



LINE LEGEND

---	CONTROL/SWGR CUBICLES
- - - -	NEUTRAL/LINE CUBICLE
---	HIGH VOLTAGE
---	CONTROL WIRING
- - - -	TRIP LINE

NOTES

1 SWITCHGEAR CONTROLS & VOLTAGE REGULATOR WIRED FOR A-B-C PHASE ROTATION.

2 IF REDUNDANCY FOR 51TG FUNCTION IS REQUIRED, 2EA BASLER BE1-50/51M-204 RELAYS WILL BE UTILIZED.

ALL RELAY FUNCTIONS MARKED WITH (1), (2) OR (1/2) ARE PART OF (1) SR489 OR (2) M3410A MULTIFUNCTION RELAYS.

DEVICE LEGEND

12	- OVERSPEED RELAY
13	- SYNC SPEED RELAY
14	- UNDERPEED RELAY
14B	- SECONDARY UNDERSPEED RELAY
25	- SYNC CHECK RELAY
25A	- AUTO SYNCHRONIZER
27DC	- DC UNDER VOLTAGE
32	- REVERSE POWER RELAY
38	- BEARING OVER TEMPERATURE
39	- OVER VIBRATION
40	- LOSS OF EXCITATION
46	- PHASE BALANCE RELAY
47-27/59	- PHASE SEQ.-UNDER/OVER VOLTAGE RELAY
49	- OVER TEMPERATURE RELAY
51V	- VOLT RESTRAINED OVERCURRENT RELAY
51TG	- TRANSFORMER GROUND OVERCURRENT RELAY
52M	- MAIN CIRCUIT BREAKER
59N	- NEUTRAL OVERVOLTAGE RELAY
63	- COOLING WATER PRESSURE RELAY
71	- BEARING OIL LEVEL RELAY
80	- COOLING WATER FLOW RELAY
810/U	- OVER/UNDER FREQUENCY RELAY
86E	- ELECTRICAL LOCKOUT RELAY
86M	- MECHANICAL LOCKOUT RELAY
86V/F	- VOLT/FREQ LOCKOUT RELAY
87G	- GENERATOR DIFFERENTIAL RELAY
AM	- AMMETER
AS	- AMMETER SWITCH
BPT	- BUS POTENTIAL TRANSFORMER
BVM	- BUS VOLTMETER
BVS	- BUS VOLTMETER SWITCH
CCT	- CROSS CURRENT TRANSFORMER
DMM	- DIGITAL MULTI METER
ET	- EXCITATION TRANSFORMER
GFM	- GENERATOR FREQUENCY METER
GPT	- GENERATOR POTENTIAL TRANSFORMER
GVM	- GENERATOR VOLTMETER
GVS	- GENERATOR VOLTMETER SWITCH
LA	- LIGHTNING ARRESTOR
M	- METERING
NCT	- NEUTRAL CURRENT TRANSFORMER
NGR	- NEUTRAL GROUNDING RESISTOR
NPT	- NEUTRAL POTENTIAL TRANSFORMER
RCT	- RELAYING CURRENT TRANSFORMER
SC	- SURGE CAPACITOR
SL	- SYNC LIGHT
SSC	- SYNCSCOPE
SSW	- SYNC SWITCH
TGCT	- TRANSFORMER GROUND CURRENT TRANSFORMER

<p>BAT ELECTRIC, INC. 20410 MARTINEZ LANE REDDING, CA 96002 TEL: (530) 221-1336 FAX: (530) 221-3496</p>	<p>RUGRAW, LLC LASSEN LODGE 5.0MW HYDRO ELECTRIC PROJECT ONE LINE DIAGRAM</p>	<table border="1"> <tr><th>REV</th><th>BY</th><th>DATE</th></tr> <tr><td>A</td><td>PT</td><td>1-21-14</td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </table>	REV	BY	DATE	A	PT	1-21-14									
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<p>DWG No.: 11P0525-01 ENGR: D.BATDORF DRFT: PT DATE: 4-20-11</p>	<p>TEXT REV E</p>																