



SolarAPP+ Solar Photovoltaic and Energy Storage System Contractor Disclosure and Agreement

Rev.20240515

This disclosure form must be signed by the contractor prior to the application and installation of solar photovoltaic (PV) systems and energy storage systems (ESS) reviewed and approved through NREL SolarApp+. This document ensures compliance with City of Spokane regulations and Washington State Amendments to the relevant PV and ESS codes. The contractor must agree to the following terms and conditions:

PROJECT OVERVIEW	
<ul style="list-style-type: none"> This document pertains to the application and installation of solar PV systems and energy storage systems ESS, with designs reviewed and approved through the NREL SolarApp+ program. 	
ACKNOWLEDGMENT OF WASHINGTON STATE AMENDMENTS	
<p>The contractor hereby acknowledges having read the Addendum identifying the Washington State Amendments to the currently adopted versions of the following codes:</p> <ul style="list-style-type: none"> International Residential Code (IRC) International Fire Code (IFC) National Electrical Code (NEC) 	
COMPLIANCE WITH WASHINGTON STATE AMENDMENTS	
<ul style="list-style-type: none"> The contractor agrees to design and install the solar photovoltaic and/or energy storage system in compliance with the Washington State amendments to the IRC, IFC, and NEC. 	
MAINTENANCE OF APPROVED PLANS	
<ul style="list-style-type: none"> The contractor agrees to maintain the SolarApp+ approval documents on-site for the duration of the installation and any inspections. 	
REVISION AND CORRECTION OF INSTALLATION	
<ul style="list-style-type: none"> The contractor agrees to revise or correct the installation as necessary to meet the Washington State amended codes, as identified by city inspection staff. 	
LIABILITY FOR REVISION FEES	
<ul style="list-style-type: none"> The contractor agrees that the City of Spokane is not liable for any payment of revision fees to NREL SolarApp+ or to the City of Spokane for designs that must be amended or revised due to differences between national/international model codes and Washington State amended codes. 	
CONTRACTOR ACKNOWLEDGMENT AND SIGNATURE	
<ul style="list-style-type: none"> By signing below, the contractor agrees to the terms and conditions outlined in this document and confirms that all information provided is accurate and truthful. The contractor understands that this agreement is legally binding. 	

CONTRACTOR INFORMATION	CONTRACTOR SIGNATURE
Company Name	Signature
Contractor Name	
Contractor License #	Date
Contact Phone	

Have Questions? Permit Team Hotline: (509) 625-6999 or email: PermitTeam@SpokaneCity.org

ADDENDUM

SOLAR ENERGY SYSTEMS		
2021 IRC	INTERNATIONAL RESIDENTIAL CODE	<u>WAC 51-51-0324</u>
R324.3	R324.3 Photovoltaic systems	R324.3 Photovoltaic systems
	Photovoltaic (PV) systems shall be designed and installed in accordance with Sections R324.3.1 through R324.7.1 and the manufacturer's installation instructions. The electrical portion of solar PV systems shall be designed and installed in accordance with NFPA 70.	<p style="color: red;">Installation, modification, or alteration of solar photovoltaic power systems shall comply with this section and the International Fire Code. Section R104.11 alternative materials and methods of this code shall be considered when approving the installation of solar photovoltaic power systems. Photovoltaic systems shall be designed and installed in accordance with Sections R324.3.1 through R324.6 and chapter 19.28 RCW. Inverters shall be listed and labeled in accordance with UL 1741. Systems connected to the utility grid shall use inverters listed for utility interaction.</p> <p style="color: red;">Exception</p> <p style="color: red;">Detached, non-habitable Group U structures shall not be subject to the requirements of this section for structural and fire safety.</p>
R324.4	R324.4 Rooftop-mounted photovoltaic systems.	R324.4 Rooftop-mounted photovoltaic systems
	Rooftop-mounted photovoltaic panel systems installed on or above the roof covering shall be designed and installed in accordance with this section .	<p>Rooftop-mounted photovoltaic panel systems installed on or above the roof covering shall be designed and installed in accordance with Section R907.</p> <p style="color: red;">Exception</p> <p style="color: red;">The roof structure shall be deemed adequate to support the load of the rooftop solar photovoltaic system if all of the following requirements are met:</p> <ol style="list-style-type: none"> <li style="color: red;">1. The solar photovoltaic panel system shall be designed for the wind speed of the local area and shall be installed per the manufacturer's specifications. <li style="color: red;">2. The ground snow load does not exceed 70 pounds per square foot (3.35 kPa). <li style="color: red;">3. The total dead load of modules, supports, mountings, raceways, and all other appurtenances weigh no more than 4 pounds per square foot (19.5 kg/m²). <li style="color: red;">4. Photovoltaic modules are not mounted higher than 18 inches (457 mm) above the surface of the roofing to which they are affixed. <li style="color: red;">5. Supports for solar modules are to be installed to spread the dead load across as many roof-framing members as needed, so that no point load exceeds 50 pounds (22.7 kg).
R324.7.1	R324.7.1 Fire separation distances	R324.7.1
	Ground-mounted photovoltaic systems shall be subject to the fire separation distance requirements determined by the local jurisdiction.	SECTION IS NOT ADOPTED
R907.1	R907.1 Rooftop-mounted photovoltaic panel systems	R907.1 Rooftop-mounted photovoltaic panel systems
	Rooftop-mounted photovoltaic panel systems shall be designed and installed in accordance with Section	Section not amended.

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	R324 and NFPA 70.	
2021 IFC	INTERNATIONAL FIRE CODE	WAC 51-54A-1205
1205.1	1205.1 General	1205.1 General
	Solar photovoltaic (PV) systems shall be installed in accordance with the International Building Code or International Residential Code. The electrical portion of solar PV systems shall be installed in accordance with NFPA 70. Rooftop-mounted solar photovoltaic systems shall be installed in accordance with Sections 1205.2 through 1205.4.3. Ground-mounted solar photovoltaic systems shall comply with Section 1205.5.	Installation, modification, or alteration of solar photovoltaic power systems shall comply with this section. Due to the emerging technologies in the solar photovoltaic industry, it is understood fire code officials may need to amend prescriptive requirements of this section to meet the requirements for firefighter access and product installations. Section 104.10 Alternative materials and methods of this code shall be considered when approving the installation of solar photovoltaic power systems. Solar photovoltaic power systems shall be installed in accordance with Sections 1205.2.1 through 1205.6, the International Building Code, and chapter 19.28 RCW.
1205.2.1	1205.2.1 Solar photovoltaic (PV) systems for Group R-3 buildings	1205.2.1 Solar photovoltaic systems for Group R-3 residential and buildings built under the International Residential Code
	Solar photovoltaic (PV) systems for Group R-3 buildings shall comply with Sections 1205.2.1.1 through 1205.2.3	Solar photovoltaic systems for Group R-3 residential and buildings built under the International Residential Code shall comply with Sections 1205.2.1.1 through 1205.2.3.
	Exception	Exception
	1. These requirements shall not apply to structures designed and constructed in accordance with the International Residential Code	1. Residential dwellings with an approved automatic fire sprinkler system installed.
	2. These requirements shall not apply to roofs with slopes of 2 units vertical in 12 units horizontal (16.7 percent slope) or less.	2. Residential dwellings with approved mechanical or passive ventilation systems.
		3. Where the fire code official determines that the slope of the roof is too steep for emergency access.
		4. Where the fire code official determines that vertical ventilation tactics will not be utilized.
		5. These requirements shall not apply to roofs where the total combined area of the solar array does not exceed 33 percent as measured in plan view of the total roof area of the structure, where the solar array will measure 1,000 sq. ft. or less in area, and where a minimum 18 inches unobstructed pathway shall be maintained along each side of any horizontal ridge.
1205.6	Not in IFC	1205.6 Size of solar photovoltaic array
		1. Each photovoltaic array shall be limited to 150 feet (45,720 mm) by 150 feet (45,720 mm). Multiple arrays shall be separated by a 3-foot wide (914 mm) clear access pathway.
		2. Panels/modules shall be located up to the roof ridge where an alternative ventilation method approved by the fire code official has determined vertical ventilation techniques will not be employed.

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2023 NEC	NATIONAL ELECTRICAL CODE	WAC 296-46B-690
690.2	690.2 Definitions	002 Definitions
	PV Systems definitions code section removed from 2023 NEC	(1) Building integrated means: Photovoltaic cells, modules, panels, or arrays that are integrated into the outer surface or structure of a building and serve as the outer protective surface of that building, such as the roof, skylights, windows, or facades.
690.4	690.4 General Requirements	004 Installation
	WAC amendments override NEC requirements as applicable.	(2) Support structure or foundation. For the purposes of this section, those portions of the structure support or foundation that are exclusively mechanical and are not part of a bonding or grounding path will not be considered part of the photovoltaic system as defined by this section. Such structural support or foundation may be done by the owner, registered general contractor, or licensed electrical contractor without electrical permit or inspection.
		(3) A photovoltaic system design review defined in WAC 296-46B-100 must be available at the installation site at the time of the first inspection and until the inspection process is complete.
		(4) The entity placing a building integrated cell, module, panel, or array is not subject to the requirements for electrical inspection, licensing, or certification so long as the work is limited to the placement and securing of the device and an electrical work permit has been previously obtained for the electrical work related to the equipment by an entity authorized to do that electrical work.
		(5) All electrical work, including wiring installation, terminations, etc., necessary to complete the electrical installations must be completed by the entity authorized to do the electrical work (i.e., owner or appropriate electrical contractor).
100	100 Part I General Definitions	WAC 296-46B-100 - "System design review"
	Definition not in NEC	"System design review" means a set of design documents that include the manufacturer's installation information, a legible one-line diagram of the system design, and calculations used to determine voltage and current within the system. The one-line diagram must show the system equipment, devices, overcurrent protection, conductor sizing, grounding, ground fault protection if required, and any system interconnection points. The review must be available to the inspector during all inspections.
CITY OF SPOKANE RECOGNIZES SOLARAPP+ REVIEW AS MEETING THE MINIMUM STANDARDS OF THE "SYSTEM DESIGN REVIEW" AS REQUIRED PER WAC 296-46B-100.		
690.7	690.7 Maximum Voltage	007 Maximum Voltage
	690.7(A) Photovoltaic Source Circuits	WAC AMENDMENT OVERRIDES MODEL CODE REQUIREMENTS AS APPLICABLE
The maximum dc voltage for a PV source circuit shall be calculated in accordance with one of the following methods:		

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<p>(1) The sum of the PV module-rated open-circuit voltage of the series-connected modules corrected for the lowest expected ambient temperature using the open-circuit voltage temperature coefficients in accordance with the instructions included in the listing or labeling of the module.</p>	<p>(6) The open-circuit voltage temperature coefficients supplied in the instructions of listed photovoltaic modules will be used to determine the maximum direct current photovoltaic system voltage. Otherwise, the voltage will be calculated using Table 690.7 of the NEC. For the purposes of this calculation, a temperature correction factor of 1.25 will be used unless another factor can be justified and is approved by the authority having jurisdiction.</p>
<p>(2) For crystalline and multi-crystalline silicon modules, the sum of the PV module-rated open-circuit voltage of the series-connected modules in the PV string circuit corrected for the lowest expected ambient temperature using the correction factors provided in Table 690.7(A)</p>	
<p>(3) For PV systems with an inverter generating capacity of 100 kW or greater, a documented and stamped PV system design, using an industry standard method maximum voltage calculation provided by a licensed professional electrical engineer.</p>	

FOR PV SYSTEMS WITH AN INVERTER GENERATING CAPACITY OF 100 kW OR GREATER, MANUAL AHJ REVIEW OF PV SYSTEM IS REQUIRED

STATIONARY STORAGE BATTERY SYSTEMS

2021 IRC	INTERNATIONAL RESIDENTIAL CODE	<u>WAC 51-51-0328</u>
R328.2	R328.2 Equipment Listings	R328.2 Equipment listings.
	Energy storage systems (ESS) shall be listed and labeled in accordance with UL 9540.	ESS shall be listed and labeled for residential use in accordance with UL 9540
	Exception	Exception
	Where approved, repurposed unlisted battery systems from electric vehicles are allowed to be installed outdoors or in detached sheds located not less than 5 feet (1524 mm) from exterior walls, property lines and public ways.	<p>1. Where approved, repurposed unlisted battery systems from electric vehicles are allowed to be installed outdoors or in detached sheds located not less than 5 feet (1524 mm) from exterior walls, property lines, and public ways.</p> <p>2. Battery systems that are an integral part of an electric vehicle are allowed provided that the installation complies with Section 625.48 of NFPA 70.</p> <p>3. Battery systems less than 1 kWh (3.6 megajoules).</p>
R328.12	Not in IRC	R328.12 Commissioning
		ESS shall be commissioned as follows:
		1. Verify that the system is installed in accordance with the approved plans and manufacturer's instructions and is operating properly.
		2. Provide a copy of the manufacturer's installation, operation, maintenance, and decommissioning instructions provided with the listed system.
		3. Provide a label on the installed system containing the contact information for the qualified maintenance and service providers.
R328.1	Not in IRC	R328.12.1 Installation prior to closing

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2.1		Where the system is installed in a one- or two-family dwelling or townhouse unit that is owned by the builder and has yet to be sold, commissioning shall be conducted as outlined in Section R328.12, and the builder shall then transfer the required information in Section R328.12 to the homeowner when the property is transferred to the owner at the closing.
2021 IFC	INTERNATIONAL FIRE CODE	<u>WAC 51-54A-1207</u>
1207.1	1207.1 General	1207.1 General
	The provisions in this section are applicable to stationary and mobile electrical energy storage systems (ESS).	The provisions in this section are applicable to stationary and mobile electrical energy storage systems (ESS).
	Exception	Exception
	ESS in Group R-3 and R-4 occupancies shall comply with Section 1207.11	ESS in Group R-3 and R-4 occupancies not exceeding thresholds in Section 1207.11.4 shall comply with Section 1207.11 through 1207.11.9
1207.11	1207.11 ESS in Group R-3 and R-4 Occupancies	1207.11 ESS in Group R-3 and R-4 Occupancies
	ESS in Group R-3 and R-4 occupancies shall be installed and maintained in accordance with Sections 1207.11.1 through 1207.11.9. The temporary use of an owner or occupant's electric-powered vehicle as an ESS shall be in accordance with Section 1207.11.10.	ESS in Group R-3 and R-4 occupancies shall be in accordance with Sections 1207.11.1 through 1207.11.9
		Exception
		1. ESS listed and labeled in accordance with UL 9540 and marked "For use in residential dwelling units", where installed in accordance with the manufacturer's instructions and NFPA 70.
		2. ESS rated less than 1 kWh (3.6 megajoules).
1207.11.4	1207.11.4 Energy Ratings	1207.11.4 Energy Ratings
	Individual ESS units shall have a maximum rating of 20 kWh. The aggregate rating structure shall not exceed:	Individual ESS units shall have a maximum rating of 20 kWh. The aggregate rating of the ESS shall not exceed:
	1. 40 kWh within utility closets and storage or utility spaces.	1. 40 kWh within utility closets, basements, and storage or utility spaces.
	2. 80 kWh in attached or detached garages and detached accessory structures.	2. 80 kWh in attached or detached garages and detached accessory structures.
	3. 80 kWh on exterior walls.	3. 80 kWh on exterior walls.
	4. 80 kWh outdoors on the ground.	4. 80 kWh outdoors on the ground.
		ESS installations exceeding the permitted individual or aggregate ratings shall be installed in accordance with Sections 1207.1 through 1207.9.
FOR ESS SYSTEMS EXCEEDING THE THRESHOLDS IN TABLE 1207.11.4, MANUAL AHJ REVIEW OF ESS SYSTEM IS REQUIRED.		
2023 NEC	NATIONAL ELECTRICAL CODE	<u>WAC 296-46B</u>
706	Energy Storage Systems	Section not amended.