subsection 3.9.3.1.4 and Figure 5.4-4.
- t. A quality assurance program for the Fire Protection System meeting the guidance of Branch Technical Position CMEB 9.5-1 (NUREG-0800), is applied.
- u. Special seismic qualification and quality assurance requirements are applied.
- v. See Regulatory Guide 1.143, Paragraph C.5 for the offgas vault seismic requirements.
- w. The condensate storage tank will be designed, fabricated, and tested to meet the intent of API Standard API 650. In addition, the specification for this tank will