Office of Statewide Health Planning and Development

Facilities Development Division *www.oshpd.ca.gov/fdd*
400 R Street. Suite 200, Sacramento, California 95811-6213 Phone (916) 440-8300 Fax (916) 654-2973

APPLICATION FOR PREAPPROVAL

SPECIAL SEISMIC CERTIFICATION OF EQUIPMENT AND COMPONENTS

For Office Use Only

APPLICATION NO.

OSP – 0246-10

Check whether application is: NEW [ ] RENEWAL [X]

1.0

UTC Fire and Security	Steven Tabb
Manufacturer	*Manufacturer's Technical Representative*

8985 Town Center Parkway, Bradenton, FL 34202
Mailing Address

(941)739-4328	Steven.tabb@fs.utc.com
Telephone	*E-mail Address*

2.0

Various (See Cert. Prod. Matrix Below)	Fire Alarm Control Panels
Product Name	*Product Type*

Various product lines are included in this listing: See Certified Product Matrix Below
Product model No (List all unique product identification numbers and/or serial numbers)

General Description: Fire Alarm Control Panels. See Attachments for full description.

3.0

UTC Fire and Security	Steven Tabb
Applicant Company Name	*Contact Person*

8985 Town Center Parkway, Bradenton, FL 34202
Mailing Address

(941)739-4328	Steven.tabb@fs.utc.com
Telephone	*E-mail Address*

I hereby agree to reimburse the Office of Statewide Health Planning and Development for the actual costs incurred by the department for review.

Steven Tabb	12/29/11
Signature of Applicant	*Date*
Test and Regulatory Engineer	UTC Fire and Security
Title	*Company Name*

4.0 ***Registered Design Professional Preparing the Report***

ANCO Engineers, Inc.
Company Name

John C. Stoessel — *Contact Name*
C 37259 — *California License Number*

1965-A 33rd St., Boulder, CO 80301
Mailing Address

(818) 591-9001 — *Telephone*
john@ancoengineers.com — *E-mail Address*

5.0 ***California Licensed Structural Engineer Review and Acceptance of the Report***

Tobolski Watkins Engineering Inc.
Company Name

Matt Tobolski — *Contact Name*
S 5648 — *California License Number*

9246 Lightwave Ave, Suite 140, San Diego, CA 92123
Mailing Address

(858) 381-5843 — *Telephone*
mtobolski@tobolskiwatkins.com — *E-mail Address*

6.0 ***Anchorage Pre-Approval***

☐ *Anchorage is pre-approved under OPA-*
(Separate application for anchorage pre-approval is required)

☒ Anchorage is not Pre-approved

70. ***Certification Method***

☒ *Testing in accordance with:* ☒ *ICC-ES AC-156* ☐ *Other (Please Specify):*

☐ *Analysis*
☐ *Experience data*
☐ *Combination of Testing, Analysis, and/or Experience Data (Please Specify):*

8.0 ***Testing Laboratory (if applicable)***

ANCO Engineers, Inc. — *Company Name*
Conor Byrne — *Contact Name*

1965-A 33rd Street, Boulder, CO 80301
Mailing Address

(303)443-7580 x223 — *Telephone*
conor@ancoengineers.com — E-mail:

9.0 ***Approval Parameters***

Design in accordance with ASCE 7-05 Chapter 13: ☒ Yes ☐ No

Design Basis of Equipment or Components (F_p/W_p) = **1.8**

S_{DS} (Spectral response acceleration at short period) = **2.5g**

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

R_p (Equipment or component response modification factor) = **2.5**

I_p (Importance factor) = **1.5**

z/h (Height factor ratio)= **1.0**

Equipment or Component fundamental period(s) = **See Attachments**

Building period limits (if any) = none

Overall dimensions and weight (or range thereof) =**See Attachments**

Equipment or Components @ grade designed in accordance with ASCE 7-05 Chapter 15: ☐ Yes ☒ No

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

S_{DS} (Spectral response acceleration at short period) =

S_1 (Spectral response acceleration at 1 second period) =

R (Response modification coefficient)=1.0

Ω_0 (System overstrength factor) =1.0

C_d (Deflection amplification factor) =1.0

I_p (Importance factor) =1.5

Height to Center of Gravity above base =

Equipment or Component fundamental period(s) = *Sec*

Overall dimensions and weight (or range thereof) =

Tank(s) designed in accordance with ASME BPVC, 2007: ☐ Yes ☒ No

10.0 ***List of attachments supporting the special seismic certification of equipment or components:***

☒ *Test Report* ☐ *Drawings* ☒ *Manufacturer's Catalog*

☐ *Calculations* ☒ *Others (Please Specify):* Product Matrices for Publication

11.0 ***OSHPD Approval*** *(For Office Use Only)*

3/6/2012	**December 31, 2016**
Signature & Date	*Approval Expiration Date*
M. R. Karim, SHFR	S_{DS} (g) = **2.5** z/h = **1.0**
Name & Title	*Special Seismic Certification Valid Up to*

Condition of Approval (if any):

Tested Unit Summary Table

Item	Unit #	Max Depth (X) [in]	Max Width (Y) [in]	Max Height (Z) [in]	Item Weight [lbs]	Mounting
EST3X Brand Fire Alarm Control Panels						
1	3X-SFS1-B	7	21.75	35.5	96	Rigid Wall Mount
Vigilant Brand Fire Alarm Control Panels						
2	VM-1S	6.75	21.75	35.5	96.5	Rigid Wall Mount
Small Analog Fire Alarm Control Panels						
4	iO500 FACP	4.5	15.75	28	27	Rigid Wall Mount
5	FX-254 FACP	4	15.75	28	27	Rigid Wall Mount
Remote Booster Power Supplies						
8	APS10A	5.25	15	26	69.5	Rigid Wall Mount

UUT Specification and Data Sheets

ANCO Engineers, Inc.
1965A 33rd Street
Boulder, CO 80301
(303)443-7580

UUT # 1

Unit Under Test (UUT) Summary Sheet

ANCO Project Number: 3298.05

Manufacturer:	UTC Fire and Security
Model Line:	EST3SX Brand SKU's
Model Number:	3X-SFS1
Product Construction Summary:	Fire alarm control panel comprised of 16 Ga. painted carbon steel back box, door, and internal control electronics with user interface. Cabinet is not NEMA rated.
Subcomponents Tested:	CAB6B , CAB6DR, TRIM6 , 3X-FIB8, MMXVR, PS10-4B, CLA-PS10, SFS1-ELEC (w/ 4x-LKE), 3-SDC1, 3-ZA40A, EAEC, 3X-PMI, 17 Ahr Batteries, 4x-6/3S1G2Y, 3-TAMP, CDR3, 3-FIBMB2, 3X-ETH1. These subcomponents represent a maximally populated configuration.

UUT Properties

Weight (lb)	**Dimensions (in)**			**Lowest Natural Frequency (Hz)**		
	Depth	**Width**	**Height**	**Front-Back**	**Side-Side**	**Vertical**
96	7	21.75	35.5	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	**Test Criteria**	S_{DS}	z/h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
ICCES AC156	CBC	2.5	1.0	1.5	4.0	3.0	1.67	0.67

Test Mounting Details:

The unit was surface mounted on 1-3/8" strut using four 1/4"-20 toggle bolts through factory punched holes in the cabinet using ¼" standard washers inside the cabinet.

Form: UUT, revision 0.0 Page 1 of 2

ANCO Engineers, Inc.
1965A 33rd Street
Boulder, CO 80301
(303)443-7580

UUT # 1

Unit Under Test (UUT) Summary Sheet

ANCO Project Number: 3298.05

Test Setup:	#1	
UUT Function:	Fire alarm sensor and annunciator control panel	
Restrictions:	Wall mount only	
Functionality Test Results:	Pre-Test	Post-Test
	Pass	Pass
Component Serial Numbers:	OSHPD3X-SFS1	

UUT Properties

Weight (lb)	**CG Location (in)**			**Coordinate System Origin**
	Depth	**Width**	**Height**	Bottom Back Left Corner (see drawing Below)
96	2.5	11	15	

Additional Notes/Comments:

None.

Coordinate Origin (Noted by Red Dot):

The Origin was taken to be the bottom back left corner (at the wall surface).

ANCO Engineers, Inc.
1965A 33rd Street
Boulder, CO 80301
(303)443-7580

UUT # 2

Unit Under Test (UUT) Summary Sheet

ANCO Project Number: 3298.05

Manufacturer:	UTC Fire and Security
Model Line:	Vigilant Brand SKU's
Model Number:	VM-1S
Product Construction Summary:	Fire alarm control panel comprised of 16 Ga. painted carbon steel backbox, door, and internal control electronics with user interface. Cabinet is not NEMA rated.
Subcomponents Tested:	CAB6B, VMDR, TRIM6 , VM-NOC, PS10-4B, CLA-PS10, VM-ELEC, VM-SLC, ACHS, EAEC, VM-PMI, VM-MFK, 17 Ahr Batteries, D12LS-VM, 3-Tamp, VM-ETH1, CDR3. These subcomponents represent a maximally populated configuration.

UUT Properties

Weight (lb)	**Dimensions (in)**			**Lowest Natural Frequency (Hz)**		
	Depth	**Width**	**Height**	**Front-Back**	**Side-Side**	**Vertical**
96.5	6.75	21.75	35.5	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	**Test Criteria**	S_{DS}	**z/h**	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
ICCES AC156	CBC	2.5	1.0	1.5	4.0	3.0	1.67	0.67

Test Mounting Details:

The unit was surface mounted using four #10-24 toggle bolts through factory punched holes in the cabinet and the plywood wall with 3/16" standard washers used inside the cabinet.

ANCO Engineers, Inc.
1965A 33rd Street
Boulder, CO 80301
(303)443-7580

UUT # 2

Unit Under Test (UUT) Summary Sheet

ANCO Project Number: 3298.05

Test Setup:	#2	
UUT Function:	Fire alarm sensor and annunciator control panel	
Restrictions:	None	
Functionality Test Results:	Pre-Test	Post-Test
	Pass	Pass
Component Serial Numbers:	OSHPDVM-1S	

UUT Properties

Weight (lb)				**Coordinate System Origin**
	Depth	**Width**	**Height**	Bottom Back Left Corner (see drawing Below)
96.5	2.75	10.5	14.5	

Additional Notes/Comments:

None.

Coordinate Origin (Noted by Red Dot):

Form: UUT, revision 0.0

Page 2 of 2

ANCO Engineers, Inc.
1965A 33rd Street
Boulder, CO 80301
(303)443-7580

UUT # 4

Unit Under Test (UUT) Summary Sheet

ANCO Project Number: 3298.05

Manufacturer:	UTC Fire and Security
Model Line:	Small Analog Systems (iO Series, VS Series, Edwards Series, FX Series, ADT Series),
Model Number:	iO500 FACP
Product Construction Summary:	Fire alarm control panel comprised of 16 Ga. painted carbon steel backbox, door, and internal control electronics. Cabinet is not NEMA rated.
Subcomponents Tested:	SA-DACT, XAL250, SA-232, SA-CLA, SA-ETH, D16L-iO-x, TRIM Kit. These subcomponents represent a maximally populated configuration.

UUT Properties

Weight (lb)	**Dimensions (in)**			**Lowest Natural Frequency (Hz)**		
	Depth	**Width**	**Height**	**Front-Back**	**Side-Side**	**Vertical**
27	4.5	15.75	28	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	**Test Criteria**	S_{DS}	**z/h**	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
ICCES AC156	CBC	2.5	1.0	1.5	4.0	3.0	1.67	0.67

Test Mounting Details:

The unit was surface mounted using four #10-24 toggle bolts through factory punched holes in the cabinet and the plywood wall with 3/16" standard washers used inside the cabinet.

ANCO Engineers, Inc.
1965A 33rd Street
Boulder, CO 80301
(303)443-7580

UUT # 4

Unit Under Test (UUT) Summary Sheet

ANCO Project Number: 3298.05d

Test Setup:	#2	
UUT Function:	Fire alarm sensor and annunciator control cabinet	
Restrictions:	Wall mount only	
Functionality Test Results:	Pre-Test	Post-Test
	Pass	Pass
Component Serial Numbers:	OSHPDiO500-FACP	

UUT Properties

Weight (lb)	**CG Location (in)**			**Coordinate System Origin**
	Depth	**Width**	**Height**	Bottom Front Left Corner (see drawing Below)
16	2	7.5	14.875	

Additional Notes/Comments:

None.

Coordinate Origin (Noted by Red Dot):

ANCO Engineers, Inc.
1965A 33rd Street
Boulder, CO 80301
(303)443-7580

UUT # 5

Unit Under Test (UUT) Summary Sheet

ANCO Project Number: 3298.05

Manufacturer:	UTC Fire and Security
Model Line:	Small Analog Systems (iO Series, VS Series, Edwards Series, FX Series, ADT Series)
Model Number:	FX-254 FACP
Product Construction Summary:	Fire alarm control panel comprised of 16 Ga. painted carbon steel backbox, door, and internal control electronics. Cabinet is not NEMA rated.
Subcomponents Tested:	SA-DACT, XAL250, SA-232, SA-CLA, SA-ETH, D16L-Fa, TRIM Kit. These subcomponents represent a maximally populated configuration.

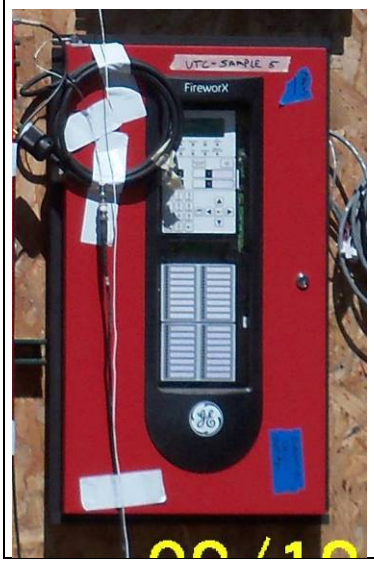
UUT Properties

Weight (lb)	**Dimensions (in)**			**Lowest Natural Frequency (Hz)**		
	Depth	**Width**	**Height**	**Front-Back**	**Side-Side**	**Vertical**
27	4	15.75	28	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	**Test Criteria**	S_{DS}	**z/h**	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
ICCES AC156	CBC	2.5	1.0	1.5	4.0	3.0	1.67	0.67

Test Mounting Details:



The unit was surface mounted using four #10-24 toggle bolts through factory punched holes in the cabinet and the plywood wall with 3/16" standard washers used inside the cabinet.

ANCO Engineers, Inc.
1965A 33rd Street
Boulder, CO 80301
(303)443-7580

UUT # 5

Unit Under Test (UUT) Summary Sheet

ANCO Project Number: 3298.05d

Test Setup:	#2	
UUT Function:	Fire alarm sensor and annunciator control panel	
Restrictions:	Wall mount only	
Functionality Test Results:	Pre-Test	Post-Test
	Pass	Pass
Component Serial Numbers:	OSHPDFX-254 FACP	

UUT Properties

Weight (lb)	**CG Location (in)**			**Coordinate System Origin**
	Depth	**Width**	**Height**	Bottom Back Left Corner (see drawing Below)
16	1.75	7	15	

Additional Notes/Comments:

See restrictions.

Coordinate Origin (Noted by Red Dot):

Form: UUT, revision 0.0

Page 2 of 2

ANCO Engineers, Inc.
1965A 33rd Street
Boulder, CO 80301
(303)443-7580

UUT # 8

Unit Under Test (UUT) Summary Sheet

ANCO Project Number: 3298.05

Manufacturer:	UTC Fire and Security
Model Line:	Remote Power Supplies Series
Model Number:	APS10A
Product Construction Summary:	16 Ga. painted carbon steel backbox with vented door and amplifiers mounted inside. Cabinet is not NEMA rated.
Subcomponents Tested:	Two SIGA-AA50 amplifiers. These subcomponents represent a maximally populated configuration.

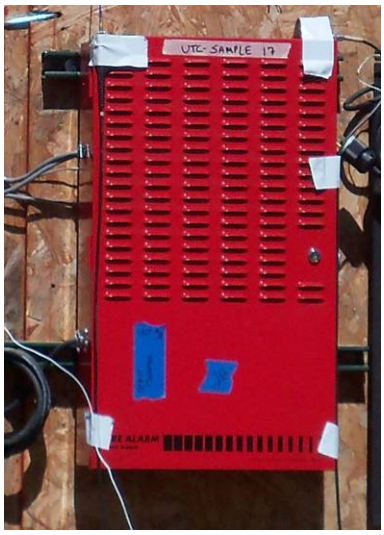
UUT Properties

Weight (lb)	**Dimensions (in)**			**Lowest Natural Frequency (Hz)**		
	Depth	**Width**	**Height**	**Front-Back**	**Side-Side**	**Vertical**
69.5	5.25	15	26	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	**Test Criteria**	S_{DS}	**z/h**	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
ICCES AC156	CBC	2.5	1.0	1.5	4.0	3.0	1.67	0.67

Test Mounting Details:



The unit was surface mounted on 1-3/8" strut using four 1/4"-20 toggle bolts through factory punched holes in the cabinet using ¼" standard washers inside the cabinet.

ANCO Engineers, Inc.
1965A 33rd Street
Boulder, CO 80301
(303)443-7580

UUT # 8

Unit Under Test (UUT) Summary Sheet

ANCO Project Number: 3298.05d

Test Setup:	#2	
UUT Function:	Signal amplifier with enclosure	
Restrictions:	Wall mount only	
Functionality Test Results:	Pre-Test	Post-Test
	Pass	Pass
Component Serial Numbers:	OSHPDAPS10A	

UUT Properties

Weight (lb)	**CG Location (in)**			**Coordinate System Origin**
	Depth	**Width**	**Height**	Bottom Front Left Corner (see drawing Below)
69.5	2.75	7.75	8.25	

Additional Notes/Comments:

None.

Coordinate Origin (Noted by Red Dot):

Certified Product Matrix

Reference UUT#	UTC Part#	Max Depth (X) [in]	Max Width (Y) [in]	Max Height (Z) [in]	Item Weight [lbs]	Interpolation
EST3X Brand Fire Alarm Control Panels						
1	3X-SFS1-B	7	21 3/4	35.5	96	Tested
1	3X-SFS1-R	7	21 3/4	35.5	96	Color
Vigilant Brand Fire Alarm Control Panels						
2	VM-1S	6.75	21.75	35.5	96.5	Tested
2	VM-1R	6.75	21.75	35.5	96.5	Color
Small Analog Fire Alarm Control Panels						
4	iO500 FACP	4.5	15.75	28	27	Tested
5	FX-254 FACP	4	15.75	28	27	Tested
4	iO500G	4.5	15.75	28	27	Color
4	iO500GD	4.5	15.75	28	27	Color
4	iO500R	4.5	15.75	28	27	Color
4	iO500RD	4.5	15.75	28	27	Color
4	iO500G-2	4.5	15.75	28	27	Input Voltage
4	iO500GL-F	4.5	15.75	28	27	Labeling
4	VS2-G	4.5	15.75	28	27	Branding/Color
4	VS2-GD	4.5	15.75	28	27	Branding/Color
4	VS2-R	4.5	15.75	28	27	Branding/Color
4	VS2-RD	4.5	15.75	28	27	Branding/Color
4	VS2-G-2	4.5	15.75	28	27	Input Voltage/Branding
4	VS2-R-2	4.5	15.75	28	27	Input Voltage/Branding
5	E-FSA250G	4	15.75	28	27	Color
5	E-FSA250GD	4	15.75	28	27	Branding
5	E-FSA250R	4	15.75	28	27	Color
5	E-FSA250RD	4	15.75	28	27	Color
5	FX-254G	4	15.75	28	27	Color
5	FX-254GD	4	15.75	28	27	Color
5	FX-254R	4	15.75	28	27	Color
5	FX-254RD	4	15.75	28	27	Color
5	FX-254G-2	4	15.75	28	27	Input Voltage
5	ADT-FSA250G	4	15.75	28	27	Branding/Color
5	ADT-FSA250GD	4	15.75	28	27	Branding/Color
5	ADT-FSA250R	4	15.75	28	27	Branding/Color
5	ADT-FSA250RD	4	15.75	28	27	Branding/Color

Reference UUT#	UTC Part#	Max Depth (X) [in]	Max Width (Y) [in]	Max Height (Z) [in]	Item Weight [lbs]	Interpolation
Remote Booster Power Supplies						
8	APS10A	5.25	15	26	69.5	Tested
8	APS10A/230	5.25	15	26	69.5	Input Voltage
8	APS10CAA	5.25	15	26	69.5	Software
8	MIRAPS10A	5.25	15	26	69.5	Branding
8	MIRAPS10A/230	5.25	15	26	69.5	Input Voltage, Branding
8	XLS-APS10A	5.25	15	26	69.5	Branding
8	XLS-APS10A/230	5.25	15	26	69.5	Input Voltage, Branding
8	EAPS10A	5.25	15	26	69.5	Branding
8	EAPS10A/230	5.25	15	26	69.5	Input Voltage, Branding
8	APS10A/230	5.25	15	26	69.5	Input Voltage