APPLICATION FOR OSHPD SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY	
APPLICATION #:	OSP – 0059 – 10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Square D by Schneider Electric

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

Mailing Address: 330 Weakley Lane, Smyma, TN 37167

Telephone: 615-459-8466 Email: Jeff.gatscher@schneider-electric.com

Product Information

Product Name: Integrated Power Center 2 (IPC2)

Product Type: Integrated Power and Control Solutions (IPaCS) – Low Voltage (600 Volts and Below)

Product Model Number: IPC2 units are custom-built and may include Square D NQ, NF, and I-Line panelboard interiors and Powerlink, PowerLogic, or other interior components (see Certified Product Listing tables).
(List all unique product identification numbers and/or part numbers)

General Description: IPC2 units are integrated, low voltage, power and control prewired systems containing stacked Components with different functionalities within a limited range of enclosure sizes. Sheet metal framed enclosures come in NEMA Type 1 and Type 3R ratings. Seismic enhancements made to the test units and modifications required to address anomalies observed during the tests shall be incorporated into the production units.

Mounting Description: Rigid floor mounted

Applicant Information

Applicant Company Name: Square D by Schneider Electric

Contact Person: David E. Childers

Mailing Address: 105 Summit Park Drive, Salisbury, NC 28146

Telephone: 704-645-2627 Email: david.childers@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: David Childers Date: March 3, 2016

Title: Product marketing Specialist Company Name: Schneider Electric

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

Company Name: Forell/Elsesser Engineers, Inc.

Name: Marco Scanu, SE California License Number: S4454

Mailing Address: 160 Pine St., 6th Flr., San Francisco, CA 94111

Telephone: (415) 837-0700 Email: m.scanu@forell.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 1

Company Name: NTS Huntsville (formerly Wyle Laboratories)

Contact Name: Don Smith – Manager, Commercial Test Services

Mailing Address: 7800 Highway 20 West, Huntsville, AL 35806

Telephone: 256-716-4221 Email: don.smith@wyle.com

Testing Laboratory 2

Company Name: Applied Technical Services, Inc.

Contact Name: David N. Common – Senior Test Engineer, Dynamics Testing

Mailing Address: 1049 Triad Court, Marietta, GA 30062

Telephone: 678-444-2905 Email: dcommon@atslab.com

Seismic Parameters

Design in accordance with ASCE 7-10 Chapter 13: ☒ Yes ☐ No

Design Basis of Equipment or Components (F_p/W_p) = See Certified Product Listing Tables

S_{DS} (Design spectral response acceleration at short period, g) = See Certified Product Listing Tables

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

R_p (Equipment or component response modification factor) = 6.0

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

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

Equipment or Component Natural Frequencies (Hz) = See attachment, UUT Summary Sheets

Overall dimensions and weight (or range thereof) = See attachment, Certified Products Table

Equipment or Components @ grade designed in accordance with ASCE 7-10 Chapter 15: ☐ Yes ☒ No

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

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

S_{D1} (Design spectral response acceleration at 1 second period, g) = _____

R (Response modification coefficient) = _____

Ω_0 (System overstrength factor) = _____

C_d (Deflection amplification factor) = _____

I_p (Importance factor) = 1.5

Height to Center of Gravity above base = _____

Equipment or Component Natural Frequencies (Hz) = _____

Overall dimensions and weight (or range thereof) = _____

Tank(s) designed in accordance with ASME BPVC, 2015: ☐ Yes ☒ No

List of Attachments Supporting Special Seismic Certification

☒ Test Report(s) ☐ Drawings ☒ Calculations ☒ Manufacturer's Catalog

☒ Other(s) (Please Specify): Certified Products Table, Certified Major Sub-Components Listing Table, UUT Summary Sheets

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

Signature: _____ Date: May 13, 2016

Print Name: Timothy J. Piland Title: SSE

Special Seismic Certification Valid Up to : S_{DS} (g) = See Above z/h = See Above

Condition of Approval (if applicable): _____

Certified Product Listing
Integrated Power Center 2 (IPC2)

Manufacturer: Square D by Schneider Electric

Product Category: Integrated Power and Control Solutions (IPaCS) – Low Voltage (600 Volts and Below)

Product Line Models: Integrated Power Center 2 (IPC2)

Product Options: IPC2 sections are integrated, low voltage, power and control prewired systems and may include Square D NQ, NF, and I-Line panelboard interiors and Powerlink, PowerLogic, and other interior components (see Certified Major Sub-Component tables) packaged within a limited range of enclosure sizes. Sheet metal framed enclosures come in NEMA Type 1 and Type 3R ratings.

Product Mounting: Rigid Floor Mount

Integrated Power Center 2 (IPC2)

Voltage Rating (V)	Ampacity Rating (A)	Section Type[1]	Width (in.)	Depth[2] (in.)	Height (in.)	Max. Weight (lbs)	NEMA Type[3]	Notes	Test Status	Certification Level[4]			
										z/h = 0		z/h = 1	
										S_{DS} (g)	F_p/W_p	S_{DS} (g)	F_p/W_p
208 – 600	Up to 1200	Distribution and Control	24	24	91.5	680	1		Wyle 54550R07, UUT-1	3.24	1.46	1.98	1.49
				36	91.5	1084	1, 3R		Interpolated	2.20	0.99	1.98	1.49
				48	91.5	1201	1, 3R		Interpolated	2.20	0.99	1.98	1.49
			30	24	91.5	749	1		PRO42387-TR-16 UUT-2	2.20	0.99	2.20	1.65
				24	91.5	1030	1		Interpolated	2.20	0.99	1.98	1.49
				36	91.5	1105	1, 3R		Interpolated	2.20	0.99	1.98	1.49
				48	91.5	1138	1, 3R		Interpolated	2.20	0.99	1.98	1.49
			36	24	91.5	848	1		Interpolated	2.20	0.99	1.98	1.49
				36	91.5	1289	1, 3R		Interpolated	2.20	0.99	1.98	1.49
				48	91.5	1417	1, 3R		Interpolated	2.20	0.99	1.98	1.49
			42	24	91.5	1761	1		Interpolated	2.20	0.99	1.98	1.49
				36	91.5	2103	1, 3R		Interpolated	2.20	0.99	1.98	1.49
				48	91.5	2371	1, 3R		Interpolated	2.20	0.99	1.98	1.49
			48	24	91.5	1078	1		Interpolated	2.20	0.99	1.98	1.49
				36	91.5	1930	3R		Interpolated	2.20	0.99	1.98	1.49
				36	91.5	1930	1		Wyle 54550R07, UUT-2	3.05	1.37	1.98	1.49
				36	91.5	2434	1		PRO42387-TR-16 UUT-4	2.20	0.99	2.20	1.65
				36	91.5	2616	1		PRO42387-TR-16 UUT-5	2.22	1.00	2.16	1.62
				36	91.5	2878	1, 3R		Extrapolated	2.20	0.99	1.98	1.49
				48	91.5	1026	1		Extrapolated	2.20	0.99	1.98	1.49
				48	91.5	1026	3R		Extrapolated	2.20	0.99	1.98	1.49

Notes:

1. Dimensions and weights are for individual sections. Section types may be installed alone or bayed together.
2. Enclosure depth does not include the depth increase from added rain shield on the NEMA Type 3R offering.
3. Enclosure types are constructed of carbon steel sheet with baked enamel or powder-coated finish.
4. Certification level is limited to the lower rating of either the Certified Product Listing, as listed here, or the internal sub-components, as listed on the Certified Major Sub-Components table.

Molded Case Circuit Breakers (2 Pole and 3 Pole)

Frame Type	Rated Voltage (Volts)	Rated Current (Amps)	Manufacturer	Part No. / Identifier	Notes	Test Status[1]	Certification Level[2]			
							z/h = 0		z/h = 1	
							S_{DS} (g)	F_p/W_p	S_{DS} (g)	F_p/W_p
H	600	15	Square D	HDA36015		Wyle 71437R13, UUT-1	2.55	1.15	2.25	1.69
	208 – 600	15 – 150	Square D	H*		Interpolated	2.55	1.15	2.17	1.63
Q	240	70 – 250	Square D	Q*		Interpolated	2.55	1.15	2.17	1.63
J	208 – 600	150 – 250	Square D	J*		Interpolated	2.55	1.15	2.17	1.63
L	208 – 600	250 – 600	Square D	L*		Interpolated	2.55	1.15	2.17	1.63
M	208 – 600	300 – 800	Square D	M*		Interpolated	2.55	1.15	2.17	1.63
P	208 – 600	250 – 1200	Square D	P*		Interpolated	2.55	1.15	2.17	1.63
R	208 – 600	1000 – 1200	Square D	R*		Interpolated	2.55	1.15	2.17	1.63
	600	1200	Square D	RJA36120CU31A		Wyle 58514R11-2, UUT-1	3.43	1.54	2.17	1.63

Notes:
1. The sub-components listed here include part numbers which provided identify configuration, manufacturer, and materials. Tested sub-components and interpolated items have the same manufacturer and materials and have similar configuration and construction as the tested units.
2. Certification level is limited to the lower rating of either the Certified Major Sub-Components Listing, as listed here, or the product section, as listed on the Certified Product Listing table.

Miniature Circuit Breakers (2 Pole and 3 Pole)

Frame Type	Rated Voltage (Volts)	Rated Current (Amps)	Manufacturer	Part No. / Identifier	Notes	Test Status[1]	Certification Level[2]			
							z/h = 0		z/h = 1	
							S_{DS} (g)	F_p/W_p	S_{DS} (g)	F_p/W_p
E	120 – 480	15	Square D	E*		Extrapolated	2.55	1.15	1.98	1.49
	480	20	Square D	EDB14020		Wyle 54550R07, UUT1	3.24	1.46	1.98	1.49
	120 – 480	20 – 125	Square D	E*		Interpolated	2.55	1.15	1.98	1.49
QO	120 – 240	20 – 150	Square D	QO*		Interpolated	2.55	1.15	1.98	1.49
	240	150	Square D	QOB3150VH		Wyle 71437R13, UUT-1	2.55	1.15	2.25	1.69

Notes:
1. The sub-components listed here include part numbers which provided identify configuration, manufacturer, and materials. Tested sub-components and interpolated/extrapolated items have the same manufacturer and materials and have similar configuration and construction as the tested units.
2. Certification level is limited to the lower rating of either the Certified Major Sub-Components Listing, as listed here, or the product section, as listed on the Certified Product Listing table.

Contactors and Relays											
Family Name / Type	Rated Voltage (Volts)	Rated Current (Amps)	Poles	Manufacturer	Part No. / Identifier	Notes	Test Status[1]	Certification Level[2]			
								z/h = 0		z/h = 0	
								S_{DS} (g)	F_p/W_p	S_{DS} (g)	F_p/W_p
R	600	10	2	Square D	8501RS42P14V14		Wyle 71437R13, UUT-1	2.55	1.15	2.25	1.69
		10	2 – 4	Square D	8501RS*		Interpolated	2.55	1.15	2.25	1.69
		10	4	Square D	8501RS44P14V20		Wyle 71437R13, UUT-1	2.55	1.15	2.25	1.69
L and LX	600	30	2	Square D	8903LO20V02		Wyle 71437R13, UUT-1	2.55	1.15	2.25	1.69
		30	2 – 12	Square D	8903L*		Interpolated	2.55	1.15	2.25	1.69
		30	12	Square D	8903LXO1200V02		Wyle 71437R13, UUT-1	2.55	1.15	2.25	1.69
S	600	30	2	Square D	8903SMO10V02		Wyle 71437R13, UUT-1	2.55	1.15	2.25	1.69
		30 – 200	2 – 3	Square D	8903S*		Interpolated	2.55	1.15	2.25	1.69
		200	3	Square D	8903SVO2V02		Wyle 71437R13, UUT-1	2.55	1.15	2.25	1.69
DPA	600	30	2	Square D	8910DPA32V02		Wyle 71437R13, UUT-1	2.55	1.15	2.25	1.69
		30	2 – 4	Square D	8910DPA*		Interpolated	2.55	1.15	2.25	1.69
		30	4	Square D	8910DPA34V02		Wyle 71437R13, UUT-1	2.55	1.15	2.25	1.69

Notes:

1. The sub-components listed here include part numbers which provided identify configuration, manufacturer, and materials. Tested sub-components and interpolated items have the same manufacturer and materials and have similar configuration and construction as the tested units.
2. Certification level is limited to the lower rating of either the Certified Major Sub-Components Listing, as listed here, or the product section, as listed on the Certified Product Listing table.

Panelboards

Family Name / Type[2]	Rated Voltage (Volts)	Rated Current (Amps)	Manufacturer	Part No. / Identifier	Notes	Test Status[1]	Certification Level[2]			
							z/h = 0		z/h = 1	
							S_{DS} (g)	F_P/W_P	S_{DS} (g)	F_P/W_P
NQ	240	225	Square D	NQ430L2C		Wyle 71437R13, UUT-1	2.55	1.15	2.25	1.69
		100 – 800	Square D	NQ*	3	Interpolated	2.55	1.15	1.76	1.32
NF	600	100 – 800	Square D	NF*	3	Interpolated	2.55	1.15	1.76	1.32
		400	Square D	NF442L4		Wyle, 53533-1, UUT-1C	2.97	1.34	1.76	1.32
I-Line	600	400	Square D	HCP14504		Wyle 71437R13, UUT-1	2.55	1.15	2.25	1.69
		400 – 1200	Square D	HC*		Interpolated	2.55	1.15	1.71	1.28
		1200	Square D	SWBD I-LINE		Wyle 59088R12, UUT-2	3.32	1.49	1.71	1.28

Notes:

1. The sub-components listed here include part numbers which provided identify configuration, manufacturer, and materials. Tested sub-components and interpolated items have the same manufacturer and materials and have similar configuration and construction as the tested units.
2. Certification level is limited to the lower rating of either the Certified Major Sub-Components Listing, as listed here, or the product section, as listed on the Certified Product Listing table.
3. NQ and NF type panels are the same material, same manufacture and of similar construction.

Surge Protective Devices (SPD)

Family Name / Type[2]	Rated Voltage (Volts)	Surge Current (Amps)	Manufacturer	Part No. / Identifier	Notes	Test Status	Certification Level[1]			
							z/h = 0		z/h = 1	
							S_{DS} (g)	F_P/W_P	S_{DS} (g)	F_P/W_P
SurgeLoc	208Y/120V	80kA – 240kA	Square D	SSP02BIA24PBQ1		Wyle 71437R13, UUT-1	2.55	1.15	2.25	1.69

Notes:

1. Certification level is limited to the lower rating of either the Certified Major Sub-Components Listing, as listed here, or the product section, as listed on the Certified Product Listing table.

Dry Type Transformers

Part Description[1]				Manufacturer	Notes	Test Status[1]	Certification Level[3]			
							z/h = 0		z/h = 1	
Phase	Power Rating (kVA)	Winding Material	Part No. / Identifier[2]				S_{DS} (g)	F_p/W_p	S_{DS} (g)	F_p/W_p
1∅	0.05	Copper	9070T50D31	Square D		Wyle 71437R13, UUT-1	2.55	1.15	2.25	1.69
	0.05 – 0.5	Copper	9070T*	Square D		Interpolated	2.55	1.15	1.98	1.49
	0.5	Copper	9070T500D1	Square D		Wyle 71437R13, UUT-1	2.55	1.15	2.25	1.69
	15 – 37.5	Aluminum	EE*, EP*, HM*	Square D	2	Interpolated	2.55	1.15	1.98	1.49
		Copper	EE*, EP*, HM*	Square D	2	Interpolated	2.55	1.15	1.98	1.49
	50 – 167	Aluminum	EE*, EP*, HM*	Square D	2	Interpolated	2.55	1.15	1.98	1.49
		Copper	EE*, EP*, HM*	Square D	2	Interpolated	2.55	1.15	1.98	1.49
3∅	15	Aluminum	EE*, EP*, HM*	Square D	2	Interpolated	2.55	1.15	1.98	1.49
		Copper	EE*, EP*, HM*	Square D	2	Interpolated	2.55	1.15	1.98	1.49
	30 – 300	Aluminum	EE*, EP*, HM*	Square D	2	Interpolated	2.55	1.15	1.98	1.49
		Copper	EE*, EP*, HM*	Square D	2	Interpolated	2.55	1.15	1.98	1.49
	300	Aluminum	EE300T3H	Square D		Wyle 54550R07, UUT-2	3.05	1.37	1.98	1.49
		Copper	EE300T68HISCUNL	Square D		Wyle 71437R13, UUT-5	2.58	1.16	2.28	1.71

Notes:

1. The sub-components listed here include part descriptions which provided identify configuration, manufacturer, and materials. Tested sub-components and interpolated/extrapolated items have the same manufacturer and materials and have similar configuration and construction as the tested units.
2. Energy Efficient (EE) dry type transformers, NEMA Premium (EP) dry type transformers and Harmonic Mitigating (HM) dry type transformers have similar configuration and construction as the tested units.
3. Certification level is limited to the lower rating of either the Certified Major Sub-Components Listing, as listed here, or the product section, as listed on the Certified Product Listing table.

Dry Type Transformers – DOE2016										
Part Description[1]							Certification Level[3]			
							z/h = 0		z/h = 1	
Phase	Power Rating (kVA)	Winding Material	Part No. / Identifier[2]	Manufacturer	Notes	Test Status[1]	S_{DS} (g)	F_p/W_p	S_{DS} (g)	F_p/W_p
3∅	15-30	Aluminum	EX*	Square D	2	Interpolated	2.20	0.99	2.20	1.65
		Copper	EX*	Square D	2	Interpolated	2.22	1.00	2.16	1.62
	30	Aluminum	EX30T3H	Square D		PRO42387-TR-16 UUT-2	2.20	0.99	2.20	1.65
		Copper	EX30T3HCU	Square D		PRO42387-TR-16 UUT-3	2.22	1.00	2.16	1.62
	45 – 300	Aluminum	EX*	Square D	2	Interpolated	2.20	0.99	2.20	1.65
		Copper	EX*	Square D	2	Interpolated	2.22	1.00	2.16	1.62
	300	Aluminum	EX300T3H	Square D		PRO42387-TR-16 UUT-4	2.20	0.99	2.20	1.65
		Copper	EX300T3HCU	Square D		PRO42387-TR-16 UUT-5	2.22	1.00	2.16	1.62

Notes:

1 The sub-components listed here include part descriptions which provided identify configuration, manufacturer, and materials. Tested sub-components and interpolated/extrapolated items have the same manufacturer and materials and have similar configuration and construction as the tested units.

2 Energy Efficient (EX) dry type transformers, NEMA Premium (EP) dry type transformers and Harmonic Mitigating (HM) dry type transformers have similar configuration and construction as the tested units.

3 Certification level is limited to the lower rating of either the internal components, as listed here, or the product section, as listed on the Certified Product table.

UUT Summary
Integrated Equipment – IPC2

UUT Product Information			
Manufacturer	**Product Category**	**Product Line Model**	**Model Number**
Square D by Schneider Electric	Integrated Power and Control Solutions (IPaCS) – Low Voltage	Integrated Power Center 2 (IPC2)	IPC224X2445KVA, E-979867

UUT Test Report Association				
Test Lab	**Report No.**	**Report Date**	**Test Run No.**	**UUT Designation**
Wyle Laboratories	54550R07	05/30/2007	10	UUT-1

UUT Notes / Description

1. The UUT is a low voltage, IPC2 unit 24” wide x 24” deep, floor mounted section containing an NF panelboard interior and a 45 kVA three phase distribution transformer packaged into a NEMA Type 1 enclosure
2. NEMA Type 1 enclosure is constructed of carbon steel sheet, with powder-coated finish
3. UUT full of contents during testing.

UUT Properties (As Tested)								
Weight (lbs.)	**Dimensions (in.)**			**Lowest Natural Frequency (Hz)**			**Shake-Table Attachment**	
	Height	**Width**	**Depth**	**F-B**	**S-S**	**V**	**Type**	**Anchorage**
680	91.5	24	24	8	14	11	Rigid floor mount	(4) 1/2-13 grade 5 bolts and Belleville conical spring washers at 70 ft-lbs torque

UUT Seismic Test Parameters								
Building Codes	**Test Criteria**	S_{DS} **(g)**	***z/h***	I_p	$A_{FLX\text{-}H}$ **(g)**	$A_{RIG\text{-}H}$ **(g)**	$A_{FLX\text{-}V}$ **(g)**	$A_{RIG\text{-}V}$ **(g)**
CBC 2016	ICC-ES AC156	3.24	0	1.5	3.24	1.30	2.17	0.87
		1.98	1	1.5	3.17	2.38	1.33	0.53

UUT Seismic Test Results

✓ The UUT maintained structural integrity and functionality as confirmed in post test inspection and active operation validation checks

UUT Photograph

UUT Major Components		
Description	**Manufacturer**	**Part No. / Identifier**
Enclosure – NEMA Type 1, Carbon Steel Sheet	Square D	24W x 24D x 91.5H
Panelboard Interior, NF, 400A, 3-phase, 42 Circuit	Square D	NF442L4C
Miniature Circuit Breaker, E-frame, 480Y/277V 20A	Square D	EDB14020
Transformer, Dry Type, 3 Phase, 45KVA, Aluminum	Square D	EE45T3H

UUT Summary
Integrated Equipment – IPC2

UUT Product Information			
Manufacturer	**Product Category**	**Product Line Model**	**Model Number**
Square D by Schneider Electric	Integrated Power and Control Solutions (IPaCS) – Low Voltage	Integrated Power Center 2 (IPC2)	IPC236X48300KVA, E-979869

UUT Test Report Association				
Test Lab	**Report No.**	**Report Date**	**Test Run No.**	**UUT Designation**
Wyle Laboratories	54550R07	05/30/2007	19	UUT-2

UUT Notes / Description

1. The UUT is a low voltage, IPC2 unit 48” wide x 36” deep, floor mounted section containing two NF panelboard interiors and a 300 kVA three phase distribution transformer packaged into a NEMA Type 1 enclosure
2. NEMA Type 1 enclosure is constructed of carbon steel sheet, with powder-coated finish
3. UUT full of contents during testing.

UUT Properties (As Tested)								
Weight (lbs.)	**Dimensions (in.)**			**Lowest Natural Frequency (Hz)**			**Shake-Table Attachment**	
	Height	**Width**	**Depth**	**F-B**	**S-S**	**V**	**Type**	**Anchorage**
1,930	91.5	48	36	5.3	14	16	Rigid floor mount	(6) 1/2-13 grade 5 bolts and Belleville conical spring washers at 70 ft-lbs torque

UUT Seismic Test Parameters								
Building Codes	**Test Criteria**	S_{DS} **(g)**	***z/h***	I_p	$A_{FLX\text{-}H}$ **(g)**	$A_{RIG\text{-}H}$ **(g)**	$A_{FLX\text{-}V}$ **(g)**	$A_{RIG\text{-}V}$ **(g)**
CBC 2016	ICC-ES AC156	3.05	0	1.5	3.05	1.22	2.04	0.82
		1.98	1	1.5	3.17	2.38	1.33	0.53

UUT Seismic Test Results

✓ The UUT maintained structural integrity and functionality as confirmed in post test inspection and active operation validation checks

UUT Photograph

UUT Major Components

Description	Manufacturer	Part No. / Identifier
Enclosure – NEMA Type 1, Carbon Steel Sheet	Square D	48W x 36D x 91.5H
Panelboard Interior, NF, 250A, 3-phase, 54 Circuit	Square D	NF454L2C
Miniature Circuit Breaker, E-frame, 277V 20A	Square D	EDB14020
Transformer, Dry Type, 3 Phase, 300 kVA, Aluminum	Square D	EE300T3H

UUT Summary
Integrated Equipment – IPC2

UUT Product Information			
Manufacturer	**Product Category**	**Product Line Model**	**Model Number**
Square D by Schneider Electric	Integrated Power and Control Solutions (IPaCS) – Low Voltage	Integrated Power Center 2 (IPC2)	FO# 2013SEISMIC001

UUT Test Report Association				
Test Lab	**Report No.**	**Report Date**	**Test Run No.**	**UUT Designation**
Wyle Laboratories	71437R13	02/04/2014	6	UUT-1

UUT Notes / Description

1. The UUT is a low voltage, Integrated Power Center 2 distribution section with I-Line and NQ panels, and various power and control components, packaged in a NEMA Type 3R enclosure
2. NEMA Type 3R enclosure is constructed of carbon steel sheet, with powder-coated finish
3. UUT full of contents during testing.

UUT Properties (As Tested)								
Weight (lbs.)	**Dimensions (in.)**			**Lowest Natural Frequency (Hz)**			**Shake-Table Attachment**	
	Height	**Width**	**Depth**	**F-B**	**S-S**	**V**	**Type**	**Anchorage**
1,026	91.55	48	51.03	16	8.6	>33.3	Rigid floor mount	(6) 1/2-13 grade 5 bolts and flat washers at 65 ft-lbs torque

UUT Seismic Test Parameters								
Building Codes	**Test Criteria**	**S_{DS} (g)**	**z/h**	**I_p**	**A_{FLX-H} (g)**	**A_{RIG-H} (g)**	**A_{FLX-V} (g)**	**A_{RIG-V} (g)**
CBC 2016	ICC-ES AC156	2.55	0	1.5	2.55	1.02	1.71	0.69
		2.25	1	1.5	3.60	2.70	1.51	0.61

UUT Seismic Test Results

✓ The UUT maintained structural integrity and functionality as confirmed in post test inspection and active operation validation checks

UUT Photograph

UUT Major Components		
Description	**Manufacturer**	**Part No. / Identifier**
Enclosure – NEMA Type 3R, Carbon Steel Sheet	Square D	48W x 51D x 91.55H
Main Bus, 600A, Copper, Tin Plated	Square D	600A Copper, Tin Plated, Bus
Panelboard Interior, I-Line, 400A, 3-phase	Square D	HCP14504
Molded Case Circuit Breaker, H-frame, 600V 15A	Square D	HDA36015
Panelboard Interior, NQ, 225A, 3-phase, 30 Circuit	Square D	NQ430L2C
Miniature Circuit Breaker, Q-frame, 120/240V 15A	Square D	QOB115
Miniature Circuit Breaker, Q-frame, 240V 30A	Square D	QOB330
Miniature Circuit Breaker, Q-frame, 240V 150A	Square D	QOB3150VH
Surge Protective Device	Square D	SSP02BIA24PBQ1
Control Power Transformer, 50 VA	Square D	9070T50D31
Control Power Transformer, 500 VA	Square D	9070T500D1
Lighting Contactor 600VAC 30A L	Square D	8903LO20V02
Lighting Contactor 600VAC 30A LX	Square D	8903LXO1200V02
Lighting Contactor 600VAC 30A NEMA	Square D	8903SMO10V02
Lighting Contactor 600VAC 200A NEMA	Square D	8903SVO2V02

UUT Major Components (Cont.)		
Description	**Manufacturer**	**Part No. / Identifier**
Definite Purpose Contactor Type DPA 30A, 2-Pole, 120VAC@60Hz - 110VAC@50Hz	Square D	8910DPA32V02
Definite Purpose Contactor Type DPA 30A, 4-Pole, 120VAC@60Hz - 110VAC@50Hz	Square D	8910DPA34V02
Relay 250VAC 10A Type R	Square D	8501RS44P14V20
Relay Socket 300VAC 10A Type R	Square D	8501NR34
Relay 240VAC 10A Type R	Square D	8501RS42P14V14
Relay Socket 300VAC 10A Type R	Square D	8501NR42

UUT Summary
Power-Style QED-2 Low Voltage Switchboard

UUT Product Information			
Manufacturer	**Product Category**	**Product Line Model**	**Model Number**
Square D by Schneider Electric	Switchboards – Low Voltage	Power-Style QED-2	(F-787208)

UUT Test Report Association				
Test Lab	**Report No.**	**Report Date**	**Test Run No.**	**UUT Designation**
Wyle Laboratories	58514R11-2	05/27/2011	5	UUT-1

UUT Notes / Description

1. The UUT is a low voltage QED-2 Double Row I-Line (63" high I-Line) switchboard section 48" wide x 48" deep, 3000A with top located through bus, floor mounted containing R-frame, P-frame, PowerPact Micrologic H, J, and L-frame circuit breakers with Electronic trip units packaged in a NEMA Type 1 enclosure.
2. The NEMA Type 1 enclosure is constructed of carbon steel sheet, with powder-coated finish
3. UUT full of contents during testing.

UUT Properties (As Tested)								
Weight (lbs.)	**Dimensions (in.)**			**Lowest Natural Frequency (Hz)**			**Shake-Table Attachment**	
	Height	**Width**	**Depth**	**F-B**	**S-S**	**V**	**Type**	**Anchorage**
1,586	90	48	48.5	7.8	5.7	>33.3	Rigid floor mount	(6) ½-13 grade 5 bolts and Belleville conical spring washers at 70 ft-lb torque

UUT Seismic Test Parameters								
Building Codes	**Test Criteria**	S_{DS} **(g)**	***z/h***	I_p	A_{FLX-H} **(g)**	A_{RIG-H} **(g)**	A_{FLX-V} **(g)**	A_{RIG-V} **(g)**
CBC 2016	ICC-ES AC156	3.43	0	1.5	3.43	1.37	2.30	0.93
		2.17	1	1.5	3.47	2.60	1.45	0.59

UUT Seismic Test Results

✓ The UUT maintained structural integrity and functionality as confirmed in post test inspection and active operation validation checks

UUT Photograph

UUT Major Components		
Description	**Manufacturer**	**Part No. / Identifier**
Enclosure – NEMA Type 1	Square D	48W x 48D x 90H
Main bus - copper bars - 3000A	Square D	3000A Cu Bus
Molded Case Circuit Breaker, P-frame, 600V 800A	Square D	PJA36080
Molded Case Circuit Breaker, R-frame, 600V 1200A	Square D	RJA36120CU31A
Molded Case Circuit Breaker, H-frame, 600V 150A	Square D	HJA261501
Molded Case Circuit Breaker, H-frame, 600V 150A	Square D	HLA36150U54X
Molded Case Circuit Breaker, J-frame, 600V 250A	Square D	JLA36250U54X
Molded Case Circuit Breaker, L-frame, 600V 600A	Square D	LLA36600U54X
Molded Case Circuit Breaker, L-frame, 600V 400A	Square D	LLA36400CU54X

UUT Summary
Integrated Equipment – IPC2

UUT Product Information			
Manufacturer	**Product Category**	**Product Line Model**	**Model Number**
Square D by Schneider Electric	Integrated Power and Control Solutions (IPaCS) – Low Voltage	Integrated Power Center 2 (IPC2)	TR0221-4

UUT Test Report Association				
Test Lab	**Report No.**	**Report Date**	**Test Run No.**	**UUT Designation**
Wyle Laboratories	53533-1	08/07/2006	16	UUT-1C

UUT Notes / Description

1. The UUT is a low voltage, IPC2 unit 48” wide x 24” deep, floor mounted distribution section containing six NF panelboard interiors and EDB branch circuit breakers packaged into a NEMA Type 1 enclosure
2. NEMA Type 1 enclosure is constructed of carbon steel sheet, with powder-coated finish
3. UUT full of contents during testing.

UUT Properties (As Tested)								
Weight (lbs.)	**Dimensions (in.)**			**Lowest Natural Frequency (Hz)**			**Shake-Table Attachment**	
	Height	**Width**	**Depth**	**F-B**	**S-S**	**V**	**Type**	**Anchorage**
1,010	91.5	48	24	6.7	9.1	12	Rigid floor mount	(4) 1/2-13 grade 5 bolts and flat washers at 70 ft-lbs torque

UUT Seismic Test Parameters								
Building Codes	**Test Criteria**	S_{DS} **(g)**	**z/h**	I_p	$A_{FLX\text{-}H}$ **(g)**	$A_{RIG\text{-}H}$ **(g)**	$A_{FLX\text{-}V}$ **(g)**	$A_{RIG\text{-}V}$ **(g)**
CBC 2016	ICC-ES AC156	2.97	0	1.5	2.97	1.19	1.99	0.80
		1.76	1	1.5	2.82	2.11	1.18	0.48

UUT Seismic Test Results

✓ The UUT maintained structural integrity and functionality as confirmed in post test inspection and active operation validation checks

UUT Photograph

UUT Major Components		
Description	**Manufacturer**	**Part No. / Identifier**
Enclosure – NEMA Type 1, Carbon Steel Sheet	Square D	48W x 24D x 91.5H
Panelboard Interior, NF, 400A, 3-phase, 42 Circuit	Square D	NF442L4
Miniature Circuit Breaker, E-frame, 480Y/277V 20A	Square D	EDB14020

UUT Summary
Power-Style QED-2 Low Voltage Switchboard

UUT Product Information			
Manufacturer	**Product Category**	**Product Line Model**	**Model Number**
Square D by Schneider Electric	Switchboards – Low Voltage	Power-Style QED-2	FO# 30552504-001

UUT Test Report Association				
Test Lab	**Report No.**	**Report Date**	**Test Run No.**	**UUT Designation**
Wyle Laboratories	59088R12	05/17/2012	14	UUT-2

UUT Notes / Description

1. The UUT is a low voltage QED-2 I-Line switchboard section 36" wide x 24" deep, 1200A back fed main, floor mounted containing a single row I-Line interior with PowerPact P-frame circuit breakers packaged in a NEMA Type 1 enclosure
2. The NEMA Type 1 enclosure is constructed of carbon steel sheet, with powder-coated finish
3. UUT full of contents during testing.

UUT Properties (As Tested)								
Weight (lbs.)	**Dimensions (in.)**			**Lowest Natural Frequency (Hz)**			**Shake-Table Attachment**	
	Height	**Width**	**Depth**	**F-B**	**S-S**	**V**	**Type**	**Anchorage**
982	91.5	36	24	9.8	9.7	>33.3	Rigid floor mount	(4) ½-13 grade 5 bolts and Belleville conical spring washers at 70 ft-lb torque

UUT Seismic Test Parameters								
Building Codes	**Test Criteria**	S_{DS} **(g)**	***z/h***	I_p	$A_{FLX\text{-}H}$ **(g)**	$A_{RIG\text{-}H}$ **(g)**	$A_{FLX\text{-}V}$ **(g)**	$A_{RIG\text{-}V}$ **(g)**
CBC 2016	ICC-ES AC156	3.32	0	1.5	3.32	1.33	2.22	0.90
		1.71	1	1.5	2.74	2.05	1.15	0.46

UUT Seismic Test Results

✓ The UUT maintained structural integrity and functionality as confirmed in post test inspection and active operation validation checks

UUT Photograph

UUT Major Components

Description	Manufacturer	Part No. / Identifier
Enclosure – NEMA Type 1, Carbon Steel Sheet	Square D	36W x 24D x 91.5H
Molded Case Circuit Breaker, PowerPact P-frame, 600V 600A	Square D	PGA36060
Panelboard Interior, I-Line, 1200A, 3-phase	Square D	SWBD I-LINE
Main bus, 1200A, Copper, Tin Plated	Square D	1200A Cu Bus

UUT Summary
Integrated Equipment – IPC2

UUT Product Information			
Manufacturer	**Product Category**	**Product Line Model**	**Model Number**
Square D by Schneider Electric	Integrated Power and Control Solutions (IPaCS) – Low Voltage	Integrated Power Center 2 (IPC2)	FO# 32013SEISMIC003

UUT Test Report Association				
Test Lab	**Report No.**	**Report Date**	**Test Run No.**	**UUT Designation**
Wyle Laboratories	71437R13	02/04/2014	12	UUT-5

UUT Notes / Description

1. The UUT is a low voltage, Integrated Power Center 2 distribution section with a 300 kVA dry-type transformer, 3-phase with copper windings, packaged in a NEMA Type 1 enclosure
2. NEMA Type 1 enclosure is constructed of carbon steel sheet, with powder-coated finish
3. UUT full of contents during testing.

UUT Properties (As Tested)								
Weight (lbs.)	**Dimensions (in.)**			**Lowest Natural Frequency (Hz)**			**Shake-Table Attachment**	
	Height	**Width**	**Depth**	**F-B**	**S-S**	**V**	**Type**	**Anchorage**
1,942	71	48	36	32	16	>33.3	Rigid floor mount	(6) 1/2-13 grade 5 bolts and Belleville conical spring washers at 65 ft-lbs torque

UUT Seismic Test Parameters								
Building Codes	**Test Criteria**	S_{DS} **(g)**	***z/h***	I_p	A_{FLX-H} **(g)**	A_{RIG-H} **(g)**	A_{FLX-V} **(g)**	A_{RIG-V} **(g)**
CBC 2016	ICC-ES AC156	2.58	0	1.5	2.58	1.03	1.73	0.70
		2.28	1	1.5	3.65	2.74	1.53	0.62

UUT Seismic Test Results

✓ The UUT maintained structural integrity and functionality as confirmed in post test inspection and active operation validation checks

UUT Photograph

UUT Major Components

Description	Manufacturer	Part No. / Identifier
Enclosure – NEMA Type 1, Carbon Steel Sheet	Square D	48W x 36D x 71H
Transformer, Dry Type, 3 Phase, 300 kVA, Copper	Square D	EE300T68HISCUNL

UUT Summary
Integrated Equipment – IPC2

UUT Product Information			
Manufacturer	**Product Category**	**Product Line Model**	**Identification Number**
Square D by Schneider Electric	Integrated Power and Control Solutions (IPaCS) – Low Voltage	Integrated Power Center 2 (IPC2)	RF 10291501-1

UUT Test Report Association				
Test Lab	**Report No.**	**Report Date**	**Test Run No.**	**UUT Designation**
NTS Huntsville	PR042387-TR-16	1/28/2016	5	UUT-2

UUT Notes / Description

1. The UUT is a low voltage (250A, 480V), Integrated Power Center 2 distribution section with an energy efficient 30 kVA dry-type transformer, 3-phase with aluminum windings (DOE2016), packaged in a NEMA Type 1 enclosure.
2. NEMA Type 1 enclosure constructed of carbon steel sheet, with powder-coated finish.
3. UUT full of contents during testing.

UUT Properties (As Tested)								
Weight (lbs.)	**Dimensions (in.)**			**Lowest Natural Frequency (Hz)**			**Shake-Table Attachment**	
	Height	**Width**	**Depth**	**F-B**	**S-S**	**V**	**Type**	**Anchorage**
749	91.5	30	24	10.0	9.2	19.9	Rigid floor mounted	(4) 1/2-13 grade 5 bolts and Belleville conical spring washers at 60 ft-lbs torque

UUT Seismic Test Parameters								
Building Codes	**Test Criteria**	S_{DS} **(g)**	***z/h***	I_p	$A_{FLX\text{-}H}$ **(g)**	$A_{RIG\text{-}H}$ **(g)**	$A_{FLX\text{-}V}$ **(g)**	$A_{RIG\text{-}V}$ **(g)**
CBC 2016	ICC-ES AC156	2.20	0	1.5	2.20	0.88	1.47	0.59
		2.20	1	1.5	3.52	2.64	1.47	0.59

UUT Seismic Test Results

✓ The UUT maintained structural integrity and functionality as confirmed in post test inspection and active operation validation checks

UUT Photograph

UUT Major Components		
Description	**Manufacturer**	**Part No. / Identifier**
Transformer, Dry Type, 3 Phase, 30kVA, Aluminum (DOE 2016)	Square D	EX30T3H
Enclosure – NEMA Type 1, Carbon Steel Sheet	Square D	30W x 24D x 91.5H
Panelboard Interior	Square D	NF454L2C

UUT Summary
Integrated Equipment – IPC2

UUT Product Information			
Manufacturer	**Product Category**	**Product Line Model**	**Identification Number**
Square D by Schneider Electric	Integrated Power and Control Solutions (IPaCS) – Low Voltage	Integrated Power Center 2 (IPC2)	RF 10291501-2

UUT Test Report Association				
Test Lab	**Report No.**	**Report Date**	**Test Run No.**	**UUT Designation**
NTS Huntsville	PR042387-TR-16	1/28/2016	9	UUT-3

UUT Notes / Description

1. The UUT is a low voltage (250A, 480V), Integrated Power Center 2 distribution section with an energy efficient 30 kVA dry-type transformer, 3-phase with copper windings (DOE2016), packaged in a NEMA Type 1 enclosure.
2. NEMA Type 1 enclosure constructed of carbon steel sheet, with powder-coated finish.
3. UUT full of contents during testing.

UUT Properties (As Tested)								
Weight (lbs.)	**Dimensions (in.)**			**Lowest Natural Frequency (Hz)**			**Shake-Table Attachment**	
	Height	**Width**	**Depth**	**F-B**	**S-S**	**V**	**Type**	**Anchorage**
771	91.5	30	24	9.8	15.0	18	Rigid floor mounted	(4) 1/2-13 grade 5 bolts and Belleville conical spring washers at 60 ft-lbs torque

UUT Seismic Test Parameters								
Building Codes	**Test Criteria**	S_{DS} **(g)**	***z/h***	I_p	$A_{FLX\text{-}H}$ **(g)**	$A_{RIG\text{-}H}$ **(g)**	$A_{FLX\text{-}V}$ **(g)**	$A_{RIG\text{-}V}$ **(g)**
CBC 2016	ICC-ES AC156	2.22	0	1.5	2.22	0.89	1.49	0.59
		2.16	1	1.5	3.46	2.59	1.45	0.58

UUT Seismic Test Results

✓ The UUT maintained structural integrity and functionality as confirmed in post test inspection and active operation validation checks

UUT Photograph

UUT Major Components

Description	Manufacturer	Part No. / Identifier
Transformer, Dry Type, 3 Phase, 30kVA, Copper (DOE 2016)	Square D	EX30T3HCU
Enclosure – NEMA Type 1, Carbon Steel Sheet	Square D	30W x 24D x 91.5H
Panelboard Interior	Square D	NF454L2C

UUT Summary
Integrated Equipment – IPC2

UUT Product Information			
Manufacturer	**Product Category**	**Product Line Model**	**Identification Number**
Square D by Schneider Electric	Integrated Power and Control Solutions (IPaCS) – Low Voltage	Integrated Power Center 2 (IPC2)	8012302876

UUT Test Report Association				
Test Lab	**Report No.**	**Report Date**	**Test Run No.**	**UUT Designation**
NTS Huntsville	PR042387-TR-16	1/28/2016	5	UUT-4

UUT Notes / Description

1. The UUT is a low voltage (800A, 480V), Integrated Power Center 2 distribution section with an energy efficient 300 kVA dry-type transformer, 3-phase with aluminum windings (DOE2016), packaged in a NEMA Type 1 enclosure.
2. NEMA Type 1 enclosure constructed of carbon steel sheet, with powder-coated finish.
3. UUT full of contents during testing.

UUT Properties (As Tested)								
Weight (lbs.)	**Dimensions (in.)**			**Lowest Natural Frequency (Hz)**			**Shake-Table Attachment**	
	Height	**Width**	**Depth**	**F-B**	**S-S**	**V**	**Type**	**Anchorage**
2434	91.5	48	36	7.3	8.0	18	Rigid floor mounted	(6) 1/2-13 grade 5 bolts and Belleville conical spring washers at 60 ft-lbs torque

UUT Seismic Test Parameters								
Building Codes	**Test Criteria**	S_{DS} **(g)**	***z/h***	I_p	$A_{FLX\text{-}H}$ **(g)**	$A_{RIG\text{-}H}$ **(g)**	$A_{FLX\text{-}V}$ **(g)**	$A_{RIG\text{-}V}$ **(g)**
CBC 2016	ICC-ES AC156	2.20	0	1.5	2.20	0.88	1.47	0.59
		2.20	1	1.5	3.52	2.64	1.47	0.59

UUT Seismic Test Results

✓ The UUT maintained structural integrity and functionality as confirmed in post test inspection and active operation validation checks

UUT Photograph

UUT Major Components		
Description	**Manufacturer**	**Part No. / Identifier**
Transformer, Dry Type, 3 Phase, 300 kVA, Aluminum (DOE 2016)	Square D	EX300T3H
Enclosure – NEMA Type 1, Carbon Steel Sheet	Square D	48W x 36D x 91.5H
Panelboard Interior	Square D	HCP14508

UUT Summary
Integrated Equipment – IPC2

UUT Product Information			
Manufacturer	**Product Category**	**Product Line Model**	**Identification Number**
Square D by Schneider Electric	Integrated Power and Control Solutions (IPaCS) – Low Voltage	Integrated Power Center 2 (IPC2)	RF 10291503 A4545643

UUT Test Report Association				
Test Lab	**Report No.**	**Report Date**	**Test Run No.**	**UUT Designation**
NTS Huntsville	PR042387-TR-16	1/28/2016	9	UUT-5

UUT Notes / Description

1. The UUT is a low voltage (800A, 480V), Integrated Power Center 2 distribution section with an energy efficient 300 kVA dry-type transformer, 3-phase with copper windings (DOE2016), packaged in a NEMA Type 1 enclosure.
2. NEMA Type 1 enclosure constructed of carbon steel sheet, with powder-coated finish.
3. UUT full of contents during testing.

UUT Properties (As Tested)								
Weight (lbs.)	**Dimensions (in.)**			**Lowest Natural Frequency (Hz)**			**Shake-Table Attachment**	
	Height	**Width**	**Depth**	**F-B**	**S-S**	**V**	**Type**	**Anchorage**
2616	91.5	48	36	7.2	9.0	18.0	Rigid floor mounted	(6) 1/2-13 grade 5 bolts and Belleville conical spring washers at 60 ft-lbs torque

UUT Seismic Test Parameters								
Building Codes	**Test Criteria**	S_{DS} **(g)**	**z/h**	I_p	$A_{FLX\text{-}H}$ **(g)**	$A_{RIG\text{-}H}$ **(g)**	$A_{FLX\text{-}V}$ **(g)**	$A_{RIG\text{-}V}$ **(g)**
CBC 2016	ICC-ES AC156	2.22	0	1.5	2.22	0.89	1.49	0.59
		2.16	1	1.5	3.46	2.59	1.45	0.58

UUT Seismic Test Results

✓ The UUT maintained structural integrity and functionality as confirmed in post test inspection and active operation validation checks

UUT Photograph

UUT Major Components		
Description	**Manufacturer**	**Part No. / Identifier**
Transformer, Dry Type, 3 Phase, 300 kVA, Copper (DOE 2016)	Square D	EX300T3HCU
Enclosure – NEMA Type 1, Carbon Steel Sheet	Square D	48W x 36D x 91.5H
Panelboard Interior	Square D	HCP14508