



Office of Audits
Office of Inspector General
U.S. General Services Administration

Alert Memorandum: Building Safety Concerns in PBS's Federal Aggregated Solar Procurement Pilot Contracts in Region 9

Memorandum Number A201020-2
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TO: DANIEL BROWN
REGIONAL COMMISSIONER
PUBLIC BUILDINGS SERVICE (9P)
Hilda M. Garcia

FROM: HILDA M. GARCIA
REGIONAL INSPECTOR GENERAL FOR AUDITING
PACIFIC RIM REGION AUDIT OFFICE (JA-9)

SUBJECT: Alert Memorandum: Building Safety Concerns in PBS's Federal Aggregated
Solar Procurement Pilot Contracts in Region 9
Memorandum Number A201020-2

The purpose of this memorandum is to notify you of serious building safety concerns we identified during the survey phase of our ongoing audit of PBS's Federal Aggregated Solar Procurement Pilot (FASPP) contracts.

We found that inadequate safety features at two PBS buildings expose GSA employees and contractors to the risk of death or serious physical harm when maintaining the roofs or photovoltaic (PV) rooftop panels. Accordingly, PBS should take immediate action to address these matters.

Background

In December 2015, PBS awarded Contract Number GS-09P-16-KS-C-0002 to SolarCity Corporation for the installation of PV panels. The FASPP contract was split into three separate contracts in February 2017 to accommodate the different construction schedules of the seven locations.¹ The FASPP is the first federal aggregated contract of its kind. Its goal is to install PV panels to generate electricity at five northern California and two northern Nevada government facilities at lower rates than those charged by the local utility companies. Under this contract, SolarCity Corporation would install and operate the PV systems, and sell power by the kilowatt-hour to the federal government. According to the Department of Energy's Office of Energy

¹ FASPP contracts were transferred from SolarCity Corporation to Tesla Energy Operations, Inc. in February 2018. Tesla Energy Operations, Inc. then sold its FASPP contract for California locations in Menlo Park, San Bruno, and San Jose to NextEra Energy, Inc. later in 2018.

Efficiency and Renewable Energy, the pilot program was set up as a model for how federal entities can partner to procure renewable energy with no upfront costs for the government. PBS collaborated with the Environmental Protection Agency and the Department of Energy's Federal Energy Management Program and National Renewable Energy Laboratory to identify suitable locations, create the FASPP contract, and evaluate offerors' bids.

The FASPP contracts are for a period of up to 20 years, including a base period of 10 years and an option to extend for an additional 10-year term. During the contract, the contractor owns, operates, and maintains the PV system; the government only pays for the produced energy.

On November 22, 2017, GSA issued a Letter of Concern to SolarCity Corporation that included issues related to its project management and deliverables for the subject contract. Based on the issues identified in this letter, we initiated an audit of PBS's FASPP contracts on April 22, 2020. This ongoing audit focuses on whether PBS's selection and oversight of the seven FASPP sites maximize energy savings and comply with applicable laws, regulations, policies, safety standards, and contract requirements.

We conducted site visits to the five northern California FASPP sites between June 23 and June 25, 2020. For each site visited, we met with the PBS building manager, took photographs, and observed the installed PV systems, their condition, and the surrounding areas.

Building Safety Concerns

During our audit survey, we identified two buildings, the Leo J. Ryan Federal Records Center and the United States Geological Survey Campus, with significant safety concerns that warrant your immediate attention. These concerns are described below and will be further explored as we continue with audit fieldwork.

The Leo J. Ryan Federal Records Center in San Bruno, California, lacks safeguards to protect against impalement.

The Leo J. Ryan Federal Records Center building in San Bruno, California, is equipped with PV panels and a lightning protection system (LPS) on its flat roof. The LPS is independent from the PV panels and was installed between 2016 and 2017 as part of the building's roof refurbishment project that included the application of a membrane to seal the roof. The LPS was installed as required by PBS P100, *Facilities Standards for the Public Buildings Service*, in accordance with National Fire Protection Association 780, *Standard for the Installation of Lightning Protection Systems*.

Based on the LPS technical drawings, there are 52 lightning rods placed around the solar arrays. As shown in *Figure 1*, these lightning rods stand vertically from the flat roof surface and measure two feet in height. We observed there were no barriers or caps to reduce the risk of impalement, and that only one rod had red stripes at the base to caution personnel working in close proximity. In addition, we noticed potential fall hazards from loose ground wiring connected to the rods and the slippery composition of the roof. Lastly, visibility is reduced when sunlight reflects off of the white roof.

Figure 1 – LPS rods at Leo J. Ryan Federal Records Center



Section 5(a)(1) of the Occupational Safety and Health Act of 1970 requires employers to provide a workplace free from hazards that may cause death or serious physical harm. In addition, an Occupational Safety and Health Administration (OSHA) interpretation letter states that “Where a lightning rod poses a recognized hazard of impalement and a [sic] there is a feasible means of protection, the employer is required to provide that protection.”

The lightning rods pose a risk of impalement to those who work on the roof or maintain the PV system. The risk of impalement from the rods is exacerbated by the fall hazards posed by the loose ground wiring and slippery roof. PBS should evaluate these fall hazards and the location of the LPS rods and implement measures to protect employees and contractors working on the roof while still providing adequate fire protection.

The United States Geological Survey Campus in Menlo Park, California, lacks fall protection on the roof.

The United States Geological Survey (USGS) Campus in Menlo Park, California, is equipped with carport and roof-mounted PV panels. GSA contractors and employees routinely access the roof to provide the required maintenance to the PV and other systems. During our site visit to the campus, we noticed that the roof lacked adequate fall protection as shown in *Figure 2* below. Specifically, we observed that the roof did not have a parapet or perimeter railing to protect against falls. Furthermore, warning lines or other markings were not present on the sides of the roof that are close to the installed PV system to alert personnel that they are in close proximity to the edge of the roof.

Figure 2 – Photograph at USGS campus showing no fall protection



OSHA's general industry standards require that when workers are exposed to fall hazards of 4 feet or more, they must be protected by a standard railing.² If such a railing is not present, then workers must be protected by a fall protection device such as a personal fall arrest system or a safety net. In addition to these OSHA standards, PBS P100 requires that flat roofs designed for access include a parapet or perimeter railing that is at least 42 inches high. PBS P100 also requires that where parapets or railings are not feasible, other fall protection measures such as warning lines or personal fall arrest systems should be included.

The solar contractor stated the PV equipment requires annual inspections and maintenance. In addition, GSA maintenance personnel may access the roof to inspect other systems. Construction management reports show that the solar contractor followed OSHA and PBS P100 safety standards when installing the PV system by using a temporary railing system; however, the solar contractor told us that they have not taken similar safety measures during maintenance of the PV system.

The Deputy Regional Commissioner told us that although fall protection is required under OSHA's general industry standards and PBS P100, it is not feasible to update all PBS facilities to code, unless the roof is renovated. Also, the Deputy Regional Commissioner and FASPP contracting officer's representative stated that under the terms of the contract, the solar contractor is required to comply with OSHA standards.

The lack of a railing or other fall hazard mitigation systems exposes maintenance personnel and contractors to fall hazards and is not in compliance with OSHA standards or PBS policy. Accordingly, PBS should take necessary steps to enforce contract compliance and protect individuals from fall hazards at the USGS Campus in Menlo Park.

Conclusion

PBS has not installed adequate safeguards to protect GSA employees and contractors against impalement or fall hazards at two FASPP sites. The lack of safeguards is not compliant with OSHA standards and PBS policy. PBS management should take immediate action to address these safety hazards, enforce contract compliance, provide oversight, and implement measures to protect the safety of its personnel and contract employees.

Compliance Statement

This alert memorandum complies with the Council of Inspectors General on Integrity and Efficiency's Quality Standards for Federal Offices of Inspector General. The related ongoing audit, when completed, will comply with generally accepted government auditing standards.

² 29 CFR 1910.28, *Duty to have fall protection and falling object protection*; and 29 CFR 1920.29, *Fall protection systems and falling object protection-criteria and practices*.

Audit Team

This assignment was managed out of the Pacific Rim Region Audit Office and conducted by the individuals listed below:

Hilda M. Garcia	Regional Inspector General for Auditing
Eric Madariaga	Audit Manager
Hector Molina-Rodriguez	Auditor-In-Charge
Lily Mirsepassi	Auditor
Joseph Eom	Auditor

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