# APPENDIX C AREA WALK-BY CHECKLISTS (AWCs)

Paul C. Rizzo A	ssociates, Inc.		Sheet 1 of 123				
	Status						
Area Walk-By Checklist (A'	WC)						
Room <u>105</u>	Floor El.	545	Bldg.	AUXB			
Instructions for Completing This checklist may be used to space below each of the follow Additional space is provided	document the results wing questions may be	e used to record	the results of judgmen	nts and findings			
				Y	N	U	N/A
1. Does anchorage of equipment potentially adverse seismic opening cabinets)?			rily	X		<u> </u>	
Concerr	nge for cover plate of l a has been judged not ng the component's sei	to represent an a	adverse coniditon	2. Y	N	U	N/A
2. Does anchorage of equipm degraded conditions?	ent in the area appear	to be free of sign	nificant	X			
				Y	N	U	N/A
<ol> <li>Based on a visual inspection raceways and HVAC ductin seismic conditions (e.g., con- conditions of cable trays ap</li> </ol>	g appear to be free of addition of supports is a	potentially adve adequate and fill		<u> </u>	<u> </u>		l
4. Does it appear that the area interactions with other equ lighting)?				Y X	<u>N</u>	U	N/A
Related equipment on SWEL	for this area:						
1) P42-1							
2) P58-1							
3) C31-4							

· · ·



#### Area Walk-By Checklist (AWC)

Room	105	Floor El.	545	Bldg.	AUXB			
Interaction Effec 5. Does it appear t interactions that					Y X	N	U	N/A
6. Does it appear t	hat the area is free	of potentially ac			Y X	N	U	N/A
interactions that	could cause a fire	in the area?			Y	N	U	N/A
	hat the area is free sociated with hous temporary installa	ekeeping practic	es, storage of p					
sinerenig).	Temporary sca	ffolding in area	appears to be	adequately restrained.	See Photo 3.			
8. Have you looke adversely affec	d for and found no t the safety function				Y X	<u>N</u>	U	]
<b>Comments</b> (Addin <i>Fire Sources:</i>		e added as neces fire sources iden						

Flooding Sources: Pump E198-1, Tanks T198-1, T199-1, Piping: Aux steam, comp cooling, cont spray, decay heat, demin water, fire protection, high press inject, prim water, makeup water, service water, reactor coolant

Evaluated by:

dates ALC Date:

7/25/2012

Eddie M. Guerra

Date: Brian A. Lucarelli



## Area Walk-By Checklist (AWC)

Room	105	Floor El.	545	Bldg.	AUXB

Other supporting or relevant documents and photos (if any):



Photo 1 General View of Room 105 Area



# Area Walk-By Checklist (AWC)

Room	105	Floor El.	545	Bldg.	AUXB

Supporting Photos (continued):



Photo 2 Missing Nuts on Cover of E31-4

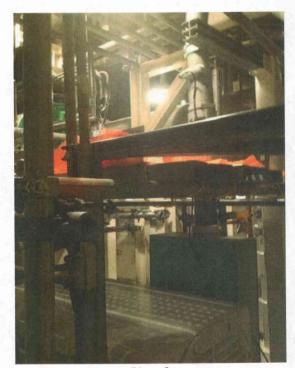


Photo 3 Temporary Scaffolding Restrained

rea Walk-By Checklist (AWC)         pom       113       Floor El.       545       Bldg.         structions for Completing Checklist         tis checklist may be used to document the results of the Area Walk-By near one or more SWEI         ace below each of the following questions may be used to record the results of judgments and f         ditional space is provided at the end of this checklist for documenting other comments.         Does anchorage of equipment in the area appear to be free of         potentially adverse seismic conditions (if visible without necessarily         opening cabinets)?         Does anchorage of equipment in the area appear to be free of significant         degraded conditions?         Based on a visual inspection from the floor, do the cable/conduit         raceways and HVAC ducting appear to be free of potentially adverse         seismic conditions (e.g., condition of supports is adequate and fill         conditions of cable trays appear to be inside acceptable limits)?         Does it appear that the area is free of potentially adverse seismic spatial         interactions with other equipment in the area (e.g., ceiling tiles and lighting)?		Status (Y)	) N U - U U	N/A N/A
bom       113       Floor El.       545       Bldg.         structions for Completing Checklist         uis checklist may be used to document the results of the Area Walk-By near one or more SWEI         ace below each of the following questions may be used to record the results of judgments and f         iditional space is provided at the end of this checklist for documenting other comments.         Does anchorage of equipment in the area appear to be free of         potentially adverse seismic conditions (if visible without necessarily         opening cabinets)?         Does anchorage of equipment in the area appear to be free of significant         degraded conditions?         Based on a visual inspection from the floor, do the cable/conduit         raceways and HVAC ducting appear to be free of potentially adverse         seismic conditions (e.g., condition of supports is adequate and fill         conditions of cable trays appear to be inside acceptable limits)?         Does it appear that the area is free of potentially adverse seismic spatial         interactions with other equipment in the area (e.g., ceiling tiles and	EL items. The findings.	N		
structions for Completing Checklist         iis checklist may be used to document the results of the Area Walk-By near one or more SWEL         ace below each of the following questions may be used to record the results of judgments and f         iditional space is provided at the end of this checklist for documenting other comments.         Does anchorage of equipment in the area appear to be free of         potentially adverse seismic conditions (if visible without necessarily         opening cabinets)?         Does anchorage of equipment in the area appear to be free of significant         degraded conditions?         Based on a visual inspection from the floor, do the cable/conduit         raceways and HVAC ducting appear to be free of potentially adverse         seismic conditions (e.g., condition of supports is adequate and fill         conditions of cable trays appear to be inside acceptable limits)?         Does it appear that the area is free of potentially adverse seismic spatial         interactions with other equipment in the area (e.g., ceiling tiles and	EL items. The findings.	N		
bis checklist may be used to document the results of the Area Walk-By near one or more SWEI ace below each of the following questions may be used to record the results of judgments and f dditional space is provided at the end of this checklist for documenting other comments.           Does anchorage of equipment in the area appear to be free of potentially adverse seismic conditions (if visible without necessarily opening cabinets)?         [           Does anchorage of equipment in the area appear to be free of significant degraded conditions?         [           Based on a visual inspection from the floor, do the cable/conduit raceways and HVAC ducting appear to be free of potentially adverse seismic conditions (e.g., condition of supports is adequate and fill conditions of cable trays appear to be inside acceptable limits)?         [           Does it appear that the area is free of potentially adverse seismic spatial interactions with other equipment in the area (e.g., ceiling tiles and         [	findings. Y X Y	N		
potentially adverse seismic conditions (if visible without necessarily opening cabinets)? Does anchorage of equipment in the area appear to be free of significant degraded conditions? Based on a visual inspection from the floor, do the cable/conduit raceways and HVAC ducting appear to be free of potentially adverse seismic conditions (e.g., condition of supports is adequate and fill conditions of cable trays appear to be inside acceptable limits)? Does it appear that the area is free of potentially adverse seismic spatial interactions with other equipment in the area (e.g., ceiling tiles and	X Y	1		
potentially adverse seismic conditions (if visible without necessarily opening cabinets)? Does anchorage of equipment in the area appear to be free of significant degraded conditions? Based on a visual inspection from the floor, do the cable/conduit raceways and HVAC ducting appear to be free of potentially adverse seismic conditions (e.g., condition of supports is adequate and fill conditions of cable trays appear to be inside acceptable limits)? Does it appear that the area is free of potentially adverse seismic spatial interactions with other equipment in the area (e.g., ceiling tiles and	Y	N	U	 N/A
degraded conditions?         Based on a visual inspection from the floor, do the cable/conduit         raceways and HVAC ducting appear to be free of potentially adverse         seismic conditions (e.g., condition of supports is adequate and fill         conditions of cable trays appear to be inside acceptable limits)?         Does it appear that the area is free of potentially adverse seismic spatial         interactions with other equipment in the area (e.g., ceiling tiles and		N	U	N/A
degraded conditions?         Based on a visual inspection from the floor, do the cable/conduit         raceways and HVAC ducting appear to be free of potentially adverse         seismic conditions (e.g., condition of supports is adequate and fill         conditions of cable trays appear to be inside acceptable limits)?         Does it appear that the area is free of potentially adverse seismic spatial         interactions with other equipment in the area (e.g., ceiling tiles and	<u> </u>	1		
raceways and HVAC ducting appear to be free of potentially adverse seismic conditions (e.g., condition of supports is adequate and fill conditions of cable trays appear to be inside acceptable limits)? Does it appear that the area is free of potentially adverse seismic spatial interactions with other equipment in the area (e.g., ceiling tiles and			I	<u>I</u>
raceways and HVAC ducting appear to be free of potentially adverse seismic conditions (e.g., condition of supports is adequate and fill conditions of cable trays appear to be inside acceptable limits)? Does it appear that the area is free of potentially adverse seismic spatial interactions with other equipment in the area (e.g., ceiling tiles and	Y	N	U	N/A
interactions with other equipment in the area (e.g., ceiling tiles and	X	<u> </u>	I	
interactions with other equipment in the area (e.g., ceiling tiles and	Y X	<u>N</u>		N/A
elated equipment on SWEL for this area:				
E27-1				
E27-2				
CC1469				



#### Area Walk-By Checklist (AWC)

Room	113	Floor El.	545	Bldg.	AUX	KB	_	_	
<b>Interaction Effects</b> 5. Does it appear the interactions that c			Y X	N	U	N/A			
6. Does it appear the interactions that co		Y X	N 	U	N/A				
<ol> <li>Does it appear the interactions asso- equipment, and te shielding)?</li> </ol>		Y X	N	U	N/A				
8. Have you looked adversely affect		to other seismic c ions of the equipr			Ē.	Y X	N	U	]
<b>Comments</b> (Addition Fire Sources:	NO	be added as neces							
Flooding Sources:	NO No flood sour	ces identified in c	area.						

Evaluated by:

the Minaft

Date:

7/25/2012

Eddie M. Guerra

Date: Brian A. Lucarelli

te:

7/25/2012

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## Area Walk-By Checklist (AWC)

Room	113	Floor El.	545	Bldg.	AUXB	

Other supporting or relevant documents and photos (if any):

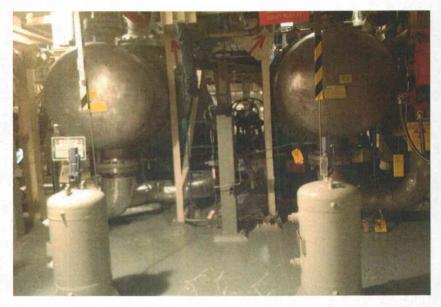


Photo 1 General View of Room 113

Paul C. Rizzo Associates, Inc. She							
				Status	N U		
Area Walk-By Checklist (AWC)							
Room <u>122</u> Floor El	l. <u>570'3.0625</u> "	Bldg.	AUXB		_		
<b>Instructions for Completing Checklist</b> This checklist may be used to document the resu space below each of the following questions may Additional space is provided at the end of this ch	y be used to record the re	esults of judgmen	nts and findings.	•	_		
<ol> <li>Does anchorage of equipment in the area apper potentially adverse seismic conditions (if visit</li> </ol>			Y X	N	U	N/A	
<ul><li>opening cabinets)?</li><li>2. Does anchorage of equipment in the area appendegraded conditions?</li></ul>	ear to be free of significa	nt	Y X	N	U	N/A	
3. Based on a visual inspection from the floor, do	o the cable/conduit		Y X	N	U	N/A	
raceways and HVAC ducting appear to be free seismic conditions (e.g., condition of supports conditions of cable trays appear to be inside ac	of potentially adverse is adequate and fill		L		I	J	
4. Does it appear that the area is free of potential interactions with other equipment in the area (lighting)?	al	Y X	<u>N</u>	U	N/A		
Masonry walls identified in Walls identified as 1157, 1 Walls 1157 and 1167 have VBW03-B001-010, Rev 8). Related equipment on SWEL for this area:	167, and 1187. been seismically analyze						

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1) SF1616A

Paul C. Rizzo Associates, Inc. ENCINEERS & CONSULTANTS

# Status (Y) N U

Area Walk-By Cho	ecklist (AWC)	)						
Room	122	Floor El.	570'3.0625"	Bldg.	AUXB		_	
Interaction Effects					Y	N	U	N/A
5. Does it appear the interactions that of		ree of potentially a oding or spray in			X			
6. Does it appear th			dverse seismic		Y X	N	U	N/A
interactions that c	ould cause a fi	re in the area?						
7. Does it appear th	at the area is fr	ree of potentially a	dverse seismic		Y	N	U	<u>N/A</u>
interactions asso	ciated with ho		ces, storage of portal	ble			•	<b>.</b>
8/-	Temporary s	caffolding installe	ed in area, judged no	ot likely to cause	interaction. Y	N	U	_
8. Have you looked adversely affect		no other seismic o tions of the equip		1	X		I	]
<b>Comments</b> (Addition <i>Fire Sources:</i>	NO	v be added as nece ces identified in ar						
Flooding Sources:	NO No flood sou	urces identified in	area.					
Evaluated by:	Eddie M. Gu	<del>ditio</del> MM nerra	matt	Date:	7/25/2012		-	

Brian A. Lucarelli, Date:



122

Status (Y) N U

#### Area Walk-By Checklist (AWC)

Floor El.

Bldg.

AUXB

Other supporting or relevant documents and photos (if any):

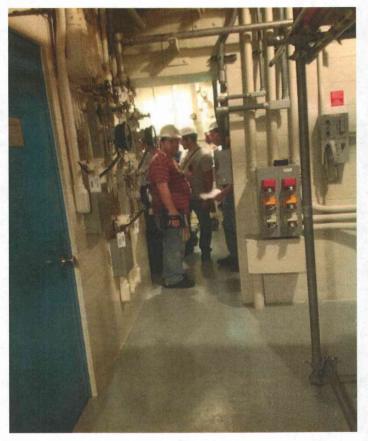


Photo 1 General View of Room 122

	Paul C. Rizzo Asso	ciates, Inc.		Sheet 11 of 123				
						Status:(Y	)n u	
Area Walk-B	y Checklist (AWC	5)						
Room	208	Floor El.	565	Bldg.	AUXB	_	_	
This checklist space below early a space below	ach of the followin	cument the results g questions may be	e used to record t	c-By near one or more he results of judgme https://www.searchart.com/inter.c	nts and findings.	e	_	
	rage of equipment adverse seismic cor binets)?			ily	Y X	N	U	N/A
2. Does ancho degraded co	rage of equipment onditions?	in the area appear t	to be free of sign	ificant	Y X	N	U	N/A
raceways an	visual inspection fr d HVAC ducting a litions (e.g., condit	ppear to be free of	potentially adver	rse	Y X	N	U	N/A
	f cable trays appear	-			Y	N	<u> </u>	N/A
	ear that the area is to with other equipm				X		1	
ngnung):	acceleration		e less than 1g, it i	s not laterally suppor is unlikely for the ext				
Related equip	ment on SWEL for	this area:						
1) FTHP3C								
2) IA-636								
3) hp2c								
4) hp3c								

Paul C. Rizzo Associates, Inc. NEERS & CONSULTANTS

#### Status: (Y) N U

#### Area Walk-By Checklist (AWC)

Room	208	Floor El.	565	Bldg.		AUXB			
Interaction		rea of potentially a	duorso soismis			Y	N	U	N/A
•	pear that the area is f as that could cause flo			2					<u> </u>
						<u>Y</u>	N	<u> </u>	N/A
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?						<u> </u>		<u></u>	
						Y	N	U	N/A
interactio	pear that the area is f ns associated with ho t, and temporary instance ?	ousekeeping praction	ces, storage of			<u> </u>			
		found unrestraine judged that it is te		2		-	nd		

equipment found in the vicinity of this dolly. 8. Have you looked for and found no other seismic conditions that could adversely affect the safety functions of the equipment in the area?

Comments (Additional pages may be added as necessary) NO

Fire Sources:

No fire sources identified in area.

No concerns identified regarding flood sources. The potential flood sources in the area are Coolers E26-1, E26-2, Flooding Sources: Tank T139-1, Piping: Aux system, borated water, component cooling, cont spray, decay heat, demin water, fire

will be returned to its storage location and tied when work is done. Also, no sensitive

Evaluated by:

d the Eddie M. Guerra

Date:

7/25/2012

Y

X

Ν

U

Brian A. Lucarell

Date:



208

Status: (Y) N U

#### Area Walk-By Checklist (AWC)

Room	

Floor El.

Bldg.

AUXB

Other supporting or relevant documents and photos (if any):



Photo 1 General View of Room 208

Photo 2 Unrestrained Dolly in Area

PCZ	Sheet 14 of 123							
						Status: Y	)n u	
Area Walk-E	By Checklist (AWC	)						
Room	209	Floor El.	565	Bldg.	AUXB	_		
This checklist space below e	for Completing Ch at may be used to doc each of the following ace is provided at th	cument the results of g questions may be	used to record the	e results of judgme	nts and findings.	e		
1. Does ancho	orage of equipment i	in the area appear t	o be free of		Y	N	- U	N/A
	adverse seismic con			у			•	
Does ancho	orage of equipment i	in the area annear t	a he free of signif	ĩcant	Y	N	<u> </u>	N/A
degraded c		in the trea uppear t		leant		- <b>1</b>	L	
					Y	N	U	N/A
raceways ar seismic con	visual inspection front ad HVAC ducting ap ditions (e.g., condition of cable trays appear	opear to be free of on of supports is a	potentially advers dequate and fill	e	X		]	]
			,		Y	N	U	N/A
	ear that the area is f s with other equipme			atial	X		L	L
2 2/	Fire extingu acceleratior		less than 1g, it is	not laterally suppor unlikely for the ext				

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Related equipment on SWEL for this area:

1) BW10

Paul C. Rizzo Associates, Inc. ENGINETRES & CONSCIENTES							Sheet 15 of 123				
						Status:Y	N U				
Area Walk-By Che	ecklist (AWC)										
Room	209	Floor El.	565	Bldg.	AUXB						
Interaction Effects 5. Does it appear the interactions that of	at the area is fre				Y X	N	U	N/A			
6. Does it appear th	at the area is fre	e of potentially a	adverse seismic		Y	N	U	N/A			
interactions that c					Y	N	U	N/A			
<ol> <li>Does it appear th interactions asso equipment, and to shielding)?</li> </ol>	ciated with hou	sekeeping practic	ces, storage of portal	ble	X			I			
	There are no	sensitive equipm	rained adjacent to c ent in the zone of inf at this cart appear to	luence of this car		N	U				
•			conditions that could ment in the area?	i	X			]			
<b>Comments</b> (Addition <i>Fire Sources:</i>	Hydrogen Pip	ping to Make Up identified regard	•	e potential i <del>gnit</del> ia	on sources in the ar	ea are Hyd	trogen Pq	jing'to			
Flooding Sources:	Piping: Aux s	team, borated wa	ing flood sources. T ater, comp cooling, 1, makeup, primary v	domestic water, l	Duratek, demin wate						

Evaluated by:

Ada US Eddie M. Guerra

\_\_\_\_\_Date:

hand

Brian A. Lucarelli

Date:

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7/25/2012



209

Status: (Y) N U

#### Area Walk-By Checklist (AWC)

Room	

\_\_\_\_\_

Floor El.

Bldg.

AUXB

Other supporting or relevant documents and photos (if any):

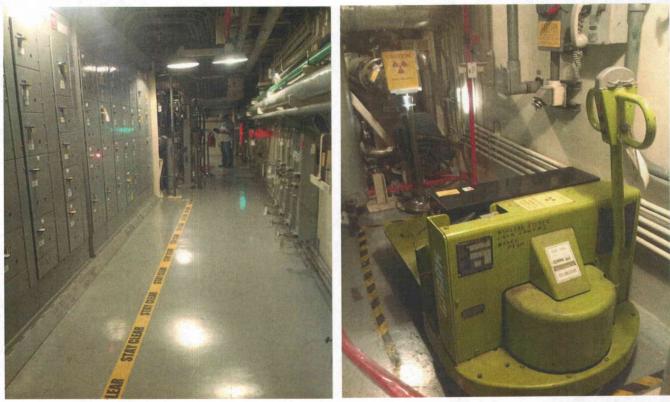


Photo 1 General View of Room 209

Photo 2 Nuclear Filter Cask Cart Not Restrained

R S	Paul C. Rizzo Assoc	ciates, Inc.					She	et 17 o	t 123
						Stat	us:Y	N U	
Area Walk-B	By Checklist (AWC	)							
Room	225	Floor El.	565	Bldg.	AUXI	3			
This checklist space below e	for Completing Ch t may be used to doc each of the following ace is provided at th	cument the results of g questions may be	e used to record th	ne results of judgme	ents and finding				
					Y		N	U	N/A
	orage of equipment i adverse seismic con binets)?			ly	X				
2. Does ancho degraded co	prage of equipment i onditions?	in the area appear t	o be free of signi	ficant	Y X		N	U	N/A
raceways an seismic con-	visual inspection front and HVAC ducting and ditions (e.g., condition of cable trays appear	opear to be free of on of supports is a	potentially adversidequate and fill	se	Y X		N	U	N/A
			., ceiling tiles and		Y X		N	U	N/A
	All walls ha		y analyzed per NI	RC IE Bulletin 80-1. 9, Rev 1).	1 (Ref. VBW00	5-B001-02	8, Rev	4,	
Related equip	oment on SWEL for	this area:							
1) P372B									
2) DH9B									



#### Area Walk-By Checklist (AWC)

Room	225	Floor El.	565	Bldg.	AUXB	-	_	
Interaction	Effects				Y	N	U	N/A
-	ppear that the area is f ns that could cause flo	• •		с	<u> </u>			
					Y	N	U	N/A
	opear that the area is f is that could cause a f	1 2	dverse seismi	c	<u> </u>			<b>_</b>
					Y	N	U	N/A
•	pear that the area is f				X			
	ns associated with he t, and temporary instant?		-	portable				
	RP cart and	dolly not restraine	d.					
	1	uent visit to his area s properly restrain		day, it was observed that				
					Y	N	U	-
-	looked for and found affect the safety fund				X			J

Comments (Additional pages may be added as necessary)

Fire Sources: Lighting Transformer

No concerns identified regarding fire sources. The potential ignition sources in the area are Lighting Transformer

Flooding Sources: No concerns identified regarding flood sources. The potential flood sources in the area are Lube oil coolers E188-1, E188-2, E212-1, E212-2, cooler E36, Accumulators T6406 & T 6407, Piping: Comp Cooling, Core flood, makeup, reactor coolant

Evaluated by:

11 to Eddie M. Guerra

Date:

7/25/2012

Date: Brian A. Lucarelli



#### Area Walk-By Checklist (AWC)

Room	225	Floor El.	565	Bldg.	AUXB
					1.00

Other supporting or relevant documents and photos (if any):



Photo 1 Dolly Not Restrained Photo 2 RP Cart Not Restrained

Paul C. Rizzo Associates, Inc.		Sh	eet 20 c	of 123
		Status: Y	N U	
Area Walk-By Checklist (AWC)				
Room         236         Floor El.         565         Bldg.	AUXB	-		
<b>Instructions for Completing Checklist</b> This checklist may be used to document the results of the Area Walk-By near one or more SWE space below each of the following questions may be used to record the results of judgments and Additional space is provided at the end of this checklist for documenting other comments.		ne		
1. Does anchorage of equipment in the area appear to be free of	Y X	N	U	N/A
potentially adverse seismic conditions (if visible without necessarily opening cabinets)?		L	<b>L</b>	L
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	Y X	N	U	N/A
	Y	N	U	N/A
3. Based on a visual inspection from the floor, do the cable/conduit raceways and HVAC ducting appear to be free of potentially adverse seismic conditions (e.g., condition of supports is adequate and fill conditions of cable trays appear to be inside acceptable limits)?	X	[	[	
4. Does it appear that the area is free of potentially adverse seismic spatial interactions with other equipment in the area (e.g., ceiling tiles and lighting)?	Y X	N	U	N/A
Fire extinguisher is mounted on the wall and is not laterally supported. It acceleration at this location is less than 1g, it is unlikely for the extinguish interaction with nearby equipment. Masonry wall in room, see Photo 2. Walls identified as 2317, 2327, 2337, and 2347. All walls seismically ana per NRC IE Bulletin 80-11 (Ref. VBW09-B001-049, Rev 8, VBW09-B001-0 VBW09-B001-051, Rev 10 and VBW09-B001-052, Rev 3).	er to fall of lyzed.			

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Related equipment on SWEL for this area:

1) hp2b

Paul C. Rizzo Associates, Inc.

Status: (Y) N U

#### Area Walk-By Checklist (AWC)

Room	236	Floor El.	565	Bldg.	AU	JXB	-		
Interaction I 5. Does it app	E <b>ffects</b> bear that the area is f	free of potentially a	adverse seismic		·	Y X	N	U	N/A
	s that could cause fl							· · · · · · · · · · · · · · · · · · ·	
6 Does it apr	pear that the area is t	free of potentially a	adverse seismic			Y X	N	U	N/A
	s that could cause a f				L		I	J	II
					_	Y	<u>N</u>	U	N/A
interaction	bear that the area is f ns associated with he , and temporary inst	ousekeeping practi	ces, storage of port	able	L	X	I	<u> </u>	
8 Have you	looked for and found	d no other seismic	conditions that cou	ld	Γ	Y X	N	U	1
•	affect the safety fun						<b>L</b>		1
Comments (	Additional pages ma	y be added as nece	essary)						

Fire Sources: NO No fire sources identified in area.

Flooding Sources: No concerns identified regarding flood sources. The potential flood sources in the area are Tank T139-2, Piping: Aux feedwater, component cooling, containment spray, decay heat, fire protection, high pressure injection, main steam, makeup, prim water, reactor coolant spent fuel, service water

Evaluated by:

atter Myhraft I

Date:

7/25/2012

Eddie M. Guerra

Brian A. Lucarelli

Date:



236

Sheet 22 of 123

Status: (Y) N U

### Area Walk-By Checklist (AWC)

Room

565

Floor El.

Bldg.

AUXB

Other supporting or relevant documents and photos (if any):



Photo 1 General View of Room 236 Photo 2 Masonry Wall

Paul C. Rizzo Ass	ociates, Inc.						Shee	et 23 o	f 123
						S	tatus:(Y)	N U	
Area Walk-By Checklist (AW	C)								
Room <u>237</u>	Floor El.	565	Bldg.		AUXB				
<b>Instructions for Completing C</b> This checklist may be used to de space below each of the followi Additional space is provided at	ocument the results on ng questions may be	used to record	the results of j	udgments and					
<ol> <li>Does anchorage of equipmen potentially adverse seismic co opening cabinets)?</li> </ol>			rily		Y X		<u>N</u>	U	N/A
2. Does anchorage of equipmen degraded conditions?		Y X		N	U	N/A			
<ol> <li>Based on a visual inspection from the floor, do the cable/conduit raceways and HVAC ducting appear to be free of potentially adverse seismic conditions (e.g., condition of supports is adequate and fill conditions of cable trays appear to be inside acceptable limits)?</li> </ol>							N	U	N/A
4. Does it appear that the area is interactions with other equipulighting)?	s free of potentially a	dverse seismic			Y X		N	U	N/A
Related equipment on SWEL for	or this area:								
1) AF19									
2) PSL 106C									
3) PSL4928A									
4) FV6452									
4) FV6452 5) P14-1									

**~** 

Paul C. Rizzo Associates, Inc.

# Status: (Y) N U

# Area Walk-By Checklist (AWC)

Room	237	Floor El.	565	Bldg.	AUX	В	-		
Interaction Effect 5. Does it appear to interactions that	that the area is fr	ree of potentially a boding or spray in t		2		Y X	N	U	N/A
6. Does it appear t interactions that			dverse seismic			Y X	N	U	N/A
	sociated with ho	ree of potentially a usekeeping practic Illations (e.g., scaft	es, storage of			Y X	N	U	N/A
8. Have you looke adversely affec		no other seismic c ctions of the equip				Y X	N	U	]

Comments (Additional pages may be added as necessary) Fire Sources: NO No fire sources identified in area.

Flooding Sources:	No concerns identified regarding flood sources. The potential flood sources in the area are Oil cooler E194-1,
	condensate tank T217, Piping: Aux. feedwater, condensate, turbine plant cooling water, domestic water, main
	steam, Service water.

Evaluated by:

det to

Date:

7/25/2012

Eddie M. Guerra

Date: Brian A. Lucarell

7/25/2012

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## Area Walk-By Checklist (AWC)

237

Floor El.

Bldg.

AUXB

Other supporting or relevant documents and photos (if any):

565

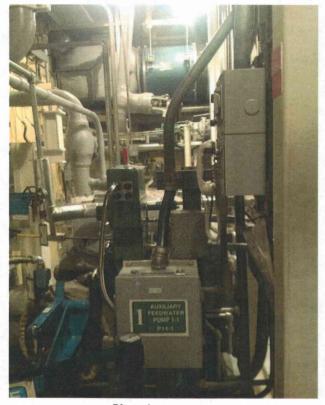


Photo 1 General View of Room 237

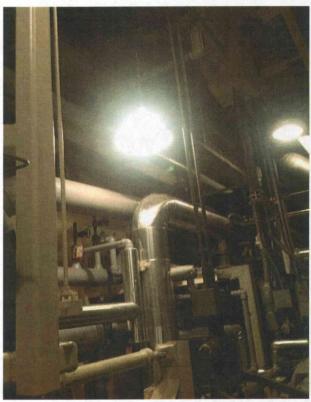


Photo 2 General View of Room 237

	C. Rizzo Associate	es, Inc.				Sh	eet 26 of 123		
						Status:(Y	)n u		
Area Walk-By Ch	ecklist (AWC)								
Room	238	Floor El.	565	Bldg.	AUXB	-	_		
Instructions for C This checklist may space below each o Additional space is	be used to docum of the following qu	ent the results o estions may be	used to record the r	esults of judgme	nts and findings.	he			
<ol> <li>Does anchorage potentially adver opening cabinets</li> </ol>	se seismic conditi		b be free of without necessarily		Y X	N	U	N/A	
2. Does anchorage degraded conditi		e area appear to	be free of signification	ant	Y X	N	U	N/A	
		ar to be free of p	ootentially adverse		Y X	N	U	N/A	
<ul><li>conditions of cab</li><li>4. Does it appear th interactions with</li></ul>	le trays appear to	be inside accept of potentially a	table limits)? dverse seismic spat	ial	Y X	N	U	N/A	
lighting)?		this location is	n the wall and is no less than 1g, it is un nent.						
Related equipment	on SWEL for this	area:							

1) P14-2

2) FV6451

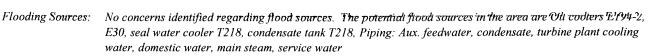
Paul C. Rizzo Associates, Inc.

Area Walk-By Checklist (AWC)

Status: YN U

Room	238	Floor El.	565	Bldg.	AUXB		_	
Interaction I					Y	N	U	N/A
	bear that the area is first state of the second state of the secon				X			
6 Daga it and	oon that the area is f				Y	N	U	N/A
• •	bear that the area is fi that could cause a fi	1 2	idverse seismic			<b>I</b>		LI
					Y	N	U	N/A
	pear that the area is fi				X			
	ns associated with ho , and temporary insta		e ,	table				
<i>C</i> ,		in area appears to	be adequately re.	strained.				
					Y	<u>N</u>	U	1
-	ooked for and found affect the safety fund			uld	<u> </u>			]. •
<b>Comments</b> (A	Additional pages may	y be added as nece	essary)					
Fire Sources:	NO							

No fire sources identified in area.



Evaluated by:

atte

7/25/2012

Eddie M. Guerra

Brian A. Lucarelli

Date:

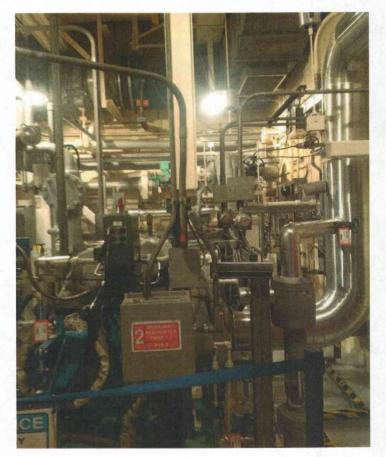
Date:



# Area Walk-By Checklist (AWC)

Room	238	Floor El.	565	Bldg.	AUXB

Other supporting or relevant documents and photos (if any):



**General View of Room 238** 

AUXB L items. T findings.	Status: (Y	)n u -	
L items. T		_	
L items. T	-	_	
	ne		
Y	N	U	N/A
<u> </u>	<u> </u>		<u> </u>
Y	N	U	N/A
X			
Y	N	U	N/A
X			
Y	N	<u> </u>	N/A
X			<u> </u>
	Y X Y X	Y N X Y N X Y N	Y     N     U       Y     N     U       Y     N     U       Y     N     U       Y     N     U

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1) T10

Paul C. Rizzo Associates, Inc. NGINEERS& CON SUITANTS

Status: (Y) N U

#### Area Walk-By Checklist (AWC)

Room	PT	Floor El.	565	Bldg.	AUXB	-		
Interaction Ef	fects				Y	N	<u> </u>	N/A
	ar that the area is fit that could cause flo				X			
					Y	N	U	N/A
	ar that the area is f hat could cause a f		adverse seismic		X	<u> </u>		
					Y	N	U	N/A
interactions	ar that the area is f associated with ho and temporary insta	usekeeping practi	ces, storage of poi	table	<u> </u>	<u> </u> .		<u> </u> ]
	Construction	n debris in area. 1	Not likely to cause	adverse interaction				
2	oked for and found fect the safety fund			uld	Y X	N	U	]
	ditional pages ma	y be added as nece	essary)					
Fire Sources:	~ 0	iping to Make Up		The potential ignitio	n sources in the	area are H	vdrogen P	ining to

Make Up Tank

g ig j

Flooding Sources: No concerns identified regarding flood sources. The potential flood sources in the area are Borated water storage tank T10, Piping: Borated water, Decay Heat, High Pressuer Injection

Evaluated by:

ditte Eddie M. Guerra

Date:

7/25/2012

Date: Brian A. Lucarelli

7/25/2012

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PC2	Paul C	. Rizzo	Associates,	Inc.
	ENGINEERS	& CONSUL	TANIS	

# Area Walk-By Checklist (AWC)

Room	РТ	Floor El.	565	Bldg.	AUXB

Other supporting or relevant documents and photos (if any):

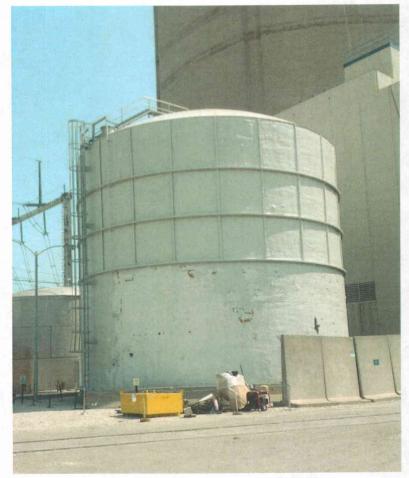


Photo 1 General View of PT

DCS	Paul C. Rizzo Asso	ciates, Inc.				Sl	neet 32 o	of 123
						Status: Y	)n u	
Area Walk-F	By Checklist (AWC	)						
Room	303	Floor El.	585	Bldg.	AUXB	_		
This checklist space below e	each of the following	cument the results og questions may be	used to record th	-By near one or mor ne results of judgmenting other comments	nts and findings.		_	
					Y	N	U	N/A
	orage of equipment i adverse seismic con binets)?			ly	X			
	Small gap (-	~1/4") between gro	ut and anchor pl	ate. Judged to be ac	ceptable, see Ph	noto 2.		
	thread enga Concluded t	gement in that the that is acceptable p	threads do not ex er procedure DE		, they are flush.	N	U	N/A
2. Does ancho degraded c	brage of equipment i onditions?	in the area appear t	o be free of signi	ficant	X			I
2 Deced on a	viewal increastion for	4 (1 4 4-	<b>1 1</b> - ( <b>1</b> - <b>1</b> - <b>1</b>		Y	N	U	N/A
raceways ar seismic con	visual inspection frond ad HVAC ducting ap ditions (e.g., condition of cable trays appear	opear to be free of point of supports is a	potentially adver- dequate and fill	se	L			
	pear that the area is f s with other equipme	· ·			Y X	<u>N</u>	U	N/A
Related equip	ment on SWEL for	this area:						
1) AF608								
2) CS1530								

-



#### Area Walk-By Checklist (AWC)

Room	303	Floor El.	585	Bldg.	AUXB			
Interaction Effect 5. Does it appear the interactions that	at the area is fre	e of potentially a ding or spray in t			Y X	N	U	N/A
6. Does it appear th interactions that of	nat the area is fre	e of potentially a			Y X	N	U	N/A
	ociated with hour	e of potentially a sekeeping practic ations (e.g., scaff	es, storage of p	ortable	Y X	N	U	N/A
8. Have you looked		o other seismic c ions of the equipn			Y X	N	U	
<b>Comments</b> (Additi Hydrogen line in th Fire Sources:	he area is well su NO		• /					

Flooding Sources: No concerns identified regarding flood sources. The potential flood sources in the area are Moisture Accumulation tank T216, Piping: Aux. feedwater, Containment Spray, Fire Protection, Feedwater

Evaluated by:

the M Date:

7/25/2012

Eddie M. Guerra

Date: Brian A. Lucarelli



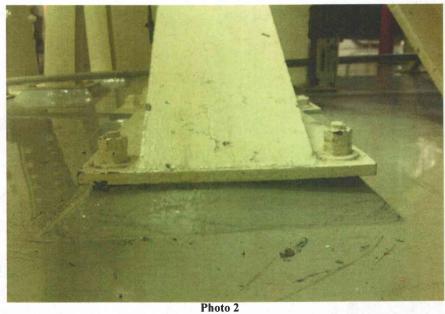
#### Area Walk-By Checklist (AWC)

Room	303	Floor El.	585	Bldg.	AUXB	

Other supporting or relevant documents and photos (if any):



Photo 1 General View of Room 303



Gap Between Grout and Anchor Plate

DCS	Paul C. Rizzo Asso		Sheet 35 of 123					
						Status: Y	)N U	
Area Walk-E	By Checklist (AWC	C)						
Room	304	Floor El.	585	Bldg.	AUXB	-		
This checklist space below e	each of the followin	cument the results of g questions may be	used to record t	t-By near one or mor he results of judgme tting other comments	nts and findings.	he	_	
					Y	N	U	N/A
	orage of equipment adverse seismic con binets)?			ily	X			I
					Y	N	U	<u>N/A</u>
2. Does ancho degraded c	orage of equipment onditions?	in the area appear t	o be free of sign	ificant	X			
					<u> </u>	N	<u> </u>	N/A
raceways ar seismic con	visual inspection fr nd HVAC ducting a ditions (e.g., condit of cable trays appea	ppear to be free of ion of supports is a	potentially adver dequate and fill	rse	X	<u> </u>	<u> </u>	<u> </u>
4. Does it app	bear that the area is	free of potentially a	dverse seismic s	patial	Y	N	U	N/A
interactions lighting)?	s with other equipm	ent in the area (e.g	., ceiling tiles and	d				
Related equip	oment on SWEL for	this area:						
1) E11B								
2) YE2B								
3) BW21								
4) SF11								

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Paul C. Rizzo Associates, Inc.

## Status: (Y) N U

#### Area Walk-By Checklist (AWC)

Room	304	Floor El.	585	Bldg.	AUXB	_		
	ffects ear that the area is fi that could cause flo				Y X	N	U	N/A
	ear that the area is fi that could cause a fi	1 2	dverse seismic		Y X	N	U	N/A
interaction	ear that the area is fi s associated with ho and temporary insta	usekeeping practic	es, storage of p		Y X	N	U	N/A
	ooked for and found affect the safety func				Y X	<u>N</u>	U	]

Degraded insulation observed on domestic water line. Judged not to be a concern.

Comments (Additional pages may be added as necessary)

Fire Sources: Transformer above L3701, Transformer above L4801 No concerns identified regarding fire sources. The potential ignition sources in the area are Transformer above L3701, Transformer above L4801

Flooding Sources: No concerns identified regarding flood sources. The potential flood sources in the area are Abandoned tank E72, Piping: Aux. Feedwater, Aux. Steam, Borated Water, Domestic water, Duratek, Demin water, fire protection, main feedwater, makeup, primary water, SPF pool cooling,

Evaluated by:

AN THE Eddie M. Guerra

Date:

7/25/2012

Date: Brian A. Lucarell

7/25/2012

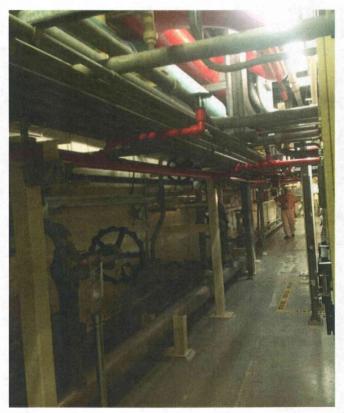


Status: (Y) N U

### Area Walk-By Checklist (AWC)

Room	304	Floor El.	585	Bldg.	AUXB

Other supporting or relevant documents and photos (if any):



**General View of Room 304** 

Paul C. Rizzo Associa ENGINEERS & CONSULTANTS	utes, Inc.				Sh	neet 38 c	of 123
					Status: Y	NU	
rea Walk-By Checklist (AWC)							
	Floor El.	590'6"	Bldg.	AUXB		_	
estructions for Completing Check his checklist may be used to docur pace below each of the following of dditional space is provided at the	ment the results questions may be	e used to record the	e results of judgmer	nts and findings.	ne	_	
				Y	N	U	N/A
Does anchorage of equipment in potentially adverse seismic condi-			y	X			
degraded conditions?				L	<u> </u>	<u> </u>	1
Does anchorage of equipment in degraded conditions?	the area appear	to be free of signif	icant	X			
	ion noted in ancl significant degr		sensor panel, see P	Photo 3. Y	N	U	N/A
Based on a visual inspection from				X			
raceways and HVAC ducting app seismic conditions (e.g., condition conditions of cable trays appear to	n of supports is a	adequate and fill	e				
Does it appear that the area is fre	e of potentially	adverse seismic sp	atial	Y	N		N/A
interactions with other equipmen lighting)?							
Masonry wall Walls identifie	ed as 3227, 3247		nic adequacy. 7, 3297, 3357, 3367 seismically analyze				
elated equipment on SWEL for th	nis area:						
) FIS 1612							
N SE 47							
) SF47							
) DH101							

-



# Status Y N U

Area Walk-By Checklist (A	AWC	)
---------------------------	-----	---

Room	312	Floor El.	590'6"	Bldg.	AUXB		
<b>Interaction Effects</b> 5. Does it appear th interactions that	at the area is fro	ee of potentially a oding or spray in t			Y N X	U	N/A
6. Does it appear th interactions that c		· ·	dverse seismic		Y N X	U	N/A
	ociated with hou emporary instal Cart with gas Judged not a	sekeeping practic lations (e.g., scaff cannisters loosel concern since stra	es, storage of por olding, lead y restrained to w aps and chains w	all, see Photo 4.	Y N X	U	N/A
8. Have you looked adversely affect		no other seismic c tions of the equipr		uld	Y N X	U	]
<b>Comments</b> (Additi <i>Fire Sources:</i>	NO	be added as neces	• /				
Flooding Sources:					sources in the area are vay heat, domestic water		

Evaluated by:

1 cc Ite My

Date:

7/25/2012

Eddie M. Guerra

Date:

Brian A. Lucarelli

7/25/2012

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Sheet 40 of 123

Status (Y) N U

### Area Walk-By Checklist (AWC)

312

590'6"

Floor El.

Bldg.

AUXB

Other supporting or relevant documents and photos (if any):

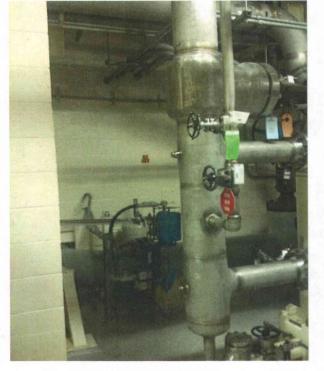


Photo 1 General View of Room 312 Showing Masonry Walls



Photo 2 Missing Anchor Bolts



Sheet 41 of 123

Status YN U

### Area Walk-By Checklist (AWC)

Supporting Photos (continued):



Photo 3 Minor Corrosion on Anchor Plate



Photo 4 Cart Containing Gas Canisters Loosely Restrained

BCS	Paul C. Rizzo Assoc	ciates, Inc.					Sh	eet 42 o	of 123
							Status: Y	NU	
Area Walk-I	By Checklist (AWC	)							
Room	314	Floor El.	585	Bldg.	A	UXB			
This checklis space below of	for Completing Ch t may be used to doc each of the following ace is provided at th	sument the results of questions may be	used to record the re	sults of judgme	ents and fir		e		
	orage of equipment i adverse seismic con binets)?					Y	N X	U	N/A
<ol> <li>Does anche degraded c</li> </ol>	Condition re	on conduit, see Ph eport issued : CR-2 n the area appear to	2012-10920	nt		Y X	N	U	N/A
<ol> <li>Based on a raceways an seismic con</li> </ol>	visual inspection frond nd HVAC ducting ap aditions (e.g., conditi	opear to be free of p on of supports is a	potentially adverse dequate and fill			Y X	<u>N</u>	U	N/A
4. Does it app	of cable trays appear bear that the area is fi s with other equipme	ree of potentially a	dverse seismic spatia	il		Y X	<u>N</u>	U	N/A
Related equip	oment on SWEL for t	this area:							
1) RC3701									

-

Paul C. Rizzo Associates, Inc. ENGINEERS & CONSECTANTS

Status: Y NU

### Area Walk-By Checklist (AWC)

Room	314	Floor El.	585	Bldg.	AUXB	-		
	ffects ar that the area is f that could cause flo	• •			Y X	N	U	N/A
	ar that the area is f hat could cause a f		adverse seismic		Y X	N	U	N/A
interactions	ear that the area is f associated with ho and temporary insta	ousekeeping praction	ces, storage of po	rtable	Y X	N	U	N/A
-	oked for and found found found found for the safety fun				Y X	N	U	]
	dditional pages ma in this area is well NO		essary)					

NO No fire sources identified in area.

Flooding Sources: No concerns identified regarding flood sources. The potential flood sources in the area are Piping: Aux feedwater, Aux. steam, Component Cooling, Core Flood, Containment Spray, Decay Heat Removal, Fire Protection, High

Evaluated by:

Eddie M. Guerra

Date:

7/25/2012

Date: Brian A. Lucarell

7/25/2012

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314

Status: Y NU

### Area Walk-By Checklist (AWC)

Room	
ROOM	

585

Bldg.

Floor El.

AUXB

Other supporting or relevant documents and photos (if any):



Photo 1 Nut Missing on Conduit

	ERS & CONSULTANTS	ciates, Inc.						
						Status	)n u	
area Walk-By Cl	hecklist (AWC)	)						
Room	318	Floor El.	585	Bldg.	AUXB			
pace below each	be used to doc of the following	ument the results of questions may be	used to record the	By near one or mor e results of judgmen ng other comments	nts and findings.	he	_	
					Y	N	- U	N/A
-	rse seismic con	n the area appear to ditions (if visible v		Ý	X			
	<b>c</b> •	a .	1 6 6		Y	N	U	N/A
. Does anchorage degraded condit		n the area appear to	o be free of signif	icant	X		1	
	1.				Y	N	U	N/A
raceways and H' seismic conditio	VAC ducting ap	om the floor, do the opear to be free of p on of supports is ac to be inside accept	potentially adverse dequate and fill	e	X		I	<u> </u>
		ree of potentially a		atial	Y	<u>N</u>	U	N/A
. Does it appear t	hat the area is h			utiui	<u> </u>			<u>1</u>
interactions with lighting)?	h other equipme	ent in the area (e.g.	, celling tiles and					
interactions with lighting)?	Fire extingu acceleration interaction v Masonry wa All walls hav	isher is mounted of a at this location is with nearby equipn ills identified as 30 we been seismically	n the wall and is r less than 1g, it is tent. 8D, 309D, 310D, analyzed per NR	not laterally suppor unlikely for the ext 311D, and 338D. C IE Bulletin 80-1. v 3, VBW13-B001-	inguisher to fall o I (Ref. VBW12-B0	r cause siz 001-068, R	gnificant Pev 3,	
lighting)?	Fire extingu acceleration interaction v Masonry wa All walls hav VBW13-B00	isher is mounted of a at this location is with nearby equipm ills identified as 30 we been seismically 11-069, Rev 3, VBW	n the wall and is r less than 1g, it is tent. 8D, 309D, 310D, analyzed per NR	unlikely for the ext. 311D, and 338D. C IE Bulletin 80-1.	inguisher to fall o I (Ref. VBW12-B0	r cause siz 001-068, R	gnificant Pev 3,	
lighting)? elated equipmen	Fire extingu acceleration interaction v Masonry wa All walls hav VBW13-B00	isher is mounted of a at this location is with nearby equipm ills identified as 30 we been seismically 11-069, Rev 3, VBW	n the wall and is r less than 1g, it is tent. 8D, 309D, 310D, analyzed per NR	unlikely for the ext. 311D, and 338D. C IE Bulletin 80-1.	inguisher to fall o I (Ref. VBW12-B0	r cause siz 001-068, R	gnificant Pev 3,	
lighting)? Related equipmen ) F108-1	Fire extingu acceleration interaction v Masonry wa All walls hav VBW13-B00	isher is mounted of a at this location is with nearby equipm ills identified as 30 we been seismically 11-069, Rev 3, VBW	n the wall and is r less than 1g, it is tent. 8D, 309D, 310D, analyzed per NR	unlikely for the ext. 311D, and 338D. C IE Bulletin 80-1.	inguisher to fall o I (Ref. VBW12-B0	r cause siz 001-068, R	gnificant Pev 3,	
lighting)? Related equipmen ) F108-1 ) E12B	Fire extingu acceleration interaction v Masonry wa All walls hav VBW13-B00	isher is mounted of a at this location is with nearby equipm ills identified as 30 we been seismically 11-069, Rev 3, VBW	n the wall and is r less than 1g, it is tent. 8D, 309D, 310D, analyzed per NR	unlikely for the ext. 311D, and 338D. C IE Bulletin 80-1.	inguisher to fall o I (Ref. VBW12-B0	r cause siz 001-068, R	gnificant Pev 3,	
lighting)? telated equipmen ) F108-1 ) E12B ) C11-1	Fire extingu acceleration interaction v Masonry wa All walls hav VBW13-B00	isher is mounted of a at this location is with nearby equipm ills identified as 30 we been seismically 11-069, Rev 3, VBW	n the wall and is r less than 1g, it is tent. 8D, 309D, 310D, analyzed per NR	unlikely for the ext. 311D, and 338D. C IE Bulletin 80-1.	inguisher to fall o I (Ref. VBW12-B0	r cause siz 001-068, R	gnificant Pev 3,	
lighting)? telated equipmen ) F108-1 ) E12B ) C11-1 ) K5-1	Fire extingu acceleration interaction v Masonry wa All walls hav VBW13-B00	isher is mounted of a at this location is with nearby equipm ills identified as 30 we been seismically 11-069, Rev 3, VBW	n the wall and is r less than 1g, it is tent. 8D, 309D, 310D, analyzed per NR	unlikely for the ext. 311D, and 338D. C IE Bulletin 80-1.	inguisher to fall o I (Ref. VBW12-B0	r cause siz 001-068, R	gnificant Pev 3,	
	Fire extingu acceleration interaction v Masonry wa All walls hav VBW13-B00	isher is mounted of a at this location is with nearby equipm ills identified as 30 we been seismically 11-069, Rev 3, VBW	n the wall and is r less than 1g, it is tent. 8D, 309D, 310D, analyzed per NR	unlikely for the ext. 311D, and 338D. C IE Bulletin 80-1.	inguisher to fall o I (Ref. VBW12-B0	r cause siz 001-068, R	gnificant Pev 3,	



Status (Y) N U

### Area Walk-By Checklist (AWC)

Room	318	Floor El.	585	Bldg.	AUXB	_		
<b>Interaction Effects</b> 5. Does it appear th interactions that o	at the area is free				Y X	N	U	N/A
6. Does it appear th interactions that c			lverse seismic		Y X	N	U	N/A
<ol> <li>Does it appear th interactions asso equipment, and to shielding)?</li> </ol>	ciated with house	ekeeping practice	es, storage of poi	rtable	Y X	N	U	N/A
8. Have you looked adversely affect	for and found no the safety function				Y X	N	U	]
<b>Comments</b> (Addition Fire Sources:	NO	e added as neces						

No concerns identified regarding flood sources. The potential flood sources in the area are EDG Jacket Codter Flooding Sources: E10-1, DG Oil Cooler E94-1, DG Jacket Water T121-1, Piping: Component Cooling, Domestic water, Diesel Fuel Oil, Demin Water, Fire Protection

Evaluated by:

ditte

Date:

7/25/2012

Eddie M. Guerra

Brian A. Lucarelli

Date:

7/25/2012

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Status (Y) N U

# Area Walk-By Checklist (AWC)

Room	318	Floor El.	585	Bldg.	AUXB
	010	1.001.2		Diag.	

Other supporting or relevant documents and photos (if any):



Photo 1 Masonry Wall

202	Paul C. Rizzo Assoc	ciates, Inc.				SI	heet 48	of 123
						Status (Y	)n u	
Area Walk-H	By Checklist (AWC	)						
Room	319	Floor El.	585	Bldg.	AUXB		_	
This checklist pace below e	for Completing Ch t may be used to doc each of the following ace is provided at th	ument the results of questions may be	e used to record the	e results of judgme	nts and findings.	ne	_	
					Y	N	U	N/A
	orage of equipment i adverse seismic con binets)?			у	X			
					Y	N	U	N/A
2. Does anche degraded c	orage of equipment i conditions?	n the area appear	to be free of signif	icant	X		I	
Based on a	visual inspection from	om the floor, do th	e cable/conduit		Y	N	U	N/A
raceways ar seismic con	nd HVAC ducting an aditions (e.g., condition of cable trays appear	opear to be free of on of supports is a	potentially advers dequate and fill	e	<u>_</u>			
4. Does it app	bear that the area is f	ree of potentially a	adverse seismic sp	atial	Y X	N	U	<u>N/A</u>
	s with other equipme		-					
	acceleration interaction Block walls	at this location is with nearby equip 304D and 307D io	e less than 1g, it is ment. dentified in room.	not laterally suppor unlikely for the ext C IE Bulletin 80-1	tinguisher to fall of	r cause siį	gnificant	I
		-B001-067, Rev 7)						
Related equip	oment on SWEL for	this area:						
) YF1								
2) K5-2								
3) C25-3								

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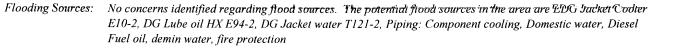


Status (Y) N U

#### Area Walk-By Checklist (AWC)

Room	319	Floor El.	585	Ι	Bldg.	AUX	B			
Interaction Effects	-	- C	1			<u> </u>		N	U	N/A
5. Does it appear th interactions that	could cause flood					<u> </u>	<u> </u>			
6. Does it appear th	at the area is free	of potentially a	dverse seismic					N	U	N/A
interactions that c			uverse seisinic				.			
						Y		N	U	N/A
	at the area is free ociated with house emporary installa	ekeeping practice	es, storage of po	ortable			<u> </u>			
8. Have you looked adversely affect	for and found no the safety function					Y X		N	U	
<b>Comments</b> (Additive Fire Sources:	onal pages may b <i>NO</i>	e added as neces	ssary)							

No fire sources identified in area.



Evaluated by:

Eddia M. Guarra

Date:

7/25/2012

Eddie M. Guerra

Date: Brian A. Lucarelli

ate:

7/25/2012

-



Sheet 50 of 123

Status (Y) N U

### Area Walk-By Checklist (AWC)

Room	319	Floor El.	585	Bldg.	AUXB

Other supporting or relevant documents and photos (if any):



Photo 1 General View of Room 319

Paul ENGINE	Paul C. Rizzo Associates, Inc. Shee								
						1	Status(Y	)n u	
Area Walk-By C	hecklist (AWC)								
Room	<u>321A</u>	Floor El.	585	Bldg.	<u>Al</u>	JXB		_	
This checklist may space below each	Completing Check y be used to docum of the following qu is provided at the en	ent the results on the results of th	used to record the	results of judgme	nts and fin		e	_	
	e of equipment in there are seismic conditions to the seismic condition of the seismic condition of the seise seismic condition of the seise sei					Y X	N	U	N/A
<ol> <li>Does anchorage degraded condi</li> </ol>	e of equipment in tl tions?	ne area appear te	o be free of signific	cant		Y X	N	U	N/A
raceways and H seismic condition	al inspection from VAC ducting appe ons (e.g., condition ble trays appear to	ar to be free of p of supports is a	potentially adverse dequate and fill			Y X	N	U	N/A
4. Does it appear	that the area is free th other equipment <i>Masonry wall, . Walls identified</i>	of potentially a in the area (e.g. see Photo 1. l as 305D and 3 been seismically	dverse seismic spa , ceiling tiles and 206D. Both have be analyzed per NRC	een seismically ar		Y X	N	U ev 5,	N/A
Related equipmen	t on SWEL for this	,							

 $\widehat{}$ 

1) LT-2787

2) T46-1

Paul C. Rizzo Associates, Inc.

Status(Y) N U

### Area Walk-By Checklist (AWC)

Room	<u>321A</u>	Floor El.	585	Bldg.	AUXB			
Interaction Effects 5. Does it appear th interactions that	at the area is free				Y X	N	U	N/A
6. Does it appear th interactions that c		1 2	dverse seismic		Y X	N	U	N/A
7. Does it appear th interactions asso equipment, and t shielding)?	ciated with hous	ekeeping practic	es, storage of port	able	Y X	N	U	N/A
8. Have you looked adversely affect			onditions that count on the transformer of the tran	ld	Y X	N	U	
<b>Comments</b> (Additi <i>Fire Sources:</i>	EMERGENCY No concerns in	' DIESEL GENE	RATOR DAY TAN ng fire sources. T	/K 1-1 The potential ignition so	urces in the a	rea are EN	1ERGEN	СҮ

Flooding Sources: No concerns identified regarding flood sources. The potential flood sources in the area are EDG Day Tank T46-1, Piping: Diesel Fuel Oil, Fire Protection

Evaluated by:

Eddie M. Guerra

detto Michma II

7/25/2012

<u>Carffl</u>

7/25/2012

Brian A. Lucarelli

Date:

Date:

-

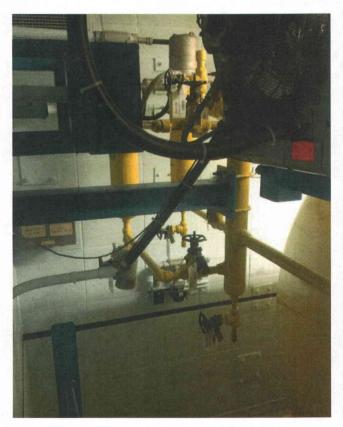


Status (Y) N U

### Area Walk-By Checklist (AWC)

Room	321A	Floor El.	585	Bldg.	AUXB
				č	

Other supporting or relevant documents and photos (if any):





DCS	Paul C. Rizzo Asso	ciates, Inc.				S	heet 54	of 123
						Status(Y	)n u	
Area Walk-H	By Checklist (AWC	<b>(</b> )						
Room	323	Floor El.	585	Bldg.	AUXB			
This checklist space below e	for Completing Ch t may be used to doc each of the following ace is provided at th	cument the results of g questions may be	used to record th	e results of judgme	ents and findings.	he		
	orage of equipment adverse seismic cor binets)?			ly	Y X	N		N/A
2. Does anche degraded c	orage of equipment i onditions?	in the area appear t	to be free of signi	ficant	Y X	N	U	N/A
raceways ar seismic con	visual inspection fr nd HVAC ducting a nditions (e.g., condition of cable trays appear	ppear to be free of ion of supports is a	potentially adversidequate and fill	se	Y X	N	U	N/A
	pear that the area is f s with other equipm		•		Y X	N	U	N/A
99).	acceleration		less than 1g, it is	not laterally suppo unlikely for the ex				al I

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Related equipment on SWEL for this area:

1) D1



Status (Y) N U

### Area Walk-By Checklist (AWC)

Room	323	Floor El.	585	Bldg.	AUXB			
Interaction Effects 5. Does it appear the interactions that c	at the area is free			;	Y X	N	U	N/A
6. Does it appear the interactions that c	at the area is free	e of potentially a			Y X	N	U	N/A
<ol> <li>Does it appear the interactions asso equipment, and to</li> </ol>	ciated with hous	ekeeping practic	es, storage of		Y X	N	U	N/A
shielding)?		t left open, see Pi cabinet is anchor		not to cause any interc	action with nearby	equipme	nt.	
8. Have you looked adversely affect					Y X	N	U	
<b>Comments</b> (Addition <i>Fire Sources:</i>	NO	be added as neces						
Flooding Sources:	NO							
Evaluated by:	No flood source	ces identified in o The Miles	rrea. Hi	Date:	7/25/2012			

Eddie M. Guerra

<u>A</u> Date: Brian A. Lucarelli

7/25/2012

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323

Sheet 56 of 123

Status (Y) N U

### Area Walk-By Checklist (AWC)

Room

Floor El.

Bldg.

AUXB

Other supporting or relevant documents and photos (if any):



Photo 1 **General View of Room 323** 

Photo 2 Supply Cabinet Left Open

	Paul C. Rizzo Associ	ates, Inc.				Sł	neet 57 c	of 123
						Status (Y	)n u	
Area Walk-B	y Checklist (AWC)							
Room	325	Floor El.	585	Bldg.	AUXB		_	
This checklist space below ea	for Completing Che may be used to docu ach of the following ace is provided at the	ment the results of questions may be	used to record th	e results of judgmen	nts and findings.	Гhe	_	
					Y	N	U	N/A
	rage of equipment in adverse seismic cond			ly	X			
opening cab								
2 Does ancho	rage of equipment in	the area appear t	a ha fraa of signi	ficant	Y	N	U	N/A
degraded co	rage of equipment in onditions?	i ille area appear i	to be free of sight	ncant				
					Y	N	U	N/A
raceways and	visual inspection from d HVAC ducting app	bear to be free of	potentially advers	se	X			
	litions (e.g., conditio f cable trays appear t							
4. Does it appe	ear that the area is fro	ee of potentially a	adverse seismic sp	patial	Y X	N	U	N/A
interactions lighting)?	with other equipment	nt in the area (e.g.	., ceiling tiles and					
	acceleration interaction w Flourescent l Flourescent l	at this location is ith nearby equipn ights ovserved ab ights jusdged as (	less than Ig, it is nent. pove sensitive equ	not laterally suppor unlikely for the ext ipment. ng of lights perform	inguisher to fall			
	nent on SWEL for the	nis area:						
1) C3645								
2) C1								

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Paul C. Rizzo Associates, Inc.

Status(Y)N U

### Area Walk-By Checklist (AWC)

Room	325	Floor El.	585	Bldg.	AUXB		_	
Interaction Effe	ects				Y	N	U	N/A
		ree of potentially a ooding or spray in t		2	X			
					Y	N	U	N/A
	that the area is f t could cause a f	ree of potentially a ire in the area?	dverse seismic		X	=		
meractions un	it could cause a l	fre in the area?						
					Y	N	U	N/A
interactions a	ssociated with ho	ree of potentially a busekeeping practic allations (e.g., scafi	es, storage of		X		L	
		l no other seismic c ctions of the equip			Y X	N	U	]
<b>Comments</b> (Add	litional pages ma	y be added as nece	ssary)					
Fire Sources:		FAQ 07-0031; 30	• •					
	Noor	n i dantifi - dan di	na fina annuan	The sector is a first in the section of	an war in the a	una ana Car	waama naw l	E1007

No concerns identified regarding fire sources. The potential ignition sources in the area are Screens per FAQ 07-0031; 30 kVA

Flooding Sources: NO

No flood sources identified in area.

Evaluated by:

atté

Date:

7/25/2012

Eddie M. Guerra

Æ

Date:

7/25/2012

Brian A. Lucarelli



Status (Y)N U

# Area Walk-By Checklist (AWC)

Room	325	Floor El.	585	Bldg.	AUXB	

Other supporting or relevant documents and photos (if any):



General View of Room 325

BCS	Paul C. Rizzo Assoc	ciates, Inc.				Sł	neet 60 o	of 123
						Status	)n u	
Area Walk-	By Checklist (AWC	)						
Room	328	Floor El.	585	Bldg.	AUXB	-	_	
This checkli space below	s for Completing Ch st may be used to doc each of the following pace is provided at th	ument the results of questions may be	used to record th	e results of judgmen	ts and findings.	he	_	
					Y	N	U	N/A
	norage of equipment i y adverse seismic con abinets)?			у	X			
1 0	Need to veri	fy anchorage of E confirmed to be con			V	N	II	N/ A
	horage of equipment i	Y X	N	U	N/A			
degraded	conditions?							
					Y	N	U	N/A
raceways a seismic co	a visual inspection fro and HVAC ducting ap nditions (e.g., conditi of cable trays appear	opear to be free of point of supports is a	potentially advers dequate and fill	se	<u> </u>	I		<u> </u>
					Y	N	U	N/A
	opear that the area is f ns with other equipme				X			
ngnung):	Fire extingu acceleration interaction w Masonry wa Walls identi per NRC IE	e at this location is with nearby equipn Il adjacent to E22- fied as 3307, 3347,	less than 1g, it is nent. , see Photo 1. , 3397, and 3407. f. VBW17-B001-(	not laterally support unlikely for the extin All walls have been 988, Rev 6, VBW18-L 5, Rev 10).	nguisher to fall o seismically ana	r cause sig		
Related equi	pment on SWEL for	this area:						
1) E22-1								
2) E22-2								
3) P43-2								

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Paul C. Rizzo Associates, Inc.

Status (Y) N U

### Area Walk-By Checklist (AWC)

Room	328	Floor El.	585	Bldg.	AUXB	_		
	nteraction Effects b. Does it appear that the area is free of potentially adverse seismic interactions that could cause flooding or spray in the area?						U	N/A
<ol> <li>Does it appear th</li> </ol>					Y	N	. U	N/A
interactions that c					Y	N	U	N/A
7. Does it appear th interactions asso equipment, and t shielding)?	ciated with hous	ekeeping practic	es, storage of po	ortable	X			
8. Have you looked				be properly restrained	Y	<u>N</u>	U	
adversely affect	the safety function	ons of the equipn	nent in the area?	2				-
<b>Comments</b> (Additi <i>Fire Sources:</i>	NO	be added as neces s identified in are	• /					

Flooding Sources: No concerns identified regarding flood sources. The potential flood sources in the area are CCW HX E22-1, E22-2, E23-3, Chem pot feeder T13, Piping: Fire Protection, Component Cooling, Demin water, service water.

Evaluated by:

ditte !! Date:

7/25/2012

Eddie M. Guerra

Date: Brian A. Lucarelli

7/25/2012

	ul C. Rizzo Assoc	iates, Inc.			Sheet 62 of 123
					Status YN U
Area Walk-By	Checklist (AWC)				
Room	328	Floor El.	585	Bldg.	AUXB

Other supporting or relevant documents and photos (if any):



Photo 1 General View of Room 328 Masonry Wall Adjacent to Heat Exchange E22-1

DCS	Paul C. Rizzo Asso	ciates, Inc.				S	heet 63	of 123
						Status:(Y	)n u	
Area Walk-E	By Checklist (AWC	C)						
Room	427	Floor El.	603	Bldg.	AUXB			
This checklist space below e	for Completing Ch t may be used to doc each of the following ace is provided at th	cument the results of questions may be	e used to record th	ne results of judgme	ents and findings.	he		
	brage of equipment i adverse seismic con binets)?			ly	Y X	N	- U	N/A
2. Does ancho degraded co	orage of equipment i onditions?	in the area appear t	to be free of signi	ficant	Y X	N	U	N/A
raceways ar seismic con	visual inspection fr nd HVAC ducting a ditions (e.g., conditi of cable trays appear	ppear to be free of ion of supports is a	potentially adversidequate and fill	se	Y X	N	U	N/A
	pear that the area is f s with other equipme				Y X	N	U	N/A
·oo)·	acceleration		less than 1g, it is	not laterally support unlikely for the ext				ıl

^

Related equipment on SWEL for this area:

1) F11A



Status: (Y) N U

#### Area Walk-By Checklist (AWC)

Room	427	Floor El.	603	Bldg.	AUXB		_	
Interaction E	ffects				Y	N	U	N/A
	ction Effects         s it appear that the area is free of potentially adverse seismic         ractions that could cause flooding or spray in the area?         s it appear that the area is free of potentially adverse seismic         actions that could cause a fire in the area?         s it appear that the area is free of potentially adverse seismic         actions that could cause a fire in the area?         s it appear that the area is free of potentially adverse seismic         eractions associated with housekeeping practices, storage of portable         ipment, and temporary installations (e.g., scaffolding, lead         lding)?         Ladder is stored adjacent to MCC and is tied loosely, see Photo 2.         Recommended to be tighten but judged not a significant adverse commended to be tighten but judged not a significant adverse commended to be tighten but judged not a significant adverse commended to be tighten but judged not a significant adverse commended to be tighten but judged not a significant adverse commended to be tighten but judged not a significant adverse commended to be tighten but judged not a significant adverse commended to be tighten but judged not a significant adverse commended to be tighten but judged not a significant adverse commended to be tighten but judged not a significant adverse commended to be tighten but judged not a significant adverse commended to be tighten but judged not a significant adverse commended to be tighten but judged not a significant adverse commended to be tighten but judged not a significant adverse commended to be tighten but judged not a significant adverse commended to be tighten but judged not a significant adverse co			X			<u> </u>	
					Y	N	U	N/A
			adverse seismic		X			
					Y	N	U	N/A
interactions equipment,	s associated with he and temporary inst	ousekeeping practi	ces, storage of p	ortable	X			
sinclung):	Ladder is st				ndition.			
o 11 - 1	1 1 0 1 0		<b>1</b>		Y	N	<u> </u>	1
-	ooked for and found affect the safety fur	d no other seismic of the equip			X		l	1

Comments (Additional pages may be added as necessary)

Fire Sources: Transformer Feed to DP4502, 480V Transformer for MCC YF2 No concerns identified regarding fire sources. The potential ignition sources in the area are Transformer Fred to DP4502, 480V Transformer for MCC YF2

No concerns identified regarding flood sources. The potential flood sources in the area are Piping: Main Steam, Flooding Sources: Fire Protection

Evaluated by:

date Eddie M. Guerra

Date:

Brian A. Lucarelli

Date:

7/25/2012

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7/25/2012



Sheet 65 of 123

Status: (Y) N U

## Area Walk-By Checklist (AWC)

427

Floor El.

Bldg.

AUXB

Other supporting or relevant documents and photos (if any):

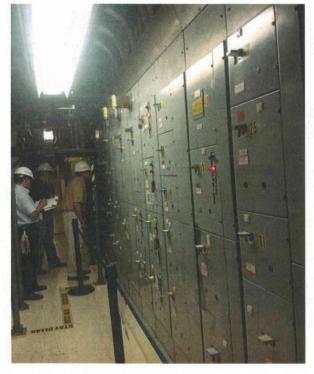


Photo 1 General View of Room 427



Photo 2 Ladder Loosely Tied Adjacent to MCC F11A

	Paul C. Rizzo Assoc	iates, Inc.				S	heet 66	of 123
						Status:(Y	)n u	
Area Walk-B	y Checklist (AWC	)						
Room	428	Floor El.	603	Bldg.	AUXB		_	
This checklist space below e	ach of the following	ument the results of questions may be	used to record	k-By near one or mor the results of judgments nting other comments	nts and findings.	ne	_	
					Y	N	U	N/A
	orage of equipment i adverse seismic con pinets)?			ily	X		]	<u> </u>
					Y	N	U	N/A
2. Does ancho degraded co	orage of equipment i onditions?	n the area appear t	to be free of sign	ificant	X		I	
					Y	N	U	N/A
raceways an seismic con	visual inspection fro ad HVAC ducting ap ditions (e.g., conditi of cable trays appear	ppear to be free of on of supports is a	potentially adve dequate and fill	rse	X	-	I	I
	ear that the area is fis with other equipme			-	Y X	<u>N</u>	<u> </u>	N/A
	acceleration interaction v Masonry wa Block walls All walls ha VBW21-B00 VBW27-B00	at this location is with nearby equipn lls adjacent to con identified as walls ve been seismicall 1-102, Rev 13, VE 1-135, Rev 19, VE	less than 1g, it nent. nponents, see Pl 4016, 4026, 40. y analyzed per N 8W25-B001-125,	s not laterally suppor is unlikely for the ext noto 2. 36, 4046, 4786, 4796 /RC IE Bulletin 80-1 Rev 9, VBW25-B001 Rev 3 and VBW28-E	inguisher to fall of , 4886, 4896, and l (Ref. VBW20-B0 l-126, Rev 6,	r cause sis 4906.	gnificant	d.
Related equip	ment on SWEL for	this area:						
1) C4606	9) DBC2P	17) DC1						

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2) F12A	10) F1	18) Y1
3) FD1062	11) D233	
4) D2_ED	12) XDF1-2	
5) D2P	13) C4605	
6) Y2	14) D233	
7) YV2	15) DBC1PN	
8) YV4	16) DBC2PN	

Paul C. Rizzo Associates, Inc.

Status: (Y) N U

#### Area Walk-By Checklist (AWC)

Room	428	Floor El.	603	Bldg.	AUXB			
Interaction I					Y	N	U	N/A
	5. Does it appear that the area is free of potentially adverse seismic interactions that could cause flooding or spray in the area?							
6 Does it ap	pear that the area is f	ree of notentially a	dverse seism	ic	Y	N	U	N/A
	s that could cause a f		uverse seisin			<b>.</b>	Į	L
					Y	N	U	N/A
interaction	bear that the area is f as associated with he and temporary instance	ousekeeping praction	ces, storage of		<u> </u>			
	These equip			om. See Photo 3. y as the equipment				
	were being ooked for and found affect the safety fun	l no other seismic o				N	U	]
		vinet DCB-2P obse v as the equipment						

Comments (Additional pages may be added as necessary)

*Fire Sources:* No concerns identified regarding fire sources. The potential ignition sources in the area are Power Transformer for Substation F2 &F1, Transformer for H3602 and H4602, Lighting Station Transformer, Constant Voltage Transformer XY2, Static Voltage Regulator

Flooding Sources: NO

No flood sources identified in area.

Evaluated by:

Eddie M. Guerra

Date:

7/25/2012

Date: Brian A. Lucarell

7/25/2012

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No concerns identified regarding fire sources. The potential ignition sources in the area are Power Transformer for



Sheet 68 of 123

Status:(Y)N U

### Area Walk-By Checklist (AWC)

428

Floor El.

Bldg.

AUXB

Other supporting or relevant documents and photos (if any):



Photo 1 **General View of Room 428** 

Photo 2 Masonry Wall Adjacent to Components



Sheet 69 of 123

Status: (Y) N U

# Area Walk-By Checklist (AWC)

Room	428	Floor El.	603	Bldg.	AUXB

Supporting Photos (continued):



Photo 3 Unrestrained Work Cart Photo 4 Cabinet DCB-2P Door Left Open

Paul ENCIN	C. Rizzo Associa	ates, Inc.					Sh	neet 70	of 123
						St	atus: (Y	)N U	
Area Walk-By C	hecklist (AWC)								
Room	428A	Floor El.	603	Bldg.	AUX	<u>(B</u>			
space below each	y be used to docu of the following o	ment the results of questions may be	of the Area Walk-B used to record the r list for documenting	esults of judgm	ents and findi				
						Y	N	U	N/A
<ol> <li>Does anchorage potentially adve opening cabinet</li> </ol>	erse seismic condi		o be free of without necessarily			X			
2. Does anchorage degraded condi		the area appear t	o be free of signific	ant		Y K	N	U	N/A
						Y	N	U	N/A
seismic conditio		ear to be free of n of supports is a	potentially adverse dequate and fill			x			
			dverse seismic spat ,, ceiling tiles and	ial		Y X	N	U	N/A
	Walls identifie		ery rack. 026, both seismicali 001-100, Rev 14).	'y analyzed per l	NRC IE				
Related equipmen	t on SWEL for th	is area:							
1) 2P									
2) 2N									

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3) C78-2

Paul C. Rizzo Associates, Inc.

Status: (Y) N U

### Area Walk-By Checklist (AWC)

Room	428A	Floor El.	603	Bldg.	AUXB	-		
Interaction	Effects				Y	N	U	N/A
• •	5. Does it appear that the area is free of potentially adverse seismic interactions that could cause flooding or spray in the area?							
					Y	N	U	N/A
6. Does it ap	6. Does it appear that the area is free of potentially adverse seismic							
interactions	s that could cause a fi	re in the area?						
					Y	N	U	N/A
7. Does it app	pear that the area is fr	ee of potentially a	dverse seismic		X			
	ns associated with how , and temporary insta		e 1	table				
		0 1	2	k which could represent a v and complies with work		dverse con	dition.	
					Y	N	U	

8. Have you looked for and found no other seismic conditions that could adversely affect the safety functions of the equipment in the area?

Comments (Additional pages may be added as necessary) Fire Sources: NO

No fire sources identified in area.

Flooding Sources: NO

No flood sources identified in area.

Evaluated by:

7**1**74 Eddie M. Guerra

Date:

7/25/2012

Х

Date: Brian A. Lucarelli

7/25/2012

-



Status: (Y) N U

# Area Walk-By Checklist (AWC)

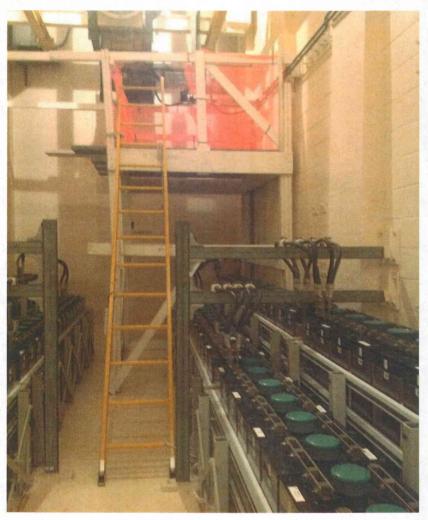
428A

Floor El.

Bldg.

AUXB

Other supporting or relevant documents and photos (if any):



**General View of Room 428A** 

	Paul C. Rizzo Associates, Inc. Shee								
						Status:(Y	)n u		
Area Walk-B	y Checklist (AWC)	)							
Room	428B	Floor El.	603	Bldg.	AUXB				
This checklist space below e	ach of the following	ecklist ument the results of t questions may be us e end of this checklis	ed to record the	results of judgme	nts and findings.	he			
1 Does ancho	rage of equipment is	n the area appear to b	a fraa af		Y	N	- U	N/A	
	adverse seismic con	ditions (if visible with					I	1	
					Y	N	U	N/A	
2. Does ancho degraded co		n the area appear to b	e free of signific	cant	X				
					Y	N	U	N/A	
3. Based on a	visual inspection fro	om the floor, do the c	able/conduit		X				
seismic cond	litions (e.g., condition	pear to be free of pot on of supports is adec to be inside acceptab	juate and fill						
					Y	N	<u> </u>	N/A	
		ree of potentially adv nt in the area (e.g., co	•	tial	X		I		
		area identified as 40 11 (Ref. VBW20-B00)		th seismically and	llyzed per NRC IE				

-

Related equipment on SWEL for this area:

1) D2N

Status: (Y) N U

# Area Walk-By Checklist (AWC)

Room	<u>428B</u>	Floor El.	603	Bldg.	AUXB		
<b>Interaction Effects</b> 5. Does it appear th interactions that	at the area is from	ee of potentially a oding or spray in t			Y N X	U	N/A
6. Does it appear th interactions that c			dverse seismic		Y N X	U	N/A
	ciated with hou	ee of potentially a sekeeping practic lations (e.g., scaff	es, storage of p	ortable	Y N X	U	N/A
8. Have you looked adversely affect		no other seismic c tions of the equipr			Y N X	U	]
<b>Comments</b> (Additie <i>Fire Sources:</i>	NO	be added as neces					
Flooding Sources:	NO No flood sour	rces identified in a	area.				
Evaluated by:		the My	- Aji	Date:	7/25/2012		

',

Eddie M. Guerra

<u>All</u> Date: Brian A. Lucarelli

7/25/2012

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Status: (Y) N U

# Area Walk-By Checklist (AWC)

Room	428B	Floor El.	603	Bldg.	AUXB
				e	

Other supporting or relevant documents and photos (if any):



**General View of Room 428B** 

Par ENGIN	11 C. Rizzo Assoc		S	heet 76	of 123			
						Status:(Y	)n u	
Area Walk-By (	Checklist (AWC)	)						
Room	429	Floor El.	603	Bldg.	AUXB		_	
This checklist ma space below each	n of the following	ument the results of questions may be	of the Area Walk-I e used to record the klist for documenti	e results of judgmo	-	ie	_	
					Y	N	U	N/A
	verse seismic con	n the area appear t ditions (if visible	to be free of without necessarily	y	X		L	
2 Does anchorad	re of equipment i	n the area annear t	to be free of signifi	icant	Y	N	<u> </u>	N/A
degraded cond		n the area appear		icant	A		<b>_</b>	L
3 Based on a vie	ual inspection fro	om the floor, do th	e cable/conduit		Y	N	U	N/A
raceways and I seismic conditi	HVAC ducting ap		potentially adverse dequate and fill	6			I	
				-4:-1	Y	N	U	N/A
		ent in the area (e.g	adverse seismic spa ., ceiling tiles and	anai			_ <b></b>	L
Related equipme	ent on SWEL for t	this area:						
1) Y105								
2) D1_ED								
3) YRF1								
4) E1								
5) XCE1-1								

-

Status: (Y) N U

#### Area Walk-By Checklist (AWC)

Room	429	Floor El.	603	Bldg.	<u>A</u>	UXB			
Interaction <b>H</b>	Effects					Y	N	U	N/A
		free of potentially a looding or spray in				X			
						Y	N	U	N/A
	ear that the area is that could cause a	free of potentially a fire in the area?	adverse seismic			X			
interaction	s associated with h	free of potentially a ousekeeping practic	ces, storage of por	table		Y X	N	U	N/A
shielding)?		tallations (e.g., scaf	folding, lead						
-		d no other seismic on the equip		ıld		Y X	N	U	]

#### Comments (Additional pages may be added as necessary)

Power Transformer For Substation E2 & E1, Constant Voltage Transformer, Static Voltage Regulator No concerns identified regarding fire sources. The potential ignition sources in the area are Power Transformer For Substation E2 & E1, Constant Voltage Transformer, Static Voltage Regulator

Flooding Sources: NO

No flood sources identified in area.

Evaluated by:

Fire Sources:

Eddie M. Guerra

the Mina It Date:

7/25/2012

Brian A. Lucarelli

Date:

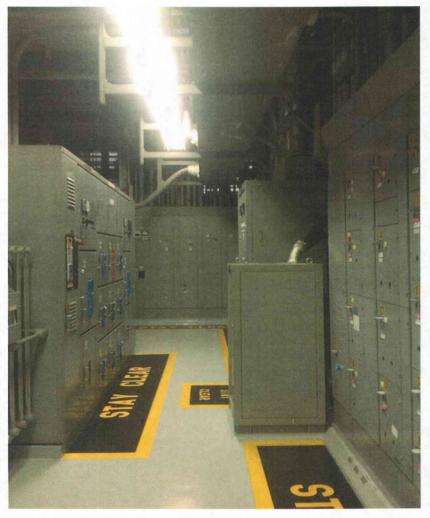


Status: (Y) N U

# Area Walk-By Checklist (AWC)

Room	429	Floor El.	603	Bldg.	AUXB

Other supporting or relevant documents and photos (if any):



**General View of Room 429** 

DCQ	Paul C. Rizzo Associates, Inc. ENGINEERS & CONSULTANTS								
						Status:(Y	)n u		
Area Walk-	By Checklist (AWC)								
Room	429A	Floor El.	603	Bldg.	AUXB	-	_		
This checklis space below	s for Completing Check st may be used to docun each of the following q pace is provided at the e	nent the results on uestions may be	e used to record the	results of judgme	nts and findings.	he			
					Y	N	- U	N/A	
	norage of equipment in t y adverse seismic condit abinets)?				X				
	norage of equipment in t conditions?	he area appear t	to be free of signific	cant	Y X	N	U	N/A	
					Y	N	U	N/A	
raceways a seismic co	a visual inspection from and HVAC ducting appe nditions (e.g., condition of cable trays appear to	ear to be free of of supports is a	potentially adverse dequate and fill		X		1	<u> </u>	
4. Does it ap	opear that the area is free	e of potentially a	adverse seismic spa	tial	Y X	<u>N</u>	U	N/A	
-	ns with other equipment	•	•		L	· · · · ·	- <b>1</b>		
Related equi	ipment on SWEL for thi	s area:							
1) D1N									

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Status:(Y)N U

#### Area Walk-By Checklist (AWC)

Room	<u>429A</u>	Floor El.	603	Bldg.	AUXB		_	
	Effects bear that the area is fr s that could cause flo				Y X	N	U	N/A
	pear that the area is fr that could cause a fi	• •	lverse seismic		Y X	N	U	N/A
interaction	bear that the area is fr is associated with ho and temporary insta	usekeeping practic	es, storage of p		Y X	N	U	N/A
-	ooked for and found affect the safety func				Y X	N	U	]
	Additional pages may guration as for D2N		• /					

Fire Sources: Constant Voltage Transformer No concerns identified regarding fire sources. The potential ignition sources in the area are Constant Voltage Transformer

Flooding Sources: NO

No flood sources identified in area.

Evaluated by:

1176 Eddie M. Guerra

Date:

7/25/2012

Date: Brian A. Lucarelli

	Paul C. Rizzo Asso		Sheet 81 of 123					
					S	Status(Y	)n u	
Area Walk-B	y Checklist (AWC	C)						
Room	501	Floor El.	623	Bldg.	AUXB		_	
This checklist space below e	ach of the followin	cument the results of g questions may be	e used to record the	-By near one or more he results of judgmen ting other comments.	ts and findings.	e	_	,
					Y	N	U	N/A
	rage of equipment adverse seismic con pinets)?			ily	X			
2. Does ancho degraded co	rage of equipment onditions?	in the area appear t	to be free of sign	ificant	Y X	N	U	N/A
raceways an seismic conc	Judged not	e adequate strength from the floor, do th ppear to be free of ion of supports is a	se condition sinc to support. e cable/conduit potentially adver dequate and fill	e remaining anchors	Y X	<u>N</u>	U	N/A
	ear that the area is a with other equipm				Y X	<u>N</u>	U 	N/A
Related equip	ment on SWEL for	this area:						
1) LT-1402								
2) PS3689D								
3) T12								

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Status (Y) N U

#### Area Walk-By Checklist (AWC)

Room	501	Floor El.	623	Bldg.	AU	XB		_	
<b>Interaction Effects</b> 5. Does it appear that		of potentially a	lverse seismic			Y X	N	U	N/A
interactions that c		• •							
6. Does it appear the	at the area is free	of potentially a	tverse seismic			Y X	<u>N</u>	U	N/A
interactions that c							<u>.</u>	I	J
						Y	N	U	N/A
7. Does it appear that interactions asso equipment, and to shielding)?	ciated with hous	ekeeping practic	es, storage of port	able	L	X	<u> </u>	<u> </u>	
8. Have you looked adversely affect				ld		Y X	N	U	]
<b>Comments</b> (Additio	onal pages may I	be added as neces	ssary)						
Fire Sources:	Lighting Trans No concerns id Transformer		ng fire sources. T	he potential ignitio	on sources i	n the c	area are Li	ghting	
Flooding Sources:				The potential floor nt cooling, demin v					

Protection

Evaluated by:

ditte,

Date:

7/25/2012

Eddie M. Guerra

Date: Brian A. Lucarell

n.o

7/.

7/25/2012

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Status (Y) N U

# Area Walk-By Checklist (AWC)

Room	501	Floor El.	623	Bldg.	AUXB

Other supporting or relevant documents and photos (if any):



Photo 1 Damaged Grout

Paul ENGINE	C. Rizzo Assoc	iates, Inc.					S	heet 84	of 123
							Status: Y	N U	
Area Walk-By C	hecklist (AWC)	)							
Room	502	Floor El.	623	Bldg.	AU	XB			
space below each	y be used to doc of the following	ument the results of questions may be	used to record	lk-By near one or n I the results of judgr enting other comme	nents and find		he	_	
						Y	N	U	N/A
<ol> <li>Does anchorage potentially adve opening cabinet</li> </ol>	erse seismic con	n the area appear to ditions (if visible v		arily		X			
<ol> <li>Does anchorage degraded condition</li> </ol>		n the area appear to	o be free of sig	nificant		Y X	N	U	N/A
raceways and H seismic conditio	VAC ducting ap	om the floor, do the pear to be free of j on of supports is a	potentially adv dequate and fil	erse		Y	N	U	N/A X
conditions of ca		to be inside accepted by the best of the b	,						
		ree of potentially a nt in the area (e.g.		-		Y	N X	U	N/A
	Condition Ra Ceiling pane Masonry wa All walls haw VBW29-B00	lls identified as 50 ve been seismically 1-148, Rev 6, VBW	2012-10973 Fire extinguish 117, 5147, 515 ) analyzed per V29-B001-149,	2. ners are in cabinets 7, 5167, 5177, 5187, NRC IE Bulletin 80 Rev 5, VBW29-B00 Rev 9, VBW30-B00	)-11 (Ref. VBN )1-151, Rev 2,	V29-B( VBW2	001-143, R 29-B001-1	Rev 10, 52, Rev 5,	
Related equipmen	t on SWEL for t	his area:							
1) C5755									
2) LSHHSP9B6									
3) LI-1525A									
4) C5792A LB2									
5) L311									
6) L511									

Paul C. Rizzo Associates, Inc. ENGINEERS & CONSULTANTS

Status: Y(N) U

# Area Walk-By Checklist (AWC)

Room	502	Floor El.	623	Bldg.	AUXB			
<b>Interaction Effects</b> 5. Does it appear th interactions that					Y X	N	U	N/A
6. Does it appear th interactions that c	at the area is free o ould cause a fire i		lverse seismic		Y X	N	U	N/A
	at the area is free or ciated with housel emporary installati	keeping practice	es, storage of po	ortable	Y X	N	U	N/A
shielding)?		ash can, light bi	ulb storage con	tainer, and I&C cart. Se nearby panels.	ee Photos 3 an	d 4.		
8. Have you looked adversely affect	for and found no the safety function				Y X	N	U	
<b>Comments</b> (Addition <i>Fire Sources:</i>	onal pages may be NO No fire sources i		•					
Flooding Sources:	NO No flood source.	s identified in a	rea.					
		2						

Evaluated by:

Later My

Eddie M. Guerra

Date: Brian A. Lucarelli

2

Date:

7/25/2012

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Sheet 86 of 123

Status: YN U

# Area Walk-By Checklist (AWC)

Room

502

623

Floor El.

Bldg.

AUXB

Other supporting or relevant documents and photos (if any):



Photo 1 General View of Room 502 Photo 2 Crack in Masonry Wall



Status: Y(N) U

# Area Walk-By Checklist (AWC)

Room	502	Floor El.	623	Bldg.	AUXB

Supporting Photos (Continued):



Photo 3 Unrestrained I&C Cart Photo 4 Unrestrained Trash Can and Light Bulb Storage

	C. Rizzo Associa	ites, me.				5		of 123
						Status:(Y	)n u	
Area Walk-By Ch	ecklist (AWC)							
Room	505	Floor El.	623	Bldg.	AUXB	-	_	
space below each o	be used to docur f the following c	ment the results of questions may be	used to record t	c-By near one or more he results of judgme nting other comment	nts and findings.	ìhe		
					Y	N	U	N/A
<ol> <li>Does anchorage potentially adver opening cabinets</li> </ol>	se seismic condi			ily	X			
					Y	N	<u> </u>	N/A
2. Does anchorage degraded conditi		the area appear t	o be free of sigr	ificant	X	<u>l.</u>		l
					Y	N	<u> </u>	N/A X
<ol> <li>Based on a visua raceways and HV seismic condition conditions of cab</li> </ol>	AC ducting app as (e.g., condition	ear to be free of n of supports is a	potentially adve dequate and fill	rse	L	I		
	Due to presen	nce of ceiling , the	ese items could	not be verified.	Y	N	U	N/A
4. Does it appear the interactions with					X			
lighting)? Related equipment	Masonry wall Walls identifi All walls have VBW29-B001 VBW31-B001	-146, Rev 8, VBV -162, Rev 1, VBV	seismic adequa , 5287, 5297, 52 y analyzed per N V31-B001-159,	847, 5357, 5367. VRC IE Bulletin 80-1 Rev 9, VBW31-B001				
1) C5706		nis area.						
2) C5702								
3) C5712								
4) HIS 5889A								
4) HIS 5889A 5) HIS 7528								



Status: (Y) N U

Area	Walk-By	Checklist	(AWC)
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Room	505	Floor El.	623	Bldg.	AUXB			
<b>Interaction Effects</b> 5. Does it appear the interactions that o	at the area is fro				Y X	N	U	N/A
6. Does it appear the interactions that c			dverse seismic		Y X	N	U	N/A
<ol> <li>Does it appear the interactions asso equipment, and to</li> </ol>	ciated with hou	sekeeping practic	ces, storage of po	rtable	Y X	N	U	N/A
shielding)? 8. Have you looked adversely affect	will not pose	any unacceptable	e adverse condition		Y X	N	U	]
<b>Comments</b> (Addition Fire Sources:	onal pages may		essary)					
Flooding Sources:	NO No flood sou	rces identified in	area.					
Evaluated by:	Eddie M. Gu	<del>Tetro</del> MGh erra	noti	Date:	7/25/2012			

Brian A. Lucarelli Date:

7/25/2012

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505

Status:(Y) N U

# Area Walk-By Checklist (AWC)

Room
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623

Bldg.

AUXB

Floor El.

Other supporting or relevant documents and photos (if any):

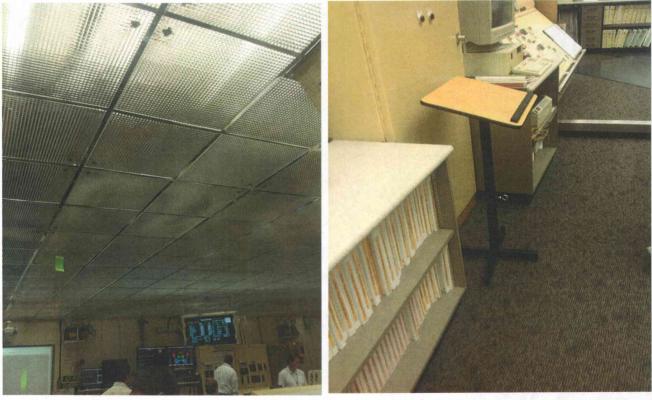


Photo 1 Ceiling Tiles and Lighting Fixtures Anchored Photo 2 Small Podium Not Anchored

BCS	Paul C. Rizzo Associa	ites, Inc.				S	heet 91	of 123
						Status:(Y	)n u	
Area Walk-I	By Checklist (AWC)							
Room	515	Floor El.	623	Bldg.	AUXB		_	
This checklis space below of	for Completing Chec t may be used to docur each of the following q pace is provided at the o	nent the results juestions may be	e used to record the	results of judgme	nts and findings.	ne		
					Y	N	- U	N/A
	orage of equipment in adverse seismic condi binets)?				X			
2. Does anche degraded c	orage of equipment in too	the area appear t	to be free of signifi	cant	Y X	N	U	N/A
					Y	N	U	N/A
raceways an seismic con	visual inspection from nd HVAC ducting appo ditions (e.g., condition of cable trays appear to	ear to be free of a of supports is a	potentially adversendequate and fill		X Y	N	U	 N/A
	pear that the area is free s with other equipment			itial		1		
Related equip	pment on SWEL for the	is area:						
1) HV5314								

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Status:(Y) N U Area Walk-By Checklist (AWC) Room 515 Floor El. Bldg. AUXB 623 **Interaction Effects** U N/A Y Ν 5. Does it appear that the area is free of potentially adverse seismic X interactions that could cause flooding or spray in the area? Ν U N/A 6. Does it appear that the area is free of potentially adverse seismic X interactions that could cause a fire in the area? U N/A N 7. Does it appear that the area is free of potentially adverse seismic Х interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)? Dolly loosely tied to column adjacent to MCC, however it is unlikely that this dolly would have an interaction with the MCC nearby. U Y N 8. Have you looked for and found no other seismic conditions that could Х adversely affect the safety functions of the equipment in the area? Comments (Additional pages may be added as necessary) Fire Sources: NO No fire sources identified in area. Flooding Sources: **PIPING: Fire Protection** 

No concerns identified regarding flood sources. The potential flood sources in the area are PIPING: Fire Protection

Eddie M. Guerra

Date:

Date:

7/25/2012

7/25/2012

Brian A. Lucarelli

Evaluated by:

202	Paul C. Rizzo Associates,	Inc.
-	ENGINEERS & CONSULTANTS	

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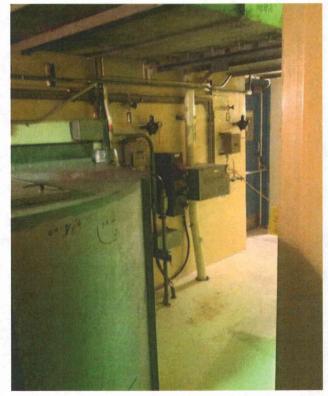


Status: YN U

# Area Walk-By Checklist (AWC)

Room	515	Floor El.	623	Bldg.	AUXB

Other supporting or relevant documents and photos (if any):



**General View of Room 515** 



**General View of Room 515** 



Status: YN U

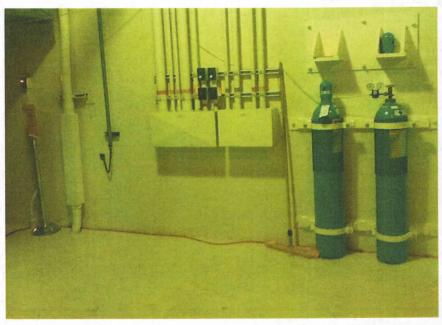
# Area Walk-By Checklist (AWC)

Room	515	Floor El.	623	Bldg.	AUXB
	the second se				

Supporting Photos (continued):



Loosely Tied Dolly in Room 515



Cylinder tanks properly fixed to wall were found in the area

	S	Status(Y	)n u	
Area Walk-By Checklist (AWC)				
Room         600         Floor El.         643         Bldg.	AUXB		_	
<b>Instructions for Completing Checklist</b> This checklist may be used to document the results of the Area Walk-By near one or more space below each of the following questions may be used to record the results of judgments Additional space is provided at the end of this checklist for documenting other comments.		e		
	Y	N	- U	N/A
1. Does anchorage of equipment in the area appear to be free of potentially adverse seismic conditions (if visible without necessarily opening cabinets)?	X		I	
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	Y X	<u>N</u>	U	N/A
3. Based on a visual inspection from the floor, do the cable/conduit raceways and HVAC ducting appear to be free of potentially adverse seismic conditions (e.g., condition of supports is adequate and fill	Y X	<u>N</u>	U	N/A
<ul><li>4. Does it appear that the area is free of potentially adverse seismic spatial interactions with other equipment in the area (e.g., ceiling tiles and lighting)?</li></ul>	Y X	<u>N</u>	U	N/A
Related equipment on SWEL for this area: 1) CV-5005				

-

Paul C. Rizzo Associates, Inc. ENCINEERS & CONSECTIANTS

Status (Y) N U

#### Area Walk-By Checklist (AWC)

Room	600	Floor El.	643	Bldg.	AUXB			
	Effects ear that the area is that could cause fl				Y X	N	U	N/A
	ear that the area is that could cause a		adverse seismic		Y X	N	U	N/A
interaction	ear that the area is s associated with he and temporary inst	ousekeeping praction	ces, storage of		Y X	<u>N</u>	U	N/A
	ooked for and found affect the safety fur				Y X	<u>N</u>	U	]
<b>Comments</b> (A	Additional pages ma	ty be added as nece	essary)					

Fire Sources: NO No fire sources identified in area.

Flooding Sources: Piping: Station Heating

No concerns identified regarding flood sources. The potential flood sources in the area are Piping: Station Heating

Evaluated by:

- -----

the Mine It \_\_\_\_\_ Date:

7/25/2012

Eddie M. Guerra

Date: Brian A. Lucarell

ate:

	Paul C. Rizzo Assoc	ciates, Inc.	Sheet 97 of 123					
					State	us(Y)N U		
Area Walk-H	By Checklist (AWC	)						
Room	601	Floor El.	643	Bldg.	AUXB			
This checklist space below e	each of the following	cument the results of questions may be	used to record	lk-By near one or mor the results of judgmen enting other comments	nts and findings.			
						N U	N/A	
	orage of equipment i adverse seismic con binets)?			nrily	X	<b>I</b>		
						N U	N/A	
2. Does ancho degraded c	orage of equipment i onditions?	n the area appear t	o be free of sig	nificant	X			
						N U	N/A	
raceways ar seismic con	visual inspection fro ad HVAC ducting ap ditions (e.g., condition of cable trays appear	opear to be free of p on of supports is a	potentially adv dequate and fil	erse	X	<b> </b>	<u></u>	
	ear that the area is fi s with other equipme					N U	N/A	
Related equip	ment on SWEL for t	this area:						
) IA608								
2) PY-101A								
3) MS101								

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Status (Y) N U

#### Area Walk-By Checklist (AWC)

Room	601	Floor El.	643	Bldg.	AUXB			
	Effects pear that the area is s that could cause f				Y X	N	U	N/A
	pear that the area is that could cause a		adverse seismic		Y X	N	U	N/A
interaction	, and temporary inst	ousekeeping practic allations (e.g., scaf	ces, storage of porta folding, lead	ble ved in area, see Photo	Y X	<u>N</u>	U	N/A
•	looked for and found affect the safety fur		conditions that could ment in the area?	i .	Y X	<u>N</u>	U	l
<b>Comments</b> (A	Additional pages ma	ny be added as nece	essary)					

No fire sources identified in area.

Flooding Sources: Cont Purge Supply Heating Coil E38, Piping: Domestic water, Fire Protection, Main Steam, Station Heating

No concerns identified regarding flood sources. The potential flood sources in the area are Cont Purge Supply Heating Coil E38, Piping: Domestic water, Fire Protection, Main Steam, Station Heating

Evaluated by:

atte

Date:

7/25/2012

Eddie M. Guerra

Date: Brian A. Lucarelli



Status (Y) N U

# Area Walk-By Checklist (AWC)

Room
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601

643

Floor El.

Bldg.

AUXB

Other supporting or relevant documents and photos (if any):

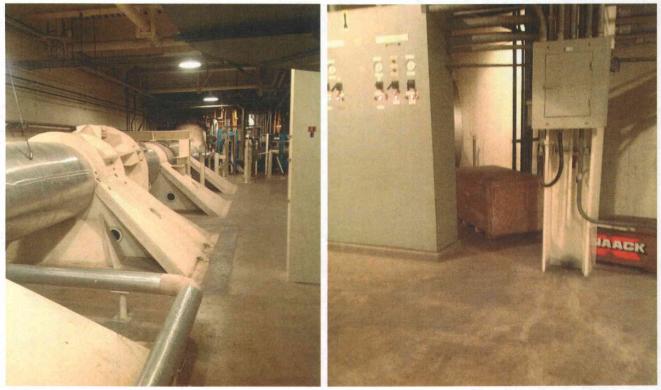


Photo 1 **General View of Room 601** 

Photo 2 **Unrestrained Storage Containers** 

DCQ	Paul C. Rizzo Asso	ciates, Inc.		Sheet 100 of 123				
						Status(Y	)n u	
Area Walk-B	By Checklist (AWC	<b>(</b> )						
Room	602	Floor El.	643	Bldg.	AUXB	-	_	
This checklist space below e	each of the followin	cument the results og questions may be	used to record	lk-By near one or mor the results of judgmen enting other comments	nts and findings.	he	_	
					Y	N	U	N/A
	orage of equipment adverse seismic con binets)?			arily	X			
					Y	N	U	N/A
2. Does anche degraded c	orage of equipment onditions?	in the area appear t	o be free of sig	nificant	X			
					Y	N	U	N/A
	visual inspection find HVAC ducting a				X			
seismic con	ditions (e.g., condit of cable trays appea	ion of supports is a	dequate and fil				• •	27/4
4 Does it apr	bear that the area is	free of potentially a	idverse seismic	spatial	Y	<u>N</u>	<u> </u>	N/A
	s with other equipm					<b>1</b>		<u></u>
Related equip	oment on SWEL for	this area:						
1) SP17A7								
2) ICS11A								

 $\widehat{}$ 

Status (Y) N U

#### Area Walk-By Checklist (AWC)

Room	602	Floor El.	643	Bldg.	AUXB	_		
<b>Interaction Effects</b> 5. Does it appear the interactions that of					Y X	N	U	N/A
6. Does it appear the interactions that c	at the area is free o ould cause a fire in		verse seismic		Y X	N	U	N/A
	ciated with housek emporary installation	eeping practice ons (e.g., scaffe	s, storage of p olding, lead		Y X	N	U	N/A
8. Have you looked adversely affect	for and found no o the safety function:				Y X	N	U	
<b>Comments</b> (Addition Fire Sources:	480V Transforme	er	• /	s. The potential i <del>gnition sou</del>	erces in the a	area are 48	Uv Transfi	ormer
Flooding Sources:	Protection, Main	ntified regardin	g flood sourc Heating	Heating es. The potential flood sour	ces in the a	rea are Pip	ing: Fire	

Evaluated by:

de Michmall

Date:

7/25/2012

Eddie M. Guerra

Date: Brian A. Lucarelli

7/25/2012

-

PCQ	Paul C. Rizzo Associates, Inc.	
	ENGINEERS & CONSULTANTS	

Status(Y)N U

# Area Walk-By Checklist (AWC)

602

643

Floor El.

Bldg.

AUXB

Other supporting or relevant documents and photos (if any):

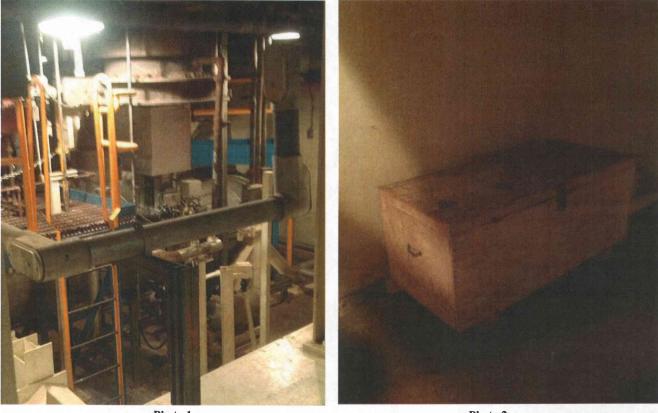


Photo 1 General View of Room 602

Photo 2 Unrestrained Storage Container

	Paul C. Rizzo Asso	ciates, Inc.				Sh	eet 103	of 123
						Status(Y	)n u	
Area Walk-B	y Checklist (AWC							
Room	603	Floor El.	638	Bldg.	AUXB			
This checklist space below early a space below	ach of the following	cument the results of g questions may be	used to record	k-By near one or mor the results of judgme nting other comment:	nts and findings.	he	-	
	rage of equipment i adverse seismic con vinets)?			rily	Y X	N	U	N/A
2. Does anchoud degraded co	rage of equipment i nditions?	n the area appear t	o be free of sign	nificant	Y X	N	<u>U</u>	N/A
raceways and seismic cond	visual inspection fro d HVAC ducting ar litions (e.g., conditi f cable trays appear	opear to be free of point of supports is a	potentially adve dequate and fill	rse	Y X	N	U	N/A
4. Does it appe	ear that the area is f with other equipme Fire extingu It is judged t interaction Masonry wa Walls identij Wall 6027 is per NRC IE	ree of potentially a ent in the area (e.g. isher is mounted of that it is unlikely for with nearby equip Ils in area, see Pho fied as 6017, 6027 exempt. All other Bulletin 80-11 (Re	dverse seismic : , ceiling tiles an n the wall and i or the extinguish nent. 500 1. 6037, 6087, 60 walls have bee f. VBW31-B001		znificant d 7, Rev 0, VBW31-			N/A
Related equipm	nent on SWEL for t	his area:						
1) TS-5261								
2) C21-1								
3) SW-5896								
4) SW3927								
5) SW3928								

 $\widehat{}$ 

Status(Y) N U

#### Area Walk-By Checklist (AWC)

Room	603	Floor El.	638	Bldg.	AUXB			
Interaction I					Y	N	- U	N/A
5. Does it app	pear that the area is	free of potentially a	dverse seismic		X	-		
interaction	s that could cause fl	ooding or spray in	the area?					
					Y	N	<u> </u>	<u>N/A</u>
	bear that the area is that could cause a t		dverse seismic		X			
					<u> </u>	N	U	N/A
	pear that the area is				X			
	ns associated with he , and temporary inst			rtable				
	I&C Cart n	ot restrained, see P	Photo 2.					
	It is judged	that the I&C cart a	and the ladder (Pi	hoto 3) would not equipm	ent.			
		acceptable interact			Y	N	U	_
	ooked for and found				X			]
adversely	affect the safety fun	ctions of the equip	ment in the area?					

Comments (Additional pages may be added as necessary)

NO

Fire Sources:

No fire sources identified in area.

Flooding Sources: No concerns identified regarding flood sources. The potential flood sources in the area are Demin water storage tank T108, Cem Pot Feeder T154, Expansion tank T88, Piping: Chilled water, Domestic water, demin water, fire protection, Station Heating, Service water

Evaluated by:

Date:

:

7/25/2012

Eddie M. Guerra

Date: Brian A. Lucarelli



603

Sheet 105 of 123

Status (Y) N U

# Area Walk-By Checklist (AWC)

Daama	
ROOM	
ROOM	

638

Floor El.

Bldg.

AUXB

Other supporting or relevant documents and photos (if any):



Photo 1 Fire Extinguisher not Restrained and Masonry Wall Photo 2 Cart Not Restrained

PCS	Paul C. Rizzo Assoc	iates, Inc.	Sheet 106 of 123						
	Status:Y								
Area Walk-E	By Checklist (AWC)	)							
Room	251	Floor El.	565	Bldg.	INTK				
This checklist space below e	each of the following	ument the results questions may be	e used to record	k-By near one or more SV the results of judgments a nting other comments.		ie	_		
					Y	N	U	N/A	
	orage of equipment in adverse seismic cond binets)?	••		rily	X		<u> </u>		
· · ·	Anchor three		0	past nut, see Photo 1.	V	N	T	<b>NT/A</b>	
2. Does ancho degraded co	orage of equipment in	<i>ptable as the supp</i> n the area appear t			Y X	<u>N</u>	U	N/A	
					Y	N	U	N/A	
raceways ar seismic con	visual inspection fro nd HVAC ducting ap iditions (e.g., condition of cable trays appear	pear to be free of on of supports is a	potentially adve dequate and fill	rse	X				
	pear that the area is fr s with other equipme				Y X	N	U	N/A	
ngining).		nt touching compo significant conce							
Related equip	oment on SWEL for t	his area:							
1) SW82									

^

Status: YN U

#### Area Walk-By Checklist (AWC)

Room	251	Floor El.	565	Bldg.	INTK			
<ul><li>Interaction Effects</li><li>5. Does it appear that the area is free of potentially adverse seismic interactions that could cause flooding or spray in the area?</li></ul>					Y X	N	U	N/A
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?					Y X	N	U	N/A
interaction	bear that the area is f as associated with he and temporary insta	usekeeping practic	ces, storage of p	ortable	Y X	<u>N</u>	U	N/A
	ooked for and found affect the safety fund				Y X	N	U	]
<b>Comments</b> (A Fire Sources:	Additional pages ma	y be added as nece	essary)					

No fire sources identified in area.

Flooding Sources: No concerns identified regarding flood sources. The potential flood sources in the area are Piping: Domestic Water, Demin Water, Service Water, Clean Water

Evaluated by:

date

Date:

7/25/2012

Eddie M. Guerra

Date: Brian A. Lucarelli

PC2	Paul C.	Rizzo	Associates,	Inc.
	ENGINEERS &	CONSUL	TANTS	

Sheet 108 of 123

Status:(Y)N U

# Area Walk-By Checklist (AWC)

251

565

Floor El.

Bldg.

INTK

Other supporting or relevant documents and photos (if any):



Photo 1 Anchor Threading Substantially Past Nut Photo 2 Hanging Light Touching Component

Paul C. Rizzo A	ssociates, Inc.				Sh	eet 109	of 123
					Status:Y	)n u	
Area Walk-By Checklist (AV	VC)						
Room <u>50</u>	Floor El.	585	Bldg.	INTK		_	
Instructions for Completing This checklist may be used to space below each of the follow Additional space is provided a	document the results ying questions may be	e used to record the	ne results of judgmen	nts and findings.	he	-	
				Y	N	- U	N/A
1. Does anchorage of equipme				X			
potentially adverse seismic opening cabinets)?	conditions (if visible	without necessari	ly				
				Y	N	U	N/A
2. Does anchorage of equipme degraded conditions?	nt in the area appear	to be free of signi	ficant	X			
- Minor co	rrosion on various co	-					
Judged n B. Based on a visual inspection	ot to affect componer	• •	eismic capacity.	Y X	N		N/A
raceways and HVAC ducting seismic conditions (e.g., con conditions of cable trays app	g appear to be free of dition of supports is a	potentially adver adequate and fill	se	<u>A</u>	L	<b>I</b>	
	g pipe (Photo 2) attac It is judged that this c			an of pipe.	N	U	N/A
4. Does it appear that the area	is free of potentially a	adverse seismic s	patial	Y X	<u>N</u>		IN/A
interactions with other equip							
It is judg	nguisher is mounted o ed that it is unlikely f on with nearby equipt	or the extinguishe					
Related equipment on SWEL		ment.					
1) P4-1							
2) F1-2							

----

Paul C. Rizzo Associates, Inc.

Status: Y) N U

#### Area Walk-By Checklist (AWC)

Room	50	Floor El.	585	Bldg.	INTK	_	_	
	Effects bear that the area is fi s that could cause flo	Y X	N	U	N/A			
	bear that the area is fit that could cause a fit		adverse seismic		Y X	N	U	N/A
interaction	bear that the area is finds associated with ho and temporary insta	usekeeping praction	ces, storage of por	table	Y X	N	U	N/A
	ooked for and found affect the safety func			ıld	Y X	N	U	]

Comments (Additional pages may be added as necessary) Fire Sources: NO

No fire sources identified in area.

Flooding Sources: No concerns identified regarding flood sources. The potential flood sources in the area are Piping: Aux. Steam, Chlorination, circulating water, fire protection, screenwash, service water, water treatment

Evaluated by:

allte Date:

7/25/2012

Eddie M. Guerra

Date: Brian A. Lucarelli

7/25/2012

Paul C. Rizzo Associates, Inc. ENGINEERS & CONSULTANTS						Sheet 111 of 123
					Sta	atus: Y N U
Area Walk-E	By Checklist (AWC)					
Room	50	Floor El.	585	Bldg.	INTK	

Other supporting or relevant documents and photos (if any):

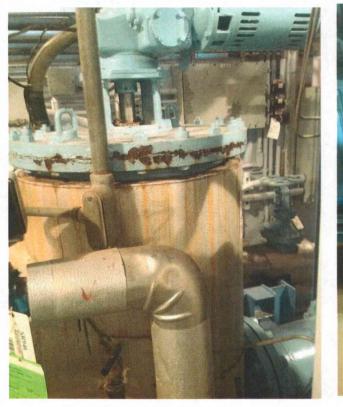


Photo 1 Minor Corrosion



Photo 2 Rod Hung Pipes

	Paul C. Rizzo Asso NGINEERS & CONSULTANTS	ciates, Inc.				She	et 112 c	of 123
						Status	)n u	
Area Walk-B	y Checklist (AWC	<b>)</b>						
Room	51	Floor El.	576	Bldg.	INTK			
This checklist space below ea	ach of the following	cument the results of g questions may be	of the Area Walk-By used to record the r list for documenting	esults of judgmen	ts and findings.	ıe	_	
					Y	N	U	N/A
	rage of equipment i adverse seismic cor pinets)?				<u> </u>	<u> </u>	<u> </u>	<u> </u>
					Y	N	U	N/A
2. Does ancho degraded co		in the area appear t	o be free of signific	ant	X	L		
		nged, see Photo 1. a significant adver	se seismic condition					
					Y	N	U	N/A
raceways and seismic conc	visual inspection fr d HVAC ducting a litions (e.g., conditi f cable trave appear	ppear to be free of ion of supports is a	potentially adverse dequate and fill		X		I	<b>.</b>
	f cable trays appear		,		Y	N	U	N/A
	ear that the area is f with other equipme		adverse seismic spat ., ceiling tiles and	al	X			L
		of MCC restrained, ts will provide later	see Photo 2. ral restraint. Deeme	d not significant				
Related equipr	ment on SWEL for	this area:						
1) E12C								

Paul C. Rizzo Associates, Inc. ENGINEERS & CONSULTANTS

# Status (Y)N U

Area	Walk-By	Checklist	(AWC)
	· · · · · · · · · · · · · · · · · · ·	Checkinst	(11110)

Room	51	Floor El.	576	Bldg.	INT	ТК			
Interaction Eff						Y	N	U	N/A
		free of potentially a looding or spray in				X	. <u></u>		
6 Does it appea	r that the area is	free of potentially a	dverse seismic			Y X	N	<u>U</u>	N/A
	at could cause a	• •				<u> </u>		<u></u>	L,
						Y	N	U	N/A
interactions a	associated with h	free of potentially a ousekeeping practic tallations (e.g., scaf	ces, storage of po	rtable	L	X		[	
	Scaffolding	in area appears to	be adequately re	estrained.		Y	N	U	
		d no other seismic on the equip				X			]
<b>Comments</b> (Ad	ditional pages ma	ay be added as nece	essary)						
Fire Sources:	÷			The potential igniti	on sources it	n the a	rea are Tra	ansformer	For

Flooding Sources: No concerns identified regarding flood sources. The potential flood sources in the area are Piping: Fire Protection, Aux. steam, diesel fuel oil, screenwash, water treatment

Evaluated by:

atte

Date:

7/25/2012

Eddie M. Guerra

Brian A. Lucarelli

Date:

7/25/2012



Sheet 114 of 123

Status YN U

#### Area Walk-By Checklist (AWC)

Room	51	Floor El.	576	Bldg.	INTK	
noom		Tioor En.	510	Diug.		

Other supporting or relevant documents and photos (if any):



Photo 1 Damaged Grout Photo 2 Movement of MCC Restrained by Adjacent Component

DCS	Paul C. Rizzo Asse	ociates, Inc.					Sheet	115	of 123
						Stat	us (Y) N	U	
Area Walk-I	By Checklist (AW)	C)							
Room	52	Floor El.	576	Bldg.	INTK	<u> </u>			
This checklist space below of	each of the followir	cument the results on g questions may be	used to record	k-By near one or mor the results of judgme nting other comments	nts and findin				
					Y		N I	U	N/A
	adverse seismic co	in the area appear t nditions (if visible		rily	X				
					Y X		N I	U	N/A
	Does anchorage of equipment in the area appear to be free of significant degraded conditions?								
raceways ar seismic con	Judged not visual inspection f ad HVAC ducting a ditions (e.g., conditions (e.g.)	corrosion noted for to affect component rom the floor, do th appear to be free of tion of supports is a r to be inside accep	t opearbility or e cable/conduit potentially adve dequate and fill	erse	3-3. See Pho	· .		U	N/A
					Y		N I	U T	N/A
	s with other equipm Fire exting It is judgea interaction Fire exting Masonry w	' that it is unlikely fo with nearby equipn uishers not restrain	, ceiling tiles an n the wall and i or the extinguish nent. ed s been seismical		gnificant				
Related equip	ment on SWEL for	this area:							
1) F12D									
2) EF12C									
3) P3-2									

-

Paul C. Rizzo Associates, Inc.

Area Walk-By Checklist (AWC)

Status (Y) N U

Room	52	Floor El.	576	Bldg.	INTK		_	
Interaction Effect 5. Does it appear th interactions that	at the area is fre	• •			Y X	N	U	N/A
6. Does it appear the interactions that c			dverse seismic		Y X	N	U	N/A
7. Does it appear th interactions asso equipment, and t shielding)?	ociated with hour	sekeeping practic	es, storage of por	table	Y X	N	U	N/A
8. Have you looked for and found no other seismic conditions that could adversely affect the safety functions of the equipment in the area?					Y X	N	U	
<b>Comments</b> (Additi <i>Fire Sources:</i>	NO	be added as neces	• /					

Flooding Sources: No concerns identified regarding flood sources. The potential flood sources in the area are Piping: Fire Protection, Aux. Steam, Circulating Water, Circulating water tubing, Service water tubing, water treatment

Evaluated by:

detto Mahne It \_\_\_\_ Date:

7/25/2012

Eddie M. Guerra

Date: Brian A. Lucarelli

7/25/2012

\_



52

Status (Y) N U

#### Area Walk-By Checklist (AWC)

Room

\_\_\_\_

576

Floor El.

Bldg.

INTK

Other supporting or relevant documents and photos (if any):



Photo 1 Minor Corrosion of Pump P3-1



Photo 2 Minor Corrosion of Pump P3-3



Photo 3 Minor Corrision of Pump P3-2

DCS	Paul C. Rizzo Asso	ociates, Inc.		Sheet 118 of 123				
						Status (Y	)n u	
Area Walk-	By Checklist (AWC	C)						
Room	53	Floor El.	566.25	Bldg.	INTK		_	
This checklis space below	s for Completing Cl st may be used to do each of the followin pace is provided at th	cument the results on g questions may be	used to record th	e results of judgme	nts and findings.	ne	_	
	orage of equipment adverse seismic co abinets)?	Y X	N	U	N/A			
	oorage of equipment conditions?	in the area appear t	o be free of signif	ficant	Y X	<u>N</u>	U	N/A
		grout, see Photo 1. to have an adverse	effect on support	's seismic capacity.	Y	N	U	N/A
raceways a seismic co	a visual inspection fi ind HVAC ducting a nditions (e.g., condit of cable trays appea	uppear to be free of tion of supports is a	potentially advers dequate and fill	se				
4. Does it ap	pear that the area is is with other equipm	free of potentially a	dverse seismic sp	patial	Y X	<u>N</u>	U	N/A
Related equi	pment on SWEL for	this area:						
1) SW3963								
2) SW1399								

-

Paul C. Rizzo Associates, Inc.

Status (Y) N U

Area Walk-By Checklist	(AWC)
------------------------	-------

Room	53	Floor El.	566.25	Bldg.	INTK			
Interaction I					Y	N	U	N/A
	pear that the area is f s that could cause fl				X		[]	
					Y	N	U	N/A
	pear that the area is f s that could cause a f		adverse seismic		X			
					Y	N	U	N/A
interaction	pear that the area is f ns associated with he , and temporary inst	ousekeeping practi	ces, storage of por	table	X			
C,	Ladder in a	rea is not restraine in area appears to		an interaction conce	ern. See Photo 2.			
8. Have vou l	looked for and found	1 no other seismic	conditions that co	uld	Y X	N	U	
	affect the safety fun						I <u></u>	I
<b>Comments</b> (A Fire Sources:	Additional pages ma	y be added as nece	essary)					

No fire sources identified in area.

Flooding Sources: No concerns identified regarding flood sources. The potential flood sources in the area are Piping: Fire Protection, Aux. Steam, Circulating Water, Domestic Water, Diesel Fuel Oil, Demi water, Screenwash, Service water, Water treatment, Neutralizing Tank discharge

Evaluated by:

ditte

Date:

7/25/2012

Eddie M. Guerra

Date: Brian A. Lucarelli

7/25/2012

-



Status (Y) N U

#### Area Walk-By Checklist (AWC)

Room
------

53

Other supporting or relevant documents and photos (if any):

Bldg.

INTK

Floor El.

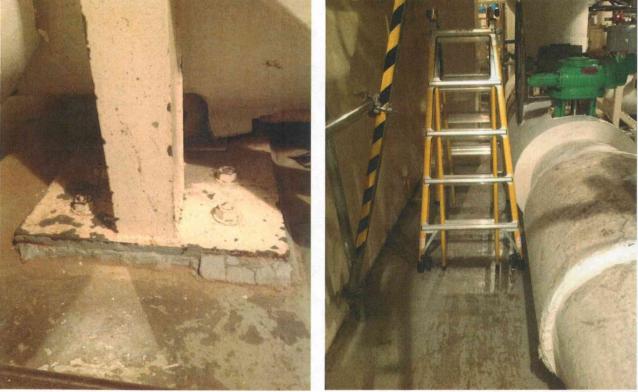


Photo 1 **Damaged Grout** 

Photo 2 Ladder Not Restrained

Paul C. Rizzo Associates, Inc.				
		Status:Y	)n u	
g. <u>Y</u>	ARD	-		
		he	-	
C	Y X	N	U	N/A
C	Y X	N	U	N/A
C	Y X	N	U	N/A
	Y X	N	U	N/A
	or more SWEL	e or more SWEL items. T judgments and findings. mments. Y X Y X Y X	Status: $Y$ g. <u>YARD</u> e or more SWEL items. The judgments and findings. mments. Y N X N X N Y N X N X N X N	g. <u>YARD</u> e or more SWEL items. The judgments and findings. mments.

~

1) T153-1

Paul C. Rizzo Associates, Inc. ENGINEERS& CONSCITANTS

Status: YN U

#### Area Walk-By Checklist (AWC)

Room	YARD	Floor El.	585	Bldg.	YARD			
	Effects bear that the area is fro s that could cause floo				Y X	N	U	N/A
	pear that the area is from that could cause a fire		dverse seismic		Y X	N	U	N/A
interaction	pear that the area is from the sassociated with how and temporary instal	sekeeping practic	ces, storage of po	ortable	Y X	N	U	N/A
	ooked for and found r affect the safety funct				Y X	N	U	]
Comments (A	Additional pages may	be added as nece	• /	NU STOR				

Fire Sources: EMERGENCY DIESEL GENERATOR FUEL OIL STOR No concerns identified regarding fire sources. The potential ignition sources in the area are EMERGENCY DIESEL GENERATOR FUEL OIL STOR

Flooding Sources: No concerns identified regarding flood sources. The potential flood sources in the area are T146, T147, T148, T149, T150, T151-1, T151-2, T160, T168, T188, T212, T45

Evaluated by:

Eddie M. Guerra

ditte Date:

7/25/2012

Brian A. Lucarelli

Date:

7/25/2012



Status: (Y)N U

### Area Walk-By Checklist (AWC)

Room	YARD	Floor El.	585	Bldg.	YARD

Other supporting or relevant documents and photos (if any):

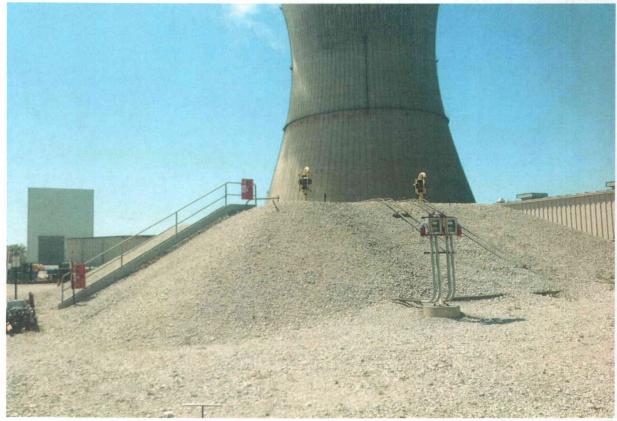


Photo 1

# **APPENDIX D**

# **COMPONENT LIST FOR ANCHORAGE CONFIGURATION CHECK**

COMPONENT ID	References
2N	Drawing C-0752 Rev 0011 Drawing E-854Q-115-1
2P	Drawing C-0752 Rev 0011 Drawing E-854Q-115-2
C21-1	Calculation C-CSS-C21-1
C25-3	Calculation C-CSS-C25-3
C3615	Calculation C-CSS-C3615
C3645	Calculation C-CSS-C3645
C4606	Calculation C-CSS-C4606 Calculation C-CSS-C4603
C73-1	Calculation C-CSS-C73-1
C78-2	Calculation C-CSS-C78-1
D1_ED	Calculation C-CSS-DCMCC-1 Drawing C-0233 Rev 0011
D1N	Drawing E-20-4-7(2) Drawing C-0220D Rev 0004
D2_ED	Calculation C-CSS-DCMCC-002 Calculation C-CSS-DCMCC-1
D2N	Drawing E-20-4-7(2) Drawing C-0220D Rev 0004 Calculation C-CSS-YV4
D2P	Drawing C-0220E Rev 0003
DBC2P	Calculation C-CSS-DBC2P
E11 <b>B</b>	Calculation C-CSS-E11B Drawing C-0233 Rev 0011
E12B	Calculation C-CSS-E12B
E12C	Calculation C-CSS-E12C Drawing C-0233 Rev 0011 Drawing C-0412B Rev 0004
E22-1	Calculation C-CSS-E22-1 Drawing M-23-5-3 Drawing 7749-M-23-3-5 Calculation 97209-TR-01_REV0 (Altran)

COMPONENT ID	References
E22-2	Calculation C-CSS-E22-1 Drawing M-23-5-3 Drawing 7749-M-23-3-5 Calculation 97209-TR-01_REV0 (Altran)
E27-1	Calculation C-CSS-E27-1
E27-2	Calculation C-CSS-E27-2
F11A	Calculation C-CSS-F11A Drawing C-0233 Rev 0011
F12A	Calculation C-CSS-F12A
F12D	Calculation C-CSS-E12C Calculation C-CSS-F12D Drawing C-0412B Rev 0004
K5-1	Calculation C-CSS-K5-1
K5-2	Calculation C-CSS-K5-2
P14-1	Calculation C-CSS-P14-1
P14-2	Calculation C-CSS-P14-1 Calculation C-CSS-P14-2
P3-2	Drawing M-045-00002-0011
P372B	Calculation C-CSS-P37-2
P42-1	Calculation C-CSS-P42-1
P43-2	Calculation C-CSS-P43-2 Calculation C-CSS-P43-001
P58-1	Calculation C-CSS-P58-1
RC3701	Calculation C-CSS-RC3701
T10	Calculation C-CSS-T10 Drawing 7749-C-34-147-3
T12	Calculation C-CSS-T12
T46-1	Drawing C-0213A Rev 0001 Calculation C-CSS-T46-1
XCE1-1	Calculation C-CSS-CE1-001 Calculation C-CSS-E1
XDF1-2	Calculation C-CSS-DF1-2 Calculation C-CSS-F1
Y2	Calculation C-CSS-Y2
YF1	Calculation C-CSS-YF1 Calculation C-CSS-F12B
YRF2	Calculation C-CSS-YRF2 Calculation C-CSS-D2P

COMPONENT ID	References				
YV2	Calculation C-CSS-YV2 Calculation C-CSS-D2P				
YV4	Calculation C-CSS-YV4				

# APPENDIX E

# **MASONRY BLOCK WALLS VERIFIED UNDER IE BULLETIN 80-11**

Elevation	Room	Wall	Seismically Analyzed	Reference
		1157	Yes	VBW03-B001-009, Rev 5 (8/16/93)
545	122	1167	Yes	VBW03-B001-010, Rev 8 (4/20/89)
		1187	Exempt	SK-C-992, Rev A (6/6/89)
		2047	Yes	VBW06-B001-028, Rev 4 (7/29/88)
	225	2427	Yes	VBW10-B001-058, Rev 3 (1/2/06)
		2437	Yes	VBW10-B001-059, Rev 1 (6/29/81)
		2077	Yes	VBW06-B001-031, Rev 2 (12/1/86)
565	227	2087	Yes	VBW06-B001-032, Rev 3 (2/4/91)
505		2447	Yes	VBW10-B001-060, Rev 4 (3/14/86)
		2317	Yes	VBW09-B001-049, Rev 8 (2/6/06)
	236	2327	Yes	VBW09-B001-050, Rev 4 (2/4/06)
	230	2337	Yes	VBW09-B001-051, Rev 10 (1/15/06)
		2347	Yes	VBW09-B001-052, Rev 3 (2/8/91)
576	52	2371	Yes	VBW10-B001-055, Rev 14 (2/10/87)
585		3227	Yes	VBW15-B001-080, Rev 6 (5/18/88)
		3247	Yes	VBW16-B001-082, Rev 5 (8/5/81)
		3257	Yes	VBW16-B001-083, Rev 2 (4/27/88)
		3267	Yes	VBW16-B001-084, Rev 5 (4/27/88)
	312	3277	Yes	VBW17-B001-085, Rev 4 (4/25/88)
	512	3297	Yes	VBW17-B001-087, Rev 4 (4/25/88)
		3357	Yes	VBW18-B001-091, Rev 5 (4/25/88)
		3367	Yes	VBW19-B001-092, Rev 2 (10/28/87)
		3417	Yes	VBW19-B001-096, Rev 5 (4/27/88)
		3427	Exempt	SK-C-994, Rev A (6/6/89)
		308D	Yes	VBW12-B001-068, Rev 3 (5/27/81)
		309D	Yes	VBW13-B001-069, Rev 3 (5/28/81)
	318	310D	Yes	VBW13-B001-070, Rev 3 (5/28/81)
		311D	Yes	VBW13-B001-071, Rev 8 (4/20/88)
		338D	Yes	VBW19-B001-093, Rev 5 (9/26/81)
	319	304D	Yes	VBW12-B001-064, Rev 8 (8/26/87)
	519	307D	Yes	VBW12-B001-067, Rev 7 (4/20/88)
	321A	305D	Yes	VBW12-B001-065, Rev 5 (4/21/88)
	321A	306D	Yes	VBW12-B001-066, Rev 6 (8/26/87)
	328	3307	Yes	VBW17-B001-088, Rev 6 (6/21/89)
		3347	Yes	VBW18-B001-090, Rev 3 (6/14/89)

Elevation	Room	Wall	Seismically Analyzed	Reference
		3397	Yes	VBW19-B001-094, Rev 5 (6/3/06)
		3407	Yes	VBW19-B001-095, Rev 10 (7/5/06)
		4016	Yes	VBW20-B001-100, Rev 14 (12/6/88)
		4026	-	-
		4036	Yes	VBW21-B001-102, Rev 13 (3/31/99)
		4046	_	-
603	428	4786	Yes	VBW25-B001-125, Rev 9 (6/26/90)
		4796	Yes	VBW25-B001-126, Rev 6 (12/11/90)
		4886	Yes	VBW27-B001-135, Rev 19 (4/29/88)
		4896	Yes	VBW27-B001-136, Rev 3 (7/18/06)
		4906	Yes	VBW28-B001-137, Rev 3 (9/23/81)
		5017	Yes	VBW29-B001-143, Rev 10 (1/7/06)
		5147	Yes	VBW29-B001-148, Rev 6 (6/10/06)
		5157	Yes	VBW29-B001-149, Rev 5 (8/14/96)
		5167	-	-
		5177	Yes	VBW29-B001-151, Rev 2 (9/27/86)
	502	5187	Yes	VBW29-B001-152, Rev 5 (1/7/06)
		5197	Yes	VBW30-B001-153, Rev 3 (3/31/86)
		5207	Yes	VBW30-B001-154, Rev 9 (9/17/93)
623		5227	-	
023		5237	Yes	VBW30-B001-156, Rev 2 (1/3/91)
		5277	Yes	VBW30-B001-158, Rev 4 (6/10/06)
		5107	Yes	VBW29-B001-145, Rev 13 (6/5/06)
		5127	Yes	VBW29-B001-146, Rev 8 (1/12/06)
		5287	Yes	VBW31-B001-159, Rev 9 (11/16/89)
	505	5297	Yes	VBW31-B001-160, Rev 3 (2/16/88)
		5347	Yes	VBW31-B001-161, Rev 4 (4/27/82)
		5357	Yes	VBW31-B001-162, Rev 1 (5/11/81)
		5367	Yes	VBW31-B001-163, Rev 2 (10/17/85)
		6017	Yes	VBW31-B001-164, Rev 3 (2/14/06)
		6027	Exempt	SK-C-997, Rev 0 (1/4/99)
		6037	Yes	VBW31-B001-165, Rev 9 (10/7/05)
643	603	6087	Yes	VBW32-B001-166, Rev 5 (11/1/90)
		6097	Yes	VBW32-B001-167, Rev 8 (11/7/84)
		6107	Yes	VBW32-B001-168, Rev 2 (5/10/88)
		6047	Yes	VBW32-B001-177, Rev 0 (12/21/83)

# APPENDIX F DAVIS-BESSE DESIGN CRITERIA MANUAL

Davis-Besse Design Criteria Manual									
Section Title: SEISMIC DESIGN				Page:	N.E.1-1				
Revision: 0									
Responsible Engineer:	Checker:	Theo Swim	Approver:		Date: <u>6/27/88</u>				

### 1.0 DESIGN EARTHQUAKE BASIS

The design earthquake basis depends on the regional geology, site seismology, and historical occurrences, etc. These subjects are discussed in detail in the Davis-Besse USAR Appendix 2C. This section consists of presenting the design response spectra and design time history used in the seismic analysis and seismic design of Category I structures which form the Davis-Besse licensing commitment. Although this section is essentially historical, it is also applicable to Post 1979 Category I building design.

# 1.1 DESIGN EARTHQUAKE

The NRC's Seismic and Geology Siting Criteria (10 CFR 100, Appendix A) requires that for purposes of analysis and design, two design earthquakes be specified; i.e., a maximum possible (larger) earthquake and a maximum probable (smaller) earthquake.

The maximum possible (larger) earthquake is defined as that earthquake producing the maximum vibratory ground motion that the nuclear power generating plant is designed to withstand without functional impairment of those features necessary to shut down the reactor and maintain the plant in a safe condition without undue risk to the health and safety of the public. The maximum horizontal ground acceleration for the maximum possible (larger) earthquake is 0.15 g. The maximum possible earthquake is also referred to as Safe-Shutdown Earthquake or SSE.

The Maximum Probable Earthquake is the conservatively determined earthquake and associated ground motion that might reasonably or probably be expected to occur at the nuclear plant site. The Maximum Probable Earthquake is similar to the Operating Basis Earthquake (OBE) terminology presently being used by the NRC. The maximum horizontal ground acceleration for the maximum probable (smaller) earthquake is 0.08 g.

# 1.2 DESIGN RESPONSE SPECTRA-

The design response spectra for horizontal ground motion of the maximum possible (larger, SSE) earthquake for 0 percent, 1/2 percent, 1 percent, 2 percent, 5 percent, and 10 percent of critical damping are shown in Figure II.E.1-1. Figure H.E.1-2 shows the corresponding response spectra for the maximum probable (smaller, OBE) earthquake, which are obtained by multiplying the maximum possible (larger) earthquake spectra values by a factor of 8/15. Figure II.E.1-3 shows the Davis-Besse time-history design spectrum plotted with the ground design spectrum for 4-percent damping. This figure also shows that the time-history response spectrum conservatively envelops the Davis-Besse design spectrum.

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The input design response spectra, often referred to as a "Newmark" spectra, is based on research conducted by Dr. Newmark in conjunction with the NRC.

Based on site studies prepared for Davis-Besse Power Station Unit 1, the maximum ground acceleration, velocity, displacement, and earthquake duration are shown in Table II.E.1-1. The vertical component of each earthquake is defined as two-thirds of the horizontal component.

#### 1.3 DESIGN TIME-HISTORY ACCELEROGRAM

The cast-west accelerogram of the Helena, Montana earthquake of October 31, 1935 was used as the basis for development of the project acceleration time-histories for both design earthquakes. The Helena record was modified to obtain an acceleration time-history having the required duration, maximum ground accelerations, and a resulting response spectra with values generally greater than the Newmark design spectra. Figure II.E.1-4 shows the modified Helena horizontal time-history accelerogram developed for Davis-Besse Power Station Unit 1. Reference 1 presents this record as a digitized time-history of 30 seconds in intervals of 0.01 second.

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#### Table II.E.1-1

#### LIMITING PARAMETERS FOR THE DESIGN EARTHQUAKES

#### 1. HORIZONTAL VIBRATORY GROUND MOTIONS

2.5 . . . . .

- a. Maximum Possible Earthquake (larger earthquake, SSE)
  - Maximum ground acceleration: 0.15 Group

Maximum ground velocity: 5 inches/second

Maximum ground displacement: 3.33 inches

Total duration: 30 seconds

#### b. Maximum Probable Earthquake (smaller earthquake, OBE)

Maximum ground acceleration:0.08 GMaximum ground velocity:2.67 inches/second

Maximum ground displacement: 1.78 inches

Total duration:

30 seconds

# 2. VERTICAL VIBRATORY GROUND MOTIONS

#### Maximum Possible (larger) Earthquake and Maximum Probable (smaller) Earthquake

Vertical vibratory ground motions are two-thirds of the respective maximum horizontal vibratory ground motions.

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	Figure II.E.1-1		
RECOMMEN	DED RESPONSE SPECTRA FOR HO	RIZONTAL GROUND	
MO	TONS OF MAXIMUM POSSIBLE EA	RTHQUAK 3	
	(LARGER EARTHQUAKE) FO	)R	
	SEVERAL DAMPING RATIO	S	
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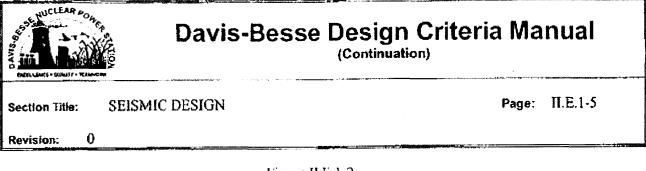
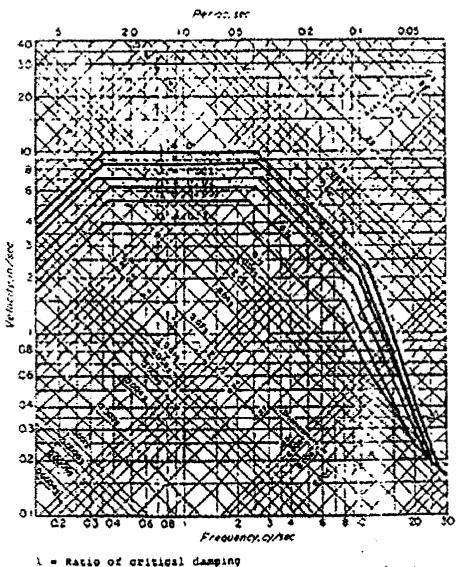


Figure II.E.1-2

RECOMMENDED RESPONSE SPECTRA FOR HORIZONTAL GROUND MOTIONS OF MAXIMUM PROBABLE EARTHQUAKE (SMALLER EARTHQUAKE) FOR SEVERAL DAMPING RATIOS



Rev. A

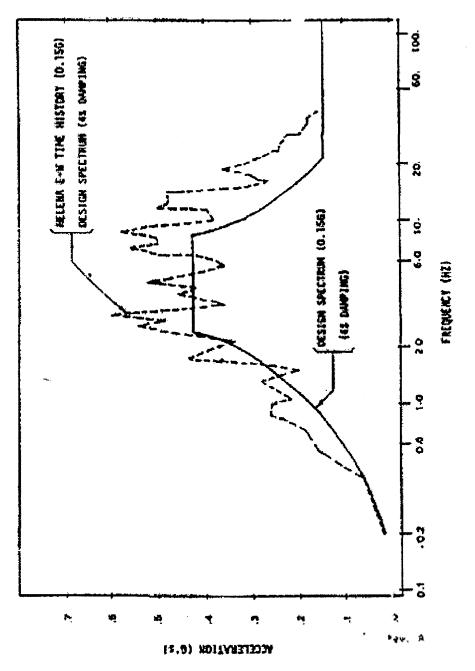
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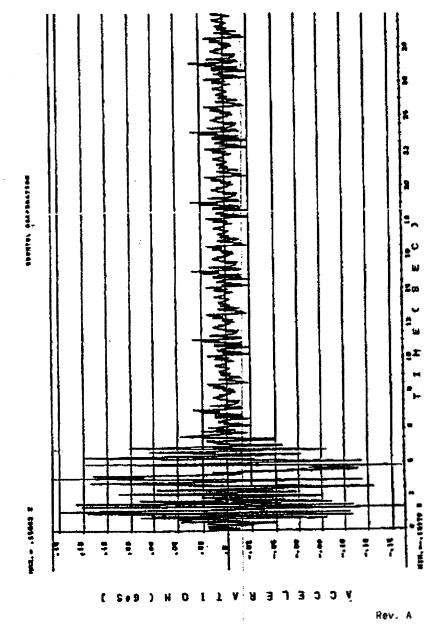
Figure II.E.1-3

# DESIGN TIME-HISTORY SPECTRUM VERSUS DESIGN SPECTRUM COMPARISON



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Figure II.E.1-4



# MODIFIED HELENA TIME-HISTORY ACCELEROGRAM

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Responsible Engineer:	Checker: Jon Hook	Approver: Theo Swim	Date: 2/13/96

This section discusses the seismic analytical approach for both Seismic Category I and Non-(Seismic Category I) structures. Modeling considerations, and the time-history method of analysis, are described for the major Category I buildings. Although this section is essentially historical, new structures would also require the considerations described herein.

#### 2.1 SEISMIC CATEGORY I STRUCTURES

The Seismic Category I structures which have been designed to withstand the effects of the design earthquakes are listed below:

- Shield building
- Containment vessel
- Containment internal structures
- Auxiliary building
- Intake structure excluding superstructure
- Service water tunnel and valve room
- Borated water storage tank and foundation
- Seismic Category I electrical duct banks and manholes
- Emergency diesel fuel oil tanks and foundations
- Chlorine detector building

The Seismic Category I systems and components located in these structures have also been designed for the effects of the design earthquakes.

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The design of Seismic Category I structures has been based on the techniques of TID 7024 (Reference 2) and the applicable sections of BC-TOP-4A (Reference 3). Lumped mass mathematical models shown in Figures II.E.2-1 through II.E.2-8 were used to analyze the major Seismic Category I structures applying both time-history and spectral response techniques. A discussion of time-history analysis is given in Section II.E.2.2, and the spectral response technique is discussed in Section II.E.3.1. It should be noted that the major plant structures as well as Areas 6, 7, and 8 of the auxiliary building are separated by 1 inch expansion (seismic) joints in order to ensure independent response under seismic excitation.

The lump mass models were dynamically excited using ground spectra and time-history as given in Figures II.E.1-1 and II.E.1-2, and in Reference 1. Seismic forces for the design of buildings were obtained using the spectral response technique. Using the time-history technique, floor response spectra were developed at each floor level for three directions of earthquake excitation. The floor spectra, found in References 4 and 5 as well as in calculations listed in Table II.E.2-2, are used to obtain seismic loads for the design of systems, subsystems, and components that are uncoupled with the building walls or slabs (refer to Section II.E.3).

## 2.2 MODELING

The Seismic Category I structures resting on sound bedrock have been idealized as fixed-base, lumped-mass systems as shown in Figures II.E.2-2 through U.E.2-7. The Seismic Category I structures which have been analyzed considering soil structure interaction effects include Area 6 of the auxiliary building and the borated water storage tank (see Figures II.E.2-1 and II.E.2-8).

In the model for the three areas of the auxiliary building, the intake structure, and the containment internals, a concentrated mass was located at each floor level to mathematically represent the mass of slabs, walls, and equipment. This idealization was based on the assumption that the floor slabs will act as rigid diaphragms. These masses were connected by massless beam elements representing the stiffness of the walls and columns between floors. The lumped mass points for the shield building, containment vessel, and borated water storage tank were established in accordance with the building geometry and structural properties.

For Area 6 of the auxiliary building, the foundation consists of a system of beams and reinforced concrete columns (Caissons) extending 27 feet through Class I structural backfill to the rock surface. In the mathematical model shown in Figure II.E.2-1, the soil and concrete masses between the grade slab and the rock surface have been lumped at three points. Translational soil springs located at these points represented the shear rigidity of the soil. A rotational spring at the top of the columns represented the rotational stiffness of the column group. The system was assumed free to rotate at the rock surface and lateral stability was provided by the translational soil springs.

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For the borated water storage tank, the foundation is a reinforced concrete slab approximately 6 feet deep and 49 feet in diameter, which rests on structural backfill extending to the in situ rock at elevation 560 feet. The mathematical model shown in Figure II.E.2-8 consisted of a lumped mass idealization of the superstructure and foundation which, in turn, was supported by springs representing the horizontal, vertical, and rotational stiffness of the compacted structural backfill. These stiffnesses have been determined using methods presented in Reference 3.

Other Category I structures such as the service water tunnel, valve rooms, buried oil storage tank, and electrical manholes with associated duct banks, have been idealized as single-degree-of-freedom systems. Since the fundamental modes were in the rigid range, design response spectra for these structures was the ground spectra.

## 2.3 TIME-HISTORY ANALYSIS

The time-history method of analysis has been utilized to analyze the Seismic Category I buildings for purposes of developing the structure's response necessary for evaluating equipment installations. Although this method of seismic analysis has principally been used for the analysis of buildings, it is applicable to any structural system where the base excitation is defined as a function of time and acceleration.

As presented in Section II.E.2.1, mathematical models representing the buildings have been used to determine the time-history response of the buildings subjected to the design earthquake time-history using a modal technique. For each building, at least one mode of vibration was considered, and all modes below 33 Hz were used for modal synthesis in each direction of excitation. In these instances, the total sum of the modal masses used in the analysis was at least 90 percent of the building mass. A set of uncoupled modal equations, representing the idealized system under dynamic loading, has been solved using a mathematical routine such as the Runge-Kutta Fourth-Order method. By algebraically combining the modal responses at each time increment, acceleration time-histories at the various floor elevations have been obtained. These time-history records, have been used to develop the floor response spectra for seismic qualification of installations.

The response spectra have been constructed by monitoring the maximum response of interest at each step of time-history integration. It is assumed that the time-history varies linearly between data points. Frequency data points are those listed in Table 5-1 of Reference 3 in addition to the natural frequencies of the structure. Peaks associated with structural frequencies have been broadened by  $\pm 10$  percent of the peak frequency value and subsequently smoothed to account for uncertainties in the model representations.

Since the building models are of a planar nature, no cross-coupling floor response spectra have been generated.

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The time-history analysis technique has been used principally to obtain floor response spectra which in turn are used to define the seismic input for decoupled systems, subsystems, and components at their respective attachment points to the building structure.

#### 2.4 DAMPING

When various components within a structural system possessed different percentages of critical damping, composite modal damping was calculated using the mass weighted method in the CE-917 program (see Section III.B.10), or the lowest damping value was conservatively used in the design for all components. Since 1980, certain structural analysis computer programs such as BSAP have utilized a strain-energy method for computing composite modal damping. This approach is preferred since the damping magnitude can be related to potential component deformations.

The percentages of critical damping for analyzing structures, systems and components are shown in Table II.E.2-1. The damping values shown above the dashed line in the table are those to which the plant has been licensed. The damping values below the dashed line in the table have been used since 1980 and were derived on the basis of reference 10 (CMU walls) and reference 11 (conduit, cable tray, wireway). Prior to 1980, damping values for items below the dashed line were derived by comparison with the damping values for the structurally similar items above the dashed line. Higher damping values than those listed in Table II.E.2-1 are allowed, provided proper justification (i.e. test results, etc.) is available for specific components or equipment.

For example, appropriate damping values for seismically qualifying equipment by analysis such as electrical cabinets, housing components, or devices such as meters and switches shall be based on the type of support assembly and whether it is bolted or welded. More exact damping values can be obtained from qualification test reports of similar equipment if available.

#### 2.5 NON-(SEISMIC CATEGORY I) STRUCTURES

Non-(Seismic Category I) structures have been designed in accordance with the seismic requirements of the Uniform Building Code (Reference 7) or the Ohio Basic Building Code (reference Section II.H). Structures designed to these codes include:

• Turbine building (UBC)
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- Turbine generator pedestal (UBC)
- Office building (UBC)
- Water treatment building (UBC)

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•	Cooling tower	(UBC)
•	Cooling water pump house	(UBC)
•	Personnel processing facility	(OBBC)
٠	Personnel shops facility	(OBBC)
•	Administration building	(UBC, 1979, Zone 2)
•	Training simulator facility	(OBBC)
•	Low level radwaste storage facility	(OBBC)
•	Station Blackout Diesel Building	(UBC)
•	Yard structures not listed in Section II.E.2.1, including intake structure superstructure.	(UBC)

Section 2312 of the Uniform Building Code describes the requirements for evaluating the lateral earthquake forces for Non- (Seismic Category I) structures and also the lateral forces on elements of structures and nonstructural components. For Davis-Besse Power Station Unit 1, structures are designed to requirements of Zone 1 of the UBC Seismic Zone Map except as noted in Section II.H for TED structures. The interaction between Seismic Category I and Non- (Seismic Category I) buildings has been precluded such that in the building design each structure responds independently to seismic motions.

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Table II.E.2-1

# PERCENT OF CRITICAL DAMPING FACTOR

Itern, Equipment, or Structures	Maximum Probable Earthquake	Maximum Possible Earthquake
* Large diameter piping systems, pipe diameter greater than 12 in.	0.5	0.5
<ul> <li>Small diameter piping systems, diameter less than or equal to 12 in.</li> </ul>	0.5	0.5
Welded steel structures	2	2
Bolted steel structures	2	5
Reinforced concrete structures	2	4
Equipment	1	1
	••••••••••••••••••••••••••••••••••••••	
CMU walls	4	7
Conduit support systems	4	7
Cable tray/wireway systems	4	7
HVAC support systems	2	2

\* Refer to Section III.B.11.3.5.1.B.3.b for use of alternative (higher) damping values per ASME Code Case N-411.

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#### Table II.E.2-2

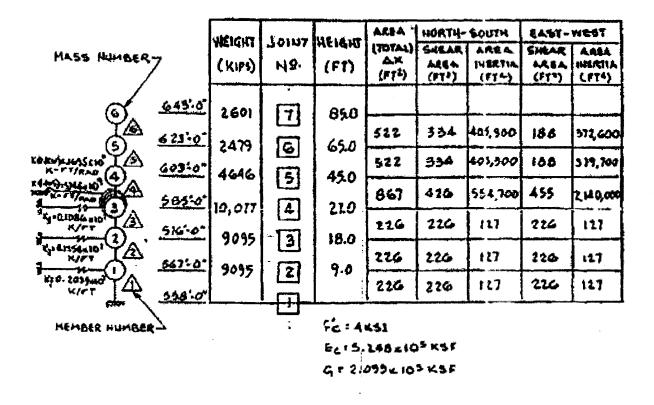
## INDEX TO CALCULATIONS FOR SEISMIC ACCELERATION RESPONSE SPECTRA

Building/Location	Earth Quakc	Ref/ Calc.	No. Sheets
Ground	OBE	USAR	2
	· SSE	Sect. 3.7	
Auxiliary Building - Area 6	SSE	S-18	12
Auxiliary Building - Area 7	SSE	S-19	21
Auxiliary Building - Area 8	SSE	S-20	21
Containment Shield Bldg.	SSE	S-21	12
Containment Vessel	SSE	S-22	16
Containment Internals	SSE	S-23	36
Intake Structure	SSE	S-24	12
Valve Room	SSE	S-25	2
Auxiliary Building - Area 6	OBE	S-18	12
Auxiliary Building - Area 7	OBE	S-19	21
Auxiliary Building - Area 8	OBE	S-20	21
Containment Shield Building	OBE	S-21	12
Containment Vessel	OBE	S-22	16
Containment Internals	OBE	S-23	36
Intake Structure	OBE	S-24	12
Valve Room	OBE	S-25	2

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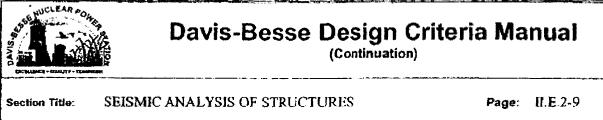
Figure II.E.2-1

### MATHEMATICAL MODEL, AUXILIARY BUILDING ALEA 6



NOTE: The Shear Area and Moment of Inertia designated as  $A_{n-s}$  and  $I_{n-s}$  is the Shear Area and Moment of Inertia for an carthquake in the North-South direction which means it is the Moment of Inertia about the East-West axis.

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Figure II.E.2-2

### MATHEMATICAL MODEL, AUXILIARY BUILDING AREA 7

<u>A'7</u>	1		HEIGHT	TOTAL		H-SOUTH	ËAS	T-WEST
UILT COND. MASS NO.	WEIGHT KIPS	JOINT NO.	H (FT)	AREA (FT,2)		MCHENT OF DIERTLA (FT. <sup>4</sup> )	AREA (FT?)	MOMENT OF
L 660-0"	4508	()	115					-
-643'-0"	6483	<b>O</b>	96	1094	469	2.027×10*	61 <b>6</b>	6941 x 10
.623'-0	3820	श् <u>र</u> (6)	78	703	389	1935×10 <sup>6</sup>	314	3.428 x10
512-0"	2566	5	67	649	402	1953×10 <sup>5</sup>	247	3709 x K
3.0.	3748		58	977	539	2.360×10 <sup>6</sup>	428	6366 x K
5-0	9155	بر ال	40	913	536	2.813×10 <sup>5</sup>	357	6,454 x H
85-0"	9055	30	<sup>-</sup> 20 <sup>.</sup>	1804	1011,4	3195×10 <sup>6</sup>	792	1,016 x 10 <sup>4</sup>
545-0 BASE		320	0	1776	883	3358×10 <sup>5</sup>	858	8538x 10

NOTE: The Shear Area and Moment of Inertia designated as A<sub>n-s</sub> and I<sub>n-s</sub> is the Shear Area and Moment of Inertia for an earthquake in the North-South direction which means it is the Moment of Inertia about the East-West axis. DB-0180-0



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Figure ILE.2-3

### MATHEMATICAL MODEL, AUXILIARY BUILDING AR 3A 8

AREA 8	ſ	1			NORTH	SOUTH	EAS	T-WEST
AS-BUILT COND.	WEIGHT XIPS	JOINT NO.	HEIGHT H (FT.)	TOTAL AREA (FT.2)		and the second se		MOMENT OF INERTIA (FT.4)
(7) EL.659-3"	2090	8 	103.0					
6 EL.653'- 3"	4061	0.15	97	649	158	432072.	491	1337986.
5EL.642-6"	4559	.6	86.25	1268	411	1955193.	857	3196459.
(4) EL. 622 - 6"	5610		66,25	1331	464	1938222	867	3285000.
(3)EL. 602'-6"	7327	27 27 27	46.25	1453	551	2326802.	902	34473OB.
2 EL.584-0"	13274	क्स () ,	27.75	2684	1243	<b>29846</b> 27,	1441	5791113.
1 EL. 564'-0"	18053	25 (N 20	7.75	3579	1481	6730000	2097	10296000.
EL.556-3" BASE			0	3157	1796	3700123.	1892	7012791.
EL.545-0"	f'c+4 ks	i;w•1	45 PC	F;Ec	•5241	B x 10 <sup>5</sup> FSF	;G <b>•2</b>	099 x 10 <sup>5</sup> KS

NOTE: The Shear Area and Moment of Inertia designated as  $A_{n-s}$  and  $I_{n-s}$  is the Shear Area and Moment of Inertia for an earthquake in the North-South direction which means it is the Moment of Inertia about the East-West axis

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Figure II.E.2-4

## MATHEMATICAL MODEL, SHIELD BUILDING

EL.81276	A A	₩13 × 403.5 <sup>K</sup>		· • 2 <sup>4</sup> · •	and the second state
EL.101.00	A	<sup>12</sup> W12 = 5451 <sup>K</sup>	- 6	1 = 2,991,468	Ax = 1854.0 A <sub>ett</sub> = 777.0
E774.50	A	51 W11 = 5102 <sup>K</sup>	3		an south a strange and the part of the
EL.744.00		# Wie = 5244 <sup>K</sup>	2		
EL_720.00		\$ ₩1 = 5386 <sup>K</sup>	¥	1 - 3,225,460	Ax = 1280.8 App = \$40.4
EL.692.00	A.	↔ ₩1 = 5771 <sup>K</sup>	3		and a standard and a standard a standard standard and standard and standard and standard and standard and stand
EL.660.00	A	- Wy = 4290 <sup>K</sup>	1		ويوهدون والمعادية والمحادثة والمحادثة والمحادثة والمحادثة والمحادثة والمحادثة والمحادثة والمحادثة والمحادثة وا
EL.646.50	<u>A</u>	~ W4 = 1526 <sup>K</sup>	2	1 - 3,004,775	Ax = 1196.3 Ages = 598.2
EL.643.00	<u>A</u> .	[+ Ws = 3311k	21		a a harrow and a stand of the
EL.609.00	A	We = 1526 <sup>K</sup>	ž	1=2,949,284	Ax = 1175.0 Ages = 5\$7.5
EL.603.00	Â	]* Wg = 1697 <sup>K</sup>	3 1		
EL_5\$9.60	A	* W2 = 2791 <sup>K</sup>	H	1 = 2,892,722	Ax = 1153.3 Aerr = 576.7
EL.570.75	A	W W = 2120 <sup>K</sup>	2		. K
E1.565.00			3		
	mn	77		Cheverytal Maightts	
Fc = 4000 PSI	1		= FT <sup>4</sup>		iass point no.
E = 524,757 )	(ut		$A = FT^2$		OINT NO.
G = 0.4E = 20	-	\$1			IEMBER NO.
	-			÷ N	lass point

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3

Figure II.E.2-5

EL \$05.00 W11 = 304" A = 25.56 L= 28,184 EL.788.00 <u>heff=12.78</u> 288 Ax = 25.74 . \* 1 = 45,590 Acff = 12.87 EL.770.5 Æ 2.65 Ay = 25.58 1 = 53,129 At ff12.75 S EL.753.00 476 Wio 1 1582K EL 725.00 A= 653K EL672.00 Ax = 51.07 I= 108,156 0 ACIF= 25.54 EL 672.75 . E = 4,176,000 KSF 50 646 G= 0.385 E = 1,605,600 KSF ã EL 617.00 6 479K W5 = \_I=f+\* \_A= f12 EL.603.00 FL.595.00 \_A - MASS PO NT NO. 8 EL.587.00 - O-JOINT NUMBER ~ 100 K EL 570.75 11-MEMBER NUMBER EL. 565.00 MASS FOINT WT = 6634K 5.75

MATHEMATICAL MODEL, CONTAINMENT VESSEL

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Figure 11.E.2-6

### MATHEMATICAL MODEL, CONTAINMENT INTERNAL STRUCTURES

MATH MODEL								
MASS NUMBER	WEIGHT	<b>J01HT</b>	HEIGHT	(TOTAL)	NORTH	-SOUTH	EAST-	WEST
	(KIPS)	NQ	(FT)	14 (FT3)	A#\$\$A -(PT3)	INEATIA (FT-)		1968, ATTA (#14)
<u>EL.655-0</u> (12)	2593	13	88					
EL. 64113"	2687		76.25	1371	909	711,000	476	251,100
	3518	12		1371	903	тідобо	476	251,100
	3710	Ξ	64.5	1311	909	711,000	476	171,100
(9)	1375	10	595					
<u>EL.617:9</u>	1828	9	52.75	1287	909	545,600	501	207,500
EL.606-0	2046	B	41	1287	909	545,600	501	201,500
	990 T			1287	909	545,600	501	207,500
$ \qquad \bigcirc_{\mathbb{A}}$	5218	7	38	1631	1154	113,000	810	1429,000
<u>(5)</u>	3511	6	30					
EL.585"0 (4)	5640	5	20	1831	1154	yn,000	810	4479,000
<u>11.578:0</u> *	5346	4	13	2255	1493	1,207,102	968	1,544,768
F1 574'.0*	1			B378	2680	375,921	2749	1063.011
	1841	3	9	2117	1275	1,136,104	1304	998,044
<u>EL.570'.9</u>	1614	2	5.75	4117	12:5	17230,000		
<u>EL.345:0"</u>				2177	1275	1,176,704	1304	116,066
MEMBER NUMBER	7	لسنيا	<b>.</b>			fé = 5	5000 P	51
		2 = 57,	000 \$50	000 + 4	× 10 <sup>4</sup> PST	E = 5	16,000	KSF
		G: E		16.000		G = 23	30,400	KSF
		Z (1•	H) 2(	17 0.25)	i			

NOTE: The Shear Area and Moment of Inertia designated as  $A_{n-s}$  and  $I_{n-s}$  is the Shear Area and Moment of Inertia for an earthquake in the North-South direction which means it is the Moment of Inertia about the East-West axis.

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Figure 11.E.2.7

### MATHEMATICAL MODEL, INTAKE STRUCTURE

-3-

 $E = W^{1.5} \times 39\sqrt{l_{*}}^{-7} = (145)^{1.6} (33) \sqrt{4000}^{-1}$ 

MODULUS OF ELASTICITY: E = 624,757 KSF SHEAR MOOULUS: G = 209,900 K8F  $G = \frac{E}{2(l+\mu)} = \frac{524,757}{2(l+25)}$ 

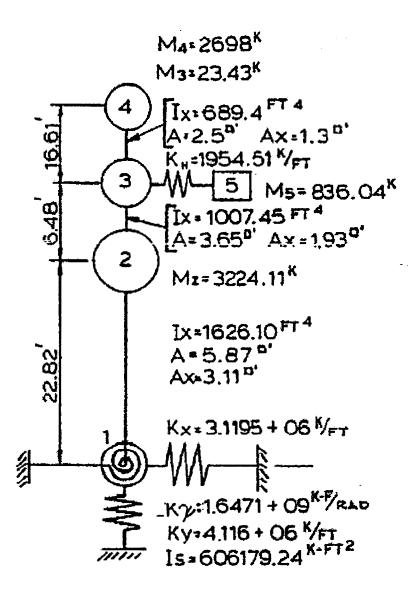
			WEIGHT JOINT HEIGHT ARCA NO (KIPS) NUMBER (FT) TOTAL				NORTH	NORTH-SO-JTH		WEST
			(			SHEAR AREA (FL <sup>+</sup> )	AREA INERTIA FC)	SHEAR AREA (PL')	AREA INERTIA (FC)	
	Mass Point,									
EL.591'0"	<b>(A)</b>	•	- 880 -		- 45 -					
EL.585'0"	X	Â	4070		_ 20 _	484.5	323	11-2,540	141.5	222,160
	(3)		- 1270 -	- 🖪 -	- 39 -	811.0	323	2:6,040	489.0	314,370
EL.576'0"	(2)		- 2430 -	- 🗊 -	- 30 -					
EL.561'0"	$\mathbf{\Phi}$	Â	4050		48	<b>\$</b> 50.0	410	2:\3,000	540.0	359,650
EL.648'0"	Ť	A	- 1950 -	- (20) -	- 15 -	782.0	182	182,360	600.5	227,940
	- FREQUENCE	Mombe	r r			a a a a a a a a a a a a a a a a a a a		and the second sec	and the second secon	

NOTE: The Shear Area and Moment of Inertia designated as An-s and In-s is the Shear Area and Moment of Inertia for an carthquake in the North-South direction which means it is the Moment of Inertia about the East-West axis.

DEFLUENCE ORIGINE A TAN	Davis-Besse Design C	riteria Manual
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Figure II.E.2-8

MATHEMATICAL MODEL, BORATED WATER STORAGE TANK.



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Revision: 1			
Responsible Engineer:	Checker: Theo Swim	Approver: Vern Watson	Date: <u>7/16/90</u>

During the operational phase of the plant, many equipment modifications have been implemented, and it is anticipated that, in the future, equipment upgrading will continue. This section is presented to describe the post-1979 seismic qualification procedures utilized for Seismic Class I equipment modifications. This section is essentially current in applicability but is based on past experience.

Prior to performing any type of seismic qualification, the system must be identified as being either Seismic Category I or Non- (Seismic Category I) system that could affect the functionality of a Seismic Category I system.

\*In order to perform seismic qualification of systems, three options are available:

- a. Spectral response analysis
- b. Simplified seismic analysis
- c. Seismic testing

Although the time-history method of analysis can be classified as a seismic qualification method, its use is generally restricted to studies where in-structure response is necessary.

Equipment and component installations are categorized as either flexible or rigid. Seismically rigid installations are those whose fundamental frequency is equal to or greater than 33 Hz. All other installations are flexible.

For rigid installations, the system is subjected to the zero-period acceleration (ZPA) for analysis and design. For installations which have a natural frequency below 33 Hz, one of the qualification options listed above may be used to ensure structural adequacy.

It should be noted that structural steel framing and platforms shall not span seismic joints, thereby altering seismic independence of the structures. However, systems such as conduits, cable trays, HVAC ducts, etc. supported between structures that are seismically independent, such as between Areas 6, 7, and 8 of the auxiliary building or between floors of the same building, shall also be analyzed for the differential movements of the support points. The response due to vibratory motion from seismic excitation shall be combined absolutely with the response due to the differential support movements and the dead load, live load, and contingency loads. Systems of this type include piping, conduit, HVAC lines, or other equipment which may span a seismic joint.

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The following criteria define the boundary between a system (and its supports) and the supporting structure. Systems are decoupled from the structure at the system support and structure interface. Piping, conduit, and cable tray systems are decoupled at the point of connection to a piece of equipment. Generally, the system being investigated is considered decoupled from the supporting structure when its fundamental frequency is significantly lower than that of the supporting structure. Specific criteria for decoupling are expressed in terms of frequency and mass ratio and are given in Reference 3.

### 3.1 SPECTRAL RESPONSE ANALYSIS

A structural system is idealized into discrete elements and a mathematical model is formulated which represents, in three-dimensions, both the stiffness and inertial characteristics of the system. A finite element computer program is used to analyze this representation. Natural frequencies and associated mode shapes which describe the vibration characteristics of the system are obtained using a modal extraction routine.

The spectral response technique subjects each mode of the system to acceleration levels as given by the design floor response spectra.

Seismic analyses prior to 1974 combined modal responses using strictly an SRSS technique. Based on recommendations as cited in NRC Regulatory Guides, the importance of considering the effects of closely spaced modes became evident.

Since 1974, the practice is to perform an SRSS summation of modal responses to obtain total response for each direction of seismic excitation. However, if the modes are closely spaced (i.e., less than 10 percent between natural frequencies) the absolute sum of the responses of each group of closely spaced modes shall be obtained, and the results from all the closely spaced groups are then combined with the other modes using the SRSS method. Responses of similar components resulting from different directions of carthquake excitation shall also be combined by the SRSS method (As a basis for this modal response method, refer to NRC Regulatory Guide 1.92, Rev 0, Dec. 1974 Sections B and C.)

Prior to 1974, seismic analyses combining spatial responses were determined by the larger of the X + Y and the Z + Y earthquake responses where X and Z are the perpendicular horizontal directions and Y is the vertical direction. Since then, the preferred technique is to combine spatial responses for three directions of excitation using the SRSS technique as presented in NRC Regulatory Guide 1.92.

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For systems having significant natural frequencies above 33 Hz, seismic analyses since 1983 have incorporated the effects of these higher modes as described in Reference 8, Section 3.1, in lieu of the methods of NRC Regulatory Guide 1.92. This technique assumes that the modes above 33 Hz will respond in phase with each other to the peak ZPA. Therefore, the effects of these modes are combined algebraically. This is equivalent to a pseudo-static response to the inertial forces from these higher modes excited at the ZPA.

To determine the overall structural peak response, the total combined response to high frequency modes is combined with the total combined response from lower frequency modes using the SRSS Method.

### 3.2 SIMPLIFIED SEISMIC ANALYSIS

If the system or equipment is structurally simple, i.e. the dynamic model may be represented by one mass and one spring, the natural frequency of the system or equipment is determined using the techniques of Reference 6. The natural frequency, together with the appropriate damping value, is used to enter the appropriate acceleration response spectrum to obtain the equipment acceleration in units of g's. The corresponding inertia force is obtained by multiplying the weight times the acceleration.

Under certain conditions, the natural frequencies of the systems or equipment may not be calculated. Under these conditions, using the appropriate damping value, the peak value of acceleration response curve, or the values obtained from duplicate or dynamically similar systems which have been analyzed are used to calculate the response. This response is then multiplied by a static coefficient of 1.5 to account for the effects of both multifrequency excitation and multimode response in order to obtain the design inertial force. A lower coefficient may be used if it will yield conservative results and is technically justified (Reference J. D. Stephenson paper, Circa 1971).

### 3.3 SEISMIC QUALIFICATION BY TESTS

Seismic qualification of most Seismic Category I original equipment purchased and installed during the construction phase has been qualified to requirements as described in IEEE-344-71. In most cases, as stated in the qualification reports, the input motion for qualification was single axis, single frequency, either of the form of sine beat or sine dwell.

Since 1975, seismic qualification of equipment has been accomplished by testing when the equipment is so complex that it cannot be modeled to adequately predict its response or when structural integrity alone cannot ensure the design-intended function. Seismic qualification using test methods shall be based on the recommendations cited in IEEE-344-1975 (Reference 9).

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Two major categories of test methods are used for seismic qualification: proof testing and fragility testing. A proof test requires equipment to be subjected to the particular response spectrum or time-history defined for the mounting location of the equipment. Fragility testing is used to qualify equipment by determining its ultimate capability.

Test methods simulating seismic environment also fall into two general categories: single frequency and multiple frequency.

In general, the proof test seismic simulation waveforms shall:

- a. Produce a test response spectrum (TRS) which closely envelops the required response spectrum (RRS)
- b. Have an input shake table acceleration magnitude equal to or greater than the ZPA
- c. Include frequencies up to but not above the ZPA asymptote
- d. Have a duration where each test should at least equal the strong motion portion of the design time-history.

Proof testing can utilize waveforms such as continuous sine, sine beat, decaying sine, multiple frequency, or time-history, provided the frequency and amplitude are chosen to properly qualify the test item.

The more common state-of-the-art testing subjects the test specimen to a random excitation where the amplitude is controlled in one-third octave or narrower bandwidths. The excitation is controlled to provide a TRS which meets or exceeds the RRS. The random excitation should have a minimum duration of 30 seconds. Five OBE (smaller earthquake) level tests followed by an SSE (larger carthquake) should define the qualification sequence having a minimum of two biaxial tests.

Equipment originally purchased for Davis-Besse Power Station Unit 1 was seismically qualified to specifications based on methods described in IEEE-344, 1971 edition. New equipment and current modifications are qualified by test methods described in IEEE-344-75 (Reference 9). Replacement parts for original equipment shall, as a minimum, maintain their original level of seismic qualification. Replacement part qualification may be based on one of the following:

- a. IEEE-344-71
- b. IEEE-344-75

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Detailed test requirements are defined in the seismic qualification attachment to the purchase specification listed in Table II.E.3-1, along with the acceptance criteria, depending on the type of equipment being qualified.

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### Table II.E.3-1

### SEISMIC QUALIFICATION SPECIFICATION ATTACHMENTS

Attachment Designation	Title	- ju •••
EA-I	Seismic Qualification Requirements for Class 1E Electric il Equipment, Devices, and Supports	
J-1	Seismic Qualification Requirements for Class 1E Control Panel Assemblies and Class 1E Control and Instrumentation Devices	
J-3	Seismic Qualification Requirements for Power-Actuated /alves	
J-5	Seismic Qualification Requirements for Class 1E Field Mounted Instruments	
J-6	Seismic Qualification Requirements for Nuclear Class Instrument Valves	
(M-900)	Qualification of Seismic Category I Mechanical Equipment	• •
• C-41	Earthquake Resistance Design of Class 1 Equipment	
• C-41-A	Earthquake Resistance Design of Class 1 Equipment	

DB-D179-0	Davis-Besse Desi	gn Criteria Ma	nual
Section Title: REFERE?	VCES	Page:	II.E.4-1
Revision: 2			
Responsible Engineer:	Checker: Theo Swim	Approver: Vern Watson	Date: 7/16/90

- 1. Davis-Besse Nuclear Power Station No. 1, Civil Engineering Calculation: Seismic Analysis Report, Volume S1, No. 2, May 1973.
- 2. Nuclear Reactors and Earthquakes, TID-7024, Lockheed Aircraft Corp. and Holmes and Navrer, Inc., prepared for USAEC, August 1963.
- 3. Seismic Analyses of Structures and Equipment for Nuclear Power Plants, Topical Report BC-TOP-4-A Rev. 3, Bechtel Power Corp., Nov. 1974.
- 4. Letter No. BT-16827, dated 6/13/86, from V. R. Marathe (Bechtel) to B. J. Carrick (TE).
- 5. Letter No. BT-12724, dated 2/19/82, from J. W. Fay (Bechtel) to C. R. Domeck (TE).
- 6. Biggs, John M., Introduction to Structural Dynamics, McGraw-Hill, 1964.
- 7. Uniform Building Code, International Conference of Building Officials, Whittier, California, 1967.
- 8. Recommended Revisions to Nuclear Regulatory Commission Seismic Design Criteria, NUREG/CR-1161RD, prepared by Lawrence Livermore Laboratory, May 1980.
- 9. IEEE Recommended Practices for Seismic Qualification of Class 1E Equipment for Nuclear Power Generating Stations (IEEE-344-75), by the Institute of Electrical and Electronics Engineers, 1975.
- 10. "Re-evaluation Criteria for Concrete Masonry Walls," I.E. Bulletin No. 80-11, Davis Besse Nuclear Power Station, Document No. C-1, Rev. 1, May 1981.
- "Cable Tray and Conduit Raceway Seismic Test Program", Anco Engineers, Inc., Report No. 1053-21.1-4, 15, December 1978.

### APPENDIX G DAVIS-BESSE A-46/IPEEE VULNERABILITIES

Equipment ID	Bldg.	EI.	Outlier Description	Outlier Resolution	Reference Mod Package or Other Comments	Record Date from FileNet
C21-1	AUXB	585	Base vibration isolators do not provide adequate restraint of overturning moment	Modify existing anchorage	MOD 95-0031	12/13/1996
C21-2	AUXB	585	Base vibration isolators do not provide adequate restraint of overturning moment	Modify existing anchorage	MOD 95-0031	12/13/1996
C5703	AUXB	623	I of 4 mounting bolts missing on two local instruments.	The missing bolts were replaced.	MWO 1-94-0006 (Work Request 94-1248)	1/2/1994
D2	AUXB	585	The internal portion of switchgear was not available for inspection.	Relocate the relay and remove D2 from the SSEL	MOD 95-0023	9/3/1996
E1	AUXB	603	Lifting hoist is free to slide which is not included in the GERS	Restrain the lifting hoist	MOD 95-0030 voided. Procedures DB-ME-09102 (5.2) \$ DB-ME-09103 (5.1) revised to require hoist/trolly to be secured	(MOD) 10-10- 1997 DB-ME-09102 4/19/01 DB-ME-09103 4/20/98
F1	AUXB	603	Lifting hoist is free to slide which is not included in the GERS	Restrain the lifting hoist	MOD 95-0030 voided. Procedures DB-ME-09102 (5.2) \$ DB-ME-09103 (5.1) revised to require hoist/trolly to be secured	(MOD) 10-10- 1997 DB-ME-09102 4/19/01 DB-ME-09103 4/20/98
P3-1	INTK	576	The vertical pump shaft is 29 feet long which is greater than the GIP value of 20 ft.	Analysis performed indicated that the deflections and stresses were low	Acceptable as-is	N/A
P3-2	INTK	576	The vertical pump shaft is 29 feet long which is greater than the GIP value of 20 ft.	Analysis performed indicated that the deflections and stresses were low	Acceptable as-is	N/A
S31-1	AUXB	638	Spring isolators are not adequate for side loading	Modify existing support	MOD 95-0046	11/9/1995
S31-2	AUXB	638	Spring isolators are not adequate for side loading	Modify existing support	MOD 95-0046	11/9/1995

Equipment ID	Bldg.	EI.	Outlier Description	Outlier Resolution	Reference Mod Package or Other Comments	Record Date from FileNet
C5702	AUXB	623	An unanchored bookcase could fall and strike the cabinet	Bookcase has been relocated	Bookcase has been relocated	N/A
C5703	AUXB	623	An unanchored bookcase could fall and strike the cabinet	Bookcase has been relocated	Bookcase has been relocated	N/A
C5704	AUXB	623	An unanchored bookcase could fall and strike the cabinet	Bookcase has been relocated	Bookcase has been relocated	N/A
C5705	AUXB	623	An unanchored bookcase could fall and strike the cabinet	Bookcase has been relocated	Bookcase has been relocated	N/A
C5706	AUXB	623	An unanchored bookcase could fall and strike the cabinet	Bookcase has been relocated	Bookcase has been relocated	N/A
C5707	AUXB	623	An unanchored bookcase could fall and strike the cabinet	Bookcase has been relocated	Bookcase has been relocated	N/A
C5708	AUXB	623	An unanchored bookcase could fall and strike the cabinet	Bookcase has been relocated	Bookcase has been relocated	N/A
C5709	AUXB	623	An unanchored bookcase could fall and strike the cabinet	Bookcase has been relocated	Bookcase has been relocated	N/A
C5710	AUXB	623	An unanchored bookcase could fall and strike the cabinet	Bookcase has been relocated	Bookcase has been relocated	N/A
C5712	AUXB	623	An unanchored bookcase could fall and strike the cabinet	Bookcase has been relocated	Bookcase has been relocated	N/A
C5755C	AUXB	623	Due to either a small or no gap, and the presence of essential relays in the cabinet striking with an adjacent cabinet could exist	Provide a restraint to prevent the adjacent cabinets from striking	MOD 95-0032	4/1/1997
C5755C	AUXB	623	Suspended ceiling deficiencies noted	To be corrected	PCAQ-94-0042 (7-94-0042- 01)	(PCAQ) 1-17- 1994 (MWO) 3-21- 1996
C5755D	AUXB	623	Due to either a small or no gap, and the presence of essential relays in the cabinet striking with an adjacent cabinet could exist	Provide a restraint to prevent the adjacent cabinets from striking	MOD 95-0032	4/1/1997

Equipment ID	Bldg.	EI.	Outlier Description	Outlier Resolution	Reference Mod Package or Other Comments	Record Date from FileNet
C5755D	AUXB	623	Suspended ceiling deficiencies noted	To be corrected	PCAQ-94-0042 (7-94-0042- 01)	(PCAQ) 1-17- 1994 (MWO) 3-21- 1996
C5756C	AUXB	623	Due to either a small or no gap, and the presence of essential relays in the cabinet striking with an adjacent cabinet could exist	Provide a restraint to prevent the adjacent cabinets from striking	MOD 95-0032	4/1/1997
C5756C	AUXB	623	Suspended ceiling deficiencies noted	To be corrected	PCAQ-94-0042 (7-94-0042- 01)	(PCAQ) 1-17- 1994 (MWO) 3-21- 1996
C5756D	AUXB	623	Due to either a small or no gap, and the presence of essential relays in the cabinet striking with an adjacent cabinet could exist	Provide a restraint to prevent the adjacent cabinets from striking	MOD 95-0032	4/1/1997
C5756D	AUXB	623	Suspended ceiling deficiencies noted	To be corrected	PCAQ-94-0042 (7-94-0042- 01)	(PCAQ) 1-17- 1994 (MWO) 3-21- 1996
C5761A	AUXB	623	Suspended ceiling deficiencies noted	To be corrected	PCAQ-94-0042 (7-94-0042- 01)	(PCAQ) 1-17- 1994 (MWO) 3-21- 1996
C5762A	AUXB	623	Due to either a small or no gap, and the presence of essential relays in the cabinet striking with an adjacent cabinet could exist	Provide a restraint to prevent the adjacent cabinets from striking	MOD 95-0032	4/1/1997
C5762A	AUXB	623	Suspended ceiling deficiencies noted	To be corrected	PCAQ-94-0042 (7-94-0042- 01)	(PCAQ) 1-17- 1994 (MWO) 3-21- 1996
C5762C	AUXB	623	Due to either a small or no gap, and the presence of essential relays in the cabinet striking with an adjacent cabinet could exist	Provide a restraint to prevent the adjacent cabinets from striking	MOD 95-0032	4/1/1997

Equipment ID	Bldg.	El.	Outlier Description	Outlier Resolution	Reference Mod Package or Other Comments	Record Date from FileNet
C5762C	AUXB	623	Suspended ceiling deficiencies noted	To be corrected	PCAQ-94-0042 (7-94-0042- 01)	(PCAQ) 1-17- 1994 (MWO) 3-21- 1996
C5762D	AUXB	623	Due to either a small or no gap, and the presence of essential relays in the cabinet striking with an adjacent cabinet could exist	Provide a restraint to prevent the adjacent cabinets from striking	MOD 95-0032	4/1/1997
C5762D	AUXB	623	Suspended ceiling deficiencies noted	To be corrected	PCAQ-94-0042 (7-94-0042- 01)	(PCAQ) 1-17- 1994 (MWO) 3-21- 1996
C5763C	AUXB	623	Due to either a small or no gap, and the presence of essential relays in the cabinet striking with an adjacent cabinet could exist	Provide a restraint to prevent the adjacent cabinets from striking	MOD 95-0032	4/1/1997
C5763C	AUXB	623	Suspended ceiling deficiencies noted	To be corrected	PCAQ-94-0042 (7-94-0042- 01)	(PCAQ) 1-17- 1994 (MWO) 3-21- 1996
C5763C	AUXB	623	Small cart adjacent to the cabinet could strike the cabinet	The cart has been relocated	The cart has been relocated	N/A
C5763D	AUXB	623	Due to either a small or no gap, and the presence of essential relays in the cabinet striking with an adjacent cabinet could exist	Provide a restraint to prevent the adjacent cabinets from striking	MOD 95-0032	4/1/1997
C5763D	AUXB	623	Suspended ceiling deficiencies noted	To be corrected	PCAQ-94-0042 (7-94-0042- 01)	(PCAQ) 1-17- 1994 (MWO) 3-21- 1996
C5763D	AUXB	623	Small cart adjacent to the cabinet could strike the cabinet	The cart has been relocated	The cart has been relocated	N/A

Equipment ID	Bldg.	El.	Outlier Description	Outlier Resolution	Reference Mod Package or Other Comments	Record Date from FileNet
C5762	AUXB	623	Suspended ceiling deficiencies noted	To be corrected	PCAQ 94-0042 (7-94-0042- 01)	(PCAQ) 1-17- 1994 (MWO) 3-21- 1996
C5792A	AUXB	623	Suspended ceiling deficiencies noted	To be corrected	PCAQ 94-0042 (7-94-0042- 01)	(PCAQ) 1-17- 1994 (MWO) 3-21- 1996
CDE11D	AUXB	565	Due to either a small or no gap, and the presence of essential relays in the cabinet striking with an adjacent cabinet could exist	Provide a restraint to prevent the adjacent cabinets from striking	MOD 95-0041	1/18/1999
CDF11A-2	AUXB	603	Due to either a small or no gap, and the presence of essential relays in the cabinet striking with an adjacent cabinet could exist	Provide a restraint to prevent the adjacent cabinets from striking	MOD 95-0040	8/11/1999
DIN	AUXB	603	Due to either a small or no gap, and the presence of essential relays in the cabinet striking with an adjacent cabinet could exist	Provide a restraint to prevent the adjacent cabinets from striking	MOD 95-0043 voided	9/24/1997
D2P	AUXB	603	Due to either a small or no gap, and the presence of essential relays in the cabinet striking with an adjacent cabinet could exist	Provide a restraint to prevent the adjacent cabinets from striking	MOD 95-0038 voided, as cabinet replaced with seismically qualified cabinet.	9/24/1997
E11B	AUXB	585	Several breakers in the MCC have padlocks that are free to strike the MCC	Padlocks to be replaced with smaller ones and attached to the MCC	Velcro used to restrain	N/A
E11C	AUXB	585	A large portable frame is located behind the MCC that could strike the MCC	The frame has been relocated	The frame has been relocated	N/A
E11D	AUXB	565	An abandon cable tray support is in close proximity to the MCC, which could strike the MCC	Cable tray support removed	Cable tray support removed	N/A
E12B	AUXB	585	MCC is in contact with the support for a pipe restraint	Modify existing pipe restraint	MOD 95-0044	1/28/1999
F11A	AUXB	603	Several breakers in the MCC have padlocks that are free to strike the MCC	Padlocks to be replaced with smaller ones and attached to the MCC	Velcro used to restrain	N/A

Equipment ID	Bldg.	EI.	Outlier Description	Outlier Resolution	Reference Mod Package or Other Comments	Record Date from FileNet
F11A	AUXB	603	Due to either a small or no gap, and the presence of essential relays in the cabinet striking with an adjacent cabinet could exist	Provide a restraint to prevent the adjacent cabinets from striking	MOD 95-0040	8/11/1999
F11A	AUXB	603	An adjacent electrical junction box is in close proximity to the MCC which could impact the MCC	Relocate/modify junction box	MOD 95-0040	8/11/1999
F11C	AUXB	565	MCC is located next to a fire extinguisher that could strike the MCC	Provide a barrier to prevent impact	FPR 95-0671-901	12/4/1995
HV5261	AUXB	638	Inadequate clearance between the operator and the HVAC support	Provide lateral support	MOD 94-0034	8/28/1995
HV5262	AUXB	638	Inadequate clearance between the operator and the HVAC support	Provide lateral support	MOD 94-0034	8/28/1995
LT-1402	AUXB	623	Instrument line from TI2-I to LT-1402 is in contact with platform	Provide lateral support for the platform	MOD 95-0037	10/17/1997
LT-1403	AUXB	623	Instrument line from TI2-II to LT-1403 is in contact with platform	Provide lateral support for the platform	MOD 95-0037	10/17/1997
PSL 4928A	AUXB	565	Chain from overhead hoist could strike PSL 4928A	Chain was secured	Chain was secured	N/A
PSL 4928B	AUXB	565	Chain from overhead hoist could strike PSL 4928B	Chain was secured	Chain was secured	N/A
RC 2826	AUXB	565	Unsecured hydrazine barrel is adjacent to the cabinet	Hydrazine barrel was removed and secured	Hydrazene barrel was removed and secured	N/A
RC 3004	ΙΝΤΚ	565	Rod-hung conduit support could swing and strike cabinet	Rework conduit support	MOD 95-0042	2/18/1999
RC 3701	AUXB	585	Back of cabinet is in contact with pipe support	Rework cabinet/support	MOD 95-0036	4/4/1997
TS 5262	AUXB	638	Instrument is in the arc of an unanchored MCC	Provide anchorage for the MCC	MOD 95-0035	6/30/1997
YE1	AUXB	585	MCC is in contact with the support for a pipe restraint	Modify the existing pipe restraint	MOD 95-0044	1/28/1999

Equipment ID	Bldg.	El.	Outlier Description	Outlier Resolution	Reference Mod Package or Other Comments	Record Date from FileNet
YV2	AUXB	603	Due to either a small or no gap, and the presence of essential relays in the cabinet striking with an adjacent cabinet could exist	Provide a restraint to prevent the adjacent cabinets from striking	MOD 95-0038 voided, as cabinet replaced with seismically qualified cabinet.	9/24/1997
YV3	AUXB	603	Due to either a small or no gap, and the presence of essential relays in the cabinet striking with an adjacent cabinet could exist	Provide a restraint to prevent the adjacent cabinets from striking	MOD 95-0043 voided, as cabinet replaced with seismically qualified cabinet.	9/24/1997
YV4	AUXB	603	Existing gap between cabinet and the Containment is not sufficient to preclude striking	Increase the gap to prevent the cabinet from striking	MOD 95-0034	7/30/1997
E22-1	AUXB	585	Applied loads exceed the anchor bolt a1 lowables	Re-evaluate the system loads and provide additional support if required	PCAQ 98-1945 MOD 98-0058	(PCAQ) 11-3- 1998 (MOD) 8-5-1999
E22-2	AUXB	585	Applied loads exceed the anchor bolt a1 lowables	Re-evaluate the system loads and provide additional support if required	MOD 98-0058	8/5/1999
E22-3	AUXB	585	Applied loads exceed the anchor bolt a1 lowables	Re-evaluate the system loads and provide additional support if required	MOD 98-0058	8/5/1999
E27-1	AUXB	545	Applied loads exceed the anchor bolt a1 lowables	Re-evaluate the system loads and provide additional support if required	PCAQ 97-1174 MOD 97-0068	(PCAQ) 9-4-1997 MOD 7/13/98
E27-2	AUXB	545	Applied loads exceed the anchor bolt a1 lowables	Re-evaluate the system loads and provide additional support if required	PCAQ 97-1174 MOD 97-0068	(PCAQ) 9-4-1997 MOD 7/13/98
T12-1	AUXB	623	Embedment length of the J-Bolt is less than the GIP minimum value	Analysis performed indicated that the existing anchorage detail is adequate.	Acceptable as is	N/A
T12-2	AUXB	623	Embedment length of the J-Bolt is less than the GIP minimum value	Analysis performed indicated that the existing anchorage detail is adequate.	Acceptable as is	N/A
T18	AUXB	565	Applied loads exceed the anchor bolt a1lowables	Re-evaluate the loads on the anchors	Deleted per RFA 95-0248	8/29/1995

Equipment ID	Bldg.	El.	Outlier Description	Outlier Resolution	Reference Mod Package or Other Comments	Record Date from FileNet
⊤7-1	AUXB	565	Embedment length of the J-Bolt is less than the GIP minimum value	Analysis performed indicated that the existing anchorage detail is adequate.	Acceptable as is	N/A
T7-2	AUXB	565	Embedment length of the J-Bolt is less than the GIP minimum value	Analysis performed indicated that the existing anchorage detail is adequate.	Acceptable as is	N/A
T12-I	AUXB	623	Instrument line from TI2-I to LT-1402 is in contact with platform	Provide lateral support for the platform	MOD 95-0037	10/17/1997
T12-II	AUXB	623	Instrument line from TI2-II to LT-1403 is in contact with platform	Provide lateral support for the platform	MOD 95-0037	10/17/1997

Table G-2. List of Relays Replaced Due to Vulnerabilities Identified During theA-46/IPEEE Programs					
Safe Shutdown Equip	Relay Name From Dwg.	Contacts Location	Area-Room- Elevation	MOD Package	
YV2	K1	YV2	6-428-603	95-0019-00	
P37-2, AD105, HISMU24B	50GS	D1 BUS	6-323-585	95-0021-00	
AC101	51-1	C1 BUS	6-325-585	95-0024-00	
AD101	51-2	D1 BUS	6-323-585	95-0024-00	
AD101	51-3	D1 BUS	6-323-585	95-0024-00	
AC101	51-4	C1 BUS	6-325-585	95-0024-00	
AD101	51-5	D1 BUS	6-323-585	95-0024-01	
AACD1	52X/AACD1	D1 BUS	6-323-585	95-0022-00	
ABDC1	52X/ABDC1	C1 BUS	6-325-585	95-0022-00	
AC110	52X/AC110	C1 BUS	6-325-585	95-0022-00	
AD110	52X/TDC	D1 BUS	6-323-585	95-0022-00	
AACD1	62/TDO	D1 BUS	6-323-585	95-0023-00	
AD101	87/DG	C3616	6-319-585	95-0020-00	
C3618	BUR-1,BUR-2	C3618	6-319-585	95-0028-00	
AC101	CR3-X	C3617	6-318-585	95-0028-00	
AC101	FSS-X	C3617	6-318-585	95-0028-00	
RC-2A, HISRC2-6	PSH/RC2-5	C5759D	7-502-623	95-0019-00	
C3617	R3X1	C3617	6-318-585	95-0028-00	
C3617	R3X2	C3617	6-318-585	95-0028-00	
C5762C, C5755C,	S1 (PWR	C5755C&D,	7-502-623	95-0032-00	
C5763C, C5756D,	SUPPLIES)	C5756C&D,			
PSH7528A,		C5762C&D,			
PSH7531A, PT2002,		C5763C&D			
PT2003, HIS7528,					
HIS7524, HIS7530,					
HIS7531					
AC101	V/F	C3617	6-318-585	95-0028-00	

Outlier No.	Outlier Description	Outlier Resolution	Reference Mod Package or Other Comments
101-1	Edge distance on conduit clamp to the edge of the unistrut channel is very small at six consecutive supports	Provide end restraints	PCAQ 94-0011 MWO 7-94-0011-06
105-1	Threaded rod to the overhead shell anchor is missing	Install the missing threaded rod	PCAQ 95-0567-02 FPR 95-0567-701
209-1	2" conduit support beam clamp is not properly installed	Re-install support	PCAQ 95-0567-02
218-1	Conduit 39242C is missing several conduit clamps	Install the conduit missing clamps Work to be done during an outage	PCAQ 95-0567-03
218-2	Cable tray BCBD and BLBE are missing clamps to the tray	Install missing tray clamps. Work to be done during an outage	PCAQ 95-0567-03
236-1	3/4" conduit has a span greater than GIP allowable	Clamp the conduit to an adjacent existing support.	PCAQ 95-0567 -0'2
240-1	1-1/2" conduit does not have an industry acceptable support creating a cantilever overspan condition	Install a new support	PCAQ 95-0567-04 FPR 95-0657-704
303-1	Inadequate flexibility for the differential building movement. Conduit has 6" span between the floor penetration and support	Remove clamp for this conduit at the support to provide sufficient conduit flexibility	PCAQ 95-0567-02
304-1	Conduit support has horizontal member disconnected from the vertical member	Install unistrut brackets for connection to the vertical member	PCAQ 95-0567-02
410-1	Conduit clamp is not properly engaged in the unistrut	Rework the conduit clamp	PCAQ 94-0011 MWO 7-94-0011-07
410-2	Edge distance of cable tray clamp to the edge of the unistrut channel is small	Provide end restraints	PCAQ 94-0011 MWO 7-94-0011-07

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Outlier No.	<b>Outlier Description</b>	<b>Outlier Resolution</b>	Reference Mod Package or Other Comments
422A-3	Base plate on the cantilever bracket exceeds the allowables	Replace the cantilever plate!bracket	MOD 95-0045
500-1	Support is not attached to beam which results in conduit exceeding the GIP span criteria	Attach support to building structure	PCAQ 95-0567-04 FPR 95-567-702
502-1	3/4" conduit has a span of 12' which is greater than the GIP allowable of 10'.	Provide support	PCAQ 95-0567-04 FPR 95-567-703
601-1	Local yielding at the beam attachment	This support will be stiffened	MOD 95-0045