



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR OSHPD SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP – 0109 – 10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Jefferson Electric Inc.

Manufacturer's Technical Representative: Eric Jaeger

Mailing Address: 9650 South Franklin Drive, Franklin, WI 53132

Telephone: 414.858.0811

Email: ejaege@jeffersonelectric.com

Product Information

Product Name: Dry-type Transformers

Product Type: Transformers

Product Model Number: Various. See Attachment

(List all unique product identification numbers and/or part numbers)

General Description: Encapsulated, Totally Enclosed, and Ventilated Transformers. 1.5 – 1000 kVA. Modifications made to the test units to address anomalies observed during testing shall be incorporated into production units.

Mounting Description: Rigid wall and floor mounted

Applicant Information

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

Contact Person: Andrew M. Coughlin, S.E.

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

Telephone: 510-379-5319

Email: acoughlin@structint.com

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

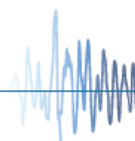
Signature of Applicant: _____

Date: 9/6/2017

Title: Manager, Structures Technology

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

"Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs"





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

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, S.E. California License Number: S6082

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

Telephone: 510-379-5319 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: Clark Testing

Contact Name: Robert Francis

Mailing Address: 1801 Route 51, Jefferson Hills, PA 15025

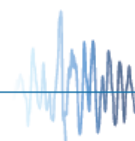
Telephone: 412.387.1001 Email: rfrancis@clarktesting.com

Company Name: Environmental Testing Laboratory (ETL)

Contact Name: Paul E. Little

Mailing Address: 11034 Indian Trail, Dallas, TX 75229

Telephone: 972.247.9657 Email: paul@etldallas.com





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Seismic Parameters

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

Design Basis of Equipment or Components (F_p/W_p) = 1.44

S_{DS} (Design spectral response acceleration at short period, g) = 2.00

a_p (In-structure equipment or component amplification factor) = 1.0

R_p (Equipment or component response modification factor) = 2.5

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

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

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): Attachment

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

Signature: _____

Date: October 11, 2017

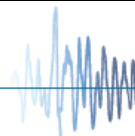
Print Name: Timothy J. Pjland

Title: SSE

Special Seismic Certification Valid Up to : S_{DS} (g) = 2.00

z/h = 1

Condition of Approval (if applicable): _____



SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENT MATRIX

16049-CR-001, rev. 0



Manufacturer: Jefferson Electric Inc.						TABLE 1	
Model Line: Dry-Type Transformers							
Certified Product Construction Summary: NEMA 3R Carbon steel enclosures							
Certified Options Summary: Transformers can be branded as Jefferson Electric, Bemag, Pioneer Power Solutions, Pioneer Power, Beaver Electrical Machinery, Harmonics Limited, or Siemens Industry, Inc.							
Mounting Configuration: Wall mounted - rigid Note: Installed mounting configuration must be of similar configuration and equivalent strength and stiffness to those tested.							
Building Code: CBC 2016		Seismic Certification Limits:		$S_{DS} = 2.0 g$		$z/h=1.0$	
						$I_p = 1.5$	
Model Line	Model	Dimensions (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
Single Phase - Al Encapsulated	1.5 kVA	5.3	6.7	12.5	32		Interp.
	2 kVA	5.3	6.7	12.5	40		Interp.
	3 kVA	7.2	7.6	14.6	68		Interp.
	5 kVA	7.2	7.6	14.6	85		Interp.
	7.5 kVA	8.6	13.5	16.1	130		2
	10 kVA	8.6	13.5	16.1	157		Interp.
	15 kVA	10.1	16.5	21.1	255		Interp.
	25 kVA	10.1	16.5	21.1	285		Interp.
Single Phase - Cu Encapsulated	1.5 kVA	5.3	6.7	12.5	32		Interp.
	2 kVA	5.3	6.7	12.5	40		Interp.
	3 kVA	7.2	7.6	14.6	68		Interp.
	5 kVA	7.2	7.6	14.6	85		Interp.
	7.5 kVA	8.6	13.5	16.1	140		Interp.
	10 kVA	8.6	13.5	16.1	185		Interp.
	15 kVA	10.1	16.5	21.1	270		Interp.
	25 kVA	10.1	16.5	21.1	320		3
Single Phase - Al/Cu Encapsulated	1.5 kVA	5.3	6.7	12.5	32		Interp.
	2 kVA	5.3	6.7	12.5	40		Interp.
	3 kVA	7.2	7.6	14.6	68		Interp.
	5 kVA	7.2	7.6	14.6	85		10
	7.5 kVA	8.6	13.5	16.1	140		Interp.
	10 kVA	8.6	13.5	16.1	185		Interp.
	15 kVA	10.1	16.5	21.1	270		Interp.
	25 kVA	10.1	16.5	21.1	290		9

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16049-CR-001, rev. 0

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SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENT MATRIX

16049-CR-001, rev. 0



Manufacturer: Jefferson Electric Inc.						TABLE 2	
Model Line: Dry-Type Transformers							
Certified Product Construction Summary: NEMA 1 or NEMA 3R Carbon steel enclosures. 3-Phase Ventilated: 500 - 1000 kVA Units include additional seismic bracing 3-Phase Totally Enclosed: 225 - 500 kVA Units include additional seismic bracing							
Certified Options Summary: Transformers can be branded as Jefferson Electric, Bemag, Pioneer Power Solutions, Pioneer Power, Beaver Electrical Machinery, Harmonics Limited, or Siemens Industry, Inc.							
Mounting Configuration: Floor mounted - rigid Note: Installed mounting configuration must be of similar configuration and equivalent strength and stiffness to those tested.							
Building Code: CBC 2016		Seismic Certification Limits:		$S_{DS} = 2.0 g$		$z/h=1.0$	
Model Line	Model	Dimensions (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
3 Phase - Al Encapsulated	30 kVA	9.5	23	33	720		Interp.
	45 kVA	11	24.5	36	800		Interp.
	75 kVA	12.8	25.3	37	1110	UUT: NEMA 3R	1
3 Phase - Cu Encapsulated	30 kVA	9.5	23.0	33	849		Interp.
	45 kVA	11	24.5	36	1028		Interp.
	75 kVA	12.8	25.3	37	1144	UUT: NEMA 3R	8
3 Phase - Al/Cu Encapsulated	30 kVA	9.5	23	33	849		Interp.
	45 kVA	11.0	24.5	36	1028		Interp.
	75 kVA	12.8	25.3	37	1144		Interp.
Single Phase - Al Totally Enclosed	1 kVA	12	13	18	67		Interp.
	2 kVA	12	13	18	104		Interp.
	3 kVA	12	13	18	155		Interp.
	5 kVA	14	17	21	188		Interp.
	7.5 kVA	14	17	21	211		Interp.
	10 kVA	17	22	25	298		Interp.
	15 kVA	17	22	25	451		Interp.
	25 kVA	21	27	32	538		Interp.
	37.5 kVA	23	29	38	691		Interp.
	50 kVA	26	33	42	844		Interp.
	75 kVA	26	33	42	1235		Interp.
	100 kVA	30	35	46	2001		Interp.
	150 kVA	33	48	60	2555		Interp.
	167 kVA	33	48	60	3340		Interp.
	200 kVA	33	48	60	4000		Interp.

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Mounting Configuration: Floor mounted - rigid Note: Installed mounting configuration must be of similar configuration and equivalent strength and stiffness to those tested.							
Building Code: CBC 2016 Seismic Certification Limits: $S_{DS} = 2.0 g$ $z/h=1.0$ $I_p = 1.5$							
Model Line	Model	Dimensions (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
Single Phase - Al Totally Enclosed	225 kVA	40	52	72	4500		Interp.
	250 kVA	40	52	72	5000		Interp.
Single Phase - Cu Totally Enclosed	1 kVA	12	13	18	77		Interp.
	2 kVA	12	13	18	120		Interp.
	3 kVA	12	13	18	178		Interp.
	5 kVA	14	17	21	216		Interp.
	7.5 kVA	14	17	21	243		Interp.
	10 kVA	17	22	25	343		Interp.
	15 kVA	17	22	25	519		Interp.
	25 kVA	21	27	32	619		Interp.
	37.5 kVA	23	29	38	795		Interp.
	50 kVA	26	33	42	971		Interp.
	75 kVA	26	33	42	1420		Interp.
	100 kVA	30	35	46	2301		Interp.
	150 kVA	33	48	60	2938		Interp.
	167 kVA	33	48	60	3841		Interp.
	200 kVA	33	48	60	4600		Interp.
	225 kVA	40	52	72	5175		Interp.
	250 kVA	40	52	72	5750		Interp.
Single Phase - Al/Cu Totally Enclosed	1 kVA	12	13	18	77		Interp.
	2 kVA	12	13	18	120		Interp.
	3 kVA	12	13	18	178		Interp.
	5 kVA	14	17	21	216		Interp.
	7.5 kVA	14	17	21	243		Interp.

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Building Code: CBC 2016 Seismic Certification Limits: $S_{DS} = 2.0 g$ $z/h=1.0$ $I_p = 1.5$							
Model Line	Model	Dimensions (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
Single Phase - Al/Cu Totally Enclosed	10 kVA	17	22	25	343		Interp.
	15 kVA	17	22	25	519		Interp.
	25 kVA	21	27	32	619		Interp.
	37.5 kVA	23	29	38	795		Interp.
	50 kVA	26	33	42	971		Interp.
	75 kVA	26	33	42	1420		Interp.
	100 kVA	30	35	46	2301		Interp.
	150 kVA	33	48	60	2938		Interp.
	167 kVA	33	48	60	3841		Interp.
	200 kVA	33	48	60	4600		Interp.
	225 kVA	40	52	72	5175		Interp.
	250 kVA	40	52	72	5750		Interp.
3-Phase - Al Totally Enclosed	1 kVA	12	13	18	78		Interp.
	2 kVA	12	13	18	144		Interp.
	3 kVA	12	13	18	166		Interp.
	6 kVA	14	17	21	243		Interp.
	9 kVA	14	17	21	300		Interp.
	12 kVA	17	22	25	350		Interp.
	15 kVA	17	22	25	350		Interp.
	30 kVA	21	27	32	600		Interp.
	45 kVA	23	29	38	795		Interp.
	75 kVA	26	33	42	1210		Interp.
	112.5 kVA	30	35	46	1500		Interp.
	150 kVA	30	35	52	2125		Interp.

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Building Code: CBC 2016 Seismic Certification Limits: $S_{DS} = 2.0 g$ $z/h=1.0$ $I_p = 1.5$							
Model Line	Model	Dimensions (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
3-Phase - Al Totally Enclosed	225 kVA	33	48	60	3090		Interp.
	300 kVA	40	52	72	4800		Interp.
	500 kVA	44	66	81	5500		Interp.
3-Phase - Cu Totally Enclosed	1 kVA	12	13	18	90		Interp.
	2 kVA	12	13	18	166		Interp.
	3 kVA	12	13	18	191		Interp.
	6 kVA	14	17	21	279		Interp.
	9 kVA	14	17	21	345		Interp.
	12 kVA	17	22	25	403		Interp.
	15 kVA	17	22	25	403		Interp.
	30 kVA	21	27	32	690		Interp.
	45 kVA	23	29	38	914		Interp.
	75 kVA	26	33	42	1392		Interp.
	112.5 kVA	30	35	46	1725		Interp.
	150 kVA	30	35	52	2444		Interp.
	225 kVA	33	48	60	3554		Interp.
	300 kVA	40	52	72	5520		Interp.
	500 kVA	44	66	81	6325		Interp.
3-Phase - Al/Cu Totally Enclosed	1 kVA	12	13	18	90		Interp.
	2 kVA	12	13	18	166		Interp.
	3 kVA	12	13	18	191		Interp.
	6 kVA	14	17	21	279		Interp.
	9 kVA	14	17	21	345		Interp.
	12 kVA	17	22	25	403		Interp.

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Building Code: CBC 2016 Seismic Certification Limits: $S_{DS} = 2.0 g$ $z/h=1.0$ $I_p = 1.5$							
Model Line	Model	Dimensions (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
3-Phase - Al/Cu Totally Enclosed	15 kVA	17	22	25	403		Interp.
	30 kVA	21	27	32	690		Interp.
	45 kVA	23	29	38	914		Interp.
	75 kVA	26	33	42	1392		Interp.
	112.5 kVA	30	35	46	1725		Interp.
	150 kVA	30	35	52	2444		Interp.
	225 kVA	33	48	60	3554		Interp.
	300 kVA	40	52	72	5520		Interp.
	500 kVA	44	66	81	6325		Interp.
Single Phase - Al Ventilated	1 kVA	12	13	18	56		Interp.
	2 kVA	12	13	18	67		Interp.
	3 kVA	12	13	18	85		Interp.
	5 kVA	12	13	18	104		Interp.
	7.5 kVA	14	15	24	155		Interp.
	10 kVA	14	15	24	188		Interp.
	15 kVA	20.5	15	27	211		Interp.
	25 kVA	22.5	17	29	298		Interp.
	37.5 kVA	23.5	20	31	451		Interp.
	50 kVA	25.5	22	32	538		Interp.
	75 kVA	27.5	22	34	691		Interp.
	100 kVA	29.5	22	36	844		Interp.
	150 kVA	37	35	46	1155		Interp.
	167 kVA	37	35	52	1200		Interp.
	200 kVA	37	35	52	1245		Interp.

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Model Line	Model	Dimensions (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
Single Phase - Al Ventilated	225 kVA	37	35	52	1615		Interp.
	250 kVA	37	35	52	1580		Interp.
Single Phase - Cu Ventilated	1 kVA	12	13	18	64	UUT: NEMA 1	4
	2 kVA	12	13	18	77		Interp.
	3 kVA	12	13	18	98		Interp.
	5 kVA	12	13	18	120		Interp.
	7.5 kVA	14	15	24	178		Interp.
	10 kVA	14	15	24	216		Interp.
	15 kVA	20.5	15	27	243		Interp.
	25 kVA	22.5	17	29	343		Interp.
	37.5 kVA	23.5	20	31	519		Interp.
	50 kVA	25.5	22	32	619		Interp.
	75 kVA	27.5	22	34	795		Interp.
	100 kVA	29.5	22	36	971		Interp.
	150 kVA	37	35	46	1328		Interp.
	167 kVA	37	35	46	1380		Interp.
	200 kVA	37	35	52	1432		Interp.
	225 kVA	37	35	52	1857		Interp.
	250 kVA	37	35	52	1817		Interp.
Single Phase - Al/Cu Ventilated	1 kVA	12	13	18	64		Interp.
	2 kVA	12	13	18	77		Interp.
	3 kVA	12	13	18	98		Interp.
	5 kVA	12	13	18	120		Interp.
	7.5 kVA	14	15	24	178		Interp.

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		Depth	Width	Height			
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	15 kVA	20.5	15	27	243		Interp.
	25 kVA	22.5	17	29	343		Interp.
	37.5 kVA	23.5	20	31	519		Interp.
	50 kVA	25.5	22	32	619		Interp.
	75 kVA	27.5	22	34	795		Interp.
	100 kVA	29.5	22	36	971		Interp.
	150 kVA	37	35	46	1328		Interp.
	167 kVA	37	35	46	1380		Interp.
	200 kVA	37	35	52	1432		Interp.
	225 kVA	37	35	52	1857		Interp.
	250 kVA	37	35	52	1817		Interp.
3 Phase - Al Ventilated	1 kVA	12	13	18	59		Interp.
	2 kVA	12	13	18	78		Interp.
	3 kVA	12	13	18	101		Interp.
	6 kVA	12	13	18	144		Interp.
	9 kVA	14	17	21	199		Interp.
	12 kVA	14	17	21	243		Interp.
	15 kVA	21	19	22	250		Interp.
	30 kVA	22	22	25	350		Interp.
	45 kVA	23.5	25	28	500		Interp.
	75 kVA	26	27	32	740		Interp.
	112.5 kVA	29	29	38	930		Interp.
	150 kVA	32.5	33	42	1210		Interp.

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SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENT MATRIX

16049-CR-001, rev. 0



Manufacturer: Jefferson Electric Inc.						TABLE 2	
Model Line: Dry-Type Transformers							
Certified Product Construction Summary: NEMA 1 or NEMA 3R Carbon steel enclosures. 3-Phase Ventilated: 500 - 1000 kVA Units include additional seismic bracing 3-Phase Totally Enclosed: 225 - 500 kVA Units include additional seismic bracing							
Certified Options Summary: Transformers can be branded as Jefferson Electric, Bemag, Pioneer Power Solutions, Pioneer Power, Beaver Electrical Machinery, Harmonics Limited, or Siemens Industry, Inc.							
Mounting Configuration: Floor mounted - rigid Note: Installed mounting configuration must be of similar configuration and equivalent strength and stiffness to those tested.							
Building Code: CBC 2016		Seismic Certification Limits:		$S_{DS} = 2.0 g$		$z/h=1.0$	
Model Line	Model	Dimensions (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
3 Phase - Al Ventilated	225 kVA	37	35	46	1500		Interp.
	300 kVA	37	35	52	2125		Interp.
	500 kVA	43.5	48	60	3090		Interp.
	750 kVA	44	52	72	4800		Interp.
	1000 kVA	61	66	81	5500		Interp.
3-Phase - Cu Ventilated	1 kVA	12	13	18	68		Interp.
	2 kVA	12	13	18	90		Interp.
	3 kVA	12	13	18	116		Interp.
	6 kVA	12	13	18	166		Interp.
	9 kVA	14	17	21	229		Interp.
	12 kVA	14	17	21	279		Interp.
	15 kVA	21	19	22	288		Interp.
	30 kVA	22	22	25	403		Interp.
	45 kVA	23.5	25	28	575		Interp.
	75 kVA	26	27	32	851		Interp.
	112.5 kVA	29	29	38	1070		Interp.
	150 kVA	32.5	33	42	1392		Interp.
	225 kVA	37	35	46	1725		Interp.
	300 kVA	37	35	52	2560		Interp.
	500 kVA	43.5	48	60	3554		Interp.
	750 kVA	44	52	72	5520		Interp.
	1000 kVA	61	66	81	6780		Interp.
3- Phase - Al/Cu Ventilated	1 kVA	12	13	18	68		Interp.
	2 kVA	12	13	18	90		Interp.

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SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENT MATRIX

16049-CR-001, rev. 0



Manufacturer: Jefferson Electric Inc.						TABLE 2	
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Certified Options Summary: Transformers can be branded as Jefferson Electric, Bemag, Pioneer Power Solutions, Pioneer Power, Beaver Electrical Machinery, Harmonics Limited, or Siemens Industry, Inc.							
Mounting Configuration: Floor mounted - rigid Note: Installed mounting configuration must be of similar configuration and equivalent strength and stiffness to those tested.							
Building Code: CBC 2016		Seismic Certification Limits:		$S_{DS} = 2.0 g$		$z/h=1.0$	
						$I_p = 1.5$	
Model Line	Model	Dimensions (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
3- Phase - Al/Cu Ventilated	3 kVA	12	13	18	116		Interp.
	6 kVA	12	13	18	166		Interp.
	9 kVA	14	17	21	229		Interp.
	12 kVA	14	17	21	279		Interp.
	15 kVA	21	19	22	288		Interp.
	30 kVA	22	22	25	403		Interp.
	45 kVA	23.5	25	28	575		Interp.
	75 kVA	26	27	32	851		Interp.
	112.5 kVA	29	29	38	1070		Interp.
	150 kVA	32.5	33	42	1392		Interp.
	225 kVA	37	35	46	1725		Interp.
	300 kVA	37	35	52	2560	UUT: NEMA 3R	7
	500 kVA	43.5	48	60	3554		Interp.
	750 kVA	44	52	72	5520		Interp.
	1000 kVA	61	66	81	6780	UUT: NEMA 3R	6

UNIT UNDER TEST (UUT) SUMMARY SHEET

16049-CR-001, rev. 0



Manufacturer:	Jefferson Electric Inc.	UUT 1
Model Line:	Dry-Type Transformers	
Model Number:	413-1234-800	
Serial Number:		N/A

Product Construction Summary:
NEMA 3R. Carbon steel enclosure

Options/Subcomponent Summary:
75 kVA. 3 Phase. Aluminum windings. Encapsulated

UUT Properties						
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
1,110	12.8	25.3	37	15.6	20.8	> 33.3

UUT Highest Passed Seismic Run Information								
Building Code	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	2.0	1.0	1.5	3.2	2.4	1.33	0.53

Test Mounting Details:



The unit was rigid floor mounted using (4) 1/2" Grade 5 bolts, washers, and lock washers.
Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

16049-CR-001, rev. 0



Manufacturer:	Jefferson Electric Inc.	UUT 2
Model Line:	Dry-Type Transformers	
Model Number:	411-0131-277	
Serial Number:		N/A

Product Construction Summary:
NEMA 3R. Carbon steel enclosure

Options/Subcomponent Summary:
7.5 kVA. Single Phase. Aluminum windings. Encapsulated

UUT Properties						
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
125	8.6	10.6	16.1	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information								
Building Code	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	2.0	1.0	1.5	3.2	2.4	1.33	0.53

Test Mounting Details:



The unit was rigid wall mounted using (4) 1/4" Grade 5 bolts, washers, and lock washers. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test. Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

16049-CR-001, rev. 0



Manufacturer:	Jefferson Electric Inc.	UUT 3
Model Line:	Dry-Type Transformers	
Model Number:	411-1187-804	
Serial Number:		N/A

Product Construction Summary:
NEMA 3R. Carbon steel enclosure

Options/Subcomponent Summary:
25 kVA. Single Phase. Copper windings. Encapsulated

UUT Properties						
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
320	10.1	13.7	21.1	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information								
Building Code	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	2.0	1.0	1.5	3.2	2.4	1.33	0.53

Test Mounting Details:



The unit was rigid wall mounted using (4) 1/4" Grade 5 bolts, washers, and lock washers.
Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

16049-CR-001, rev. 0



Manufacturer:	Jefferson Electric Inc.	UUT 4
Model Line:	Dry-Type Transformers	
Model Number:	421-8071-000	
Serial Number:		N/A

Product Construction Summary:
NEMA 1. Carbon steel ventilated enclosure

Options/Subcomponent Summary:
1 kVA. Single Phase. Copper windings.

UUT Properties						
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
57	12	13	18	15.6	20.8	25.1

UUT Highest Passed Seismic Run Information								
Building Code	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	2.0	1.0	1.5	3.2	2.4	1.33	0.53

Test Mounting Details:



The unit was rigid floor mounted using (4) 1/2" Grade 5 bolts, washers, and lock washers.
Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

16049-CR-001, rev. 0



Manufacturer:	Jefferson Electric Inc.	UUT 6
Model Line:	Dry-Type Transformers	
Model Number:	423-4900-112	
		Serial Number: N/A

Product Construction Summary:
NEMA 3R. Carbon steel ventilated enclosure.
Upgraded seismic bracing included.

Options/Subcomponent Summary:
1000 kVA; 3-phase; Aluminum and Copper windings

UUT Properties						
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
6780	61	66	81	5.7	4.6	3.7

UUT Highest Passed Seismic Run Information								
Building Code	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	2.0	1.0	1.5	3.2	2.4	2.13	0.85
		3.2	0.0					

Test Mounting Details:



The unit was rigid floor mounted using (8) 1/2" Grade 8 bolts.
Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

16049-CR-001, rev. 0



Manufacturer:	Jefferson Electric Inc.	UUT 7
Model Line:	Dry-Type Transformers	
Model Number:	423-4900-113	
Serial Number:		N/A

Product Construction Summary:
NEMA 3R. Carbon steel ventilated enclosure.
(4) additional 1/4" self-tapping screws added to each side at base of enclosure.

Options/Subcomponent Summary:
300 kVA; 3-phase; Aluminum and Copper windings

UUT Properties						
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
2560	37	35	52	11.3	6.9	28.9

UUT Highest Passed Seismic Run Information								
Building Code	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	2.0	1.0	1.5	3.2	2.4	2.13	0.85
		3.2	0.0					

Test Mounting Details:



The unit was rigid floor mounted using (4) 1/2" Grade 8 bolts.
Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

16049-CR-001, rev. 0



Manufacturer:	Jefferson Electric Inc.	UUT 8
Model Line:	Dry-Type Transformers	
Model Number:	413-1234-800	
Serial Number:		N/A

Product Construction Summary:
NEMA 3R. Carbon steel enclosure

Options/Subcomponent Summary:
75 kVA; 3-phase; Copper windings; Encapsulated

UUT Properties						
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
1144	12.8	25.3	37	24.8	32.4	> 33.3

UUT Highest Passed Seismic Run Information								
Building Code	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	2.0	1.0	1.5	3.2	2.4	2.13	0.85
		3.2	0.0					

Test Mounting Details:



The unit was rigid floor mounted using (4) 1/2" Grade 8 bolts.
Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

16049-CR-001, rev. 0



Manufacturer:	Jefferson Electric Inc.	UUT 9
Model Line:	Dry-Type Transformers	
Model Number:	411-0081-000	
Serial Number:		N/A

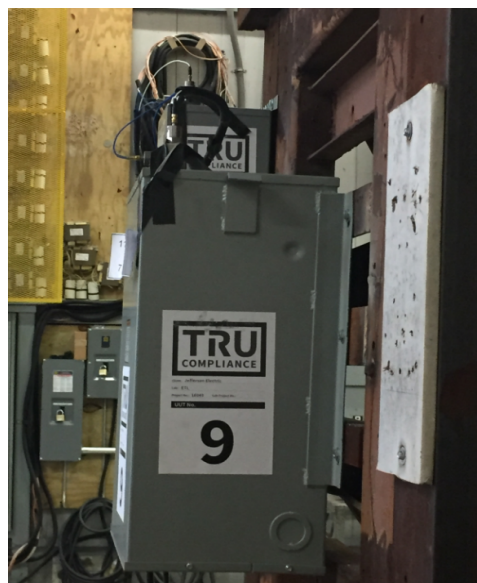
Product Construction Summary:
NEMA 3R. Carbon steel enclosure

Options/Subcomponent Summary:
25 kVA; Single Phase; Aluminum and Copper windings; Encapsulated

UUT Properties						
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
290	10.1	16.5	21.1	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information								
Building Code	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	2.0	1.0	1.5	3.2	2.4	2.13	0.85
		3.2	0.0					

Test Mounting Details:



The unit was rigid wall mounted using (6) 1/4" Grade 5 bolts and standard washers.
Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

16049-CR-001, rev. 0



Manufacturer:	Jefferson Electric Inc.	UUT 10
Model Line:	Dry-Type Transformers	
Model Number:	411-0111-000	
Serial Number:		N/A

Product Construction Summary:
NEMA 3R. Carbon steel enclosure

Options/Subcomponent Summary:
5 kVA; Single phase; Aluminum and Copper windings; Encapsulated

UUT Properties						
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
85	7.2	7.6	12.75	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information								
Building Code	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	2.0	1.0	1.5	3.2	2.4	2.13	0.85
		3.2	0.0					

Test Mounting Details:



The unit was rigid wall mounted using (5) 1/4" Grade 5 bolts and standard washers.
Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

16049-CR-001, rev. 0



Manufacturer:	Jefferson Electric Inc.	UUT 11
Model Line:	Dry-Type Transformers	
Model Number:	413-1161-800	
Serial Number:		N/A

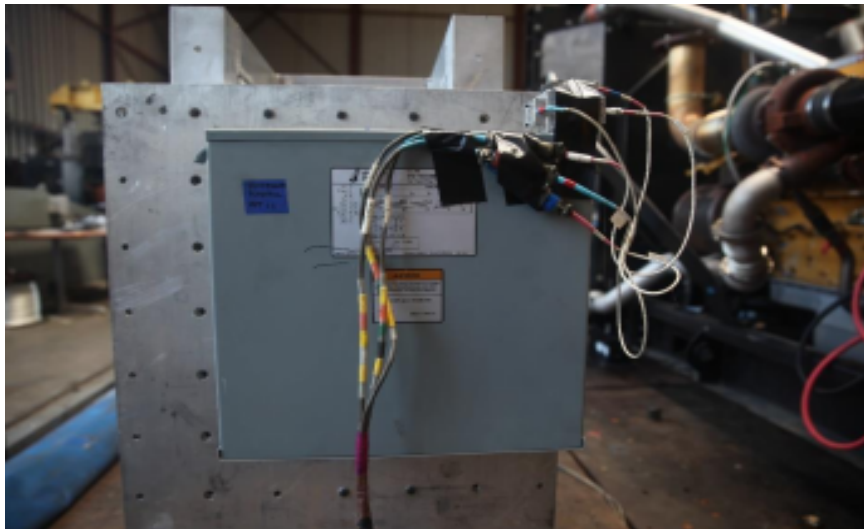
Product Construction Summary:
NEMA 3R. Carbon steel enclosure

Options/Subcomponent Summary:
15 kVA; Three phase; Copper windings; Encapsulated

UUT Properties						
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
250	9	19	15	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information								
Building Code	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	2.0	1.0	1.5	3.2	2.4	2.13	0.85
		3.2	0.0					

Test Mounting Details:



The unit was rigid wall mounted using (6) 1/4" Grade 8 bolts.
Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.
Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

16049-CR-001, rev. 0



Manufacturer:	Jefferson Electric Inc.	UUT 12
Model Line:	Dry-Type Transformers	
Model Number:	413-1164-000	
Serial Number:		N/A

Product Construction Summary:
NEMA 3R. Carbon steel enclosure

Options/Subcomponent Summary:
15 kVA; Three phase; Aluminum windings; Encapsulated

UUT Properties						
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
250	9	19	15	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information									
Building Code	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	2.0	1.0	1.5	3.2	2.4	2.13	0.85	
		3.2	0.0						

Test Mounting Details:



The unit was rigid wall mounted using (6) 1/4" Grade 8 bolts.
Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.
Contents were included in testing per operating conditions.