
**SAN DIEGO GAS & ELECTRIC COMPANY
EAST COUNTY SUBSTATION PROJECT
CONSTRUCTION LIGHTING MITIGATION PLAN**

**PREPARED
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TABLE OF CONTENTS

1 – INTRODUCTION..... 1
2 – OBJECTIVES 1
3 – APPLICABLE LIGHTING REQUIREMENTS 2
 3.0 County of San Diego Light Pollution Code2
 3.1 County of San Diego Zoning Ordinance2
4 – MITIGATION MEASURE..... 2
5 – PLAN IMPLEMENTATION 3
 5.0 Lighting Requirements.....3
 5.1 Lighting Design and Implementation4
 5.2 Public Liaison4
6 – REFERENCES..... 5

1 – INTRODUCTION

This Construction Lighting Mitigation Plan (Plan) describes how San Diego Gas & Electric Company (SDG&E) and its contractors will demonstrate that lighting effects at staging areas and static work sites during construction of the East County (ECO) Substation Project (Project) are minimized. The Project involves the construction of a new 500/230/138 kilovolt (kV) ECO Substation, rebuild of the Boulevard Substation in a new location, and construction of an approximately 14-mile-long 138 kV transmission line, consisting of overhead and underground segments in southeastern San Diego County.

This Plan was prepared in accordance with Mitigation Measure (MM) VIS-3b of the Mitigation Monitoring, Compliance, and Reporting Program (MMCRP) for the Project, which includes guidelines for minimizing the emission of light into the night sky, reflected glare, and light trespass. Construction of the ECO Substation is anticipated to require approximately 16 months to complete, while construction of the 138 kV transmission line would require approximately 12 months, and the Boulevard Substation rebuild and demolition of the existing substation would require approximately 14 months. The construction activities that are anticipated to require nighttime lighting include, but are not limited to, delivery and filling of substation transformers and placing foundations, as well as an additional activities required by applicable agencies, such as the California Independent Systems Operation (CAISO) or the California Department of Transportation (Caltrans). MM VIS-3b requires that the Plan be consistent with the County of San Diego Light Pollution Code (Section 59.100 et. al) and Section 6322 of the County of San Diego Zoning Ordinance. This Plan was developed to illustrate compliance with these local requirements, as well as the requirements stipulated by the California Public Utilities Commission (CPUC) in the MMCRP. The Plan pertains to all static Project construction sites, including work areas, construction and storage yards, staging areas, and fly yards.

2 – OBJECTIVES

The purpose of this Plan is to ensure that lighting at work areas, construction and storage yards, staging areas, and fly yards is designed and used in a manner that minimizes illumination of the Project facilities, vicinity, and nighttime sky. The lighting practices and illumination equipment presented in this Plan are intended to accomplish the following objectives:

- Minimize emission of light into the night sky, reflected glare, and light trespass from construction lighting during construction of the Project
- Maintain consistency with MM VIS-3b as specified in the Project's MMCRP, as well as with relevant San Diego County ordinances

3 – APPLICABLE LIGHTING REQUIREMENTS

3.0 COUNTY OF SAN DIEGO LIGHT POLLUTION CODE

Section 59.100 of the County of San Diego Light Pollution Code provides specific restrictions for the use of outdoor light fixtures for buildings and structures, recreational facilities, parking lots, landscape lighting, billboards, street lighting, and walkway lighting. Section 59.106 lists lamp and shielding requirements for outdoor light fixtures that are applicable to the Project area (Class II, Zone B), which includes the following:

- Low-pressure sodium lamp type – fully shielded
- Other lamp types above 4050 lumens – prohibited
- Other lamp types 4050 lumens and below – allowed¹

3.1 COUNTY OF SAN DIEGO ZONING ORDINANCE

Section 6322 of the County of San Diego Zoning Ordinance controls excessive or unnecessary outdoor light emissions that produce unwanted illumination of adjacent properties by restricting outdoor lighting usage. Between the hours of 11:00 p.m. and dawn, the following forms of outdoor lighting usage are prohibited:

- operation of searchlights for advertising purposes
- illumination of outdoor public recreational facilities
- outside illumination for aesthetic or dramatic purposes of any building
- illumination of outdoor advertising signs

4 – MITIGATION MEASURE

MM VIS-3b, as stipulated in the Final Environmental Impact Report/Environmental Impact Statement (EIR/EIS), is intended to reduce construction night-lighting impacts. The measure from the EIR/EIS is as follows:

“SDG&E shall design and install all lighting at construction and storage yards and at staging areas and fly yards such that illumination of the project facilities, vicinity, and nighttime sky is minimized. The Construction Lighting Mitigation Plan shall be reviewed for consistency with the County of San Diego Light Pollution Code (Section 59.100 et. al) and Section 6322 of the Zoning Ordinance to ensure outdoor light fixtures emitting light into the night sky do not result in a detrimental effect on astronomical research and to ensure reflected glare and light trespass is minimized. SDG&E shall submit a Construction Lighting Mitigation Plan to the CPUC and BLM for review and approval at least 90 days before the start of construction or the ordering of any exterior lighting fixtures or components, whichever comes first. SDG&E shall not order any exterior lighting fixtures or components until the Construction Lighting Mitigation Plan is

¹ Consistent with MM VIS-3b, the San Diego Light Pollution Code provides that lights shall be shielded where feasible and focused to minimize spill light into the night sky or adjacent properties.

approved by the CPUC and BLM. The Plan shall include but is not necessarily limited to the following:

- Lighting shall be designed so that exterior light fixtures are hooded, with lights directed downward or toward the area to be illuminated, and so that backscatter to the nighttime sky is minimized. The design of the lighting shall be such that the luminescence or light sources are shielded to prevent light trespass outside the project boundary;
- All lighting shall be of minimum necessary brightness consistent with worker safety; and
- High illumination areas not occupied on a continuous basis shall have switches or motion detectors to light the area only when occupied.”

Through discussions with SDG&E and the CPUC, the BLM has stated that it has deferred responsibility for approval of this Plan to the CPUC. Thus, the BLM is not a reviewing agency for this Plan.

5 – PLAN IMPLEMENTATION

Work will be planned to the extent feasible to avoid nighttime construction activities. SDG&E and its contractors will take all reasonable precautions to minimize emission of light and glare into the night sky when nighttime construction activities cannot be avoided. SDG&E will monitor lighting utilized at static project construction sites to verify that the lighting used complies with this Plan.

5.0 LIGHTING REQUIREMENTS

5.0.0 Lighting at Static Project Construction Sites

Temporary portable trailers will be staged at both substations and possibly at two construction yards to provide office space for the contractor and Project team. Temporary construction trailers are typically equipped with light fixtures adjacent to each door for safety and security. It is anticipated that each trailer will have up to two vendor-supplied outdoor light fixtures when they arrive at the site. Additional temporary security lighting may be required within the substations and construction yards during construction. Typical lighting used at construction trailers includes single 60- to 75-watt incandescent bulbs within wall-mounted fixtures with clear jar-shaped diffusers. SDG&E will confirm that the lighting complies with the local codes and ordinances; the construction lighting equipment specification will be submitted to the CPUC for its records once the lighting has been selected.

5.0.1 Nighttime Construction Lighting

SDG&E and its contractors plan to use portable light towers with integrated generators if nighttime construction is necessary to complete a construction activity.² In general, construction activities will be limited to the hours of 7:00 a.m. to 7:00 p.m. in accordance with San Diego

² Portable light towers are self-contained lights that consist of a generator, telescoping light pole, and light fixture attached to a small trailer. They can be moved and adjusted as needed to facilitate night work.

County noise ordinances; however, the following activities may extend past 7:00 p.m. and/or during non-daylight hours in limited and/or unforeseen circumstances:

- Delivery of transformers to the substations
- Filling and processing oil for transformers
- Placing concrete for foundations³

Delivery and filling of the transformers will be scheduled in advance and notice will be provided to the Project team, as well as adjacent landowners, if necessary, in compliance with the MM NOI-1. The timing of this work cannot be determined prior to construction and may occur on short notice.

When night lighting is needed to illuminate a construction activity, compliant lighting equipment will be used. Typically, one to two portable light towers are adequate to safely illuminate the construction activities that are anticipated to occur at night. Construction lighting will be the minimum necessary brightness to meet Occupational Safety and Health Administration (OSHA) regulations and SDG&E safety standards. In addition, switches or motion detectors will be used in high illumination areas that will not be occupied on a continuous basis.

5.0.2 Unanticipated Nighttime Work

If unanticipated nighttime work is required, such as in the case of an emergency, portable lighting will be brought to the site, as described in Section 5.0.0 Lighting at Static Project Construction Sites. Every effort will be made to minimize the duration of nighttime work and to limit the amount of light used to a level that meets safety requirements for Project personnel.

5.1 LIGHTING DESIGN AND IMPLEMENTATION

SDG&E will use conventional construction lighting designed to meet OSHA requirements for all nighttime work. Lighting will be inspected by SDG&E prior to use to confirm that it complies with this Plan. The light towers are adjustable so that the height and directions can be altered for site-specific situations.

All lights on each light plant will be directed downwards and include exterior hoods so that only the areas being actively constructed are being illuminated and that backscatter to the nighttime sky is minimized. No individual light on a light plant will be oriented at an angle greater than 45 degrees between the light post and the horizon. In addition to these requirements, SDG&E will orient lights away from residents to the extent feasible and will comply with MM NOI-1 for noise that is generated by the construction lighting equipment.

5.2 PUBLIC LIAISON

As stated in MM-LU-1a, SDG&E will provide a public liaison and a toll-free hot line, to respond to concerns of neighboring property owners related to construction disturbances. Contact

³ Foundations will be placed during daylight hours and planned to be completed prior to dusk. However, once the placement begins, it must continue to completion. Therefore, if a conflict arises during a placement, the activity could extend into the night to allow completion prior to the concrete beginning to set.

information for the public liaison will be included in the construction notices. SDG&E will respond to complaints as described in the Project's Construction Notification Plan.

6 – REFERENCES

County of San Diego. Zoning Ordinance. Online.

<http://www.sdcountry.ca.gov/dplu/zoning/index.html>. Site visited May 23, 2012.

ECO Substation Project. Final Environmental Impact Report/Environmental Impact Statement. 2012. Online.

http://www.cpuc.ca.gov/environment/info/dudek/ECOSUB/ECO_Final_EIR-EIS.htm.

Site visited May 23, 2012.