



DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
OFFICE OF STATEWIDE HOSPITAL PLANNING AND DEVELOPMENT

APPLICATION FOR HCAI SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0597

HCAI Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Termaco

Manufacturer's Technical Representative: Carl Tremblay

Mailing Address: 325 Boul. Industriel, Saint-Jean-Sur-Rich, QC J3B 7M3 Canada

Telephone: (450) 346-6871 Email: ctremblay@termaco.com

Product Information

Product Name: GVS Battery Cabinets

Product Model Number(s): See Attached

Product Category: UPS and Batteries

Product Sub-Category: Batteries

General Description: Each UUT is a cabinet comprised of batteries and breakers.

Mounting Description: Base Mounted Rigid

Tested Seismic Enhancements: None

Applicant Information

Applicant Company Name: DCL Labs, LLC

Contact Person: Nastya Veyngerova

Mailing Address: 1315 Greg Street, Suite 109, Sparks, NV 89431

Telephone: (775) 358-5085 Email: nastya.veyngerova@shaketest.com

Title: Seismic Test Engineer



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California Licensed Structural Engineer Responsible for the Engineering and Test Report(s)

Company Name: THE VMC GROUP

Name: Kenneth Tarlow California License Number: S2851

Mailing Address: 980 9th Street, 16th Floor, Sacramento, CA 95814

Telephone: (832) 627-2214 Email: ken.tarlow@thevmcgroup.com

Certification Method

☐ GR-63-Core ☒ ICC-ES AC156 ☐ IEEE 344 ☐ IEEE 693 ☐ NEBS 3
☐ Other (Please Specify): _____

Testing Laboratory

Company Name: DYNAMIC CERTIFICATION LABORATORY (DCL)

Contact Person: Josh Sailer

Mailing Address: 1315 Greg St., Ste 109, Sparks NV 89431

Telephone: (775) 358-5085 Email: Josh@shaketest.com

Company Name: NATIONAL TECHNICAL SYSTEMS (NTS)

Contact Person: Robert Bridges

Mailing Address: 7800 Highway 20 West, Huntsville AL 35806

Telephone: (256) 837-4411 Email: rob.bridges@nts.com



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Seismic Parameters

Certified Response Spectral Acceleration Factors: (F_p/W_p)

Horizontal (A Flx-H), $g =$ 2.32 (A Rig-H), $g =$ 1.56

Vertical (A Flx-V), $g =$ 0.97 (A Rig-V), $g =$ 0.39

S_{DS} (Design spectral response acceleration at short period, g) = 1.45

H_f (Force amplification height factor) = 3.5 at $z/h=1.0$; 1.0 at $z/h=0$

R_u (Structure ductility reduction factor) = 1.3 at $z/h=1.0$; 1.0 at $z/h=0$

I_p (Importance factor) = 1.5

z/h (Height ratio factor) = 0 and 1

HCAI Approval (For Office Use Only) - Approval Expires on 12/15/2031

Date: 12/15/2025

Name: Mohammad Karim

Title: Supervisor, Health Facilities

Condition of Approval (if applicable): _____

OSP-0597

BY: Mohammad Karim

DATE: 12/15/2025



Special Seismic Certification

Table 1 - Certified Components



DCL Project Number: 98254-2501

Manufacturer: Termaco

Product Line: GVS Battery Cabinets

Certified Product Construction: Painted Carbon Steel

Mounting: Rigid Base Mounted

Certified Seismic Levels: Sds=1.45 g with z/h=1.0 and 0.0

Factors for Force Amplification and Structure Ductility Reduction: $H_f = 3.5$ at $z/h=1.0$; 1.0 at $z/h=0$ and $R_p = 1.3$ at $z/h=1.0$; 1.0 at $z/h=0$

Model Number	Schneider Drawing Number	Battery Quantity	Battery Model	Battery Manufacturer	Max. Dimensions [in.]			Max. Weight [lb.]	Unit
					Depth	Width	Height		
TCR-CS-410RB-A07-150A-32-HRL140	GVS32B150NA140-CS	32	HRL140	Narada	33.1	27.6	58.5	1,286	Extrapolated
TCR-CS-410RB-A07-150A-32-xxxxx	GVS32B150NA140-CS	32	12HX135 12HRL140 UPS12-150MR	Energys (1) Narada (30) C&D (1)	33.1	27.6	58.5	1,357	UUT 1
TCR-CS-410RB-A07-150A-32-HX135	GVS32B150EN135-CS	32	12HX135	Energys	33.1	27.6	58.5	1,366	Interpolated
TCR-CS-410RB-A07-150A-32-150MR	GVS32B150CD150-CS	32	UPS12-150MR	C&D	33.1	27.6	58.5	1,418	Interpolated
TCR-CS-410RB-A07-150A-40-HRL140	GVS40B150NA140-CS	40	HRL140	Narada	33.1	27.6	58.5	1,494	Interpolated
TCR-CS-410RB-A07-150A-40-HX135	GVS40B150EN135-CS	40	12HX135	Energys	33.1	27.6	58.5	1,574	Interpolated
TCR-CS-410RB-A07-150A-40-150MR	GVS40B150CD150-CS	40	UPS12-150MR	C&D	33.1	27.6	58.5	1,626	Interpolated
TCR-CS-410RB-A07-150A-40-210MR	GVS40B150CD210-CS	40	UPS12-210MR	C&D	33.1	27.6	58.5	2,120	Interpolated
TCR-CS-410RB-A07-150A-40-HRL200	GVS40B150NA200-CS	40	HRL200	Narada	33.1	27.6	58.5	2,160	Interpolated
TCR-CS-410RB-A07-150A-40-HX205	GVS40B150EN205-CS	40	12HX205	Energys	33.1	27.6	58.5	2,240	Interpolated
TCR-CS-410RB-A10-250A-40-HRL300	GVS40B250NA300-CS	40	HRL300	Narada	33.1	39.4	58.5	2,917	Interpolated
TCR-CS-410RB-A10-250A-40-300MR	GVS40B250CD300-CS	40	UPS12-300MR	C&D	33.1	39.4	58.5	3,009	Interpolated
TCR-CS-410RB-A10-250A-40-HX300	GVS40B250EN300-CS	40	12HX300	Energys	33.1	39.4	58.5	3,073	Interpolated
TCR-CS-410RB-A10-250A-40-HRL365	GVS40B250NA365-CS	40	HRL365	Narada	33.1	39.4	58.5	3,324	Interpolated
TCR-CS-410RB-A10-250A-40-350MR	GVS40B250CD350-CS	40	350MR	C&D	33.1	39.4	58.5	3,364	Interpolated
TCR-CS-410RB-A10-250A-40-xxxxx	GVS40B250EN330-CS	40	12HX330 12HRL365 UPS12-350MR	Energys (38) Narada (1) C&D (1)	33.1	39.4	58.5	3,468	UUT 2
TCR-CS-410RB-A11-250A-40-XP400	GVS40B250LE400-CS	40	XP12-400	Leoch	33.1	44.4	58.5	3,499	Interpolated
TCR-CS-410RB-A10-250A-40-HX330	GVS40B250EN330-CS	40	12HX330	Energys	33.1	39.4	58.5	3,508	Interpolated
TCR-CS-410RB-A11-400A-40-XP400	GVS40B400LE400-CS	40	XP12-400	Leoch	33.1	44.4	58.5	3,538	Interpolated
TCR-CS-410RB-A11-250A-40-HRL400	GVS40B250NA400-CS	40	HRL400	Narada	33.1	44.4	58.5	3,731	Interpolated
TCR-CS-410RB-A11-400A-40-xxxxx	GVS40B400EN400-CS	40	12HX400 12HRL400 UPS12-400MR HR4000 XP12-400	Energys (32) Narada (2) C&D (2) East Penn (2) Leoch (2)	33.0	44.0	59.0	3,760	UUT 3
TCR-CS-410RB-A11-250A-40-400MR	GVS40B250CD400-CS	40	400MR	C&D	33.1	44.4	58.5	3,763	Extrapolated
TCR-CS-410RB-A11-400A-40-HRL400	GVS40B400NA400-CS	40	HRL400	Narada	33.1	44.4	58.5	3,770	Extrapolated
TCR-CS-410RB-A11-400A-40-400MR	GVS40B400CD400-CS	40	400MR	C&D	33.1	44.4	58.5	3,802	Extrapolated
TCR-CS-410RB-A11-250A-40-HX400	GVS40B250EN400-CS	40	12HX400	Energys	33.1	44.4	58.5	3,931	Extrapolated
TCR-CS-410RB-A11-250A-40-HR4000	GVS40B250EP400-CS	40	HR4000	East Penn	33.1	44.4	58.5	3,931	Extrapolated
TCR-CS-410RB-A11-400A-40-HX400	GVS40B400EN400-CS	40	12HX400	Energys	33.1	44.4	58.5	3,970	Extrapolated
TCR-CS-410RB-A11-400A-40-HR4000	GVS40B400EP400-CS	40	HR4000	East Penn	33.1	44.4	58.5	3,970	Extrapolated

Notes:

1. Multiple batteries were used in UUTs to encompass all the brands in the full product line. As such a distinct model number cannot be associated with the actual tested units since they each utilized multiple battery brands.

Special Seismic Certification
Table 2 - Nomenclature Chart



DCL Project Number: 98254-2501

Manufacturer: Termaco

Product Line: GVS Battery Cabinets

Sample Part Number: ABC- DE-012-FG-A34-567A-89-XXXX

Part Number	Allowable Value	Description	Unit
ABC	TCR	Termaco Top Terminal Battery Cabinet	UUT 1, UUT 2, UUT 3
DE	CS	Seismic Version	UUT 1, UUT 2, UUT 3
0	4	Number of Tiers	UUT 1, UUT 2, UUT 3
12	10	Maximum Quantity of Batteries per Tier	UUT 1, UUT 2, UUT 3
F	R	Regular Battery Type	UUT 1, UUT 2, UUT 3
G	B	Door Cabinet Configuration	UUT 1, UUT 2, UUT 3
A34	A07	Cabinet Width (700mm)	UUT 1
	A10	Cabinet Width (1000mm)	UUT 2
	A11	Cabinet Width (1150mm)	UUT 3
567A	150A	Amperage (Amperes)	UUT 1
	250A		UUT 2
	400A		UUT 3
89	32	Battery Quantity	UUT 1
	40		UUT 2, UUT 3
XXXX	HX135	Battery Type / Brand Allowable Values	UUT 1
	HX205		Interpolated
	HX300		Interpolated
	HX330		UUT 2
	HX400		UUT 3
	HR4000		UUT 3
	HRL140		UUT 1
	HRL200		Interpolated
	HRL300		Interpolated
	HRL365		UUT 2
	HRL400		UUT 3
	150MR		UUT 1
	210MR		Interpolated
	300MR		Interpolated
	350MR		UUT 2
	400MR		UUT 3
	XP400		UUT 3

Special Seismic Certification
Table 3 - Certified Subcomponents



DCL Project Number: 98254-2501

Product Line: Termaco

Certified Seismic Levels: Sds=1.45 g with z/h=1.0 and 0.0

12 Volt Batteries						
Model Number	Manufacturer	Rated power (W) ¹	Material	Battery Quantity Tested	Weight [lb.]	Unit
12HX135	Energysys	136	Lead Acid	1	26	UUT 1
12HX205		206		N/A	43	Interpolated
12HX300		284		N/A	60	Interpolated
12HX330		336		38	71	UUT 2
12HX400		381		32	80	UUT 3
12HRL140	Narada	140	Lead Acid	1	24	UUT 1
12HRL200		200		N/A	41	Interpolated
12HRL300		300		N/A	56	Interpolated
12HRL365		365		1	66	UUT 2
12HRL400		400		2	75	UUT 3
UPS12-150MR	C&D	148	Lead Acid	30	27	UUT 1
UPS12-210MR		206		N/A	40	Interpolated
UPS12-300MR		300		N/A	58	Interpolated
UPS12-350MR		350		1	67	UUT 2
UPS12-400MR		400		2	76	UUT 3
HR4000	East Penn	420	Lead Acid	2	80	UUT 3
XP12-400	Leoch	406	Lead Acid	2	69	UUT 3

Notes:

1. Capacity ratings are at 15min rate to 1.67 volts per cell @ 77°F

Cabinets						
Model Number	Manufacturer	Dimensions (D" x W" x H")	Material ¹	NEMA	Weight [lb.]	Unit
GVSCBT1ST	Termaco	33.1 x 27.6 x 58.5	Carbon Steel	1	1366	UUT 1
GVSCBT2ST					1574	Interpolated
GVSCBT3ST					2240	Interpolated
GVSCBT4ST		33.1 x 39.4 x 58.5			3073	Interpolated
GVSCBT5ST					3508	UUT 2
GVSCBT6ST		33.1 x 44.4 x 58.5			3931	Interpolated
GVSCBT7ST					3970	UUT 3

Notes:

1. Cabinets are 10 gage carbon steel. Cabinet Panels are 16 gage carbon steel.

Breakers					
Model Number	Manufacturer	Description	Material	Weight [lb.]	Unit
JGL37150D81AAUO	Schneider Electric	150A	Plastic, Copper	5	UUT 1
JGL37250D82AAUO		250A		5	UUT 2
LGL37040D30ABUO		400A		13	UUT 3

Special Seismic Certification

Table 4 - Tested Units



DCL Project Number: 98254-2501

Manufacturer: Termaco

Product Line: GVS Battery Cabinets

Certified Product Construction: Painted Carbon Steel

NTS Report Number: PR091540-02TR Rev. 2 (UUT 1 and UUT 2)

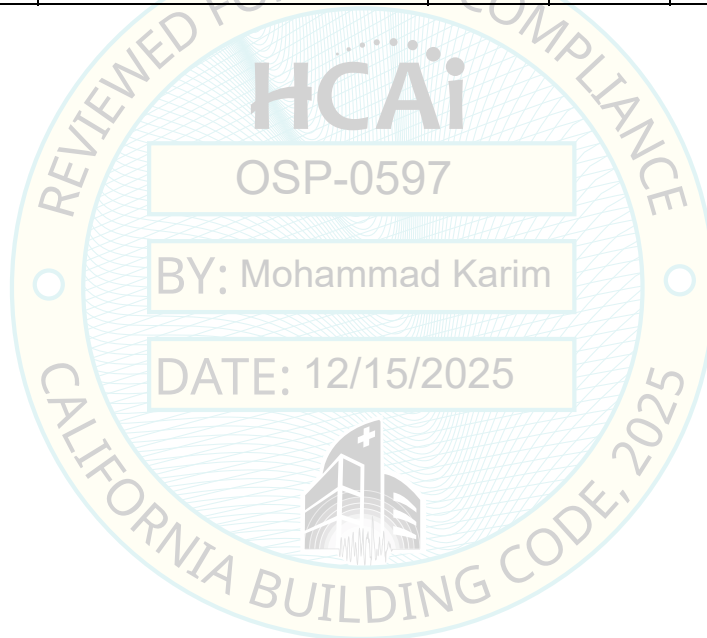
DCL Report Number: 76815-1901 (UUT 3)

Mounting: Rigid Base Mounted

Certified Seismic Levels: $S_d=1.45$ g with $z/h=1.0$ and 0.0

Factors for Force Amplification and Structure Ductility Reduction: $H_f = 3.5$ at $z/h=1.0$; 1.0 at $z/h=0$ and $R_d = 1.3$ at $z/h=1.0$; 1.0 at $z/h=0$

Model Number	Battery Manufacturer (Quantity Tested in Unit)	Dimensions [in.]			Weight [lb.]	Unit
		Length	Width	Height		
TCR-CS-410RB-A07-150A-32-xxxx	Energys (1), Narada (30), C&D (1)	33.1	27.6	58.5	1,357	UUT 1
TCR-CS-410RB-A10-250A-40-xxxx	Energys (38), Narada (1), C&D (1)	33.1	39.4	58.5	3,468	UUT 2
TCR-CS-410RB-A11-400A-40-xxxx	Energys (32), Narada (2), C&D (2), East Penn (2), Leoch (2)	33.0	44.0	59.0	3,760	UUT 3



UNIT UNDER TEST (UUT) Summary Sheet



UUT 1

NTS Repot Number: PR091540-02TR Rev. 2

Test Dates: 1/30/19 - 2/4/19

Manufacturer: Termaco

Product Line: GVS Battery Cabinets

Model Number: TCR-CS-410RB-A07-150A-32-xxxxx

Product Construction Summary: Painted Carbon Steel

Options / Component Summary: Lead acid 12 Volt batteries: Enersys (12HX135), C&D (UPS12-150MR) and Narada (12HRL140); carbon steel cabinet: Termaco (GVSCBT1ST); plastic/copper breaker: Schneider Electric (JGL37150D81AAUO)

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained before and after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
1,357	33.1	27.6	58.5	10.00	10.00	23.00

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	H _r	R _μ	I _p	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES	1.45	1.0	3.5	1.3	1.5	2.32	1.74	N/A	N/A
	AC156-24	1.45	0.0	1.0	1.0		N/A	N/A	0.97	0.39

Unit Mounting Description: UUT 1 was rigid base mounted to a shake table interface plate with (6) 1/2" Grade 5 bolts spaced approximately 14" on center widthwise and 32" lengthwise.



Overall view of UUT 1

UNIT UNDER TEST (UUT) Summary Sheet



UUT 2

NTS Repot Number: PR091540-02TR Rev. 2

Test Dates: 1/30/19 - 2/4/19

Manufacturer: Termaco

Product Line: GVS Battery Cabinets

Model Number: TCR-CS-410RB-A10-250A-40-xxxxx

Product Construction Summary: Painted Carbon Steel

Options / Component Summary: Lead acid 12 Volt batteries: Eversys (12HX330), C&D (UPS12-350MR) and Narada (12HRL365); carbon steel cabinet: Termaco (GVSCBT5ST); plastic/copper breaker: Schneider Electric (JGL37250D82AAUO)

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained before and after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
3,468	33.1	39.4	58.5	10.00	10.00	23.00

Seismic Test Parameters

Building Code	Test Criteria	S _{ds} (g)	z/h	H _r	R _μ	I _p	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES AC156-24	1.45	1.0	3.5	1.3	1.5	2.32	1.74	N/A	N/A
		1.45	0.0	1.0	1.0		N/A	N/A	0.97	0.39

Unit Mounting Description: UUT 2 was rigid base mounted to a shake table interface plate with (6) 1/2" Grade 5 bolts spaced approximately 19" on center widthwise and 32" lengthwise.



Overall view of UUT 2

UNIT UNDER TEST (UUT) Summary Sheet



UUT 3

DCL Repot Number: 76815-1901

Test Dates: 7/17/19

Manufacturer: Termaco

Product Line: GVS Battery Cabinets

Model Number: TCR-CS-410RB-A11-400A-40-xxxxx

Product Construction Summary: Painted Carbon Steel

Options / Component Summary: Lead acid 12 Volt batteries: EnerSys (12HX400), East Penn (HR4000), Leoch (XP12-400), and Narada (12HRL400); carbon steel cabinet: Termaco (GVSCBT7ST); plastic/copper breaker: Schneider Electric (LGL37040D30ABUO)

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained before and after the AC 156 test.

UUT Properties

Operating Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
3,760	33	44	59	9.00	10.00	>33.3

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	H _r	R _μ	I _p	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES	2.00	1.0	3.5	1.3	1.5	3.20	2.40	N/A	N/A
	AC156-24	2.00	0.0	1.0	1.0		N/A	N/A	1.33	0.53

Unit Mounting Description: UUT 3 was base mounted to the steel shake table interface plate with (6) M12x1.75 class 8.8 bolts and washers. The bolts are spaced 21" widthwise and 35.5" lengthwise.



Overall view of UUT 3