

National Electrical Safety Code Committee, Accredited Standards Committee C2

National Electrical Safety Code® Interpretation

Section 11. Protective Arrangements in Electric Supply Stations

Rule 111.A Illumination—Under Normal Conditions (2002 Edition, page 30) **Table 111-1 Illumination Levels (2002 Edition, page 31)** **IR542**

In the National Electrical Safety Code (2002 Edition) in Section 111.A, Illumination—Under Normal Conditions, it states: “Illumination levels not less than those listed in Table 111-1 are recommended for safety to be maintained on the task.” In Table 111-1, it lists illumination levels for substations as 22 lux for “General horizontal” and “Specific vertical”, and 2.2 lux for the fence.

Is this to be interpreted that these are recommended minimum levels of lighting to be maintained at all times while the station is in service for safety and security at the facility, or that these levels are to be maintained only while qualified operation and maintenance personnel are present in the facility?

Does the 110 lux recommended for entrances in Table 111-1 apply to substation main drive-in gates that do not have a guard house?

If reduced lighting levels are deemed permissible when personnel are not present, does the recommended 110 lux at the entrance need to be maintained for safe entry into the facility?

As clarification from my viewpoint, normal conditions for most substations would be that they are unattended while they are in service.

This is an attempt at determining how to meet the intent of the NESC while balancing the following two concerns in determining minimum required lighting levels in a substation:

1. That there is sufficient light to maintain safety and security at the facility, while it is unattended and while personnel are present
2. That from an environmental perspective the lighting at the substation is not overly intrusive to the residents in the area of the facility

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Interpretation

The Interpretations Subcommittee has considered the subject Interpretation Request for Rule 111.A and has developed a consensus report as follows:

“Based on the text of the request for interpretation, it is assumed that the concern is with lighting of unattended substations that are not on or part of a generating station property. There is no requirement to provide lighting for such substations when personnel are not present. The interpretation given for IR 419 (14 February 1989) is still valid. This interpretation stated: “At unmanned (distribution) substations, either permanent or portable lighting may be used during such times that personnel perform work in the station at night.” Similarly, the entrance lighting levels in Table 111-1 apply to generating and service building entrances, including gate houses at such facilities, but not to unattended substation entrances. Consequently, neither work areas in nor entrances to unattended substations need to be lighted when personnel are not present.”