WAYNE STATE UNIVERSITY
ELECTRICAL RELIABILITY UPGRADE

005 - SCIENCE HALL
5055 CASS AVENUE, DETROIT, MICHIGAN 48202
WSU PROJECT NO. 005-219056

BIDS 08/26/2014

Peter Basso Associates Inc
CONSULTING ENGINEERS
5445 Livernois, Suite 100
Troy, Michigan  48098-3276
Tel: 248-879-5666
Fax: 248-879-3007
www.PeterBassoAssociates.com

CIVIL DRAWING INDEX

ELECTRICAL DRAWING INDEX

CONTROLS BY SEPARATE SHEET FOR REFERENCE ONLY

CAMPUS MAP

PROJECT LOCATION
SCIENCE HALL
<table>
<thead>
<tr>
<th>Control Device</th>
<th>Qty</th>
<th>Product Number</th>
<th>Manufacturer</th>
<th>Document Number</th>
<th>Description</th>
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<tr>
<td>Top Mounted Devices</td>
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<tr>
<td>TOP</td>
<td>14</td>
<td>567-352</td>
<td>SIEMENS</td>
<td>567-352</td>
<td>A3 PNEU PANEL 2422450</td>
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<td>Front Mounted Devices</td>
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<td>KG 1</td>
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<td>UNITED SECURITY</td>
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<td>AUTO VOICE/PUFFER DIALER</td>
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<td>AC-2P</td>
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<td>AC/DC ADAPTER 12V R/PLUG</td>
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<td>KG 1</td>
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<td>HI-1</td>
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<td>ISOLATION RELAY</td>
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<td>KG 1</td>
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<td>PP-1</td>
<td>POWER PACK FOR AVD</td>
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<td>PS 1</td>
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<td>SLS-12-007T</td>
<td>EMERSON</td>
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<td>POWER SUPPLY 120V, 12V-150VDC, DUAL RAIL</td>
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<td>BTS 1</td>
<td>20</td>
<td>MO209x1U</td>
<td>SQUARE D</td>
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<td>PUSH BUTTON, MOMENTARY, 30MM, RED/GRN/BK</td>
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<td>BTS 1</td>
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<td>MO209x2U</td>
<td>SQUARE D</td>
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<td>RACO</td>
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<td>SB 1</td>
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<td>DUPLEX RECEPTACLE 20A, 125VAC</td>
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<td>PMS15251500</td>
<td>POWERWAVE</td>
<td>PMS15251500</td>
<td>UPS 1500VA, 1500WATT</td>
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<td>UPS 1</td>
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<td>N9003</td>
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<td>POWER SUPPLY CORES 12/24 V, 6 FT</td>
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**TEST #1: NORMAL RUNNING ALARM**

START AND RUN GENERATOR FOR NORMAL MONTHLY TESTING. ONCE GENERATOR STARTED, GENERATOR INTERLOCK RELAY PROVIDES SIMIENS RENO PAGING AND GRAPHIC ALARMS AS SHOWN. "GENERATOR RUN STATUS = ON" AND "GENERATOR RUN STATUS = OFF".

**TEST #2: ALARM FAULT TEST**

GENERATOR OFF AND PANEL SELECTION SWITCH IN "AUTO"; MOVE SELECTOR SWITCH TO "MANUAL RUN"; (DELAY OCCURS THEN GENERATOR STARTS) NOW PUSH IN RED STOP BUTTON; THIS WILL FORCE GENERATOR INTO AN ALARM CONDITION. GENERATOR INTERLOCK RELAY PROVIDES SIMIENS RENO PAGING AND GRAPHIC ALARMS AS SHOWN. TO RESET ALARM, FULL OUT RED STOP BUTTON, SIENTOR SELECTOR SWITCH TO "AUTO". NOTE THAT GENERATOR SELECTOR SWITCH SHOULD ALWAYS BE IN THE "AUTO" POSITION.

"GENERATOR ALARM = ALARM" AND "GENERATOR ALARM = NORMAL".

**TEST #3: TANK RUPTURE ALARM**

PRESS AND HOLD THE MOMENTARY WALL MOUNTED "RUPTURE" PUSH BUTTON (PB). GENERATOR INTERLOCK RELAY PROVIDES SIMIENS RENO PAGING AND GRAPHIC ALARMS AS SHOWN. NOTE THAT THE RENO ALARM SHOULD BE BROADCASTED WITHIN 1 MINUTE AFTER PB ONCE COMPLETED. "FUEL TANK RUPTURE = ON" AND "FUEL TANK RUPTURE = OFF".

**TEST #4: 50% FUEL LEVEL ALARM**

FUEL LEVEL 50% TEST ACTIVATES BOTH THE LOCAL PHONE DIALER AND SIMIENS SYSTEM. CONTACT GLENN WILLIAMS (313-350-9195) AT DAW FUEL SUPPLY COMPANY (313-834-2500). INFORM GLENN THAT HE WILL RECEIVE A 50% FUEL CALL OUT FROM THE RESPECTIVE BUILDING. GLENN WILL BE STANDING BY AND WILL NEED TO CALL BACK THE WSI ONST TEMP PERSON ONCE EACH ALARM HAS BEEN RECEIVED. TEST PROCEDURE AS FOLLOWS: PRESS AND HOLD THE MOMENTARY WALL MOUNTED "50% TEST" PUSH BUTTON (PB). GENERATOR INTERLOCK RELAY PROVIDES PHONE DIALER, SIMIENS RENO PAGING AND GRAPHIC ALARMS AS SHOWN: NOTE THAT ALARM SHOULD BE BROADCASTED WITHIN 1 MINUTE. CONTINUE TO HOLD PB UNTIL GLENN RECEIVES, ACCEPTS AND THEN RETURNS HIS CONFIRMATION CALL THAT PHONE DIALER WAS RECEIVED. PHONE MESSAGE READS... WSI RESPECTIVE BUILDING GENERATOR STARTED, DELIVER FUEL WITHIN 4 HOURS.

"50% FUEL LEVEL = ALARM" AND "50% FUEL LEVEL = NORMAL".

NOTE: 2 MINUTE DELAY BEFORE RETURN TO NORMAL ON RENO ALARM.

**TEST #5: 80% FUEL LEVEL ALARM**

FUEL LEVEL 80% TEST ACTIVATES BOTH THE LOCAL PHONE DIALER AND SIMIENS SYSTEM. CONTACT GLENN WILLIAMS (313-350-9195) AT DAW FUEL SUPPLY COMPANY (313-834-2500). INFORM GLENN THAT HE WILL RECEIVE A 80% FUEL CALL OUT FROM THE RESPECTIVE BUILDING. GLENN WILL BE STANDING BY AND WILL NEED TO CALL BACK THE WSI ONSITE PERSON ONCE EACH ALARM HAS BEEN RECEIVED. TEST PROCEDURE AS FOLLOWS: PRESS AND HOLD THE MOMENTARY WALL MOUNTED "80% TEST" PUSH BUTTON (PB). GENERATOR INTERLOCK RELAY PROVIDES PHONE DIALER, SIMIENS RENO PAGING AND GRAPHIC ALARMS AS SHOWN: NOTE THAT ALARM SHOULD BE BROADCASTED WITHIN 1 MINUTE. CONTINUE TO HOLD PB UNTIL GLENN RECEIVES, ACCEPTS AND THEN RETURNS HIS CONFIRMATION CALL THAT PHONE DIALER WAS RECEIVED. PHONE MESSAGE READS... WSI RESPECTIVE BUILDING GENERATOR FUEL LEVEL LOW, DELIVER FUEL IMMEDIATELY.

"80% FUEL LEVEL = ALARM" AND "80% FUEL LEVEL = NORMAL".

NOTE: 2 MINUTE DELAY BEFORE RETURN TO NORMAL ON RENO ALARM.

**DOC MONITORING POINTS PER GENERATOR:**

- **GENERATOR RUN**
  - DIGITAL INPUT VIA DRY CONTACT
- **GENERATOR FAULT**
  - DIGITAL INPUT VIA DRY CONTACT
- **BATTERY CHARGER FAULT**
  - DIGITAL INPUT VIA DRY CONTACT

FOR REFERENCE ONLY
EDC MONITORING POINTS FOR FUEL STORAGE TANK:

FUEL LEVEL BOX  DIGITAL INPUT VIA DRY CONTACT
FUEL LEVEL SOX  DIGITAL INPUT VIA DRY CONTACT
TANK RUPTURE ALARM DIGITAL INPUT VIA DRY CONTACT
LOW DETECTION ALARM DIGITAL INPUT VIA DRY CONTACT
TANK LEVEL  ANALOG INPUT VIA 4-20MA SIGNAL

RENO — REMOTE ENUNCIATION THRU APD/SEE

SET UP RENO GROUP FOR GENERATOR, "COMP CTR GENERATOR"
1. SUPERVISOR PAGE (COMMAND CENTRAL)
2. OWNER DEFINED
3. OWNER DEFINED
4. OWNER DEFINED

DEFINE THE FOLLOWING POINTS FOR RENO

GENERATOR RUN — "GEN # IS RUNNING" (USE RUNNING AND OFF AS CHANGE OF STATES)
RETURN TO NORMAL — "GEN # IS OFF"

GENERATOR ALARM — "GEN # FAILED TO START"

LOW FUEL LEVEL (DAY TANK) — "GEN # ARE DAY TANKS NUMBERED"

SOX FUEL LEVEL — "FUEL TANK SOX ALARM"

BOX FUEL LEVEL — "FUEL TANK BOX ALARM"

NO ATS POINTS DEFINED FOR RENO

ANALOG PHONE DIALER INFORMATION

THE FOLLOWING FOUR NUMBERS TO BE PROGRAMMED INTO THE "DIALER" PANEL

1. ATLAS OIL COMPANY (FUEL DELIVERY) 800-878-2000
2. KATIE WELLMAN (ACCOUNT REPRESENTATIVE)—(OFFICE) 313-665-0261
   (CELL) 313-932-6883
3. WSU SUPERVISOR (COMMAND CENTER) 313-577-4844
4. WSU PUBLIC SAFETY (NON-EMERGENCY) 313-577-2224

FOR REFERENCE ONLY

REVISION HISTORY

001A
Reference Only

This drawing is for reference only. This drawing must be used only to add additional detail to what is being provided by the engineer of record. Not all terminations, wire pulls or interlocks are shown in these diagrams as this will be dependent on the equipment purchased by others. Once equipment submittals are secured, the final drawings will reflect all work necessary to provide a full and functioning control system as outlined in the plans and spec. It is the bidders responsibility to review all contract documents provided by engineer of record to ensure that a complete scope is bid. Quantity of items and location of devices/panels that are not clearly spelled out in the drawings must be field verified to ensure that this project is properly bid. It is assumed that the bidder of the temperature controls electrical installation is knowledgeable in such work and requires minimal guidance. Siemens assumes no responsibility or risk for bidders not fully understanding the scope or extend of the work required.
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