



APPLICATION FOR PREAPPROVAL

SPECIAL SEISMIC CERTIFICATION OF EQUIPMENT AND COMPONENTS

For Office Use Only

APPLICATION NO.

OSP – 0034-10

Check whether application is: NEW RENEWAL

1.0 Carrier Corporation Anthony Molavi
Manufacturer *Manufacturer's Technical Representative*
9701 Old Statesville Road, Charlotte, NC 28269
Mailing Address

(704) 921-3976

Telephone

Anthony.Molavi@carrier.utc.com

E-mail Address

2.0 AquaForce 30XW150-400 Water-Cooled Liquid Screw Chillers Water-Cooled Liquid Screw Chillers
Product Name *Product Type*
Model 30XW150 through 30XW400
Product model No (List all unique product identification numbers and/or serial numbers)

General Description: Water-Cooled Liquid Screw Chillers

3.0 Carrier Corporation Anthony Molavi
Applicant Company Name *Contact Person*
9701 Old Statesville Road, Charlotte, NC 28269
Mailing Address
(704) 921-3976 Anthony.Molavi@carrier.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.

02/01/2010

Signature of Applicant

Date

Program Manager, Water-cooled Screw & Centrifugal Chillers

Title

Carrier Corporation

Company Name



Registered Design Professional Preparing the Report

4.0 Buehler and Buehler Structural Engineers, Inc
Company Name

Ali Sumer 72785 / Civil
Contact Name *California License Number*

600 Q St. Suite 200, Sacramento, CA 95811
Mailing Address

(916) 443-0303 asumer@bbse.com
Telephone *E-mail Address*

California Licensed Structural Engineer Review and Acceptance of the Report

5.0 Buehler and Buehler Structural Engineers, Inc
Company Name

Scott R. Hooker 3937 / Structural
Contact Name *California License Number*

600 Q St. Suite 200, Sacramento, CA 95811
Mailing Address

(916) 443-0303 shooker@bbse.com
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 University of Nevada, Reno (UNR) Dr. Gokhan Pekcan (UNR)
 Clark Dynamic Test Laboratory (Clark) John R. Antenucci (Clark)
Company Name *Contact Name*

UNR address: Department of Civil Eng., University of Nevada, Reno, Mail Stop 258, Reno, NV 89523
 Clark Address: 1801 Route 51, Jefferson Hills, Pennsylvania 15025
Mailing Address

(775) 784-4512 (UNR) pekcan@unr.edu (UNR)
 (412) 387-1001 (Clark) jrantenucci@clarkdynamic.com (Clark)
Telephone *E-mail:*

2/1



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) = 4.34

S_{DS} (Spectral response acceleration at short period) = 1.93

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

R_p (Equipment or component response modification factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1.0

Equipment or Component fundamental period(s) = See attachment

Building period limits (if any) = N/A Sec

Overall dimensions and weight (or range thereof) = See manufacturer drawings

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) =

Ω_0 (System overstrength factor) =

C_d (Deflection amplification factor) =

I_p (Importance factor) =

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 ☺: Operability test details)

11.0 OSHPD Approval (For Office Use Only)

Chris Tokas

Signature & Date
Chris Tokas, SHFR

2/9/10

December 31, 2012

Approval Expiration Date

S_{DS} (g) = 1.93 z/h = 1.0

Name & Title

Special Seismic Certification Valid Up to

Condition of Approval (if any): ONLY valid for installation with spring isolators & snubbers

**BUEHLER & BUEHLER
STRUCTURAL ENGINEERS, INC.**

JOB	Carrier - 30XW		
JOB NO.	S09-158.00	DATE	1/29/2010
CLIENT	Carrier	BY	Ali
		SHEET NO.	

CARRIER 30XW CHILLER SHAKE TABLE TESTS

Table: Identified Dominant Frequencies of Vibration*

<i>Test Report</i>	<i>Specimen ID</i>	<i>Excitation Direction</i>	<i>Frequency (Hz)</i>
EL9038 - Clark Dynamics	30XW150	X	2.60
		Y	2.50
		Z	5.00
CENT-09-0008 - (UNR)	30XW400	X	2.25
		Y	1.50
		Z	N/A

* Frequencies are for chillers with spring isolators.

* Frequencies are for units tested prior to AC156.