

# MSC Guidelines for Review of Lighting Systems and Components

Procedure Number: E2-14

Revision Date 12/21/10



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## References:

- a) Title 46 CFR 111.75 "Lighting Circuits and Protection"
- b) Title 46 CFR 112.43 "Emergency Lighting Systems"
- c) IEEE Std 45-2002, "Recommended Practice for Electric Installations on Shipboard"
- d) Navigation and Inspection Circular (NVIC) 2-89, "Guide for Electrical Installations on Merchant Vessels and Mobile Offshore Drilling Units", can be found at: <http://www.uscg.mil/hq/cg5/nvic/pdf/1989/n2-89.pdf>

## Contact Information:

If you have any questions or comments concerning this document, please contact the Marine Safety Center by e-mail or phone, referring to Procedure Number: **E2-14**.

E-mail: [MSC@uscg.mil](mailto:MSC@uscg.mil)

Phone: 202-475-3402

Website: <http://homeport.uscg.mil/msc>

## Responsibilities:

Using applicable portions of references (a) through (d), the submitter shall provide sufficient documentation and plans to support review of lighting systems and components. If the submission is mailed to MSC than all plans shall be made in triplicate. To facilitate plan review and project management, all plans and information specified in this guideline should be submitted as one complete package through a single point of contact for the project.

## General Guidance:

Note: This guidance is only applicable for vessels regulated under 46 CFR Subchapter J. Other vessel classification (e.g. 46 CFR Subchapter T) requirements may differ from those listed below.

- Lighting shall be arranged such that a fire in one main vertical zone does not interfere with the lighting in another fire zone (46 CFR 111.75-1(a)).
- Lighting for machinery spaces shall be powered via two or more feeders; one of the feeders shall be from the ship's service switchboards (46 CFR 111.75-1(b)).
- Branch circuits of a lighting distribution panel shall not exceed 30 amps (46 CFR 111.75-5(a)).
- The connected load of a lighting branch circuit shall be less than 80% of the branch circuit overcurrent protection (46 CFR 111.75-5(b)).
- Lighting circuits in passageways, public spaces and berthing compartments accommodating 25 or more persons shall be divided into two circuits; one may be an emergency lighting circuit (46 CFR 111.75-15(a)).

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## General Guidance (continued):

- ❑ Lighting fixtures must be powered by a lighting branch circuit and protected by overcurrent protection not to exceed 20 amps except:
  - 25–30 amp circuits for fixed, nonswitched lighting fixtures for cargo holds or deck lighting with mogul type lamp holders
  - Other lamps requiring 300 watts of power (46 CFR 111.75-5(c) - (e)).
- ❑ Lighting circuits for machinery spaces shall be arranged such that failure of a branch circuit does not leave an area without light (46 CFR 111.75-15(b)).
- ❑ Lighting for survival and rescue craft launch stations shall be fed from an emergency power source. Adjacent launching stations shall be fed from separate branch circuits (46 CFR 111.75-16).
- ❑ Emergency lighting circuits shall not have a switch except for the breaker at the distribution panel or as required for hazardous spaces (46 CFR 112.43-1).
- ❑ Passenger and crew spaces shall be provided with adequate normal lighting and sufficient emergency lighting to provide for safe egress from each space and damage control (46 CFR 111.75-15(b)).
- ❑ Each crew berth must have a fixed berth light that is not wired with a flexible cord (46 CFR 111.75-15(d)).
- ❑ Lighting fixtures for non-hazardous locations must conform to one of the following standards (46 CFR 111.75-20(a)):
  - UL 1598A
  - IEC 92-306
- ❑ Each globe, lens or diffuser must be made of high strength material except in an accommodations space, bridge, gyro room, radio room, galley or other location where it is not subject to damage (46 CFR 111.75-20(b)).
- ❑ Lighting fixtures may not serve as a connection box for other than the branch circuit supplying the fixture (46 CFR 111.75-20(c)).

## Disclaimer:

This guidance is not a substitute for applicable legal requirements, nor is it itself a rule. It is not intended to nor does it impose legally-binding requirements on any party. It represents the Coast Guard's current thinking on this topic and may assist industry, mariners, the general public, and the Coast Guard, as well as other federal and state regulators, in applying statutory and regulatory requirements. You can use an alternative approach for complying with these requirements if the approach satisfies the requirements of the applicable statutes and regulations. If you want to discuss an alternative, you may contact the Marine Safety Center, the unit responsible for implementing this guidance.