GE-Hitachi Nuclear Energy Americas LLC

James C. Kinsey
Project Manager, ESBWR Licensing

PO Box 780 M/C A-55
Wilmington, NC 28402-0780
USA

T 910 675 5057
F 910 362 5057
jim.kinsey@ge.com

MFN 06-218, Supplement 1

Docket No. 52-010

August 31, 2007

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555-0001

Subject: **Response to Portion of NRC Request for Additional Information Letter No. 35 Related to ESBWR Design Certification Application – Radioactive Waste Management Systems – RAI Number 11.4-6 S01**

Enclosure 1 contains GE-Hitachi Nuclear Energy Americas (GEH) response to the subject NRC RAI transmitted via Reference 1. Enclosure 2 contains the DCD Markups associated with this response.

If you have any questions or require additional information regarding the information provided here, please contact me.

Sincerely,

Kathy Sedney for

James C. Kinsey
Project Manager, ESBWR Licensing

D068

NRO

Reference:

1. MFN 06-199 – Letter from U.S. Nuclear Regulatory Commission (NRC) to David H. Hinds, *Request for Additional Information Letter No. 35 Related to ESBWR Design Certification Application,* dated June 22, 2006

Enclosures:

1. Response to NRC Request for Additional Information Letter No. 35 Related to ESBWR Design Certification Application – Radioactive Waste Management Systems, RAI Number 11.4-6 S01
2. DCD Markups

cc: AE Cubbage USNRC (with enclosures)
GB Stramback GEH /San Jose (with enclosures)
RE Brown GEH /Wilmington (with enclosures)
eDRF 0073-6433

Enclosure 1

MFN 06-218, Supplement 1

Response to Portion of NRC Request for Additional Information Letter No. 35 Related to ESBWR Design Certification Application

Radiaoctive Waste Management Systems

RAI Number 11.4-6 S01 Items a through c

NRC RAI 11.4-6 S01:

RAI 11.4-6a - A review of the system components listed in DCD Rev. 3, Table 11.4-1 and Figure 11.4-1 indicates that the HIC Return Pumps and Sorting Table are not shown in Figure 11.4-1. Accordingly, update the table and figure to indicate where in the SWMS these components are located.

RAI 11.4-6b - A review of the estimated radwaste inventories listed in DCD Rev. 3, Table 11.4-2 indicates that the amount listed for the Wet Solid Waste Total is inconsistent with each of the listed waste streams comprising this total. Accordingly, update the value of the total waste estimate.

RAI 11.4-6c - A review of DCD Rev. 3, Table 11.4-2 indicates that the last footnote refers to the use of evaporation as a mean of achieving waste volume reduction for concentrated wet wastes. However, the use of evaporators is not discussed in DCD Rev. 3, Section 11.4.2. Accordingly, revise the footnote to eliminate evaporation as a waste reduction method or add the use of this type of waste processing technology to DCD Section 11.4.2 and update the associated DCD tables and Figure 11.4-1.

GEH Response:

The HIC return pump (dewatering pump) will be added to Figure 11.4-3. Sorting is a manual activity performed by station personnel and will be shown on Figure 11.4-2. The wet solid waste totals have been updated on Table 11.2-4. The last footnote on Table 11.4-2 has been changed from evaporation to drying, which is discussed Subsection 11.4.2.2 for the description of mobile waste solid waste processing.

DCD Impact:

DCD Tier 2, Section 11, Table 11.2-4, Figures 11.4-2, and 11.4-3 will be revised as noted on the attached markup and provided in Revision 5.

Enclosure 2

MFN 06-218, Supplement 1

DCD Markups

Table 11.4-2

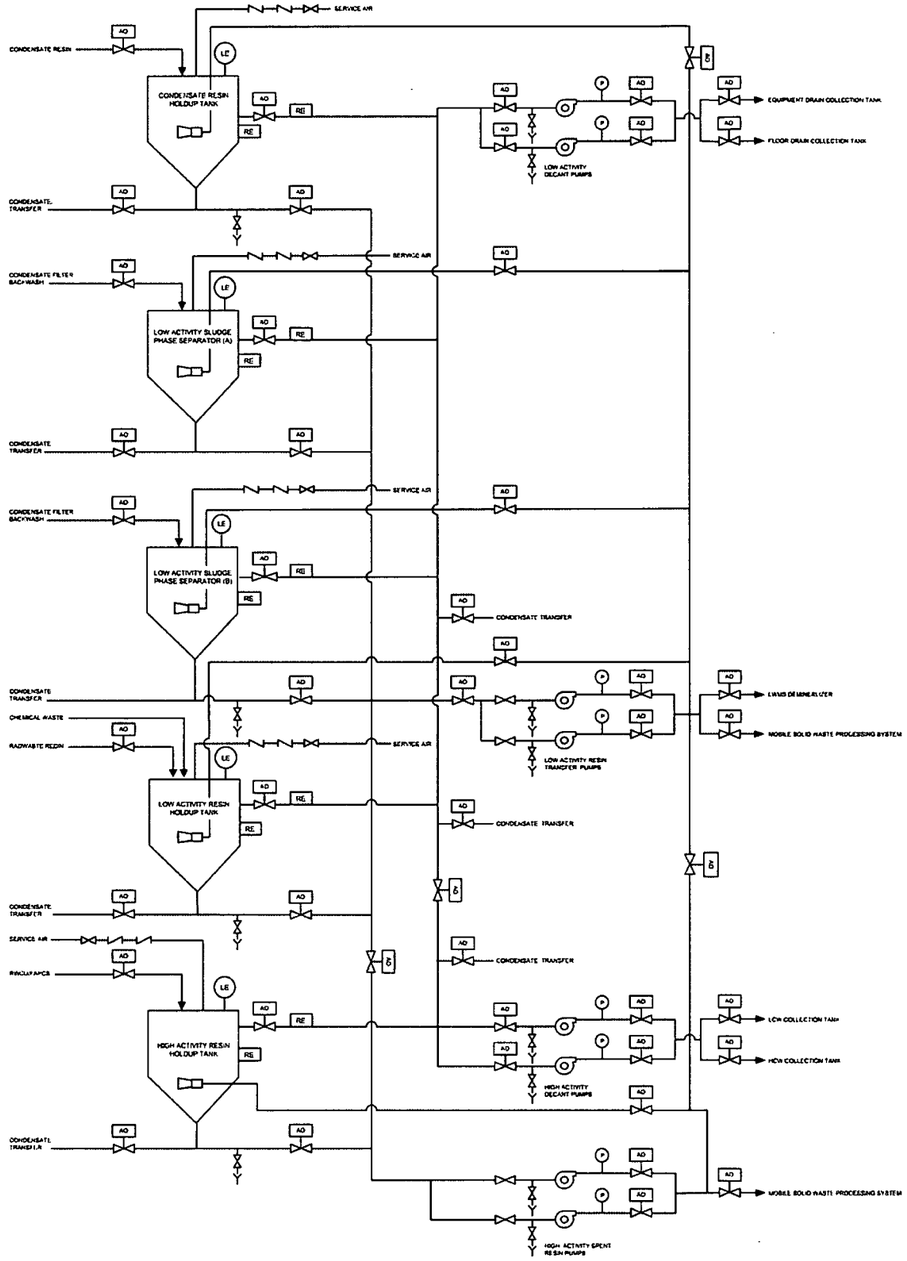
Annual Shipped Waste Volumes♦

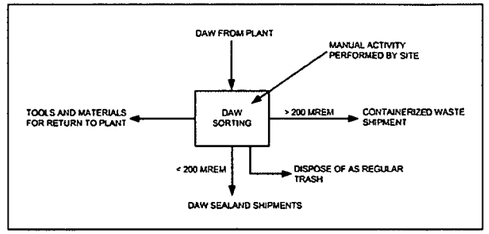
Waste Type	Estimated Annual Waste Generation m^3/yr (ft^3/yr)	Estimated Shipped Volume* m^3/yr (ft^3/yr)
Dry Active Wastes (DAW)		
Combustible waste:	225 (7,951)	225 (7,951)
Compactable waste:	38 (1,343)	38 (1,343)
Other waste:	100 (3,534)	100 (3,534)
DAW Total	363 (12,827)	363 (12,827)
Wet Solid Wastes		
RWCU Spent Bead Resin:	7.6 (269)	7.6 (269)
FAPCS Spent Bead Resin:	8.032.4 (2831,144)	8.032.4 (2831,144)
Condensate Purification System Spent Bead Resin:	33.8 (1,194)	33.8 (1,194)
LWMS Spent Bead Resin:	5.4 (191)	5.4 (191)
Condensate Purification System Filter Sludge:	5.2 (184)	5.2 (184)
LWMS Filter Sludge:	0.8 (28.3)	0.8 (28.3)
LWMS Concentrated Waste◊:	50 (1,767)	25 (883)
Wet Solid Waste Total	110.81 (3,922)	85.8 (3,032)
Mixed Waste:	0.416 (14.71)	0.416 (14.71)

♦ ~~Should a COL holder compact~~ If waste is compacted using a third party service, the estimated annual shipped waste volume provided in Table 11.4-2 ~~reduction~~may be reduced ~~will be considered~~ depending on the type and level of waste and the waste compacting equipment and resulting compaction performance.

* Note the goal value is a long term average of resins and sludges in the dewatered condition and all other wastes packaged for shipment. The values for resins and sludges in the above table are volumes packaged for shipment.

◊ The volume reduction is based on LWMS Concentrated Waste moisture removal. An estimate of 50% volume reduction is thought to be conservative based on current moisture removal technologies, such ~~evaporation~~ as drying and membrane-based operations.





System Design Per Requirements of Reg. Guide 1.143

Figure 11.4-2. SWMS Spent Resin Sludge Transfer System

*Conceptual Design

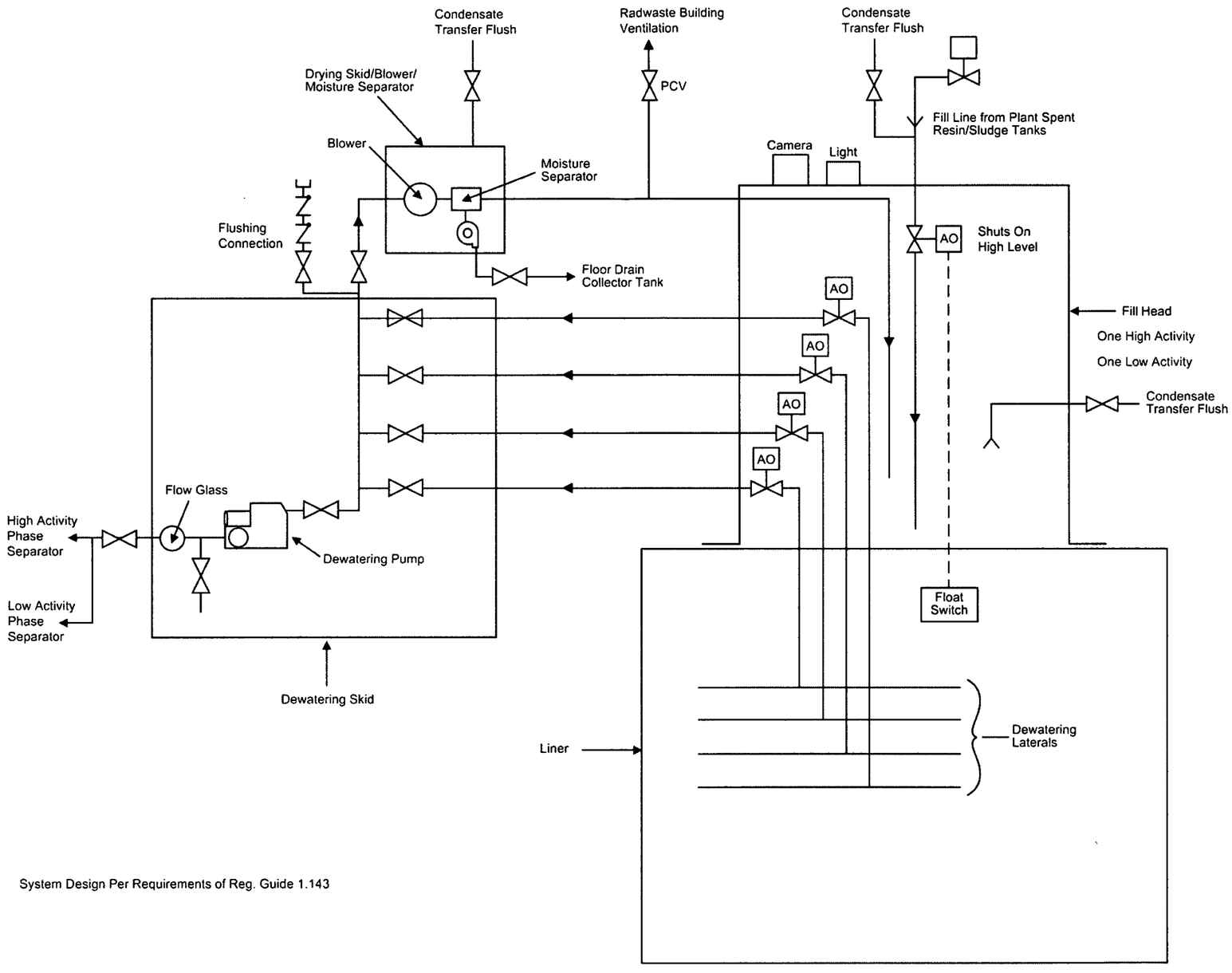


Figure 11.4-3. SWMS Solid Radwaste Dewatering System

*Conceptual Design