



**OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT  
FACILITIES DEVELOPMENT DIVISION**

**APPLICATION FOR OSHPD SPECIAL SEISMIC  
CERTIFICATION PREAPPROVAL (OSP)**

OFFICE USE ONLY	
APPLICATION #:	OSP – 0563 – 10

**OSHPD Special Seismic Certification Preapproval (OSP)**

Type:  New  Renewal

**Manufacturer Information**

Manufacturer: Schneider Electric

Manufacturer's Technical Representative: Jeffrey A. Gatscher, Fellow Engineer

Mailing Address: Nashville HUB, 6700 Tower Circle, Franklin, TN 37067, United States

Telephone: +1 615-600-1108 Email: jeff.gatscher@schneider-electric.com

**Product Information**

Product Name: Lithium-Ion Battery Cabinets for Schneider Electric UPS Systems

Product Type: Uninterrupted Power Supply (UPS) Battery System

Product Model Number: See Certified Product Listing Tables  
(List all unique product identification numbers and/or part numbers)

General Description: Lithium-Ion battery systems consisting of Lithium-Ion battery modules, Battery Management Systems, Switchgears, SMPS and rack frames. Seismic enhancements made to the test units to address anomalies observed during the tests shall be incorporated into the production units.

Mounting Description: Rigid floor mount.

**Applicant Information**

Applicant Company Name: Schneider Electric

Contact Person: Ilay Azoz

Mailing Address: 800 Federal Street, Andover, MA, 01810, United States

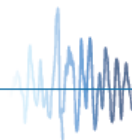
Telephone: +1 978 975 9573 Email: ilay.azoz@schneider-electric.com

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2016.

Signature of Applicant:  Date: 5/4/2018

Title: Product Line Manager Company Name: Schneider Electric

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

Company Name: TRU Compliance, by Structural Integrity Associates, Inc.

Name: Andrew M. Coughlin SE California License Number: S6082

Mailing Address: 5215 Hellyer Ave., Suite 210, San Jose, CA 95138

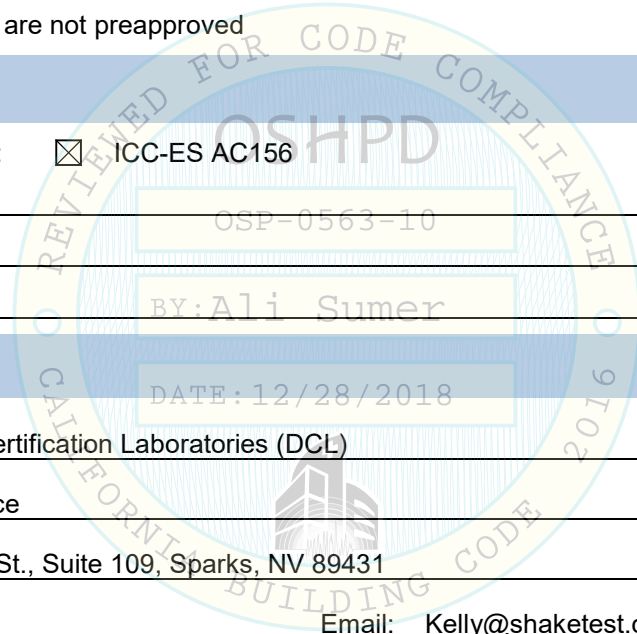
Telephone: (844) 878-0200 Email: acoughlin@structint.com

**Supports and Attachments Preapproval**

- Supports and attachments are preapproved under OPM- \_\_\_\_\_  
(Separate application for OSHPD Preapproval of Manufacturer's Certification (OPM) of Supports and attachments is required)
- Supports and attachments are not preapproved

**Certification Method**

- Testing in accordance with:  ICC-ES AC156
- Other (Please Specify): \_\_\_\_\_



**Testing Laboratory**

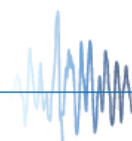
Company Name: Dynamic Certification Laboratories (DCL)

Contact Name: Kelly Laplace

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

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

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Seismic Parameters

Design in accordance with ASCE 7-10 Chapter 13: [X] Yes [ ] No

Design Basis of Equipment or Components (Fp/Wp) = 1.24 (SDS = 1.65g, z/h = 1.0); 0.9 (SDS = 2.0g, z/h = 0.0)

SDS (Design spectral response acceleration at short period, g) = 1.65 (z/h = 1.0); 2.0 (z/h = 0.0)

ap (In-structure equipment or component amplification factor) = 2.5

Rp (Equipment or component response modification factor) = 6.0

Omega\_0 (System overstrength factor) = 2.0

Ip (Importance factor) = 1.5

z/h (Height factor ratio) = 1.0 (SDS = 1.65g); 0.0 (SDS = 2.0g)

Equipment or Component Natural Frequencies (Hz) = See Attachment

Overall dimensions and weight (or range thereof) = See Attachment

Equipment or Components @ grade designed in accordance with ASCE 7-10 Chapter 15: [ ] Yes [X] No

Design Basis of Equipment or Components (V/W) =

SDS (Design spectral response acceleration at short period, g) =

SD1 (Design spectral response acceleration at 1 second period, g) =

R (Response modification coefficient) = OSP-0563-10

Omega\_0 (System overstrength factor) =

Cd (Deflection amplification factor) = BY:Ali Sumer

Ip (Importance factor) = 1.5

Height to Center of Gravity above base = DATE: 12/28/2018

Equipment or Component Natural Frequencies (Hz) =

Overall dimensions and weight (or range thereof) =

Tank(s) designed in accordance with ASME BPVC, 2015: [ ] Yes [X] No

List of Attachments Supporting Special Seismic Certification

[X] Test Report(s) [ ] Drawings [ ] Calculations [X] Manufacturer's Catalog

[X] Other(s) (Please Specify): Attachment A

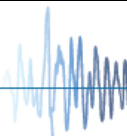
OSHPD Approval (For Office Use Only) - Approval Expires on December 31, 2022

Signature: [Signature] Date: December 28, 2018

Print Name: Ali Sumer Title: DSE

Special Seismic Certification Valid Up to : SDS (g) = See Above z/h = See Above

Condition of Approval (if applicable):



# SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENT MATRIX



TRU PROJECT NO. 1701565

<b>Manufacturer:</b> Schneider Electric						<b>TABLE 1</b>	
<b>Model Line:</b> Lithium-Ion Battery Cabinet							
<b>Certified Product Construction Summary:</b> Carbon Steel Lithium Ion Battery Cabinet.							
<b>Certified Options Summary:</b> 10 - 17 Lithium-Ion Battery Modules. Quantity is uniquely identified by model number. All other subcomponents are identical between models.							
<b>Mounting Configuration:</b> Base mounted - rigid Note: Installed mounting configuration must be of similar configuration and equivalent strength and stiffness to those tested.							
<b>Building Code: CBC 2016</b>						<b>Seismic Certification Limits:</b> $S_{DS} = 1.65 g \quad z/h=1.0$ $S_{DS} = 2.0 g \quad z/h=0.0$	$I_p = 1.5$
Model Line	Model	Dimensions (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
Lithium Ion Battery Cabinet (LIB)	LIBATTSMGOUL (ELSU203-0001)	23.5	25.5	81	850	10 Battery Modules	1a
	LIBATTSMGSUL (ELSU263-0001)	23.5	25.5	81	965	13 Battery Modules	Interp.
	LIBATTSMGEUL (ELSU323-0001)	23.5	25.5	81	1,081	16 Battery Modules	Interp.
	LIBATTSMGGUL (ELSU343-0001)	23.5	25.5	81	1,110	17 Battery Modules	1b

**SPECIAL SEISMIC CERTIFICATION  
CERTIFIED SUBCOMPONENT MATRIX**

**TRU PROJECT NO. 1701565**



<b>Manufacturer:</b>	Schneider Electric	<b>Table Description:</b> Electrical Components	<b>TABLE 2</b>
<b>Model Line:</b>	Lithium-Ion Battery Cabinet		

**Building Code:** CBC 2016      **Seismic Certification Limits:**  $S_{DS} = 1.65 g$   $z/h = 1.0$   $I_p = 1.5$   
 $S_{DS} = 2.0 g$   $z/h = 0.0$

Model Line (Manufacturer)	Model	Dimension (in)			Weight (lb)	Material	Notes	UUT
		Depth	Width	Height				
LI Battery Module Type A (Samsung)	LIBATTSMGMODA	16.3	8.5	6.4	37.5	Plastic Case, Lithium Ion, 3.8V		1a, 1b
LI Battery Module Type B (Samsung)	LIBATTSMGMOB	16.3	8.5	6.4	37.5	Plastic Case, Lithium Ion, 3.8V		1a, 1b
Switchgear (Samsung)	LIBATTSMGSGUL	16.2	23	9.25	33	Carbon Steel, Plastic, Aluminum		1a, 1b
SMPS Assembly (Samsung)	LIBATTSMGSMPS	13.3	15.6	3.4	11	Carbon Steel, Plastic		1a, 1b
Rack Frame (Samsung)	LIBATTSMGRACKUL	23.6	25.6	81	441	Carbon Steel		1a, 1b

# UNIT UNDER TEST (UUT) SUMMARY SHEET



**TRU PROJECT NO. 1701565**

<b>Manufacturer:</b> Schneider Electric	<b>UUT 1a</b>
<b>Model Line:</b> Lithium-Ion Battery Cabinet	
<b>Model Number:</b> LIBATTSMGOUL (ELSU203-00001) <b>Serial Number:</b> N/A	

**Product Construction Summary:**  
Carbon Steel Lithium Ion Battery Cabinet with Ten (10) Battery Modules

**Options/Subcomponent Summary:**  
 6 - LIBATTSMGMODB  
 4 - LIBATTSMGMODA  
 1 - LIBATTSMGSGUL  
 1 - LIBATTSMGSMPS  
 1 - LIBATTSMGRACKUL

<i>UUT Properties</i>						
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
850	23.5	25.5	81	7.0	15.0	>33.3

<i>UUT Highest Passed Seismic Run Information</i>									
Building Code	Test Criteria	S <sub>DS</sub> (g)	z/h	I <sub>p</sub>	A <sub>FLX-H</sub> (g)	A <sub>RIG-H</sub> (g)	A <sub>FLX-V</sub> (g)	A <sub>RIG-V</sub> (g)	
CBC 2016	ICC-ES AC156	1.65	1.0	1.50	2.64	1.98	1.33	0.53	
		2.00	0.0						

**Test Mounting Details:**



Lithium-Ion rack rigid base mounted to steel shake table plate with four (4) 5/8" diameter Grade 5 bolts with a 1.5" x 1.5" low carbon steel plate washer. One at each corner of rack.  
 Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.  
 Contents were included in testing per operating conditions.



Figure C.8. UUT1a interior view, pre-test



**Figure C.10.** *UUT1a interior view, post-test*



# UNIT UNDER TEST (UUT) SUMMARY SHEET



TRU PROJECT NO. 1701565

<b>Manufacturer:</b> Schneider Electric	<b>UUT 1b</b>
<b>Model Line:</b> Lithium-Ion Battery Cabinet	
<b>Model Number:</b> LIBATTSMGGUL (ELSU343-00001) <b>Serial Number:</b> N/A	

**Product Construction Summary:**  
Carbon Steel Lithium Ion Battery Cabinet with Seventeen (17) Battery Modules. All 5mm screws fastening the (3) side panels to the frame were replaced with 5mm diameter, 15mm long zinc finish screws with washer and lock washer (4 per panel).

**Options/Subcomponent Summary:**  
9 - LIBATTSMGMOB  
8 - LIBATTSMGMODA  
1 - LIBATTSMGSGUL  
1 - LIBATTSMGSMPS  
1 - LIBATTSMGRACKUL

<i>UUT Properties</i>						
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
1110	23.5	25.5	81	5.5	12.5	>33.3

<i>UUT Highest Passed Seismic Run Information</i>									
Building Code	Test Criteria	S <sub>DS</sub> (g)	z/h	I <sub>p</sub>	A <sub>FLX-H</sub> (g)	A <sub>RIG-H</sub> (g)	A <sub>FLX-V</sub> (g)	A <sub>RIG-V</sub> (g)	
CBC 2016	ICC-ES AC156	1.65	1.0	1.50	2.64	1.98	1.33	0.53	
		2.00	0.0						

**Test Mounting Details:**



Lithium-Ion rack rigid base mounted to steel shake table plate with four (4) 5/8" diameter Grade 5 bolts with a 1.5" x 1.5" low carbon steel plate washer. One at each corner of rack.  
Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.  
Contents were included in testing per operating conditions.