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Your ref: Project Number 740  
Our ref: DCP/NRC1996

September 17, 2007

Subject: AP1000 COL Standard Technical Report Submittal of APP-GW-GLR-127, Revision 1 (TR 127)

In support of Combined License application pre-application activities, Westinghouse is submitting Revision 1 of AP1000 Standard Combined License Technical Report Number 127. This technical report is submitted to explain how Figure 2.2.2-1 is changed in Revision 16 of the AP1000 Design Control Document. This revision to Technical Report 127 provides additional regulatory compliance justification as discussed in a teleconference between Andrea Sterdis of Westinghouse and Chris Jackson of the NRC on August 3, 2007.

This report is submitted as part of the NuStart Bellefonte COL Project (NRC Project Number 740). The information included in this report is generic and is expected to apply to all COL applications referencing the AP1000 Design Certification.

The purpose for submittal of this report was explained in a March 8, 2006 letter from NuStart to the NRC.

Pursuant to 10 CFR 50.30(b), APP-GW-GLR-127, Revision 1, "PCS Tier 1 Diagram Correction," Technical Report Number 127, is submitted as Enclosure 1 under the attached Oath of Affirmation. Revision 0 of Technical Report 127 was submitted May 25, 2007, under Westinghouse letter DCP/NRC1910.

It is expected that when the NRC review of Technical Report Number 127 is complete, Figure 2.2.2-1 will be considered correct for all COL applicants referencing the AP1000 Design Certification.

Questions or requests for additional information related to content and preparation of this report 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.

Westinghouse requests the NRC to provide a schedule for review of the technical report within two weeks of its submittal.

Very truly yours,

  
A. Sterdis, Manager  
Licensing and Customer Interface  
Regulatory Affairs and Standardization

/Attachment

1. "Oath of Affirmation," dated September 17, 2007

/Enclosure

1. APP-GW-GLR-127, Revision 1, "PCS Tier 1 Diagram Correction," Technical Report Number 127

cc:	D. Jaffe	- U.S. NRC	1E	1A
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	G. Zinke	- NuStart/Entergy	1E	1A
	P. Greco	- Westinghouse	1E	1A

ATTACHMENT 1

“Oath of Affirmation”

ATTACHMENT 1  
UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

In the Matter of: )  
NuStart Bellefonte COL Project )  
NRC Project Number 740 )

APPLICATION FOR REVIEW OF  
"AP1000 GENERAL COMBINED LICENSE INFORMATION"  
FOR COL APPLICATION PRE-APPLICATION REVIEW

W. E. Cummins, being duly sworn, states that he is Vice President, Regulatory Affairs & Standardization, for Westinghouse Electric Company; that he is authorized on the part of said company to sign and file with the Nuclear Regulatory Commission this document; that all statements made and matters set forth therein are true and correct to the best of his knowledge, information and belief.



W. E. Cummins  
Vice President  
Regulatory Affairs & Standardization

Subscribed and sworn to  
before me this *17<sup>th</sup>* day  
of September 2007.

COMMONWEALTH OF PENNSYLVANIA

Notarial Seal  
Patricia S. Aston, Notary Public  
Murrysville Boro, Westmoreland County  
My Commission Expires July 11, 2011

Member, Pennsylvania Association of Notaries

  
Notary

ENCLOSURE 1

APP-GW-GLR-127, Revision 1

“PCS Tier 1 Diagram Correction”

Technical Report 127

# AP1000 DOCUMENT COVER SHEET

TDC: Permanent File: APY  
RFS#: RFS ITEM #:

AP1000 DOCUMENT NO. <b>APP-GW-GLR-127</b>	REVISION NO. <b>1</b>	Page 1 of 11	ASSIGNED TO <b>W-McGinnis</b>
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ALTERNATE DOCUMENT NUMBER: TR 127 WORK BREAKDOWN #:

ORIGINATING ORGANIZATION: Westinghouse Electric Company

TITLE: **PCS Tier 1 Diagram Correction**

ATTACHMENTS:	DCP #/REV. INCORPORATED IN THIS DOCUMENT REVISION: APP-GW-GEE-098 Rev. 0 APP-GW-GEE-124 Rev. 1
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CALCULATION/ANALYSIS REFERENCE:	
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PATENT REVIEW <b>Douglas Ekeroth</b>	SIGNATURE/DATE <i>Douglas Ekeroth</i> <b>9/10/07</b>

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REVIEWERS	SIGNATURE/DATE

VERIFIER A.F. Pfister	SIGNATURE/DATE <i>A.F. Pfister</i> <b>9/7/07</b>	VERIFICATION METHOD Review of Revisions
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AP1000 RESPONSIBLE MANAGER C.A. McGinnis	SIGNATURE/DATE <i>C.A. McGinnis</i> <b>9-10-07</b>	APPROVAL DATE
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\* Approval of the responsible manager signifies that document is complete, all required reviews are complete, electronic file is attached and document is released for use.

# AP1000 Standard Combined License Technical Report

## PCS Tier 1 Diagram Correction

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## REVISION HISTORY

Original document: APP-GW-GLR-127 Revision 0

Revision	Location	Change Description
0	EDMS	Original Issue
1	EDMS	Regulatory Impact section edited to address NRC comments



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## 1.0 INTRODUCTION

AP1000 Design Control Document (DCD) Tier 1 Section 2.2.2 addresses the Passive Containment Cooling System (PCS). Figure 2.2.2-1 is a simplified representation of the PCS. As currently drawn, this figure does not represent the Tier 2 information found in Section 6.2.2 which also addresses Passive Containment Cooling. This technical report is submitted to explain how the diagram is changed in Revision 16 of the AP1000 DCD.

## 2.0 TECHNICAL BACKGROUND

There were two design changes made to the PCS and/or its respective design documents that have an impact on Figure 2.2.2-1 in the Tier 1 information of the AP1000 Design Control Document (DCD). These changes are addressed in this technical report. There are three corrections made to the figure 2.2.2-1. They are as follows:

1. A National Academy of Sciences' report "Safety and Security of Commercial Spent Nuclear Fuel Storage: Public Report (2006)" expressed concerns about the ability of the spent fuel pool to be completely drained by a malicious act (beyond design basis accident). A design change was made to address this concern by providing a system with "spray" capability for the spent fuel. This capability uses either the passive containment cooling water storage tank inventory, or inventory from the fire protection system. Because of this change a line that used to branch off of a current PCS line was given its own penetration into the tank. The line leading from the PCCWST to the spent fuel pool (including valve V009) no longer branches off of the standpipe in the tank. This line now has its own connection into the tank.
2. A design change was made to the PCS Piping and Instrumentation Diagram (P&ID) to reflect the pipe routing that exists in the plant. This change modifies this figure to correctly depict the design of PCS. Downstream of the pumps, heater and chemical addition tank the connection to the Fire Protection System has been moved to reflect where it exists in the design. This was a correction that was made to the PCS P&ID to match the current design. Functionally, this change does not affect the design it only changes the location of a branch in that line.
3. Valve V050 is added to the Tier 1 diagram. This valve has always been present in the design. It is now included in the Tier 1 figure to address the following commitment made in the ITAACs, specifically Table 2.2.2-3 Design Commitment Number 8.b:

The PCS delivers water from the PCCAWST to the PCCWST and spent fuel pool simultaneously.

## 3.0 REGULATORY IMPACT

Westinghouse performed a regulatory assessment of the information contained in this technical report (TR) against the regulatory basis for the original AP1000 certified design, which is described in DCD Revision 15, Sections 3.1, 1.9 and Appendix 1A. The results of the regulatory assessment appear below. Unless specifically noted, the changes described in the TR are not intended to change the regulatory basis for the design, but are instead meant to be incremental changes that are necessary to properly describe standard aspects of the AP1000 and to allow successful construction of the plant. The regulatory requirements of DCD Revision 15, Sections 3.1, 1.9 and Appendix 1A, therefore remain valid.

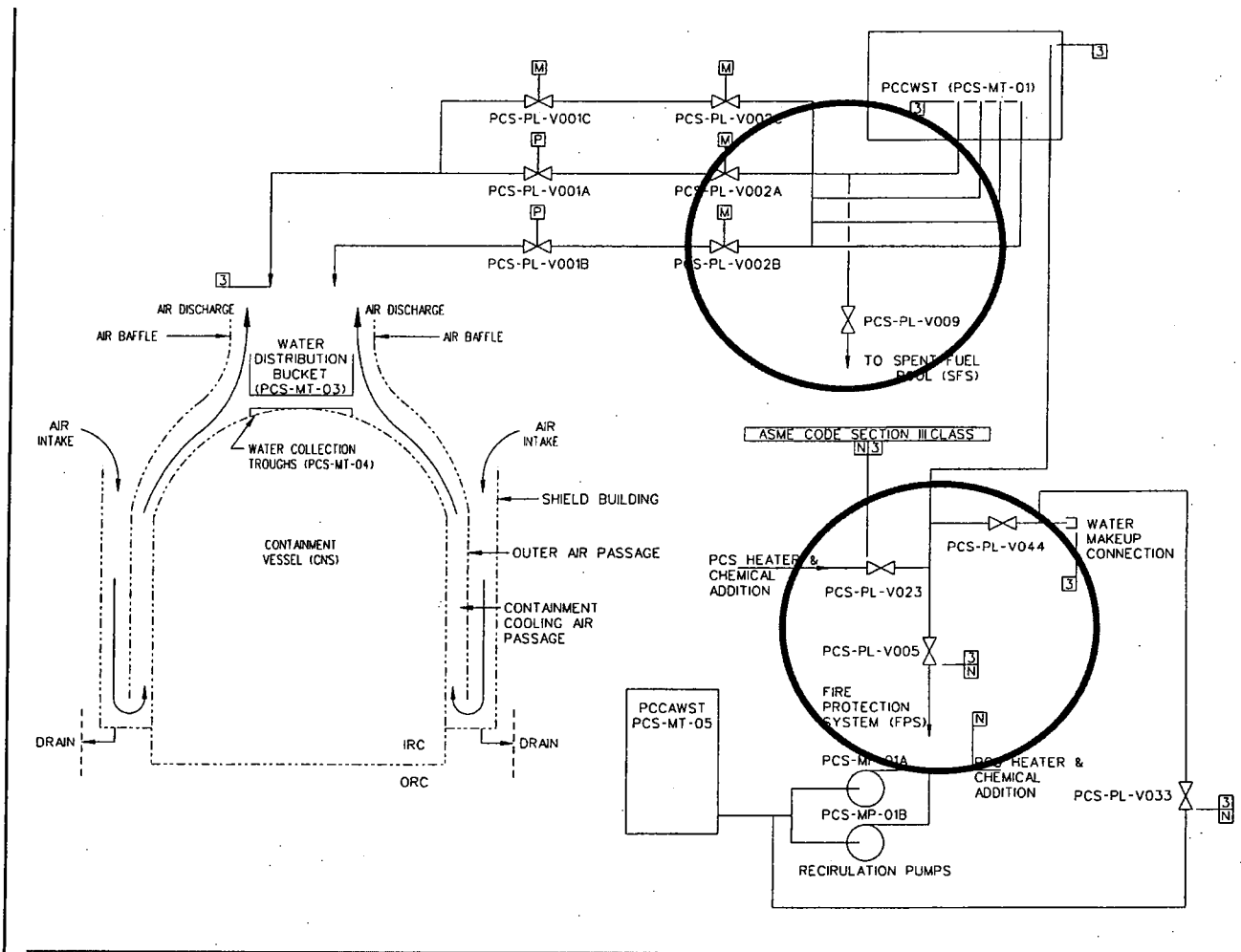
- Regulatory requirements and guidance are defined in AP1000 DCD Section 1.9 and Appendix 1A. This technical report does not affect the conformance to these requirements and guidance where applicable.

- Nuclear Regulatory Commission General Design Criteria (GDC) are defined in AP1000 DCD section 3.1. This technical report does not affect the conformance of the AP1000 to the GDCs, where applicable.
- The technical report was reviewed against WCAP-15799 Rev. 1 (SRP Conformance) and WCAP-15800 Rev. 3 (AP1000 Operational Assessment). This technical report does not affect the AP1000 conformance as described in these WCAPs. This includes the commitments to any applicable Branch Technical Positions.
- The report was reviewed against the AP1000 Probabilistic Risk Assessment (PRA). This technical report does not negatively impact the AP1000 PRA results as documented in Westinghouse document APP-PRA-GER-001.
- This technical report was reviewed against the AP1000 DCD Chapter 15 Accident Analyses. It has been concluded that the safety analyses results documented in DCD Chapter 15 remain bounding.
- This technical report was reviewed against the AP1000 Technical Specifications (AP1000 DCD Chapter 16.1). This technical report does not affect the AP1000 Technical Specifications.
- This technical report was reviewed against barriers and alarms that control access to protected areas of the plant, as well as requirements for security personnel. This technical report does not have an adverse impact on the security assessment of the AP1000.
- This technical report was reviewed against design features that mitigate severe accidents. This technical report does not have an adverse affect on the AP1000's ability to mitigate severe accidents.
- This technical report was reviewed against AP1000 DCD Tier 1 Section 2.2.2 and Tier 2 Section 6.2.2, which are the applicable sections to the changes in this report. This technical report aligns these two sections so the commitments made in these sections can be fulfilled.
- This technical report was reviewed against the Tier 1 information of the DCD Rev.15. It is determined that this report does reflect a change to the Tier 1 information and therefore requires NRC approval.

## **4.0 REVISIONS TO THE DESIGN CONTROL DOCUMENT (DCD)**

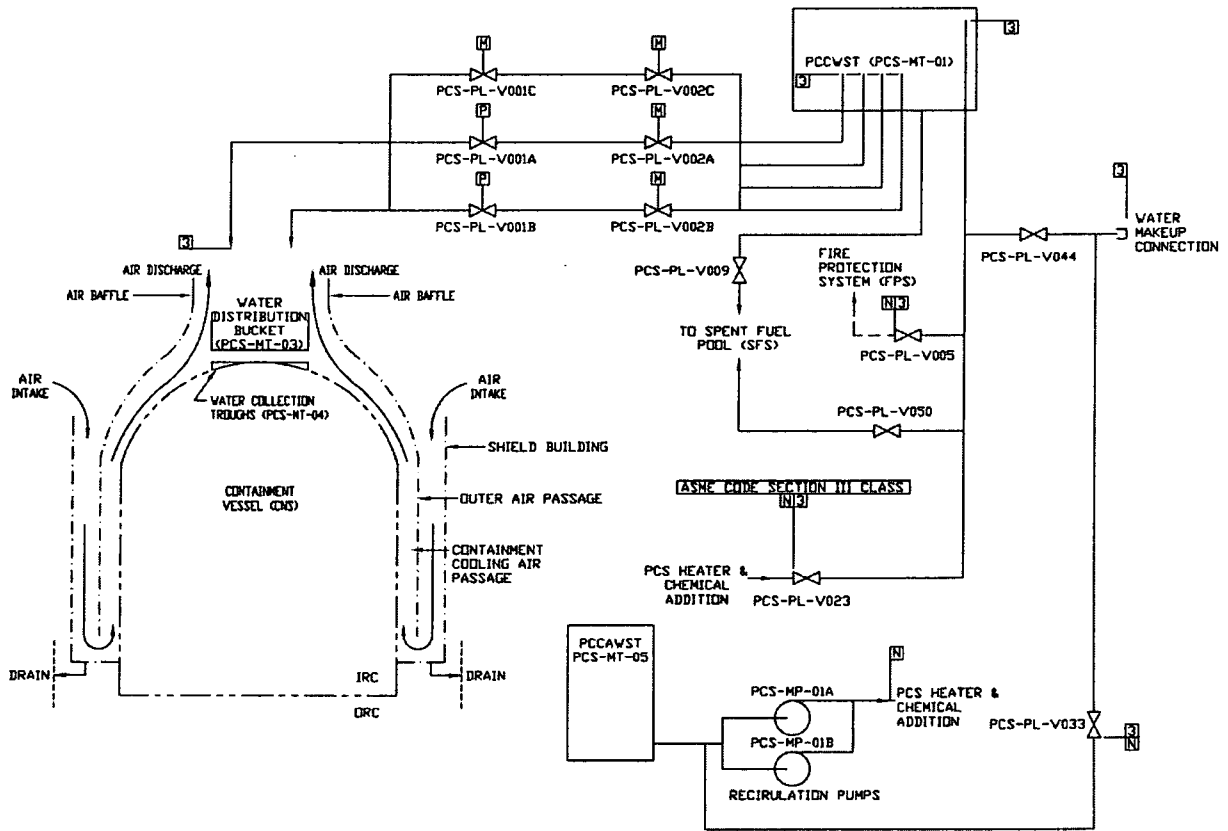
### **Tier 1**

#### **1. Figure 2.2.2-1**



**Figure 2.2.2-1**  
**Passive Containment Cooling System**

Revision 15 DCD Figure



**Figure 2.2.2-1**  
**Passive Containment Cooling System**

**Revision 16 DCD Figure**

## 5.0 REFERENCES

1. APP-GW-GL-700, Revision 15, AP1000 Design Control Document
2. NUREG-1793, September 2004, Final Safety Evaluation Report Related to Certification of the AP1000 Standard Design.