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Your ref: Docket Number 52-006
Our ref: DCP/NRC2184

June 27, 2008

Subject: AP1000 DCD Impact Document Submittal of APP-GW-GLE-012, Revision 0

Westinghouse is submitting Revision 0 of APP-GW-GLE-012, "Probable Maximum Precipitation Value Increase." The purpose of this report is to identify changes to the AP1000 Design Control Document (DCD).

This report is submitted in support of the AP1000 Design Certification Amendment Application (Docket No. 52-006). The information provided in this report is generic and is expected to apply to all Combined Operating License (COL) applicants referencing the AP1000 Design Certification and the AP1000 Design Certification Amendment Application.

Pursuant to 10 CFR 50.30(b), APP-GW-GLE-012, Revision 0, "Probable Maximum Precipitation Value Increase," is submitted as Enclosure 1.

Questions or requests for additional information related to the 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.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Robert Sisk'.

Robert Sisk, Manager
Licensing and Customer Interface
Regulatory Affairs and Standardization

/Enclosure

1. APP-GW-GLE-012, Revision 0, "Probable Maximum Precipitation Value Increase"

cc: D. Jaffe - U.S. NRC 1E
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ENCLOSURE 1

APP-GW-GLE-012

Revision 0

“Probable Maximum Precipitation Value Increase”

AP1000 DOCUMENT COVER SHEET

TDC: _____ Permanent File: _____

AP1000 DOCUMENT NO. APP-GW-GLE-012	REVISION 0	PAGE 1 of 7	ASSIGNED TO J. J. DeBlasio	OPEN ITEMS (Y/N) N
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ALTERNATE DOCUMENT NUMBER:

WORK BREAKDOWN #:

ORIGINATING ORGANIZATION: AP1000 Licensing & Cust. Interface

TITLE: Probable Maximum Precipitation Value Increase

ATTACHMENTS: Markups to Table 5.0-1 of DCD Tier 1 document and Table 2-1 of Tier 2 document CALCULATION/ANALYSIS REFERENCE: Calculation Note N/A	DCP #/REV. INCORPORATED IN THIS DOCUMENT REVISION: DCP-438, R1
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ELECTRONIC FILENAME APP-GW-GLE-012_R0	ELECTRONIC FILE FORMAT Microsoft Word	ELECTRONIC FILE DESCRIPTION .doc
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LEGAL REVIEW T. J. White	<i>Thomas A. Capozza</i>	SIGNATURE / DATE 6/27/08
PATENT REVIEW Doug Ekeroth		SIGNATURE / DATE <i>M.M. White</i> 6/26/08

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ORIGINATOR(S) J.J. DeBlasio	SIGNATURE / DATE <i>John J. DeBlasio</i> 6/25/08	
REVIEWER(S) D. Lindgren	SIGNATURE / DATE <i>D. Lindgren</i> 6/25/2008	
	SIGNATURE / DATE	
VERIFIER(S) Nicole M. Cheberenchick,	SIGNATURE / DATE <i>Nicole M. Cheberenchick</i> 6/25/08	Verification Method: Independent Review

**Plant Applicability: All AP1000 plants except: No Exceptions
 Only the following plants:

APPLICABILITY REVIEWER** J. A. Speer	SIGNATURE / DATE <i>J. A. Speer</i> 6/27/08
RESPONSIBLE MANAGER* Rob Sisk	SIGNATURE / DATE <i>Monty D. Bentley FOR</i> 6/25/08

* Approval of the responsible manager signifies that the document and all required reviews are complete, the appropriate proprietary class has been assigned, electronic file has been provided to the EDMS, and the document is released for use.

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Brief Description of the Impact (what is being changed and why):

The proposed change has been requested by Progress Energy to support the Levy site for probable maximum precipitation (PMP) value that has been calculated. This calculation shows that the current value stated in the DCD of 19.4 in/hr needs to be increased. The value was increased to 20.7 in/hr (1-hr 1-mi²PMP) based on further analysis of the HMR 52 Figure 24, which is required by NRC Reg Guide 1.59, to the southern extent of Florida. This would prevent a departure from the DCD for the Levy COLA submittal. It is expected that this increased value would also support the other domestic and international sites that maybe selected. The following changes are proposed:

Table 5.0-1 "Site Parameters" on page 5.0-2: Change 'Rain' value under "Precipitation" from 19.4 in/hr to 20.7 in/hr (1-hr 1-mi²PMP).

Table 2-1 (Sheet 2 of 3) "Site Parameters" on page 2-20: Change 'Rain' value under "Precipitation" from 19.4 in/hr to 20.7 in/hr (1-hr 1-mi²PMP).

These changes are proposed at the request of a customer to envelope higher calculated values for a location in the State of Florida.

SRP Section Impacted:

DCD Tier 1 Section 5.0: Site Parameters (Table 5.0-1)

DCD Tier 2 Section 2: Site Characteristics (Table 2-1)

This evaluation is prepared to document the Design Control Document (DCD) change described above. The DCD change is a departure from Tier 1 and Tier 2 information currently in the AP1000 DCD, Revision 16. The changes identified in this document are intended to be included in a revision to the DCD and in the review of the Design Certification amendment or included as generic information in plant specific FSARs. Changes to Tier 1 information require review and approval by the NRC.

I. TECHNICAL DESCRIPTION

Progress Energy has calculated a higher probable maximum precipitation (PMP) for the LEVY site in the State of Florida. The new calculated value of 20.7 in/hr (1-hr 1-mi²PMP) is higher than the current DCD specified value of 19.4 in/hr. Further analysis of the HMR 52 Figure 24 to the southern extent of Florida yields a higher value and to ensure potential future application would not require a future change, a value of 20.7 in/(1-hr 1-mi²PMP) was chosen. The original PMP value is based on the URD, which can then be traced back to the NOAA/NWS, and was the highest reported value for the United States at the time. No known updates have been published by the NOAA/NWS; thus the higher calculated value should be incorporated into the DCD to preclude Progress from taking an exception in preparing the COLA submittal or any future applications. To support the customer and provide a mechanism to envelope all sites, the DCD is being changed to reflect the higher value. This change has been investigated with regards to impact to the current AP1000 design and no design changes are necessary as a result of this modification.

II. CHANGE JUSTIFICATION

Progress Energy has formally requested a change to the DCD based on CH2M HILL (consultant) which performed a calculation which identified a higher local probable maximum precipitation at the LEVY site in Florida. The current value (19.4) is based on the URD which is based on the best available information and

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there are no known changes to the PMP estimates by the NOAA/NWS. As such, the higher calculated value should be incorporated into the design to support the Progress LEVY submittal.

The site impacts of the 1.3 in/hr (1-hr 1-mi²PMP) higher PMP amount, based on further analysis to encompass the southern extent of Florida, are negligible to the overall amount of potential rainfall. The insignificant increase in PMF level will not affect the plant due to the DCD specification that the PMF be less than the plant 100' elevation; with the plant 100' elevation being established on the site once the PMF is calculated. The DCD further specifies that site runoff is directed to drainage structures and that the site is graded to offer flooding protection to the Nuclear Island (seismic category I structures).

As for structural effects of the higher PMP amount, each of the buildings' roofs have been designed to be sloped and have no lips that would allow water to build up. Any rainfall on those roofs will run off prior to accumulation. Specifically:

1. The auxiliary building has sloped roofs with three varying elevations (high points given); Area 1&2 155'-6", Area 3&4 163'-0", and Area 5&6 180'-9". The south side of the nuclear island wall 1 is above the radwaste building's roof elevation 136'-4". The east side of the nuclear island, wall I, is below the annex building's roof elevation 183'-4.25", but the auxiliary building roof is sloped so that areas 3&4 drain on to areas 1&2 roof, which is sloped from east to west. There are no lips on the roof of the auxiliary building that could prevent the flow of water. The North side of the nuclear island is also below the turbine building's roof elevation 246'-3", but again, areas 1&2 are sloped such that the run-off will flow off the west side.
2. The enhanced shield building roof is sloped with no lips around the edge of the roof to allow water build up. The Passive Containment Cooling System (PCS) tank roof has a slope of 0.78%, which is greater than the minimum slope of 0.5% which facilitates water runoff; there is also a central hole that can allow water to drain down in between the Shield Building wall and the Steel Containment Vessel (SCV), and not to accumulate on the roof area. There is one area of potential buildup where the plant vent/elevator/stairwell enclosure rises above the edge of the enhanced shield building sloping roofline. In this location, a small amount of water may collect prior to running off of the roof to either side of the vent/elevator/stairwell enclosure. The amount of water that could accumulate in this location is negligible and therefore its effects of loading on the enhanced shield building roof structure would not be a controlling factor when compared to the other load combinations.

III. REGULATORY IMPACT

A. EVALUATION OF DEPARTURE FROM TIER 2 INFORMATION (Check correct response and provide justification for that determination under each response)

10 CFR Part 52, Appendix D, Section VIII. B.5.a. provides that an applicant for a combined licensee who references the AP1000 design certification may depart from Tier 2 information, without prior NRC approval, if it does not require a license amendment under paragraph B.5.b. These questions are addressed here to provide an evaluation of the regulatory impact. Regardless of the answers to these questions these changes are being provided to the NRC for review and approval as part of the design certification amendment. Also changes to Tier 1 require NRC review and approval. The questions below address the criteria of B.5.b.

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<p>1. Does the proposed departure result in more than a minimal increase in the frequency of occurrence of an accident previously evaluated in the plant-specific DCD?</p>	<p><input type="checkbox"/> YES <input checked="" type="checkbox"/> NO</p>
<p>The addition of 1.3 in/hr (1-hr 1-mi²PMP) higher Probable Maximum Precipitation (PMP) amount is negligible to the overall amount of potential rainfall. The sloping roof elevations and site runoff is directed to drainage structures and that the site is graded to offer flooding protection. The likelihood of a failure of a structure, system, or component is not increased by the change in the increased precipitation value. Thus, this additional precipitation does not alter accident precursors or the design function of structures, systems, or components (SSCs).</p>	
<p>2. Does the proposed departure result in more than a minimal increase in the likelihood of occurrence of a malfunction of a structure, system, or component (SSC) important to safety and previously evaluated in the plant-specific DCD?</p>	<p><input type="checkbox"/> YES <input checked="" type="checkbox"/> NO</p>
<p>The addition of 1.3 in/hr (1-hr 1-mi²PMP) higher Probable Maximum Precipitation (PMP) amount is negligible to the overall amount of potential rainfall. This will not increase the likelihood of occurrence of a malfunction of any SSC important to safety. The change in PMP as identified in Table 5.0-1 and Table 2-1 (sheet 2 of 3) does not alter the response of structures, systems, and components to transient conditions, postulated accident conditions, or other loading combinations. The additional precipitation will not affect accident precursors as a result of increasing the current value.</p>	
<p>3. Does the proposed departure result in more than a minimal increase in the consequences of an accident previously evaluated in the plant-specific DCD?</p>	<p><input type="checkbox"/> YES <input checked="" type="checkbox"/> NO</p>
<p>The change in PMP as identified in Table 5.0-1 and Table 2-1 (sheet 2 of 3) does not alter the design function of structures, systems, or components or alter the response to an accident previously evaluated in the plant-specific DCD. The change in the PMP does not alter the calculation of radiation releases for postulated accident conditions.</p>	
<p>4. Does the proposed departure result in more than a minimal increase in the consequences of a malfunction of an SSC important to safety previously evaluated in the plant-specific DCD?</p>	<p><input type="checkbox"/> YES <input checked="" type="checkbox"/> NO</p>
<p>The change in PMP as identified in Table 5.0-1 and Table 2-1 (sheet 2 of 3) does not alter the design function of structures, systems, or components or alter the response to an accident previously evaluated in the plant-specific DCD. The change in PMP does not alter the calculation of radiation releases for postulated accident conditions.</p>	
<p>5. Does the proposed departure create a possibility for an accident of a different type than any evaluated previously in the plant-specific DCD?</p>	<p><input type="checkbox"/> YES <input checked="" type="checkbox"/> NO</p>
<p>The change in PMP as identified in Table 5.0-1 and Table 2-1 (sheet 2 of 3) does not alter the design function of structures, systems, or components. The change in the PMP value does not add or modify accident precursors. This change does not create a possibility of an accident of a different type than any evaluated previously in the DCD.</p>	

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6. Does the proposed departure create a possibility for a malfunction of an SSC important to safety with a different result than any evaluated previously in the plant-specific DCD?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
The change in PMP as identified in Table 5.0-1 and Table 2-1 (sheet 2 of 3) does not alter operating conditions or design functions of SSCs important to safety. Therefore there is no new malfunction.	
7. Does the proposed departure result in a design basis limit for a fission product barrier as described in the plant-specific DCD being exceeded or altered?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
The change in PMP as identified in Table 5.0-1 and Table 2-1 (sheet 2 of 3) does not alter the pressure boundary integrity design function of the reactor coolant system or other SSCs important to safety. The change will not adversely alter the results of the evaluation of pressure boundary integrity due to the increase in the PMP value.	
8. Does the proposed departure result in a departure from a method of evaluation described in the plant-specific DCD used in establishing the design bases or in the safety analyses?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
The change in PMP as identified in Table 5.0-1 and Table 2-1 (sheet 2 of 3) does not alter the methodology of the evaluation of the pressure boundary integrity. The revised value does result in a departure from a method of evaluation described in the DCD for the design bases.	

B. IMPACT ON RESOLUTION OF A SEVERE ACCIDENT ISSUE

10 CFR Part 52, Appendix D, Section VIII. B.5.a. provides that an applicant for a combined licensee who references the AP1000 design certification may depart from Tier 2 information, without prior NRC approval, if it does not require a license amendment under paragraph B.5.c. The questions below address the criteria of B.5.c.

1. Does the proposed activity result in an impact to features that mitigate severe accidents. If the answer is Yes answer Questions 2 and 3 below.	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
The change in PMP as identified in Table 5.0-1 and Table 2-1 (sheet 2 of 3) does not alter the design function of structures, systems, or components or alter the response to an accident previously evaluated in the plant-specific DCD. The change in the PMP does not alter the ability to mitigate for severe accidents.	

2. Is there is a substantial increase in the probability of a severe accident such that a particular severe accident previously reviewed and determined to be not credible could become credible? YES NO N/A

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3. Is there is a substantial increase in the consequences to the public of a particular severe accident previously reviewed? YES NO N/A

N/A

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C. SECURITY ASSESSMENT

1. Does the proposed change have an adverse impact on the security assessment of the AP1000. YES NO

The change in the current precipitation value from 19.4 in/hr to 20.7 in/hr (1-hr 1-mi²PMP) will not alter barriers or alarms that control access to protected areas of the plant. The change in the precipitation value will not alter requirements for security personnel.

D. OTHER REGULATORY CRITERIA

None

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IV. DCD MARK-UP

Changes are shown with deletions shown with strikeout and additions underlined. Additions and changes shown previously in other submittals are show in italics.

Table 5.0-1 Site Parameters	
Precipitation	
Rain	19.4 <u>20.7</u> in./hr (6.3 in./5 min) (1-hr 1-mi ² PMP)

Table 2-1 (Sheet 2 of 3) SITE PARAMETERS	
Precipitation	
Rain	19.4 <u>20.7</u> in./hr (6.3 in./5 min) (1-hr 1-mi ² PMP)