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}

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

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 [ ]^{c} of the Peach Bottom Units 2 & 3 Replacement Steam Dryer (RSD) design requires [ ]^{c} analysis of the alternating stresses acting on the structure. [

]^{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 [ ]^{a,c} THE REPLACEMENT STEAM DRYER

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

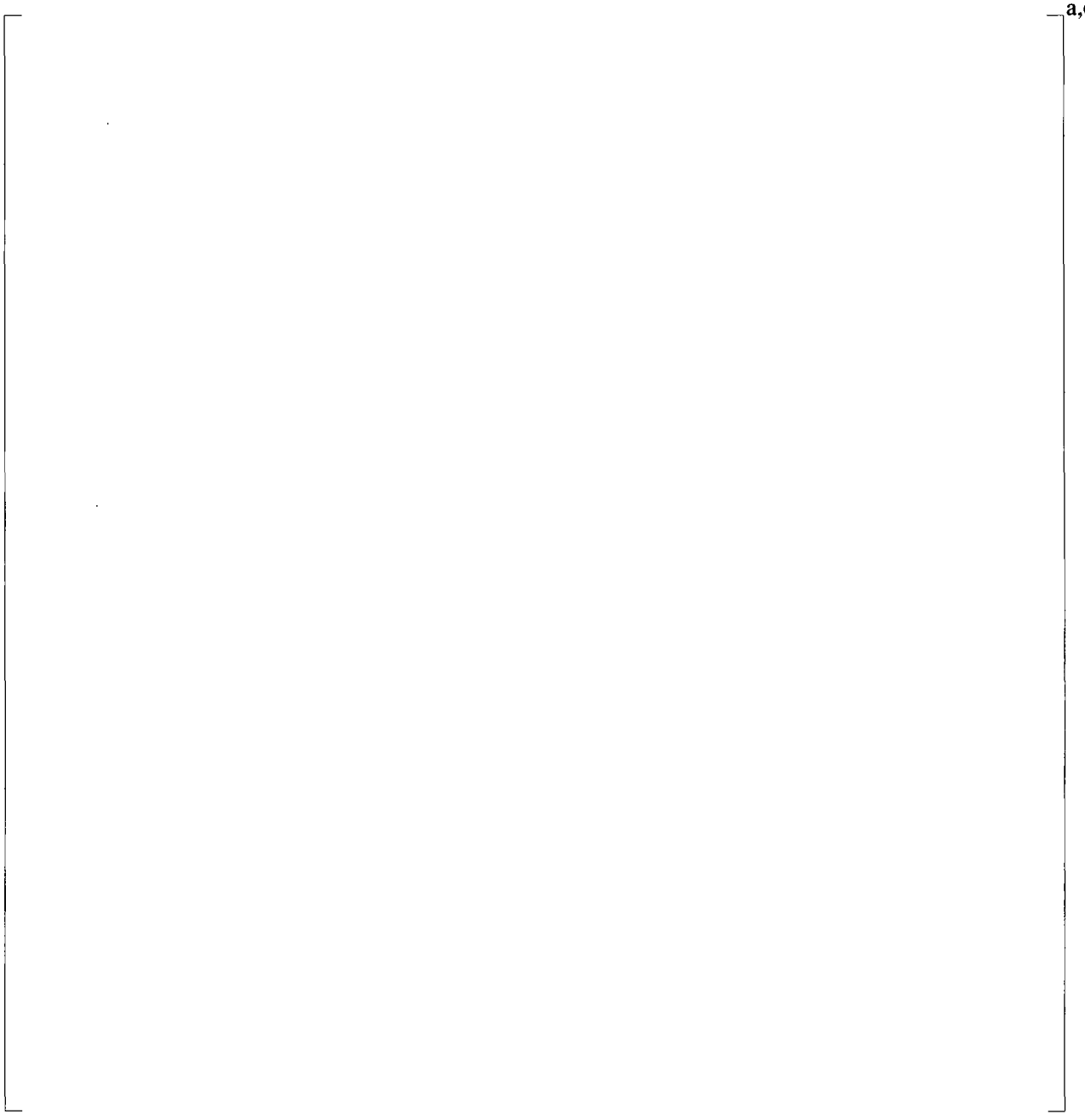


Figure 2-2c [ ]a,c

[a,c

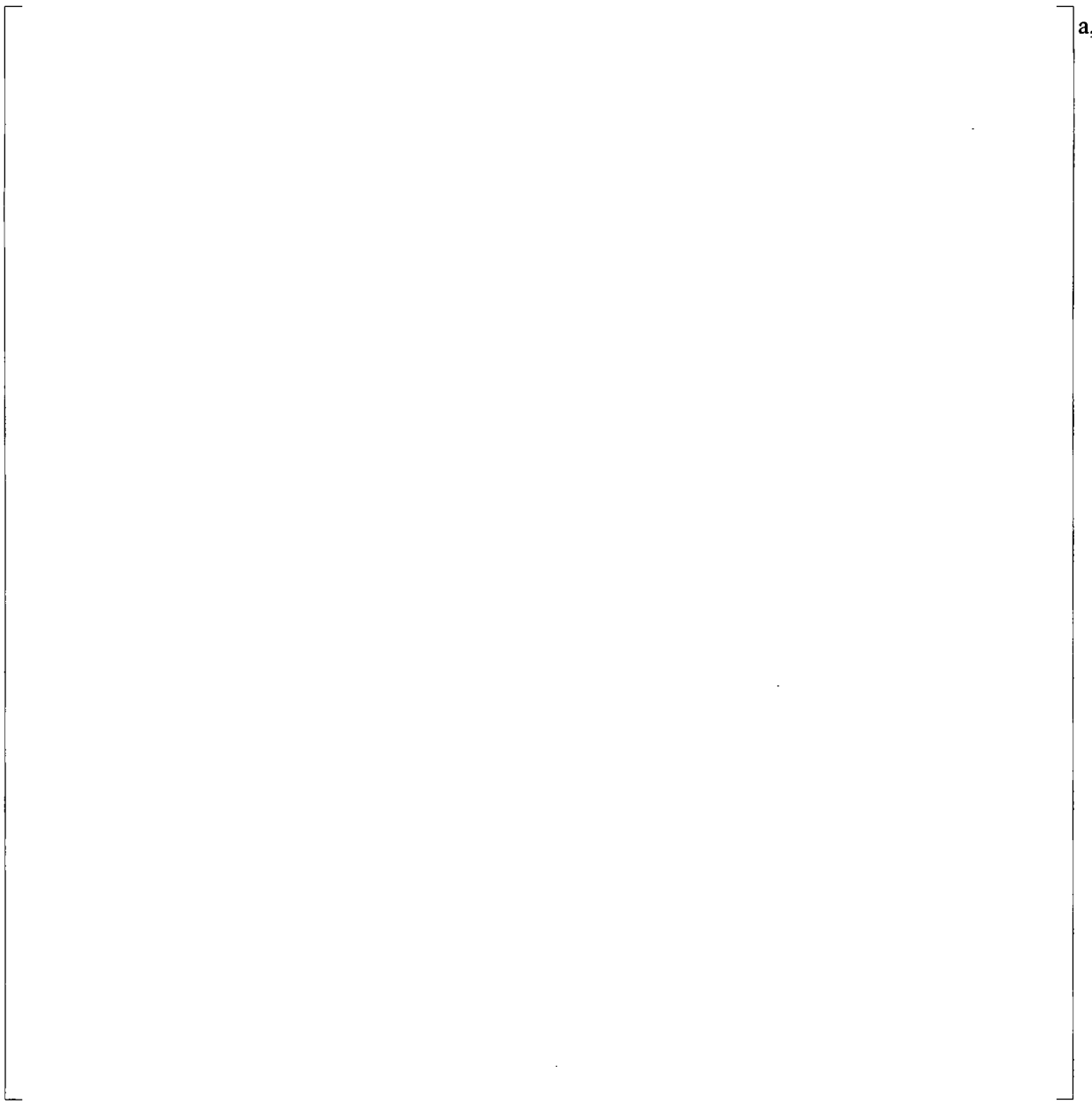


Figure 2-3a [

]a,c

[a,c

]

Figure 2-3b [ ]a,c

2.2 [ ]a,c

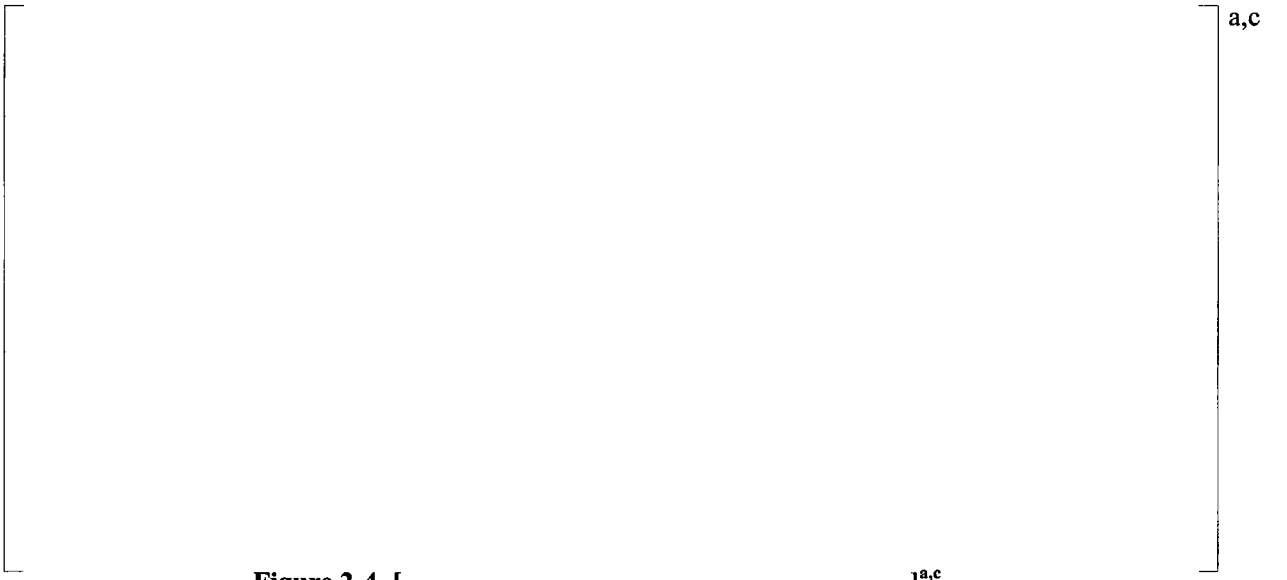
[

]a,c

a,c

[

]a,c



a,c

Figure 2-4 [ ]a,c

[

]a,c

a,c

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]a,c

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]a,c

a,c

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]a,c

a,c

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]a,c

a,c

Figure 2-5 [ ]a,c

[

]^{a,c}

3 [ ]a,c

[

]a,b,c

a,c

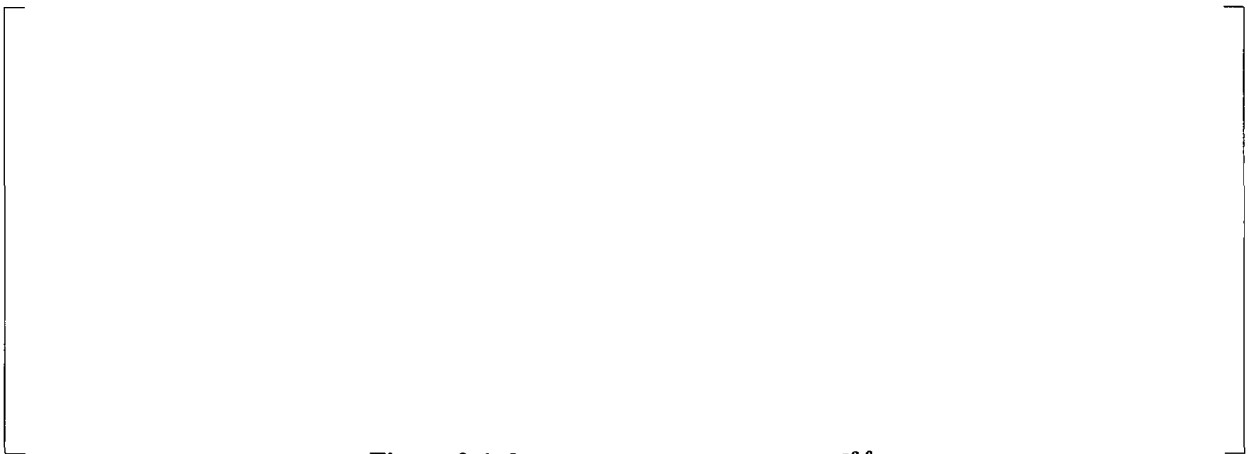

Figure 3-1 [ ]a,c

[

]a,c

[a,c

a,c

[

[

]a,c

a,c

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]a,c

[ ]a,c

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]a,c

[ ]a,c

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]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

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

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

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Figure 3-10 [

]^{a,c}

a,b,c

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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

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Figure 3-18 [

][a,c]

a,b,c

[

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Figure 3-19 [

][a,c]

a,b,c

Figure 3-20 [

][a,c]

a,b,c

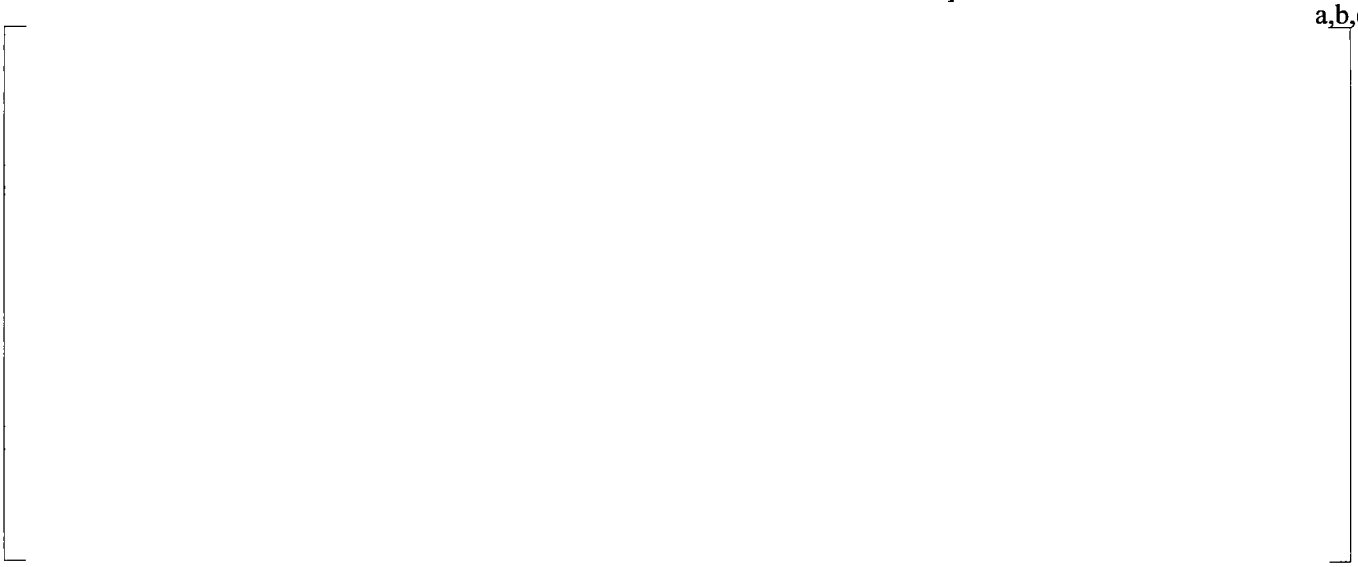

Figure 3-21 [

][a,c]

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