



# APPLICATION FOR PREAPPROVAL SPECIAL SEISMIC CERTIFICATION OF EQUIPMENT AND COMPONENTS

For Office Use Only

APPLICATION NO.

OSP - 0045-10

Check whether application is: NEW  RENEWAL

1.0 JOHNSON CONTROLS, INC FRANCIS E. JEHRIO  
*Manufacturer* *Manufacturer's Technical Representative*  
631 S. RICHLAND AVE, YORK, PA 7403  
*Mailing Address*

717-771-6854

*Telephone*

Francis.e.jehrio@jci.com

*E-mail Address*

2.0 CENTRIFUGAL CHILLERS CHILLERS  
*Product Name* *Product Type*

*Product model No (List all unique product identification numbers and/or serial numbers)*

*General Description: CENTRIFUGAL CHILLERS (YK, YD) WITH WELDED STEEL EVAPORATOR AND CONDENSER VESSEL CONSTRUCTION. THE CHILLERS INCLUDE COMPRESSOR, MOTOR, VFD, AND CONTROLLERS. THE UNIT WAS TESTED WITH CONTENTS (WATER, OIL, ETC.) MOUNTING CONFIGURATION FOR NEOPRENE SUPPORT CONDITION. APPROVAL IS LIMITED TO BE FLOOR MOUNTED UNITS WITH NEOPRENE PADS.*

3.0 MAKEITRIGHT, INC. JOSEPH L. LA BRIE, SE  
*Applicant Company Name* *Contact Person*  
55 E. HUNTINGTON DR, SUITE 277, ARCADIA, CA., 91006  
*Mailing Address*

626-445-0366

*Telephone*

labrie@makeitright.net

*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*

October 19, 2011

*Date*

PRESIDENT / CEO  
*Title*

MAKEITRIGHT, INC  
*Company Name*

1/10



Registered Design Professional Preparing the Report

4.0 **MAKEITRIGHT, INC.**  
 Company Name  
 JOSEPH L. LA BRIE, SE S 3566  
 Contact Name California License Number  
 55 E. HUNTINGTON DR, SUITE 277, ARCADIA, CA., 91006  
 Mailing Address  
 626-445-0366 labrie@makeitright.net  
 Telephone E-mail Address

California Licensed Structural Engineer Review and Acceptance of the Report

5.0 **MAKEITRIGHT, INC.**  
 Company Name  
 JOSEPH L. LABRIE, SE S 3566  
 Contact Name California License Number  
 55 E. HUNTINGTON DRIVE, #277, ARCADIA, CA., 91006  
 Mailing Address  
 626-445-0366 labrie@makeitright.net  
 Telephone E-mail Address

Anchorage Pre-Approval

6.0  Anchorage is pre-approved under OPA-  
 (Separate application for anchorage pre-approval is required)  
 Anchorage is not Pre-approved

Certification Method

7.0  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 UCSD: SRMD Test Facility Gianmario Benzoni Ph.D.  
 Company Name Contact Name  
 9500 Gilman Drive, La Jolla, Ca., 92093  
 Mailing Address  
 (858) 534-1432 benzoni@ucsd.edu  
 Telephone E-mail:

2/10



**Approval Parameters**

9.0

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

Design Basis of Equipment or Components ( $F_p/W_p$ ) = 2.88

- $S_{DS}$  (Spectral response acceleration at short period) = 1.6g
- $a_p$  (In-structure equipment or component amplification factor) = 2.5
- $R_p$  (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 ATTACHED
- Building period limits (if any) = NONE
- Overall dimensions and weight (or range thereof) = SEE ATTACHED

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
- $\Omega_0$  (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):

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

<p style="text-align: center; margin: 0;">Signature &amp; Date</p> <p style="text-align: center; margin: 0;"><b>M. R. Karim, SHFR</b></p> <p style="text-align: center; margin: 0;">Name &amp; Title</p>	<p style="margin: 0;">10/19/2011</p>	<p style="margin: 0;"><b>December 31, 2016</b></p> <p style="margin: 0; font-size: small;">Approval Expiration Date</p>
<p style="margin: 0;">Condition of Approval (if any): Approval is limited to chillers up to 3,000 ton (90,000 lbs. maximum operating weight) with components listed in pages # 5 through # 9 in the tested configuration.</p>		<p style="margin: 0;"> <math>S_{DS}</math> (g) = <b>1.6</b>      <math>z/h</math> = <b>1.0</b> </p> <p style="margin: 0; font-size: small;">Special Seismic Certification Valid Up to</p>



**TABLE 1: Product Line and Model Numbers**

Support Condition: Bolts through 3/4" Neoprene Pad

MODEL	UUT	TONAGE	WEIGHT (lbs)	WIDTH (ft-in)	HEIGHT (ft-in)	LENGTH (ft-in)	FUND. FREQ. (hz)			PICTURE
							frt to bck	side to side	vertical	
YK WR W2 K7	UUT-1	3000 Ton	89,171	10'-3"	12'-0"	22'-0"	6.47	7.88	13.26	
YK DS DS Q3	UUT-2	200 Ton	21,035	5'-6"	5'-10 1/2"	16'-0"	8	8.5	18.5	



**TABLE 2: SUBASSEMBLIES AND SUBCOMPONENTS**

COMPONENT

MANUFACTURER: JOHNSON CONTROLS, INC

CONSTRUCTION

MATERIALS: CAST IRON

PRODUCT LINE	MODEL NUMBER	LARGEST	SMALLEST	INCLUDED WITH TEST	MOUNT CONFIGURATION	PICTURE
COMPRESSORS	Q3		√	UUT-2	Mounted on Unit	
	Q4			*	Mounted on Unit	
	Q5			*	Mounted on Unit	
	Q6			*	Mounted on Unit	
	Q7			*	Mounted on Unit	
	P7			*	Mounted on Unit	
	P8			*	Mounted on Unit	
	P9			*	Mounted on Unit	
	G4			*	Mounted on Unit	
	H0			*	Mounted on Unit	
	H1			*	Mounted on Unit	
	U1			*	Mounted on Unit	
	U2			*	Mounted on Unit	
	H9			*	Mounted on Unit	
	K1			*	Mounted on Unit	
	K2			*	Mounted on Unit	
	K3			*	Mounted on Unit	
	K4			*	Mounted on Unit	
	K7		√		UUT-1	

\* Interpolated



COMPONENT

MANUFACTURER: JOHNSON CONTROLS, INC

CONSTRUCTION

MATERIALS: CARBON STEEL

PRODUCT LINE	MODEL NUMBER	LARGEST	SMALLEST	INCLUDED WITH TEST	MOUNT CONFIGURATION
EVAPORATOR	AP,AQ,AR,AS,AC ,AD,A3,A4			*	Base Mounted
	CP,CQ,CR,CS,CC, CD,CE,C3,C4,C5			*	Base Mounted
	DP,DQ,DR,DS, DC,DD,DE,D3, D4,D5		√	UUT-2	Base Mounted
	EP,EQ,ER,ES,ET, EC,ED,EE,E3,E4, E5			*	Base Mounted
	FQ,FR,FS,FT,FC, FD,FE,F3,F4,F5			*	Base Mounted
	GQ,GR,GS,GC, GD,GE,G3,G4,G5			*	Base Mounted
	HQ,HR,HS,HC, HD,HE,H3,H4,H5			*	Base Mounted
	JP,JQ,JR,JS			*	Base Mounted
	KP,KQ,KR,KS,K2, K3,K4,KT,KV,KW, KX,K5,K6,K7,KC, KD,K8,K9,K0			*	Base Mounted
	LQ,LR,LS			*	Base Mounted
	MQ,MR,MS,M2, M3,M4			*	Base Mounted
	NQ,NR,NS,N2, N3,N4			*	Base Mounted
	PQ,PR,PS,P2, P3,P4			*	Base Mounted
	QQ,QR,QS,Q2, Q3,Q4,QT,QV			*	Base Mounted
	RQ,RS,RV,R3,R5, R7,RP,RR,RT,R2, R4,R6			*	Base Mounted
	SQ,SS,SV,S3, S5,S7			*	Base Mounted
	XQ,XR,XS,X2,X3, X4			*	Base Mounted
	ZQ,ZR,ZS,Z1,Z2, Z3,Z4			*	Base Mounted
	WP,WR,WT,W1, W2,W4,W6		√	UUT-1	Base Mounted

\* Interpolated

6/10



COMPONENT

MANUFACTURER: JOHNSON CONTROLS, INC

CONSTRUCTION

MATERIALS: CARBON STEEL

PRODUCT LINE	MODEL NUMBER	LARGEST	SMALLEST	INCLUDED WITH TEST	MOUNT CONFIGURATION	
CONDENSER	AP,AQ,AR,AS			*	Base Mounted	
	CP,CQ,CR,CS			*	Base Mounted	
	DP,DQ,DR,DS		√	UUT-2	Base Mounted	
	EP,EQ,ER,ES,ET			*	Base Mounted	
	EV,EW,EX,E3,E4			*	Base Mounted	
	FQ,FR,FS,FT			*	Base Mounted	
	FV,FW,FX,F3,F4			*	Base Mounted	
	JP,JQ,JR,JS			*	Base Mounted	
	KP,KQ,KR,KS,K2, K3,K4			*	Base Mounted	
	LQ,LR,LS			*	Base Mounted	
	MP,MQ,MR,MS, M2,M3,M4			*	Base Mounted	
	NP,NQ,NR,NS,N 2,N3,N4			*	Base Mounted	
	PQ,PR,PS,P2,P3, P4			*	Base Mounted	
	QQ,QR,QS,Q2,Q3, ,Q4			*	Base Mounted	
	RQ,RR,RS,R2,R3, R4			*	Base Mounted	
	SQ,SR,SS,S2,S3,S 4			*	Base Mounted	
	TP,TQ,TR,TS,T2,T 3,T4,T5			*	Base Mounted	
	VP,VQ,VR,VS,V2, V3,V4,V5			*	Base Mounted	
	XQ,XR,XS,X2,X3, X4			*	Base Mounted	
	ZQ,ZR,ZS,Z1,Z2,Z 3,Z4			*	Base Mounted	
	WQ,WR,WS,W1, W2,W3,W4		√		UUT-1	Base Mounted

\* Interpolated



COMPONENT

MANUFACTURER: JOHNSON CONTROLS, INC

CONSTRUCTION

MATERIALS: CARBON STEEL

PRODUCT LINE	MODEL NUMBER	LARGEST	SMALLEST	INCLUDED WITH TEST	MOUNT CONFIGURATION	PICTURE
OIL SUMP	14"Diameter		√	UUT-2	Mounted on Unit	
	16"Diameter	√		UUT-1	Mounted on Unit	

COMPONENT

MANUFACTURER: SCHNEIDER ELECTRIC

CONSTRUCTION

MATERIALS: COLOR, LIQUID CRYSTAL DISPLAY

PRODUCT LINE	MODEL NUMBER	LARGEST	SMALLEST	INCLUDED WITH TEST	MOUNT CONFIGURATION	PICTURE
CONTROLLER	OPTIVIEW		√	UUT-2	Mounted on Unit	
	OPTIVIEW	√		UUT-1	Mounted on Unit	

8/10



COMPONENT

MANUFACTURER: SCHNEIDER ELECTRIC

CONSTRUCTION

MATERIALS: NEMA-1 ENCLOSURE

PRODUCT LINE	MODEL NUMBER	LARGEST	SMALLEST	INCLUDED WITH TEST	MOUNT CONFIGURATION	PICTURE
VSD	VSD292		√	UUT-2	Mounted on Unit	
	VSD351			*		
	VSD424			*		
	VSD503			*		
	VSD608			*		
	TM790			*		
	TM1100		√	UUT-1		

COMPONENT

MANUFACTURER: SCHNEIDER ELECTRIC

CONSTRUCTION

MATERIALS: CARBON STEEL

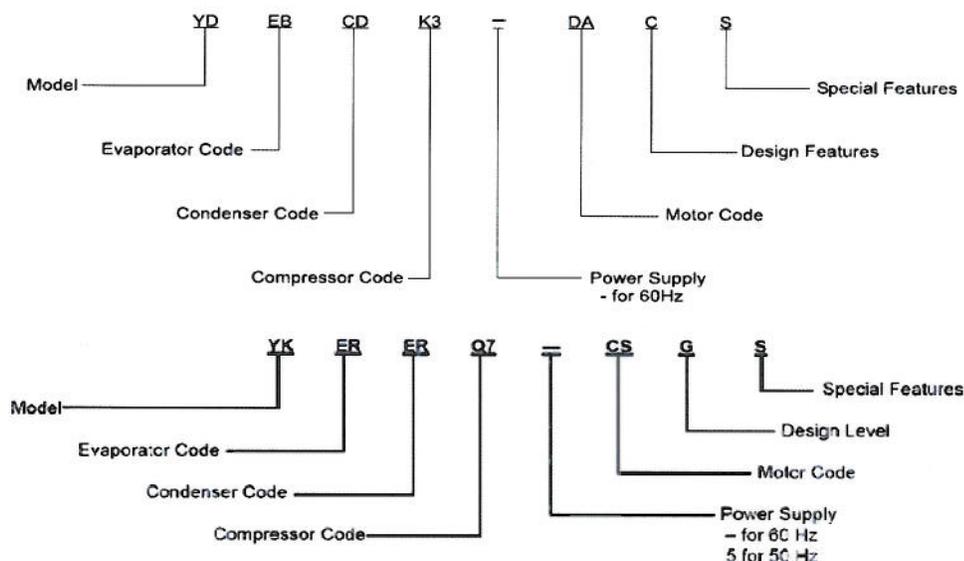
PRODUCT LINE	MODEL NUMBER	LARGEST	SMALLEST	INCLUDED WITH TEST	MOUNT CONFIGURATION	PICTURE	
MOTOR	CF, EF, CG, EG, CH, EH, CJ, EJ, CK, EK			*	Mounted on Unit		
	CL		√	UUT-2			
	EL, CM, EM, CN, EN, CP, EP, CR, ER, CS, ES, CT, ET, CU, EU, CV, EV, CW, CX, CY, CZ, CA, CB, CZ						*
	DA, DB, DC, DD, DE, DF, DH, DJ, DK						*
	DL		√	UUT-1			

9/10



**PRODUCT CODE:**

**NOMENCLATURE**



Johnson Controls, Inc., York Brand chiller products are identified by a Product Code as shown below. ~~See page two for a Table summarizing this Code for large tonnage chillers.~~

The Model Type is a "YK". OR "YD"

The 2-character Evaporator Code is next and its range is from AP to Z4.

The 2-character Condenser Code is next and its range is from AP to Z4.

The 2-character Compressor Code is next and ranges from Q3 to K7.

The first letter of the evaporator and condenser code stand for the shell dia ranging from 25-1/4" for the evaporator and 21-1/4" for the condenser to 62" for the evaporator and 56-5/8" for the condenser for an "A".

The second letter represents the tube pattern. Bundle sizes vary for the same shell dia. Thus, for the same shell dia., the tonnage varies with the number of tubes.

10/10