

Attachment 8

Peach Bottom Atomic Power Station Units 2 and 3

NRC Docket Nos. 50-277 and 50-278

WCAP-17590, Rev 2, Acoustic Load Definition

Westinghouse Non-Proprietary Class 3

WCAP-17590-NP
Revision 2

February 2014

Peach Bottom Units 2 & 3 Replacement Steam Dryer Acoustic Load Definition



WCAP-17590-NP
Revision 2

Peach Bottom Units 2 & 3 Replacement Steam Dryer Acoustic Load Definition

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February 2014

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*Electronically approved records are authenticated in the electronic document management system.

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Record of Revisions		
Rev	Date	Revision Description
0	August 2012	Acoustic load input developed with [] ^{a,c}
1	June 2013	Acoustic load input developed with [] ^{a,c}
2	February 2014	Acoustic load input developed with [] ^{a,c}

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LIST OF ACRONYMS/ABBREVIATIONS

Acronym	Definition
3-D	three-dimensional
ACE	acoustic circuit enhanced
CLTP	current licensed thermal power
EPU	extended power uprate
FIV	flow-induced vibration
MSL	main steam line
PBAPS	Peach Bottom Atomic Power Station
PSD	power spectral density
RMS	root mean square
RPV	reactor pressure vessel
RSD	replacement steam dryer
SNR	signal-to-noise ratio
SPM	skirt protection model
SRSS	square root of the sum of the squares
SRV	safety relief valve
SSV	spring safety valve

1 EXECUTIVE SUMMARY

The qualification [Replacement Steam Dryer (RSD) design requires [on the structure. [

]° of the Peach Bottom Units 2 & 3]° analysis of the alternating stresses acting

]a,b,c

Table 1-1 ACE Revision 2.0 Differential Pressure Loads at EPU*1.02 Conditions

a,b,c

Table 1-2 ACE+SPM Revision 2.0 Differential Pressure Loads at EPU*1.02 Conditions

a,b,c

2 [DRYER

] ^{a,c} THE REPLACEMENT STEAM

In order to qualify the Peach Bottom Atomic Power Station (PBAPS) Units 2 & 3 replacement steam dryer design for acoustic pressure loads originating from flow-induced vibration (FIV) phenomena, it is necessary to define [

|

|

|

] ^{a,c}

2.1 [

] ^{a,c}

[

] ^{a,c}

[

|

|

] ^{a,c}

] ^{a,c}

Figure 2-1 [

] ^{ac}



a,c

Figure 2-2a [

] ^{a,c}

a,c

Figure 2-2b [

] a,c

a,c



Figure 2-2c [

]^{a,c}

a,c

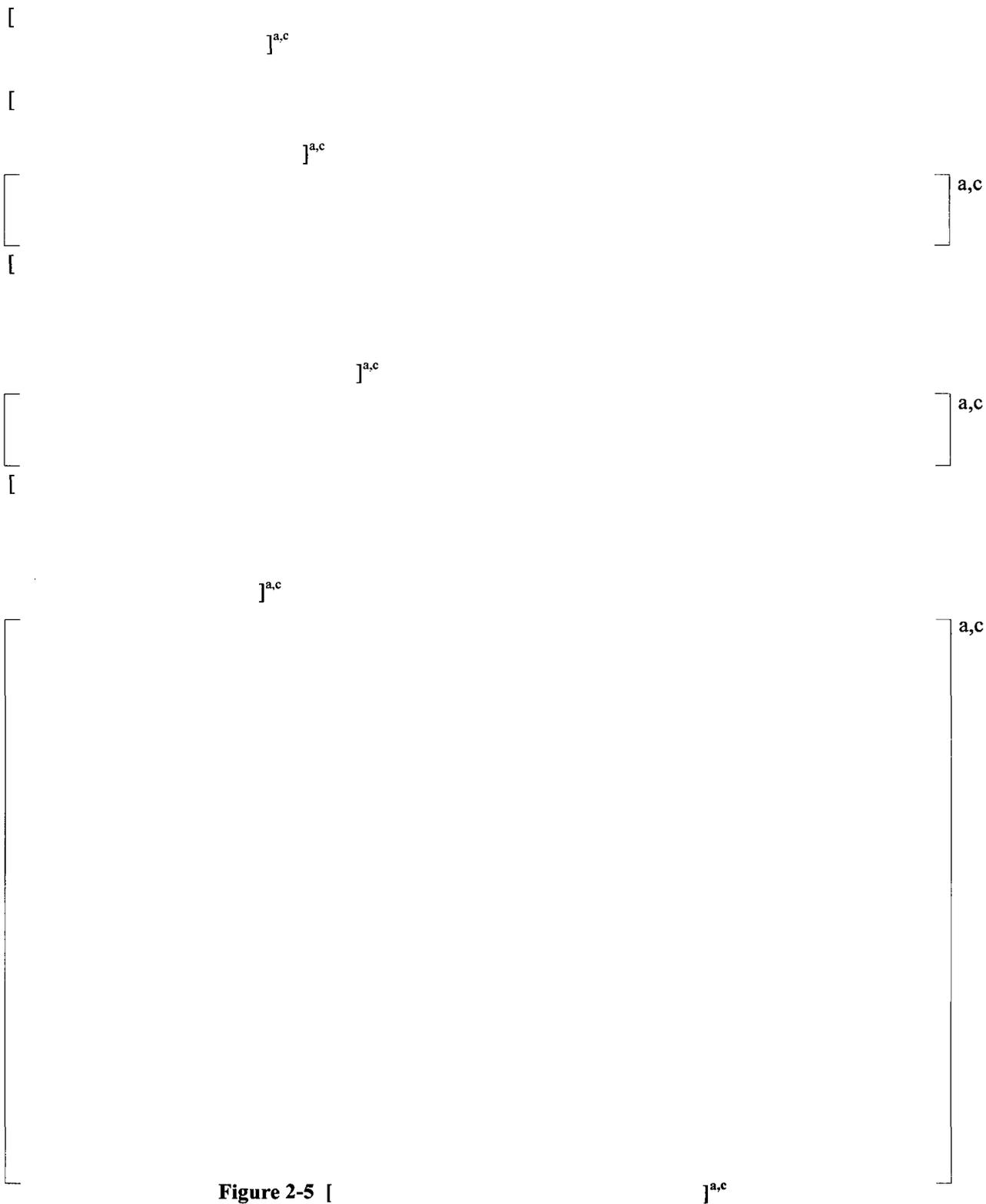
Figure 2-3a [

]a,c

a,c

Figure 2-3b [

] a,c



[

]a.c

3 [

] ^{a,c}

[

] ^{a,b,c}

] ^{a,c}

Figure 3-1 [

] ^{a,c}

[

]a,c

[

] a,c

[

] a,c

[

]a,c

[

] a,c

[

]a,c

[] a,c

[

]a,c

[] a,c

[

]a,c

3.1 [] a,c

[

]a,c

Table 3-1 []^{a,c}

a,b,c

Table 3-1a []^{a,c}

a,b,c

3.2 [

] ^{a,c}

[

] ^{ac}

] ^{a,b,c}

[

] ^{a,c}

Table 3-2a

] ^{a,b,c}

a,b,c

Table 3-2b

] ^{a,b,c}

a,b,c

Table 3-3

] ^{a,b,c}

a,b,c

Table 3-4

] ^{a,b,c}

a,b,c

Table 3-5

] ^{a,b,c}

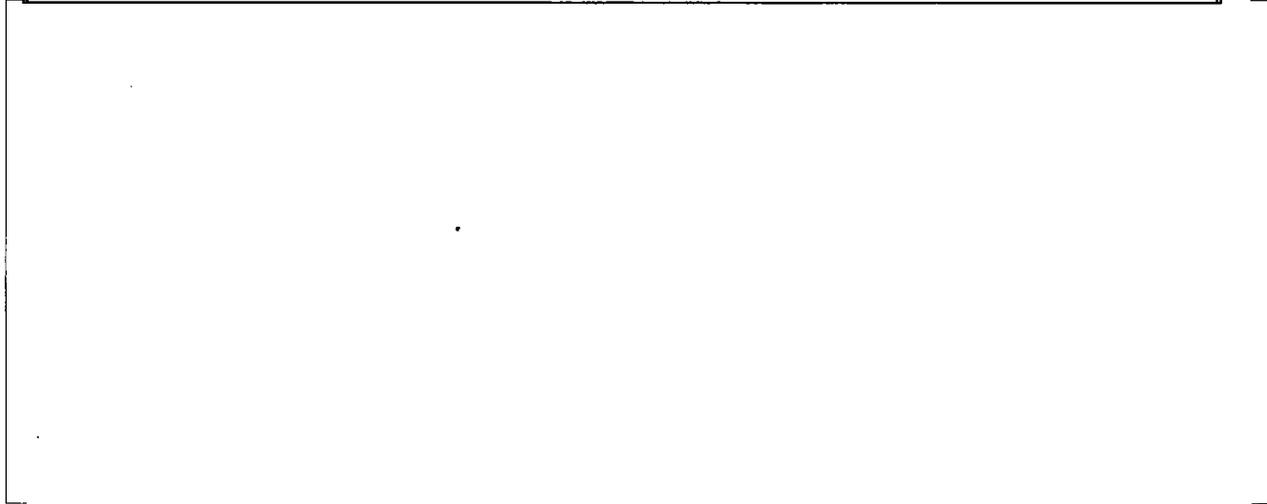
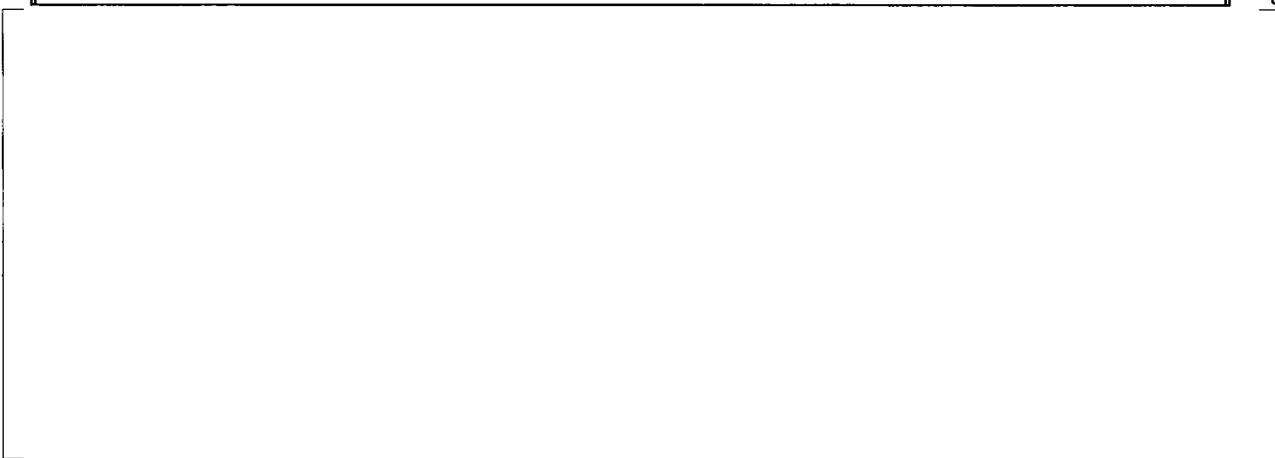


Table 3-6

] ^{a,b,c}



a,b,c

Table 3-7

] ^{a,b,c}

a,b,c

--

Table 3-8

] ^{a,b,c}

a,b,c

--

a,b,c

Figure 3-2a [

]^{a,c}

a,b,c

Figure 3-2b [

]^{a,c}



a,b,c

Figure 3-3a [

]^{a,c}



a,b,c

Figure 3-3b [

]^{a,c}

3.3 [

] ^{a,c}

[

] ^{a,c}

[
[

] ^{a,c}

] ^{a,b,c}

Table 3-9 []^{a,c}

a,b,c

Table 3-10 []^{a,c}

a,b,c

a,b,c

Figure 3-4 [

] ^{a,c}

a,b,c

Figure 3-5 [

] ^{a,c}

3.4 [

]a,c

[

]a,b,c

a,b,c

Figure 3-6 [

]a,c

a,b,c

Figure 3-7 [

]a,c

a,b,c

Figure 3-8 [

] ^{a,c}

a,b,c

Figure 3-9 [

] ^{a,c}

a,b,c

Figure 3-10 [

] ^{a,c}

a,b,c

Figure 3-11 [

] ^{a,c}

a,b,c

Figure 3-12 [

] ^{a,c}

a,b,c

Figure 3-13 [

] ^{a,c}

3.5 [

] ^{a,c}

[

] ^{a,b,c}

a,b,c

Figure 3-14 [

] ^{a,c}

a,b,c

Figure 3-15 [

] ^{a,c}

a,b,c

Figure 3-16 [

]^{a,c}

a,b,c

Figure 3-17 [

]^{a,c}

a,b,c

Figure 3-18 [

] ^{a,c}

a,b,c

Figure 3-19 [

] ^{a,c}

a,b,c

Figure 3-20 [

] ^{a,c}

a,b,c

Figure 3-21 [

] ^{a,c}

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