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Your ref: Docket No. 52-006
Our ref: DCP_NRC_003090

November 17, 2010

Subject: Westinghouse Response to USNRC Request to Incorporate AP1000™ Design Change

Westinghouse is submitting the enclosed response for additional information related to an AP1000™ design enhancement that mitigates the risk of spurious actuation of the Automatic Depressurization System (ADS). On October 20, 2010, NRC representatives initiated a telephone discussion with Westinghouse representatives to address NRC questions related to the possibility of ADS actuation due to a spurious actuation by the Protection and Safety Monitoring System (PMS). NRC staff explained they are considering evaluating this scenario for safety consequence and described options that could be pursued to eliminate the need for this evaluation. The options involved Westinghouse action to either perform an analysis to demonstrate there is no safety consequence of a spurious ADS actuation, or initiate a design change, independent from the PMS, that would prevent spurious action. Further, NRC described the desirability of incorporating the resolution of this request into the Design Control Document being prepared for the update to the application to amend design certification.

In response to the NRC request, Westinghouse offers the additional information to be included in DCD Revision 18, Tier 2 - Chapter 7 - Section 7.2 "Engineered Safety Features". This change is being implemented to facilitate a timely resolution of the NRC evaluation and is an enhancement to the certified AP1000 design. The existing ADS design is safe and meets all USNRC requirements.

This information is submitted in support of the AP1000 Design Certification Amendment Application (Docket No. 52-006). The information included in this letter is generic and is expected to apply to all COL applications referencing the AP1000 Design Certification and the AP1000 Design Certification Amendment Application.

Questions or requests for additional information related to the content and preparation of this letter should be directed to Westinghouse. Please send copies of such questions or requests to the prospective applicants for combined licenses referencing the AP1000 Design Certification. A representative for each applicant is included on the cc: list of this letter.

Very truly yours,

A handwritten signature in black ink that reads "Stanley E. Rutterbusch for". The signature is written in a cursive style.

R. F. Ziesing
Director, U.S. Licensing

DO96
NRC

/Enclosure

1. Westinghouse AP1000™ ADS Spurious Actuation DCD Revision 18 Wording

| | | | |
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ENCLOSURE 1

**Westinghouse AP1000TM
ADS Spurious Actuation
Design Control Document Revision 18 Wording**

Design Control Document (DCD) Revision:

Tier 2, Chapter 7

7.3 Engineered Safety Features

7.3.1 Description

7.3.1.2 Engineered Safety Feature Descriptions

7.3.1.2.4.1 Block to Prevent ADS Spurious Actuation

A number of measures have been taken to reduce the likelihood of spurious actuation of ESF functions in the AP1000 Protection and Safety Monitoring System (PMS) design. Special attention has been given to prevention of spurious Automatic Depressurization System (ADS) valve action, since a spurious actuation could result in a release of reactor coolant to containment. In order to prevent such spurious actuations, an ADS blocking device is provided that is independent of PMS failure modes. Each division of the PMS contains an independent block or interlock that prevents the ADS Stage 1-4 valves from being actuated unless there is a confirmatory process condition separate from the PMS ADS actuation logic.

Independence

The ADS blocking device is a Class 1E module physically located within each of the PMS divisions. The blocking device is diverse from the PMS hardware and software that is used to create the automatic ADS actuation signal, which provides the input to the component interface modules for the ADS valves. There are no inter-divisional connections between the blocking devices nor will there be any coincidence voting. One valve in each of the ADS 1-4 paths is interlocked.

Clearing of the ADS Block

The ADS block device uses Core Makeup Tank (CMT) level to automatically clear this block. The ADS block in each division uses a level signal input from each CMT that clears the interlock if either signal indicates a CMT is draining. The use of two CMT level sensors in each ADS block device provides for a device that does not adversely affect the reliability of ADS to actuate when it is required. Switches, one for each division, are provided in the Main Control Room (MCR) to allow the operators to manually clear the ADS blocks.