APPENDIX C
AREA WALK-BY CHECKLISTS (AWCs)

Status (Y) N U

Area Walk-By Checklist (AWC)

Room 105 Floor El. 545 Bldg. AUXB

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			

Anchorage for cover plate of E31-4 does not have nuts, see Photo 2. Concern has been judged not to represent an adverse coniditon regarding the component's seismic performance.

	Y	N	U	N/A
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			

	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			

	Y	N	U	N/A
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)?	X			

Related equipment on SWEL for this area:

1) P42-1

2) P58-1

3) C31-4

Status (Y) N U

Area Walk-By Checklist (AWC)

Room 105 Floor El. 545 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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	X			

Temporary scaffolding in area appears to be adequately restrained. See Photo 3.

	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?	X		

Comments (Additional pages may be added as necessary)

Fire Sources: *NO* *No fire sources identified in area.*

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: _____ Date: 7/25/2012
Eddie M. Guerra

_____ Date: 7/25/2012
Brian A. Lucarelli

Status (Y) N U

Area Walk-By Checklist (AWC)

Room 105 Floor El. 545 Bldg. AUXB

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

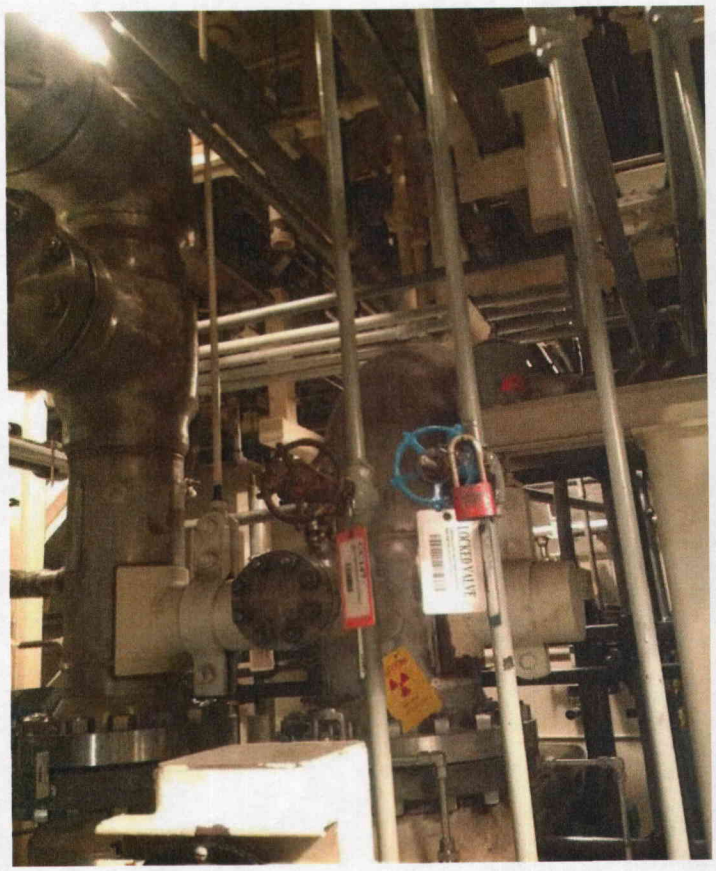


Photo 1
General View of Room 105 Area

Status (Y) N U

Area Walk-By Checklist (AWC)

Room 105 Floor El. 545 Bldg. AUXB

Supporting Photos (continued):

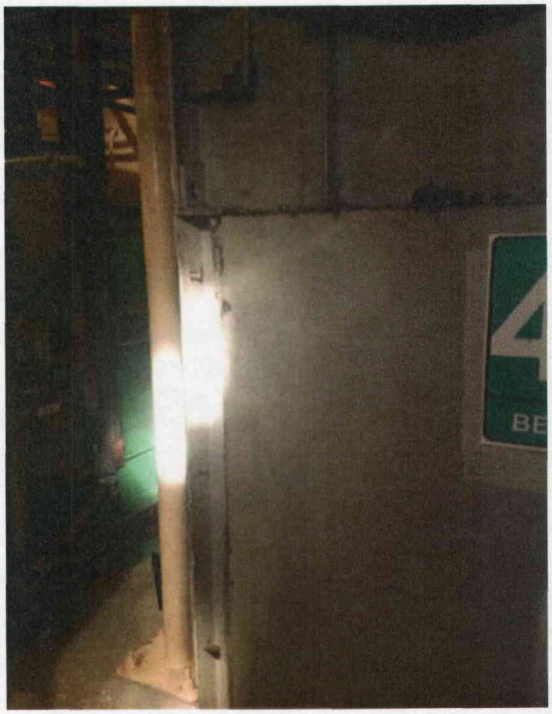


Photo 2
Missing Nuts on Cover of E31-4

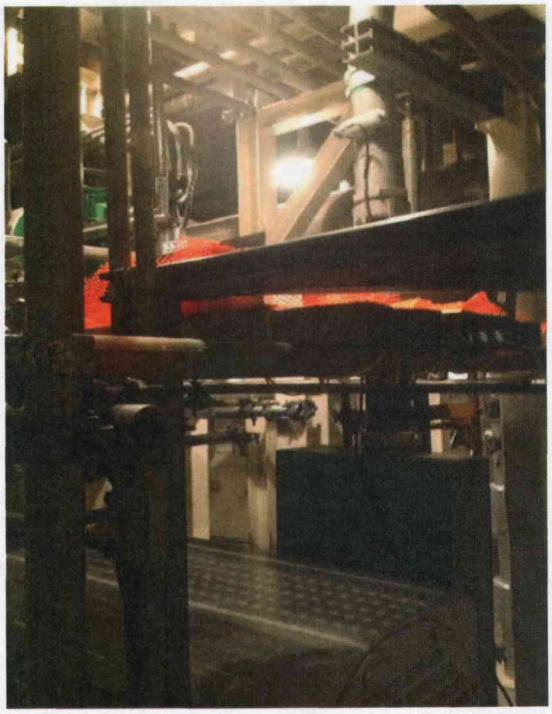


Photo 3
Temporary Scaffolding Restrained

Status (Y) N U

Area Walk-By Checklist (AWC)

Room 113 Floor El. 545 Bldg. AUXB

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			
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)?	X			

Related equipment on SWEL for this area:

1) E27-1

2) E27-2

3) CC1469

Status (Y) N U

Area Walk-By Checklist (AWC)

Room 113 Floor El. 545 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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	X			

	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?	X		

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: _____ Date: 7/25/2012
Eddie M. Guerra

_____ Date: 7/25/2012
Brian A. Lucarelli

Status (Y) N U

Area Walk-By Checklist (AWC)

Room 113 Floor El. 545 Bldg. AUXB

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

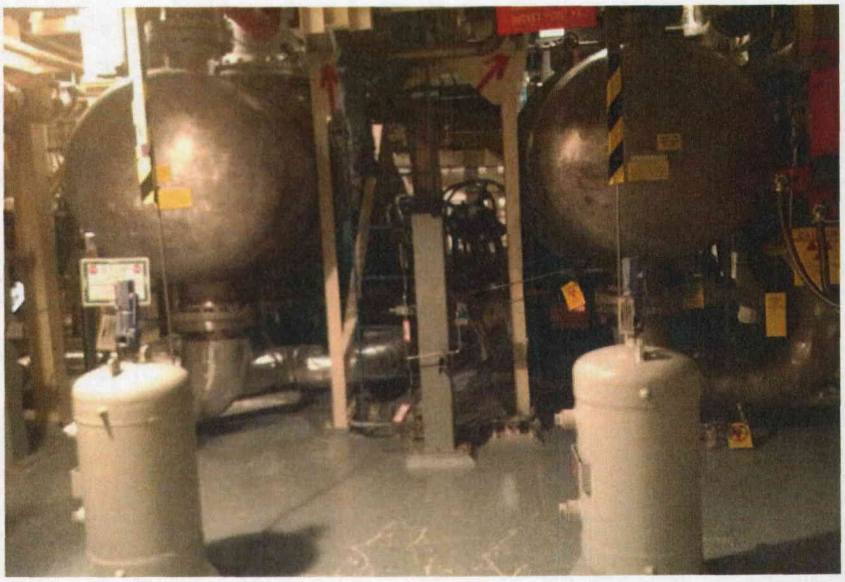


Photo 1
General View of Room 113

Status (Y) N U

Area Walk-By Checklist (AWC)

Room 122 Floor El. 570'3.0625" Bldg. AUXB

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			
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)?	X			

Masonry walls identified in area.
Walls identified as 1157, 1167, and 1187.
Walls 1157 and 1167 have been seismically analyzed per NRC IE Bulletin 80-11 (Ref. VBW03-B001-009, Rev 5 and VBW03-B001-010, Rev 8). Wall 1187 is exempt since no safety-related equipment is in the vicinity of the wall.

Related equipment on SWEL for this area:

1) SF1616A

Status (Y) N U

Area Walk-By Checklist (AWC)

Room 122 Floor El. 570'3.0625" 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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	X			

Temporary scaffolding installed in area, judged not likely to cause interaction.

	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?	X		

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: _____ Date: 7/25/2012
Eddie M. Guerra

_____ Date: 7/25/2012
Brian A. Lucarelli

Status (Y) N U

Area Walk-By Checklist (AWC)

Room 122 Floor El. 570'3.0625" Bldg. AUXB

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

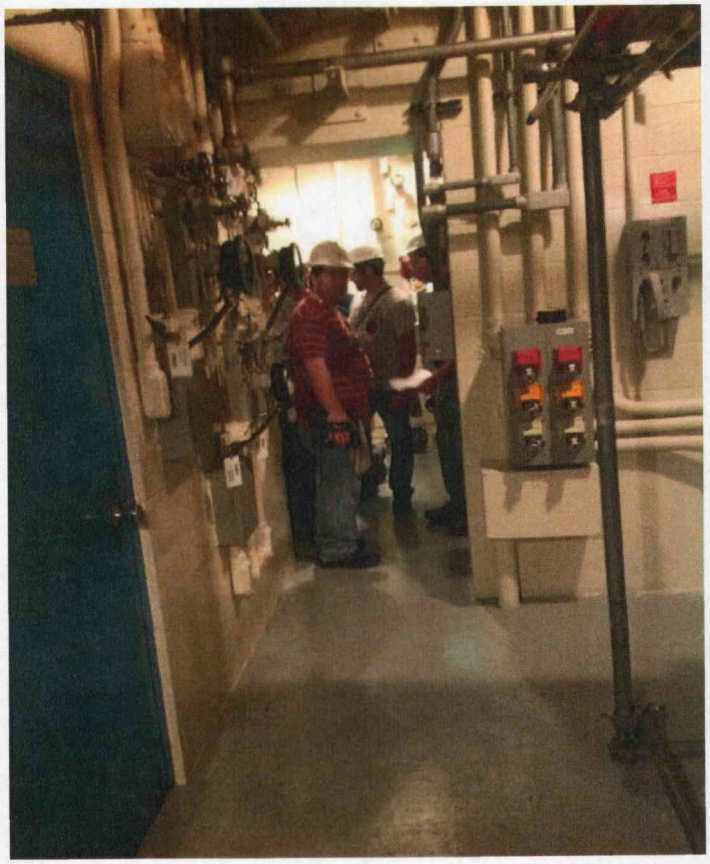


Photo 1
General View of Room 122

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 208 Floor El. 565 Bldg. AUXB

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			
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)?	X			

Fire extinguisher is mounted on the wall and is not laterally supported. It is judged that since the vertical acceleration at this location is less than 1g, it is unlikely for the extinguisher to fall or cause significant interaction with nearby equipment.

Related equipment on SWEL for this area:

1) FTHP3C

2) IA-636

3) hp2c

4) hp3c

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 208 Floor El. 565 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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	X			

A dolly was found unrestrained in the area. Since the dolly had restraining chains on it, it was judged that it is temporarily located at the position found in the room and will be returned to its storage location and tied when work is done. Also, no sensitive equipment found in the vicinity of this dolly.

	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?	X		

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 Coolers E26-1,E26-2, Tank T139-1, Piping: Aux system, borated water, component cooling, cont spray, decay heat, demin water, fire*

Evaluated by: _____ Date: 7/25/2012
Eddie M. Guerra

_____ Date: 7/25/2012
Brian A. Lucarelli

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 208 Floor El. 565 Bldg. AUXB

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

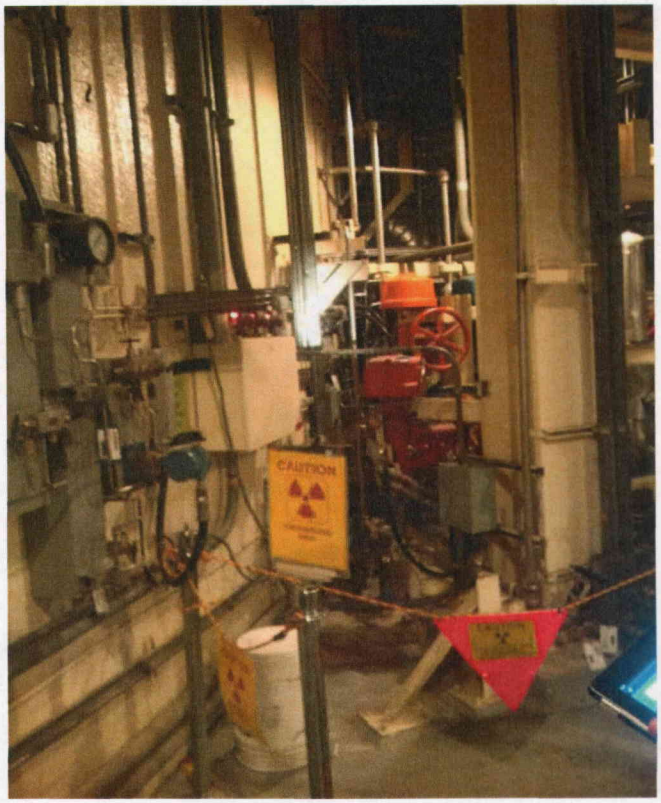


Photo 1
General View of Room 208

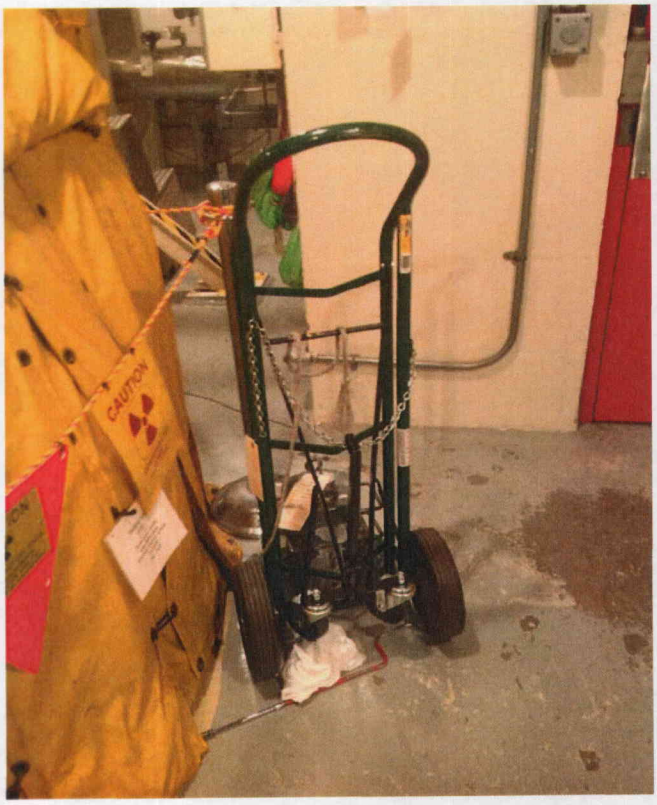


Photo 2
Unrestrained Dolly in Area

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 209 Floor El. 565 Bldg. AUXB

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			
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)?	X			

Fire extinguisher is mounted on the wall and is not laterally supported. It is judged that since the vertical acceleration at this location is less than 1g, it is unlikely for the extinguisher to fall or cause significant interaction with nearby equipment.

Related equipment on SWEL for this area:

1) BW10

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 209 Floor El. 565 Bldg. AUXB

Interaction Effects

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
X			

6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?

Y	N	U	N/A
X			

7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?

Y	N	U	N/A
X			

Nuclear filter cask cart unrestrained adjacent to components. There are no sensitive equipment in the zone of influence of this cart and it is judged OK. It is also noted that this cart appear to be temporarily in the area.

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	N	U
X		

Comments (Additional pages may be added as necessary)

Fire Sources: *Hydrogen Piping to Make Up Tank*
No concerns identified regarding fire sources. The potential ignition sources in the area are Hydrogen Piping to Make Up Tank

Flooding Sources: *No concerns identified regarding flood sources. The potential flood sources in the area are BWST Heater E34, Piping: Aux steam, borated water, comp cooling, domestic water, Duratek, demin water, fire protection, high pressure injection, main steam, makeup, primary water, spent fuel clean waste*

Evaluated by: _____ Date: 7/25/2012
Eddie M. Guerra

_____ Date: 7/25/2012
Brian A. Lucarelli

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 209 Floor El. 565 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

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 225 Floor El. 565 Bldg. AUXB

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			
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)?	X			

Block wall close to P372B.
Walls identified as 2047, 2427, and 2437.
All walls have been seismically analyzed per NRC IE Bulletin 80-11 (Ref. VBW06-B001-028, Rev 4, VBW10-B001-058, Rev 3 and VBW10-B001-059, Rev 1).

Related equipment on SWEL for this area:

1) P372B

2) DH9B

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 225 Floor El. 565 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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	X			

RP cart and dolly not restrained.
In a subsequent visit to his area on the next day, it was observed that this cart was properly restrained.

	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?	X		

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: _____ Date: 7/25/2012
Eddie M. Guerra

_____ Date: 7/25/2012
Brian A. Lucarelli

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 225 Floor El. 565 Bldg. AUXB

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

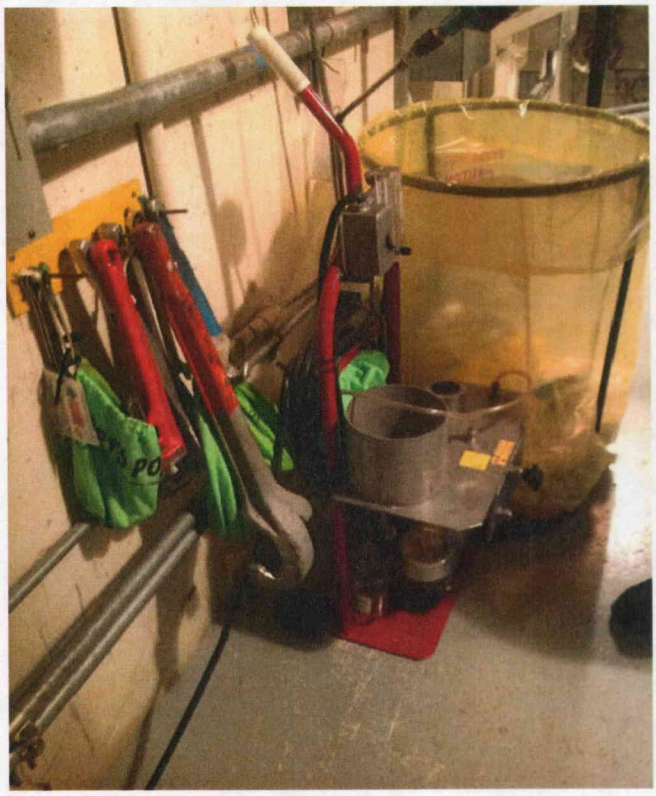


Photo 1
Dolly Not Restrained

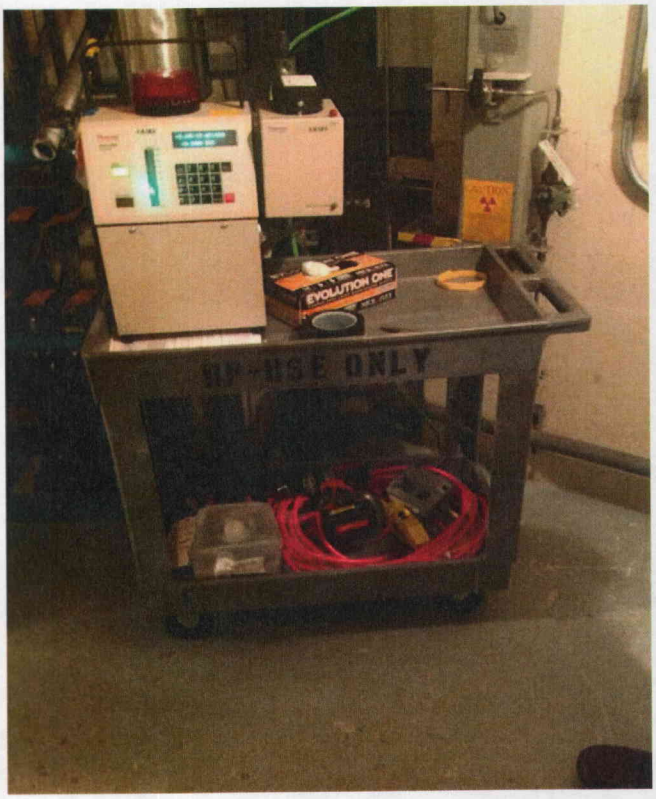


Photo 2
RP Cart Not Restrained

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 236 Floor El. 565 Bldg. AUXB

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			
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)?	X			

Fire extinguisher is mounted on the wall and is not laterally supported. It is judged that since the vertical acceleration at this location is less than 1g, it is unlikely for the extinguisher to fall or cause significant interaction with nearby equipment.
Masonry wall in room, see Photo 2.
Walls identified as 2317, 2327, 2337, and 2347. All walls seismically analyzed.
per NRC IE Bulletin 80-11 (Ref. VBW09-B001-049, Rev 8, VBW09-B001-050, Rev 4, VBW09-B001-051, Rev 10 and VBW09-B001-052, Rev 3).

Related equipment on SWEL for this area:

1) hp2b

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 236 Floor El. 565 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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	X			

	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?	X		

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 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: _____ Date: 7/25/2012
Eddie M. Guerra

_____ Date: 7/25/2012
Brian A. Lucarelli

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 236 Floor El. 565 Bldg. AUXB

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

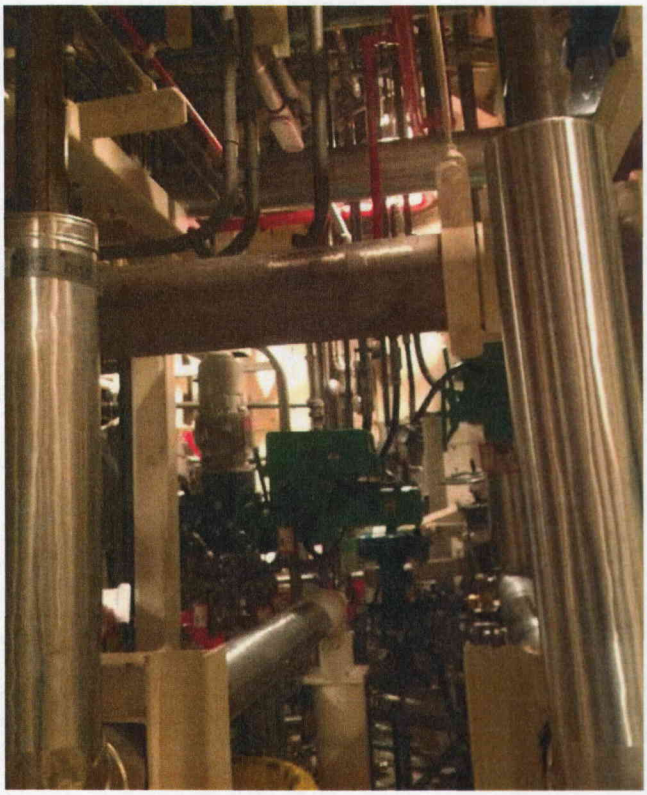


Photo 1
General View of Room 236

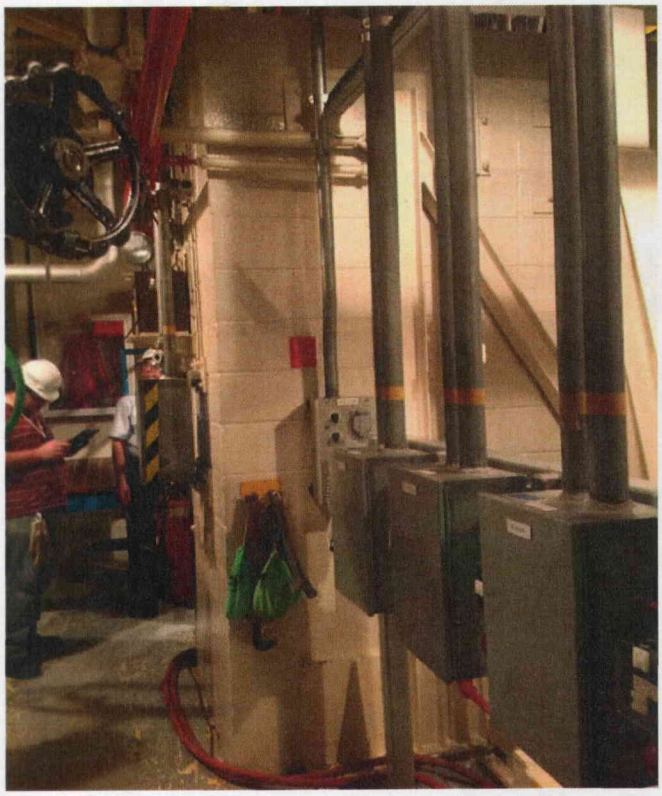


Photo 2
Masonry Wall

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 237 Floor El. 565 Bldg. AUXB

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			
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)?	X			

Related equipment on SWEL for this area:

1) AF19

2) PSL 106C

3) PSL4928A

4) FV6452

5) P14-1

6) MS5889A

7) C73-1

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 237 Floor El. 565 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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	X			

	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?	X		

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: _____ Date: 7/25/2012
Eddie M. Guerra

_____ Date: 7/25/2012
Brian A. Lucarelli

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 237 Floor El. 565 Bldg. AUXB

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

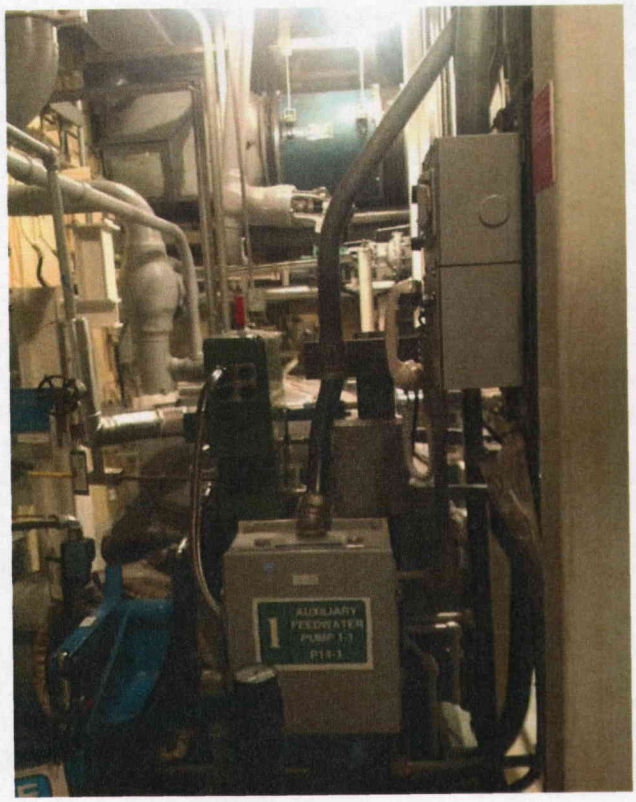


Photo 1
General View of Room 237

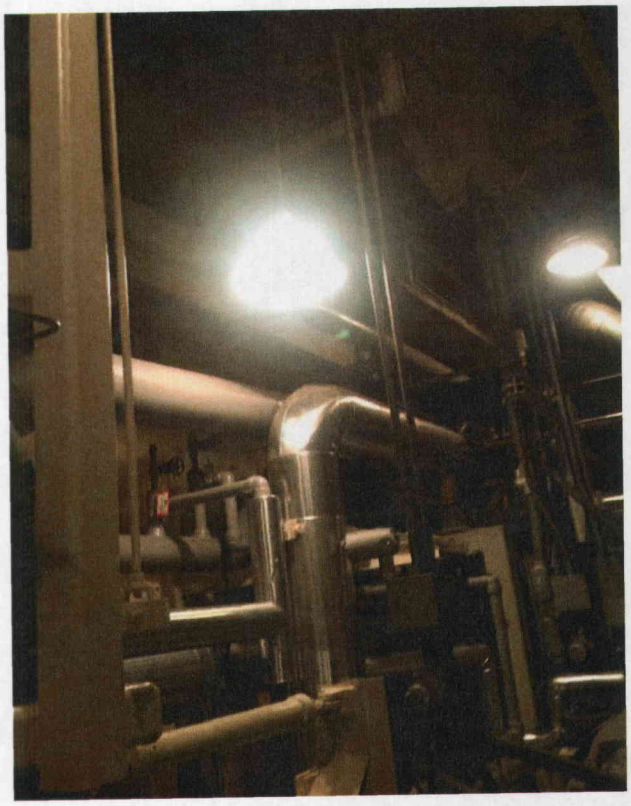


Photo 2
General View of Room 237

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 238 Floor El. 565 Bldg. AUXB

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			
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)?	X			

Fire extinguisher is mounted on the wall and is not laterally supported. It is judged that since the vertical acceleration at this location is less than 1g, it is unlikely for the extinguisher to fall or cause significant interaction with nearby equipment.

Related equipment on SWEL for this area:

1) P14-2

2) FV6451

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 238 Floor El. 565 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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)? *Scaffolding in area appears to be adequately restrained.*	X			

	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?	X		

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 coolers E194-2, E30, seal water cooler T218, condensate tank T218, Piping: Aux. feedwater, condensate, turbine plant cooling water, domestic water, main steam, service water*

Evaluated by: _____ Date: 7/25/2012
Eddie M. Guerra

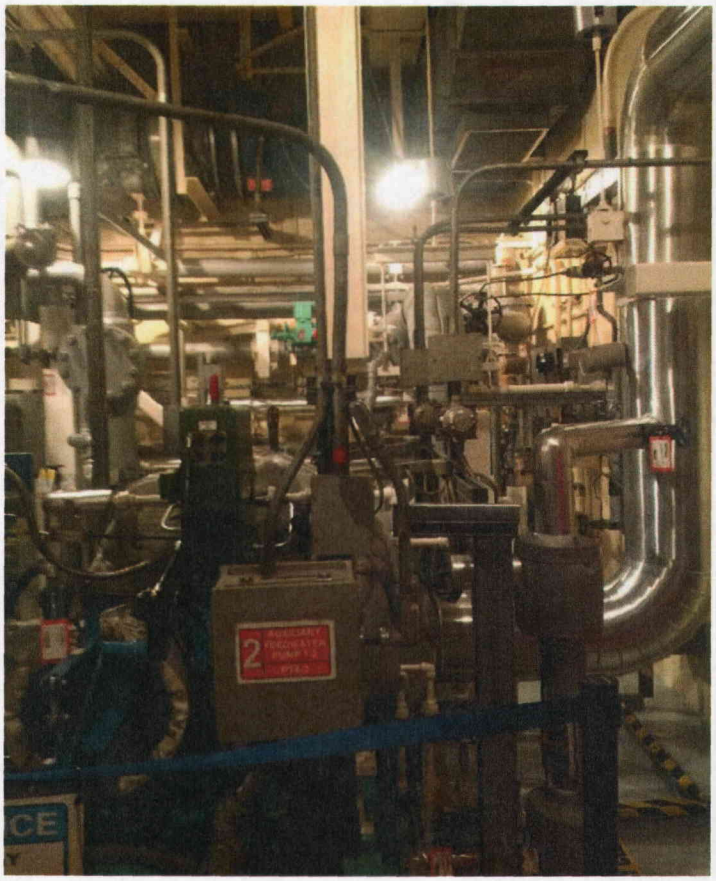
_____ Date: 7/25/2012
Brian A. Lucarelli

Status: (Y) N U

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

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room PT Floor El. 565 Bldg. AUXB

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			
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)?	X			

Related equipment on SWEL for this area:

1) T10

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room PT Floor El. 565 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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	X			

Construction debris in area. Not likely to cause adverse interaction.

	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?	X		

Comments (Additional pages may be added as necessary)

Fire Sources: *Hydrogen Piping to Make Up Tank*
No concerns identified regarding fire sources. The potential ignition sources in the area are Hydrogen Piping to Make Up Tank

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: _____ Date: 7/25/2012
Eddie M. Guerra

_____ Date: 7/25/2012
Brian A. Lucarelli

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room PT Floor El. 565 Bldg. AUXB

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

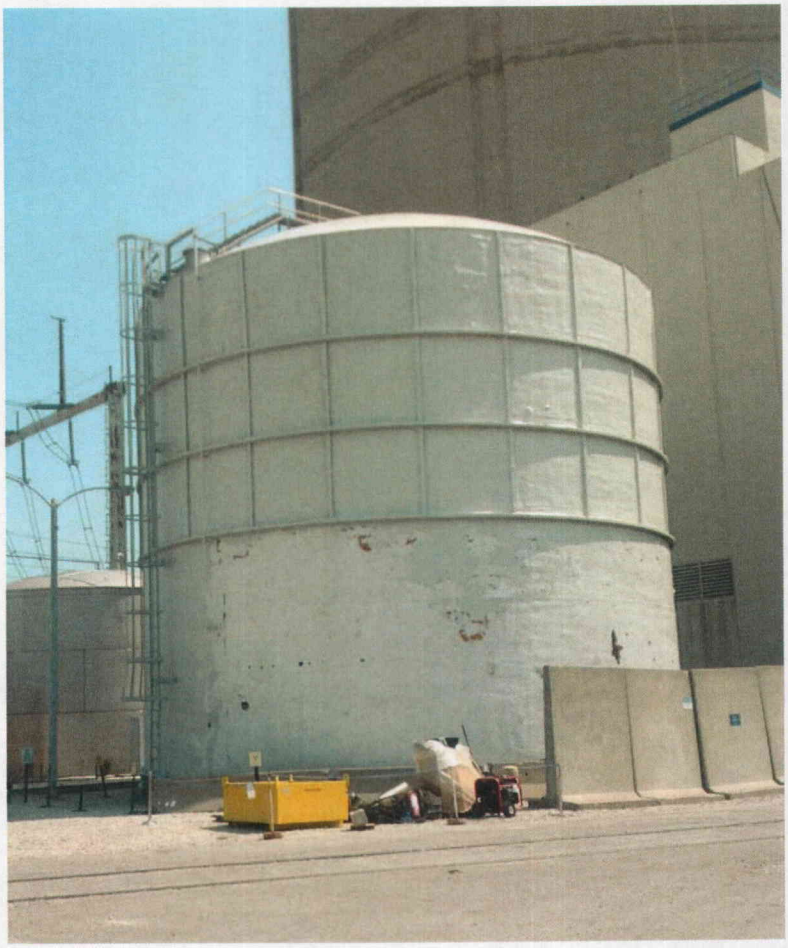


Photo 1
General View of PT

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 303 Floor El. 585 Bldg. AUXB

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			

Small gap (~1/4") between grout and anchor plate. Judged to be acceptable, see Photo 2.

CS16, a checkvalve, has several nuts with what appears to be less than adequate thread engagement in that the threads do not extend beyond the nut, they are flush. Concluded that is acceptable per procedure DB-MM-09266.

	Y	N	U	N/A
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			

	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			

	Y	N	U	N/A
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)?	X			

Related equipment on SWEL for this area:

1) AF608

2) CS1530

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 303 Floor El. 585 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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	X			

	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?	X		

Comments (Additional pages may be added as necessary)

Hydrogen line in the area is well supported.

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 Moisture Accumulation tank T216, Piping: Aux. feedwater, Containment Spray, Fire Protection, Feedwater*

Evaluated by: _____ Date: 7/25/2012
Eddie M. Guerra

_____ Date: 7/25/2012
Brian A. Lucarelli

Status: (Y) N U

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

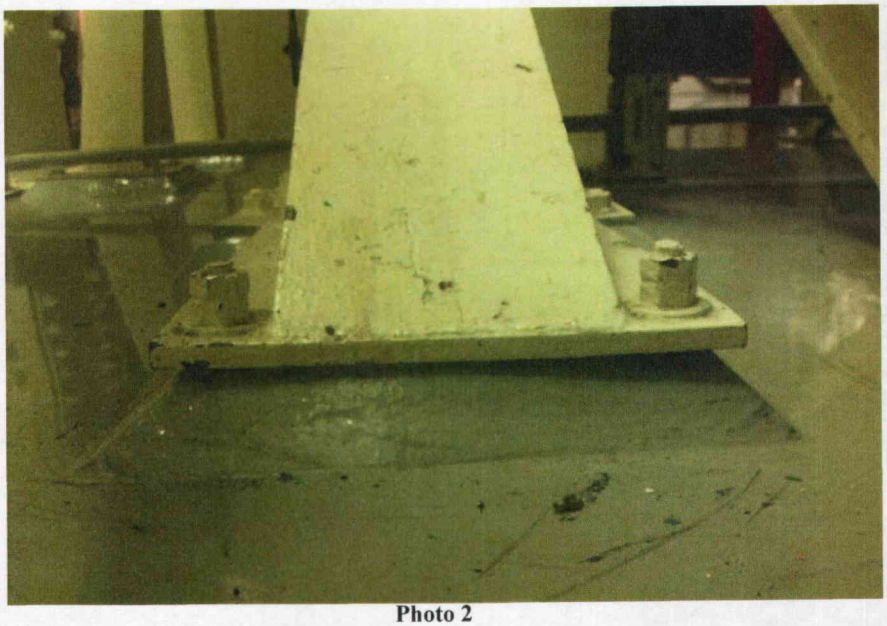


Photo 2
Gap Between Grout and Anchor Plate

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 304 Floor El. 585 Bldg. AUXB

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			
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)?	X			

Related equipment on SWEL for this area:

1) E11B

2) YE2B

3) BW21

4) SF11

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 304 Floor El. 585 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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	X			

	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?	X		

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: _____ Date: 7/25/2012
Eddie M. Guerra

_____ Date: 7/25/2012
Brian A. Lucarelli

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

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 312 Floor El. 590'6" Bldg. AUXB

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			

Two anchor bolts missing from electrical conduit support near R3701 rack, see Photo 2. An additional inspection was performed and it was noted that the base support is welded to the angle in the floor for the floor plug. Therefore, this finding is judged not to present a significant seismic concern.

	Y	N	U	N/A
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			

Minor corrosion noted in anchorage supporting sensor panel, see Photo 3. Deemed not a significant degraded condition.

	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			

	Y	N	U	N/A
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)?	X			

Masonry wall in area, see Photo 1. Check seismic adequacy. Walls identified as 3227, 3247, 3257, 3267, 3277, 3297, 3357, 3367, 3417, 3427. Wall 3427 is exempt. All other walls have been seismically analyzed.

Related equipment on SWEL for this area:

1) FIS 1612

2) SF47

3) DH101

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 312 Floor El. 590'6" 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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	X			

Cart with gas cannisters loosely restrained to wall, see Photo 4. Judged not a concern since straps and chains will keep cannisters in place thus no direct contact with nearby equipment is expected.

	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?	X		

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 HX E23-1, E23-2, Pumps P247, P248, P249 & P250, Piping: Component cooling, Decay heat, domestic water, demin water, spent fuel*

Evaluated by: _____ Date: 7/25/2012
Eddie M. Guerra

_____ Date: 7/25/2012
Brian A. Lucarelli

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 312 Floor El. 590'6" Bldg. AUXB

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

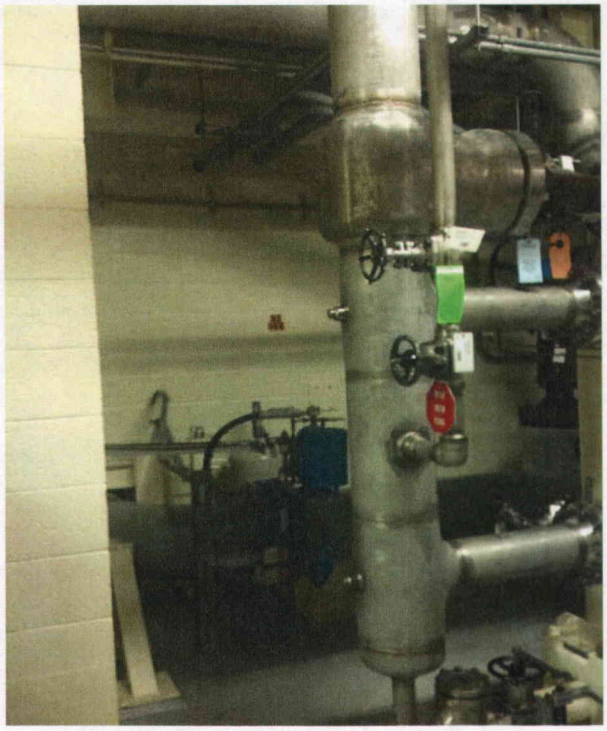


Photo 1
General View of Room 312
Showing Masonry Walls

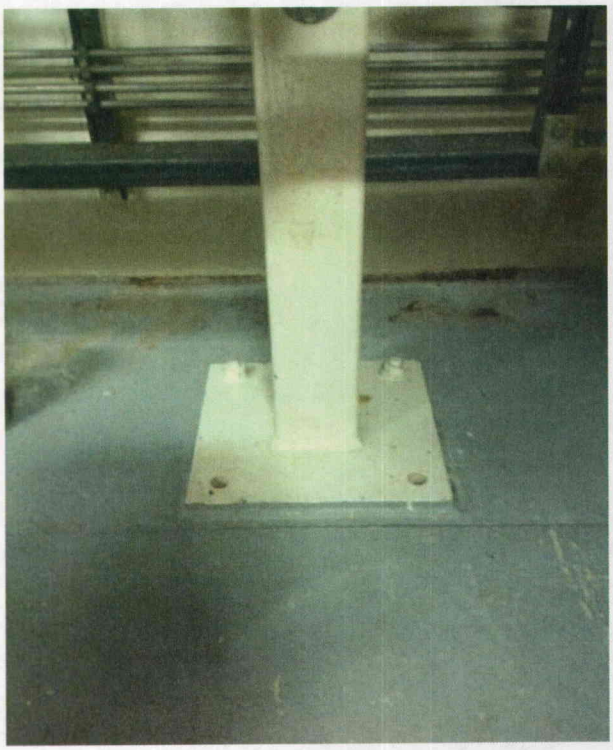


Photo 2
Missing Anchor Bolts

Status: (Y) N U

Area Walk-By Checklist (AWC)

Supporting Photos (continued):

Photo 3
Minor Corrosion on
Anchor Plate

Photo 4
Cart Containing Gas Canisters
Loosely Restrained

Status: Y (N) U

Area Walk-By Checklist (AWC)

Room 314 Floor El. 585 Bldg. AUXB

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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		

Nut missing on conduit, see Photo 1.
Condition report issued : CR-2012-10920

	Y	N	U	N/A
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			

	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			

	Y	N	U	N/A
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)?	X			

Related equipment on SWEL for this area:

1) RC3701

Status: Y (N) U

Area Walk-By Checklist (AWC)

Room 314 Floor El. 585 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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	X			

	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?	X		

Comments (Additional pages may be added as necessary)

Hydrogen line in this area is well supported.

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 feedwater, Aux. steam, Component Cooling, Core Flood, Containment Spray, Decay Heat Removal, Fire Protection, High*

Evaluated by: _____ Date: 7/25/2012
Eddie M. Guerra

_____ Date: 7/25/2012
Brian A. Lucarelli

Status: Y (N) U

Area Walk-By Checklist (AWC)

Room 314 Floor El. 585 Bldg. AUXB

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

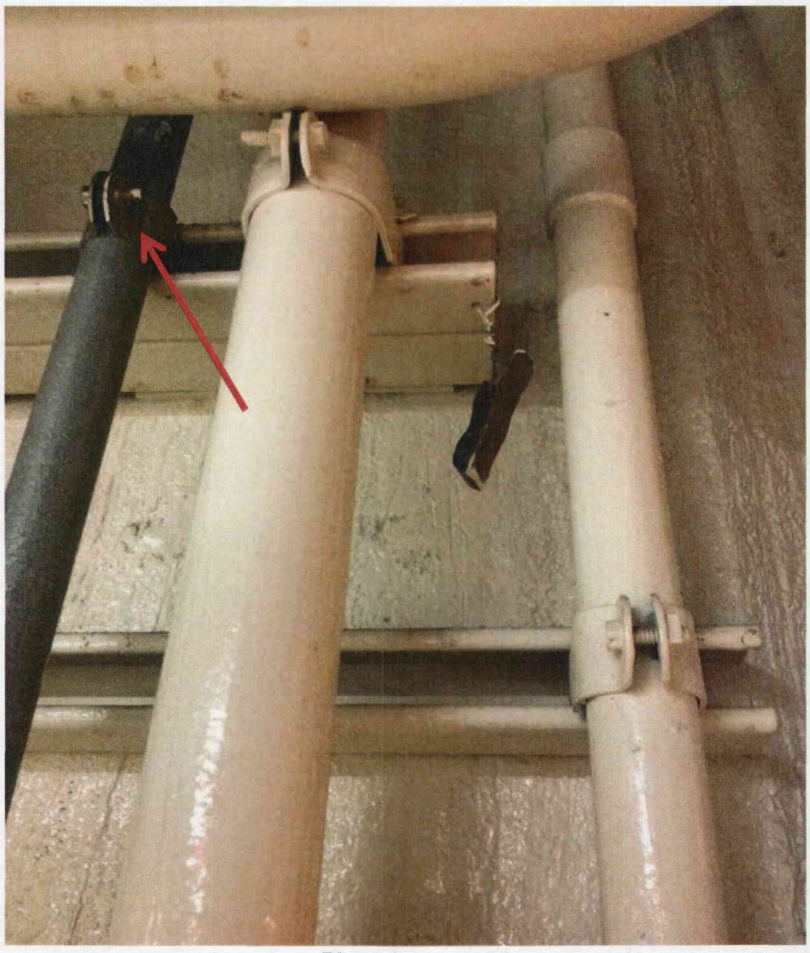


Photo 1
Nut Missing on Conduit

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 318 Floor El. 585 Bldg. AUXB

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			
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)?	X			

Fire extinguisher is mounted on the wall and is not laterally supported. It is judged that since the vertical acceleration at this location is less than 1g, it is unlikely for the extinguisher to fall or cause significant interaction with nearby equipment.
Masonry walls identified as 308D, 309D, 310D, 311D, and 338D.
All walls have been seismically analyzed per NRC IE Bulletin 80-11 (Ref. VBW12-B001-068, Rev 3, VBW13-B001-069, Rev 3, VBW13-B001-070, Rev 3, VBW13-B001-071, Rev 8 and VBW19-B001-093, Rev 5).

Related equipment on SWEL for this area:

1) F108-1

2) E12B

3) C11-1

4) K5-1

5) TE-5329

6) C3615

7) DA-3783

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 318 Floor El. 585 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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	X			

	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?	X		

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 EDG Jacket Cooler 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: _____ Date: 7/25/2012
Eddie M. Guerra

_____ Date: 7/25/2012
Brian A. Lucarelli

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 318 Floor El. 585 Bldg. AUXB

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

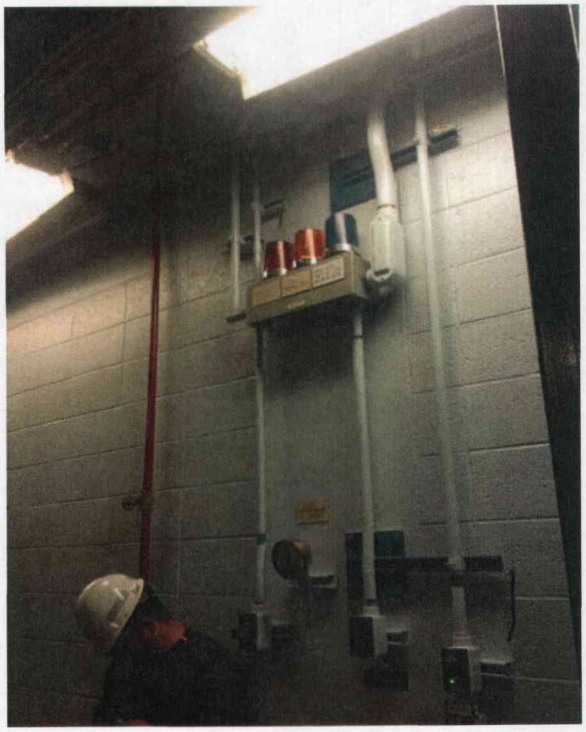


Photo 1
Masonry Wall

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 319 Floor El. 585 Bldg. AUXB

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			
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)?	X			

Fire extinguisher is mounted on the wall and is not laterally supported. It is judged that since the vertical acceleration at this location is less than 1g, it is unlikely for the extinguisher to fall or cause significant interaction with nearby equipment.
Block walls 304D and 307D identified in room.
All walls have been seismically analyzed per NRC IE Bulletin 80-11 (Ref. VBW12-B001-064, Rev 8, and VBW12-B001-067, Rev 7).

Related equipment on SWEL for this area:

1) YF1

2) K5-2

3) C25-3

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 319 Floor El. 585 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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	X			

	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?	X		

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 EDG Jacket Cooler E10-2, DG Lube oil HX E94-2, DG Jacket water T121-2, Piping: Component cooling, Domestic water, Diesel Fuel oil, demin water, fire protection*

Evaluated by: _____ Date: 7/25/2012
Eddie M. Guerra

_____ Date: 7/25/2012
Brian A. Lucarelli

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):

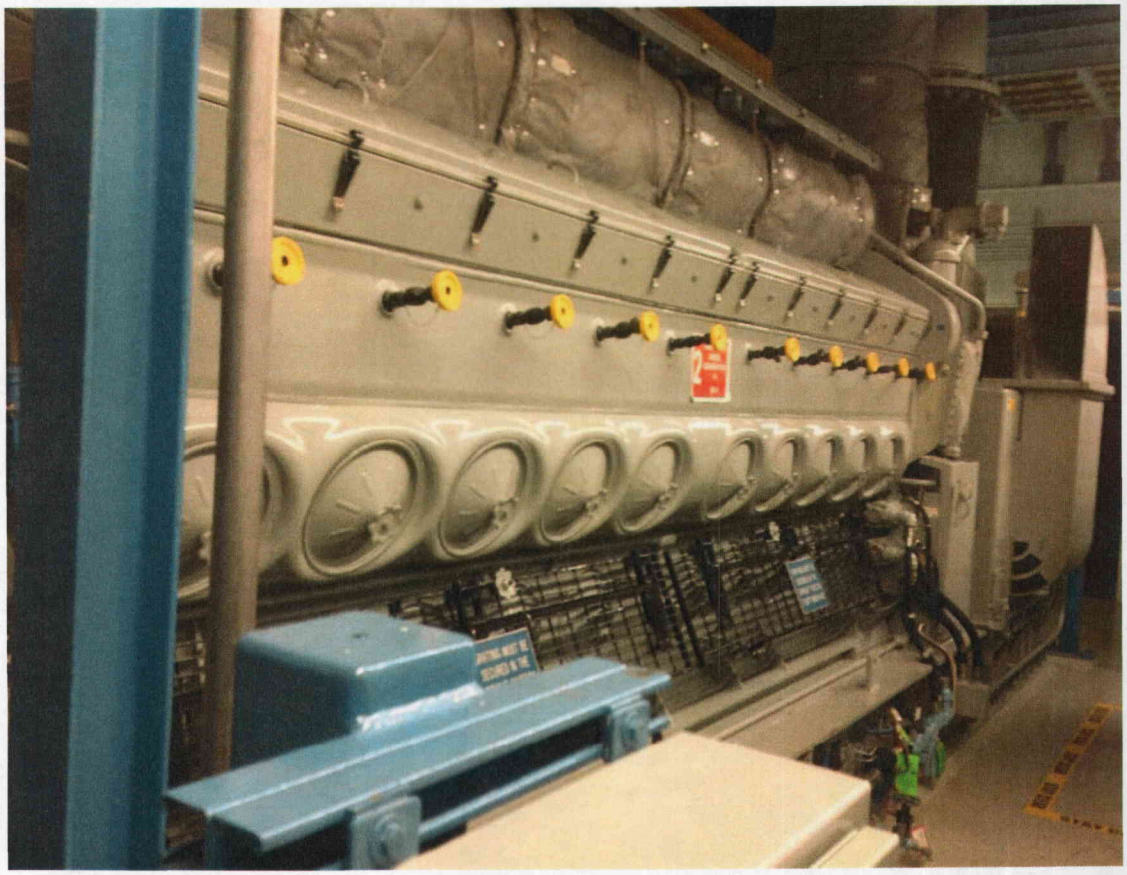


Photo 1
General View of Room 319

Status (Y) N U

Area Walk-By Checklist (AWC)

Room 321A Floor El. 585 Bldg. AUXB

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			
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)?	X			

Masonry wall, see Photo 1.
Walls identified as 305D and 306D. Both have been seismically analyzed.
All walls have been seismically analyzed per NRC IE Bulletin 80-11 (Ref. VBW12-B001-065, Rev 5, and VBW12-B001-066, Rev 6).

Related equipment on SWEL for this area:

1) LT-2787

2) T46-1

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 321A Floor El. 585 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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	X			

	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?	X		

Comments (Additional pages may be added as necessary)

Fire Sources: *EMERGENCY DIESEL GENERATOR DAY TANK 1-1*
No concerns identified regarding fire sources. The potential ignition sources in the area are EMERGENCY DIESEL GENERATOR DAY TANK 1-1

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: _____ Date: 7/25/2012
Eddie M. Guerra

_____ Date: 7/25/2012
Brian A. Lucarelli

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 321A Floor El. 585 Bldg. AUXB

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

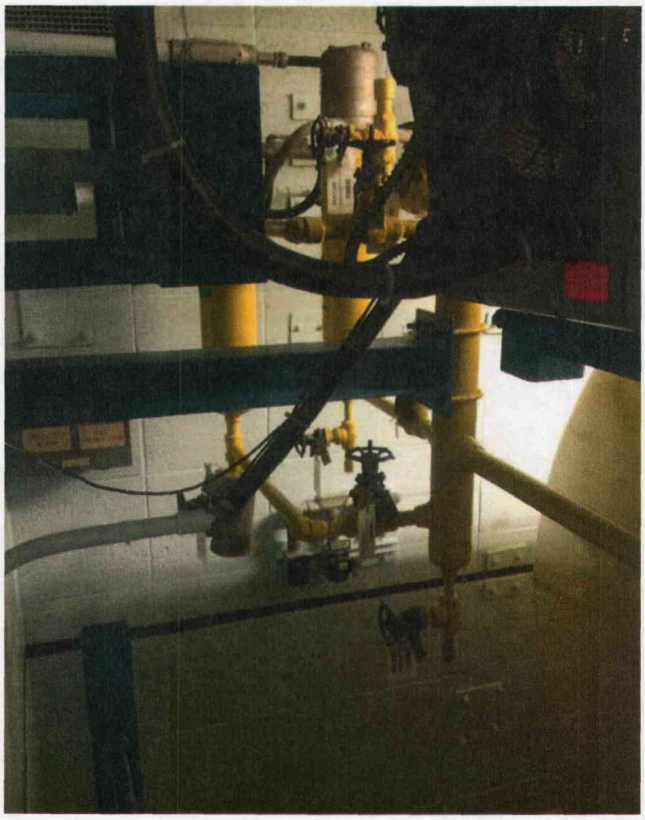


Photo 1
Masonry Wall

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 323 Floor El. 585 Bldg. AUXB

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			
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)?	X			

Fire extinguisher is mounted on the wall and is not laterally supported. It is judged that since the vertical acceleration at this location is less than 1g, it is unlikely for the extinguisher to fall or cause significant interaction with nearby equipment.

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

	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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	X			

Supply cabinet left open, see Photo 2.
However this cabinet is anchored and judged not to cause any interaction with nearby equipment.

	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?	X		

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: _____ Date: 7/25/2012
Eddie M. Guerra

_____ Date: 7/25/2012
Brian A. Lucarelli

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 323 Floor El. 585 Bldg. AUXB

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

Photo 1
General View of Room 323

Photo 2
Supply Cabinet Left Open

Status (Y) N U

Area Walk-By Checklist (AWC)

Room 325 Floor El. 585 Bldg. AUXB

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			
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)?	X			

Fire extinguisher is mounted on the wall and is not laterally supported. It is judged that since the vertical acceleration at this location is less than 1g, it is unlikely for the extinguisher to fall or cause significant interaction with nearby equipment.
Flourescent lights ovserved above sensitive equipment.
Flourescent lights jusdged as OK based on testing of lights performed for IPEEE.

Related equipment on SWEL for this area:

1) C3645

2) C1

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 325 Floor El. 585 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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	X			

	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?	X		

Comments (Additional pages may be added as necessary)

Fire Sources: *Screens per FAQ 07-0031; 30 kVA*
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: _____ Date: 7/25/2012
Eddie M. Guerra

_____ 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

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 328 Floor El. 585 Bldg. AUXB

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			

Need to verify anchorage of E 22-1 (welded?)
Anchorage confirmed to be consistent with design documentation.

	Y	N	U	N/A
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			

	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			

	Y	N	U	N/A
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)?	X			

Fire extinguisher is mounted on the wall and is not laterally supported. It is judged that since the vertical acceleration at this location is less than 1g, it is unlikely for the extinguisher to fall or cause significant interaction with nearby equipment.
Masonry wall adjacent to E22-1, see Photo 1.
Walls identified as 3307, 3347, 3397, and 3407. All walls have been seismically analyzed. per NRC IE Bulletin 80-11 (Ref. VBW17-B001-088, Rev 6, VBW18-B001-090, Rev 3 VBW19-B001-094, Rev 5 and VBW19-B001-095, Rev 10).

Related equipment on SWEL for this area:

1) E22-1

2) E22-2

3) P43-2

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 328 Floor El. 585 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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)? *Scaffolding and stepladders in area appear to be properly restrained*	X			

	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?	X		

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 CCW HX E22-1, E22-2, E23-3, Chem pot feeder T13, Piping: Fire Protection, Component Cooling, Demin water, service water.*

Evaluated by: _____ Date: 7/25/2012
Eddie M. Guerra

_____ Date: 7/25/2012
Brian A. Lucarelli

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 328 Floor El. 585 Bldg. AUXB

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

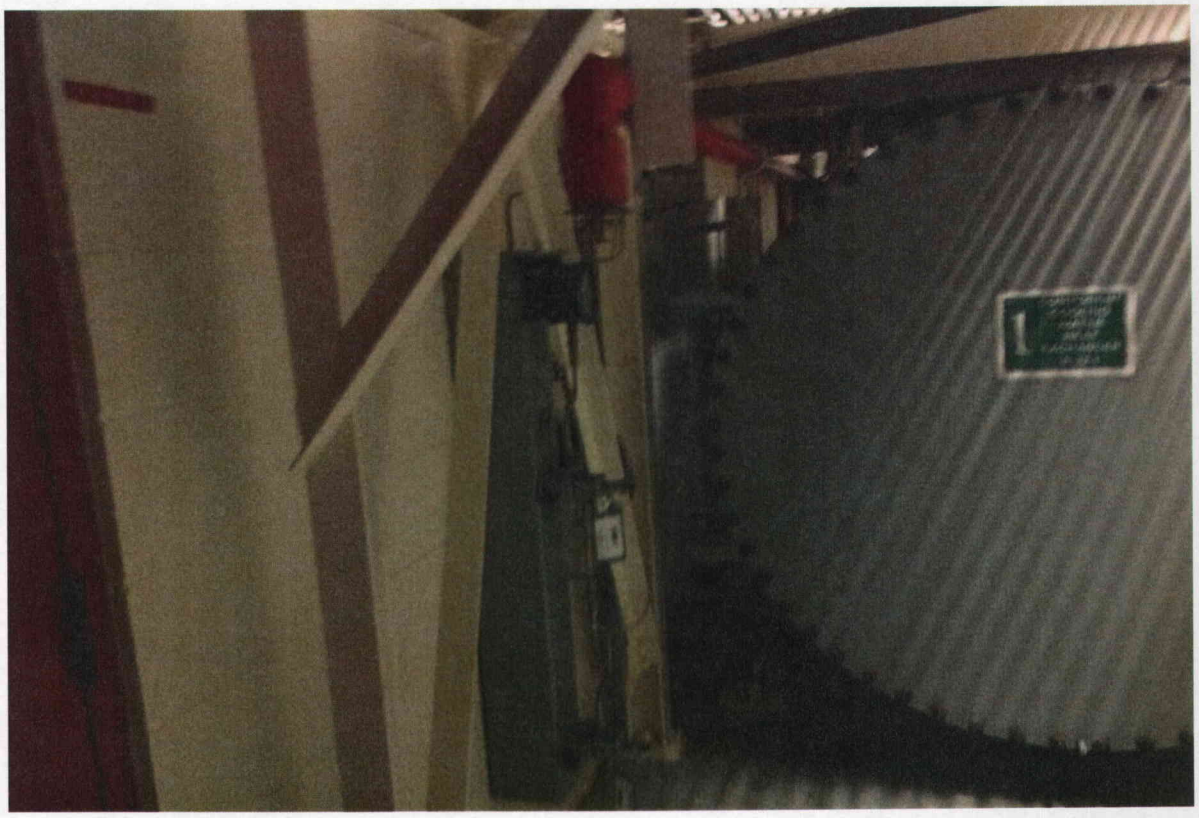


Photo 1
General View of Room 328
Masonry Wall Adjacent to Heat Exchange E22-1

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 427 Floor El. 603 Bldg. AUXB

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			
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)?	X			

Fire extinguisher is mounted on the wall and is not laterally supported. It is judged that since the vertical acceleration at this location is less than 1g, it is unlikely for the extinguisher to fall or cause significant interaction with nearby equipment.

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 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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	X			

Ladder is stored adjacent to MCC and is tied loosely, see Photo 2.
Recommended to be tighten but judged not a significant adverse condition.

	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?	X		

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 Feed to DP4502, 480V Transformer for MCC YF2

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

Evaluated by: _____ Date: 7/25/2012
Eddie M. Guerra

_____ Date: 7/25/2012
Brian A. Lucarelli

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 427 Floor El. 603 Bldg. AUXB

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

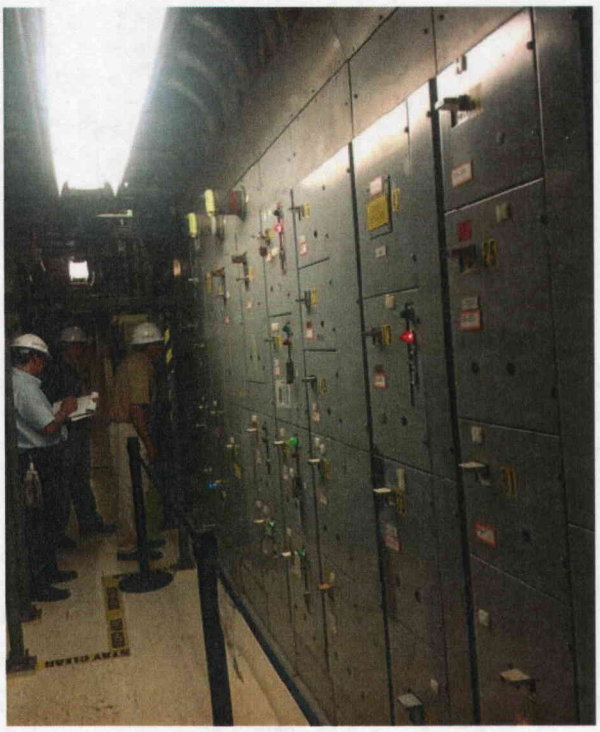


Photo 1
General View of Room 427

Photo 2
Ladder Loosely Tied Adjacent to MCC F11A

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 428 Floor El. 603 Bldg. AUXB

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			
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)?	X			

Fire extinguisher is mounted on the wall and is not laterally supported. It is judged that since the vertical acceleration at this location is less than 1g, it is unlikely for the extinguisher to fall or cause significant interaction with nearby equipment.
Masonry walls adjacent to components, see Photo 2.
Block walls identified as walls 4016, 4026, 4036, 4046, 4786, 4796, 4886, 4896, and 4906.
All walls have been seismically analyzed per NRC IE Bulletin 80-11 (Ref. VBW20-B001-100, Rev 14, VBW21-B001-102, Rev 13, VBW25-B001-125, Rev 9, VBW25-B001-126, Rev 6, VBW27-B001-135, Rev 19, VBW27-B001-136, Rev 3 and VBW28-B001-137, Rev 3.

Related equipment on SWEL for this area:

1) C4606	9) DBC2P	17) DC1
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	

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 428 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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	X			

Electrical cart and tools unrestrained in room. See Photo 3. These equipment were found to be temporary as the equipment were being serviced.

	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?	X		

Door to cabinet DCB-2P observed open. See Photo 4. Judged okay as the equipment was being serviced.

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: _____ Date: 7/25/2012
Eddie M. Guerra

_____ Date: 7/25/2012
Brian A. Lucarelli

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

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 428 Floor El. 603 Bldg. AUXB

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

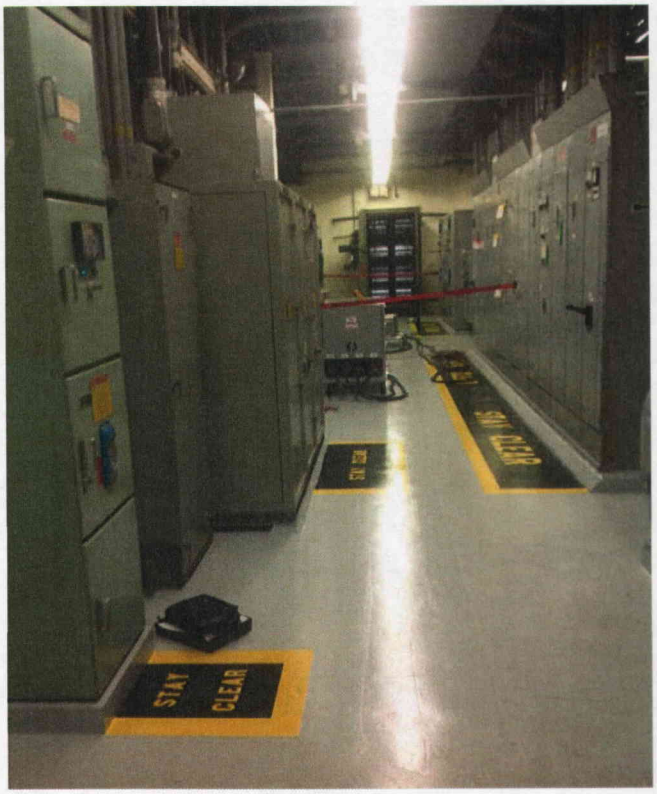


Photo 1
General View of Room 428

Photo 2
Masonry Wall Adjacent to Components

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

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 428A Floor El. 603 Bldg. AUXB

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			
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)?	X			

Masonry wall adjacent to battery rack.
Walls identified as 4016 and 4026, both seismically analyzed per NRC IE Bulletin 80-11 (Ref. VBW20-B001-100, Rev 14).

Related equipment on SWEL for this area:

1) 2P

2) 2N

3) C78-2

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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	X			

Wooden scaffolding was found near battery rack which could represent a potential adverse condition. Control process confirmed scaffold is temporary and complies with work period.

	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?	X		

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: _____ Date: 7/25/2012

Eddie M. Guerra

_____ Date: 7/25/2012

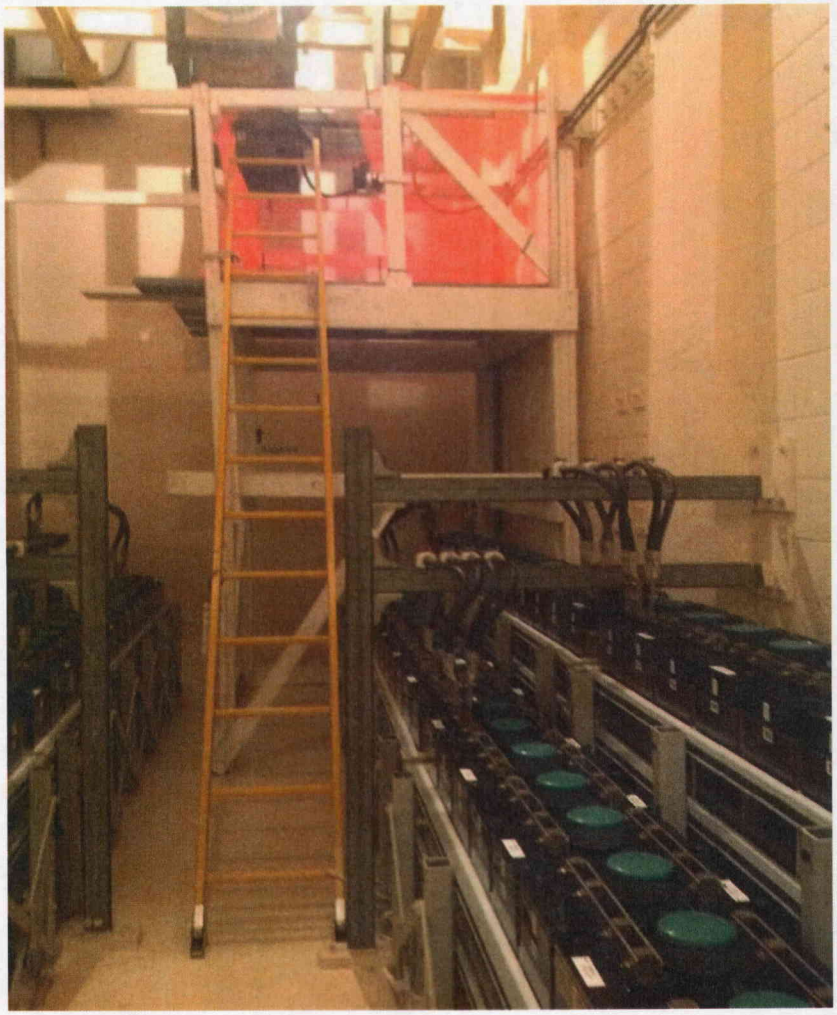
Brian A. Lucarelli

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 428A Floor El. 603 Bldg. AUXB

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



General View of Room 428A

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 428B Floor El. 603 Bldg. AUXB

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			
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)?	X			

Walls in the area identified as 4016 and 4026, both seismically analyzed per NRC IE Bulletin 80-11 (Ref. VBW20-B001-100, Rev 14).

Related equipment on SWEL for this area:

1) D2N

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 428B 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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	X			

	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?	X		

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: _____ Date: 7/25/2012
Eddie M. Guerra

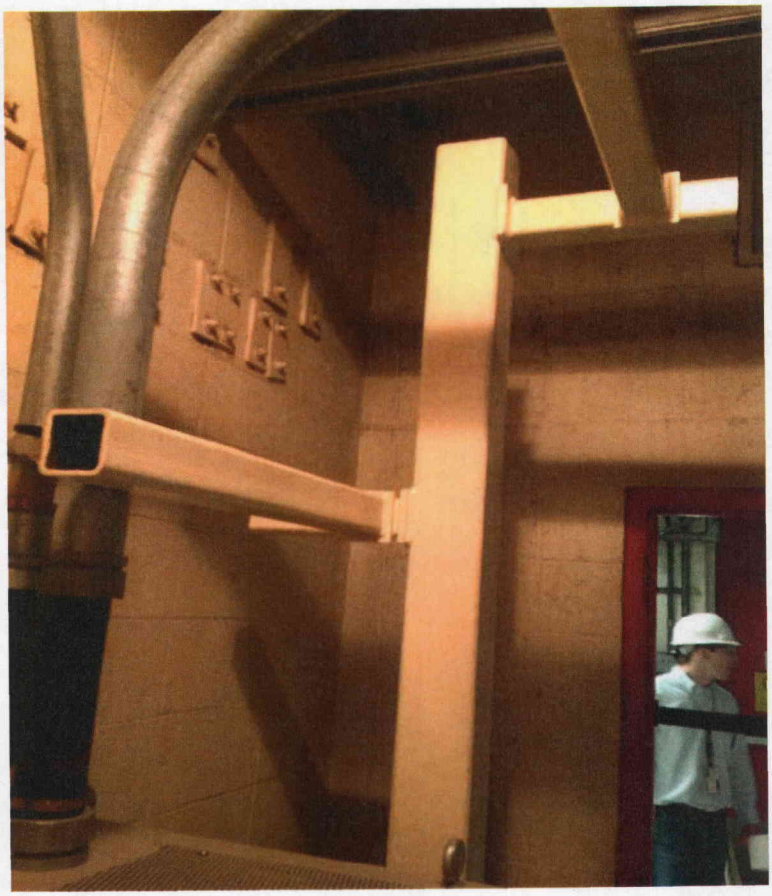
_____ Date: 7/25/2012
Brian A. Lucarelli

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 428B Floor El. 603 Bldg. AUXB

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



General View of Room 428B

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 429 Floor El. 603 Bldg. AUXB

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			
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)?	X			

Related equipment on SWEL for 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. 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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	X			

	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?	X		

Comments (Additional pages may be added as necessary)

Fire Sources: *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: _____ Date: 7/25/2012
Eddie M. Guerra

_____ Date: 7/25/2012
Brian A. Lucarelli

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

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 429A Floor El. 603 Bldg. AUXB

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			
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)?	X			

Related equipment on SWEL for this area:

1) D1N

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 429A 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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	X			

	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?	X		

Comments (Additional pages may be added as necessary)
Similar configuration as for D2N (Drawing E-20-4-7).

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: _____ Date: 7/25/2012
Eddie M. Guerra

_____ Date: 7/25/2012
Brian A. Lucarelli

Status (Y) N U

Area Walk-By Checklist (AWC)

Room 501 Floor El. 623 Bldg. AUXB

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			

Grout damaged in nearby anchorage, see Photo 1.
Judged not a significant adverse condition since remaining anchors will provide adequate strength to support.

	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)?	X			

Related equipment on SWEL for this area:

1) LT-1402

2) PS3689D

3) T12

Status (Y) N U

Area Walk-By Checklist (AWC)

Room 501 Floor El. 623 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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	X			

	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?	X		

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 Component Cooling Surg Tank T12, Piping: Chilled water, component cooling, demin water, Main Steam, Station Heating, Fire Protection*

Evaluated by: _____ Date: 7/25/2012
Eddie M. Guerra

_____ Date: 7/25/2012
Brian A. Lucarelli

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

Status: Y (N) U

Area Walk-By Checklist (AWC)

Room 502 Floor El. 623 Bldg. AUXB

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			
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)?		X		

Unable to see due to ceiling panels

Crack observed in Masonry Wall, See Photo 2.
Condition Report issued: CR-2012-10973
Ceiling panels are anchored. Fire extinguishers are in cabinets
Masonry walls identified as 5017, 5147, 5157, 5167, 5177, 5187, 5197, 5207, 5227, 5237, and 5277.
All walls have been seismically analyzed per NRC IE Bulletin 80-11 (Ref. VBW29-B001-143, Rev 10, VBW29-B001-148, Rev 6, VBW29-B001-149, Rev 5, VBW29-B001-151, Rev 2, VBW29-B001-152, Rev 5, VBW30-B001-153, Rev 3, VBW30-B001-154, Rev 9, VBW30-B001-156, Rev 2, VBW30-B001-158, Rev 4.

Related equipment on SWEL for this area:

1) C5755

2) LSHHSP9B6

3) LI-1525A

4) C5792A LB2

5) L311

6) L511

Status: Y (N) U

Area Walk-By Checklist (AWC)

Room 502 Floor El. 623 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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	X			

Unrestrained trash can, light bulb storage container, and I&C cart. See Photos 3 and 4. Judged not to cause damaging interaction with nearby panels.

	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?	X		

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: _____ Date: 7/25/2012

Eddie M. Guerra

_____ Date: 7/25/2012

Brian A. Lucarelli

Status: Y (N) U

Area Walk-By Checklist (AWC)

Room 502 Floor El. 623 Bldg. AUXB

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

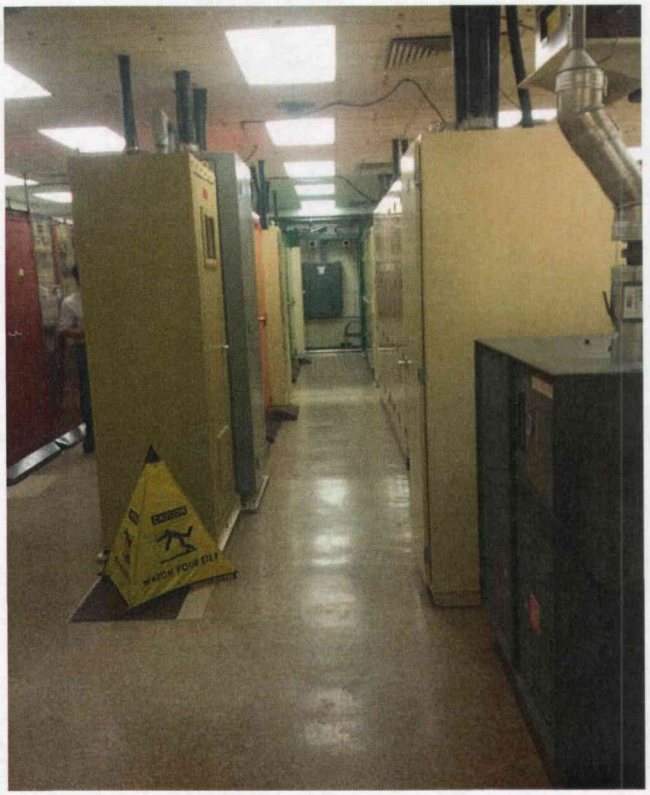


Photo 1
General View of Room 502

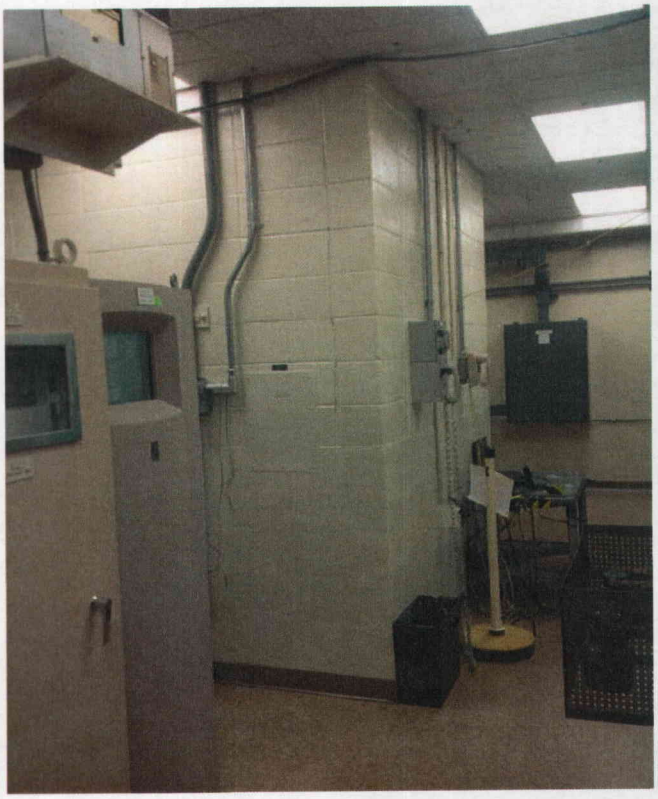


Photo 2
Crack in Masonry Wall

Status: Y (N) U

Area Walk-By Checklist (AWC)

Room 502 Floor El. 623 Bldg. AUXB

Supporting Photos (Continued):

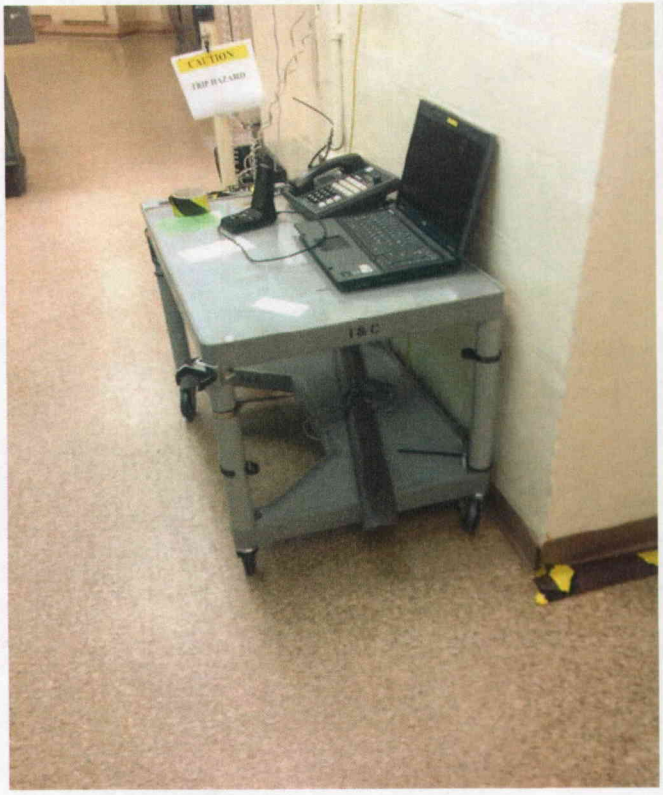


Photo 3
Unrestrained I&C Cart

Photo 4
Unrestrained Trash Can and Light Bulb Storage

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 505 Floor El. 623 Bldg. AUXB

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			
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)?	X			

Due to presence of ceiling , these items could not be verified.

Ceiling panels anchored, see Photo 1.
Masonry walls in area. Verify seismic adequacy of walls
Walls identified as 5107, 5127, 5287, 5297, 5347, 5357, 5367.
All walls have been seismically analyzed per NRC IE Bulletin 80-11 (Ref. VBW29-B001-145, Rev 13, VBW29-B001-146, Rev 8, VBW31-B001-159, Rev 9, VBW31-B001-160, Rev 3, VBW31-B001-161, Rev 4, VBW31-B001-162, Rev 1, VBW31-B001-163, Rev 2.

Related equipment on SWEL for this area:

1) C5706

2) C5702

3) C5712

4) HIS 5889A

5) HIS 7528

6) CS 5711

7) CS 5716

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 505 Floor El. 623 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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	X			

Small podium not anchored (see Photo 2), however it is judged that it will not pose any unacceptable adverse condition to nearby panels.

	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?	X		

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: _____ Date: 7/25/2012
Eddie M. Guerra

_____ Date: 7/25/2012
Brian A. Lucarelli

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 505 Floor El. 623 Bldg. AUXB

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

Photo 1
Ceiling Tiles and Lighting Fixtures Anchored

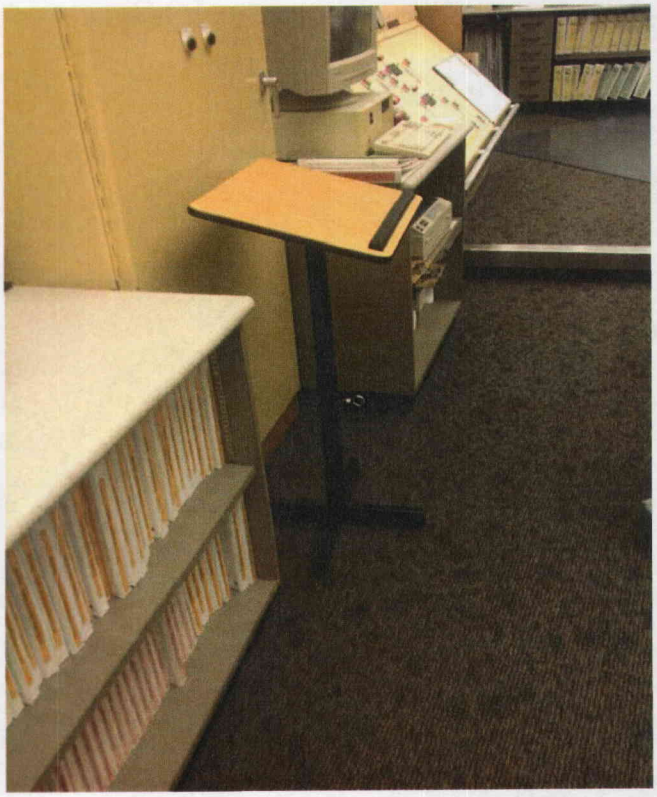


Photo 2
Small Podium Not Anchored

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 515 Floor El. 623 Bldg. AUXB

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			
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)?	X			

Related equipment on SWEL for this area:

1) HV5314

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 515 Floor El. 623 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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	X			

Dolly loosely tied to column adjacent to MCC, however it is unlikely that this dolly would have an interaction with the MCC nearby.

	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?	X		

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

Evaluated by: _____ Date: 7/25/2012
Eddie M. Guerra

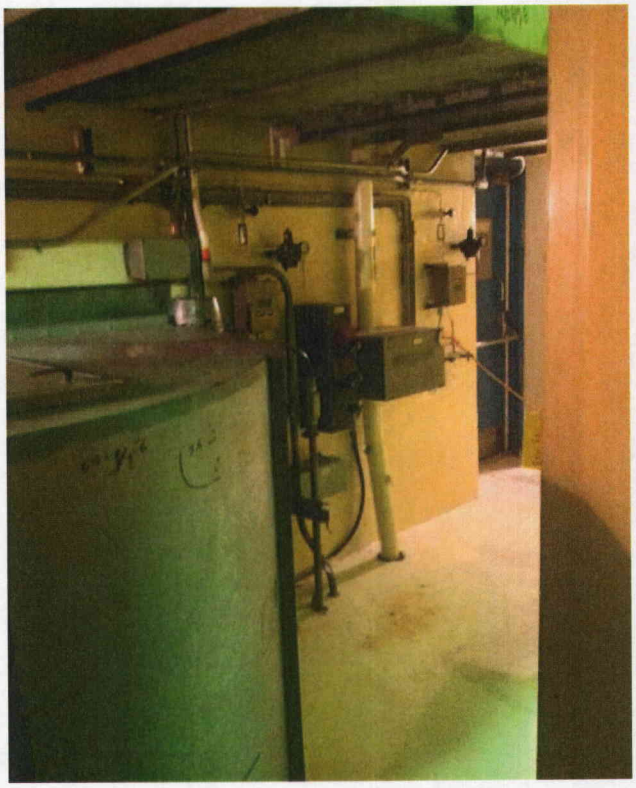
_____ Date: 7/25/2012
Brian A. Lucarelli

Status: (Y) N U

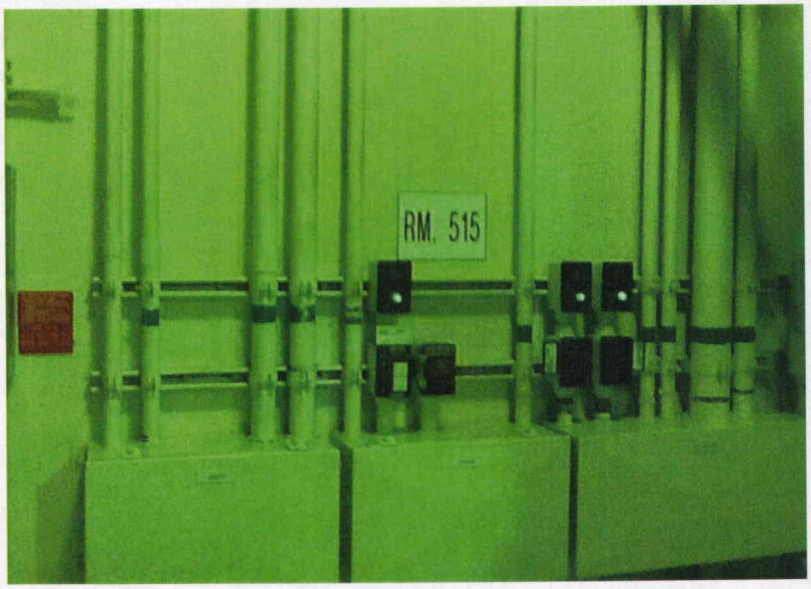
Area Walk-By Checklist (AWC)

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

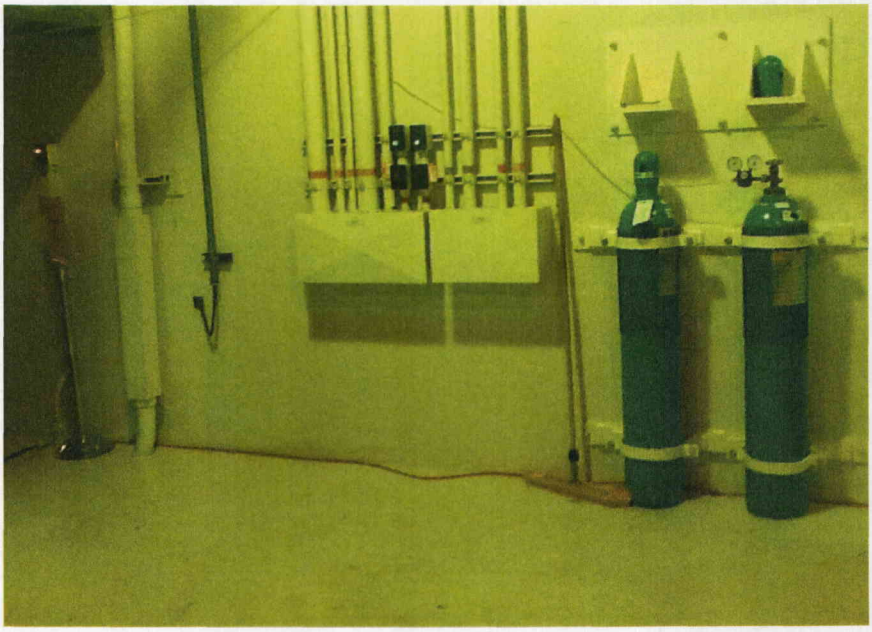
Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 515 Floor El. 623 Bldg. AUXB

Supporting Photos (continued):

Loosely Tied Dolly in Room 515



Cylinder tanks properly fixed to wall were found in the area

Status (Y) N U

Area Walk-By Checklist (AWC)

Room 600 Floor El. 643 Bldg. AUXB

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			
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)?	X			

Related equipment on SWEL for this area:

1) CV-5005

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 600 Floor El. 643 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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	X			

	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?	X		

Comments (Additional pages may be added as necessary)

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: _____ Date: 7/25/2012
Eddie M. Guerra

_____ Date: 7/25/2012
Brian A. Lucarelli

Status (Y) N U

Area Walk-By Checklist (AWC)

Room 601 Floor El. 643 Bldg. AUXB

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			
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)?	X			

Related equipment on SWEL for this area:

1) IA608

2) PY-101A

3) MS101

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 601 Floor El. 643 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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	X			

Unrestrained temporary storage containers observed in area, see Photo 2

	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?	X		

Comments (Additional pages may be added as necessary)

Fire Sources: *NO*
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: _____ Date: 7/25/2012
Eddie M. Guerra

_____ Date: 7/25/2012
Brian A. Lucarelli

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 601 Floor El. 643 Bldg. AUXB

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

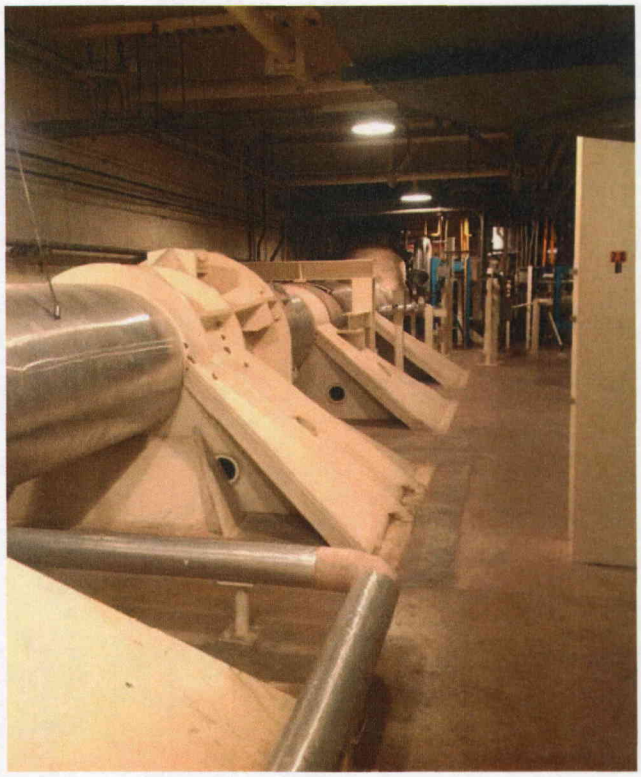


Photo 1
General View of Room 601

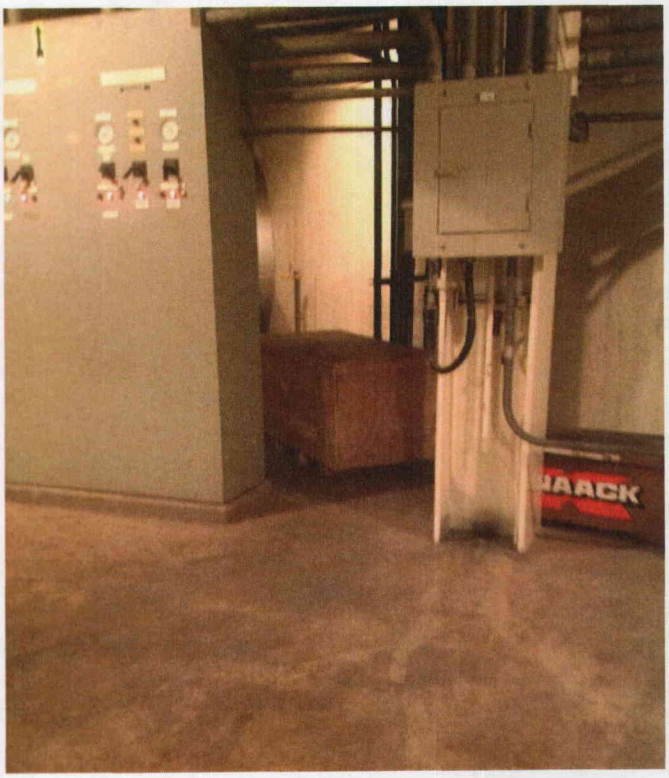


Photo 2
Unrestrained Storage Containers

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 602 Floor El. 643 Bldg. AUXB

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			
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)?	X			

Related equipment on SWEL for this area:

1) SP17A7

2) ICS11A

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 602 Floor El. 643 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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	X			

Unrestrained temporary storage container in the area, see Photo 2.

	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?	X		

Comments (Additional pages may be added as necessary)

Fire Sources: *480V Transformer*

No concerns identified regarding fire sources. ~~The potential ignition sources in the area are 480V Transformer~~

Flooding Sources: *Piping: Fire Protection, Main Steam, Station Heating*

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

Evaluated by: _____ Date: 7/25/2012
Eddie M. Guerra

_____ Date: 7/25/2012
Brian A. Lucarelli

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 602 Floor El. 643 Bldg. AUXB

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

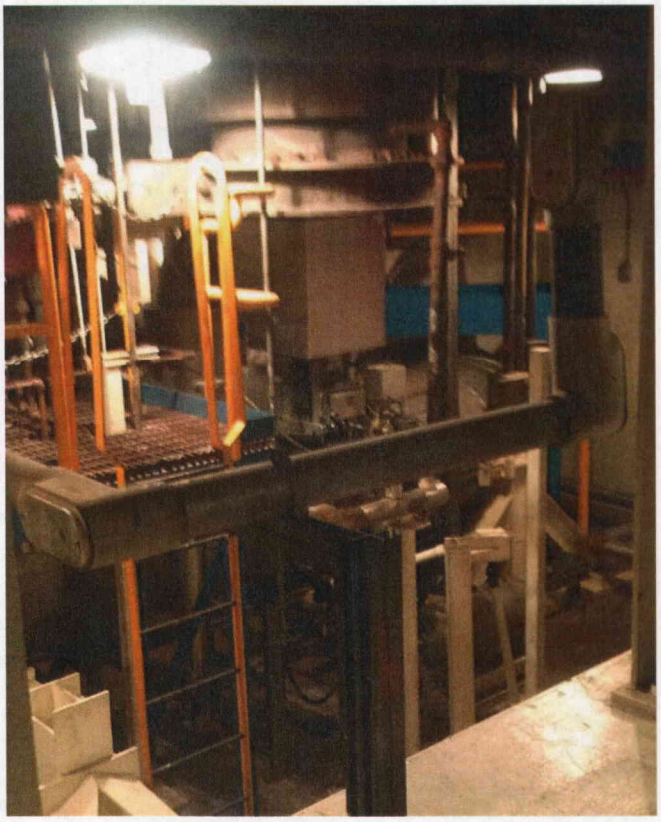


Photo 1
General View of Room 602

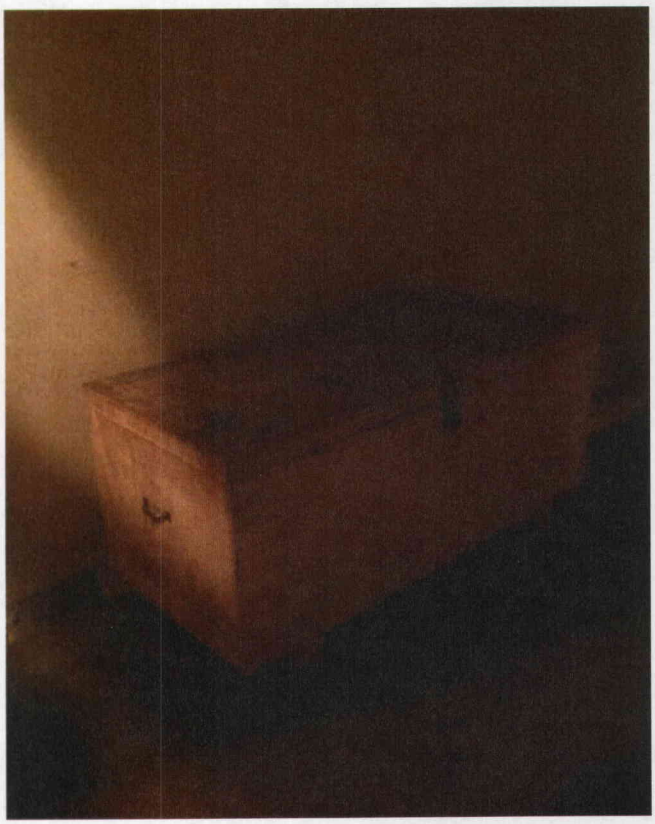


Photo 2
Unrestrained Storage Container

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 603 Floor El. 638 Bldg. AUXB

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			
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)?	X			

Fire extinguisher is mounted on the wall and is not laterally supported.
It is judged that it is unlikely for the extinguisher to fall or cause significant interaction with nearby equipment.
Masonry walls in area, see Photo 1.
Walls identified as 6017, 6027 6037, 6087, 6097, 6107, and 6047
Wall 6027 is exempt. All other walls have been seismically analyzed per NRC IE Bulletin 80-11 (Ref. VBW31-B001-164, Rev 3,SK-C-997, Rev 0, VBW31-B001-165, Rev 9, VBW32-B001-166, Rev 5, VBW32-B001-167, Rev 8, VBW32-B001-168, Rev 2 , VBW32-B001-177, Rev 0

Related equipment on SWEL for this area:

1) TS-5261

2) C21-1

3) SW-5896

4) SW3927

5) SW3928

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 603 Floor El. 638 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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	X			

I&C Cart not restrained, see Photo 2.
It is judged that the I&C cart and the ladder (Photo 3) would not equipment.
cause an unacceptable interaction with nearby.

	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?	X		

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 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: 7/25/2012
Brian A. Lucarelli

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 603 Floor El. 638 Bldg. AUXB

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

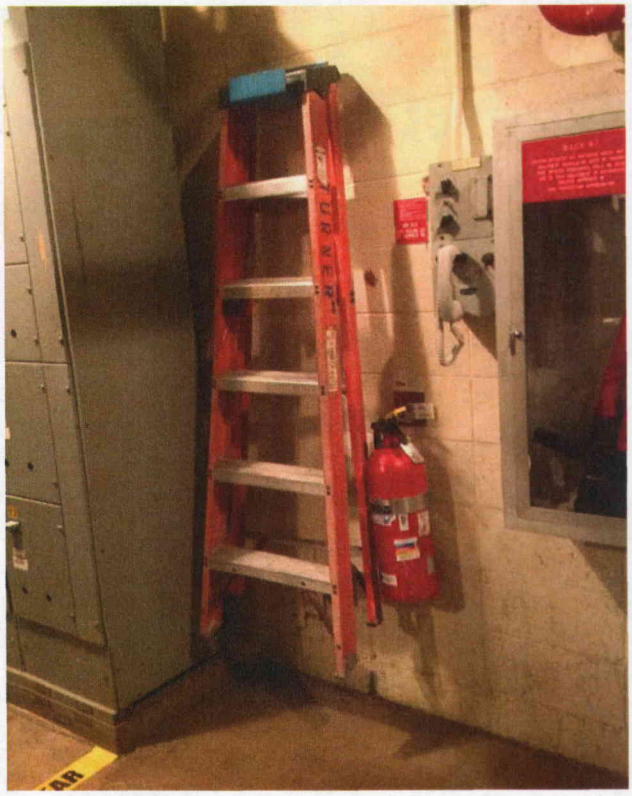


Photo 1
Fire Extinguisher not Restrained and Masonry Wall

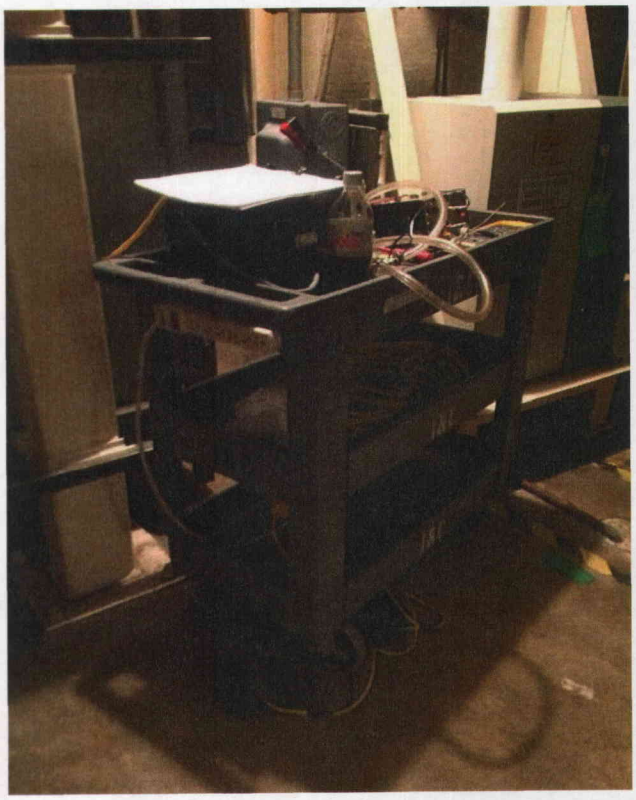


Photo 2
Cart Not Restrained

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 251 Floor El. 565 Bldg. INTK

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			

Anchor threads shown with substantial length past nut, see Photo 1.
Judged acceptable as the support loads are very insignificant.

	Y	N	U	N/A
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			

	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			

	Y	N	U	N/A
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)?	X			

Hanging light touching component, see Photo 2.
Judged not a significant concern due to weight of hanging light

Related equipment on SWEL for this area:

1) SW82

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 251 Floor El. 565 Bldg. INTK

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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	X			

	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?	X		

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: Domestic Water, Demin Water, Service Water, Clean Water*

Evaluated by: _____ Date: 7/25/2012
Eddie M. Guerra

_____ Date: 7/25/2012
Brian A. Lucarelli

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 251 Floor El. 565 Bldg. INTK

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

Photo 1
Anchor Threading
Substantially Past Nut

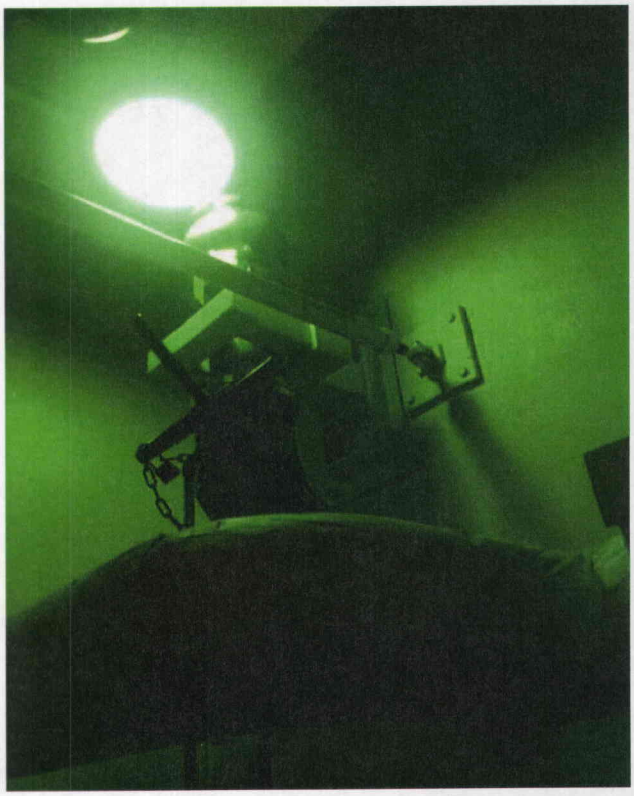


Photo 2
Hanging Light
Touching Component

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 50 Floor El. 585 Bldg. INTK

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			

Minor corrosion on various components, see Photo 1.
Judged not to affect component opearbility or seismic capacity.

	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			

Rod hung pipe (Photo 2) attached to building structural beam with friction clamps. It is judged that this condition is acceptable due to short span of pipe.

	Y	N	U	N/A
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)?	X			

Fire extinguisher is mounted on the wall and is not laterally supported.
It is judged that it is unlikely for the extinguisher to fall or cause significant interaction with nearby equipment.

Related equipment on SWEL for this area:

1) P4-1

2) F1-2

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 50 Floor El. 585 Bldg. INTK

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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	X			

	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?	X		

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: _____ Date: 7/25/2012
Eddie M. Guerra

_____ Date: 7/25/2012
Brian A. Lucarelli

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 50 Floor El. 585 Bldg. INTK

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

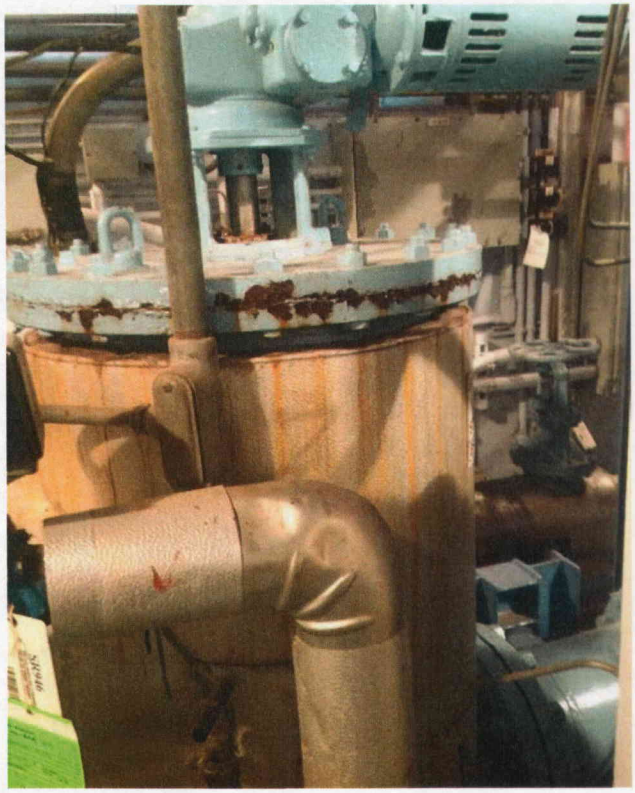


Photo 1
Minor Corrosion

Photo 2
Rod Hung Pipes

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 51 Floor El. 576 Bldg. INTK

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			
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)?	X			

Grout damaged, see Photo 1.
Judged not a significant adverse seismic condition.

Movement of MCC restrained, see Photo 2.
Top conduits will provide lateral restraint. Deemed not significant

Related equipment on SWEL for this area:

1) E12C

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 51 Floor El. 576 Bldg. INTK

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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)? *Scaffolding in area appears to be adequately restrained.*	X			

	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?	X		

Comments (Additional pages may be added as necessary)

Fire Sources: *Transformer For Lighting Panel L3012*
No concerns identified regarding fire sources. The potential ignition sources in the area are Transformer For Lighting Panel L3012

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: _____ Date: 7/25/2012
Eddie M. Guerra

_____ Date: 7/25/2012
Brian A. Lucarelli

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 51 Floor El. 576 Bldg. INTK

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

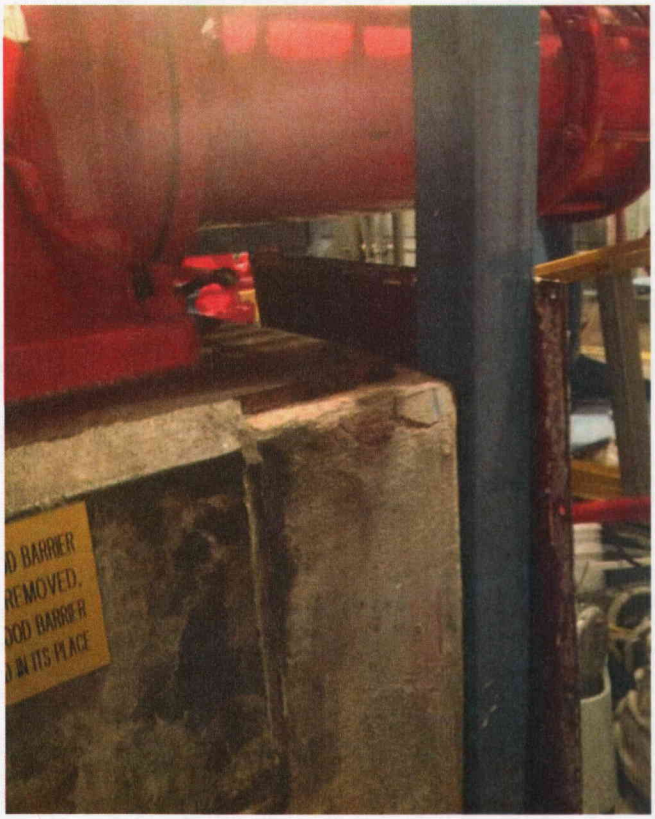


Photo 1
Damaged Grout

Photo 2
Movement of MCC Restrained by Adjacent Component

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 52 Floor El. 576 Bldg. INTK

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			

Minor bolt corrosion noted for Service Water Pumps P3-1, P3-2, P3-3. See Photos 1, 2 and 3. Judged not to affect component opearbility or seismic capacity.

	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)?	X			

Fire extinguisher is mounted on the wall and is not laterally supported. It is judged that it is unlikely for the extinguisher to fall or cause significant interaction with nearby equipment.
Fire extinguishers not restrained
Masonry wall 237I in area has been seismically analyzed per NRC IE Bulletin 80-11 (Ref. VBW10-B001-055, Rev 14)

Related equipment on SWEL for this area:

1) F12D

2) EF12C

3) P3-2

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 52 Floor El. 576 Bldg. INTK

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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	X			

	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?	X		

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: Fire Protection, Aux. Steam, Circulating Water, Circulating water tubing, Service water tubing, water treatment*

Evaluated by: _____ Date: 7/25/2012
Eddie M. Guerra

_____ Date: 7/25/2012
Brian A. Lucarelli

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 52 Floor El. 576 Bldg. INTK

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

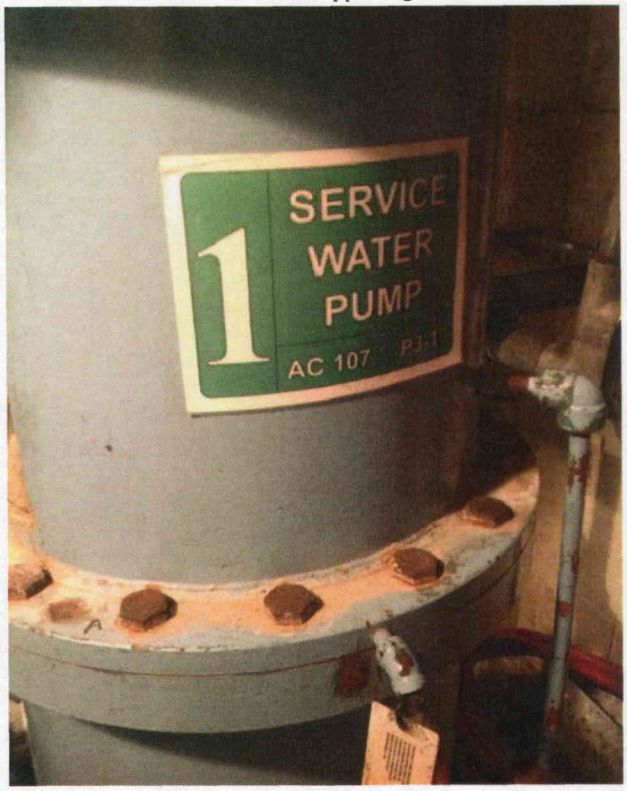


Photo 1
Minor Corrosion of Pump P3-1

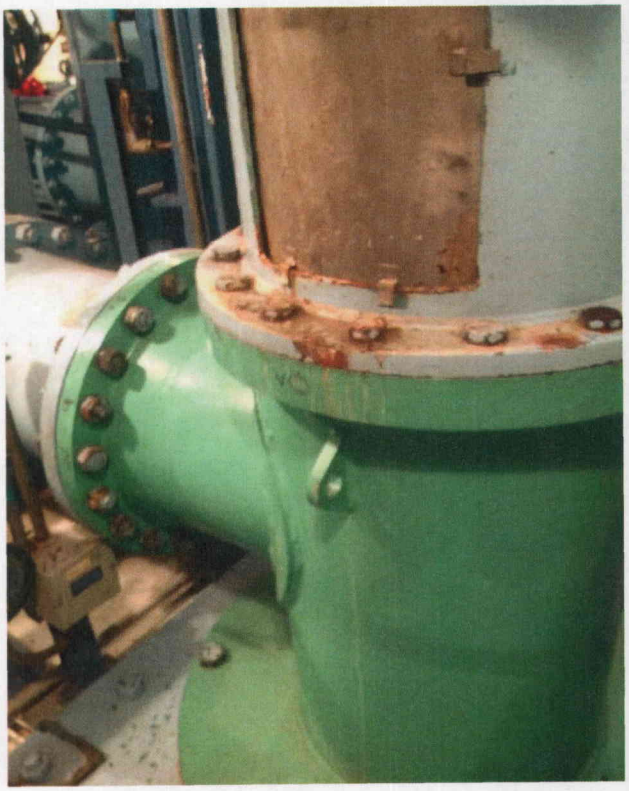


Photo 2
Minor Corrosion of Pump P3-3

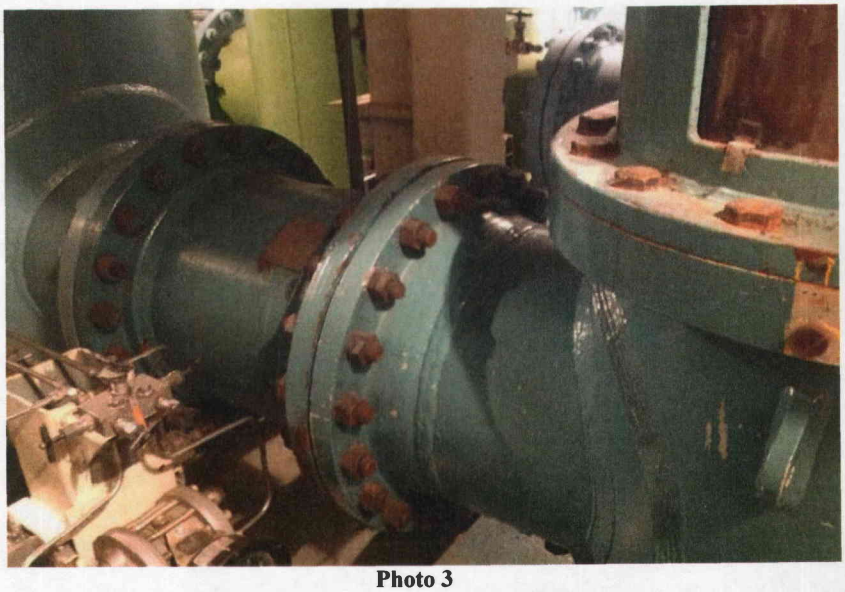


Photo 3
Minor Corrision of Pump P3-2

Status (Y) N U

Area Walk-By Checklist (AWC)

Room 53 Floor El. 566.25 Bldg. INTK

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			

Damaged grout, see Photo 1.
Judged not to have an adverse effect on support's seismic capacity.

	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)?	X			

Related equipment on SWEL for this area:

1) SW3963

2) SW1399

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 53 Floor El. 566.25 Bldg. INTK

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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	X			

Ladder in area is not restrained, but judged not an interaction concern. See Photo 2. Scaffolding in area appears to be adequate.

	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?	X		

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: Fire Protection, Aux. Steam, Circulating Water, Domestic Water, Diesel Fuel Oil, Demi water, Screenwash, Service water, Water treatment, Neutralizing Tank discharge*

Evaluated by: _____ Date: 7/25/2012
Eddie M. Guerra

_____ Date: 7/25/2012
Brian A. Lucarelli

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room 53 Floor El. 566.25 Bldg. INTK

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

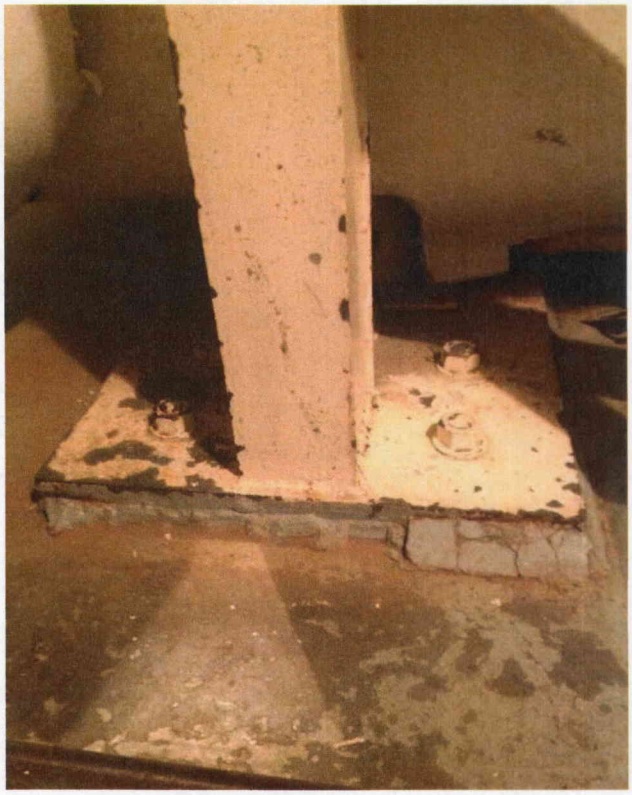


Photo 1
Damaged Grout

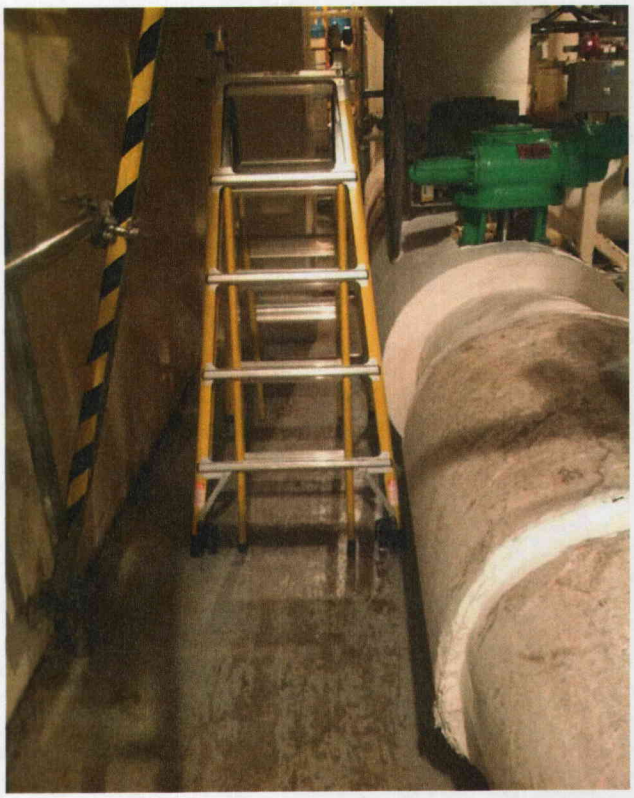


Photo 2
Ladder Not Restrained

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room YARD Floor El. 585 Bldg. YARD

Instructions for Completing Checklist

This checklist may be used to document the results of the Area Walk-By near one or more SWEL items. The space below each of the following questions may be used to record the results of judgments and findings. Additional space is provided at the end of this checklist for documenting other comments.

	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			
2. Does anchorage of equipment in the area appear to be free of significant degraded conditions?	X			
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)?	X			

Related equipment on SWEL for this area:

1) T153-1

Status: (Y) N U

Area Walk-By Checklist (AWC)

Room YARD Floor El. 585 Bldg. YARD

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?	X			
6. Does it appear that the area is free of potentially adverse seismic interactions that could cause a fire in the area?	X			
7. Does it appear that the area is free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding)?	X			

	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?	X		

Comments (Additional pages may be added as necessary)

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: _____ Date: 7/25/2012
Eddie M. Guerra

_____ Date: 7/25/2012
Brian A. Lucarelli

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
E11B	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
545	122	1157	Yes	VBW03-B001-009, Rev 5 (8/16/93)
		1167	Yes	VBW03-B001-010, Rev 8 (4/20/89)
		1187	Exempt	SK-C-992, Rev A (6/6/89)
565	225	2047	Yes	VBW06-B001-028, Rev 4 (7/29/88)
		2427	Yes	VBW10-B001-058, Rev 3 (1/2/06)
		2437	Yes	VBW10-B001-059, Rev 1 (6/29/81)
	227	2077	Yes	VBW06-B001-031, Rev 2 (12/1/86)
		2087	Yes	VBW06-B001-032, Rev 3 (2/4/91)
		2447	Yes	VBW10-B001-060, Rev 4 (3/14/86)
	236	2317	Yes	VBW09-B001-049, Rev 8 (2/6/06)
		2327	Yes	VBW09-B001-050, Rev 4 (2/4/06)
		2337	Yes	VBW09-B001-051, Rev 10 (1/15/06)
		2347	Yes	VBW09-B001-052, Rev 3 (2/8/91)
576	52	237I	Yes	VBW10-B001-055, Rev 14 (2/10/87)
585	312	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)
		3277	Yes	VBW17-B001-085, Rev 4 (4/25/88)
		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)
	318	308D	Yes	VBW12-B001-068, Rev 3 (5/27/81)
		309D	Yes	VBW13-B001-069, Rev 3 (5/28/81)
		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)
		307D	Yes	VBW12-B001-067, Rev 7 (4/20/88)
	321A	305D	Yes	VBW12-B001-065, Rev 5 (4/21/88)
		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)
603	428	4016	Yes	VBW20-B001-100, Rev 14 (12/6/88)
		4026	-	-
		4036	Yes	VBW21-B001-102, Rev 13 (3/31/99)
		4046	-	-
		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)
623	502	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)
		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)
		5227	-	-
		5237	Yes	VBW30-B001-156, Rev 2 (1/3/91)
		5277	Yes	VBW30-B001-158, Rev 4 (6/10/06)
	505	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)
		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)
643	603	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)
		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

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 II.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.

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 east-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.

Table II.E.1-1

LIMITING PARAMETERS FOR THE DESIGN EARTHQUAKES

1. HORIZONTAL VIBRATORY GROUND MOTIONS

a. Maximum Possible Earthquake (larger earthquake, SSE)

Maximum ground acceleration:	0.15 G
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 G
Maximum ground velocity:	2.67 inches/second
Maximum ground displacement:	1.78 inches
Total duration:	30 seconds

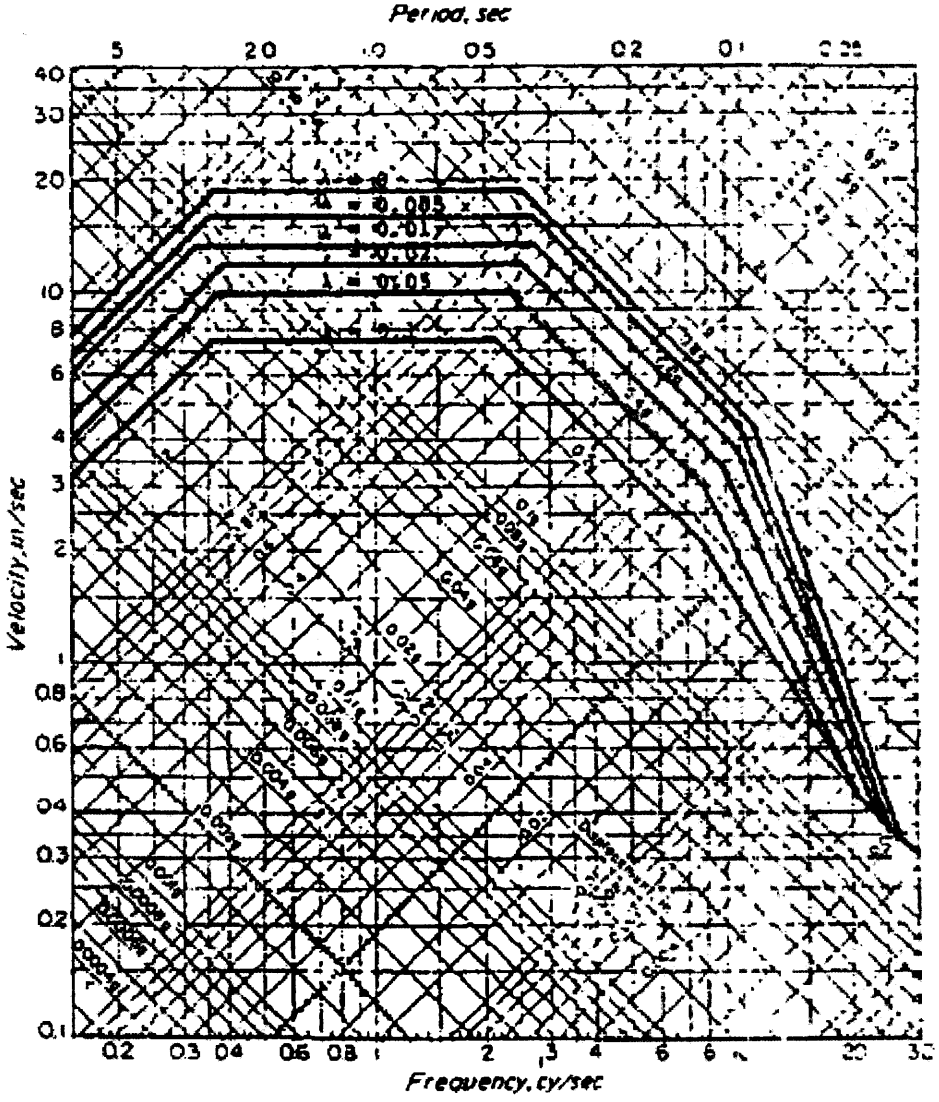
2. VERTICAL VIBRATORY GROUND MOTIONS

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

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

Figure II.E.1-1

RECOMMENDED RESPONSE SPECTRA FOR HORIZONTAL GROUND MOTIONS OF MAXIMUM POSSIBLE EARTHQUAK E (LARGER EARTHQUAKE) FOR SEVERAL DAMPING RATIOS

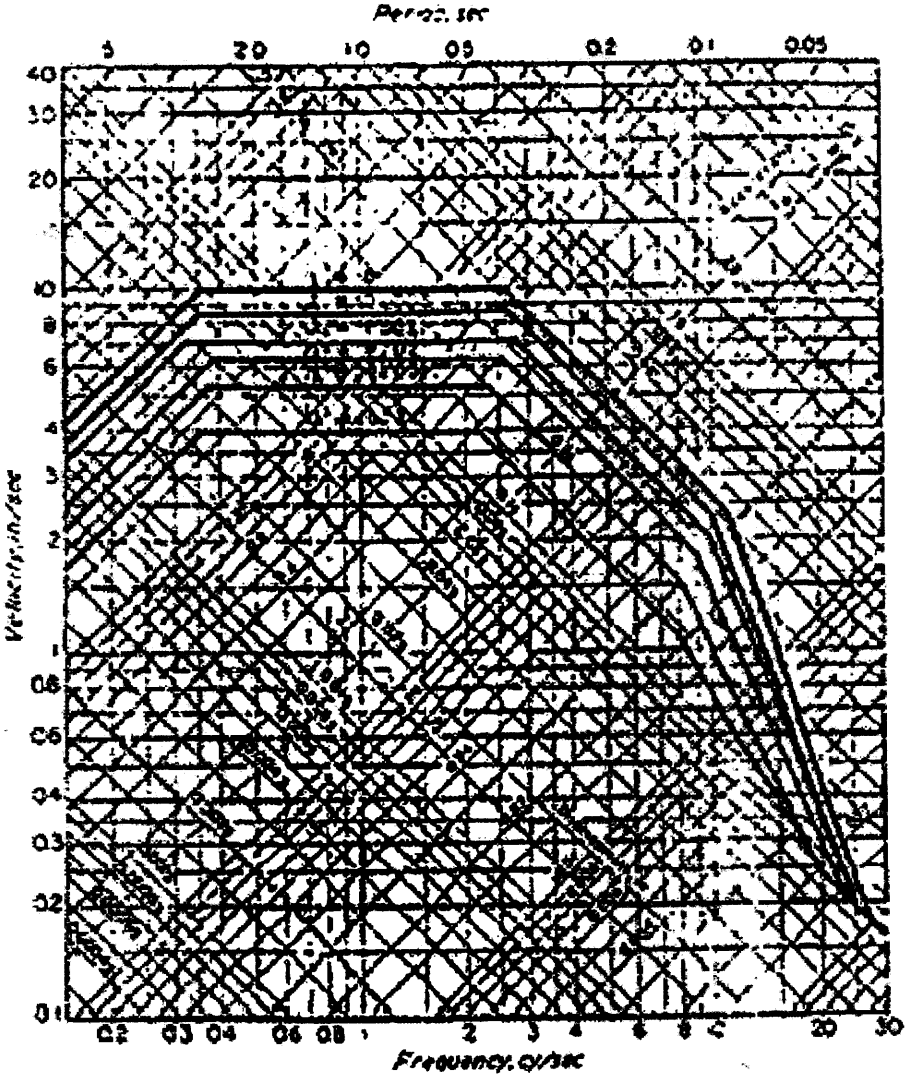


λ = Ratio of critical damping

Rev. 0

Figure II.E.1-2

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



λ = Ratio of critical damping

Rev. A

Figure II.E.1-3

DESIGN TIME-HISTORY SPECTRUM VERSUS DESIGN SPECTRUM COMPARISON

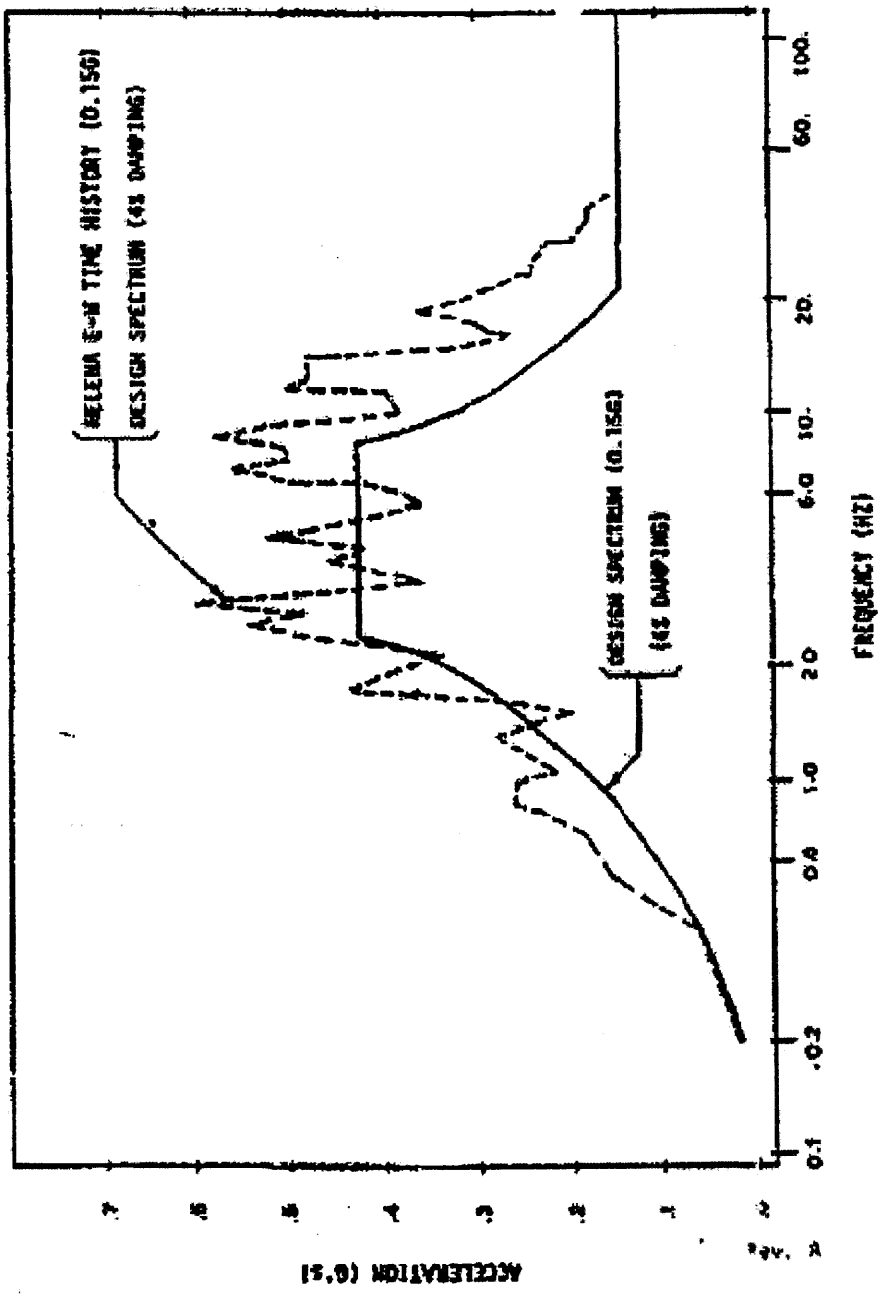
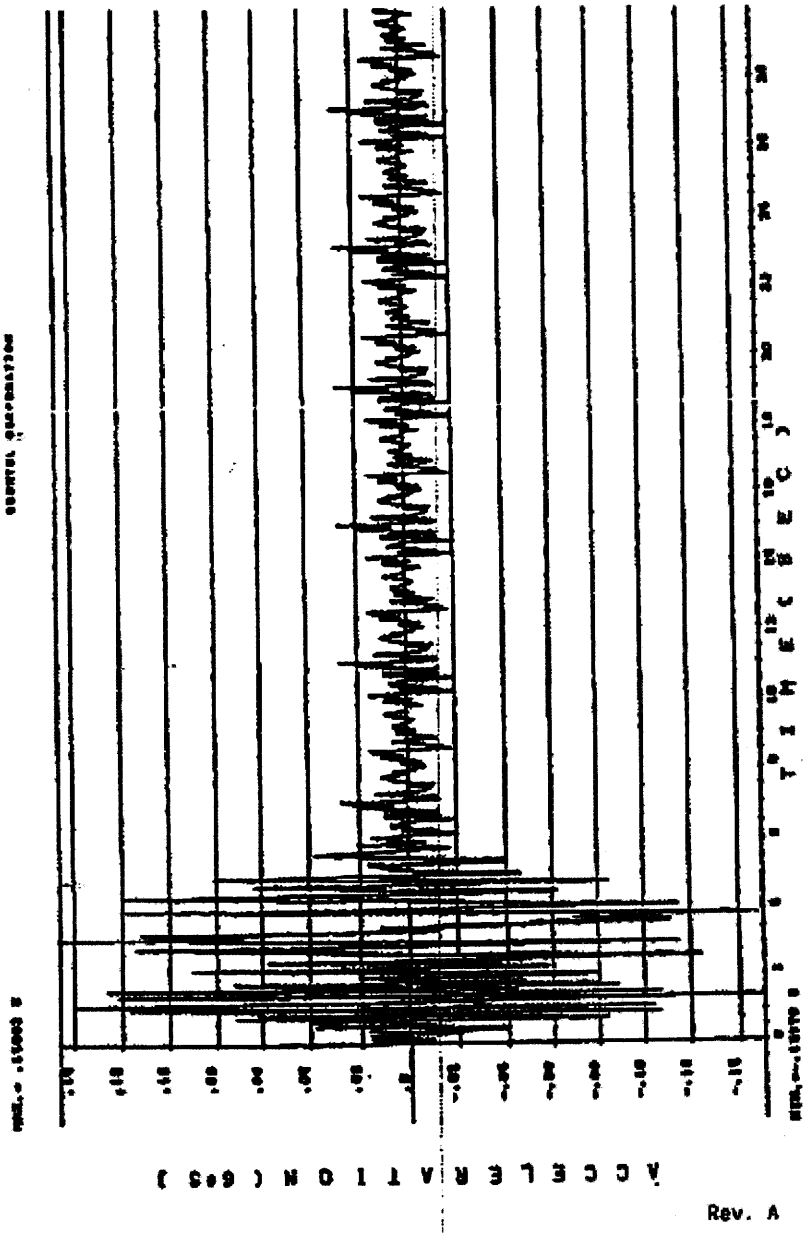


Figure II.E.1-4

MODIFIED HELENA TIME-HISTORY ACCELEROGRAM



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.

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 II.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.

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 ±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.

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

- Cooling tower (UBC)
- Cooling water pump house (UBC)
- Personnel processing facility (OBBC)
- 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.

Table II.E.2-1

PERCENT OF CRITICAL DAMPING FACTOR

Item, Equipment, or Structures	Maximum Probable Earthquake	Maximum Possible Earthquake
* Large diameter piping systems, pipe diameter greater than 12 in.	0.5	0.5
* Small diameter piping systems, diameter less than or equal to 12 in.	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.

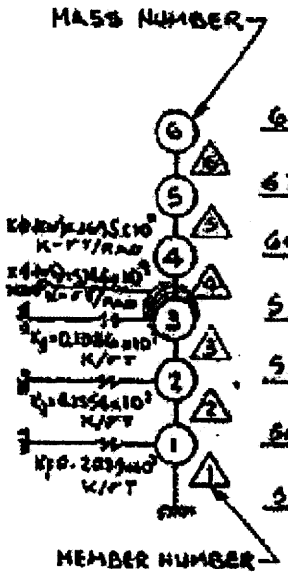
Table II.E.2-2

INDEX TO CALCULATIONS
FOR
SEISMIC ACCELERATION RESPONSE SPECTRA

Building/Location	Earth Quake	Ref/ Calc.	No. Sheets
Ground	OBE/ SSE	USAR Sect. 3.7	2
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

Figure II.E.2-1

MATHEMATICAL MODEL, AUXILIARY BUILDING AREA 6



	WEIGHT (KIPS)	JOINT NO.	HEIGHT (FT)	AREA (TOTAL) A_K (FT^2)	NORTH-SOUTH SHEAR AREA (FT^2)	NORTH-SOUTH AREA INERTIA (FT^4)	EAST-WEST SHEAR AREA (FT^2)	EAST-WEST AREA INERTIA (FT^4)
645'-0"	2601	7	85.0					
623'-0"	2479	6	65.0	522	334	401,900	186	372,600
603'-0"	4646	5	45.0	522	334	401,900	188	379,700
585'-0"	10,077	4	21.0	867	426	554,700	455	2,140,000
516'-0"	9095	3	18.0	226	226	127	226	127
447'-0"	9095	2	9.0	226	226	127	226	127
338'-0"		1		226	226	127	226	127

$f'_c = 4451$

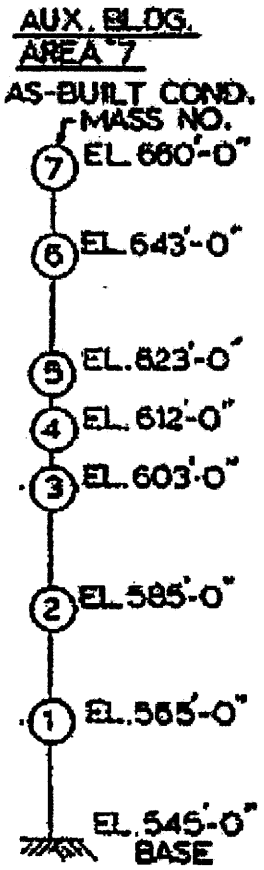
$E_c = 5.248 \times 10^5$ KSF

$G = 2.099 \times 10^5$ KSF

NOTE: The Shear Area and Moment of Inertia designated as $A_{n\text{-}s}$ and $I_{n\text{-}s}$ 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.

Figure II.E.2-2

MATHEMATICAL MODEL, AUXILIARY BUILDING AREA 7



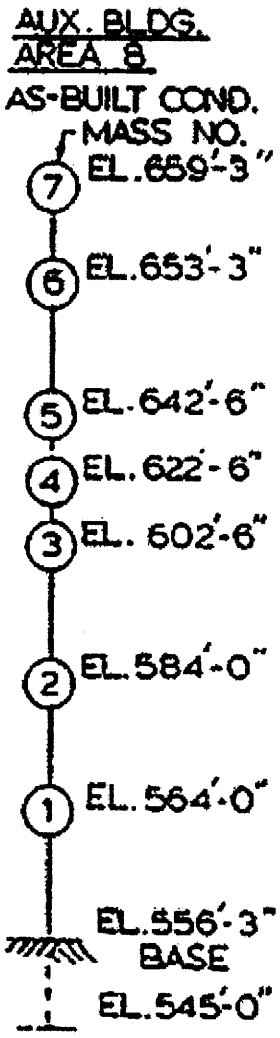
WEIGHT KIPS	JOINT NO.		HEIGHT H (FT.)	TOTAL AREA (FT.2)	NORTH-SOUTH SHEAR AREA (FT.2)	NORTH-SOUTH MOMENT OF INERTIA (FT.4)	EAST-WEST SHEAR AREA (FT.2)	EAST-WEST MOMENT OF INERTIA (FT.4)
4508	8		115					
6483	7	17'	98	1094	469	2.027×10^6	616	6.941×10^5
3820	6	20'	78	703	389	1.935×10^6	314	3.428×10^5
2566	5	11'	67	649	402	1.953×10^5	247	3.709×10^5
3748	4	9'	58	977	539	2.360×10^6	428	6.366×10^5
9155	3	18'	40	913	536	2.813×10^6	357	6.454×10^5
9055	2	20'	20	1804	1011.4	3.195×10^5	792	1.016×10^6
	1	20'	0	1776	883	2.358×10^6	858	8.538×10^5

$f'_c = 4$ ksi ; $w = 145$ PCF ; $E_c = 5.248 \times 10^5$ KSF ; $G = 2.099 \times 10^5$ KSF

NOTE: The Shear Area and Moment of Inertia designated as $A_{n\text{-}s}$ and $I_{n\text{-}s}$ 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.

Figure II.E.2-3

MATHEMATICAL MODEL, AUXILIARY BUILDING AREA 8



WEIGHT KIPS	JOINT NO.	HEIGHT H (FT.)	TOTAL AREA (FT.2)	NORTH-SOUTH SHEAR AREA (FT.2)	NORTH-SOUTH MOMENT OF INERTIA (FT.4)	EAST-WEST SHEAR AREA (FT.2)	EAST-WEST MOMENT OF INERTIA (FT.4)
2090	8	103.0					
4061	7	97	649	158	432072.	491	1337986.
4559	6	86.25	1268	411	1955193.	857	3196459.
5610	5	66.25	1331	464	1938222.	867	3285000.
7327	4	46.25	1453	551	2326802.	902	3447308.
13274	3	27.75	2684	1243	2984627.	1441	5791113.
18053	2	7.75	3579	1481	6730000.	2097	10296000.
	1	0	3157	1796	3700123.	1892	7012791.

6' 10.75' 20' 20' 18.5 20' 7.75

f'c=4 ksi ; W=145 PCF ; Ec=5.248 x 10^5 KSF ; G=2.099 x 10^5 KSF

NOTE: The Shear Area and Moment of Inertia designated as $A_{n\text{-}s}$ and $I_{n\text{-}s}$ 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.

Figure II.E.2-4

MATHEMATICAL MODEL, SHIELD BUILDING

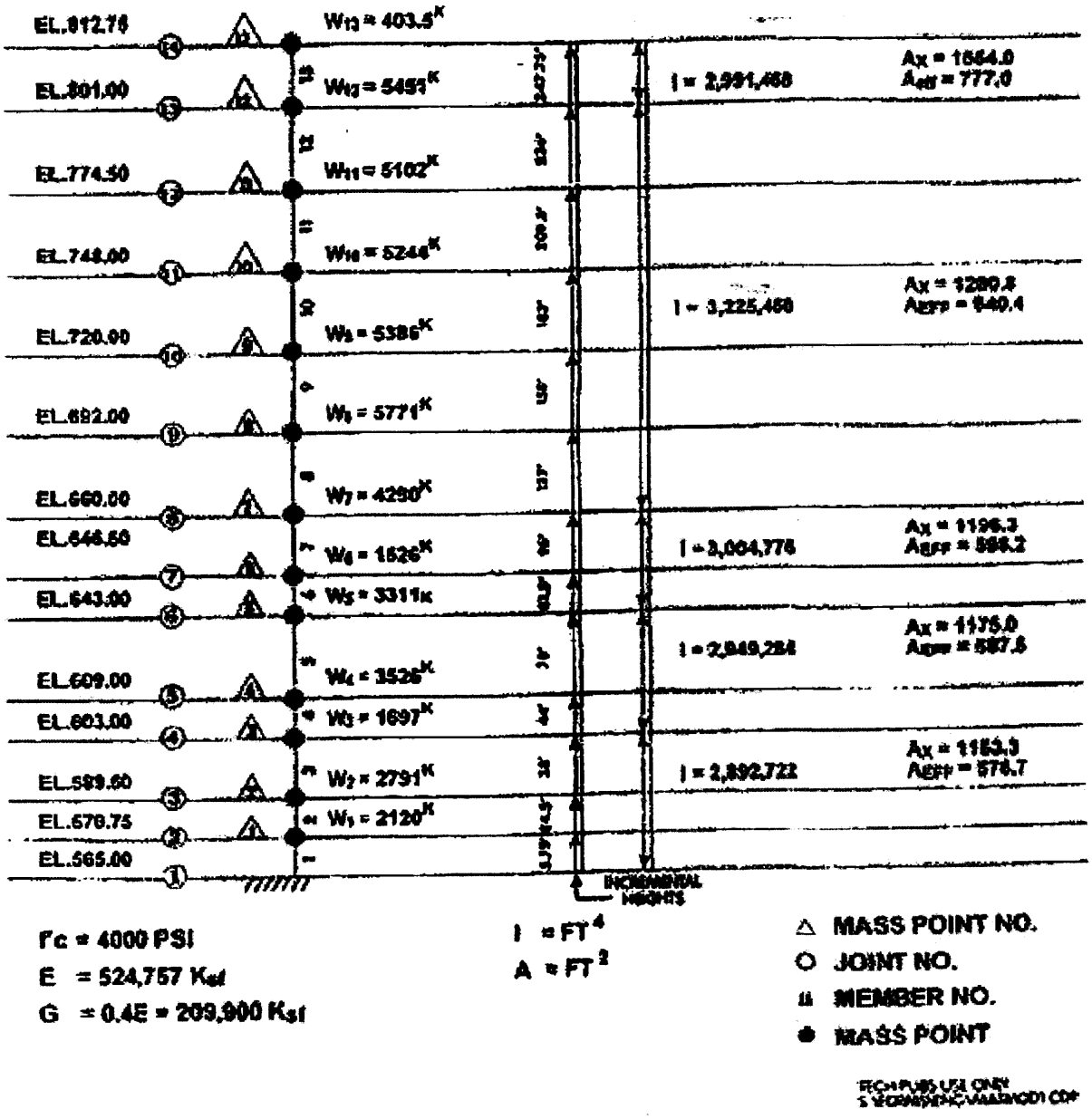


Figure II.E.2-5

MATHEMATICAL MODEL, CONTAINMENT VESSEL

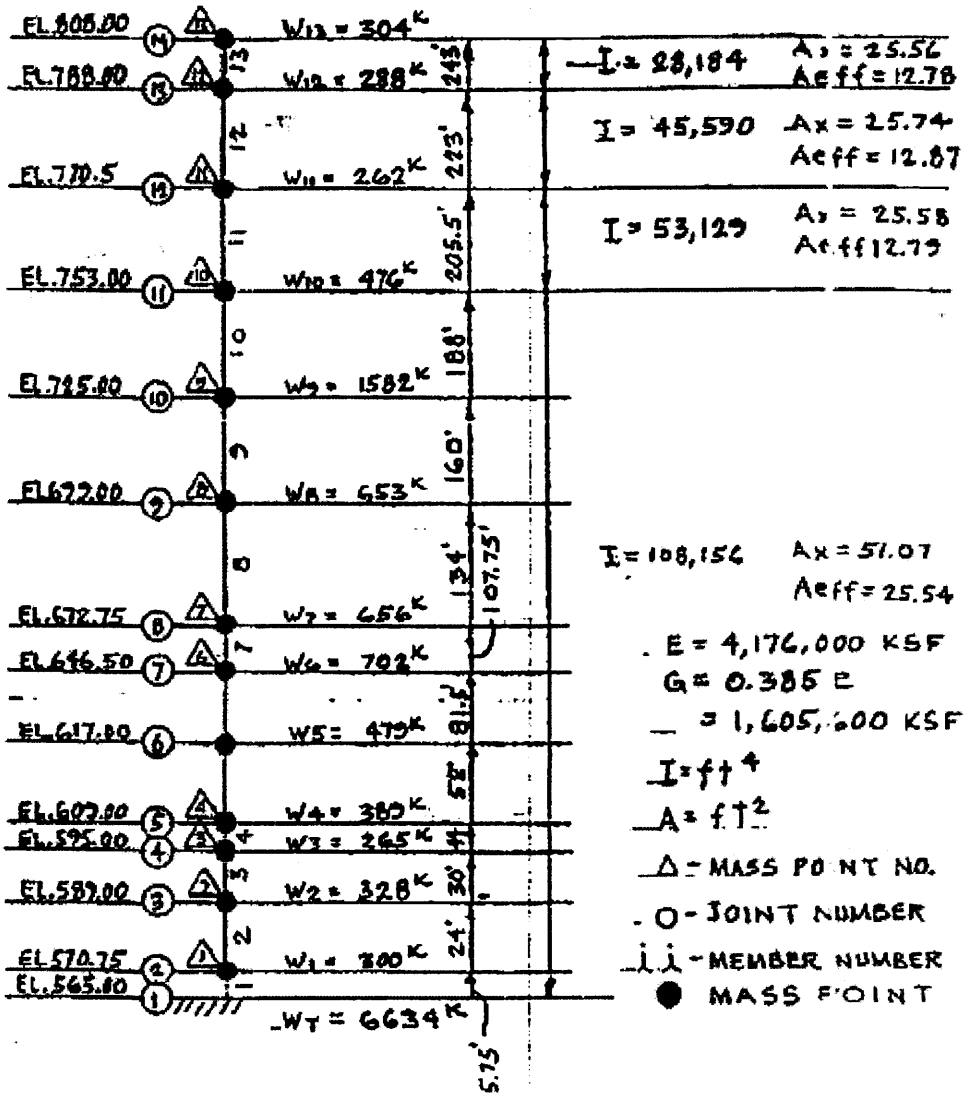
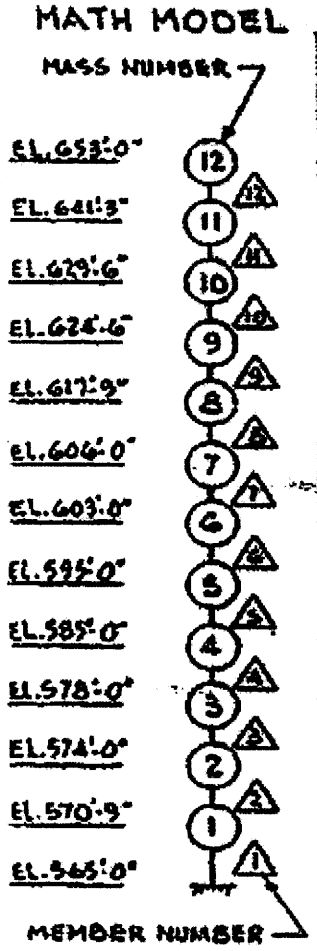


Figure II.E.2-6

MATHEMATICAL MODEL, CONTAINMENT INTERNAL STRUCTURES



WEIGHT (KIPS)	JOINT NO.	HEIGHT (FT)	AREA (TOTAL) A_C (FT^2)	NORTH-SOUTH SHEAR AREA (FT^2)	NORTH-SOUTH AREA INERTIA (FT^4)	EAST-WEST SHEAR AREA (FT^2)	EAST-WEST AREA INERTIA (FT^4)
2523	13	88					
			1371	909	711,000	476	251,100
2687	12	76.75					
			1371	909	711,000	476	251,100
3518	11	64.5					
			1311	909	711,000	476	251,100
1375	10	52.5					
			1287	909	545,600	501	207,500
1828	9	52.75					
			1287	909	545,600	501	207,500
2046	8	41					
			1287	909	545,600	501	207,500
5218	7	38					
			1831	1154	1,113,000	810	1,429,000
3511	6	30					
			1831	1154	1,113,000	810	1,429,000
5640	5	20					
			2255	1493	1,207,702	968	1,544,968
5346	4	13					
			8318	2680	1,375,921	2749	1,063,071
1841	3	9					
			2117	1275	1,336,104	1304	998,066
1614	2	5.75					
			2117	1275	1,336,704	1304	998,066
	1						

$f'_c = 5000$ PSI

$E = 57{,}000\sqrt{5000} = 4\times10^6$ PSI $\quad E = 576{,}000$ KSF

$G = \frac{E}{2(1+\mu)} = \frac{576{,}000}{2(1+0.25)}$ $\quad G = 230{,}400$ KSF

NOTE: The Shear Area and Moment of Inertia designated as $A_{n\text{-}s}$ and $I_{n\text{-}s}$ 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.

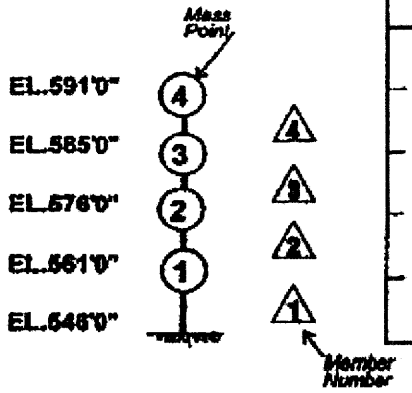
Figure II.E.2-7

MATHEMATICAL MODEL, INTAKE STRUCTURE

$E = W^{1.5} \times 33\sqrt{f'_c} = (145)^{1.5}(33)\sqrt{4000}$

MODULUS OF ELASTICITY: E = 624,757 KSF
SHEAR MODULUS: G = 209,900 KSF

$G = \frac{E}{2(1+\mu)} = \frac{524,757}{2(1+.25)}$

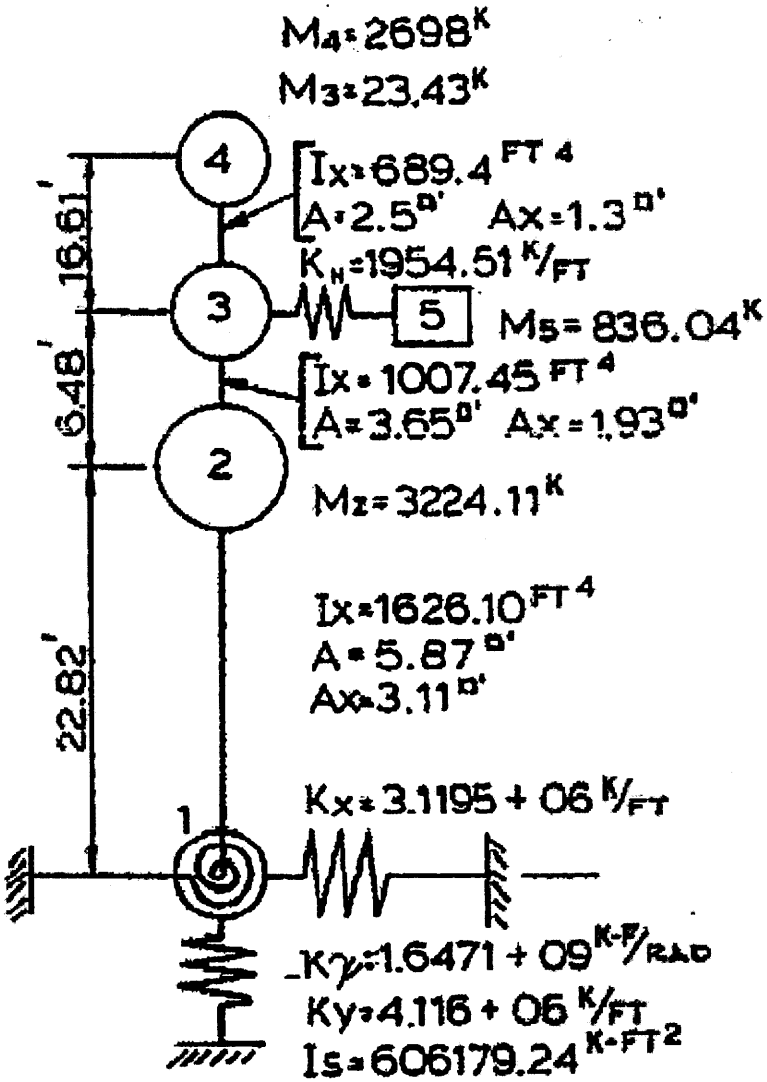


WEIGHT (KIPS)	JOINT NUMBER	HEIGHT (FT)	ARCA TOTAL $\left(\frac{AY}{Ft^2}\right)$	NORTH-SOUTH		EAST-WEST	
				SHEAR AREA (Ft^2)	AREA INERTIA (Ft^4)	SHEAR AREA (Ft^2)	AREA INERTIA (Ft^4)
880	5	45	464.5	323	182,540	141.5	222,160
1270	4	39	811.0	323	256,040	488.0	314,370
2430	3	30	950.0	410	213,000	540.0	359,680
1950	2	15	782.0	182	182,360	600.0	227,040
	1						

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.

Figure II.E.2-8

MATHEMATICAL MODEL, BORATED WATER STORAGE TANK



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.

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 earthquake 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.

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).

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 earthquake) 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

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.

Table II.E.3-1

SEISMIC QUALIFICATION SPECIFICATION ATTACHMENTS

Attachment Designation	Title
EA-1	Seismic Qualification Requirements for Class 1E Electrical 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 Valves
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

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.

11. "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

Table G-1: List of Equipment Enhanced Due to Vulnerabilities Identified During the A-46/IPEEE programs

Equipment ID	Bldg.	El.	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

Table G-1: List of Equipment Enhanced Due to Vulnerabilities Identified During the A-46/IPEEE programs

Equipment ID	Bldg.	El.	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

Table G-1: List of Equipment Enhanced Due to Vulnerabilities Identified During the A-46/IPEEE programs

Equipment ID	Bldg.	El.	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

Table G-1: List of Equipment Enhanced Due to Vulnerabilities Identified During the A-46/IPEEE programs

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

Table G-1: List of Equipment Enhanced Due to Vulnerabilities Identified During the A-46/IPEEE programs

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

Table G-1: List of Equipment Enhanced Due to Vulnerabilities Identified During the A-46/IPEEE programs

Equipment ID	Bldg.	El.	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	INTK	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

Table G-1: List of Equipment Enhanced Due to Vulnerabilities Identified During the A-46/IPEEE programs

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 a1lowables	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 a1lowables	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 a1lowables	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 a1lowables	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 a1lowables	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

Table G-1: List of Equipment Enhanced Due to Vulnerabilities Identified During the A-46/IPEEE programs

Equipment ID	Bldg.	El.	Outlier Description	Outlier Resolution	Reference Mod Package or Other Comments	Record Date from FileNet
T7-1	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 the A-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, C5763C, C5756D, PSH7528A, PSH7531A, PT2002, PT2003, HIS7528, HIS7524, HIS7530, HIS7531	S1 (PWR SUPPLIES)	C5755C&D, C5756C&D, C5762C&D, C5763C&D	7-502-623	95-0032-00
AC101	V/F	C3617	6-318-585	95-0028-00

Table G-3: List of Cable Trays and Conduit Enhanced due to Vulnerabilities Identified During the A-46/IPEEE Programs			
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

Table G-3: List of Cable Trays and Conduit Enhanced due to Vulnerabilities Identified During the A-46/IPEEE Programs			
Outlier No.	**Outlier Description**	**Outlier Resolution**	**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