



GE Energy

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MFN 06-332

Docket No. 52-010

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

Subject: **ESBWR Design Change – Isolation Condenser Drain Line**

As discussed with the NRC in meetings held on August 10, 2006, a change to the Isolation Condenser (IC) drain line will be incorporated into the ESBWR design. The reason for this design change is to improve operator flexibility and to maintain margin in minimum chimney collapsed level during a LOCA. Enclosure 1 contains a summary of the background and objectives of this design change. This design change will be fully described and analyzed in Revision 2 of the ESBWR DCD.

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

Sincerely,

A handwritten signature in cursive script that reads "Kathy Sedney for".

David H. Hinds  
Manager, ESBWR

Handwritten initials, possibly "DHH", in the bottom right corner.

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Enclosure:

1. MFN 06-332 – ESBWR Design Change – Isolation Condenser Drain Line

cc: AE Cabbage USNRC (with enclosures)  
GB Stramback GE/San Jose (with enclosures)  
eDRF 0000- 0058-7889

**ENCLOSURE 1**

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**ESBWR Design Change  
Isolation Condenser Drain Line**

## ESBWR Design Change Isolation Condenser Drain Line

### Background

Current ADS logic (DCD Rev. 1)

- Level 1.5 = 13.0 m, Level 1 = 11.0 m
- ADS trip
  - L1.5 + High DW Pressure
  - L1.5 + 900 s delay time
  - L1

Current Transient (DCD Rev. 1)

- Loss of all feedwater flow event
  - need HP CRD flow to avoid ADS
- Station Blackout
  - Water level drop below L1.5 for more than 900 s
  - ADS activated

**There are NO SAFETY ISSUES**

### Objective

- Design changes are not due to SAFETY ISSUES
- Design changes to improve operator flexibility
  - To Avoid ADS trip in SBO and LOFW events
  - To Eliminate 900 seconds delay timer on Level 1.5
  - To Eliminate Level 1.5 trip
  - To simplify the ADS logic, combine L1.5 and L1 into one Level 1
- Maintain margin in minimum chimney collapsed level in LOCAs.

### Design Change Being Analyzed for DCD, Rev. 2

- Increase the IC drain line water volume
  - Add 9 m<sup>3</sup> per drain line in the upper DW, between the isolation valve and drain valve (elevation and orientation of volume to be forwarded under separate cover.)
- ADS logic change
  - Combine the existing L1.5 and L1 into a single new L1, eliminate 900s timer logic & high DW pressure input into L1.5.
  - New L1 setpoint = 11.5 m