

Glare Study for Alameda Landfill Solar Project



NextEra Energy, Inc.

**Alameda Landfill Solar Project
Project No. 126882**

**Revision 0
8/27/2020**

Glare Study for Alameda Landfill Solar Project

prepared for

**NextEra Energy, Inc.
Alameda Landfill Solar Project
Alameda, CA**

Project No. 126882

**Revision 0
8/27/2020**

prepared by

**Burns & McDonnell Engineering Company, Inc.
Phoenix, AZ**

1.0 EXECUTIVE SUMMARY

1.1 Project Description

Burns & McDonnell Consultants, Inc. (Burns & McDonnell) conducted a glare study for the proposed 2.7 MWdc Alameda Landfill Solar Project (Project) located in Alameda County, CA to determine its effects on the intersections of Island Dr. and Doolittle Dr., Harbor Bay Pkwy and Doolittle Dr., and the Corica Park Golf Course. Several different observation points (OPs) were evaluated for nearby intersections and potentially sensitive locations on Corica Park Golf Course. Figure 1-1 shows the Project's proposed layout and the locations of the various OPs assessed in the study.

Figure 1-1: Proposed Site Layout



Source: Bing Satellite Imagery

1.2 Results

The results of this study are summarized in Table 1-1. The summary is by OP having the potential for glare as determined by the Solar Glare Hazard Analysis Tool (SGHAT) and that were categorized as having unobstructed visibility or marginal visibility to the arrays potentially causing the glare. Photos demonstrating obstructed views are contained in Attachment 1. The full parameters and results of the SGHAT analysis are contained in Attachment 2 through Attachment 4.

Table 1-1: Study Results

Observation Point	Results Summary
OP. 1	Based on SGHAT results (Figure 3-10), there is a potential for glare created from the project to cause temporary after images in observers traveling on the right of way near OP. 1. Based on the view angle analysis (Figure 3-7), glare will occur at OP. 1 that is not completely obstructed. However, the effect to observers will be notably reduced by mature vegetation in the region, in the periphery vision of observers, and in a similar direction as the sun.
OP. 2	Based on line-of-sight to the Project from OP. 2 (Figure 3-13), potential glare created from the Project will not adversely impact vehicles traveling near OP. 2 and is notably obstructed by existing mature vegetation.
OP. 3	Based on the line-of-sight and view angle analysis in Section 3.3, potential glare from the Project will not notably impact observers near OP. 3 and is notably obstructed by existing mature vegetation.
OP. 4	No glare determined at OP from geometric analysis.
OP. 5	No glare determined at OP from geometric analysis.
OP.6	No glare determined at OP from geometric analysis.

Yellow glare from the SGHAT analysis was categorized as not adversely impacting nearby stationary observers because it would not cause permanent eye damage to the observer and would not cause an adverse effect on properties or structures. Yellow glare has the potential to cause an afterimage, but afterimage is eliminated with blinking and not looking directly at the source of the glare. To further reiterate, all yellow glare as indicated in each SGOHP was below the maximum permissible exposure threshold as applied by the U.S. Army Environmental Hygiene Agency in evaluating light sources. The maximum permissible exposure threshold is 0.1 W/cm^2 (Brumleve, 1977) and is shown in Figure 2-6. All yellow glare was below 0.05 W/cm^2 , which is 200 times less than that of direct sunlight (10 W/cm^2). The full parameters and results of the SGHAT analysis are contained in Attachment 2 through Attachment 4.