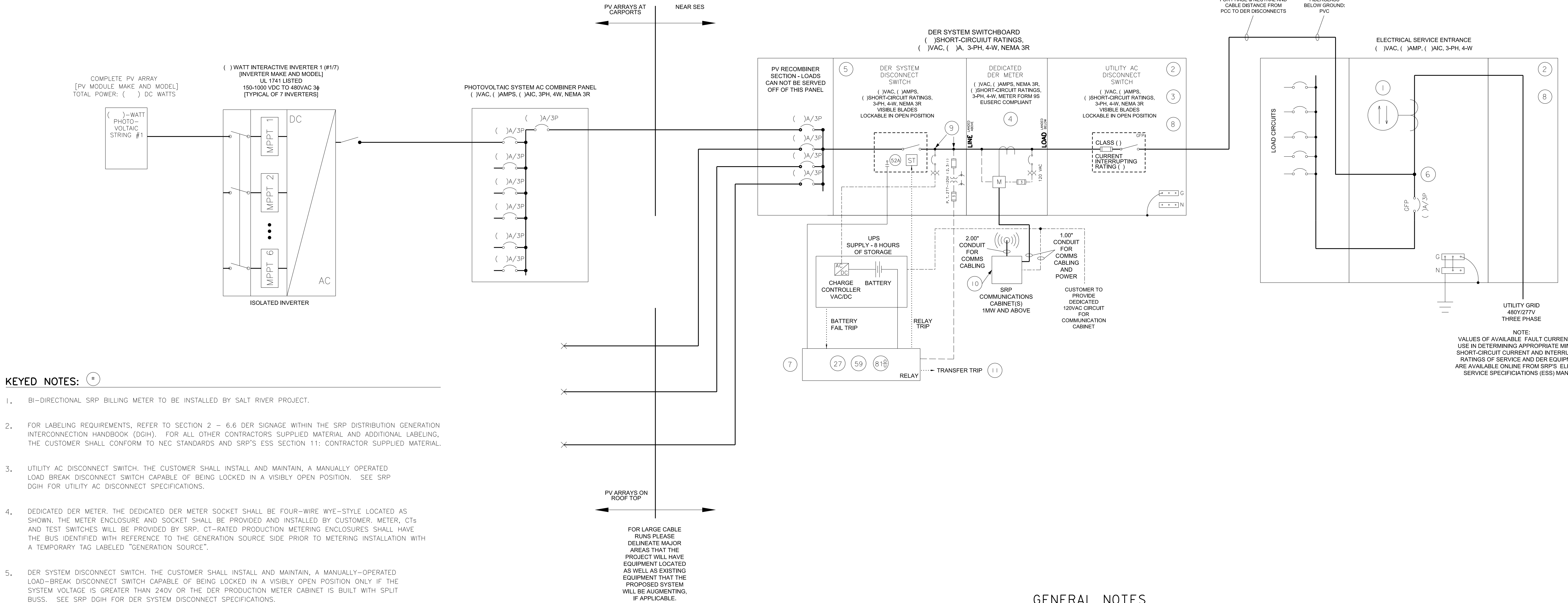


SINGLE LINE DRAWING TO SHOW SRP REQUIREMENTS FOR A CLASS III PV SYSTEM OVER 1MW



- KEYED NOTES:** #
- BI-DIRECTIONAL SRP BILLING METER TO BE INSTALLED BY SALT RIVER PROJECT.
 - FOR LABELING REQUIREMENTS, REFER TO SECTION 2 – 6.6 DER SIGNAGE WITHIN THE SRP DISTRIBUTION GENERATION INTERCONNECTION HANDBOOK (DGIH). FOR ALL OTHER CONTRACTORS SUPPLIED MATERIAL AND ADDITIONAL LABELING, THE CUSTOMER SHALL CONFORM TO NEC STANDARDS AND SRP'S ESS SECTION 11: CONTRACTOR SUPPLIED MATERIAL.
 - UTILITY AC DISCONNECT SWITCH. THE CUSTOMER SHALL INSTALL AND MAINTAIN, A MANUALLY OPERATED LOAD BREAK DISCONNECT SWITCH CAPABLE OF BEING LOCKED IN A VISIBLY OPEN POSITION. SEE SRP DGIH FOR UTILITY AC DISCONNECT SPECIFICATIONS.
 - DEDICATED DER METER. THE DEDICATED DER METER SOCKET SHALL BE FOUR-WIRE WYE-STYLE LOCATED AS SHOWN. THE METER ENCLOSURE AND SOCKET SHALL BE PROVIDED AND INSTALLED BY CUSTOMER. METER, CTs AND TEST SWITCHES WILL BE PROVIDED BY SRP. CT-RATED PRODUCTION METERING ENCLOSURES SHALL HAVE THE BUS IDENTIFIED WITH REFERENCE TO THE GENERATION SOURCE SIDE PRIOR TO METERING INSTALLATION WITH A TEMPORARY TAG LABELED "GENERATION SOURCE".
 - DER SYSTEM DISCONNECT SWITCH. THE CUSTOMER SHALL INSTALL AND MAINTAIN, A MANUALLY-OPERATED LOAD-BREAK DISCONNECT SWITCH CAPABLE OF BEING LOCKED IN A VISIBLY OPEN POSITION ONLY IF THE SYSTEM VOLTAGE IS GREATER THAN 240V OR THE DER PRODUCTION METER CABINET IS BUILT WITH SPLIT BUSS. SEE SRP DGIH FOR DER SYSTEM DISCONNECT SPECIFICATIONS.
 - SUPPLY-SIDE SOURCE CONNECTION SHALL BE LOCATED AT THE SERVICE ENTRANCE SECTION, AFTER THE SRP BILLING METER AND BEFORE THE SOURCE SIDE OF THE SERVICE DISCONNECT, OUTSIDE OF ANY SEALED AREAS OF THE UTILITY SECTION. SUPPLY-SIDE SOURCE CONNECTIONS SHALL BE INSTALLED IN ACCORDANCE WITH ARTICLE 705 OF THE NEC AND DOCUMENTATION OF RECERTIFICATION BY A NATIONALLY RECOGNIZED TESTING LABORATORY TO MAINTAIN EQUIPMENT LISTINGS NEEDS TO BE INCLUDED WITH THE SRP POWERCLERK INTERCONNECTION APPLICATION.
 - SUPPLEMENTAL DER DEVICE IS REQUIRED FOR REDUNDANT ISOLATION OF THE PRIMARY SOURCE.
 - EQUIPMENT SHALL BE LISTED AND RATED TO WITHSTAND THE AVAILABLE SHORT-CIRCUIT CURRENT. THE CIRCUIT BREAKERS/FUSES SHOWN ON THE SINGLE LINE DIAGRAM SHALL INCLUDE THE CURRENT INTERRUPTING RATINGS THAT THE DEVICES CAN SAFELY INTERRUPT AT THE SPECIFIED VOLTAGE. THE EQUIPMENT SHOWN ON THE SINGLE LINE DIAGRAM SHALL INCLUDE THE SHORT CIRCUIT CURRENT RATINGS THAT DEVICES CAN SAFELY HANDLE DURING FAULT CONDITIONS.
 - THE SUPPLEMENTAL DER DEVICE SENSING POTENTIALS AND POWER SHALL BE UPSTREAM OF THE DISCONNECT OPERATED BY THE SUPPLEMENTAL DER DEVICE SO THAT THE SENSING POTENTIALS AND POWER ARE ENERGIZED WHEN THE DISCONNECT IS OPENED. POWER TO THE COMMUNICATIONS CABINET AND DER METER SHALL BE UPSTREAM OF THE DISCONNECT OPERATED BY SUPPLEMENTAL DER DEVICE SO THAT BOTH DEVICES REMAIN IN POWER WHILE THE DISCONNECT IS OPEN.
 - CONTACT SRP TELECOM DEPARTMENT FOR CONSTRUCTION SPECIFICATION AND SAMPLE DRAWINGS OF THE COMMUNICATIONS CABINET BOX. POWER TO THE COMMUNICATIONS CABINET SHALL BE FROM A DEDICATED SOURCE AND REMAIN IN SERVICE DURING A DER OUTAGE. THE DER METER AND COMMUNICATIONS CABINET MAY SHARE THE DEDICATED SOURCE. THE DEDICATED SOURCE MAY BE THE UPS IF FEASIBLE. THE COMMUNICATIONS CABINET SHALL BE WITHIN TEN FEET OF THE DEDICATED DER METER SOCKET.
 - DIRECT TRANSFER TRIP SCHEMES MAY BE REQUIRED AND SHALL BE OUTLINED IN THE SINGLE LINE DIAGRAMS.

EQUIPMENT SCHEDULE

ITEM	DESCRIPTION	MANUFACTURER	PART NO.	NOTES
A	PV MODULE			
B	INVERTER			
C	AC BKR			
D	METER SOCKET			
E	AC DISC.			
F	UPS			
G	RELAY			

THIS SAMPLE DRAWING IS FOR ILLUSTRATION PURPOSES ONLY AND IS NOT TO BE USED FOR DESIGN OR CONSTRUCTION. THIS DRAWING AND ITS SUITABILITY FOR END USE IS NOT IMPLIED. THE INTENT IS ONLY TO ILLUSTRATE TYPICAL MINIMUM INFORMATION REQUIRED AT THE TIME OF APPLICATION TO SRP. ADDITIONAL INFORMATION MAY BE REQUIRED.

GENERAL NOTES

- ALL SYSTEM DESIGN DRAWINGS MUST INCLUDE ALL SWITCHGEAR FROM GENERATION FUEL (SOLAR ARRAY, BATTERY, ETC.) TO UTILITY SERVICE TRANSFORMER. ALL SWITCHGEAR MUST BE IDENTIFIED WITH UNIQUE IDENTIFIERS.
- ANY CUSTOMER-SITED EQUIPMENT THAT CONSISTS OF A MAIN-TIE-MAIN MUST INCLUDE INTERLOCK DESCRIPTION AND MAIN-TIE-MAIN SCHEME.
- TELEMETERING IS REQUIRED FOR SYSTEMS 1MW AND ABOVE PER SITE. DEPENDING ON SYSTEM PCC SRP MAY REQUIRE INDICATION AT ANY SWITCHGEAR THAT PROVIDES A PARALLEL PATH FROM THE GENERATION FACILITY TO SRP. A LOCAL AND END-TO-END CHECK OUT MUST BE PERFORMED AT WITNESS TESTING FOR ALL TELEMETERING.
- THE COMMUNICATIONS ANTENNA REQUIRES LINE OF SIGHT (LOS) WITH A SUBSTATION RECEIVER. THE SUBSTATION THAT IT WILL NEED TO HAVE LOS WITH WILL BE DETERMINED DURING A TECHNICAL STUDY. THERE MAY NEED TO BE MOUNTING OF THE ANTENNA ON ROOFTOP OR ON A POLE. DESIGN LOCATION OF EQUIPMENT AND NUMBER OF POINTS OF CONNECTION WILL IMPACT COSTS.
- OVER/UNDER FREQUENCY, OVER/UNDER VOLTAGE PROTECTION DEVICE IS REQUIRED FOR SYSTEMS 1MW AND OVER. THIS REQUIREMENT IS MET THROUGH A RELAY SYSTEM IN ADDITION TO THE PV INVERTER PROTECTION SETTINGS.
- DESIGN MUST INCORPORATE ISOLATION OF PROTECTION DEVICES FOR TESTING AND MAINTENANCE.
- SENSING POTENTIALS MUST BE CONNECTED TO UTILITY SIDE OF SHUNT TRIP DISCONNECT.
- THE DER RELAY REQUIRES 52A CONTACT STATUS. IN CERTAIN CASES THE DER METER REQUIRES 52A CONTACT STATUS.
- ADDITIONAL INDICATIONS MAY BE REQUIRED IF ADDITIONAL CUSTOMER SWITCHING CAN OCCUR.
- DER SYSTEMS FED FROM A DEDICATED SUBSTATION AND DEDICATED FEEDER MAY IN SOME CASES FORGO THE SUPPLEMENTAL DER RELAY REQUIREMENTS.
- CUSTOMER OWNED MAIN POWER TRANSFORMERS SHALL BE PROPERLY RATED WITH HIGH SIDE VOLTAGE CORRESPONDING WITH SRP'S ELECTRIC SYSTEM PRIMARY AT PCC. DRAWINGS SHALL INCLUDE MPT RATINGS, KVA, PRI-SEC VOLTAGE, PRI-SEC WINDING CONFIGURATION, NEMA AND IMPEDANCE.

NOTES:

- WITHIN EACH INDIVIDUAL INTERCONNECTION APPLICATION, A SITE PLAN, ONE LINE, THREE LINE, AND LABEL SHEET SPECIFIC FOR EACH PROJECT WILL NEED TO BE UPLOADED INTO POWERCLERK FOR ENGINEERING REVIEW. IN ADDITION FOR SITES OVER 1MW A UNIQUE PROTECTION SCHEMATIC WILL BE REQUIRED FOR EACH PROJECT SUBMITTED IN POWERCLERK.
- ALL DESIGN DRAWINGS FOR A DER SITE GREATER THAN 300KW MUST BE STAMPED BY AN ELECTRICAL PE REGISTERED IN THE STATE OF ARIZONA.
- EQUIPMENT SHALL HAVE SHORT CIRCUIT CURRENT RATINGS EQUAL TO OR GREATER THAN THE AVAILABLE FAULT CURRENT SUPPLIED BY SRP. SEE SRP ESS AVAILABLE ONLINE FOR SCC SPECIFIC TO CUSTOMERS SES.
- UNFUSED DISCONNECT SWITCHES WILL BE EVALUATED AT IOKA SCCR. IF DESIGN UTILIZES SERIES RATINGS FOR DISCONNECTS BASED ON UPSTREAM OVERCURRENT PROTECTION APPROPRIATE DETAILS SHALL BE INCLUDED IN DESIGN FOR JUSTIFICATION. MARKINGS FOR SERIES RATING WILL BE REQUIRED AT BOTH DISCONNECTS PER THE NEC.

2	001	10/2024	MCA	MCA	PCM	PCM
REV NO.	PROJECT NO.	DATE	DSGN ENGR	DFTR	DESIGN CHECK	ISSUE APPRVD
 PROJECT NO. - 4012024 XXX KW DC/ XXXKW AC PV SINGLE LINE DIAGRAM ADDRESS LINE 1 ADDRESS LINE 2						
SCALE: NONE			CLASS III 1MW			
SUBJ CODE 015TH CODE 0000 SIZE			01 E8 30x42			