



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

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

OFFICE USE ONLY

APPLICATION #: **OSP – 0317 – 10**

OSHPD Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: Johnson Controls, Inc.

Manufacturer's Technical Representative: Brian Aske

Mailing Address: 631 South Richland Ave., York, PA 17403

Telephone: 717-771-7814 Email: Brian.A.Aske@jci.com

Product Information

Product Name: YVAA/QTC4 Air-Cooled Screw Liquid Chillers

Product Type: Chiller

Product Model Number: Various (see Certified Product Matrix)
(List all unique product identification numbers and/or part numbers)

General Description: Air-Cooled Variable-Speed Screw Chiller

Mounting Description: Base mounted on captive neoprene mount isolators.

Applicant Information

Applicant Company Name: TRU Compliance, LLC – A Tobolski Watkins Affiliate

Contact Person: Matthew J. Tobolski, Ph.D., S.E.

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

Telephone: 844-878-0200 Email: mtobolski@trucompliance.com

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2013.

Signature of Applicant:  Date: 07/07/2015

Title: President & CEO Company Name: TRU Compliance, LLC

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

STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY
OSH-FD-759 (REV 10/21/14)





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

Company Name: TRU Compliance, LLC – A Tobolski Watkins Affiliate

Name: Matthew J. Tobolski, Ph.D., S.E. California License Number: S 5648

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

Telephone: 844-878-0200 Email: mtobolski@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: U.S. Army Engineer Research & Development Center

Contact Name: Jim Wilcoski

Mailing Address: 2902 Newmark Drive, Champaign, IL 61826

Telephone: 217-373-6763 Email: James.Wilcoski@usace.army.mil

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

STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY
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OSHPD

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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) = 3.51

S_{DS} (Design spectral response acceleration at short period, g) = 1.95

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

R_p (Equipment or component response modification factor) = 2.5

Ω_0 (System overstrength factor) = 2.5

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, 2010: 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, 2019

Signature:  Date: August 3, 2015

Print Name: Timothy J. Piland Title: SSE

Special Seismic Certification Valid Up to : S_{DS} (g) = 1.95 z/h = 1

Condition of Approval (if applicable): _____





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Table 1

Special Seismic Certification Certified Product Matrix

TWEI Project No.: 2011-0263-CO-004

Manufacturer: Johnson Controls, Inc.

Model Line: YVAA/QTC4

Certified Product Construction Summary:

Painted carbon steel framing.

Certified Options Summary:

460V (Component voltage tied directly to overall unit voltage).

See Tables 2-6 for certified option details.

Mounting Configuration:

Isolated base mount using captive mount isolators. SEOR to design unit anchorage.

Note: Installed mounting configuration must be of similar configuration and equivalent strength and stiffness to those tested.

Building Code: CBC 2013

Seismic Certification Limits: $S_{DS} = 1.95g$ $z/h = 1.0$

$I_p = 1.5$

Model Line	Model	Dimension (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
YVAA Chillers	YVAA0153	208.3	93.0	96.0	13,911		
	YVAA0165	252.0	93.0	96.0	13,801	460V, Single Point, 500A	1
	YVAA0178	296.2	93.0	96.0	17,764		
	YVAA0183	252.0	93.0	96.0	14,452		
	YVAA0195	296.2	93.0	96.0	15,306		
	YVAA0198	340.2	93.0	96.0	16,439		
	YVAA0200	231.0	93.0	96.0	16,347		
	YVAA0213	296.2	93.0	96.0	15,394		
	YVAA0215	296.2	93.0	96.0	18,036		
	YVAA0218	340.2	93.0	96.0	18,876		
	YVAA0233	296.2	93.0	96.0	15,896		
	YVAA0245	340.2	93.0	96.0	19,091		
	YVAA0248	384.1	93.0	96.0	19,927		
	YVAA0263	340.2	93.0	96.0	16,773		
	YVAA0270	296.2	93.0	96.0	16,775		
	YVAA0273	340.2	93.0	96.0	19,604		
	YVAA0275	340.2	93.0	96.0	20,422		
	YVAA0278	384.2	93.0	96.0	21,251		
	YVAA0295	384.2	93.0	96.0	21,752		
	YVAA0303	384.2	93.0	96.0	20,450		
YVAA0305	425.0	93.0	96.0	21,273			
YVAA0308	428.1	93.0	96.0	22,107			



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Table 5

Special Seismic Certification Certified Subcomponent Matrix

TWEI Project No.: 2011-0263-CO-004

Manufacturer: Johnson Controls, Inc.

Model Line: YVAA/QTC4

ACCESSORIES

Certified Subcomponent Construction Summary:

Certified Options Summary:

Mounting Configuration:

Mounted on equipment.

Building Code: CBC 2013

Seismic Certification Limits: $S_{DS} = 1.95g$ $z/h = 1.0$

$I_p = 1.5$

Model Line	Model	Dimension (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
Flash Tank (Johnson Controls, Inc.)	375-79551-000 (14")					Carbon Steel ASME Vessel	1
	375-89884-000 (18")						2
Oil Seperator (Westermeyer)	375-93290-000 (8")					Carbon Steel ASME Vessel	1
	375-79591-000 (10")						
	375-89951-000 (14")						2
Economizer EEV (Danfoss)	025-44027-000 (ETS-400)					Brass & Copper Construction	1,2
Liquid Line EEV (Danfoss)	025-43887-000(ETS-250)					Brass & Copper Construction	1
	025-44027-000(ETS-400)						2
Condenser Fan VSD (ABB)	024-34355-021 (31A)					Carbon Steel & Copper	1
	024-34355-022 (38A)						2



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UUT - 1

Unit Under Test (UUT) Summary Sheet

TWEI Project No.: 2011-0263-CO-004

Manufacturer: Johnson Controls, Inc.

Model Line: YVAA/QTC4

Model Number: YVAA0165/QTC4165T **Serial Number:** N/A

Product Construction Summary:
Painted carbon steel enclosure.

Options/Subcomponent Summary:
Schneider Electric 460V-Single Point-500A Compressor VSD Power/Control Panel, JCI CTS24SAAD compressor, JCI FFE230 evaporator, Danfoss 026-45677-000 condenser, (10) AO Smith fan motors (2-motor types, 024-36873-507 & 024-34980-501), (10) MultiWing condenser fan impellers (2-fan types, 026-41594-000 & 026-41942-000), Danfoss Liquid Line EEV (electronic expansion valve) 025-43887-000, JCI 375-79551-000 (14") flash tank, Westermeyer Industries 8" oil separator 375-93290-000, Danfoss Economizer EEV (electronic expansion valve) 025-44027-000, ABB 024-34355-021 (31A) condenser fan.

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
13,801	252	93	96	6.9	4.7	9.0

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}
CBC 2013	ICC-ES AC156	1.95g	1.0	1.5	3.12g	2.34g	1.30g	0.52g

Test Mounting Details:



Unit mounted on four (4) YRSM3 2300Z, four (4) YRSM3 1300Z and two (2) YRSM3-1000Z VMC captive mount isolators mounted to shake table platen using (40) 5/8" Ø – Gr. 8 bolts.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.



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UUT - 2

Unit Under Test (UUT) Summary Sheet

TWEI Project No.: 2011-0263-CO-004

Manufacturer: Johnson Controls, Inc.

Model Line: YVAA/QTC4

Model Number: YVAA0343 **Serial Number:** N/A

Product Construction Summary:
Painted carbon steel enclosure.

Options/Subcomponent Summary:
Schneider Electric 460V-Single Point-800A Compressor VSD Power/Control Panel, JCI CTS24SAAD compressor, JCI FFE331 evaporator, Danfoss 026-45677-000 condenser, (18) AO Smith fan motors (2-motor types, 024-36873-507 & 024-34980-501), (18) MultiWing condenser fan impellers (2-fan types, 026-41594-000 & 026-41942-000), Danfoss Liquid Line EEV (electronic expansion valve) 025-44027-000, JCI 375-89884-000 (18") flash tank, Westermeyer Industries oil separator 375-89951-000 (14"), Danfoss Economizer EEV (electronic expansion valve) 025-44027-000, ABB 024-34355-022 (38A) condenser fan.

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
22,193	428.1	93	96	7.0	3.6	8.0

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}
CBC 2013	ICC-ES AC156	1.95g	1.0	1.5	3.12g	2.34g	1.30g	0.52g

Test Mounting Details:



Unit mounted on eight (8) YRSM3-2300Z and four (4) YRSM3- 1000Z VMC captive mount isolators mounted to shake table platen using (48) 5/8" Ø – Gr. 8 bolts
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.