Issue 120 | July – September 2017

BLUEPRINT

California Energy Commission
Efficiency Division

In This Issue

New 2016 NRCC-LTI-E!

The new lighting **certificate of compliance (NRCC-LTI-E)** is available now! The NRCC-LTI-01-E through NRCC-LTI-06-E were incorporated into one compliance document (form). Six forms down to one!

The new NRCC-LTI-E can be used for any prescriptive nonresidential indoor lighting project complying with the *2016 Building Energy Efficiency Standards* (Energy Standards). The NRCC-LTI-E is project specific and expands based on the project scope.

Some key features of the NRCC-LTI-E include:

- Major decrease in the amount of pages required to show compliance
- One signature block
- Hyperlinks to the Energy Standards

This form is beneficial to many people:

Enforcement Agencies - Plans Examiners

- Table C - Compliance Results gives a quick check of the inputs on the first page and will indicate if the project "COMPLIES." See the example in Figure 1.
- Table D - Exceptional Conditions auto-generates comments. For example, it will say an exception has been applied or that track lighting is included.
- Table H - Indoor Lighting Controls is split into "Building Level" and "Area Level" controls and shows how compliance is achieved.
- Tables T and U - Both tables automatically indicate the required installation and acceptance forms, eliminating guesswork.

Lighting Designers and Energy Consultants

- All calculations and transfer of numbers are automatic, limiting the chance for errors.
- User selections limit drop-down menus and table options to guide users toward compliant designs.
- No more wondering which lighting forms to submit. There is just one compliance form for all prescriptive nonresidential indoor lighting projects.
- All tables hyperlink to applicable sections of the Energy Standards to limit confusion about what requirements are being documented.

A completed **NRCC-LTI-E sample** is available for review.

Enforcement agencies may continue to use the NRCC-LTI-01-E through NRCC-LTI-06-E at their discretion.

"COMPLIES with Exceptional Conditions" refer to Table D for guidance.

Watts)				Actual Lighting Power per §140.6(a) (Watts)					Compliance Results
		05		06	07	08		09	10
					Adjustments				
3	=	**Total Allowed** (Watts)	≥	Total Designed (Watts)	Portable Lighting §140.6(a) (-)	PAF Control Credits §140.6(a)2 (-)	=	**Total Actual** (Watts) *Includes Adjustments	**05 Must be ≥ 09** §140.6
L)				(See Table F)	(See Table J)	(See Table R)			
	=	**8,365**	≥	6,740	36		=	**6,704**	**COMPLIES**
	=		≥				=		
Controls Compliance (See Table H for Details)								**COMPLIES with Exceptional Conditions**	
Rated Power Reduction Compliance (See Table S for Details)								**Not Applicable**	

Figure 1 - An example from Table C of the new NRCC-LTI-E. At the right, we see that the project "COMPLIES" with the lighting power requirements. For controls compliance, the project "COMPLIES with Exceptional Conditions." We also see that rated power reduction compliance is "Not Applicable" to this project.

New Lighting Videos and Fact Sheets!

New educational videos and fact sheets are available at the **Online Resource Center** (ORC). These videos and fact sheets address the 2016 Energy Standards lighting requirements for residential and nonresidential buildings.

Residential

Videos: High Efficacy Lighting for Residential Applications

- Module 1: Overview of High Efficacy Lighting
- Module 2: High Efficacy Luminaires
- Module 3: Joint Appendix JA8 Performance Requirements
- Module 4: Efficacy Requirements Applied

Fact Sheet: High Efficacy Lighting for Residential Applications

Nonresidential

Videos: Lighting Controls Acceptance Testing

- Module 1: Introduction to Acceptance Testing
- Module 2: Acceptance Testing Requirements
- Module 3: Compliance Process
- Module 4: Certification & Training

Fact Sheet: Lighting Controls Acceptance Testing

Videos: Nonresidential Lighting Alterations and Additions

- Module 1: Overview Indoor Lighting Alterations
- Module 2: Indoor Lighting Alterations Compliance Process
- Module 3: Outdoor Lighting Alterations

Fact Sheet: Lighting Alterations

Videos: Nonresidential Lighting Controls

- Module 1: Introduction to Lighting Control Systems
- Module 2: Area Controls
- Module 3: Multi-Level Lighting Controls
- Module 4: Shut-OFF Controls
- Module 5: Automatic Daylighting Controls
- Module 6: Demand Responsive Controls
- Module 7: Outdoor Lighting Controls for Nonresidential Buildings

Fact Sheet: Indoor Shut-OFF Controls

2016 Acceptance Forms From CALCTP and NLCAA

California Advanced Lighting Controls Training Program (CALCTP) and the National Lighting Contractors Association of America (NLCAA) have been approved to provide their own acceptance forms (NRCAs) for their technicians. These forms follow the format, order, and content of the Energy Commission's forms.

All lighting NRCAs should be completed electronically and bear either CALCTP's or NLCAA's logo.

Enforcement agencies should only accept CALCTP's or NLCAA's acceptance forms. These include:

- Lighting Control (NRCA-LTI-02-A)
- Automatic Daylighting Control (NRCA-LTI-03-A)
- Demand Responsive Lighting Control (NRCA-LTI-04-A)
- Institutional Tuning PAF (NRCA-LTI-05-A)
- Outdoor Lighting Control (NRCA-LTO-02-A)

CALCTP and NLCAA are both lighting controls acceptance test technician certification providers (ATTCPs). ATTCPs are approved by the Energy Commission to train, certify, and oversee acceptance test technicians (ATTs). These technicians complete the NRCAs.

Section 10-103(a) allows the Executive Director to approve alternative forms such as CALCTP's and NLCAA's.

For more information, please visit the **ATTCP program** web page.

2019 CBECC-Res Research Version Now Available!

CBECC-Res 2019.0.4, a research version of the compliance software, is available for download.

This software is for users who wish to model projects using the 2019 Energy Standards. This version uses the draft 2019 Energy Standards. Results from this version cannot be used for compliance. The results are subject to change as the development of the 2019 Energy Standards continues.

Features in this version include:

- Improved compliance and summary results screen
- Insulation values accept decimal input, along with additional compressed insulation selections
- Target design energy design rating (EDR) score tool
- Battery storage option
- Selectable photovoltaic (PV) system size limiter

The **Quick Start Guide** summarizes major changes in CBECC-Res 2019.0.4 compared to previous versions of CBECC-Res.

Technical support

If you need general help with the software, please check the **CBECC-Res FAQs** and the user manual available in the software. For additional assistance, please contact:

cbecc.res@gmail.com
If you send the .ribd file, be sure to include the CBECC-Res version number.

Uniform Energy Factors for Water Heaters

The energy efficiency for water heaters will now be reported as uniform energy factor (UEF). This is a result of updates made to the federal testing requirements for water heaters. UEF allows consumers to more accurately compare the efficiency of different types of water heaters.

The **Water Heater Efficiency Guide** has been updated to reflect the minimum required UEF.

Q&A

Water Heater Types

What is the difference between consumer and residential-duty commercial (RDC) water heaters?

The difference is the input rating. Consumer water heaters have a lower input rating than RDC water heaters.

For example, consumer gas-fired storage water heaters have an input rating of 75,000 Btu/h or less. RDC gas-fired storage water heaters have an input rating greater than 75,000 Btu/h, but not exceeding 105,000 Btu/h.

RDC water heaters are commercial water heaters that have features that are suited for residential uses.

Want to know more? See **Section 5.2** of the *2016 Residential Compliance Manual*.

For More Information

Home Energy Rating System:
http://www.energy.ca.gov/HERS/

Acceptance Test Technician Certification Provider Program:
http://www.energy.ca.gov/title24/attcp/

Approved Compliance Software:
http://www.energy.ca.gov/title24/2016standards/2016_computer_prog_list.html

The California Energy Commission welcomes your feedback on Blueprint. Please contact Andrea Bailey at:
Title24@energy.ca.gov.

EDITOR

- Andrea Bailey

SPECIAL THANKS

- Alexis Smith
- Amie Brousseau
- Chris Olvera
- Christopher Meyer
- Daniel Wong
- Danny Tam
- Javier Perez
- Kristen Driskell
- Larry Froess
- Lea Haro
- Peter Strait
- Todd Ferris
- Veronica Martinez