



GE Energy

David H. Hinds
Manager, ESBWR

PO Box 780 M/C L60
Wilmington, NC 28402-0780
USA

T 910 675 6363
F 910 362 6363
david.hinds@ge.com

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Subject: Revised Response to RAI Number 5.4-2 - NRC Request for Additional Information Letter No. 8 for the ESBWR Design Certification Application

Enclosure 1 contains GE's revised response to the subject NRC RAI. This response provides additional clarification regarding demineralizer reduced flow as discussed in a NRC/GE telecon on March 21, 2006. GE's original response to this RAI was transmitted via the Reference 1 letter.

If you have any questions about the information provided here, please let me know.

Sincerely,

David H. Hinds
Manager, ESBWR

D068

Reference:

1. MFN 06-064, Letter from David Hinds to U.S. Nuclear Regulatory Commission, *Response to NRC Request for Additional Information Letter No. 8 for the ESBWR Design Certification Application – Reactor Water Cleanup/Shutdown Cooling System – RAI Numbers 5.4-1 through 5.4-7, 6.5-1, 9.2-1, 9.2-2, 9.3-1, and 10.4-1*, February 28, 2006

Enclosure:

1. MFN 06-088 – Revised Response to RAI Number 5.4-2 - NRC Request for Additional Information Letter No. 8 for the ESBWR Design Certification Application

cc: WD Beckner USNRC (w/o enclosures)
AE Cabbage USNRC (with enclosures)
LA Dudes USNRC (w/o enclosures)
GB Stramback GE/San Jose (with enclosures)
eDRFs 0000-0052-3362

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Enclosure 1

ENCLOSURE 1

MFN 06-088

**Revised Response to RAI Number 5.4-2 - NRC Request for
Additional Information Letter No. 8 for the
ESBWR Design Certification Application**

NRC RAI 5.4-2

Provide design requirements for a system controlling the ability of the demineralizer to automatically maintain flow through its resin beds in the event the system flow has to be decreased in order to prevent loss of resin from the bed.

Revised GE Response

It is assumed that the requirement in the above RAI is taken from SRP 5.4.8 Draft Rev. 3-April 1996, page 5.4.8-6 item 2.c which states:

“2.c The reactor water cleanup system should include the following:
Means for automatically maintaining flow through filter/demineralizer beds in the event of low process flow or loss of process flow through the system to prevent bed loss. The recirculation loop and holding pump subsystem provided for precoating can serve this purpose if it is activated on loss of flow or low flow conditions.”

The above SRP requirement does not apply to the ESBWR reactor water cleanup system demineralizer. As described in DCD Section 5.4.8.1.2, under the heading “Demineralizer”, the demineralizer is a mixed bed type, which uses non-regeneration bead type resins. This type of demineralizer does not lose resins on a reduction or loss of process flow and also does not require a holding pump to prevent such loss.

Please note that the above SRP requirement applies to a powdered resin type demineralizer requiring a holding pump and a precoat system.

In addition, for a flow control through demineralizer when the system flow is higher than the demineralizer design capacity, the design description is given in DCD Subsection 7.4.3.2, under heading “Control Valves”, last paragraph, first sentence as follows:

“The demineralizer bypass piping have an air-operated modulating flow control valve that will bypass the excess flow above the demineralizer capacity.”