**SECTION 26 31 00**

**PHOTOVOLTAIC COLLECTOR SYSTEM**

**BASED ON DFD MASTER ELECTRICAL SPEC DATED 7/10/25**

**PART 1 - GENERAL**

**SCOPE**

The work under this section includes photovoltaic solar panels, support structures and inverters.

***DFD does not yet have a master PV spec. The A/E should utilize their own and/or create one. The red text below identifies issues to address in the design process where PV is installed on buildings and structures.***

For projects with roof-mounted PV systems:

The electrical engineer, architect, and structural engineer must work together to determine the appropriate PV support system for each application. The electrical engineer shall confer with several commercial PV vendors (a minimum of 2) on which PV support systems and roof fastening systems are available and/or applicable for this project. The architect and structural engineer must ensure the PV system and roof system work together to provide a durable, maintainable, and code-compliant design. The A/E team must review recommendations with DFD prior to completion of Preliminary Review documents. The electrical engineer should contact the DFD Electrical Team Leader (Cleven McChesney) for inspection and labeling checklists to be incorporated and for commissioning requirements.

Factors to consider include, but are not limited to, the following:

* Building height/anticipated wind uplift loads on PV panels
* PV installer recommendations for the attachment system type based on the building height/anticipated wind uplift loads on PV panels (ballasted racking (a.k.a. “sled”) system, fixed anchor to roof, etc.)
* Roof structure type
* Roofing type/roof system: (1) a coverboard should be installed under membrane roofs to improve durability and resistance to foot traffic and (2) roofing systems should utilize adhered materials to prevent abrasion and premature wear related to mechanical fasteners.
* Age of roof, if existing: PV systems should be installed over roofing systems that have been in place for two years or less and that have been specifically designed to accommodate PV systems.
* Size of roof area
* Physical size of PV array
* Are raised parapets or handrails needed for fall protection?
* Quantity of vendors who can provide the chosen system type
* Maintenance: (1) rated paver walkways should be integrated into the PV layout for maintenance. (2) alleyways should be created in the PV layout to provide access for drains and sled or mechanical attachment points shall not be allowed in drain sump areas.
* Long term maintenance: If a sled-type racking system is used, sometimes cinder blocks are used for ballast on the sleds. Cinder blocks are susceptible to ultraviolet degradation from the sun and must be inspected periodically for cracks and deterioration and may have to be replaced prior to the PV panels being replaced. The Agency needs to be made aware of this potential issue if cinder blocks are used as ballast for the sleds.
* Impact on roofing warranties: If a sled-type racking system is used, roofing manufacturers will include an over-burdened waiver in their Warranty. This means that if the PV system must be removed to repair a leak, the Agency is responsible for removing the PV system to facilitate the repair. Once the roof is repaired, the Agency is again responsible for re-installing the PV system on the roof. The Agency needs to be made aware of this roofing waiver if a sled-type racking system is used.
* Roofing warranties: PV systems that are attached to the roof and are mounted at least three feet above the roof will not affect the roofing warranty. Roofing manufacturers will be able to maneuver underneath the PV system to make repairs without removing the PV system.
* Ensure PV panels selected will fasten appropriately to method of attaching PV system to roof.
* Verify if each sled needs to be attached to an anchor point via an attached cable to ensure the PV system stays on the roof in case of a violent wind event.

Recommended resources include, but are not limited to:

* NRCA’s Photovoltaic Systems guidelines, second edition
* California Fire Marshall’s Solar Photovoltaic Installations Guideline and/or local WI fire codes related to PV installation

END OF SECTION