APPLICATION FOR PREAPPROVAL

SPECIAL SEISMIC CERTIFICATION OF EQUIPMENT AND COMPONENTS

For Office Use Only

APPLICATION NO.
OSP – 0173 – 10

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

1.0 **JOHNSON THERMAL SYSTEMS** — *Manufacturer*
Jeff Johnson — *Manufacturer's Technical Representative*
1614 Industrial Way, Ste. 104, Caldwell, Idaho 83605-6925 — *Mailing Address*
(208) 453 - 1000 — *Telephone*
JeffJ@johnsonthermal.com — *E-mail Address*

2.0 **JTS CHILLERS** — *Product Name*
Air-cooled process chillers — *Product Type*
SEE ATTACHMENT 1 — *Product model No (List all unique product identification numbers and/or serial numbers)*
General Description: Rigid base mounted chillers for medical equipment cooling, data center cooling, space cooling, and dehumidification. Chiller frame is constructed from G90 galvanized steel members. All cover panels are powder coated carbon steel. Cabinets have NEMA 4 electrical enclosure. Structural enhancements incorporated in the test units shall be incorporated into all approved units.

3.0 ***EQUIPMENTANCHORAGE.COM*** — *Applicant Company Name*
JONATHAN ROBERSON, S.E. — *Contact Person*
5877 Pine Ave, Suite 210, Chino Hills, CA. 91709 — *Mailing Address*
(406) 541-EASE (3273) — *Telephone*
jon@easeco.com — *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.

Signature of Applicant
April 4, 2011 — *Date*
SENIOR ENGINEER — *Title*
EQUIPMENTANCHORAGE.COM — *Company Name*

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Registered Design Professional Preparing the Report

4.0 EQUIPMENTANCHORAGE.COM
Company Name

Jonathan Roberson, S.E. | S4197
Contact Name | *California License Number*

5877 Pine Ave, Suite 210, Chino Hills, CA. 91709
Mailing Address

909-606-7622 | jon@easeco.com
Telephone | *E-mail Address*

California Licensed Structural Engineer Review and Acceptance of the Report

5.0 EQUIPMENTANCHORAGE.COM
Company Name

Jonathan Roberson, S.E. | S4197
Contact Name | *California License Number*

5877 Pine Ave, Suite 210, Chino Hills, CA. 91709
Mailing Address

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Anchorage Pre-Approval

6.0

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

☒ Anchorage is not Pre-approved ***SEE ATTACHMENT 1***

Certification Method

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

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

Testing Laboratory (if applicable)

8.0 Environmental Testing Laboratory, Inc. | Brady Richard
Company Name | *Contact Name*

11034 Indian Trail, Dallas, TX 75229-3513
Mailing Address

972-247-9657 | brady@etldallas.com
Telephone | E-mail:

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Approval Parameters

9.0

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

Design Basis of Equipment or Components (F_p/W_p) = ***2.16g (30 Ton Chiller) | 1.99g (Other Chillers)***

S_{DS} (Spectral response acceleration at short period) = ***3.0g (30 Ton Chiller) | 2.77g (Other Chillers)***

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 ATTACHMENT 1***

Building period limits (if any) = ***NONE***

Overall dimensions and weight (or range thereof) = ***SEE ATTACHMENT 1***

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)*: ***ATTACHMENT 1***

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

Signature & Date **5/11/2011**	**December 31, 2016** *Approval Expiration Date*
M. R. Karim, SHFR *Name & Title*	S_{DS} (g) = **See Section 9.0** z/h = **1.0** *Special Seismic Certification Valid Up to*

Condition of Approval (if any):

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Johnson Thermal Systems

SPECIAL SEISMIC CERTIFICATION OF CHILLER SYSTEMS

ATTACHMENT 1: AIR-COOLED CONDENSING WATER CHILLERS

JOHNSON THERMAL SYSTEMS

TABLE 1: SEISMICALLY CERTIFIED COMPONENTS:

PRODUCT LINE	MODEL NO.	WIDTH (IN)	DEPTH (IN)	HEIGHT (IN)	DRY WT (LBS)	MOUNT	BASIS
3 Ton Chiller (SAC)	JTS3SAC-OSP	34	60	60	690	Rigid Base	Interpolated
4 Ton Chiller (SAC	JTS4SAC-OSP	34	60	60	690	Rigid Base	Interpolated
5 Ton Chiller (SAC)	JTS5SAC-OSP	34	60	60	700	Rigid Base	UUT 1
7 Ton Chiller (SAC)	JTS7SAC-OSP	42	83	78	1050	Rigid Base	Interpolated
7 Ton Chiller (SAC-HA)	JTS7SAC-HA-OSP	42	83	78	1200	Rigid Base	Interpolated
10 Ton Chiller (SAC)	JTS10SAC-OSP	42	83	78	1100	Rigid Base	Interpolated
10 Ton Chiller (SAC-HA)	JTS10SAC-HA-OSP	42	83	78	1164	Rigid Base	Interpolated
10 Ton Chiller (DIAC)	JTS10DIAC-OSP	52	79	80	1750	Rigid Base	Interpolated
15 Ton Chiller (DIAC)	JTS15DIAC-OSP	52	79	80	1800	Rigid Base	Interpolated
15 Ton Chiller (DIAC-HA)	JTS15DIAC-HA-OSP	52	79	80	1950	Rigid Base	Interpolated
20 Ton Chiller (DIAC)	JTS20DIAC-OSP	52	79	80	1950	Rigid Base	Interpolated
20 Ton Chiller (DIAC-HA)	JTS20DIAC-HA-OSP	52	79	80	1950	Rigid Base	Interpolated
25 Ton Chiller (DIAC)	JTS25DIAC-OSP	68	79	88	2200	Rigid Base	Interpolated
25 Ton Chiller (DIAC-HA)	JTS25DIAC-HA-OSP	68	79	88	2250	Rigid Base	Interpolated
30 Ton Chiller (DIAC)	JTS30DIAC-OSP	68	79	88	2250	Rigid Base	UUT 2

NOTES:

1. **Mounting:** Establishes the general mounting type(s) under which the tabulated components are seismically certified
   - **Rigid Base:** a free-standing, base mounted condition with direct connection between unit base and supporting structure.
2. **Subassemblies:** Units are seismically certified with the subassemblies listed in Table 3 below.

TABLE 2: OSHPD ANCHORAGE PRE-APPROVALS (OPA)

COMPONENT	OPA NO.	APPROVAL STATUS
4 Ton & 5 Ton Chillers	OPA-2675-10	Pending
10 Ton,15 Ton, 20 Ton, 25 Ton & 30 Ton Chillers	OPA-2674-10	Pending

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ATTACHMENT 1: AIR-COOLED CONDENSING WATER CHILLERS

JOHNSON THERMAL SYSTEMS

TABLE 3: CHILLER SUBASSEMBLIES ACCEPTED IN SEISMIC CERTIFICATION

			MAX. DIMENSIONS (IN)				MAX.		
MANUFACTURER	PRODUCT SERIES	MODEL	DIAM	LENGTH	WIDTH	HEIGHT	WT. (LB)	MOUNT	NOTES
COMPRESSORS									
COPELAND	Digital Scroll Compressor, Hermetic R-410a	ZPD34K5E	N/A	9.57"	9.57"	17.66"	68.2 lb	Inside Unit	
COPELAND	Digital Scroll Compressor, Hermetic R-410a	ZPD51K5E	N/A	9.26"	9.26"	18.39"	72.8 lb	Inside Unit	
COPELAND	Digital Scroll Compressor, Hermetic R-410a	ZPD61KCE	N/A	9.63'	9.82"	17.91"	88.8 lb	Inside Unit	UUT1
COPELAND	Digital Scroll Compressor, Hermetic R-410a	ZPD103KCE	N/A	11.54"	11.23"	21.00"	134 lb	Inside Unit	
COPELAND	Digital Scroll Compressor, Hermetic R-410a	ZPD120KCE	N/A	11.54"	11.23"	21.00"	136 lb	Inside Unit	
COPELAND	Digital Scroll Compressor, Hermetic R-410a	ZPD83KCE	N/A	9.48"	9.70"	19.46"	89.9 lb	Inside Unit	
COPELAND	Digital Scroll Compressor, Hermetic R-410a	ZPD137KCE	N/A	10.38"	11.23"	21.00"	137 lb	Inside Unit	
COPELAND	Digital Scroll Compressor, Hermetic R-410a	ZPD154KCE	N/A	12.83"	11.61"	21.72"	144 lb	Inside Unit	
COPELAND	Digital Scroll Compressor, Hermetic R-410a	ZPD182KCE	N/A	12.83"	11.61"	21.71"	147 lb	Inside Unit	UUT2
RESERVOIR									
JTS	Custom SS water/glycol reservoir, closed	15T-M005-1-B	18"	64 1/2"	18"	20"	70 lb	Inside Unit	
JTS	Custom SS water/glycol reservoir, closed	JTS4SAC-V001	18"	22 1/2"	18"	20"	45 lb	Inside Unit	
JTS	Custom SS water/glycol reservoir, closed	15T-M005-1-B	18"	64 1/2"	18"	20"	70 lb	Inside Unit	UUT1
JTS	Custom SS water/glycol reservoir, closed	JTS4SAC-V001	18"	22 1/2"	18"	20"	45 lb	Inside Unit	UUT2
PUMP									
Goulds	End suction centrifugal pump, single impeller	1ST1G5A4	9"	14.5"	9"	10"	45 lb	Inside Unit	UUT1
Goulds	End suction centrifugal pump, single impeller	1ST1E5C4	9"	14.5"	9"	10"	45 lb	Inside Unit	
Goulds	End suction centrifugal pump, dual impeller	LCC1J2D0	6.75"	21.2"	6.75"	9.37"	57 lb	Inside Unit	UUT2
Weber	End suction centrifugal pump, dual impeller	FC40B50-3T	10"	21"	10"	10"	64 lb	Inside Unit	UUT2
FAN ASSEMBLY									
Ziehl-Abegg	FN Series, EC Axial motor driven, 500 mm	FN050-4DQ.4I.V7P1	N/A	26"	26"	6"	37 lb	Inside Unit	UUT2
Ziehl-Abegg	FN Series, EC Axial motor driven, 710 mm	FN071-ZIQ.DG.V7P3	N/A	33 1/2"	33 1/2"	9"	49 lb	Inside Unit	UUT2
EBM-Pabst	W3G Series, EC Axial motor driven, 500 mm	W3G500-CE33-01 3/60/460	N/A	26"	26"	6"	37 lb	Inside Unit	UUT1

Johnson Thermal Systems

SPECIAL SEISMIC CERTIFICATION OF CHILLER SYSTEMS

ATTACHMENT 1: AIR-COOLED CONDENSING WATER CHILLERS

JOHNSON THERMAL SYSTEMS

TABLE 3: CHILLER SUBASSEMBLIES ACCEPTED IN SEISMIC CERTIFICATION

			MAX. DIMENSIONS (IN)				MAX.		
MANUFACTURER	PRODUCT SERIES	MODEL	DIAM	LENGTH	WIDTH	HEIGHT	WT. (LB)	MOUNT	NOTES
EBM-Pabst	W3G Series, EC Axial motor driven, 650 mm	W3G650-CK02-03 3/60/460	N/A	33 1/2"	33 1/2"	9"	49 lb	Inside Unit	UUT2
EVAPORATOR									
Alfa Laval	Brazed Plate Heat Exchanger	AC-30-60EQ-S21	N/A	3.9"	3.7"	12.8"	14.2 lb	Inside Unit	UUT1
Alfa Laval	Brazed Plate Heat Exchanger	AC-70X-50M	N/A	20 1/2"	4 1/2"	6"	25 lb	Inside Unit	UUT2
ELECTRONIC EXPANSION VALVES									
Carel	E2V	E2V24BSM00	N/A	5"	2 1/2"	5/8"	1 1/2"	Inside Unit	UUT1
Carel	E3V	E3V45ASR00	N/A	3"	2 1/2"	1 1/4"	2 lb	Inside Unit	UUT2
CONDENSER									
Heatcraft	Micro-channel aluminium coil	59509901 HTS-D Cabinet	N/A	37"	26"	1 1/4"	15 lb	Inside Unit	UUT1
Luvata	Micro-channel aluminium coil	E66005OH	N/A	69"	32 1/2"	1 1/4"	36 lb	Inside Unit	UUT2
FLOW SWITCH									
W.E. Anderson	flow switch	119151	N/A	5"	2"	1"	1 oz	Inside Unit	All UUT
CONTROLLER									
Carel	pCOxs	PCO1000BX0	N/A	5 1/2"	4 1/2"	3"	1 1/2 lb	Inside Unit	UUT1
Carel	pCO3	PCO3000ES0	N/A	9"	4 1/2"	3"	2 lb	Inside Unit	UUT2
PRESSURE RELIEF VALVE									
Wilkins	pressure relief valve	P-1000A952	N/A	3'	2"	1/4"	6 oz	Inside Unit	All UUT
LIQUID LINE FILTER DRIER									
Flow	liquid line filter drier	30 EK 4155	3 1/2"	3 1/2"	3 1/2"	8"	3 lb	Inside Unit	All UUT
AUTOMATIC AIR VENT									
McDonnel Mill	automatic air vent	AAV-90	2 1/2"	2 1/2"	2 1/2"	6 1/2"	1 1/2 lb	Inside Unit	All UUT

Johnson Thermal Systems

SPECIAL SEISMIC CERTIFICATION OF CHILLER SYSTEMS

ATTACHMENT 1: AIR-COOLED CONDENSING WATER CHILLERS

JOHNSON THERMAL SYSTEMS

UUT-1: 5 TON CHILLER

NAME: JTS5SAC-OSP

MANUFACTURER: Johnson Thermal Systems

UUT FUNCTION: Chillers for medical equipment cooling, data center cooling, space cooling and dehumidification.

DESCRIPTION:

Controller:	Carel PCOxs
Compressor :	(1) Copland Digital Scroll ZPD61KCE 5 Ton
Pump :	(1) Goulds 1ST1G5A4 2HP
Fan Assembly:	(1) EBM-Pabst W3G Series, EC Axial motor driven, 500 mm
Evaporator:	(1) Alfa Laval Brazed Plate Heat Exchanger
Condensor:	(1) Heatcraft HTS-D Cabinet Micro-channel aluminum coil
Refrigerant:	R-410a
Cabinet:	NEMA 4 electrical enclosure,
Tank:	20 gallon

pressure relief bypass valve, flow switch, & liquid line filter drier

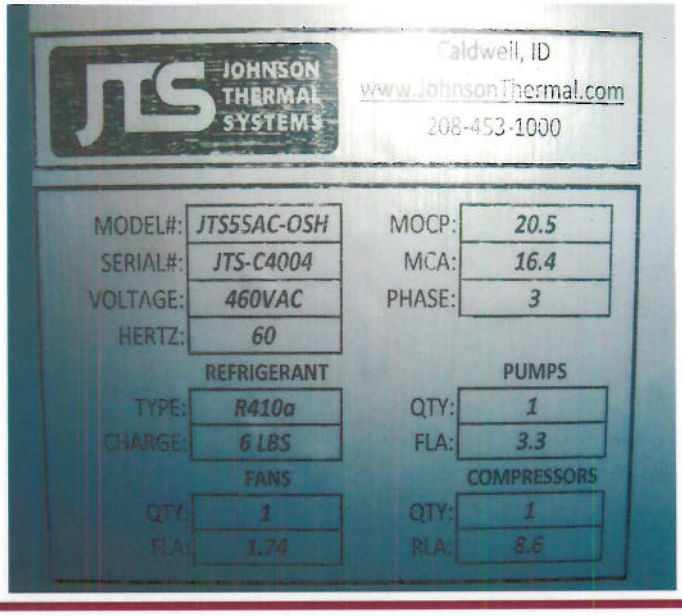
IDENTIFICATION: Model No.: JTS5SAC-OSP Serial No.: JTS-C4004

DIMENSIONS: 34" W x 60" D x 60" H

WEIGHT: 698 lb. Dry / 866 lb. full of water

MOUNTING: RIGID BASE: (4) 3/8" dia bolts to 1 ¼" Aluminum Plate

LOWEST RESONANT FREQUENCY:	F/B AXIS	S/S AXIS	VERT AXIS	OFF-AXIS
	15.2	13.8	8.9	11.1



Johnson Thermal Systems

SPECIAL SEISMIC CERTIFICATION OF CHILLER SYSTEMS

ATTACHMENT 1: AIR-COOLED CONDENSING WATER CHILLERS

JOHNSON THERMAL SYSTEMS

UUT-2: 30 TON CHILLER

NAME: JTS30DIAC-OSP

MANUFACTURER: Johnson Thermal Systems

UUT FUNCTION: Chillers for medical equipment cooling, data center cooling, space cooling and dehumidification.

DESCRIPTION:

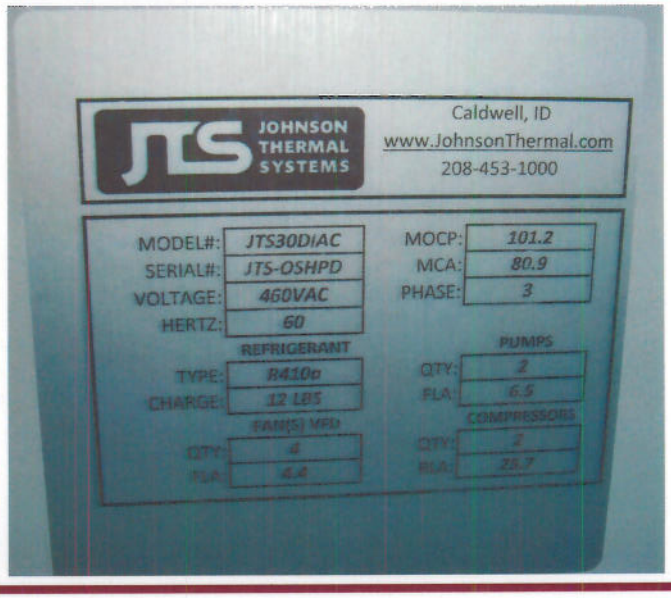
Controller:	Carel PCO3
Compressor :	(2) Copland Digital Scroll ZPD182KCE 5 Ton
Pump :	(1) Goulds 5HP
	(1) Weber 5HP
Fan Assembly:	(2) Ziehl-Abegg, FN Series, EC Axial motor driven, 500 mm
	(1) Ziehl-Abegg, FN Series, EC Axial motor driven, 710 mm
	(1) EBM-Pabst W3G Series, EC Axial motor driven, 650 mm
Evaporator:	(1) Alfa Laval Brazed Plate Heat Exchanger
Condensor:	(1) Luvata Micro-channel aluminum coil
Refrigerant:	R-410a
Cabinet:	NEMA 4 electrical enclosure,
Tank:	65 gallon

pressure relief bypass valve, flow switch, & liquid line filter drier

IDENTIFICATION: Model No.: JTS30DIAC-OSP Serial No.: JTS-OSHPD

DIMENSIONS: 68" W x 79" D x 88" H

WEIGHT: 2248 lbs Dry / 2791 lb. full of water

MOUNTING: RIGID BASE: (4) ½" dia bolts to steel table extension frame

LOWEST RESONANT FREQUENCY:	F/B AXIS	S/S AXIS	VERT AXIS	OFF-AXIS
	8.9	7.7	>50	8.9