



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

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

OFFICE USE ONLY

APPLICATION #: OSP – 0218-10

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

Type:  New  Renewal

**Manufacturer Information**

Manufacturer: Siemens Industry, Inc.

Manufacturer's Technical Representative: Mike Schuler

Mailing Address: 1000 Deerfield Parkway, Buffalo Grove, IL 60089-4547

Telephone: 847.941.5764 Email: mike.schuler@siemens.com

**Product Information**

Product Name: TC & TNM Series Controllers

Product Type: Building Automation System

Product Model Number: Various – See Attachments

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

General Description: TALON Building Automation System Controllers. See attachments for a listing of certified  
Internal components.

Mounting Description: Rigid Wall Mounted

**Applicant Information**

Applicant Company Name: TRU Compliance, LLC

Contact Person: Derrick A. Watkins, PhD, S.E.

Mailing Address: 960 SW Disk Dr., Suite 104, Bend, OR 97702

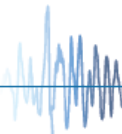
Telephone: 844.878.0200 Email: dwatkins@trucompliance.com

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: 12/12/2016

Title: Executive Vice President Company Name: TRU Compliance, LLC

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





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

Company Name: TRU Compliance, LLC

Name: Derrick A. Watkins, PhD, S.E. California License Number: S5257

Mailing Address: 960 SW Disk Dr., Suite 104, Bend, OR 97702

Telephone: 844.878.0200 Email: dwatkins@trucompliance.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**

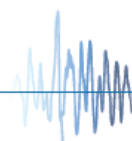
Company Name: Clark Testing

Contact Name: Robert Francis

Mailing Address: 1801 Route 51 South, Building 8, Jefferson Hills, PA 15025

Telephone: 412.387.1001 Email: rfrancis@clarktesting.com

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**Seismic Parameters**

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

Design Basis of Equipment or Components ( $F_p/W_p$ ) = 1.87

$S_{DS}$  (Design spectral response acceleration at short period, g) = 2.5

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

$R_p$  (Equipment or component response modification factor) = 6.0

$\Omega_0$  (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 attached

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

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) = \_\_\_\_\_

$\Omega_0$  (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 A

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

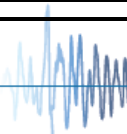
Signature:  Date: 12/27/2016

Print Name: M. R. Karim Title: SHFR

Special Seismic Certification Valid Up to :  $S_{DS}$  (g) = 2.5  $z/h$  = 1.0

Condition of Approval (if applicable): \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_







# SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

TRU PROJECT NO. 16042



<b>Manufacturer:</b> Siemens Industry, Inc.		<b>Table Description:</b> TALON TC Series Controllers			<b>TABLE 3</b>
<b>Model Line:</b> TC & TNM Series Controllers					
<b>Building Code:</b> IBC 2015		<b>Seismic Certification Limits:</b> $S_{DS} = 2.5g$ $z/h = 1.0$			$I_p = 1.5$
<b>Component Type</b>	<b>Manufacturer</b>	<b>Model</b>	<b>Description</b>	<b>Notes</b>	<b>UUT</b>
TC Modular Series Controllers	Siemens	TC1100-E96.T	TALON MODULAR, TX I/O		1
		TC1000-E96.T	TALON MODULAR	Same construction as TC1100-E96.T	Interp.
TC Compact Series Controllers	Siemens	TC16.2-EF.T	TALON 16PT, BACNET ETHERNET, RS485	Same construction as TC24.3-UCMR.T	Interp.
		TC16.2-EF32.T	TALON 16PT BACNET IP RS485 ENABLED	Same construction as TC24.3-UCMR.T	Interp.
		TC16.2-M.T	TALON 16PT, BACNET MS/TP	Same construction as TC24.3-UCMR.T	Interp.
		TC16.3-UCM.T	TALON 16 PT, UEC BAC MSTP RS485	Same construction as TC24.3-UCMR.T	Interp.
		TC16.3-UCMR.T	TALON 16 PT, UEC BAC MSTP RS485,ROOFTOP	Same construction as TC24.3-UCMR.T	Interp.
		TC24.2-EF.T	TALON 24PT, BACNET ETHERNET, RS485	Same construction as TC24.3-UCMR.T	Interp.
		TC24.2-EF32.T	TALON 24PT BACNET IP RS485 ENABLED	Same construction as TC24.3-UCMR.T	Interp.
		TC24.2-ERF.T	TALON 24PT, BACNET ETHERNET, RS485, ROOF	Same construction as TC24.3-UCMR.T	Interp.
		TC24.2-M.T	TALON 24PT, BACNET MS/TP	Same construction as TC24.3-UCMR.T	Interp.
		TC24.2-MR.T	TALON 24PT, BACNET MS/TP, ROOFTOP	Same construction as TC24.3-UCMR.T	Interp.
		TC24.3-UCM.T	TALON 24PT,TC UNITARY EQPT BAC MSTP	Same construction as TC24.3-UCMR.T	Interp.
		TC24.3-UCMR.T	TALON 24 PT, UEC BAC MSTP RS485,ROOFTOP		3
		TC36-E.T	TALON 36PT, BACNET IP/ MSTP	Same Construction as TC36-EF.T	Interp.
		TC36-EF.T	TALON 36PT, BACNET IP/MSTP, TXIO, RS485		3
PX Accessories	Siemens	PXA-HMI	Remote kit and cables		3
		PXM10 Tiny	Operator Display Panel		3
		PXA8	Hand Off Auto (HOA) 8 switch	Same construction as PXA16	Interp.
		PXA16	Hand Off Auto (HOA) 16 switch		3
TX-I/O Product Range	Siemens	TXM1.6R	6 relay output module		1
		TXM1.6R-M	6 relay output module with manual override		1,3
		TXM1.8D	8 digital input module		1

# SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

TRU PROJECT NO. 16042



<b>Manufacturer:</b> Siemens Industry, Inc.		<b>Table Description:</b> TALON TC Series Controllers			<b>TABLE 3</b>
<b>Model Line:</b> TC & TNM Series Controllers					
<b>Building Code:</b> IBC 2015		<b>Seismic Certification Limits:</b> $S_{DS} = 2.5g$ $z/h = 1.0$			$I_p = 1.5$
<b>Component Type</b>	<b>Manufacturer</b>	<b>Model</b>	<b>Description</b>	<b>Notes</b>	<b>UUT</b>
TX-I/O Product Range	Siemens	TXM1.16D	16 digital input module		1
		TXM1.8U	8 univ I/O module (DI, AI, AO)		1
		TXM1.8U-ML	8 univ I/O module (DI, AI, AO) + LOID		1
		TXM1.8X	8 univ I/O module (DI, AI, AO + current)		1
		TXM1.8X-ML	8 univ I/O module (DI, AI, AO + current) + LOID		1,3
		TXB1.P1	TX-I/O Bus interface module		1
		TXB1.P1-4	TX-I/O Bus interface module	Same construction as TXB1.P1	Interp.
		TXS1.12F4	TX-I/O Power Supply 4A		1,3
		TXS1.12F10	TX-I/O Power Supply 10A	Same construction as TXS1.12F4	Interp.
		TXS1.EF4	TX-I/O Bus Connection Module 4A		1,3
		TXS1.EF10	TX-I/O Bus Connection Module 10A	Same construction as TXS1.EF4	Interp.
		TXA1.IBE	Bus expansion module		1
		TXA1.K*	TXIO Address keys		1,3
		TXA1.LL	TXIO Labels		1,3
Point Pickup Module	Siemens	PPM-1U32.PPF	PPM, 1UI, 3 DI, 2 DO, FIXED TB		1
		PPM-1U32.PPR	PPM, 1UI, 3 DI, 2 DO, REMOVABLE TB	Same construction as PPM-1U32.PPF	Interp.
		PPM-1U32.BPF	DIGITAL PPM, 1UI, 3 DI, 2 DO, FIXED TB	Same construction as PPM-2U3322.BPR	Interp.
		PPM-1U32.BPR	DIGITAL PPM, 1UI, 3 DI, 2 DO, REMOVABLE TB	Same construction as PPM-2U3322.BPR	Interp.
		PPM-2U22.BPF	ANALOG PPM, 2UI, 2AI, 2AO, FIXED TB	Same construction as PPM-2U3322.BPR	Interp.
		PPM-2U22.BPR	ANALOG PPM, 2UI, 2AI, 2AO, REMOVABLE TB	Same construction as PPM-2U3322.BPR	Interp.
		PPM-2U3322.BPF	COMBO PPM, 3DI, 3DO, 2UI, 2AI, 2AO, FIXED TB	Same construction as PPM-2U3322.BPR	Interp.
		PPM-2U3322.BPR	COMBO PPM, 3DI, 3DO, 2UI, 2AI, 2AO, REMOVABLE TB		3

# SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENT MATRIX

TRU PROJECT NO. 16042



<b>Manufacturer:</b> Siemens Industry, Inc.		<b>Table Description:</b> TNM Series Controllers			<b>TABLE 4</b>
<b>Model Line:</b> TC & TNM Series Controllers					
<b>Building Code:</b> IBC 2015		<b>Seismic Certification Limits:</b> $S_{DS} = 2.5g$ $z/h = 1.0$			$I_p = 1.5$
<b>Component Type</b>	<b>Manufacturer</b>	<b>Model</b>	<b>Description</b>	<b>Notes</b>	<b>UUT</b>
Talon Network managers	Tridium, Inc.	TNM-2	Base controller up to 66 point		Interp.
		TNM-6	Base controller up to 66 point		2
		TNM-7	Base controller up to remote 256 point		2
I/O Modules	Tridium, Inc.	IO-16	Input/Output module 16 points		2
		IO-34	Input/Output module 34 points		2
		T-IO-16-485	RS-485 remote I/O module 16 points		2
Communication option cards	Tridium, Inc.	NPB-LON	Internal Single Port LON		2
		NPB-MDM	Internal Single Port Modem	Same construction as NPB-2X-485	Interp.
		NPB-232	Internal Single Port RS-232	Same construction as NPB-2X-485	Interp.
		NPB-2X-485	Internal Dual Port RS-485	0.5 lbs	2
Power Supplies	Tridium, Inc.	NPB-PWR	DIN-mountable 24V isolated pwr. module		2
		NPB-PWR-UN	DIN-mountable, Universal 90-263 VAC input, 15VDC output, 30W power supply		2
		WPM-US	US Wall Power Module	Same const./fastening tested with DFOTI	Interp.



# UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 16042



<b>Manufacturer:</b> Siemens Industry, Inc.	<b>UUT 1</b>
<b>Model Line:</b> TC & TNM Series Controllers	
<b>Model Number:</b> PX Series 34" Enclosure <b>Serial Number:</b> N/A	

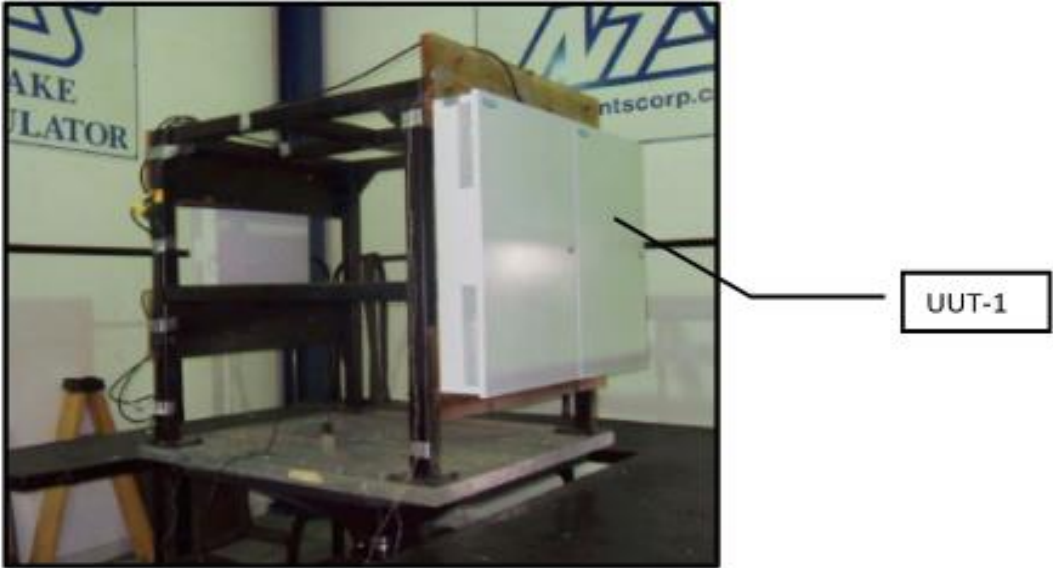
**Product Construction Summary:**  
Carbon steel enclosure. NEMA 1 rated

**Options/Subcomponent Summary:**  
Refer to tables 2-4 for a complete listing of internal components

UUT Properties						
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
100	5.8	22	34	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information									
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	2.5	1.0	1.5	4.0	3.0	1.67	0.67	

**Test Mounting Details:**



Unit was rigid wall mounted using four (4) 1/4" diameter 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



TRU PROJECT NO. 16042

<b>Manufacturer:</b> Siemens Industry, Inc.	<b>UUT 2</b>
<b>Model Line:</b> TC & TNM Series Controllers	
<b>Model Number:</b> PX Series 34" Enclosure <b>Serial Number:</b> N/A	

**Product Construction Summary:**  
Carbon steel enclosure. NEMA 1 rated

**Options/Subcomponent Summary:**  
Refer to tables 2-4 for a complete listing of internal components

**UUT Properties**

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
100	5.8	22	34	N/A	N/A	N/A

**UUT Highest Passed Seismic Run Information**

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	2.5	1.0	1.5	4.0	3.0	1.67	0.67

**Test Mounting Details:**



Unit was rigid wall mounted using four (4) 1/4" diameter 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



**TRU PROJECT NO. 16042**

<b>Manufacturer:</b> Siemens Industry, Inc.	<b>UUT 3</b>
<b>Model Line:</b> TC & TNM Series Controllers	
<b>Model Number:</b> PX Series 19" Enclosure <b>Serial Number:</b> N/A	

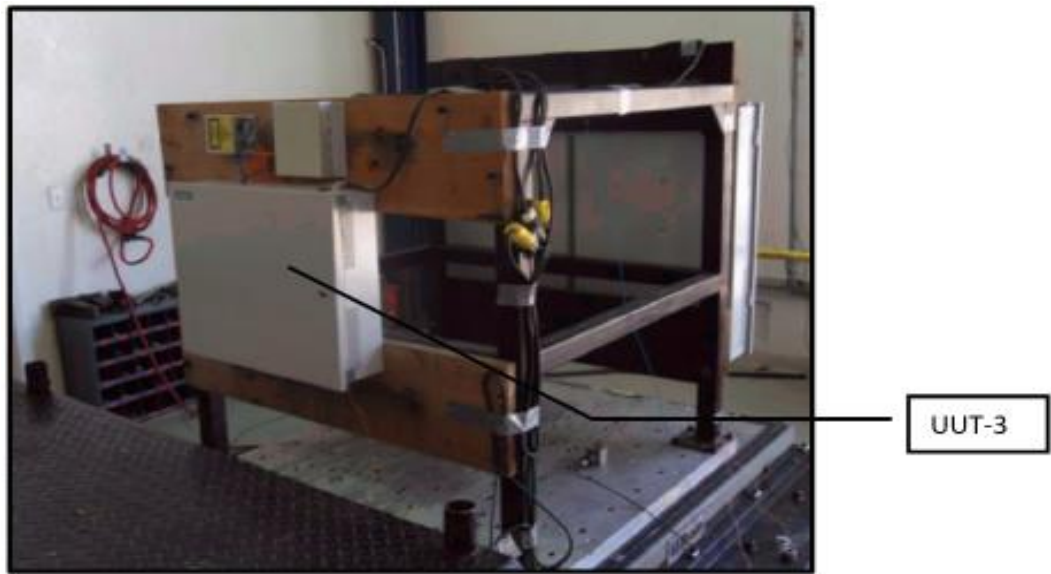
**Product Construction Summary:**  
Carbon steel enclosure. NEMA 1 rated

**Options/Subcomponent Summary:**  
Refer to tables 2-4 for a complete listing of internal components

<i>UUT Properties</i>						
Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
50	5.8	22	19	N/A	N/A	N/A

<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	2.5	1.0	1.5	4.0	3.0	1.67	0.67

**Test Mounting Details:**



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