DOCKETE	A D
Docket Number:	16-BSTD-05
Project Title:	2016 Nonresidential Compliance Manual Subchapters and Documents Related to Lighting Alterations
TN #:	210576
Document Title:	2016-NRCC-LTS-01-E - Certificate of Compliance, Sign Lighting
Description:	2016 Certificate of Compliance, Sign Lighting
Filer:	Peter Strait
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	3/1/2016 2:40:23 PM
Docketed Date:	3/1/2016

SIG	N LIGHTING			
CEC-	NRCC-LTS-01-E(Revised <u>02/16</u>)			CALIFORNIA ENERGY COMMISSION
CEF	RTIFICATE OF COMPLIANCE			NRCC-LTS-01-E
Sigi	n Lighting			(Page 1 of 5)
Proje	ct Name:			Date Prepared:
Α. (General Information			
Pro _.	ect Address:			
	ation of Sign 🔲 Outdoor S		☐ Indoor Signs	
	se of Sign Construction		☐ Sign Alterations	
	e of Lighting Control New Lighti		☐ Replaced Lighting Cont	ols
	SCERTIFICATE OF COMPLIANCE INCLUDES THE FOLLOWING Mandatory Measures (Lighting Controls)			cific Lighting Sources
1 1	Mandatory Sign Lighting Controls			
	OTES:			
1.		hoth the sian l	liahtina nower and the s	gn lighting controls, or a different responsible
	person may install the sign lighting contro	_		
2.	, , , , , , , , , , , , , , , , , , , ,	•		with the sign lighting Standards. If the person
responsible for installing the sign lighting power is not also responsible for the sign lighting controls, then the owner				
	general contractor, or architect shall be re			
3.	If more than one person has responsibil	ity for complic	ance, each responsible p	erson shall prepare and sign a Certificate of
	Compliance and an Installation Certificate	applicable to t	the portion of construction	n for which they are responsible; alternatively,
	the person with chief responsibility for co.	nstruction shall	l prepare and sign the Ce	rtificate of Compliance Declaration Statement
	for the entire construction (e.g. a C-10 c	ontractor may	complete parts 1a and	1b on one compliance document and a C-45
	contractor may complete parts 2a and 2b	on a separate	compliance document -	the Responsible Designer shall submit the two
	compliance documents together for the so	•	<u>nstallation)</u> .	
	ave responsibility for installing the sign ligh			
	Yes, I have responsibility for the sign lighting co			ibility for installing the sign lighting controls.
	complete parts 1a and 1b of this compliance do	<u>cument</u> So	omeone else will complete	parts 1a and 1b of this compliance document.
	Statements of Responsibility			
		ce Declaration	Statement on this NRCC	LTS-01-E shall complete Part 1a. Check Yes or
No	for all of the following statements:			
<u>1</u>	There are existing sign lighting controls th			s of §110.9 and §130.3
	☐ Yes		<u> No</u>	
	I have responsibility for installing the sign			
	☐ Yes, complete parts 1a and 1b of this for)rm E	3 No, complete part 1a o	this torm

- 1	There are existing sign lighting controls that comply with the applicable provisions of \$110.5 and \$150.5
Τ.	□ Yes
	I have responsibility for installing the sign lighting controls
	☐ Yes, complete parts 1a and 1b of this form ☐ No, complete part 1a of this form
	There are no existing sign lighting controls and I will be installing compliant sign lighting controls that comply with the
2	applicable provisions of §110.9 and §130.3
	☐ Yes ☐ No
3	There are no existing sign lighting controls and someone else will be responsible to install compliant sign lighting controls
3	□ Yes
	There are existing sign lighting controls that do not comply with the applicable provisions of §110.9 and §130.3 and I will be
<u>3</u>	installing compliant sign lighting controls and comply with the applicable provisions of §110.9 and §130.3
	☐ Yes ☐ No
	There are existing sign lighting controls that do not comply with the applicable provision of §110.9 and §130.3 and someone
5	else will be responsible to install compliant sign lighting controls
	□ Yes □ No

SIGN LIGHTING | CEC-NRCC-LTS-01-E(Revised 02/16)

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CERTIFICATE OF COMPLIANCE	NRCC-LTS-01-E
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Project Name:	Date Prepared:

1b.	Mandatory Sign Lighting Controls				
If th	If the person signing the Certificate of Compliance Declaration Statement on this NRCC-LTS-01-E is responsible for complying with				
the	sign lighting control requirements, that person shall answer all of the following questions:				
If tl	here are construction documents, indicate where on the building plans the				
ma	ndatory measures (sign lighting control) note block can be located:				
1	§130.3(a)1. All indoor sign lighting is controlled with an automatic time-switch control or astronomical time-	Υ	N	NA	
1	switch control.				
	§130.3(a)2A. All outdoor sign lighting is controlled with a photocontrol in addition to an automatic time-	Υ	N	NA	
2	switch control, or an astronomical time-switch control.				
2	EXCEPTION to Section 130.3(a)2A: Outdoor signs in tunnels, and signs in large permanently covered outdoor				
	areas that are intended to be continuously lit, 24 hours per day and 365 days per year.				
	§130.3(a)2B. All outdoor sign lighting that is ON both day and night is controlled with a dimmer that provides				
	the ability to automatically reduce sign lighting power by a minimum of 65% percent during nighttime hours.				
3	Signs that are illuminated at night and for more than 1 hour during daylight hours shall be considered ON both				
3	day and night.				
	EXCEPTION to Section 130.3(a)2B: Outdoor signs in tunnels and large covered areas that are intended to be				
	illuminated both day and night.				
	§130.3(a)3. Demand Responsive Electronic Message Center Control. An Electronic Message Center (EMC)		N	N1 / A	
	having a new connected lighting power load greater than 15 kW has a control installed that is capable of			N/A	
4	reducing the lighting power by a minimum of 30% percent when receiving a demand response signal.			ш	
	EXCEPTION to Section 130.3(a)3: Lighting for EMCs that is not permitted by a health or life safety statute,				
ordinance, or regulation to be reduced by 30% percent.					
Field	d Inspector Notes:				



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	ATE OF COMPLIANCE						0/1211 0/11111		NRCC-LTS-01-E
Sign Ligh	ting								(Page 3 of 5)
Project Name:						Da	ate Prepared:		
2. Manda	tory Sign Lighting Meas	ures							
l -	ponsibility for installing								
	ave responsibility for the si						or installing the		Someone else
	parts 2a and 2b of this comp num Allowed Lighting Po		_		parts 2a and	2b of this	compliance do	<u>cument.</u>	
_	e of Compliance and Field		-						
Complete	this part if there are sign of Compliance if there a	ns using the maximu	m allow	ed lighting				mplete part	<u>2b</u> ₃ of this
Α	В	С	D	Е	F	G	Н	I	J
Symbol or Code	Description of the Sign	OPTIONAL – Energy Verified Label (see instructions below)		Allott	ed Watts		Design Watts	Complies Y/N	Filed Inspector Check that s Sign eComplies
			Sign Area (ft²)	Internally (I) or Externally (E) Illuminated	Allowed LPD (I = 12 W/ft ²) (E = 2.3 W/ft ²)	Allowed Watts (D x F)	Total <u>∗i</u> nstalled <mark>w∭</mark> atts for <mark>s∑</mark> ign	Complies if H ≤ G	
		✓					*		✓

A Symbol or code used on the plans (when plans are required) and other do

В A description of the sign, or location of sign on the building; and the location of sign on construction documents.

OPTIONAL - Check this box only if this sign has a permanent, pre-printed, factory-installed, ENERGY VERIFIED label, confirming that the sign complies with the Section 140.8 of the California 20132016 Title 24, Part 6 Standards, using the Maximum Allowed Lighting Power method of compliance. The only labels that will be recognized for this purpose are ENERGY VERIFIED Certification Marks authorized by Underwriters Laboratories (UL) or other Product Certification Body accredited to ISO/IEC Guide 65 by the American National Standards С Institute in accordance with ISO/IEC 17011. Surveillance by the Accredited Certification Body shall be an ongoing annual inspection program carried out by a Type A Inspection body in accordance with ISO/IEC 17020. For signs with such an ENERGY VERIFIED label, columns 'D' through 'l' are not required to be filled out. Note: Using an ENERGY VERIFIED label is an optional method to validate compliance. An ENERGY VERIFIED label is not needed for compliance.

D	The sign area in square f	ieet
	i ilic sigli alca ili suualc i	CCL.

Ε List "I" if the sign is internally illuminated. List "E" if the sign is externally illuminated.

F Allowed watts per square foot. Enter 12 if the sign is listed as "I" in column E. Enter 2.3 if sign is listed as "E" in column E.

Multiply the square footage in column D times the allowed Lighting Power Density (LPD = watts) in column F. G

Н Show the total installed watts in the sign, as determined according to the applicable provisions of §130(c).

Enter Y if the number in column H is less than or equal to the number in column G. Otherwise, the sign does not comply.

This page doubles as a field inspection checklist.

Field Inspector Notes:

SIGN LIGHTING

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Project Name:	Date Prepared:

	-	ecific Lighting Source Method of Compliance							
		ate of Compliance and Field Inspection Energy Chec							
	Complete this part if there are signs using the Specific Lighting Source method of compliance. (Complete part 2 of this Certificate of Compliance if there are signs using the maximum allowed lighting power method of compliance)								
CC	-		·	· ·	г				
	Α	В	C	D	E				
_			<u>OPTIONAL</u> ENERGY	Specific light source used for	Field Inspector				
Sy	mbol		VERIFIED	compliance	Check that Sign				
,	or	Description	label	Shall include only lighting	Complies				
	Code		(see instructions	technologies listed below	✓				
			below)	(List all that apply)					
Α		pol or code used on the plans (when plans are required) a							
В		rrative description of the sign, or location of sign on the b							
		ONAL - Check this box only if this sign has a permanent, polies with the Section 140.8 of the California 20132016							
		only labels that will be recognized for this purpose are EN							
С		her Product Certification Body accredited to ISO/IEC Guid							
		1. Surveillance by the Accredited Certification Body shall							
	in ac	cordance with ISO/IEC 17020. For signs with such an ENE	RGY VERIFIED label, c	olumn 'D' is not required to be filled o	ut. Note: Using an				
ENERGY VERIFIED label is an optional method to validate compliance. An ENERGY VERIFIED label is not needed for compliance.					ance.				
Specific Light Source Compliance Method. The sign(s) identified above use only the following lighting technologies:									
	List all applicable numbers (1 through 9) that apply in column D above for each row.								
	1	High pressure sodium lamps Metal halide lamps that are pulse start or coramic served by a hallact that has a minimum efficiency of 99% percent or							
	Metal halide lamps that are pulse start or ceramic served by a ballast that has a minimum efficiency of 88% perce greater. Ballast efficiency is the measured output wattage to the lamp divided by the measured operating input v								
	_	when tested according to ANSI C82.6-2005.	rattage to the lamp	arriaca sy the measured operation	8 mpat wattage				
		Metal halide lamps that are pulse start that are 320) watts or smaller, a	are not 250 watt or 175 watt lamps	s, and are served by				
	2	a ballast that has a minimum efficiency of 80 <u>%-percent</u> .							
	3	Ballast efficiency is the measured output wattage t	o the lamp divided	by the measured operating input v	wattage when tested				
		according to ANSI C82.6-2005.							
_		Neon or cold cathode lamps with transformer or power		·	·				
D	4	when the transformer or power supply rated output curi	rent is less than 50 m.	A. The ratio of the output wattage to t	he input wattage is at				
		100% percent tubing load.		touth an an annual to a mainime una efficie					
	5	Neon or cold cathode lamps with transformer or power when the transformer or power supply rated output curi							
	,	100%-percent tubing load.	Territ is 50 mix or great	ter. The ratio of the output wattage to	the input wattage is at				
		Fluorescent lighting systems meeting one of the following	g requirements: A.) L	Jse only lamps with a minimum color r	endering index (CRI) of				
	6	80; or B.] Use only electronic ballasts with a fundamenta							
	7	Light emitting diodes (LEDs) with a power supply having							
		Single voltage external power supplies that are designed		•	•				
	8	nameplate output power less than or equal to 250 watts Regulations (Title 20).	, shall comply with th	le applicable requirements of the Appli	ance Eπiciency				
	9	Compact fluorescent lamps that do not contain a mediur	n screw base sockets	(E24/E26).					
Ε	This	page doubles as a field inspection checklist.							
Fie	eld Ins	pector Notes:							
					_				
1									

City/State/Zip:

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CERTIFICATE OF COMPLIANCE	NRCC-LTS-01-E
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Project Name:	Date Prepared:

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT			
1. I certify that this Certificate of Compliance documentation is accurate an	d complete.		
Documentation Author Name:	Documentation Author Signature:		
Company	Signature Date:		
Company:	Signature Date:		
Address:	CEA Certification Identification (if applicable):		
City/State/Zip:	Phone:		
RESPONSIBLE PERSON'S DECLARATION STATEMENT			
I certify the following under penalty of perjury, under the laws of the State of	California:		
1. The information provided on this Certificate of Compliance is true and correct.			
2. I am eligible under Division 3 of the Business and Professions Code to ac	cept responsibility for the building design or system design identified		
on this Certificate of Compliance (responsible designer).			
3. The energy features and performance specifications, materials, component	ents, and manufactured devices for the building design or system		
design identified on this Certificate of Compliance conform to the requir	ements of Title 24, Part 1 and Part 6 of the California Code of		
Regulations.			
4. The building design features or system design features identified on this	Certificate of Compliance are consistent with the information		
provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement			
agency for approval with this building permit application.			
5. I will ensure that a completed signed copy of this Certificate of Complian	nce shall be made available with the building permit(s) issued for the		
building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this			
Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.			
Responsible Designer Name: Responsible Designer Signature:			
Company	Date Signed:		
Company:	Date signed.		
Address: License:			

Phone:

Sign Lighting (Page 1 of 3)

NRCC-LTS-01-E User Instructions

A copy of this document must be submitted to the enforcement agency at the time of building permit application. With enforcement agency approval, the applicant may use alternative formats of these documents (rather than the official Energy Commission compliance documents), provided the information is the same and the format is similar.

Section A. General Information

- Project Address the address of the project where the sign is installed, as shown on the plans.
- Location of Sign check the appropriate box to identify if the project includes Outdoor Signs, Indoor Signs, or both.
- Phase of Sign Construction check the appropriate box to identify if the project includes adding or installing new signs, altering existing signs, or both.
- Type of Lighting Control check the appropriate box to identify if the project includes adding new lighting controls, replacing existing lighting controls, or if the project does not include installing lighting controls.

Compliance Components – check the appropriate box to indicate if this job includes installing lighting controls that meet mandatory requirements for sign lighting, uses the Maximum Allowed Lighting Power as the method to achieve compliance with the lighting power requirements in the Standards, and/or uses Specific Lighting Sources as the method to achieve compliance with the lighting power requirements in the Standards. (A project may include some signs that comply using the Maximum Allowed Lighting Power approach and some that comply using the Specific Lighting Sources approach.)

Section 1. Mandatory Sign Lighting Controls

If the person signing the Certificate of Compliance Declaration Statement on the last page is responsible for complying with the sign lighting control requirements, that person shall answer all statement questions in Section 1a and 1b.

Section 1a. Statement of Responsibility

Check each box to indicate if the existing controls meet §110.9 and §130.3, if they fail to meet §110.9 and §130.3, or if there are no existing controls.

Section 1b. Mandatory Sign Lighting Controls

Answer all statement questions by checking Yes (Y), NO (N), or Not Applicable (NA).

Field Inspector Notes: This space is provided on the document for the field inspector to make notes.

<u>In addition to the mandatory sign lighting control requirements, there are two options for complying with the sign lighting power requirements:</u>

- 1. Maximum Allowed Lighting Power, which is documented on page 3; and
- Specific Lighting Source, which is documented on page 4.

Section 2. Mandatory Sign Lighting Measures

If the person signing the Certificate of Compliance Declaration Statement on the last page is responsible for complying with the sign lighting Control requirements, that person shall answer all statement questions in Section 1a and 1b.

Section 2a. Maximum Allowed Lighting Power Method of Compliance

Certificate of Compliance and Field Inspection Energy Checklist

This page is for documenting compliance when using the maximum allowed lighting power method. A sign which complies with the specific lighting source method is not required to comply with the maximum allowed lighting power method.

Fill out a separate row for each sign as follows:

t a separate row	Tor each sight as follows.
Column A.	List the symbol or code used to identify the sign on the plans (when plans are required) and other
	<u>documents.</u>
Column B	A description of the sign, or location of sign on the building; and the location of the sign on the
	construction documents.
Column C	OPTIONAL – this is an optional, voluntary method for documenting that a sign complies with the lighting

power requirements.

Sign Lighting (Page 2 of 3)

	Check this box only if the sign has a permanent, pre-printed, factory-installed, ENERGY VERIFIED label,
	confirming that the sign complies with the Section 140.8 of the California 2016 Title 24, Part 6 Standards,
	using the Maximum Allowed Lighting Power method of compliance.
	The only labels that will be recognized for this purpose are ENERGY VERIFIED Certification Marks
	authorized by Underwriters Laboratories (UL) or other Product Certification Body accredited to ISO/IEC
	Guide 65 by the American National Standards Institute in accordance with ISO/IEC 17011. Surveillance by
	the Accredited Certification Body shall be an ongoing annual inspection program carried out by a Type A
	Inspection body in accordance with ISO/IEC 17020. For signs with an ENERGY VERIFIED label, columns 'D'
	through 'I' are not required to be filled out. Note: Using an ENERGY VERIFIED label is an optional method
	to validate compliance. An ENERGY VERIFIED label is not needed for compliance.
Column D	The sign area in square feet.
Column E	List "I" if the sign is internally illuminated. List "E" if the sign is externally illuminated.
Column F	Allowed watts per square foot. Enter 12 if the sign is listed as "I" in column E. Enter 2.3 if sign is listed as
	"E" in column E. These two numbers are the only numbers which can be used when using the maximum
	lighting power method of compliance.
Column G	Multiply the square footage in column D by the allowed Lighting Power Density (LPD = watts) in column F.
Column H	Show the total installed watts in the sign, as determined according to the applicable provisions of
	§130.0(c).
Column I	Enter 'Y' if the number in column 'H' is less than or equal to the number in column 'G'. This entry is a
	declaration that the sign complies with the sign lighting power requirements by using the maximum
	lighting power method of compliance. Otherwise, the sign does not comply.
Column J	This page doubles as a field inspection checklist.

<u>Field Inspector Notes: This space is provided for the field inspector to make notes.</u>

Section 2b. Specific Lighting Source Method of Compliance

Certificate of Compliance and Field Inspection Energy Checklist

This page is for documenting compliance when using the specific lighting source compliance method. Watts per square foot are not required to be calculated when signs consist solely of one or more of the specified lighting technologies listed on this page.

Fill out a separate row for each sign as follows:

Column A.	List the symbol or code used to identify the sign on the plans (when plans are required) and other			
	<u>documents.</u>			
Column B	A narrative description of the sign, or location of sign on the building; and the location of the sign on			
	construction documents.			
Column C	OPTIONAL – this is an optional, voluntary method for documenting that a sign complies with the lighting			
	power requirements.			
	Check this box only if this sign has a permanent, pre-printed, factory-installed, ENERGY VERIFIED label,			
	confirming that the sign complies with Section 140.8 of the California 2016 Title 24, Part 6 Standards,			
	using the Specific Lighting Source Method of compliance.			
	The only labels that will be recognized for this purpose are ENERGY VERIFIED Certification Marks			
	authorized by Underwriters Laboratories (UL) or other Product Certification Body accredited to ISO/IEC			
	Guide 65 by the American National Standards Institute in accordance with ISO/IEC 17011. Surveilland			
	the Accredited Certification Body shall be an ongoing annual inspection program carried out by a T			
	Inspection body in accordance with ISO/IEC 17020. For signs with such an ENERGY VERIFIED label,			
	columns 'D' through 'l' are not required to be filled out. Note: Using an ENERGY VERIFIED label is an			
	optional method to validate compliance. An ENERGY VERIFIED label is not needed for compliance.			
Column D	Specific Light Source Compliance Method.			
	List one or more of the following numbers to identify which of the specified lighting technologies are used			
	to comply with the sign lighting power requirements:			
	1 High pressure sodium lamps			
	Metal halide lamps that are pulse start or ceramic served by a ballast that has a minimum			
	efficiency of 88% or greater. Ballast efficiency is the measured output wattage to the lamp			
	divided by the measured operating input wattage when tested according to ANSI C82.6-2005.			

lamps, and are served by a ballast that has a minimum efficiency of 80%.

Metal halide lamps that are pulse start that are 320 watts or less, are not 250 watt or 175 watt

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		Ballast efficiency is the measured output wattage to the lamp divided by the measured operating
		input wattage when tested according to ANSI C82.6-2005.
	4	Neon or cold cathode lamps with transformer or power supply efficiency greater than or equal to
		a minimum efficiency of 75% when the transformer or power supply rated output current is less
		than 50 mA. The ratio of the output wattage to the input wattage is at 100% tubing load.
	5	Neon or cold cathode lamps with transformer or power supply efficiency greater than or equal to
		a minimum efficiency of 68% when the transformer or power supply rated output current is 50
		mA or greater. The ratio of the output wattage to the input wattage is at 100% tubing load.
	6	Fluorescent lighting systems meeting one of the following requirements: A.) use only lamps with
		a minimum color rendering index (CRI) of 80; or B.) use only electronic ballasts with a
		fundamental output frequency not less than 20 kHz.
	7	Light emitting diodes (LEDs) with a power supply having an efficiency of 80% or greater.
	8	Single voltage external power supplies that are designed to convert 120 volt AC input into lower
		voltage DC or AC output, and have a nameplate output power less than or equal to 250 watts,
		shall comply with the applicable requirements of the Appliance Efficiency Regulations (Title 20).
	9	Compact fluorescent lamps that do not contain a medium screw base sockets (E24/E26).
Column E	This pa	age doubles as a field inspection checklist.

Field Inspector Notes: This space is provided for the field inspector to make notes.

Documentation Author's Declaration Statement

The "documentation author" is the person who prepares a Title 24 Part 6 compliance document that must subsequently be reviewed and signed by a responsible person (see below) in order to certify compliance with Part 6. Subject to the requirements of §10-103(a)1 and §10-103(a)2, the person who prepares the Certificate of Compliance documents (documentation authors) shall sign a declaration statement on the documents they prepare to certify the information provided on the documentation is accurate and complete.

A documentation author may have additional certifications such as a Certified Energy Analyst certification number. Enter number in the CEA# field provided, if applicable.

The person's telephone number is given to facilitate response to any questions that arise.

Responsible Person's Declaration Statement

The "responsible person" signing the Certificate of Compliance is required to be eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design, to certify conformance with Part 6. If more than one person has responsibility for the building design, each person (such as an eligible lighting designer) shall sign the Certificate of Compliance document(s) applicable to that portion of the design for which the person is responsible. Alternatively, the person with chief responsibility for the building design shall prepare and sign the Certificate of Compliance document(s) for the entire building design.

CERTIFICATE OF COMPLIANCE – DATA FIELD DEFINITIONS AND CALCULATIONS	NRCC-LTS-01-E
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