|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| A. General Information | | | | | | |
| 01 | Project Location (City) |  | 02 | Building Type |  |
| 03 | Climate Zone |  | 04 | Method of Compliance: |  |
| 05 | Qualifying Exceptions |  | 06 | Community Solar |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **B. Design Photovoltaic Systems Information** | | | | | | | | | | | | | |
| 01 | 02 | 03 | | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 |
| PV Array ID or Name | Adjusted Minimum PV Size (kW) | Adjusted Value from Exception | | Module Type | CFI (Yes/No) | Azimuth (deg) | Tilt Input (Deg/Pitch) | Angle/Tilt | Annual Solar Access (%) | Inverter Efficiency (%) | Shading Requirement Compliance Path | Array Type | Module Level Power Electronics |
|  |  |  | |  |  |  |  |  |  |  |  |  |  |
|  |  |  | |  |  |  |  |  |  |  |  |  |  |
| 14 | Total DC System Size (kW) | |  | | | | | | | | | | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **C. Installed Photovoltaic Systems Information** | | | | | | | | | |
| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 |
| PV Array ID or Name | DC System Size (kW) | Module Type | Azimuth (deg) | Tilt Input (Deg/Pitch) | Angle/Tilt | Annual Solar Access (%) | Inverter Efficiency (%) | Array Type | Module Level Power Electronics |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| 11 | Total DC System Size (kW) |  | | | | | | | |
| **If the installer certifies that the installed PV system matches or exceeds the design PV system, the building complies with the PV system requirement, otherwise it does not comply.** | | | | | | | | | |

|  |  |
| --- | --- |
| D. Shading Requirement | |
| **Minimal Shading Criterion** | |
| No obstruction is closer than a distance D of twice the height H as specified JA11.3.1 |  |
| **Annual Solar Access Input** | |
| The shading condition of the PV array must be properly accounted for in the performance calculation by the annual solar access input. | |
| **The responsible person’s signature on this compliance document affirms that all applicable requirements in this table have been met.** | |

|  |  |
| --- | --- |
| E. Solar Access Verification | |
| 01 | The installer shall provide documentation that demonstrates the shading condition of the actual installation of the PV module is consistent with the shading requirement in Table D. The verification must be done by measurements from an approved solar assessment tool or other CEC approved alternative methods. The satellite, drone or other digital image of the obstructions that cast shadows on the PV array must be created and dated after the installation of the photovoltaic system. |
| **The responsible person’s signature on this compliance document affirms that all applicable requirements in this table have been met.** | |

|  |  |
| --- | --- |
| F. System Monitoring Requirements | |
| All installed PV system must have a working web based portal and a mobile device application provide access to the following information | |
| 01 | Nominal kW rating of the PV system |
| 02 | Number of PV modules and nominal watt rating of each module |
| 03 | Hourly (or 15 min), daily, monthly and annual kWh production in numeric and graphic format |
| 04 | Running total of daily kWh production |
| 05 | Daily kW peak power production |
| 06 | Current kW production of the entire PV system |
| **The responsible person’s signature on this compliance document affirms that all applicable requirements in this table have been met.** | |

|  |  |
| --- | --- |
| G. Qualifying Exception Verification | |
| 01 | The installer shall provide documentation of the roof area limitations that justify the exception. Documentation may include roof plans, aerial photos, satellite images, 3D model, or other documentation that clearly shows the available roof areas that meets the solar access requirements. |
| **The responsible person’s signature on this compliance document affirms that all applicable requirements in this table have been met.** | |

|  |  |  |
| --- | --- | --- |
| H. SMUD Solar Share Program | | |
| 01 | Required kW |  |
| 02 | Attach a copy of SMUD Attestation of Premise Registration in Neighborhood SolarShares (Attestation). | |
| **The responsible person’s signature on this compliance document affirms that all applicable requirements in this table have been met.** | | |

|  |
| --- |
| **I. Compliance Statement** |
|  |

|  |  |
| --- | --- |
| **Documentation Author's Declaration Statement** | |
| 1. I certify that this Certificate of Compliance documentation is accurate and complete. | |
| Documentation Author Name: | Documentation Author Signature: |
| Company: | Signature Date: |
| Address: | CEA/ HERS Certification Identification (if applicable): |
| City/State/Zip: | Phone: |
| **Responsible Person's Declaration statement** | |
| I certify the following under penalty of perjury, under the laws of the State of California:The information provided on this Certificate of Compliance is true and correct.I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).  1. That the energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations. 2. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application. 3. I will ensure that a registered copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a registered copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy. | |
| Responsible Designer Name: | Responsible Designer Signature: |
| Company: | Date Signed: |
| Address: | License: |
| City/State/Zip: | Phone: |

**CF2R-PVB-01-E User Instructions**

1. **General Information**

01 For information only and requires no user input.

02 For information only and requires no user input.

03 User choose from list of qualifying exceptions to the PV requirements. If no exception applicable, choose N/A

04 For information only and requires no user input.

05 For information only and requires no user input.

06 For information only and requires no user input.

1. **Design Photovoltaic Systems Information**

This table reports the PV system features that were specified on the registered CF1R compliance document for this project. For information only and requires no user input.

1. **Installed Photovoltaic Systems Information**

01 PV Array ID or Name - Reference information from CF1R.

02 DC System Size – Enter the kWdc of the array. Must be equal or greater the design system size for this array.

03 Module Type – If the array meets the California Flexible Installation criteria, then enter the Module Type. Different module types are Standard and Premium.

04 Azimuth - If the array meets the California Flexible Installation criteria, then enter the azimuth of the array in degrees from North.

05 Tilt Input - Different Tilt input are Degree and Pitch.

06 Angle/Tilt - Enter the value of the angle or tilt.

07 Annual Solar access – Enter the percent of solar access

08 Inverter Efficiency – Enter the inverter efficiency in percent. Must be equal or greater the design inverter efficiency for this array.

09 Array Type – Choose from: fixed (open rack), tracking (one axis), tracking (two axis)

10 Module Level Power Electronics – Choose from: microinverters or DC power optimizers

1. **Shading Requirement**

Installer must ensure all the requirements on this table are met.

1. **Solar Access Verification**

Installer must ensure all the requirements on this table are met.

1. **System Monitoring Requirements**

Installer must ensure all the requirements on this table are met.

1. **Qualifying Exception Verification**

Installer must ensure all the requirements on this table are met.

1. **SMUD Solar Share Program**

Installer must ensure all the requirements on this table are met.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| A. General Information | | | | | | | |
| 01 | Project Location (City) | <<Auto filled field text: Reference text from CF1R>> | 02 | Building Type | <<Auto filled field text: Reference text from CF1R >> | | |
| 03 | Climate Zone | <<Auto filled field text: Reference text from CF1R >> | 04 | Method of Compliance: | <<Reference CF1R document: allowed values: Performance or Prescriptive>> | | |
| 05 | Qualifying Exceptions | << user pick from list:  No PV – limited solar access (Trigger CF2R-SRA-01)  CZ15 reduced PV size  2 habitable stories  3 habitable stories  Plan approved before 1/1/20  Battery storage (Trigger CF2R-PVB-02)  Community Solar  NA >> | | | 06 | Community Solar | <<Auto filled field text: Reference text from CF1R; allow NA>> |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **B. Design Photovoltaic Systems Information**  <<if A05 = “No PV – limited solar access” or ”Community Solar”, then display the "section does not apply" message; else display this entire table >> | | | | | | | | | | | | | |
| 01 | 02 | 03 | 04 | 05 | | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 |
| PV Array ID or Name | Adjusted Minimum PV Size (kW) | Adjusted Value from Exception | Module Type | CFI | | Azimuth (deg) | Tilt Input (Deg/Pitch) | Angle/Tilt | Annual Solar Access (%) | Inverter Efficiency (%) | Shading Requirement Compliance Path | Array Type | Module Level Power Electronics |
| <<auto filled text: referenced from CF1R; elseif not available, user input>> | <<auto filled text: referenced from CF1R>> | <<if performance, then value = B02;  Elseif prescriptive and A05 = NA, then autofill from B02;  elseif A05 = “Battery storage”, then value = ((O04 from CF1R\*0.75) + O05 from CF1R);  Else user input: decimalnonnegative >> | <<From CF1R-PRF-01;  Else = NA>> | <<From CF1R-PRF-01 (Da06\_ CFI\_PV), value = Yes (true) if CFI1 or CFI2 is chosen, else value = No (false); Else if prescriptive, value = NA>> | | <<If performance and CFI = Yes, then if CF1R-PRF Da07\_AzimuthRange = 150 to 270, user input between 150 and 270; elseif CF1R-PRF Da07\_AzimuthRange = 105 to 300, then user input between 105 and 300; else if performance and CFI = Yes and value is not on CF1R-PRF, then user input between 150 and 270; else if performance and CFI=No, use value from CF1R-PRF Da07\_Azimuth; else if performance and CFI=No and value is not on CF1R-PRF, then user input between 0 and 359;  if prescriptive, then user input between  0 and 359>> | <<From CF1R-PRF-01;  else user pick from list:   * Deg * Pitch>> | <<If prescriptive and B07=Deg and (B06≤59 or B06≥301), then user input  0 ≤B08≤ 10; if prescriptive and B07=Deg and 90≤B06≤300, then user input 0 ≤B08<90;  if prescriptive and B07=Pitch and (B06≤59 or B06≥301), then user input  0 ≤B08≤ 2; if prescriptive and B07=Pitch and 90≤B06≤300, then user input 0 ≤B08≤50;  elseif performance and CFI = Yes, then value from CF1R-PRF and B08 ≤ 7;  if performance and CFI = No, then value from CF1R-PRF>> | <<From CF1R-PRF-01; Else value = 100>> | <<From CF1R-PRF-01; Else = NA>> | <<Default value = “Minimum Shading Criterion”>> | <<From CF1R-PRF-01; Else = NA>> | <<From CF1R-PRF-01; Else = NA>> |
|  |  |  |  |  | |  |  |  |  |  |  |  |  |
| 14 | Total DC System Size (kW) | | | | <<Sum of B03>> | | | | | | | | |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **C. Installed Photovoltaic Systems Information**  <<if A05 = “No PV – limited solar access” or ”Community Solar”, then display the "section does not apply" message; else display this entire table>>  <<For each record in table B, require a record in Table C. If B05 is Yes for an array, allow user to add a record in Table C for that array. | | | | | | | | | | |
| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 |
| PV Array ID or Name | DC System Size (kW) | Module Type | Azimuth (deg) | Tilt Input (Deg/Pitch) | Angle/Tilt | Annual Solar Access (%) | Inverter Efficiency (%) | Array Type | Module Level Power Electronics |
| <<auto filled text: referenced from CF1R; else user input>> | <<If B05=No, then autofill from B03 but allow user to override only if ≥ B03;  Else user input >> | <<If B05=No, then autofill from B04;  Else user pick from list:  Standard,  Premium >> | <<If B05=No, then autofill from B06; elseif B05 = Yes, then if CF1R-PRF Da07\_AzimuthRange = 150 to 270, user input between 150 and 270;  Elseif CF1R-PRF Da07\_AzimuthRange = 105 to 300, then user input between 105 and 300;  Else user input (value must be > 0 and ≤ 359>> | <<If B05=No, then autofill from B07;  Else user pick from list:   * Deg * Pitch>> | <<If B05=No, then autofill from B08; Else user input (value must be > 0 and < 10)>> | <<reference value from B09 as default, but allow user to override >> | <<reference value from B10 as default, but allow user to override >> | <<reference value from B12>> | <<reference value from B13 as default, if B13 = “none”, then allow user to override and pick from list: \*Microinverters or \*DC power Optimizers>> |
|  |  |  |  |  |  |  |  |  |  |
| 11 | Total DC System Size (kW) | <<Sum of C02>> | | | | | | | | |
| **If the installer certifies that the installed PV system matches or exceeds the design PV system, the building complies with the PV system requirement, otherwise it does not comply.** | | | | | | | | | | |

|  |  |
| --- | --- |
| D. Shading Requirement <<if A05 = “No PV – limited solar access” or “Community Solar”, then display the "section does not apply" message; else display this entire table >> << Shading Requirement Compliance Path B11 = “Minimal Shading Criterion”, then display row “Minimal Shading Criterion” below; Else display row “Annual Solar Access Input”>> | |
| **Minimal Shading Criterion** | |
| No obstruction is closer than a distance D of twice the height H as specified JA11.3.1 |  |
| **Annual Solar Access Input** | |
| The shading condition of the PV array must be properly accounted for in the performance calculation by the annual solar access input. | |
| **The responsible person’s signature on this compliance document affirms that all applicable requirements in this table have been met.** | |

|  |  |
| --- | --- |
| E. Solar Access Verification <<if A05 = “No PV – limited solar access” or “Community Solar”, then display the "section does not apply" message; else display this entire table >> | |
| 01 | The installer shall provide documentation that demonstrates the shading condition of the actual installation of the PV module is consistent with the shading requirement in Table D. The verification must be done by measurements from an approved solar assessment tool or other CEC approved alternative methods. The satellite, drone or other digital image of the obstructions that cast shadows on the PV array must be created and dated after the installation of the photovoltaic system. |
| **The responsible person’s signature on this compliance document affirms that all applicable requirements in this table have been met.** | |

|  |  |
| --- | --- |
| F. System Monitoring Requirements <<if A05 = “No PV – limited solar access” or “Community Solar”, then display the "section does not apply" message; else display this entire table >> | |
| All installed PV system must have a working web based portal and a mobile device application provide access to the following information: | |
| 01 | Nominal kW rating of the PV system |
| 02 | Number of PV modules and nominal watt rating of each module |
| 03 | Hourly (or 15 min), daily, monthly and annual kWh production in numeric and graphic format |
| 04 | Running total of daily kWh production |
| 05 | Daily kW peak power production |
| 06 | Current kW production of the entire PV system |
| **The responsible person’s signature on this compliance document affirms that all applicable requirements in this table have been met.** | |

|  |  |
| --- | --- |
| G. Qualifying Exception Verification <<If A05 “Qualifying Exceptions” = “NA” or “Community Solar”, then display the "section does not apply" message; else display this entire table >> | |
| 01 | The installer shall provide documentation of the roof area limitations that justify the exception. Documentation may include roof plans, aerial photos, satellite images, 3D model, or other documentation that clearly shows the available roof areas that meets the solar access requirements. |
| **The responsible person’s signature on this compliance document affirms that all applicable requirements in this table have been met.** | |

|  |  |  |
| --- | --- | --- |
| H. SMUD Solar Share Program <<If A05 ≠ “Community Solar”, then display the "section does not apply" message; else display this entire table >> | | |
| 01 | Required kW | << From CF1R-PRF-01>> |
| 02 | Attach a copy of SMUD Attestation of Premise Registration in Neighborhood SolarShares (Attestation). | |
| **The responsible person’s signature on this compliance document affirms that all applicable requirements in this table have been met.** | | |

|  |
| --- |
| **I. Compliance Statement** |
| **<<calculated field: if C11 ≥ B14 or A05 = “No PV – limited solar access” or “Community Solar”, then display result: Pass - dwelling complies with the Photovoltaic Systems requirements; else display result: Fail - dwelling does not comply with the Photovoltaic System requirements>>** |

|  |  |
| --- | --- |
| **Documentation Author's Declaration Statement** | |
| 1. I certify that this Certificate of Compliance documentation is accurate and complete. | |
| Documentation Author Name: | Documentation Author Signature: |
| Company: | Signature Date: |
| Address: | CEA/ HERS Certification Identification (if applicable): |
| City/State/Zip: | Phone: |
| **Responsible Person's Declaration statement** | |
| I certify the following under penalty of perjury, under the laws of the State of California:The information provided on this Certificate of Compliance is true and correct.I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).  1. That the energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations. 2. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application. 3. I will ensure that a registered copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a registered copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy. | |
| Responsible Designer Name: | Responsible Designer Signature: |
| Company: | Date Signed: |
| Address: | License: |
| City/State/Zip: | Phone: |