ATTACHMENT H

NIAGARA MOHAWK NUCLEAR ENGINEERING

CALCULATION COVER SHEET

Page 1 (Next 2)
Total 17
Last B1

NINE MILE POINT NUCLEAR STATION Unit (1, 2 or 0=Both) : 1 Discipline : STRUCTURAL

Title	Calculation No.			
SCREENING EVALUATION WORK SHEETS FOR BATTERY BOARD #11	S0.0SEWSBB11			
	(Sub)system(s)	Building	Floor Elev.	Index No.
	NA	TB	261	S0.0

Originator(s)
CARMEN R. AGOSTA

Checker(s) / Approver(s)
MOHAMMED ALVI

Rev	Description	Design Change No.	By	Date	Chk	Date	App	Date
00	INITIAL ISSUE	NA	CA	7-1-97	M.A	7-7-97	M.A	7-7-97

Computer Output/Microfilm Filed Separately (Yes / No / NA): NA Safety Class (SR / NSR / Qxx) : SR

Superseded Document(s) : NONE

Document Cross Reference(s) - For additional references see page(s) : NA

Ref No	Document No.	Doc Type	Index	Sheet	Rev
1	NER-1S-012	NER	---	---	00
2	S0.0SQUGANCHOR	CALC	S0.0	---	00

General Reference(s) :
3. GENERIC IMPLIMENTATION PROCEDURE (GIP)
4. NMPC Letter to NRC, File Code NMP1L 1044, dated March 11, 1996

Remarks :
NONE

Confirmation Required (Yes / No) : No See Page(s) :	Final Issue Status (APP / FIO / VOI) : APP	File Location (Calc / Hold) : Calc	Operations Acceptance Required (Yes / No) : No

Evaluation Number(s) / Revision : NR Copy of Applicability Review Attached (Yes / N/R)?N/R	Component ID(s) / EPN(s) / Line Number(s) : NA
Key Words : NMP-1, STRUCTURAL, SQUG, SEWS, SEISMIC VERIFICATION	

FORMAT # NEP-DES-08-F01-00

9708070131 970731
PDR ADOCK 05000220
P PDR

Nine Mile Point Nuclear Station Unit: 1 Disposition: ---

Originator/Date	Checker/Date	Calculation No.	Revision
[illegible] 7-1-97	M.A 7-7-97	S0.0SEWSBB11	00

Ref.

PURPOSE: Document the Screening Evaluation Work Sheets (SEWS) for the AP/125V DC BATTERY BOARD #11, equipment number BB11.

This SEWS has been prepared as part of the commitment to use the SQUG (GIP) methodology to document the seismic adequacy of SSEL components.

CONCLUSION: The BB11 weld and cinch anchor analysis concluded the anchorage is adequate based on the analysis in Attachment A, the cinch anchor capacities given in Calculation S0.0SQUGANCHOR (Ref. 2) and the bolt tightness check results confirming these type of anchors are tight.
Therefore, the SQUG outlier for BB11 is resolved.

#2

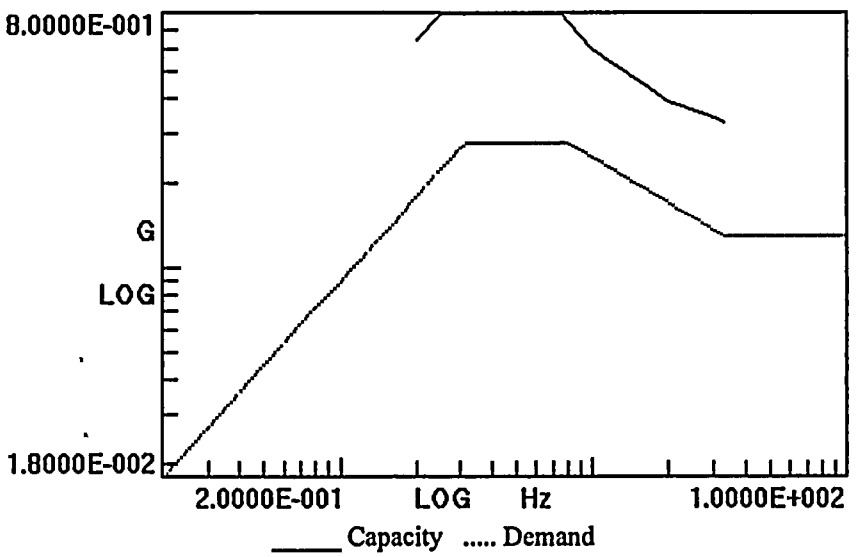
ATTACHMENTS

A. SEWS for Equipment ID Number 167A
B. The Outlier Seismic Verification Sheet (OSVS) for Equipment ID Number 167A

Niagara Mohawk Power Corporation - Nine Mile Point 1 SCREENING EVALUATION WORK SHEET (SEWS)		GIP Rev 2, Corrected, 2/14/92 Status: No Sheet 1 of 8
ID : BB11 (Rev. 0)	Class : 14. Distribution Panels	
Description : AP/125 V DC BATTERY BOARD #11		
Building : TB	Floor El. : 261.00	Room, Row/Col : A9,10
Manufacturer, Model, Etc. :		

SEISMIC CAPACITY VS DEMAND

1.	Elevation where equipment receives seismic input	261.00
2.	Elevation of seismic input below about 40' from grade (grade = 243.00)	Yes
3.	Equipment has fundamental frequency above about 8 Hz (est. frequency =)	SRT
4.	Capacity based on: 1.00 * Bounding Spectrum	
5.	Demand based on: 1.00 * Design Basis Ground Response Spectrum	



	File	Record
Capacity	F:\GIP\GIP\spectra.des	Label|Bounding Spectrum
Demand 1	F:\GIP\PROJ003F\spectra.des	UNIT:|PLANT|BLDG:|BUILDING|E/Q:|SSE|ELEV:|ELEVATION|ROW/COL:|ALL|DIR:|DIR|NODE:|1
Demand 2	F:\GIP\PROJ003F\spectra.des	UNIT:|PLANT|BLDG:|BUILDING|E/Q:|SSE|ELEV:|ELEVATION|ROW/COL:|ALL|DIR:|DIR|NODE:|1

Does capacity exceed demand? Yes

Niagara Mohawk Power Corporation - Nine Mile Point 1 SCREENING EVALUATION WORK SHEET (SEWS)		GIP Rev 2, Corrected, 2/14/92 Status: No Sheet 2 of 8
ID : BB11 (Rev. 0)	Class : 14. Distribution Panels	
Description : AP/125 V DC BATTERY BOARD #11		
Building : TB	Floor El. : 261.00	Room, Row/Col : A9,10
Manufacturer, Model, Etc. :		

CAVEATS - BOUNDING SPECTRUM

DP/BS Caveat I - Earthquake Experience Equipment Class.	Yes
DP/BS Caveat 2 - Contains only Circuit Breakers and Switches.	Yes
DP/BS Caveat 3 - Doors Secured.	Yes
DP/BS Caveat 4 - Adjacent Cabinets Bolted Together.	Yes
DP/BS Caveat 5 - General Configuration Similar to NEMA Standards.	Yes
DP/BS Caveat 6 - Adequate Anchorage.	No
DP/BS Caveat 7 - Potential Chatter of Essential Relays Evaluated.	Yes*
DP/BS Caveat 8 - No Other Concerns.	Yes

Is the intent of all the caveats met for Bounding Spectrum? No

ANCHORAGE

1. The sizes and locations of anchors have been determined.	Yes
2. Appropriate equipment characteristics have been determined (mass, CG, natural freq., damping, center of rotation).	Yes
3. The type of anchorage is covered by the GIP.	No
4. The adequacy of the anchorage installation has been evaluated (weld quality and length, nuts and washers, expansion anchor tightness, etc.)	Yes
5. Factors affecting anchorage capacity or margin of safety have been considered: embedment length, anchor spacing, free-edge distance, concrete strength/condition, and concrete cracking.	Yes
6. For bolted anchorages, any gaps under the base are less than 1/4 .	Yes
7. Factors affecting essential relays have been considered: gaps under the base, capacity reduction for expansion anchors.	Yes
8. The base has adequate stiffness and the effect of prying action on anchors has been considered.	Yes
9. The strength of the equipment base and the load path to the CG is adequate.	Yes
10. The adequacy of embedded steel, grout pads or large concrete pads have been evaluated.	Yes
11. The anchorage capacity exceeds the demand.	Yes

Are anchorage requirements met? No

INTERACTION EFFECTS

1. Soft targets are free from impact by nearby equipment or structures.	Yes
2. If the equipment contains sensitive relays, it is free from all impact by nearby equipment or structures.	Yes
3. Attached lines have adequate flexibility.	Yes
4. Overhead equipment or distribution systems are not likely to collapse.	Yes
5. No other adverse concerns were found.	Yes

Is equipment free of interaction effects? Yes

Niagara Mohawk Power Corporation - Nine Mile Point 1 SCREENING EVALUATION WORK SHEET (SEWS)		GIP Rev 2, Corrected, 2/14/92 Status: No Sheet 3 of 8
ID : BB11 (Rev. 0)	Class : 14. Distribution Panels	
Description : AP/125 V DC BATTERY BOARD #11		
Building : TB	Floor El. : 261.00	Room, Row/Col : A9,10
Manufacturer, Model, Etc. :		

IS EQUIPMENT SEISMICALLY ADEQUATE? **No**

COMMENTS

IMPORTANT NOTE: This SEWS is a composite of the original SQUG pilot plant walkdown conducted in January and February of 1988 by D. Moore, A. Ordonez, W Djordjevic,.RF Oleck, J Valente, D Aelbrecht, J. Reddington, T. Hester, D. Tahiliani, J. Raby, and F. Feng using the GIP, Revision 1; a supplementary walkdown conducted by RF Starck, F Feng and W Djordjevic in April 1989 still using Revision 1 of the GIP, and the final walkdown conducted in April 1993 by W Djordjevic and C Agosta to update the SEWS to Revision 2 GIP requirements as required by USNRC in SSER-2.

Contains a GE relay for the emergency seal pump (model 12HFA51A2H); however, NMPC advised that seal pump is not on SSEL, therefore, OK.

One bolt missing in top frame, but of no consequence.

Tray bolted to top of panel.

Adjacent block wall evaluated to IE80-11 program and therefore acceptable for design basis.-

Cabinet is stitch welded to embedded plate that is secured by Cinch anchors (see NMPC drawing C-18801-C, Rev. 3). This makes cabinet an outlier because overturning moment does exceed restoring moment and Cinch anchors will be subject to tension.

Evaluated by: _____ Date: 1/26/94

_____ 3/30/94

Attachment: ANCHOR Report

Niagara Mohawk Power Corporation - Nine Mile Point 1 SCREENING EVALUATION WORK SHEET (SEWS)		GIP Rev 2, Corrected, 2/14/92 Status: No Sheet 4 of 8
ID : BB11 (Rev. 0)	Class : 14. Distribution Panels	
Description : AP/125 V DC BATTERY BOARD #11		
Building : TB	Floor El. : 261.00	Room, Row/Col : A9,10
Manufacturer, Model, Etc. :		

ANCHOR Report

Earthquake :

Response Spectrum : Instructure Realistic

Frequency : GIP - Flexible

Damping : GIP - 5.00

Spectral Values :

Direction	Acceleration (g's)
North - South	0.82
East - West	0.54
Vertical	0.15

Angle : 0.00

Combination Criteria : SRSS

Weights :

Number of Weights : 1

No	Weight	X	Y	Z
1	7.50E+003	9.05E+001	2.00E+001	4.50E+001

Forces :

Number of Forces : 0

Moments :

Number of Moments : 0

Allowables :

Anchor :

Number of Anchor types : 1

						Tension	Shear	
				Ultimate	Ultimate	Inter	Inter	Saf
No.	Dia	Manufact	Product	Tension	Shear	Coeff	Coeff	Fact

Niagara Mohawk Power Corporation - Nine Mile Point 1 SCREENING EVALUATION WORK SHEET (SEWS)		GIP Rev 2, Corrected, 2/14/92 Status: No Sheet 5 of 8
ID : BB11 (Rev. 0)	Class : 14. Distribution Panels	
Description : AP/125 V DC BATTERY BOARD #11		
Building : TB	Floor El. : 261.00	Room, Row/Col : A9,10
Manufacturer, Model, Etc. :		

1	5/8	Other	Unknown Expansion Anchor	685.00	685.00	1.00	0.30	1.00

Concrete :

Ultimate Stress : 4000.00 psi.

Reduction Factor : 0.85

Weld :

Allowable Stress : 30600 psi.

Surfaces :

Number of Surfaces : 1

	Direction Comp	Direction Comp	Direction Comp
No	Nx	Ny	Nz
1	0.00E+000	0.00E+000	1.00E+000

Anchor Pattern for Surface # 1

Legend for Anchor Patterns

Niagara Mohawk Power Corporation - Nine Mile Point 1 SCREENING EVALUATION WORK SHEET (SEWS)		GIP Rev 2, Corrected, 2/14/92 Status: No Sheet 6 of 8
ID : BB11 (Rev. 0)	Class : 14. Distribution Panels	
Description : AP/125 V DC BATTERY BOARD #11		
Building : TB	Floor El. : 261.00	Room, Row/Col : A9,10
Manufacturer, Model, Etc. :		

Anchors : [redacted]

Concrete Lines : [redacted]

Concrete Points : [redacted]

Weld Lines : [redacted]

Geometry :

Anchor :

Number of Anchors : 0

Concrete Lines :

# of elements per line : 1

Number of Concrete Lines : 4

No	Start X-Coord	Start Y-Coord	Start Z-Coord	End X-Coord	End Y-Coord	End Z-Coord	Sf Id	Line Width
1	0.00E+000	2.00E+000	0.00E+000	1.81E+002	2.00E+000	0.00E+000	1	4.00E+000
2	1.79E+002	0.00E+000	0.00E+000	1.79E+002	4.00E+001	0.00E+000	1	4.00E+000
3	1.81E+002	3.80E+001	0.00E+000	0.00E+000	3.80E+001	0.00E+000	1	4.00E+000
4	2.00E+000	4.00E+001	0.00E+000	2.00E+000	0.00E+000	0.00E+000	1	4.00E+000

Concrete Points :

Number of Concrete Points : 0

Weld Lines :

# of elements per line : 1

Number of Weld Lines : 24

No	Start X-Coord	Start Y-Coord	Start Z-Coord	End X-Coord	End Y-Coord	End Z-Coord	Sf Id	Line Width
1	2.50E+000	2.00E+000	1.00E+000	4.50E+000	2.00E+000	1.00E+000	1	2.50E-001
2	2.05E+001	2.00E+000	1.00E+000	2.25E+001	2.00E+000	1.00E+000	1	2.50E-001
3	3.40E+001	2.00E+000	1.00E+000	3.60E+001	2.00E+000	1.00E+000	1	2.50E-001
4	5.20E+001	2.00E+000	1.00E+000	5.40E+001	2.00E+000	1.00E+000	1	2.50E-001
5	7.15E+001	2.00E+000	1.00E+000	7.35E+001	2.00E+000	1.00E+000	1	2.50E-001

Niagara Mohawk Power Corporation - Nine Mile Point 1 SCREENING EVALUATION WORK SHEET (SEWS)		GIP Rev 2, Corrected, 2/14/92 Status: No Sheet 7 of 8
ID : BB11 (Rev. 0)	Class : 14. Distribution Panels	
Description : AP/125 V DC BATTERY BOARD #11		
Building : TB	Floor El. : 261.00	Room, Row/Col : A9,10
Manufacturer, Model, Etc. :		

6	8.95E+001	2.00E+000	1.00E+000	9.15E+001	2.00E+000	1.00E+000	1	2.50E-001
7	1.03E+002	2.00E+000	1.00E+000	1.05E+002	2.00E+000	1.00E+000	1	2.50E-001
8	1.21E+002	2.00E+000	1.00E+000	1.23E+002	2.00E+000	1.00E+000	1	2.50E-001
9	1.28E+002	2.00E+000	1.00E+000	1.30E+002	2.00E+000	1.00E+000	1	2.50E-001
10	1.46E+002	2.00E+000	1.00E+000	1.48E+002	2.00E+000	1.00E+000	1	2.50E-001
11	1.56E+002	2.00E+000	1.00E+000	1.58E+002	2.00E+000	1.00E+000	1	2.50E-001
12	1.74E+002	2.00E+000	1.00E+000	1.76E+002	2.00E+000	1.00E+000	1	2.50E-001
13	2.50E+000	3.80E+001	1.00E+000	4.50E+000	3.80E+001	1.00E+000	1	2.50E-001
14	2.05E+001	3.80E+001	1.00E+000	2.25E+001	3.80E+001	1.00E+000	1	2.50E-001
15	3.40E+001	3.80E+001	1.00E+000	3.60E+001	3.80E+001	1.00E+000	1	2.50E-001
16	5.20E+001	3.80E+001	1.00E+000	5.40E+001	3.80E+001	1.00E+000	1	2.50E-001
17	7.15E+001	3.80E+001	1.00E+000	7.35E+001	3.80E+001	1.00E+000	1	2.50E-001
18	8.95E+001	3.80E+001	1.00E+000	9.15E+001	3.80E+001	1.00E+000	1	2.50E-001
19	1.03E+002	3.80E+001	1.00E+000	1.05E+002	3.80E+001	1.00E+000	1	2.50E-001
20	1.21E+002	3.80E+001	1.00E+000	1.23E+002	3.80E+001	1.00E+000	1	2.50E-001
21	1.28E+002	3.80E+001	1.00E+000	1.30E+002	3.80E+001	1.00E+000	1	2.50E-001
22	1.46E+002	3.80E+001	1.00E+000	1.48E+002	3.80E+001	1.00E+000	1	2.50E-001
23	1.56E+002	3.80E+001	1.00E+000	1.58E+002	3.80E+001	1.00E+000	1	2.50E-001
24	1.74E+002	3.80E+001	1.00E+000	1.76E+002	3.80E+001	1.00E+000	1	2.50E-001

Reduction Factors :

Reduction Factors Data Current : Yes

Analysis Results :

Analysis Performed : Yes

Type of Analysis : Regular

	Spectral Accelerations (G's)			Allowable
No	N-S	E-W	Vertical	Load Factor
1	8.21E-001	2.14E-001	5.85E-002	29.586
2	-8.21E-001	-2.14E-001	-5.85E-002	31.488
3	-8.21E-001	2.14E-001	5.85E-002	29.784
4	8.21E-001	-2.14E-001	-5.85E-002	31.303
5	8.21E-001	-2.14E-001	5.85E-002	29.586
6	-8.21E-001	2.14E-001	-5.85E-002	31.488
7	8.21E-001	2.14E-001	-5.85E-002	31.303
8	-8.21E-001	-2.14E-001	5.85E-002	29.784
9	3.28E-001	5.36E-001	5.85E-002	24.628
10	-3.28E-001	-5.36E-001	-5.85E-002	26.647
11	3.28E-001	-5.36E-001	5.85E-002	24.628
12	-3.28E-001	5.36E-001	-5.85E-002	26.647

Niagara Mohawk Power Corporation - Nine Mile Point 1 SCREENING EVALUATION WORK SHEET (SEWS)		GIP Rev 2, Corrected, 2/14/92 Status: No Sheet 8 of 8
ID : BB11 (Rev. 0)	Class : 14. Distribution Panels	
Description : AP/125 V DC BATTERY BOARD #11		
Building : TB	Floor El. : 261.00	Room, Row/Col : A9,10
Manufacturer, Model, Etc. :		

13	-3.28E-001	5.36E-001	5.85E-002	25.042
14	3.28E-001	-5.36E-001	-5.85E-002	26.220
15	3.28E-001	5.36E-001	-5.85E-002	26.220
16	-3.28E-001	-5.36E-001	5.85E-002	25.042
17	3.28E-001	2.14E-001	1.46E-001	44.079
18	-3.28E-001	-2.14E-001	-1.46E-001	59.302
19	3.28E-001	2.14E-001	-1.46E-001	58.885
20	-3.28E-001	-2.14E-001	1.46E-001	44.765
21	-3.28E-001	2.14E-001	1.46E-001	44.765
22	3.28E-001	-2.14E-001	-1.46E-001	58.885
23	3.28E-001	-2.14E-001	1.46E-001	44.079
24	-3.28E-001	2.14E-001	-1.46E-001	59.302

Minimum Allowable Load Factor : 2.46E+001

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CALC NO SQ.2SEWSBB11
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Appendices

A1. Anchor Run for BB11 and BB12

Earthquake :

Response Spectrum : User
Frequency : User - 0.00
Percent Damping : User - 0.00

Spectral Values :

Direction	Acceleration (g's)
North - South	0.412
East - West	0.396
Vertical	0.129

Angle (N-S Direction makes with the X Axis) : 90.00
Combination Criteria : SRSS

Weights :

Number of Weights : 1

No	Weight	X	Y	Z
1	7500.00	90.500	20.000	45.000

Forces :

Number of External Forces : 0

Moments :

Number of External Moments : 0

Allowables :

Anchor :

Number of Anchor types : 1

						Tension	Shear	
				Ultimate	Ultimate	Inter	Inter	Saf
No.	Dia	Manufact	Product	Tension	Shear	Coeff	Coeff	Fact
1	5/8	Other	Unknown Expansion Anchor	970.00	1400.00	1.00	0.30	1.00

Concrete :

Ultimate Stress : 3500.00 psi.

Reduction Factor : 0.85

ATTACHMENT A
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Weld :
Allowable Stress : 30600 psi.

Surfaces :
Number of Surfaces : 1
Surface Orientation

	Direction Comp	Direction Comp	Direction Comp
No	Nx	Ny	Nz
1	0.000	0.000	1.000

Anchor Pattern for Surface # 1

Legend for Anchor Patterns

Anchor Bolts :
Concrete Lines :
Concrete Points :
Weld Lines :

Geometry :

ATTACHMENT A
CALC NO SQ.0SEQMSTRU
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Anchor :
Number of Anchors : 10

No.	Anch Id	X Coord	Y Coord	Z Coord	Surf Id
1	1	12.625	2.500	0.000	1
2	1	64.625	2.500	0.000	1
3	1	116.625	2.500	0.000	1
4	1	168.625	2.500	0.000	1
5	1	12.625	37.500	0.000	1
6	1	64.625	37.500	0.000	1
7	1	116.625	37.500	0.000	1
8	1	168.625	37.500	0.000	1
9	1	2.500	20.000	0.000	1
10	1	181.000	20.000	0.000	1

Concrete Lines :
# of elements per line : 4
Number of Concrete Lines : 4

No	Start X-Coord	Start Y-Coord	Start Z-Coord	End X-Coord	End Y-Coord	End Z-Coord	Sf Id	Line Width
1	0.000	2.500	0.000	181.250	2.500	0.000	1	5.000
2	2.500	0.000	0.000	2.500	40.000	0.000	1	5.000
3	0.000	37.500	0.000	181.250	37.500	0.000	1	5.000
4	181.000	0.000	0.000	181.000	40.000	0.000	1	5.000

Concrete Points :
Number of Concrete Points : 0

Weld Lines :
# of elements per line : 4
Number of Weld Lines : 0

Determination of Reduction Factors :
Reduction Factor Input for Anchor # 1

No Input - Reduction factors needing user input are not used.

Reduction Factor Input for Anchor # 2

No Input - Reduction factors needing user input are not used.

Reduction Factor Input for Anchor # 3

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CALC NO SQ.0SEWSBB.11
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No Input - Reduction factors needing user input are not used.

Reduction Factor Input for Anchor # 4

No Input - Reduction factors needing user input are not used.

Reduction Factor Input for Anchor # 5

No Input - Reduction factors needing user input are not used.

Reduction Factor Input for Anchor # 6

No Input - Reduction factors needing user input are not used.

Reduction Factor Input for Anchor # 7

No Input - Reduction factors needing user input are not used.

Reduction Factor Input for Anchor # 8

No Input - Reduction factors needing user input are not used.

Reduction Factor Input for Anchor # 9

No Input - Reduction factors needing user input are not used.

Reduction Factor Input for Anchor # 10

No Input - Reduction factors needing user input are not used.

Reduction Factors Data Current : Yes

No	Anc Id	Pall/ Vall	Pallr/ Vallr	RT	RN	RL	RG	RS	RE	RF	RC	RR	RP	RB	RM
1	1	970.00	N/A	X	X	X	X	X	X	X	X	X	X	X	X
		1400.00	N/A	X	X	X	X	X	X	X	X	X	X	X	X
2	1	970.00	N/A	X	X	X	X	X	X	X	X	X	X	X	X
		1400.00	N/A	X	X	X	X	X	X	X	X	X	X	X	X
3	1	970.00	N/A	X	X	X	X	X	X	X	X	X	X	X	X
		1400.00	N/A	X	X	X	X	X	X	X	X	X	X	X	X
4	1	970.00	N/A	X	X	X	X	X	X	X	X	X	X	X	X
		1400.00	N/A	X	X	X	X	X	X	X	X	X	X	X	X
5	1	970.00	N/A	X	X	X	X	X	X	X	X	X	X	X	X
		1400.00	N/A	X	X	X	X	X	X	X	X	X	X	X	X
6	1	970.00	N/A	X	X	X	X	X	X	X	X	X	X	X	X
		1400.00	N/A	X	X	X	X	X	X	X	X	X	X	X	X
7	1	970.00	N/A	X	X	X	X	X	X	X	X	X	X	X	X
		1400.00	N/A	X	X	X	X	X	X	X	X	X	X	X	X

8	1	970.00	N/A	X	X	X	X	X	X	X	X	X	X	X	X
		1400.00	N/A	X	X	X	X	X	X	X	X	X	X	X	X
9	1	970.00	N/A	X	X	X	X	X	X	X	X	X	X	X	X
		1400.00	N/A	X	X	X	X	X	X	X	X	X	X	X	X
10	1	970.00	N/A	X	X	X	X	X	X	X	X	X	X	X	X
		1400.00	N/A	X	X	X	X	X	X	X	X	X	X	X	X

Legend :

N/A	= Not Applicable
Pall	= Allowable Pull without Reduced Inspection
Vall	= Allowable Shear without Reduced Inspection
Pallr	= Allowable Pull with Reduced Inspection
Vallr	= Allowable Shear with Reduced Inspection
*	= Outlier
X	= Reduction Factor Not Used
RT	= Reduction Factor for Type of Anchorage
RN	= Reduction Factor for Installation Adequacy
RL	= Reduction Factor for Embedment
RG	= Reduction Factor for Gap at Anchors
RS	= Reduction Factor for Spacing
RE	= Reduction Factor for Edge Distance
RF	= Reduction Factor for Concrete Strength
RC	= Reduction Factor for Concrete Cracks
RR	= Reduction Factor for Essential Relays
RP	= Reduction Factor for Base Stiffness and Prying Action
RB	= Reduction Factor for Base Strength and Load Path
RM	= Reduction Factor for Embed. Steel and Pads

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Analysis Results :

Analysis Performed : Yes

Type of Analysis : Regular

	Spectral Accelerations (G's)			
No	N-S	E-W	Vertical	Safety Factor
1	0.412	0.158	0.052	2.064
2	-0.412	-0.158	-0.052	2.273
3	-0.412	0.158	0.052	2.064
4	0.412	-0.158	-0.052	2.273
5	0.412	-0.158	0.052	2.064
6	-0.412	0.158	-0.052	2.273
7	0.412	0.158	-0.052	2.273
8	-0.412	-0.158	0.052	2.064
9	0.165	0.396	0.052	3.367

10	-0.165	-0.396	-0.052	3.636
11	0.165	-0.396	0.052	3.367
12	-0.165	0.396	-0.052	3.636
13	-0.165	0.396	0.052	3.367
14	0.165	-0.396	-0.052	3.636
15	0.165	0.396	-0.052	3.636
16	-0.165	-0.396	0.052	3.367
17	0.165	0.158	0.129	4.149
18	-0.165	-0.158	-0.129	6.253
19	0.165	0.158	-0.129	6.253
20	-0.165	-0.158	0.129	4.149
21	-0.165	0.158	0.129	4.149
22	0.165	-0.158	-0.129	6.253
23	0.165	-0.158	0.129	4.149
24	-0.165	0.158	-0.129	6.253

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Minimum Safety Factor : 2.064

The anchorage can withstand 2.064 times greater seismic demand

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OUTLIER SEISMIC VERIFICATION SHEET (OSVS)		GIP Rev 2, Corrected 2/14/92 Sheet 1 of 21
ID : BB11 (Rev. 0)	Class : 14. Distribution Panels	
Description : AP/125 V DC BATTERY BOARD #11		
Building : TB	Floor El. : 261.00	Room, Row/Col : A9,10

1. OUTLIER ISSUE DEFINITION - Mechanical and Electrical Equipment

a. Identify all the screening guidelines which are not met. (Check more than one if several guidelines could not be satisfied.)

Capacity vs. Demand	
Caveats	
Anchorage	X
Seismic Interaction	
Other	

b. Describe all the reasons for the outlier (i.e., if all the listed outlier issues were resolved, then the signatories would consider this item of equipment to be verified for seismic adequacy).

Embedded channel to which Battery Board is secured is anchored with Cinch (leaded) type anchors. Cinch type anchors are not covered by the GIP.

2. PROPOSED METHOD OF OUTLIER RESOLUTION (Optional)

a. Defined proposed method(s) for resolving outlier.

Determine actual capacities of Cinch type anchors and compare them to demand loads or retrofit anchorage.

b. Provide information needed to implement proposed method(s) for resolving outlier (e.g., estimate of fundamental frequency).

3. COMMENTS

REFER TO '90 BB11 OSVS

4. CERTIFICATION:

The information on this OSVS is, to the best of our knowledge and belief, correct and accurate, and resolution of the outlier issues listed on the previous page will satisfy the requirments for this item of equipment to be verified for seismic adequacy:

Approved by: _____ Date: 1/11/94

_____ 6/6/95