



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-0846

HCAI Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Vertiv Corporation

Manufacturer's Technical Representative: Julian Freeman

Mailing Address: 975 Pittsburgh Drive, Delaware, OH 43015

Telephone: (740) 833-8910 Email: julian.freeman@vertiv.com

Product Information

Product Name: APM2 FR3 & FR4 UPS

Product Model Number(s): Varies. See Attachment

Product Category: UPS and Batteries

Product Sub-Category: UPS

General Description: Uninterruptible Power Supply with Lithium-Ion or VRLA Batteries and External Battery Cabinets

Mounting Description: Base Mounted Rigid

Tested Seismic Enhancements: None

Applicant Information

Applicant Company Name: Pre Compliance

Contact Person: Galen Reid

Mailing Address: 36 SW Wall Street, Bend, OR 97702

Telephone: (541) 241-2310 Email: galen@go-pre.com

Title: Principal & Program Manager



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

Company Name: PRE COMPLIANCE

Name: Andrew Coughlin

California License Number: S6082

Mailing Address: 324 NW Hill St, Bend, OR 97703

Telephone: (415) 635-8461

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Certification Method

☐ GR-63-Core

☒ ICC-ES AC156

☐ IEEE 344

☐ IEEE 693

☐ NEBS 3

☐ Other (Please Specify): _____

Testing Laboratory

Company Name: CHINA TELECOMMUNICATION TECHNOLOGY LABS (CTTL)

Contact Person: Ying Deng

Mailing Address: 299 Tengfei Road, Lianchi District, Baoding City Hebei Province 000000

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BY: Timothy J. Piland

DATE: 08/29/2025



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Seismic Parameters

Certified Response Spectral Acceleration Factors: (F_p/W_p)

Horizontal (A Flx-H), $g =$ 2.57 (A Rig-H), $g =$ 1.73

Vertical (A Flx-V), $g =$ 1.07 (A Rig-V), $g =$ 0.43

S_{DS} (Design spectral response acceleration at short period, g) = 1.61 at $z/h=1$; 1.61 at $z/h=0$

H_f (Force amplification height factor) = 1 @ $z/h = 0$; 3.5 @ $z/h = 1$

R_u (Structure ductility reduction factor) = 1 @ $z/h = 0$; 1.3 @ $z/h = 1$

I_p (Importance factor) = 1.5

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

HCAI Approval (For Office Use Only) - Approval Expires on 08/29/2031

Date: 8/29/2025

Name: Timothy Piland

Title: Senior Structural Engineer

Condition of Approval (if applicable): _____

OSP-0846

BY: Timothy J. Piland

DATE: 08/29/2025



Manufacturer: Vertiv Corporation
Product Type: UPS
Model Line: APM2

S_{DS} = 1.61g for R_μ=1.3, H_f=3.5
S_{DS} = 1.61g for R_μ=1.0, H_f=1.0

$I_p=1.5$

CBC 2025

Mounting Configuration: Base Mounted - Rigid

Options Summary

See Model Numbering Nomenclature

Pre Compliance

Manufacturer: Vertiv Corporation
Product Type: UPS
Model Line: APM2

Seismic Parameters

$S_{DS} = 1.61g$ for $R_p=1.3, H_f=3.5$
 $S_{DS} = 1.61g$ for $R_p=1.0, H_f=1.0$

$I_p=1.5$

Building Codes

CBC 2025

UPS Model Nomenclature

Placeholder	Description	Digit(s)	Option
1-2	Product Line	56	APM2
3	System Type	S	SMS (Single Module System)
		M	MMS (Multi Module System)
4	Voltage and Wiring	C	208V 4-wire
		Y	220V 4-wire
		M	380V 4-wire
		T	400V 4-wire
		E	415V 4-wire
		A	480V 3-wire
		O	480V 4-wire
5-7	Maximum Nameplate Rating (kVA,kW)	010	010
		015	015
		020	020
		025	025
		030	030
		040	040
		045	045
		050	050
		060	060
		075	075
		080	080
		090	090
		100	100
		120	120
		140	140
		150	150
		180	180
		200	200
		225	225
		240	240
		250	250
		300	300
		360	360
		400	400

Manufacturer: Vertiv Corporation
Product Type: UPS
Model Line: APM2

Seismic Parameters

$S_{DS} = 1.61g$ for $R_{\mu}=1.3, H_f=3.5$
 $S_{DS} = 1.61g$ for $R_{\mu}=1.0, H_f=1.0$

$I_p=1.5$

Building Codes

CBC 2025

UPS Model Nomenclature

Placeholder	Description	Digit(s)	Option
5-7	Maximum Nameplate Rating (kVA,kW)	420	420
		480	480
		500	500
		540	540
		600	600
8	Configured Rating (kVA,kW)	A	010
		B	015
		C	020
		D	025
		E	030
		F	040
		G	045
		H	050
		J	060
		K	075
		L	080
		M	090
		N	100
		P	120
		Q	140
		R	150
		S	180
		T	200
		U	225
		V	240
		W	250
		X	300
		Y	360
		Z	400
		1	420
		2	480
		3	500
		4	540
		5	600



Manufacturer: Vertiv Corporation
Product Type: UPS
Model Line: APM2

S_{DS} = 1.61g for R_μ=1.3, H_f=3.5
S_{DS} = 1.61g for R_μ=1.0, H_f=1.0

I_p=1.5 **CBC 2025**

[illegible]

SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENTS

Manufacturer: Vertiv Corporation
Product Type: UPS
Model Line: APM2

Seismic Parameters

$S_{DS} = 1.61g$ for $R_{\mu}=1.3, H_r=3.5$
 $S_{DS} = 1.61g$ for $R_{\mu}=1.0, H_r=1.0$

Building Codes

$I_p=1.5$
CBC 2025

208V EBC Model Nomenclature

Placeholder	Description	Digit(s)	Option
1-2	Product Line	56	APM2
3-4	Battery Pack Type	BP	No Monitoring
5	Rating (kVA)	A	10
		B	15
		C	20
		D	25
		E	30
		F	40
		G	45
		H	50
		J	60
		K	75
		L	80
		M	90
		N	100
		P	120
		Q	140
		R	150
6-7	Battery Model	01	No Battery 600 Frame (Digit 8=6)
		02	No Battery 600 Frame (Digit 8=7)
		03	No Battery 880 Frame (Digit 8=8)
		04	No Battery 880 Frame (Digit 8=9)
		HX	EnerSys HX150E-FR
		MX	EnerSys HX205-FR
		PX	EnerSys HX300-FR
		RX	EnerSys HX330-FR
		UX	EnerSys HX400-FR
		WX	EnerSys HX505-FR
		XX	EnerSys HX540-FR
		YX	EnerSys XE 760-FR
		ZX	EnerSys XE 1040-FR
8	DC Breaker Rating (kVA)	6	400A (600MM)
		7	400A (600MM)



Manufacturer: Vertiv Corporation
Product Type: UPS
Model Line: APM2

S_{DS} = 1.61g for R_μ=1.3, H_f=3.5
S_{DS} = 1.61g for R_μ=1.0, H_f=1.0

$I_p=1.5$ CBC 2025

[illegible]

SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENTS

Manufacturer: Vertiv Corporation
Product Type: UPS
Model Line: APM2

Seismic Parameters

$S_{DS} = 1.61g$ for $R_{\mu}=1.3, H_f=3.5$
 $S_{DS} = 1.61g$ for $R_{\mu}=1.0, H_f=1.0$

Building Codes

$I_p=1.5$
CBC 2025

480V EBC Model Nomenclature

Placeholder	Description	Digit(s)	Option
1-2	Product Line	56	APM2
3-4	Battery Pack Type	BP	No Monitoring
5	Rating (kVA)	C	020
		E	030
		F	040
		H	050
		J	060
		L	080
		M	090
		N	100
		P	120
		R	150
		S	180
		T	200
		U	225
		V	240
		W	250
		X	300
		Y	360
		Z	400
		1	420
		2	480
		3	500
		4	540
		5	600
6-7	Battery Model	No	No Battery 880 Frame
		01	No Battery 880 Frame
		02	No Battery 1200 Frame
		03	No Battery 1200 Frame
		04	No Battery 1200 Frame
		05	No Battery 1200 Frame
		HX	EnerSys HX150E-FR
		MX	EnerSys HX205-FR



Pre No. CC241634-01-R0

SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENTS

Manufacturer: Vertiv Corporation
Product Type: UPS
Model Line: APM2

Seismic Parameters

$S_{DS} = 1.61g$ for $R_p=1.3, H_f=3.5$
 $S_{DS} = 1.61g$ for $R_p=1.0, H_f=1.0$

$I_p=1.5$

Building Codes

CBC 2025

480V EBC Model Nomenclature

Placeholder	Description	Digit(s)	Option
6-7	Battery Model	PX	EnerSys HX300-FR
		RX	EnerSys HX330-FR
		UX	EnerSys HX400-FR
		WX	EnerSys HX505-FR
		XX	EnerSys HX540-FR
		YX	EnerSys XE 760-FR
		ZX	EnerSys XE 1040-FR
8	Breaker	A	400 x 36 Jar 880MM
		B	400A x 36 Jar 880MM
		G	600A 40 Jar 1200MM
		H	600A x 40 Jar 1200MM
		K	600A x 40 Jar 1200MM
9	Number of Cabinets In System	1	1 Cabinet
		2	2 Cabinets
		3	3 Cabinets
		4	4 Cabinets
10	Mounting Location	L	Left Side FR1 UPS
		M	Left Side FR3 UPS
		S	Stand Alone
		C	Stand Alone System
		R	Right Side
11	Battery Cabinet Position	1	Position #1
		2	Position #2
		3	Position #3
		4	Position #4
12	Options	0	None
13-15	Factory Digits	000	Randomized Unique Alphanumeric

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENTS

Manufacturer: Vertiv Corporation
Product Type: UPS
Model Line: APM2

Seismic Parameters

$S_{DS} = 1.61g$ for $R_p=1.3, H_f=3.5$
 $S_{DS} = 1.61g$ for $R_p=1.0, H_f=1.0$

$I_p=1.5$

Building Codes

CBC 2025

TABLE 2

Table Description: Electrical Components

Component (Manufacturer)	Model	Description	Notes	UUT
Power Module (Vertiv)	PM60-D	Function Module, APM 0600kTK56FN02Z1-60kVA Power Module-PM60-D		1,2,3,6
Battery Modules (EnerSys)	12HX300-FR	Valve-regulated sealed lead-acid battery		4
	12HX540-FR	Valve-regulated sealed lead-acid battery		5
Centralized control module (Vertiv)	APM 0600kCMS01	Centralized control module		1,2,3,6
Functional Module (Vertiv)	APM 0600kMK16FN02SZ3	Functional module		1,2,3,6
Circuit Breaker (ABB)	XT5H 600 Ekip Dip LS/I 600 3p FF UL /CSA + Acc	MCB 600A 3P XT5HQ360BEFF000XXX 600VAC UL /CSA ACC (VTC: 16029963)		2
	XT7H 1200 Ekip Dip LS/I In = 1200A 3p FF UL + Acc	Plastic-Shell Circuit Breaker, ACV, 1200A, 3P, 50kA, 3 Pole Trip Electronic Circuit Breaker, 268×210×178mm, UL-ROHS/ (VTC : 1602A17K)		6
Circuit Breakers (LS)	UTS400HT ATU 400A 3P UL	400A Adjustable thermal-magnetic trip circuit breaker		4
	UTS600HT ATU 600A 3P UL	600A Adjustable thermal-magnetic trip circuit breaker		5
Breaker Auxiliary Contacts (LS)	A,AX,UTS150~UTS600	LS Auxiliary Switch UTS 250A, 400A, 600A Frame		4,5
Breaker Shunt Release (LS)	T,SHT,T,AC/DC24V,UTS150~UTS600	LS 24VDC Shunt Trip UTS 250A, 400A, 600A Frame		4,5
Hall Sensor (LEM)	HAT 800-S	Hall Current Sensor		4,5
Battery Gnd Fault Option (Vertiv)	APM 0150KTE46FN02Z5000	APM2 FR3 DC GND FAULT KIT 02313905		1,2,3,6

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENTS

Manufacturer: Vertiv Corporation
Product Type: UPS
Model Line: APM2

Seismic Parameters

$S_{DS} = 1.61g$ for $R_p=1.3$, $H_f=3.5$
 $S_{DS} = 1.61g$ for $R_p=1.0$, $H_f=1.0$

$I_p=1.5$

Building Codes

CBC 2025

TABLE 2

Table Description: Electrical Components

Component (Manufacturer)	Model	Description	Notes	UUT
Upper Exhaust Fan (Airflow Electric Appliances Co., Ltd.)	A2E250S-5KN-AE6H	Axial Fan		1,2,6
Upper Exhaust Fan (EBM)	W2E250-HL06-13	AC Axial Fan		3,6
IS-UNITY-DP CARD (Jabil Circuit)	IS-UNITY-DP	IS-UNITY-DP CARD		1,2,3,6
Lead-acid acquisition module (Vertiv)	APM 0600kTK56FN02Z4	Internal Module		4,5
Lead-acid acquisition module docking board (Vertiv)	APM 0600kTK56FN02X1	Internal Module		4,5
Fuse (Sinofuse)	RS306-3-Q1Z-1600A690V	Bypass Input Fuse		6
Fuse (Bussman)	170M6621	Bypass Input Fuse		6
Optional Accessories (Vertiv)	APM 0600kTK56FN02Z8	600kVA IO MBC SKRU option		6
	APM 0600kTK56FN02Z12	Zinc5 Battery Power Transformer Option		6



SPECIAL SEISMIC CERTIFICATION TESTING SUMMARY



UUT 1

Test Report# 24B02X801517

Highest Passed Test Level

Dimensions/Weights

Lowest Natural Frequency (Hz)

Building Codes

Test Criteria

Construction/Option Summary

UUT Mounting Details:

List of Included Subcomponents



Model

Frame	56SC150RNNNN000
Power Module	PM60-D
Centralized control module	APM 0600kCMS01
Functional modules	APM 0600kMK16FN02SZ3
Fuse	RS306-2-S1P-1000A690V
Battery Gnd Fault Option	APM 0150KTE46FN02Z5000
Upper exhaust fan	A2E250S-5KN-AE6H
IS-UNITY-DP CARD	IS-UNITY-DP

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UUT 2

Test Report# 24T04X801744

Highest Passed Test Level

Dimensions/Weights

Lowest Natural Frequency (Hz)

Building Codes

Test Criteria

Construction/Option Summary

UUT Mounting Details:



UUT was rigid base mounted to the table using seismic brackets 605360P1 (front), 606507P1 (rear), and 606504P1 (rear channel) with (8) Grade 8.8 M12 bolts. Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.



UUT 3

Test Report# 24B02X801518

Highest Passed Test Level

Dimensions/Weights

Lowest Natural Frequency (Hz)

Building Codes

Test Criteria

Construction/Option Summary

UUT Mounting Details:



UUT was rigid base mounted to the table using seismic brackets 605360P1 (front), 606507P1 (rear), and 60163572P1 (rear channel) with (15) Grade 8.8 M12 bolts.

Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.



UUT 4

Test Report# 24T04X802160

Highest Passed Test Level

Dimensions/Weights

Lowest Natural Frequency (Hz)

Building Codes

Test Criteria

Construction/Option Summary

Carbon steel frame and cladding

UUT Mounting Details:



UUT was rigid base mounted to the table using seismic brackets 605360P1 (front), 606504P1 (rear), and 606507P1 (rear channel) with (8) Grade 8.8 M12 bolts. Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.



UUT 5

Test Report# 24T04X801765

Highest Passed Test Level

Dimensions/Weights

Lowest Natural Frequency (Hz)

Building Codes

Test Criteria

Construction/Option Summary

Carbon steel frame and cladding

UUT Mounting Details:

List of Included Subcomponents



UUT was rigid base mounted to the table using seismic brackets 605360P1 (front), 606504P1 (rear), and 608689P1 (rear channel) with (15) Grade 8.8 M12 bolts. Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.



UUT 6

Test Report# 25T04X801026-001

Highest Passed Test Level

Dimensions/Weights

Lowest Natural Frequency (Hz)

Building Codes

Test Criteria

Construction/Option Summary

UUT Mounting Details:

List of Included Subcomponents



Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.