Bret,

This email is to summarize our discussion from the second week of January. We must have a phone conference to clarify the things listed below and help Gary get things finished up and ready for the outage.

Comments on the design from Gary Mercer.

1. After review of the schematic proposed for the chiller pumps and control Hand-Off-Auto logic we note the following:
   a. Gary is bringing in the Flow switch points but not the MCC running contacts. He must bring a wire pair from each of the four MCC buckets that feed the four pumps (I know that there is a NC contact available on each because that is what I am temporarily using in my alarm).
   b. The circuit for the non-critical alarm must go to terminals 21 & 22 (Add more terminals for future capacity).

2. Reviewing the alarms:

   a. We have Amber LED lights (See list of suggested pilot devices) for the alarm lights.
   b. R1 as well as RC should be picked up when their corresponding switches are in the "OFF" position. Parallel the contacts off both R1 and RC and wire to a pair of terminals on the terminal boards.
   c. There must be provided a table telling the type of contacts on the rotary switch. This is standard in all our other drawings.
      for example:

on	off	auto
NC	NC	NC

   d. Again, Gary must bring all four signals from the four (4) MCC buckets into the control panel (I know he can use the NC contacts that I am temporarily using on the alarm.

   e. There will be two alarms sent downstairs:

      One of them will be NON-CRITICAL == (any switch in "off" position OR any standby pump has been started).

      The second alarm will be CRITICAL == (Apower-off AND Bpower-off) OR (Aflow-off AND Bflow-off) OR (Cpower-off AND Dpower-off) OR (Cflow-off AND Dflow-off).

3. Parts to be used:

Terminal Block: our stock number 24838.
Green indicating lights: our stock number 22722.
Red indicating lights: our stock number 18498.
Amber indicating lights: our stock number 117.
Rotary switch:

From: Bret Kent
To: Nathan Crop
Date: 1/17/2006 7:23:53 AM
Subject: Re: action points on Gary Mercers design

Looks good. Do you want me to forward this to Gary and set up a conference call? If so I will look in TIMS and get manufactures and part numbers for the parts you suggested. Let me know.

Bret

>>> Nathan Crop 1/16/2006 5:37:00 PM >>>
Bret,

This email is to summarize our discussion from the second week of January. We must have a phone conference to clarify the things listed below and help Gary get things finished up and ready for the outage.
Comments on the design from Gary Mercer.
1. After review of the schematic proposed for the chiller pumps and control Hand-Off-Auto logic we note the following:
a. Gary is bringing in the Flow switch points but not the MCC running contacts. He must bring a wire pair from each of the four MCC buckets that feed the four pumps (I know that there is a NC contact available on each because that is what I am temporarily using in my alarm).
b. The circuit for the non-critical alarm must go to terminals 21 & 22 (Add more terminals for future capacity).

2. Reviewing the alarms:

a. We have Amber LED lights (See list of suggested pilot devices) for the alarm lights.
b. R1 as well as RC should be picked up when their corresponding switches are in the "OFF" position. Parallel the contacts off both R1 and RC and wire to a pair of terminals on the terminal boards.
c. There must be provided a table telling the type of contacts on the rotary switch. This is standard in all our other drawings.
for example:
on offauto
NCNCNC

d. Again, Gary must bring all four signals from the four (4) MCC buckets into the control panel (I know he can use the NC contacts that I am temporarily using on the alarm.

e. There will be two alarms sent downstairs:

One of them will be NON-CRITICAL == (any switch in "off" position OR any standby pump has been started).

The second alarm will be CRITICAL == (Apower-off AND Bpower-off) OR (Aflow-off AND Bflow-off) OR (Cpower-off AND Dpower-off) OR (Cflow-off AND Dflow-off).

3. Parts to be used:

Terminal Block: our stock number 24838.
Green indicating lights: our stock number 22722.
Red indicating lights: our stock number 18498.
Amber indicating lights: our stock number 117.
Rotary switch: Use a Allen Bradley (800 series) 3 position switch with sufficient aux contacts or Micro-switch brand. These are the brands that we have in stock and would easily be able to re-produce if needed in the future.
Relay that Gary suggested will be fine.

Nathan Crop

Electrical Engineer
850 West Brush Wellman Road
Delta, UT 84624-9522
Telephone (435) 864-6483
home: (435) 864-8429
Fax (435) 864-6670
E-mail: nathan-c@ipsc.com

Looks good. Do you want me to forward this to Gary and set up a conference call? If so I will look in TIMS and get manufactures and part numbers for the parts you suggested. Let me know.

Bret

>>> Nathan Crop 1/16/2006 5:37:00 PM >>>
Bret,

This email is to summarize our discussion from the second week of January.
We must have a phone conference to clarify the things listed below and help Gary get things finished up and ready for the outage.
Comments on the design from Gary Mercer.
1. After review of the schematic proposed for the chiller pumps and control Hand-Off-Auto logic we note the following:
a. Gary is bringing in the Flow switch points but not the MCC running contacts. He must bring a wire pair from each of the four MCC buckets that feed the four pumps (I know that there is a NC contact available on each because that is what I am temporarily using in my alarm).
b. The circuit for the non-critical alarm must go to terminals 21 & 22 (Add more terminals for future capacity).

2. Reviewing the alarms:

a. We have Amber LED lights (See list of suggested pilot devices) for the alarm lights.
b. R1 as well as RC should be picked up when their corresponding switches are in the "OFF" position. Parallel the contacts off both R1 and RC and wire to a pair of terminals on the terminal boards.
c. There must be provided a table telling the type of contacts on the rotary switch. This is standard in all our other drawings.
for example:
on offauto
NCNCNC

d. Again, Gary must bring all four signals from the four (4) MCC buckets into the control panel (I know he can use the NC contacts that I am temporarily using on the alarm.

e. There will be two alarms sent downstairs:

One of them will be NON-CRITICAL == (any switch in "off" position OR any standby pump has been started).

The second alarm will be CRITICAL == (Apower-off AND Bpower-off) OR (Aflow-off AND Bflow-off) OR (Cpower-off AND Dpower-off) OR (Cflow-off AND Dflow-off).

3. Parts to be used:

Terminal Block: our stock number 24838.
Green indicating lights: our stock number 22722.
Red indicating lights: our stock number 18498.
Amber indicating lights: our stock number 117.
Rotary switch: Use a Allen Bradley (800 series) 3 position switch with sufficient aux contacts or Micro-switch brand. These are the brands that we have in stock and would easily be able to re-produce if needed in the future.
Relay that Gary suggested will be fine.

Nathan Crop

IP7015560

Electrical Engineer
850 West Brush Wellman Road
Delta, UT 84624-9522
Telephone (435) 864-6483
home: (435) 864-8429
Fax (435) 864-6670
E-mail: nathan-c@ipsc.com

IP7015561

From: "Gary Mercer" <GMercer@centry.net>
To: "Bret Kent" <Bret-K@ipsc.com>
Date: 3/3/2006 12:31:06 PM
Subject: Chiller CW Pump Panel Drawings

Attached is the complete drawing package for the chiller pump panel.

Gary W Mercer
CEntry Constructors and Engineers
9020 Sandy Parkway
Sandy, Utah 84070

Phone (801) 233-5729

CC: "Nathan Crop" <Nathan-C@ipsc.com>

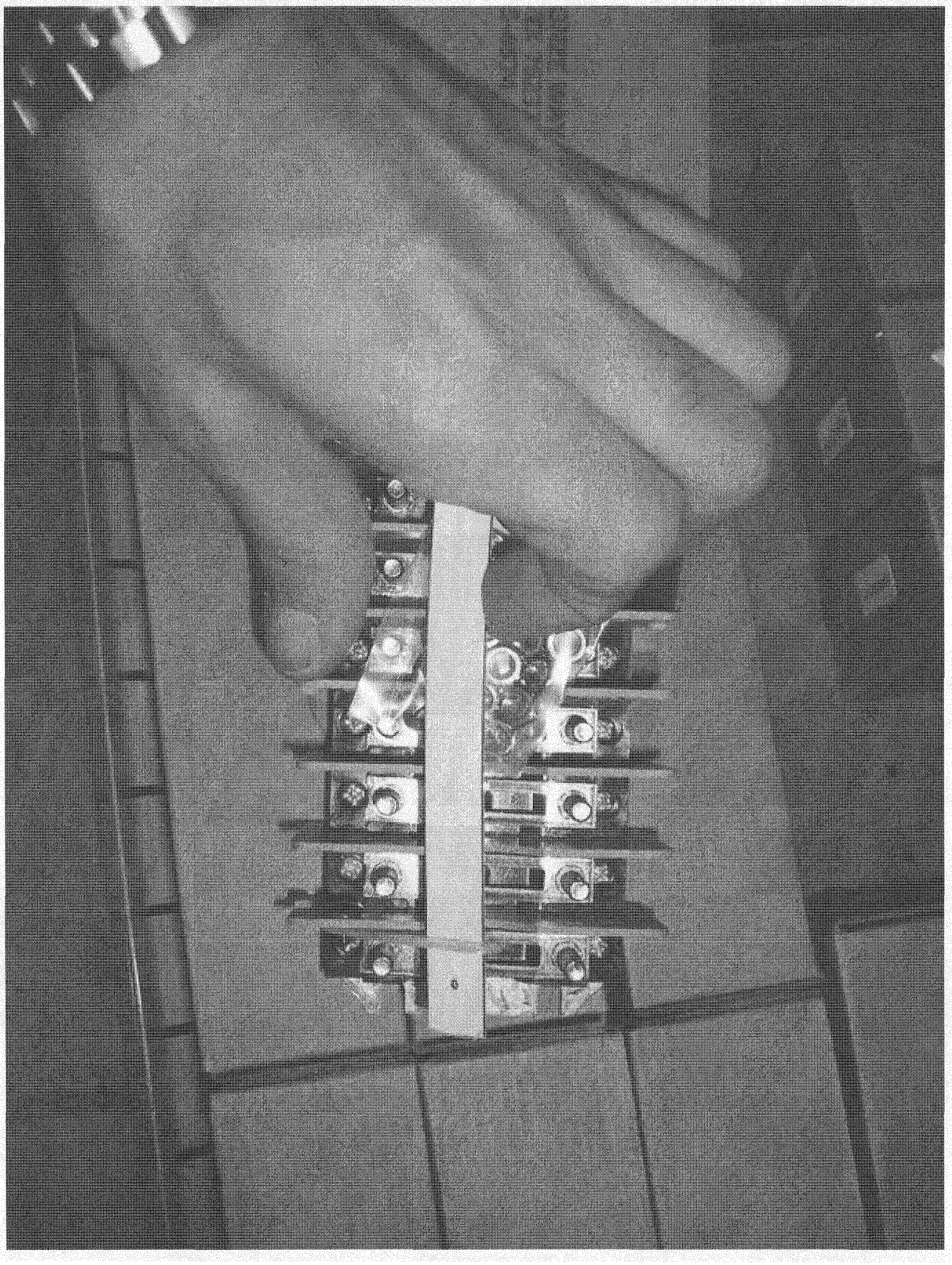
Attached is the complete drawing package for the chiller pump panel.

Gary W Mercer
CEntry Constructors and Engineers
9020 Sandy Parkway
Sandy, Utah 84070

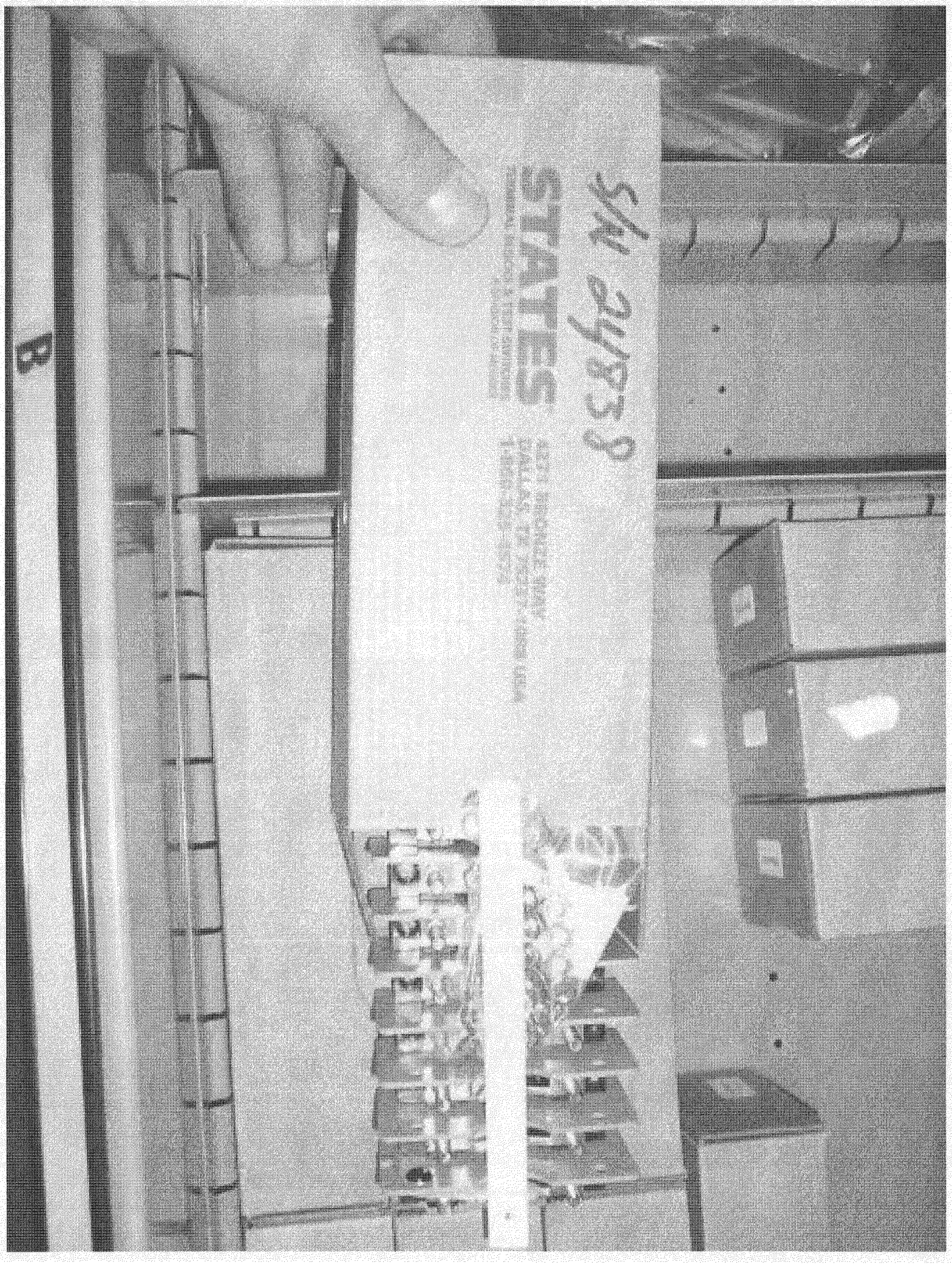
Phone (801) 233-5729

IP7015563

IP7015564



IP7015565



IP7015566

```
File      : 70116_01.GDM
Time/Date : Thu Jan 174 11:26:25 2005

IPP
TYPE-C PIB
1106-6007F
03-05/02/15
FAST TASK : 4
LANGUAGES : UK,
SYMBOLS   : YES
USERPROG  : NO
CORE OIS  : 0000.0000
CUST OIS  : 0000.0000
FIR0 OIS  : 0000.0000
FIR1 OIS  : 0000.0000
FIR2 OIS  : 0000.0000
ENH0 OIS  : 0000.0000
ENH1 OIS  : 0000.0000
ENH2 OIS  : 0000.0000
ENH3 OIS  : 0000.0000

DEF TABLE A1.0=1,0,0,0,0,ID FAN OFF
DEF TABLE A1.1=1,0,0,0,0,PLC TURNING GEAR
DEF TABLE A1.2=1,0,0,0,0,PLC NORMAL SPEED
DEF TABLE A1.3=1,0,0,0,0,PLC RUN
DEF TABLE A1.4=1,0,0,0,0,O/P DIS CLOSED
DEF TABLE A1.5=1,0,0,0,0,REAC FAN 1 OK
DEF TABLE A1.6=1,0,0,0,0,REAC FAN 2 OK
DEF TABLE A1.7=1,0,0,0,0,REAC HIGH TEMP
DEF TABLE A2.0=1,0,0,0,0,SLAVE I/P
DEF TABLE A2.1=1,0,0,0,0,OTH CH RUNNING
DEF TABLE A2.2=1,0,0,0,0,I/P XFMR A O/T
DEF TABLE A2.3=1,0,0,0,0,I/P XFMR B O/T
DEF TABLE A2.4=1,0,0,0,0,I/P XFMR C O/T
DEF TABLE A2.5=1,0,0,0,0,DRIVE RESET
DEF TABLE A2.6=1,0,0,0,0,GATE PSU ALRM OK
DEF TABLE A2.7=1,0,0,0,0,GATE PSU TRIP OK
DEF TABLE A2.8=1,0,0,0,0,SPARE A2.8
DEF TABLE A2.9=1,0,0,0,0,SPARE A2.9
DEF TABLE A2.10=1,0,0,0,0,SPARE A2.10
DEF TABLE A2.11=1,0,0,0,0,SUPP SRGE CCT OK
DEF TABLE A2.12=1,0,0,0,0,HV DOORS CLOSED
DEF TABLE A2.13=1,0,0,0,0,CONTROL PSU'S OK
DEF TABLE A2.14=1,0,0,0,0,GROUND FAULT OK
DEF TABLE A2.15=1,0,0,0,0,EXC CONTROLER OK
DEF TABLE A4.0=1,0,0,0,0,COOL RES LEV TRP
DEF TABLE A4.1=1,0,0,0,0,COOL RES LEV ALM
DEF TABLE A4.2=1,0,0,0,0,COOL LO FLOW TRP
DEF TABLE A4.3=1,0,0,0,0,COOL LO FLOW ALM
DEF TABLE A4.4=1,0,0,0,0,COOL HI COND TRP
DEF TABLE A4.5=1,0,0,0,0,COOL HI TEMP TRP
DEF TABLE A4.6=1,0,0,0,0,COOL PAN H20 ALM
DEF TABLE A4.7=1,0,0,0,0,SPARE A4.7
DEF TABLE A4.8=1,0,0,0,0,COOL PUMP 1 O/L
DEF TABLE A4.9=1,0,0,0,0,COOL PUMP 2 O/L
```

```
DEF TABLE A4.10=1,0,0,0,0,SPARE A4.10
DEF TABLE A4.11=1,0,0,0,0,SPARE A4.11
DEF TABLE A4.12=1,0,0,0,0,SPARE A4.12
DEF TABLE A4.13=1,0,0,0,0,SPARE A4.13
DEF TABLE A4.14=1,0,0,0,0,SPARE A4.14
DEF TABLE A4.15=1,0,0,0,0,SPARE A4.15
DEF TABLE A32.0=1,0,0,0,0,E-STOP
DEF TABLE A32.1=1,0,0,0,0,ENC 1
DEF TABLE A32.2=1,0,0,0,0,ENC 2
DEF TABLE A32.3=1,0,0,0,0,ENC 3
DEF TABLE A32.4=1,0,0,0,0,SPARE
DEF TABLE A32.5=1,0,0,0,0,SPARE
DEF TABLE A32.6=1,0,0,0,0,SPARE
DEF TABLE A32.7=1,0,0,0,0,HV BRKR CLOSED
DEF TABLE A35.0=1,0,0,0,0,BATTERY OK
DEF TABLE A35.1=1,0,0,0,0,WATCHDOG TRIP
DEF TABLE A35.2=1,0,0,0,0,SIGMA EPF
DEF TABLE B1.8=1,0,0,0,0,DRIVE HLTHY DHR
DEF TABLE B1.9=1,0,0,0,0,DRIVE ALARM DAR
DEF TABLE B1.10=1,0,0,0,0,HV NOT TRIP IBT
DEF TABLE B1.11=1,0,0,0,0,CLOSE EXC FCC
DEF TABLE B1.12=1,0,0,0,0,CLSE OP DIS DIS
DEF TABLE B1.13=1,0,0,0,0,RL1 SPARE
DEF TABLE B1.14=1,0,0,0,0,RL2 SPARE
DEF TABLE B1.15=1,0,0,0,0,RL3 SPARE
DEF TABLE B3.0=1,0,0,0,0,ZERO SPEED ZSR
DEF TABLE B3.1=1,0,0,0,0,MIN SPEED MSR
DEF TABLE B3.2=1,0,0,0,0,TRNG GEAR TGS
DEF TABLE B3.3=1,0,0,0,0,SPD REF LOSS SRF
DEF TABLE B3.4=1,0,0,0,0,SLAVE OUTPUT SOR
DEF TABLE B3.5=1,0,0,0,0,DRIVE RUNING DRR
DEF TABLE B3.6=1,0,0,0,0,RL4 SPARE
DEF TABLE B3.7=1,0,0,0,0,RL5 SPARE
DEF TABLE B3.8=1,0,0,0,0,COOL PMP 1 START
DEF TABLE B3.9=1,0,0,0,0,COOL PMP 2 START
DEF TABLE B3.10=1,0,0,0,0,COOL DI H2O SV
DEF TABLE B3.11=1,0,0,0,0,RL6 SPARE
DEF TABLE B3.12=1,0,0,0,0,RL7 SPARE
DEF TABLE B3.13=1,0,0,0,0,RL8 SPARE
DEF TABLE B3.14=1,0,0,0,0,RL9 SPARE
DEF TABLE B3.15=1,0,0,0,0,RL10 SPARE
DEF TABLE C0=2147483647,-2147483648,0,0,0,SUPPLY CURENT FB
DEF TABLE C1=2147483647,-2147483648,0,0,0,MACH CURRENT FB
DEF TABLE C2=2147483647,-2147483648,0,0,0,SPARE
DEF TABLE C3=2147483647,-2147483648,0,0,0,SPARE
DEF TABLE C4=2147483647,-2147483648,0,0,0,MAINS 1 VOLTS
DEF TABLE C5=2147483647,-2147483648,0,0,0,MAINS 2 VOLTS
DEF TABLE C6=2147483647,-2147483648,0,0,0,TORQUE REF I/P
DEF TABLE C7=2147483647,-2147483648,0,0,0,EXCITER CURRENT
DEF TABLE C8=2147483647,-2147483648,0,0,0,480V SUPPLY
DEF TABLE C11=2147483647,-2147483648,0,0,0,A STATOR VOLTS
DEF TABLE C12=2147483647,-2147483648,0,0,0,B STATOR VOLTS
DEF TABLE C14=2147483647,-2147483648,0,0,0,PLC SPEED REF
DEF TABLE C15=2147483647,-2147483648,0,0,0,COOL TEMPERATURE
DEF TABLE C16=2147483647,-2147483648,0,0,0,COOL CONDUCTIVIT
DEF TABLE C17=2147483647,-2147483648,0,0,0,COOL FLOW
DEF TABLE D0=2147483647,-2147483648,0,0,0,EXC CONTRLER REF
```

```
DEF TABLE D1=2147483647,-2147483648,0,0,0,TORQUE REF O/P
DEF TABLE D2=2147483647,-2147483648,0,0,0,SPARE
DEF TABLE D3=2147483647,-2147483648,0,0,0,SPARE
DEF TABLE D4=2147483647,-2147483648,0,0,0,MOTOR SPEED F/B
DEF TABLE D5=2147483647,-2147483648,0,0,0,MOTOR CURENT F/B
DEF TABLE D6=2147483647,-2147483648,0,0,0,MOTOR VOLTS F/B
DEF TABLE D7=2147483647,-2147483648,0,0,0,SPARE
DEF TABLE E21=2147483647,-2147483648,0,0,0,CHNL ID SETTING
DEF TABLE G1.0=1,0,0,0,0,TRIP FAULT
DEF TABLE G1.1=1,0,0,0,0,TRIPS HEALTHY
DEF TABLE G1.10=1,0,0,0,0,PRESET V/F RAMP
DEF TABLE G1.11=1,0,0,0,0,RESET
DEF TABLE G1.12=1,0,0,0,0,TRIP HISTORY
DEF TABLE G7=2147483647,-2147483648,0,0,0,SIGMA TEMP
DEF TABLE G11=2147483647,-2147483648,0,0,0,HDLC MSGS RECVD
DEF TABLE G12.0=1,0,0,0,0,HDLC CARD FAIL
DEF TABLE G13=2147483647,-2147483648,0,0,0,HDLC AND W600'S
DEF TABLE G14=2147483647,-2147483648,0,0,0,OPTO LINK COMP
DEF TABLE G15.0=1,0,0,0,0,OPTO LINK FAIL
DEF TABLE G16.0=1,0,0,0,0,12P TRQ REF HI
DEF TABLE G16.1=1,0,0,0,0,12P TRQ REF LO
DEF TABLE G23.10=1,0,0,0,0,DIS PARITY TRIPS
DEF TABLE G30=2147483647,-2147483648,0,0,0,CONV DIAG MASK
DEF TABLE G42.0=1,0,0,0,0,NOT SYNCED
DEF TABLE G42.1=1,0,0,0,0,SYNC FRQ HIGH OK
DEF TABLE G42.2=1,0,0,0,0,SYNC FRQ LOW OK
DEF TABLE G42.3=1,0,0,0,0,NATURAL COM OK
DEF TABLE G42.4=1,0,0,0,0,IN MODE 1
DEF TABLE G42.7=1,0,0,0,0,CHECK START FAIL
DEF TABLE G42.9=1,0,0,0,0,ENCLESS START OK
DEF TABLE G42.10=1,0,0,0,0,REMOTE STOP
DEF TABLE G50.0=1,0,0,0,0,PULSES RELEASED
DEF TABLE G50.1=1,0,0,0,0,STARTED
DEF TABLE G50.2=1,0,0,0,0,CONTROL AVLBLE
DEF TABLE G50.4=1,0,0,0,0,L128 PULS RELSED
DEF TABLE G50.6=1,0,0,0,0,START SEQUENCE
DEF TABLE G50.7=1,0,0,0,0,LCL START CHAIN
DEF TABLE G50.8=1,0,0,0,0,REM START CHAIN
DEF TABLE G50.9=1,0,0,0,0,STOPPED
DEF TABLE G50.11=1,0,0,0,0,SLECT RMP RATE2
DEF TABLE G51.0=1,0,0,0,0,OVERVOLTS OK
DEF TABLE G51.1=1,0,0,0,0,MOTOR OVERSPEED
DEF TABLE G51.2=1,0,0,0,0,SUP PHASE REF OK
DEF TABLE G51.3=1,0,0,0,0,AUX 480V SUP LO
DEF TABLE G51.4=1,0,0,0,0,PIB PLUG INTLK
DEF TABLE G51.9=1,0,0,0,0,MOTOR OVER FLUX
DEF TABLE G51.10=1,0,0,0,0,UNDER FLUX OK
DEF TABLE G51.11=1,0,0,0,0,PIB CONFIG OK
DEF TABLE G51.13=1,0,0,0,0,EXCITER OK
DEF TABLE G52.0=1,0,0,0,0,STARTED
DEF TABLE G52.7=1,0,0,0,0,ZCD OK
DEF TABLE G54.0=1,0,0,0,0,KEYPAD REM/LOCAL
DEF TABLE G54.1=1,0,0,0,0,DRIVE IN LOCAL
DEF TABLE G54.2=1,0,0,0,0,DRIVE IN REMOTE
DEF TABLE G56.2=1,0,0,0,0,IN 1ST SKIP BAND
DEF TABLE G56.3=1,0,0,0,0,IN 2ND SKIP BAND
DEF TABLE G56.4=1,0,0,0,0,SKP BND ACL RATE
```

```
DEF TABLE G56.5=1,0,0,0,0,REF IN SKIP 1
DEF TABLE G56.6=1,0,0,0,0,REF IN SKIP 2
DEF TABLE G56.7=1,0,0,0,0,IN SKP1 FROM BLW
DEF TABLE G56.8=1,0,0,0,0,IN SKP1 FROM ABV
DEF TABLE G56.9=1,0,0,0,0,IN SKP2 FROM BLW
DEF TABLE G56.10=1,0,0,0,0,IN SKP2 FROM ABV
DEF TABLE G60.0=1,0,0,0,0,12 PULSE MASTER
DEF TABLE G60.1=1,0,0,0,0,12 PULSE SLAVE
DEF TABLE G60.2=1,0,0,0,0,6 PULSE MASTER
DEF TABLE G60.3=1,0,0,0,0, ANY MASTER
DEF TABLE G62=2147483647,-2147483648,0,0,0,SOR SET TMR
DEF TABLE G63=2147483647,-2147483648,0,0,0,GROUND FAULT TMR
DEF TABLE G70.0=1,0,0,0,0,IN MODE 1
DEF TABLE G80=20000,-20000,2,0,1,CURRENT REF
DEF TABLE G81=20000,-20000,2,0,1,ADJSTD I REF
DEF TABLE G82=2147483647,-2147483648,2,0,1,I LIMIT MAX
DEF TABLE G83=2147483647,-2147483648,0,0,0,SCALED TQ REF IN
DEF TABLE G85=20000,-20000,2,0,1,SKIP BAND REF
DEF TABLE G88=2147483647,-2147483648,0,0,0,LIMITED BETA REF
DEF TABLE G90=20000,-20000,2,0,1,SPEED REF
DEF TABLE G91=20000,-20000,2,0,1,LIMITED SPD REF
DEF TABLE G92=20000,-20000,2,0,1,KEYPAD SPEED REF
DEF TABLE G94=32767,-32767,0,0,0,SPARE OUTPUT D2
DEF TABLE G95=32767,-32767,0,0,0,MOTOR VOLTAGE
DEF TABLE G96=32767,-32767,0,0,0,DC LINK CURRENT
DEF TABLE G97=600,-600,0,0,0,V/F TRIM REF
DEF TABLE G98=2147483647,-2147483648,0,0,0,I REF STEP I/P
DEF TABLE G110.0=1,0,0,0,0,RELEASE V/F REG
DEF TABLE G110.2=1,0,0,0,0,INHIBIT V/F REG
DEF TABLE G111=20000,-20000,2,0,1,LAST 1 SEC N REF
DEF TABLE G112=20000,-20000,2,0,1,LAST 2 SEC N REF
DEF TABLE G113=20000,-20000,2,0,1,LAST 3 SEC N REF
DEF TABLE G114=20000,-20000,2,0,1,LAST 4 SEC N REF
DEF TABLE G115=20000,-20000,2,0,1,LAST 5 SEC N REF
DEF TABLE G150=2147483647,-2147483648,0,0,0,RSET ONE SHOT
DEF TABLE G152=2147483647,-2147483648,0,0,0,COUNT ONE
DEF TABLE G154=2147483647,-2147483648,0,0,0,RST ONE SHOT LEN
DEF TABLE G155=2147483647,-2147483648,0,0,0,PULSE LENGTH
DEF TABLE G181=2147483647,-2147483648,0,0,0,PULSE RELEASE DL
DEF TABLE G182=2147483647,-2147483648,0,0,0,START FAIL TMR
DEF TABLE G183=2147483647,-2147483648,0,0,0,START FAIL VAL
DEF TABLE G184=2147483647,-2147483648,0,0,0,START FAIL MIN F
DEF TABLE G259=2147483647,-2147483648,0,0,0,FILTERED SUPPLY
DEF TABLE G269=2147483647,-2147483648,0,0,0,FILTERED SUPP V
DEF TABLE G300.0=1,0,0,0,0,SURGE CCT ALARM
DEF TABLE G300.1=1,0,0,0,0,REAC FAN 1 FAIL
DEF TABLE G300.2=1,0,0,0,0,REAC FAN 2 FAIL
DEF TABLE G300.3=1,0,0,0,0,BOTH REAC FANS
DEF TABLE G300.4=1,0,0,0,0,START FAIL TRIP
DEF TABLE G300.5=1,0,0,0,0,MODULE 128 PROT
DEF TABLE G300.6=1,0,0,0,0,6 PLS EXC FAIL
DEF TABLE G300.8=1,0,0,0,0,SUPPLY HI V TRIP
DEF TABLE G300.9=1,0,0,0,0,INV LO V  TRIP
DEF TABLE G300.10=1,0,0,0,0,INV HI V TRIP
DEF TABLE G300.11=1,0,0,0,0,INV HIFREQ TRIP
DEF TABLE G300.14=1,0,0,0,0,MODE1 ENCDR TRIP
DEF TABLE G300.15=1,0,0,0,0,RUN FAIL TRIP
```

```
DEF TABLE G301.0=1,0,0,0,0,LCL STOP REQ
DEF TABLE G301.1=1,0,0,0,0,LOCAL STOP FLT
DEF TABLE G301.7=1,0,0,0,0,SUPPLY LO V ALRM
DEF TABLE G301.8=1,0,0,0,0,SUPPLY HI V ALRM
DEF TABLE G301.14=1,0,0,0,0,MODE2 ENCD ALARM
DEF TABLE G302.4=1,0,0,0,0,SPD RAMP RELEASE
DEF TABLE G320.0=1,0,0,0,0,CLR LOCL RUN
DEF TABLE G320.2=1,0,0,0,0,REM STOP REQ
DEF TABLE G320.3=1,0,0,0,0,CLR REM RUN
DEF TABLE G320.4=1,0,0,0,0,CLR ALL RUNS
DEF TABLE G320.6=1,0,0,0,0,SLOW SPEED
DEF TABLE G321.1=1,0,0,0,0,ANY TRIP
DEF TABLE G321.2=1,0,0,0,0,CHANNEL ALARM
DEF TABLE G321.3=1,0,0,0,0,DIAGNOSTICS ALM
DEF TABLE G321.4=1,0,0,0,0,DIAGNOSTICS TRIP
DEF TABLE G321.5=1,0,0,0,0,DIAGNOSTICS FLT
DEF TABLE G400.0=1,0,0,0,0,COOL RES LVL TRP
DEF TABLE G400.1=1,0,0,0,0,COOL RES LVL ALM
DEF TABLE G400.2=1,0,0,0,0,COOL LOW FLO TRP
DEF TABLE G400.3=1,0,0,0,0,COOL LOW FLO ALM
DEF TABLE G400.4=1,0,0,0,0,COOL HI COND TRP
DEF TABLE G400.5=1,0,0,0,0,COOL HI COND ALM
DEF TABLE G400.6=1,0,0,0,0,COOL HI TEMP TRP
DEF TABLE G400.7=1,0,0,0,0,COOL HI TEMP ALM
DEF TABLE G400.10=1,0,0,0,0,PUMP 1 ALARM
DEF TABLE G400.11=1,0,0,0,0,PUMP 2 ALARM
DEF TABLE G400.13=1,0,0,0,0,COOL COND ALM
DEF TABLE G400.14=1,0,0,0,0,COOL TEMP ALM
DEF TABLE G400.15=1,0,0,0,0,NO HONEYWELL SIG
DEF TABLE G401=2147483647,-2147483648,0,0,0,COOL RES TRP TMR
DEF TABLE G402=2147483647,0,0,0,3,COOL RES TRP DEL
DEF TABLE G403=2147483647,-2147483648,0,0,0,COOL RES ALM TMR
DEF TABLE G404=2147483647,0,0,0,3,COOL RES ALM DEL
DEF TABLE G405=2147483647,-2147483648,0,0,0,COOL FLO TRP TMR
DEF TABLE G406=2147483647,0,0,0,3,COOL FLO TRP DEL
DEF TABLE G407=2147483647,-2147483648,0,0,0,COOL FLO ALM TMR
DEF TABLE G408=2147483647,0,0,0,3,COOL FLO ALM DEL
DEF TABLE G409=2147483647,-2147483648,0,0,0,COOL CND TRP TMR
DEF TABLE G410=2147483647,0,0,0,3,COOL CND TRP DEL
DEF TABLE G411=2147483647,-2147483648,0,0,0,COOL CND ALM TMR
DEF TABLE G412=2147483647,0,0,0,3,COOL CND ALM DEL
DEF TABLE G413=2147483647,-2147483648,0,0,0,COOL TMP TRP TMR
DEF TABLE G414=2147483647,0,0,0,3,COOL TMP TRP DEL
DEF TABLE G415=2147483647,-2147483648,0,0,0,COOL TMP ALM TMR
DEF TABLE G416=2147483647,0,0,0,3,COOL TMP ALM DEL
DEF TABLE G417=2147483647,0,0,864000,4,COOL CHPOVR SECS
DEF TABLE G420=2147483647,0,0,1000,4,COOL FLO CHPOVR
DEF TABLE G430=2147483647,-2147483648,0,0,0,COOL COND AL SP
DEF TABLE G431=2147483647,-2147483648,0,0,0,COOL COND AL HYS
DEF TABLE G432=2147483647,-2147483648,0,0,0,COOL TEMP AL SP
DEF TABLE G433=2147483647,-2147483648,0,0,0,COOL TEMP AL HYS
DEF TABLE G434=2147483647,-2147483648,0,0,0,COND/TMP SIG LOS
DEF TABLE G450=2147483647,-2147483648,0,0,0,SIG BAT TIMER
DEF TABLE G451=2147483647,-2147483648,0,0,0,SIG BAT TIME DEL
DEF TABLE G452.0=1,0,0,0,0,SIG BAT OK
DEF TABLE G452.1=1,0,0,0,0,ENABLE HMI ALMS
DEF TABLE G453=2147483647,-2147483648,0,0,0,HMI ALM DEL
```

```
DEF TABLE G454=2147483647,-2147483648,0,0,0,HMI ALM DEL TIME
DEF TABLE G460=2147483647,-2147483648,1,0,12,UPS SUP MONITOR
DEF TABLE G461=2000,0,3,2000,0,CONDUCTIVITY US/
DEF TABLE G462=2147483647,-2147483648,0,0,0,RUN FLT DEL
DEF TABLE G463=2147483647,-2147483648,0,0,0,RUN FLT DEL VAL
DEF TABLE G500.0=1,0,0,0,0,LTCHD SUPP 1 O/C
DEF TABLE G500.1=1,0,0,0,0,LTCHD MACH 1 O/C
DEF TABLE G500.2=1,0,0,0,0,UNLCHD SUP1 O/C
DEF TABLE G500.3=1,0,0,0,0,UNLCHD MAC1 O/C
DEF TABLE G500.4=1,0,0,0,0,LTCHD S1/M1 PRTY
DEF TABLE G501.0=1,0,0,0,0,SUPP1 O/CURR OK
DEF TABLE G501.1=1,0,0,0,0,MACH 1 O/CURR OK
DEF TABLE G501.2=1,0,0,0,0,OVERCURRENT OK
DEF TABLE G502.0=1,0,0,0,0,BOTH O/CURRENT
DEF TABLE G503.0=1,0,0,0,0,START AUTO RESET
DEF TABLE G503.1=1,0,0,0,0,RESTARTING
DEF TABLE G503.2=1,0,0,0,0,RESET MOD 128
DEF TABLE G503.3=1,0,0,0,0,COUNTED FOUR
DEF TABLE G503.5=1,0,0,0,0,FIFTEEN MINS UP
DEF TABLE G510=2147483647,-2147483648,0,0,3,SUP1 O/C TIMER
DEF TABLE G511=500,5,0,5,3,SUP1 O/C TIME
DEF TABLE G512=2147483647,-2147483648,0,0,3,MACH1 O/C TIM
DEF TABLE G513=500,5,0,5,3,MACH1 O/C TIME
DEF TABLE G514=2147483647,-2147483648,0,0,3,BOTH O/C TIMER
DEF TABLE G515=2147483647,-2147483648,0,0,3,BOTH O/C TIME
DEF TABLE G516=2147483647,-2147483648,0,0,3,RESTART WAIT
DEF TABLE G517=2147483647,-2147483648,0,0,3,RSTART WAIT TIME
DEF TABLE G518=2147483647,-2147483648,0,0,3,RESTART PULSE CN
DEF TABLE G519=2147483647,-2147483648,0,0,3,RST M128 PULSE D
DEF TABLE G520=2147483647,-2147483648,0,0,3,RST M128 PULSE
DEF TABLE G521=2147483647,-2147483648,0,0,0,RST LENGTH
DEF TABLE G522=2147483647,-2147483648,0,0,0,AUTO REST CNTR
DEF TABLE G523=5,0,0,0,0,RESTART ATTEMPTS
DEF TABLE G524=2147483647,-2147483648,0,0,4,ELAPSED TIME
DEF TABLE G525=2147483647,-2147483648,0,0,4,ONE MIN TIME
DEF TABLE G527.0=1,0,0,0,0,SET SUP1 FLT
DEF TABLE G528.0=1,0,0,0,0,SET MACH1 FLT
DEF TABLE G531=2147483647,-2147483648,0,0,3,SUP1 FLT TIME
DEF TABLE G532=2147483647,-2147483648,0,0,0,SWARE O/C LEVEL
DEF TABLE G533=2147483647,-2147483648,0,0,3,O/CURRENT THRESH
DEF TABLE G534=2147483647,-2147483648,0,0,0,MACH O/C CNTR
DEF TABLE G536=2147483647,-2147483648,0,0,3,MACH1 FLT TIME
DEF TABLE G538=2147483647,-2147483648,0,0,0,SUPP O/C CNTR
DEF TABLE G540=2147483647,-2147483648,0,0,3,SLINK T/OUT TIME
DEF TABLE G542=2147483647,-2147483648,0,0,1,S1/M1 PRTY THRES
DEF TABLE G543.0=1,0,0,0,0,SRL COMMS FAIL
DEF TABLE G546=2147483647,-2147483648,0,0,3,S1/M1 FAULT TIME
DEF TABLE G548=2147483647,-2147483648,0,0,3,RDTH ALM LTCH TM
DEF TABLE G575=2147483647,-2147483648,0,0,0,FILT ATTEN POWER
DEF TABLE G600=2147483647,-2147483648,0,0,0,KEYPAD H1 LINC
DEF TABLE G601=2147483647,-2147483648,0,0,0,KEYPAD H1 MULT
DEF TABLE G602=2147483647,-2147483648,0,0,0,KEYPAD H1 DIV
DEF TABLE G603=2147483647,-2147483648,0,0,0,KEYPAD H1 OFF
DEF TABLE G604=2147483647,-2147483648,0,0,0,KEYPAD H2 LINC
DEF TABLE G605=2147483647,-2147483648,0,0,0,KEYPAD H2 MULT
DEF TABLE G606=2147483647,-2147483648,0,0,0,KEYPAD H2 DIV
DEF TABLE G607=2147483647,-2147483648,0,0,0,KEYPAD H2 OFF
```

```
DEF TABLE G608=2147483647,-2147483648,0,0,0,KEYPAD H3 LINC
DEF TABLE G609=2147483647,-2147483648,0,0,0,KEYPAD H3 MULT
DEF TABLE G610=2147483647,-2147483648,0,0,0,KEYPAD H3 DIV
DEF TABLE G611=2147483647,-2147483648,0,0,0,KEYPAD H3 OFF
DEF TABLE G612=2147483647,-2147483648,0,0,0,KEYPAD H4 LINC
DEF TABLE G613=2147483647,-2147483648,0,0,0,KEYPAD H4 MULT
DEF TABLE G614=2147483647,-2147483648,0,0,0,KEYPAD H4 DIV
DEF TABLE G615=2147483647,-2147483648,0,0,0,KEYPAD H4 OFF
DEF TABLE G616=2147483647,-2147483648,0,0,0,KEYPAD H5 LINC
DEF TABLE G617=2147483647,-2147483648,0,0,0,KEYPAD H5 MULT
DEF TABLE G618=2147483647,-2147483648,0,0,0,KEYPAD H5 DIV
DEF TABLE G619=2147483647,-2147483648,0,0,0,KEYPAD H5 OFF
DEF TABLE G620=2147483647,-2147483648,0,0,0,KEYPAD H6 LINC
DEF TABLE G621=2147483647,-2147483648,0,0,0,KEYPAD H6 MULT
DEF TABLE G622=2147483647,-2147483648,0,0,0,KEYPAD H6 DIV
DEF TABLE G623=2147483647,-2147483648,0,0,0,KEYPAD H6 OFFSET
DEF TABLE G648=2147483647,-2147483648,0,0,0,KEYPAD H13 LINC
DEF TABLE G649=2147483647,-2147483648,0,0,0,KEYPAD H13 MULT
DEF TABLE G650=2147483647,-2147483648,0,0,0,KEYPAD H13 DIV
DEF TABLE G651=2147483647,-2147483648,0,0,0,KEYPAD H13 OFF
DEF TABLE G652=2147483647,-2147483648,0,0,0,KEYPAD H14 LINC
DEF TABLE G653=2147483647,-2147483648,0,0,0,KEYPAD H14 MULT
DEF TABLE G654=2147483647,-2147483648,0,0,0,KEYPAD H14 DIV
DEF TABLE G655=2147483647,-2147483648,0,0,0,KEYPAD H14 OFF
DEF TABLE G656=2147483647,-2147483648,0,0,0,KEYPAD H15 LINC
DEF TABLE G657=2147483647,-2147483648,0,0,0,KEYPAD H15 MULT
DEF TABLE G658=2147483647,-2147483648,0,0,0,KEYPAD H15 DIV
DEF TABLE G659=2147483647,-2147483648,0,0,0,KEYPAD H15 OFF
DEF TABLE G660=2147483647,-2147483648,0,0,0,KEYPAD H16 LINC
DEF TABLE G661=2147483647,-2147483648,0,0,0,KEYPAD H16 MULT
DEF TABLE G662=2147483647,-2147483648,0,0,0,KEYPAD H16 DIV
DEF TABLE G663=2147483647,-2147483648,0,0,0,KEYPAD H16 OFF
DEF TABLE G691.0=1,0,0,0,0,SLVE-MSTR ONESHT
DEF TABLE G691.1=1,0,0,0,0,SLVE-MSTR TFR
DEF TABLE G697=2147483647,-2147483648,0,0,3,SLAVE-MASTER TIM
DEF TABLE G800.0=1,0,0,0,0,PIB PLUG1 ILK
DEF TABLE G800.1=1,0,0,0,0,PIB PLUG2 ILK
DEF TABLE G800.2=1,0,0,0,0,PIB PLUG3 ILK
DEF TABLE G800.3=1,0,0,0,0,PIB PLUG4 ILK
DEF TABLE G900=2147483647,-2147483648,0,0,0,V/F PROFILE FLT
DEF TABLE G901=2147483647,-2147483648,0,0,0,V/F PROFILE LWST
DEF TABLE G902=2147483647,-2147483648,0,0,0,V/F PROFILE INTV
DEF TABLE G903=2147483647,-2147483648,0,0,0,V/F PROFILE TAB
DEF TABLE G904=2147483647,-2147483648,2,0,1,V/F OP AT 0% SP
DEF TABLE G905=2147483647,-2147483648,2,0,1,V/F OP AT 5% SP
DEF TABLE G906=2147483647,-2147483648,2,0,1,V/F OP AT 10% SP
DEF TABLE G907=2147483647,-2147483648,2,0,1,V/F OP AT 15% SP
DEF TABLE G908=2147483647,-2147483648,2,0,1,V/F OP AT 20 %SP
DEF TABLE G909=2147483647,-2147483648,2,0,1,V/F OP AT 25 %SP
DEF TABLE G910=2147483647,-2147483648,2,0,1,V/F OP AT 30 %SP
DEF TABLE G911=2147483647,-2147483648,2,0,1,V/F OP AT 35% SP
DEF TABLE G912=2147483647,-2147483648,2,0,1,V/F OP AT 40% SP
DEF TABLE G913=2147483647,-2147483648,2,0,1,V/F OP AT 45% SP
DEF TABLE G914=2147483647,-2147483648,2,0,1,V/F OP AT 50% SP
DEF TABLE G915=2147483647,-2147483648,2,0,1,V/F OP AT 55% SP
DEF TABLE G916=2147483647,-2147483648,2,0,1,V/F OP AT 60% SP
DEF TABLE G917=2147483647,-2147483648,2,0,1,V/F OP AT 65% SP
```

```
DEF TABLE G918=2147483647,-2147483648,2,0,1,V/F OP AT 70% SP
DEF TABLE G919=2147483647,-2147483648,2,0,1,V/F OP AT 75% SP
DEF TABLE G920=2147483647,-2147483648,2,0,1,V/F OP AT 80% SP
DEF TABLE G921=2147483647,-2147483648,2,0,1,V/F OP AT 85% SP
DEF TABLE G922=2147483647,-2147483648,2,0,1,V/F OP AT 90% SP
DEF TABLE G923=2147483647,-2147483648,2,0,1,V/F OP AT 95% SP
DEF TABLE G924=2147483647,-2147483648,2,0,1,V/F OP AT 100%SP
DEF TABLE G925=2147483647,-2147483648,2,0,1,V/F OP AT 105%SP
DEF TABLE H1=2147483647,-2147483648,2,0,12,MOTOR VOLTAGE
DEF TABLE H2=2147483647,-2147483648,2,0,11,MOTOR SPEED
DEF TABLE H3=2147483647,-2147483648,2,0,13,MOTOR CURRENT
DEF TABLE H4=2147483647,-2147483648,2,0,0,MOTOR POWER
DEF TABLE H5=2147483647,-2147483648,2,0,13,DC LINK CURRENT
DEF TABLE H6=2147483647,-2147483648,2,0,11,REMOTE SPEED REF
DEF TABLE H7=2147483647,-2147483648,1,10,5,MODE 1 ACCL RATE
DEF TABLE H8=2147483647,-2147483648,1,10,5,MODE 2 ACCL RATE
DEF TABLE H9=2147483647,-2147483648,1,10,5,DECEL RATE
DEF TABLE H10=2147483647,-2147483648,2,0,1,6 PULSE I LIMIT
DEF TABLE H11=2147483647,-2147483648,2,0,1,12 PULSE I LIMIT
DEF TABLE H12=2147483647,-2147483648,2,0,1,SCALED T REF IN
DEF TABLE H13=2147483647,-2147483648,3,0,12,SIGMA BATT VOLTS
DEF TABLE H14=2147483647,-2147483648,2,0,11,LCL SPEED REF
DEF TABLE H15=2147483647,-2147483648,2,0,11,HMI SPEED REF
DEF TABLE H16=2147483647,-2147483648,2,0,8,SIGMA TEMP
DEF TABLE H100.0=1,0,0,0,0,MOTOR GND FAULT
DEF TABLE H100.3=1,0,0,0,0,REACTOR O/T
DEF TABLE H100.4=1,0,0,0,0,TORQUE REF FAIL
DEF TABLE H100.5=1,0,0,0,0,EMERGENCY STOP
DEF TABLE H100.6=1,0,0,0,0,GROUND FAULT
DEF TABLE H100.7=1,0,0,0,0,SPARE
DEF TABLE H100.8=1,0,0,0,0,SPARE
DEF TABLE H102.0=1,0,0,0,0,S1 O/C RIDETHRO
DEF TABLE H102.1=1,0,0,0,0,M1 O/C RIDETHRO
DEF TABLE H102.2=1,0,0,0,0,PARITY RIDETHRO
DEF TABLE H102.3=1,0,0,0,0,IP XFMR A PH O/T
DEF TABLE H102.4=1,0,0,0,0,IP XFMR B PH O/T
DEF TABLE H102.5=1,0,0,0,0,IP XFMR C PH O/T
DEF TABLE H102.7=1,0,0,0,0,SIGMA TEMP HIGH
DEF TABLE J100=2147483647,-2147483648,0,0,0,HMI SECOND
DEF TABLE J101=2147483647,-2147483648,0,0,0,HMI MINUTE
DEF TABLE J102=2147483647,-2147483648,0,0,0,HMI HOUR
DEF TABLE J103=2147483647,-2147483648,0,0,0,HMI DAY
DEF TABLE J104=2147483647,-2147483648,0,0,0,HMI MONTH
DEF TABLE J105=2147483647,-2147483648,0,0,0,HMI YEAR
DEF TABLE J106.0=1,0,0,0,0,HMI RESET
DEF TABLE J106.1=1,0,0,0,0,HMI LOCAL REQEST
DEF TABLE J106.2=1,0,0,0,0,HMI STOP
DEF TABLE J106.3=1,0,0,0,0,HMI RUN
DEF TABLE J106.4=1,0,0,0,0,HMI TRIG HIST
DEF TABLE J106.5=1,0,0,0,0,HMI FRCE PLS REL
DEF TABLE J106.6=1,0,0,0,0,HMI FRCE EXC TST
DEF TABLE J106.7=1,0,0,0,0,HMI D/O TST MODE
DEF TABLE J106.8=1,0,0,0,0,HMI COOL MAN CTL
DEF TABLE J106.9=1,0,0,0,0,HMI COOL P1 ON
DEF TABLE J106.10=1,0,0,0,0,HMI COOL P2 ON
DEF TABLE J106.11=1,0,0,0,0,HMI SPARE
DEF TABLE J106.12=1,0,0,0,0,HMI SPARE
```

```
DEF TABLE J106.13=1,0,0,0,0,HMI SPARE
DEF TABLE J106.14=1,0,0,0,0,HMI SPARE
DEF TABLE J106.15=1,0,0,0,0,HMI READ H/BEAT
DEF TABLE J107.0=1,0,0,0,0,HMI TEST B1.0
DEF TABLE J107.1=1,0,0,0,0,HMI TEST B1.1
DEF TABLE J107.2=1,0,0,0,0,HMI TEST B1.2
DEF TABLE J107.3=1,0,0,0,0,HMI TEST B1.3
DEF TABLE J107.4=1,0,0,0,0,HMI TEST B1.4
DEF TABLE J107.5=1,0,0,0,0,HMI TEST B1.5
DEF TABLE J107.6=1,0,0,0,0,HMI TEST B1.6
DEF TABLE J107.7=1,0,0,0,0,HMI TEST B1.7
DEF TABLE J107.8=1,0,0,0,0,HMI SPARE
DEF TABLE J107.9=1,0,0,0,0,HMI SPARE
DEF TABLE J107.10=1,0,0,0,0,HMI SPARE
DEF TABLE J107.11=1,0,0,0,0,HMI SPARE
DEF TABLE J107.12=1,0,0,0,0,HMI SPARE
DEF TABLE J107.13=1,0,0,0,0,HMI SPARE
DEF TABLE J107.14=1,0,0,0,0,HMI SPARE
DEF TABLE J107.15=1,0,0,0,0,HMI SPARE
DEF TABLE J108.0=1,0,0,0,0,HMI TEST B3.0
DEF TABLE J108.1=1,0,0,0,0,HMI TEST B3.1
DEF TABLE J108.2=1,0,0,0,0,HMI TEST B3.2
DEF TABLE J108.3=1,0,0,0,0,HMI TEST B3.3
DEF TABLE J108.4=1,0,0,0,0,HMI TEST B3.4
DEF TABLE J108.5=1,0,0,0,0,HMI TEST B3.5
DEF TABLE J108.6=1,0,0,0,0,HMI TEST B3.6
DEF TABLE J108.7=1,0,0,0,0,HMI TEST B3.7
DEF TABLE J108.8=1,0,0,0,0,HMI TEST B3.8
DEF TABLE J108.9=1,0,0,0,0,HMI TEST B3.9
DEF TABLE J108.10=1,0,0,0,0,HMI TEST B3.10
DEF TABLE J108.11=1,0,0,0,0,HMI TEST B3.11
DEF TABLE J108.12=1,0,0,0,0,HMI TEST B3.12
DEF TABLE J108.13=1,0,0,0,0,HMI TEST B3.13
DEF TABLE J108.14=1,0,0,0,0,HMI TEST B3.14
DEF TABLE J108.15=1,0,0,0,0,HMI TEST B3.15
DEF TABLE J109=10000,0,2,0,1,HMI SPEED REF
DEF TABLE J110=10000,0,2,0,1,HMI EXCITER REF
DEF TABLE K100=2147483647,-2147483648,0,0,0,HMI FAULT WORD1
DEF TABLE K101=2147483647,-2147483648,0,0,0,HMI FAULT WORD2
DEF TABLE K102=2147483647,-2147483648,0,0,0,HMI FAULT WORD3
DEF TABLE K103=2147483647,-2147483648,0,0,0,HMI FAULT WORD4
DEF TABLE K104=2147483647,-2147483648,0,0,0,HMI FAULT WORD5
DEF TABLE K105=2147483647,-2147483648,0,0,0,HMI FAULT WORD6
DEF TABLE K106=2147483647,-2147483648,0,0,0,HMI BIT WORD7
DEF TABLE K107=2147483647,-2147483648,0,0,0,HMI BIT WORD8
DEF TABLE K108=2147483647,-2147483648,0,0,0,HMI WORD9 A1+B1
DEF TABLE K109=2147483647,-2147483648,0,0,0,HMI WORD10 A2
DEF TABLE K110=2147483647,-2147483648,0,0,0,HMI WORD11 B3
DEF TABLE K111=2147483647,-2147483648,0,0,0,HMI WORD12 A4
DEF TABLE K112=2147483647,-2147483648,0,0,0,HMI WORD13 B5
DEF TABLE K113=2147483647,-2147483648,0,0,0,HMI WORD14 A32
DEF TABLE K114=2147483647,-2147483648,0,0,0,HMI WORD15 N F/B
DEF TABLE K115=2147483647,-2147483648,0,0,0,HMI WORD16 HP
DEF TABLE K116=2147483647,-2147483648,0,0,0,HMI WORD17 MOT V
DEF TABLE K117=2147483647,-2147483648,0,0,0,HMI WORD18 MOT I
DEF TABLE K118=2147483647,-2147483648,0,0,0,HMI WORD19 TQREF
DEF TABLE K119=2147483647,-2147483648,0,0,0,HMI WORD20 SUP V
```

```
DEF TABLE K120=2147483647,-2147483648,0,0,0,HMI WORD21 N REF
DEF TABLE K121=2147483647,-2147483648,0,0,0,HMI WORD 22 C6
DEF TABLE K122=2147483647,-2147483648,0,0,0,HMI WORD23 C7
DEF TABLE K123=2147483647,-2147483648,0,0,0,HMI WORD 24 C8
DEF TABLE K124=2147483647,-2147483648,0,0,0,HMI WORD25 C14
DEF TABLE K125=2147483647,-2147483648,0,0,0,HMI WORD26 C15
DEF TABLE K126=2147483647,-2147483648,0,0,0,HMI WORD27 C16
DEF TABLE K127=2147483647,-2147483648,0,0,0,HMI WORD28 C17
DEF TABLE K128=2147483647,-2147483648,0,0,0,HMI WORD29 D0
DEF TABLE K129=2147483647,-2147483648,0,0,0,HMI WORD30 D1
DEF TABLE K130=2147483647,-2147483648,0,0,0,HMI WORD31 D2
DEF TABLE K131=2147483647,-2147483648,0,0,0,HMI WORD32 D3
DEF TABLE K132=2147483647,-2147483648,0,0,0,HMI WORD33 D4
DEF TABLE K133=2147483647,-2147483648,0,0,0,HMI WORD34 D5
DEF TABLE K134=2147483647,-2147483648,0,0,0,HMI WORD35 D5
DEF TABLE K135=2147483647,-2147483648,0,0,0,HMI WORD36 D7
DEF TABLE K136=2147483647,-2147483648,0,0,0,HMI WORD37 BAT V
DEF TABLE K137=2147483647,-2147483648,0,0,0,HMI WORD38 DC V
DEF TABLE K138=2147483647,-2147483648,0,0,0,HMI WORD39 ALPHA
DEF TABLE K139=2147483647,-2147483648,0,0,0,HMI WORD40 BETA
DEF TABLE K140=2147483647,-2147483648,0,0,0,HMI WORD41 1FLT
DEF TABLE K141=2147483647,-2147483648,0,0,0,HMI WORD42 TEMP
DEF TABLE K142=15,0,0,0,0,HMI WORD42 ID
DEF TABLE L2115=2147483647,-2147483648,2,0,1,SPEED AMP O/P
DEF TABLE L2208=12000,-12000,2,0,1,SPD RAMP INPUT
DEF TABLE L3397=4294967295,0,0,0,0,CRITICAL FLT STS
DEF TABLE L3398=4294967295,0,0,0,0,CHANNEL FLT STS
DEF TABLE L3399=4294967295,0,0,0,0,ALARM STS
DEF TABLE L12809=1,0,0,1,0,SUPP 1 O/C
DEF TABLE L12811=1,0,0,1,0,MACH 1 O/C
DEF TABLE L13921=1,0,0,0,0,IN MODE 1
DEF TABLE L16841=32767,-32768,0,0,0,D4 MOTOR SPEED
DEF TABLE L16842=32767,-32768,0,0,0,D5 MOTOR CURRENT
DEF TABLE L16843=32767,-32768,0,0,0,D6 MOTOR VOLTS
DEF TABLE L16844=32767,-32768,0,0,0,D7 SPARE
DEF TABLE L22106=12000,-12000,2,0,1,V/F REFERENCE
DEF TABLE L22112=32767,-32768,0,0,0,V/F FEEDBACK
DEF TABLE L22115=2147483647,-2147483648,2,0,1,V/F CONTROL O/P
DEF TABLE L22116=1,0,0,0,0,IN V/F LIMIT
DEF TABLE L22117=2147483647,-2147483648,2,0,1,SCALED V/F F/B
DEF TABLE L22129=2500,0,2,0,1,V/F LIMIT DETECT
DEF TABLE L22132=32767,100,0,100,0,V/F FDBCK SCALE
DEF TABLE L22145=2147483647,-2147483648,2,0,1,FILT V/F FB
DEF TABLE L22151=5000,0,4,0,4,V/F FDBCK FILTER
DEF TABLE L22152=2147483647,-2147483648,2,0,1,FILT V/F FDBCK
DEF TABLE L22159=1,0,0,0,0,DEGAIN V/F/CNTRL
DEF TABLE L22218=2147483647,-2147483648,2,0,1,V/F REFERENCE
DEF TABLE L22220=2147483647,-2147483648,2,0,1,TOTAL V/F REF
DEF TABLE L22224=12000,0,2,0,1,+ V/F LIMIT
DEF TABLE L22225=0,-12000,2,0,1,- V/F LIMIT
DEF TABLE L22231=2147483647,-2147483648,1,0,5, REACTIVE I RATE
DEF TABLE L22238=5000,-5000,2,0,1,LIMITED V/F ERR
DEF TABLE L22239=12000,-12000,2,0,1,V/F
DEF TABLE L22243=2147483647,-2147483648,2,0,1,OLD FILTERED V/F
DEF TABLE L22250=2147483647,-2147483648,2,0,1,OLD LIM V/F ERR
DEF TABLE L22257=2147483647,-2147483648,2,0,1,SCLD FILT EXC I
DEF TABLE M1=5,0,0,0,0,ENCODER PATTERN
```

```
DEF TABLE M2.0=1,0,0,0,0,MAN HISTORY TRIP
DEF TABLE M2.1=1,0,0,0,0,MANUAL RESET
DEF TABLE M2.2=1,0,0,0,0,FORCE CONT AVBLE
DEF TABLE M2.3=1,0,0,0,0,FORCE LOCAL
DEF TABLE M2.4=1,0,0,0,0,FRC CLOSED LOOP
DEF TABLE M2.5=1,0,0,0,0,FORCE LCL START
DEF TABLE M2.6=1,0,0,0,0,FRC LCL STOP CST
DEF TABLE M2.7=1,0,0,0,0,INHIB CRITL TRIP
DEF TABLE M2.8=1,0,0,0,0,SET CRITL TRIP
DEF TABLE M2.9=1,0,0,0,0,INHIB SLAVE O/P
DEF TABLE M2.10=1,0,0,0,0,SET CHNNL TRIP
DEF TABLE M2.11=1,0,0,0,0,FORCE ESTOP OK
DEF TABLE M2.12=1,0,0,0,0,FORCE OPEN LOOP
DEF TABLE M2.13=1,0,0,0,0,INHIB ANY TRIP
DEF TABLE M2.14=1,0,0,0,0,SET ANY TRIP
DEF TABLE M3.0=1,0,0,0,0,INHIB CHNNL ALRM
DEF TABLE M3.1=1,0,0,0,0,SET CHNNL ALARM
DEF TABLE M3.2=1,0,0,0,0,FRC REM STOP
DEF TABLE M3.3=1,0,0,0,0,FRC REM START
DEF TABLE M3.4=1,0,0,0,0,INHIB MODE1 ENC
DEF TABLE M3.5=1,0,0,0,0,INHIB MODE2 ENC
DEF TABLE M3.6=1,0,0,0,0,FRCE N REF OK
DEF TABLE M3.7=1,0,0,0,0,INHB EXCTR CHECK
DEF TABLE M3.8=1,0,0,0,0,FCE STRT FAIL OK
DEF TABLE M3.9=1,0,0,0,0,INHIB SLNK SETUP
DEF TABLE M3.10=1,0,0,0,0,FRCE LCL RMP STP
DEF TABLE M3.11=1,0,0,0,0,FRCE REM RMP STP
DEF TABLE M3.12=1,0,0,0,0,FRCE LCL ILM STP
DEF TABLE M3.13=1,0,0,0,0,FRCE REM ILM STP
DEF TABLE M3.14=1,0,0,0,0,DISBL AUTO RESRT
DEF TABLE M3.15=1,0,0,0,0,ENB A/RST ONE/SH
DEF TABLE M4=10000,0,2,0,1,CSP TEST SPD REF
DEF TABLE M5.0=1,0,0,0,0,TEST EXCITER
DEF TABLE M5.1=1,0,0,0,0,FRC HDLC CRD OK
DEF TABLE M5.2=1,0,0,0,0,ENABLE SKIP 1
DEF TABLE M5.3=1,0,0,0,0,ENABLE SKIP 2
DEF TABLE M5.4=1,0,0,0,0,SYNC 2 REQUIRED
DEF TABLE M5.5=1,0,0,0,0,MASK COOLING FLT
DEF TABLE M5.6=1,0,0,0,0,MSK SUP REF LOSS
DEF TABLE M5.7=1,0,0,0,0,MSK SPD REF LOSS
DEF TABLE M5.8=1,0,0,0,0,FORCE PULSE REL
DEF TABLE M5.9=1,0,0,0,0,MSK DIAG OPTO AL
DEF TABLE M5.10=1,0,0,0,0,MSK HONEY NO SIG
DEF TABLE M5.11=1,0,0,0,0,USE HMI CLOCK
DEF TABLE M5.12=1,0,0,0,0,EN COND HISTORY
DEF TABLE M6=10000,0,2,0,1,EXCTR TEST REF
DEF TABLE M7.0=1,0,0,0,0,NOT USED
DEF TABLE M7.1=1,0,0,0,0,NOT USED
DEF TABLE M7.2=1,0,0,0,0,NOT USED
DEF TABLE M7.3=1,0,0,0,0,NOT USED
DEF TABLE M7.4=1,0,0,0,0,NOT USED
DEF TABLE M7.5=1,0,0,0,0,NOT USED
DEF TABLE M7.6=1,0,0,0,0,NOT USED
DEF TABLE M7.7=1,0,0,0,0,NOT USED
DEF TABLE M7.8=1,0,0,0,0,SET B3.8 /PUMP1
DEF TABLE M7.9=1,0,0,0,0,SET B3.9 /PUMP2
DEF TABLE M7.10=1,0,0,0,0,SET B3.10 /SV
```

```
DEF TABLE M7.11=1,0,0,0,0,SET B3.11 /SPARE
DEF TABLE M7.12=1,0,0,0,0,SET B3.12 /RL6
DEF TABLE M7.13=1,0,0,0,0,SET B3.13 /RL7
DEF TABLE M7.14=1,0,0,0,0,SET B3.14 /RL8
DEF TABLE M7.15=1,0,0,0,0,SET B3.15 /RL9
DEF TABLE M8.0=1,0,0,0,0,SET B1.8 /DHR
DEF TABLE M8.1=1,0,0,0,0,SET B1.9 /DAR
DEF TABLE M8.2=1,0,0,0,0,SET B1.10 /IBT
DEF TABLE M8.3=1,0,0,0,0,SET B1.11 /FCC
DEF TABLE M8.4=1,0,0,0,0,SET B1.12 /DIS
DEF TABLE M8.5=1,0,0,0,0,SET B1.13 /RL1
DEF TABLE M8.6=1,0,0,0,0,SET B1.14 /RL2
DEF TABLE M8.7=1,0,0,0,0,SET B1.15 /RL3
DEF TABLE M9.0=1,0,0,0,0,TEST ANLG O/P'S
DEF TABLE M9.1=1,0,0,0,0,FORCE EXCTR FAIL
DEF TABLE M9.2=1,0,0,0,0,ENBL HIST ON TRN
DEF TABLE M9.3=1,0,0,0,0,INHIBIT G50.0
DEF TABLE M9.4=1,0,0,0,0,ENABLE DIAG
DEF TABLE M9.5=1,0,0,0,0,FORCE DIAG
DEF TABLE M9.8=1,0,0,0,0,CSP DIG O/P TEST
DEF TABLE M9.9=1,0,0,0,0,INH STALL PROT
DEF TABLE M9.10=1,0,0,0,0,USE ENCODERS
DEF TABLE M9.13=1,0,0,0,0,FORCE DISCONNECT
DEF TABLE M9.14=1,0,0,0,0,ENABLE ENC SIMUL
DEF TABLE M9.15=1,0,0,0,0,DIG/OP TEST MODE
DEF TABLE M10=20000,-20000,2,0,1,D0 TEST REF
DEF TABLE M11=20000,-20000,2,0,1,D1 TEST REF
DEF TABLE M12=20000,-20000,2,0,1,D2 TEST REF
DEF TABLE M13=20000,-20000,2,0,1,D3 TEST REF
DEF TABLE M14=20000,-20000,2,0,1,D4 TEST REF
DEF TABLE M15=20000,-20000,2,0,1,D5 TEST REF
DEF TABLE M16=20000,-20000,2,0,1,D6 TEST REF
DEF TABLE M17=20000,-20000,2,0,1,D7 TEST REF
DEF TABLE M18=10000,-10000,2,0,1,OL I REF
DEF TABLE M19.0=1,0,0,0,0,SET B3.0 /ZSR
DEF TABLE M19.1=1,0,0,0,0,SET B3.1 /MSR
DEF TABLE M19.2=1,0,0,0,0,SET B3.2 /TGS
DEF TABLE M19.3=1,0,0,0,0,SET B3.3 /SRF
DEF TABLE M19.4=1,0,0,0,0,SET B3.4 /SOR
DEF TABLE M19.5=1,0,0,0,0,SET B3.5 /DRR
DEF TABLE M19.6=1,0,0,0,0,SET B3.6 /RL4
DEF TABLE M19.7=1,0,0,0,0,SET B3.7 /RL5
DEF TABLE M19.8=1,0,0,0,0,SET B3.8 /RUN/P1
DEF TABLE M19.9=1,0,0,0,0,SET B3.9 /RUN/P2
DEF TABLE M19.10=1,0,0,0,0,SET B3.10 /SV
DEF TABLE M19.11=1,0,0,0,0,SET B3.11 /RL6
DEF TABLE M19.12=1,0,0,0,0,SET B3.12 /RL7
DEF TABLE M19.13=1,0,0,0,0,SET B3.13 /RL8
DEF TABLE M19.14=1,0,0,0,0,SET B3.14 /RL9
DEF TABLE M19.15=1,0,0,0,0,SET B3.15 /RL10
DEF TABLE P800=2147483647,-2147483648,0,0,0,ESP LINK ADDRESS
DEF TABLE P801=2147483647,-2147483648,0,0,0,PARTNERS
DEF TABLE P802=2147483647,-2147483648,0,0,0,BAUD RATE 38400
DEF TABLE P803=2147483647,-2147483648,0,0,0,SLINK PARITY
DEF TABLE P804=2147483647,-2147483648,0,0,0,NOT USED
DEF TABLE P805=2147483647,-2147483648,0,0,0,DATA-TABLE EXCHG
DEF TABLE W0=2147483647,-2147483648,2,0,1,EXC REF LIM
```

```
DEF TABLE W1=32767,-32767,0,0,0,EX REF LO LIMIT
DEF TABLE W2=32767,-32767,0,0,0,EX REF HI LIMIT
DEF TABLE W3=32767,-32767,0,0,0,N F/B LIMIT
DEF TABLE W4=32767,-32767,0,0,0,N F/B LO LIMIT
DEF TABLE W5=32767,-32767,0,0,0,N F/B HI LIMIT
DEF TABLE W6=2147483647,0,0,0,4,COOL P1 RUN TIME
DEF TABLE W7=2147483647,0,0,0,4,COOL P2 RUN TIME
DEF TABLE W17=15000,0,2,11000,1,STR O/VOLT LEVEL
DEF TABLE W18=20000,0,2,11000,1,O/SPEED LEVEL
DEF TABLE W19=20000,0,2,10000,1,V/F REFERENCE
DEF TABLE W22=20000,0,2,12000,1,O/FLUX TRIP LVL
DEF TABLE W23=10000,0,2,8000,1,U/FLUX TRIP LVL
DEF TABLE W27=20000,0,2,1100,1,SLOW SPEED LEVEL
DEF TABLE W28=99999,0,0,0,3,STRT FAIL TIMER
DEF TABLE W30=2000,0,0,0,3,SURGE CCT FAIL
DEF TABLE W31=20000,0,2,0,1,SPLY HV TR LEVEL
DEF TABLE W32=99999,0,0,0,3,SPLY HV TR TIMER
DEF TABLE W33=20000,0,2,0,1,INV LV TR LEVEL
DEF TABLE W34=99999,0,0,0,3,INV LV TR TIMER
DEF TABLE W35=20000,0,2,0,1,INV HV TR LEVEL
DEF TABLE W36=99999,0,0,0,3,INV HV TR TIMER
DEF TABLE W37=20000,0,2,0,1,INV HIFREQ LEVEL
DEF TABLE W38=99999,0,0,0,3,INV HIFREQ TIMER
DEF TABLE W39=2000,0,0,0,3,DEL UPON PLS REL
DEF TABLE W40=16376,0,0,0,0,MIN EXC CURRENT
DEF TABLE W41=2147483647,0,0,0,3,GND FLT DELAY
DEF TABLE W50=2147483647,-2147483648,0,0,0,TEMP LINCON 1
DEF TABLE W51=2147483647,-2147483648,0,0,0,TEMP LINC 1 MULT
DEF TABLE W52=2147483647,-2147483648,0,0,0,TEMP LINC 1 DIV
DEF TABLE W53=2147483647,-2147483648,0,0,0,TEMP LINC 1 OFF
DEF TABLE W54=2147483647,-2147483648,0,0,0,TEMP LINCON 2
DEF TABLE W55=2147483647,-2147483648,0,0,0,TEMP LINC 2 MULT
DEF TABLE W56=2147483647,-2147483648,0,0,0,TEMP LINC 2 DIV
DEF TABLE W57=2147483647,-2147483648,0,0,0,TEMP LINC 2 OFF
DEF TABLE W58=2147483647,-2147483648,0,0,0,TEMP ALARM LEVEL
DEF TABLE W111=20000,0,2,0,1,V/F THRESH HI
DEF TABLE W112=20000,0,2,0,1,V/F THRESH LO
DEF TABLE W120=20000,0,2,800,1,ZERO SPEED
DEF TABLE W151=32767,-32767,0,0,0,CRT SPD1 DEADBND
DEF TABLE W152=32767,-32767,0,0,0,CRT SPD2 OFFSET
DEF TABLE W153=32767,-32767,0,0,0,CRITICAL SPD 1
DEF TABLE W155=32767,-32767,0,0,0,CRT SPD2 DEADBND
DEF TABLE W156=32767,-32767,0,0,0,CRT SPD2 OFFSEF
DEF TABLE W157=32767,-32767,0,0,0,CRITICAL SPD 2
DEF TABLE W160=32767,-32767,0,0,0,SPD REF LINCON
DEF TABLE W161=32767,-32767,0,0,0,SPD REF MULT
DEF TABLE W162=32767,-32767,0,0,0,SPD REF DIVISOR
DEF TABLE W163=32767,-32767,0,0,0,SPD REF OFFSET
DEF TABLE W164=32767,-32767,0,0,0,SPD REF LIMIT
DEF TABLE W165=15000,0,2,0,1,SPD REF LWR LIM
DEF TABLE W166=15000,0,2,0,1,SPD REF UPR LIM
DEF TABLE W171=32767,-32768,0,0,0,OUTPUT D1 MULT
DEF TABLE W172=32767,-32768,0,0,0,OUTPUT D1 DIV
DEF TABLE W173=32767,-32768,0,0,0,OUTPUT D1 OFFSET
DEF TABLE W176=32767,-32768,0,0,0,OUTPUT D2 MULT
DEF TABLE W177=32767,-32768,0,0,0,OUTPUT D2 DIV
DEF TABLE W178=32767,-32768,0,0,0,OUTPUT D2 OFFSET
```

```
DEF TABLE W180=32767,-32768,0,0,0,OUTPUT D4 MULT
DEF TABLE W181=32767,-32768,0,0,0,OUTPUT D4 DIV
DEF TABLE W182=32767,-32768,0,0,0,OUTPUT D4 OFFSET
DEF TABLE W184=32767,-32768,0,0,0,OUTPUT D5 MULT
DEF TABLE W185=32767,-32768,0,0,0,OUTPUT D5 DIV
DEF TABLE W186=32767,-32768,0,0,0,OUTPUT D5 OFFSET
DEF TABLE W190=2147483647,-2147483648,0,0,0,UPS SUP LINCON
DEF TABLE W191=2147483647,-2147483648,0,0,0,UPS MULT
DEF TABLE W192=2147483647,-2147483648,0,0,0,UPS DIV
DEF TABLE W193=2147483647,-2147483648,0,0,0,UPS OFFSET
DEF TABLE W194=2147483647,-2147483648,0,0,0,COND LINCON
DEF TABLE W195=2147483647,-2147483648,0,0,0,COND MULT
DEF TABLE W196=2147483647,-2147483648,0,0,0,COND DIV
DEF TABLE W197=2147483647,-2147483648,0,0,0,COND OFFSET
DEF TABLE W204=20000,0,0,0,1,MODE2 ACCEL LVL
DEF TABLE W205=1000,10,1,10,5,MODE1 ACCEL RATE
DEF TABLE W206=1000,10,1,10,5,MODE2 ACCEL RATE
DEF TABLE W207=1000,10,1,10,5,DECEL RATE
DEF TABLE W208=100,0,0,0,5,SKIP BAND ACCEL1
DEF TABLE W209=100,0,0,0,5,SKIP BAND ACCEL2
DEF TABLE W212=20000,0,2,0,1,SKIP 1 LO
DEF TABLE W213=20000,0,2,0,1,SKIP 1 HI
DEF TABLE W214=20000,0,2,0,1,SKIP 2 LO
DEF TABLE W215=20000,0,0,0,1,SKIP 2 HI
DEF TABLE W218=2147483647,-2147483648,2,0,1,6 PLSE I2T LIM
DEF TABLE W219=2147483647,-2147483648,2,0,1,12 PLSE I2T LIM
DEF TABLE W220=2147483647,-2147483648,2,0,1,USED I2T LEVEL
DEF TABLE W221=2147483647,-2147483648,2,0,1,6 PLSE I LIMIT
DEF TABLE W222=2147483647,-2147483648,2,0,1,12 PLSE I LIMIT
DEF TABLE W241=32767,-32767,0,0,0,V/F LMT MULT
DEF TABLE W242=32767,-32767,0,0,0,V/F LMT DIV
DEF TABLE W243=32767,-32767,0,0,0,V/F LMT OFFSET
DEF TABLE W246=32767,-32767,0,0,0,V/F MIN LIMIT
DEF TABLE W247=32767,-32767,0,0,0,V/F MAX LIMIT
DEF TABLE W304=20000,0,2,0,1,LO SUPLV AL L SP
DEF TABLE W305=20000,0,2,0,1,LO SUPLV AL H SP
DEF TABLE W306=99999,0,0,0,3,LO SUPLV AL TIME
DEF TABLE W307=20000,0,2,0,1,HI SUPLV AL L SP
DEF TABLE W308=20000,0,2,0,1,HI SUPLV AL H SP
DEF TABLE W309=99999,0,0,0,3,HI SUPLV AL TIME
DEF TABLE W310=99999,0,0,0,3,PROT HLY TMR
DEF TABLE W311=99999,0,0,0,3,ENC TRIP TIMER
DEF TABLE W312=99999,0,0,0,3,ENC ALRM TIMER
DEF TABLE W313=99999,0,0,0,3,RUN TIMER 1
DEF TABLE W314=99999,0,0,0,3,OVRSPD TRP TMR
DEF TABLE W315=99999,0,0,0,3,PHREF LOSS TMR
DEF TABLE W316=99999,0,0,0,3,ZCREF LOSS TMR
DEF TABLE W317=10000,0,0,0,3,HDLC FAIL TMR
DEF TABLE W326=15000,0,2,0,1,ZERO SPEED LIM
DEF TABLE W327=15000,0,2,0,1,TG SPEED LIM
DEF TABLE W328=15000,0,2,0,1,MIN SPEED LIM
DEF TABLE W329=15000,0,2,0,1,TG MIN SPEED
DEF TABLE W330=15000,0,2,0,1,RUN MIN SPEED
DEF TABLE W333=2147483647,-2147483648,0,0,0,A IREF LMT FUNCT
DEF TABLE W334=20000,0,2,0,1,A IREF LO LIM
DEF TABLE W335=20000,0,2,0,1,A IREF HI LIM
DEF TABLE W336=99999,0,0,0,3,RUN TIMER 2
```

```
DEF TABLE W337=17000,-17000,2,0,1,MODE 1 ILIM
DEF TABLE W338=17000,-17000,2,0,1,MODE 2 ILIM
DEF TABLE W349=99999,0,0,0,3,UNDR FLUX TMR
DEF TABLE W350=99999,0,0,0,3,OVER FLUX TMR
DEF TABLE W351=99999,0,0,0,3,OVER VOLT TMR
DEF TABLE W352=2147483647,-2147483648,0,0,0,TQ REF FAIL TMR
DEF TABLE W353=2147483647,-2147483648,0,0,3,TQ REF FAIL TIME
DEF TABLE W355=99999,0,0,0,3,CT PARITY TIMER
DEF TABLE W356=36000,-36000,2,0,8,D MAINS OFFSET
DEF TABLE W357=36000,-36000,2,0,8,W MAINS OFFSET
DEF TABLE W358=36000,-36000,2,0,8,USED MNS OFFSET
DEF TABLE W361=2147483647,-2147483648,0,0,0,ANLG I/P C6 MUL
DEF TABLE W362=2147483647,-2147483648,0,0,0,ANLG I/P C6 DIV
DEF TABLE W363=2147483647,-2147483648,0,0,0,ANLG I/P C6 OFS
DEF TABLE W365=2147483647,-2147483648,0,0,0,ANLG I/P C7 MUL
DEF TABLE W366=2147483647,-2147483648,0,0,0,ANLG I/P C7 DIV
DEF TABLE W367=2147483647,-2147483648,0,0,0,ANLG I/P C7 OFS
DEF TABLE W369=2147483647,-2147483648,0,0,0,ANLG I/P C8 MUL
DEF TABLE W370=2147483647,-2147483648,0,0,0,ANLG I/P C8 DIV
DEF TABLE W371=2147483647,-2147483648,0,0,0,ANLG I/P C8 OFS
DEF TABLE W401=2147483647,-2147483648,0,0,0,ANLG I/P C14 MUL
DEF TABLE W402=2147483647,-2147483648,0,0,0,ANLG I/P C14 DIV
DEF TABLE W403=2147483647,-2147483648,0,0,0,ANLG I/P C14 OFS
DEF TABLE W404=2147483647,-2147483648,2,0,1,SCALED C14
DEF TABLE W406=2147483647,-2147483648,0,0,0,ANLG I/P C15 MUL
DEF TABLE W407=2147483647,-2147483648,0,0,0,ANLG I/P C15 DIV
DEF TABLE W408=2147483647,-2147483648,0,0,0,ANLG I/P C15 OFS
DEF TABLE W409=2147483647,-2147483648,0,0,0,SCALED C15
DEF TABLE W411=2147483647,-2147483648,0,0,0,ANLG I/P C16 MUL
DEF TABLE W412=2147483647,-2147483648,0,0,0,ANLG I/P C16 DIV
DEF TABLE W413=2147483647,-2147483648,0,0,0,ANLG I/P C16 OFS
DEF TABLE W414=2147483647,-2147483648,0,0,0,SCALED C16
DEF TABLE W416=2147483647,-2147483648,0,0,0,ANLG I/P C17 MUL
DEF TABLE W417=2147483647,-2147483648,0,0,0,ANLG I/P C17 DIV
DEF TABLE W418=2147483647,-2147483648,0,0,0,ANLG I/P C17 OFS
DEF TABLE W419=2147483647,-2147483648,0,0,0,SCALED C17
DEF TABLE W421=2147483647,-2147483648,0,0,0,ANLG O/P D0 MUL
DEF TABLE W422=2147483647,-2147483648,0,0,0,ANLG O/P D0 DIV
DEF TABLE W423=2147483647,-2147483648,0,0,0,ANLG O/P D0 OFS
DEF TABLE W426=2147483647,-2147483648,0,0,0,ANLG O/P D1 MUL
DEF TABLE W427=2147483647,-2147483648,0,0,0,ANLG O/P D1 DIV
DEF TABLE W428=2147483647,-2147483648,0,0,0,ANLG O/P D1 OFS
DEF TABLE W429=2147483647,-2147483648,0,0,0,SCALED D1
DEF TABLE W431=2147483647,-2147483648,0,0,0,ANLG O/P D2 MUL
DEF TABLE W432=2147483647,-2147483648,0,0,0,ANLG O/P D2 DIV
DEF TABLE W433=2147483647,-2147483648,0,0,0,ANLG O/P D2 OFS
DEF TABLE W436=2147483647,-2147483648,0,0,0,ANLG O/P D3 MUL
DEF TABLE W437=2147483647,-2147483648,0,0,0,ANLG O/P D3 DIV
DEF TABLE W438=2147483647,-2147483648,0,0,0,ANLG O/P D3 OFS
DEF TABLE W439=2147483647,-2147483648,0,0,0,SCALED D3
DEF TABLE W441=2147483647,-2147483648,0,0,0,ANLG O/P D4 MUL
DEF TABLE W442=2147483647,-2147483648,0,0,0,ANLG O/P D4 MUL
DEF TABLE W443=2147483647,-2147483648,0,0,0,ANLG O/P D4 OFS
DEF TABLE W444=2147483647,-2147483648,0,0,0,SCALED D4
DEF TABLE W446=2147483647,-2147483648,0,0,0,ANLG O/P D5 MUL
DEF TABLE W447=2147483647,-2147483648,0,0,0,ANLG O/P D5 DIV
DEF TABLE W448=2147483647,-2147483648,0,0,0,ANLG O/P D5 OFS
```

```
DEF TABLE W449=2147483647,-2147483648,0,0,0,SCALED D5
DEF TABLE W451=2147483647,-2147483648,0,0,0,ANLG O/P D6 MUL
DEF TABLE W452=2147483647,-2147483648,0,0,0,ANLG O/P D6 DIV
DEF TABLE W453=2147483647,-2147483648,0,0,0,ANLG O/P D6 OFS
DEF TABLE W454=2147483647,-2147483648,0,0,0,SCALED D6
DEF TABLE W456=2147483647,-2147483648,0,0,0,ANLG O/P D7 MUL
DEF TABLE W457=2147483647,-2147483648,0,0,0,ANLG O/P D7 DIV
DEF TABLE W458=2147483647,-2147483648,0,0,0,ANLG O/P D7 OFS
DEF TABLE W459=2147483647,-2147483648,0,0,0,SCALED D7
DEF TABLE W460=2147483647,-2147483648,0,0,0,HMI N REF LIM
DEF TABLE W461=32767,0,0,0,0,MIN HMI N REF
DEF TABLE W462=32767,0,0,0,0,MAX HMI N REF
DEF TABLE W463=20000,0,2,0,1,I REF SUB
DEF TABLE W464=99999,0,0,0,3,SPD REG DLY
DEF TABLE W465=1000,10,1,10,5,RATE 2 DECEL
DEF TABLE W466=10000,0,2,0,1,SLOW SPEED I/P
DEF TABLE W467=50000,0,2,0,1,FIXD SPEED LEVEL
DEF TABLE W468=50000,0,2,0,1,SLOW SPEED LEVEL
DEF TABLE W469=2147483647,-2147483648,2,0,1,FAN FAIL I LMT
DEF TABLE W488=2147483647,-2147483648,0,0,0,-VE BETA RATE
DEF TABLE W489=2147483647,-2147483648,0,0,0,+ BETA RATE
DEF TABLE W490=2147483647,-2147483648,0,0,0,HMI HP SCALAR
DEF TABLE W491=2147483647,-2147483648,0,0,0,HMI HP MULT
DEF TABLE W492=2147483647,-2147483648,0,0,0,HMI HP DIV
DEF TABLE W493=2147483647,-2147483648,0,0,0,HMI HP OFFSET
DEF TABLE W503=2147483647,-2147483648,0,0,0,RAMPED PSET REF
DEF TABLE W504=2147483647,-2147483648,0,0,0,RAMP ADDER
DEF TABLE W505=2147483647,-2147483648,0,0,0,PSET LIMIT STUS
DEF TABLE W506=2147483647,-2147483648,0,0,0,PSET MIN LIMIT
DEF TABLE W507=2147483647,-2147483648,0,0,0,PSET MAX LIMIT
DEF TABLE W510=2147483647,-2147483648,2,0,1,HI FREQ FOR NCOM
DEF TABLE W511=2147483647,-2147483648,2,0,1,LO FREQ FOR NCOM
DEF TABLE W512=2147483647,-2147483648,0,0,0,REAC REF
DEF TABLE W513=2147483647,-2147483648,0,0,0,REAC REF MULT
DEF TABLE W514=2147483647,-2147483648,0,0,0,REAC REF DIV
DEF TABLE W515=2147483647,-2147483648,0,0,0,REAC REF OFFSET
DEF TABLE W516=2147483647,-2147483648,0,0,0,REAC REF LIMIT
DEF TABLE W517=2147483647,-2147483648,0,0,0,REAC REF MIN
DEF TABLE W518=2147483647,-2147483648,0,0,0,REAC REF MAX
DEF TABLE W520=2147483647,-2147483648,0,0,0,HMI DC VOLTS M
DEF TABLE W521=2147483647,-2147483648,0,0,0,HMI DC VOLTS D
DEF TABLE W522=2147483647,-2147483648,0,0,0,HMI DC VOLTS OFF
DEF TABLE W524=2147483647,-2147483648,0,0,0,HMI DC VOLTS M1
DEF TABLE W525=2147483647,-2147483648,0,0,0,HMI DC VOLTS D1
DEF TABLE W526=2147483647,-2147483648,0,0,0,HMI DC VOLTS O1

;----------KEYPAD LED'S CONFIGURATION----------------------------------------
B32.9   = G1.1          L    Healthy          = TRIPS HEALTHY
B32.10  = L12802        L    Running          = Release Pulses
B32.11  = G54.1         L    Keypad Control   = DRIVE IN LOCAL
B32.12  = G321.2        L    Warning          = CHANNEL ALARM
B32.13  = G321.1        L    Tripped          = ANY TRIP

;---------ANALOG OUTPUTS ALSO SEE MODULE 168 FOR TYPE C OUTPUTS-------------
D4      = W444          L    MOTOR SPEED F/B  = SCALED D4
D5      = W449          L    MOTOR CURENT F/B = SCALED D5
D6      = W454          L    MOTOR VOLTS F/B  = SCALED D6
```

```
D7      = W459                      L     SPARE            = SCALED D7

;---------OPTO LINK FAILED-----------------------------------------------
G14     = -1                        L     OPTO LINK COMP   = -1
;---------G TABLE VALUES-------------------------------------------------
G30     = 65535                     L     CONV DIAG MASK   = 65535
G54.0   = 0                       P       KEYPAD REM/LOCAL = LOW
G70.0   = L13921                    L     IN MODE 1        = IN MODE 1
G98     = 0                         L     I REF STEP I/P   = 0
G152    = 1                         L     COUNT ONE        = 1
G155    = 500                       L     PULSE LENGTH     = 500
G183    = 30000                     L     START FAIL VAL   = 30000
G184    = 500                       L     START FAIL MIN F = 500
;---------ANALAG FUNCTIONS-----------------------------------------------
G201    = 2000                      L                      = 2000
G204    = 1                         L                      = 1
G211    = 2000                      L                      = 2000
G214    = 1                         L                      = 1
G221    = 2000                      L                      = 2000
G224    = 1                         L                      = 1
G231    = 2000                      L                      = 2000
G234    = 1                         L                      = 1
G241    = 2000                      L                      = 2000
G244    = 0                         L                      = 0
G251    = 2000                      L                      = 2000
G254    = 1                         L                      = 1
G261    = 2000                      L                      = 2000
G264    = 1                         L                      = 1
G271    = 2000                      L                      = 2000
G274    = 1                         L                      = 1
G281    = 2000                      L                      = 2000
G284    = 1                         L                      = 1
;---------COOLING SYSTEM VARIABLES---------------------------------------
G402    = 1000                      L     COOL RES TRP DEL = 1000 ms
G404    = 1000                      L     COOL RES ALM DEL = 1000 ms
G406    = 5000                      L     COOL FLO TRP DEL = 5000 ms
G408    = 1000                      L     COOL FLO ALM DEL = 1000 ms
G410    = 15000                     L     COOL CND TRP DEL = 15000 ms
G412    = 1800000                   L     COOL CND ALM DEL = 1800000 ms
G414    = 3000                      L     COOL TMP TRP DEL = 3000 ms
G416    = 5000                      L     COOL TMP ALM DEL = 5000 ms
G417    = 864000                    L     COOL CHPOVR SECS = 864000 s
G420    = 2000                      L     COOL FLO CHPOVR  = 2000 s
G430    = 14417                     L     COOL COND AL SP  = 14417
G431    = 11796                     L     COOL COND AL HYS = 11796
G432    = 18349                     L     COOL TEMP AL SP  = 18349
G433    = 17825                     L     COOL TEMP AL HYS = 17825
G434    = 6000                      L     COND/TMP SIG LOS = 6000
G451    = 5000                      L     SIG BAT TIME DEL = 5000
G454    = 3000                      L     HMI ALM DEL TIME = 3000
G463    = 20000                 U         RUN FLT DEL VAL  = 20000
;---------OVERCURRENT RIDETHROUGH VARIABLES------------------------------
G500.0  = L12809                    L     LTCHD SUPP 1 O/C = SUPP 1 O/C
G500.1  = L12811                    L     LTCHD MACH 1 O/C = MACH 1 O/C
G500.2  = L13105                    L     UNLCHD SUP1 O/C  = O/C Prot Healthy
G500.3  = L13405                    L     UNLCHD MAC1 O/C  = O/C Prot Healthy
G500.4  = L12816                    L     LTCHD S1/M1 PRTY = Parity S1/M1 OK
```

```
G511    = 15                    L     SUP1 O/C TIME    = 15 ms
G513    = 20                    L     MACH1 O/C TIME   = 20 ms
G515    = 0                     L     BOTH O/C TIME    = 0 ms
G517    = 1200                  L     RSTART WAIT TIME = 1200 ms
G519    = 1                     L     RST M128 PULSE D = 1 ms
G521    = 1000                  L     RST LENGTH       = 1000
G523    = 4                     L     RESTART ATTEMPTS = 4
G525    = 30                    L     ONE MIN TIME     = 30 s
G531    = 5                     L     SUP1 FLT TIME    = 5 ms
G532    = 15000                 L     SWARE O/C LEVEL  = 15000
G534    = 1                     L     MACH O/C CNTR    = 1
G536    = 5                     L     MACH1 FLT TIME   = 5 ms
G538    = 1                     L     SUPP O/C CNTR    = 1
;---------SERIAL LINK TIMERS-----------------------------------------------
G540    = 30000                 L     SLINK T/OUT TIME = 30000 ms
;---------RIDETHROUGH PARAMETER SETPOINTS----------------------------------
G542    = 50                    L     S1/M1 PRTY THRES = 50 %
G546    = 5                     L     S1/M1 FAULT TIME = 5 ms
G548    = 3000                  L     RDTH ALM LTCH TM = 3000 ms
;---------HISTORY RESET DELAY----------------------------------------------
G551    = 3000                  L                      = 3000
;---------KEYPAD O/P SCALARS-----------------------------------------------
G601    = 40700                 L     KEYPAD H1 MULT   = 40700
G602    = 1000                  L     KEYPAD H1 DIV    = 1000
G603    = 0                     L     KEYPAD H1 OFF    = 0
G605    = 954                   L     KEYPAD H2 MULT   = 954
G606    = 100                   L     KEYPAD H2 DIV    = 100
G607    = 0                     L     KEYPAD H2 OFF    = 0
G609    = 672                   L     KEYPAD H3 MULT   = 672
G610    = 100                   L     KEYPAD H3 DIV    = 100
G611    = 0                     L     KEYPAD H3 OFF    = 0
G613    = L13109                L     KEYPAD H4 MULT   = Filtered I F/B
G614    = 93                    L     KEYPAD H4 DIV    = 93
G615    = 0                     L     KEYPAD H4 OFF    = 0
G617    = 823                   L     KEYPAD H5 MULT   = 823
G618    = 100                   L     KEYPAD H5 DIV    = 100
G619    = 0                     L     KEYPAD H5 OFF    = 0
G621    = 954                   L     KEYPAD H6 MULT   = 954
G622    = 100                   L     KEYPAD H6 DIV    = 100
G623    = 0                     L     KEYPAD H6 OFFSET = 0
G649    = 1000                  L     KEYPAD H13 MULT  = 1000
G650    = 205                   L     KEYPAD H13 DIV   = 205
G651    = 0                     L     KEYPAD H13 OFF   = 0
G653    = 954                   L     KEYPAD H14 MULT  = 954
G654    = 10000                 L     KEYPAD H14 DIV   = 10000
G655    = 0                     L     KEYPAD H14 OFF   = 0
G657    = 954                   L     KEYPAD H15 MULT  = 954
G658    = 10000                 L     KEYPAD H15 DIV   = 10000
G659    = 0                     L     KEYPAD H15 OFF   = 0
G661    = 5                     L     KEYPAD H16 MULT  = 5
G662    = 1024                  L     KEYPAD H16 DIV   = 1024
G663    = 0                     L     KEYPAD H16 OFF   = 0
;---------MASTER/SLAVE TRANSFER LOGIC--------------------------------------
G686    = 3                     L                      = 3
G689    = 1                     L                      = 1
G694    = 1                     L                      = 1
G697    = 2000                  L     SLAVE-MASTER TIM = 2000 ms
```

```
G720     = 2000                    L                        = 2000
G741     = 79646                   L                        = 79646
G742     = 10000                   L                        = 10000
;---------PIB PLUG INTERLOCKS-----------------------------------------------
G800.0   = L16809                  L     PIB PLUG1 ILK      = ACCT ILK1/
G800.1   = L16810                  L     PIB PLUG2 ILK      = ACCT ILK2/
G800.2   = L16811                  L     PIB PLUG3 ILK      = AN Term ILK/
G800.3   = L16815                  L     PIB PLUG4 ILK      = Stator V ILK/
;---------V/F PROFILE FUNCTION GENERATOR-------------------------------------
G900     = 0                       L     V/F PROFILE FLT    = 0
G901     = 0                       L     V/F PROFILE LWST   = 0
G902     = 500                     L     V/F PROFILE INTV   = 500
G903     = 22                      L     V/F PROFILE TAB    = 22
G904     = 80.00                   L     V/F OP AT 0% SP    = 80.00 %
G905     = 80.00                   L     V/F OP AT 5% SP    = 80.00 %
G906     = 80.00                   L     V/F OP AT 10% SP   = 80.00 %
G907     = 80.00                   L     V/F OP AT 15% SP   = 80.00 %
G908     = 80.00                   L     V/F OP AT 20 %SP   = 80.00 %
G909     = 80.00                   L     V/F OP AT 25 %SP   = 80.00 %
G910     = 80.00                   L     V/F OP AT 30 %SP   = 80.00 %
G911     = 80.00                   L     V/F OP AT 35% SP   = 80.00 %
G912     = 80.00                   L     V/F OP AT 40% SP   = 80.00 %
G913     = 82.00                   L     V/F OP AT 45% SP   = 82.00 %
G914     = 85.00                   L     V/F OP AT 50% SP   = 85.00 %
G915     = 90.00                   L     V/F OP AT 55% SP   = 90.00 %
G916     = 96.10                   L     V/F OP AT 60% SP   = 96.10 %
G917     = 104.20                  L     V/F OP AT 65% SP   = 104.20 %
G918     = 112.20                  L     V/F OP AT 70% SP   = 112.20 %
G919     = 112.20                  L     V/F OP AT 75% SP   = 112.20 %
G920     = 112.20                  L     V/F OP AT 80% SP   = 112.20 %
G921     = 112.20                  L     V/F OP AT 85% SP   = 112.20 %
G922     = 111.11                  L     V/F OP AT 90% SP   = 111.11 %
G923     = 105.30                  L     V/F OP AT 95% SP   = 105.30 %
G924     = 100.00                  L     V/F OP AT 100%SP   = 100.00 %

;-----------HMI SERIAL LINK DATA-----------------------------------------
I3       = 36                      L     Lnk 1/1 tx len     = 36

K108.0   = A1.0                    L                        = ID FAN OFF
K108.1   = A1.1                    L                        = PLC TURNING GEAR
K108.2   = A1.2                    L                        = PLC NORMAL SPEED
K108.3   = A1.3                    L                        = PLC RUN
K108.4   = A1.4                    L                        = O/P DIS CLOSED
K108.5   = A1.5                    L                        = REAC FAN 1 OK
K108.6   = A1.6                    L                        = REAC FAN 2 OK
K108.7   = A1.7                    L                        = REAC HIGH TEMP
K108.8   = B1.8                    L                        = DRIVE HLTHY DHR
K108.9   = B1.9                    L                        = DRIVE ALARM DAR
K108.10  = B1.10                   L                        = HV NOT TRIP IBT
K108.11  = B1.11                   L                        = CLOSE EXC FCC
K108.12  = B1.12                   L                        = CLSE OP DIS DIS
K108.13  = B1.13                   L                        = RL1 SPARE
K108.14  = B1.14                   L                        = RL2 SPARE
K108.15  = B1.15                   L                        = RL3 SPARE

;-----------SPEED REGULATOR----------------------------------------------
L2101    = L12805                  L     Release reg.       = Release Control
```

```
L2106   = L2219                    L     Speed ref         = Total spd. ref.
L2121   = 1.000                    L     Lead t.c.         = 1.000 s
L2122   = 0.020                    L     Integral t.c.     = 0.020 s
L2124   = L7621                    L     Max. output lim.  = Spd Reg Pos Max
L2125   = L7622                    L     Min. output lim.  = Spd Reg Neg Max
L2132   = 10000                    L     Speed f.b. scale  = 10000
L2134   = 1.50                     L     F.b. ratio        = 1.50
L2144   = 0.1000                   L     Fdbk filter       = 0.1000 s
L2159   = 1                        L     Degain speed ctl  = HIGH
L2160   = 3                        L     Degain factor     = 3
L2164   = 1                        L     Initiate degain   = HIGH

;-----------SPEED REFERENCE-----------------------------------------------
L2201   = 0                        L     Apply jog ref.    = LOW
L2205   = 0.00                     L     Trim ref.         = 0.00 %
L2206   = G50.0                    L     Sel. ramp output  = PULSES RELEASED
L2207   = G50.0                    L     Start ramp        = PULSES RELEASED
L2208   = G91                      L     SPD RAMP INPUT    = LIMITED SPD REF
L2212   = L2126                    L     In max limit      = In max limit
L2213   = L2128                    L     In min limit      = In min limit
L2214   = G50.0                    L     Lift ref. clamp   = PULSES RELEASED
L2215   = G50.11                   L     Sel. rate 2       = SLECT RMP RATE2
L2223   = W207                     L     Rate 1 dec        = DECEL RATE
L2224   = 100.00                   L     Max. speed lim.   = 100.00 %
L2225   = 0.00                     L     Min. speed lim.   = 0.00 %
L2229   = 10000                    L     Ramp input scale  = 10000
L2233   = 2.0                      L     Rate 2 acc        = 2.0 %/s
L2234   = W465                     L     Rate 2 dec        = RATE 2 DECEL
L2235   = L2117                    L     Preset ramp in.   = Scaled speed fb.
L2238   = L2137                    L     Limited error     = Limited error
L2239   = L2117                    L     Speed             = Scaled speed fb.
L2241   = 0.5000                   L     Feedback filter   = 0.5000 s
L2248   = 0                        L     Select trim 1     = LOW
L2252   = 10240                    L     Trim 1 scalar     = 10240
L2256   = 0.200                    L     Fltr 1 time cnst  = 0.200 s
L2258   = C3                       L     Filter 2 input    = SPARE
L2259   = 0.300                    L     Fltr 2 time cnst  = 0.300 s

;-----------CONTROL AVAILABLE---------------------------------------------
L2702   = G81                      L     Current fb.       = ADJSTD I REF
L2704   = L3265                    L     Reset             = Reset
L2720   = 10.000                   L     Time at stall     = 10.000 s
L2728   = W220                     L     Cont. cur. level  = USED I2T LEVEL
L2729   = 596.0                    L     Averaging tc      = 596.0 s
L2733   = 35.00                    L     Current det.      = 35.00 %
L2734   = 2.00                     L     Speed det.        = 2.00 %

;------------FAULT DISPLAY------------------------------------------------
L3201   = 'P'                      L     Mess Ltr 0        = 'P'
L3202   = 100                      L     Mess Tbl 0        = 100
L3203   = 'P'                      L     Mess Ltr 8        = 'P'
L3204   = 132                      L     Mess Tbl 8        = 132
L3205   = 'P'                      L     Mess Ltr 16       = 'P'
L3206   = 164                      L     Mess Tbl 16       = 164
L3207   = 'P'                      L     Mess Ltr 24       = 'P'
L3208   = 196                      L     Mess Tbl 24       = 196
L3209   = 'P'                      L     Mess Ltr 32       = 'P'
```

```
L3210   = 228                    L     Mess Tbl 32       = 228
L3211   = 'P'                    L     Mess Ltr 40       = 'P'
L3212   = 260                    L     Mess Tbl 40       = 260
L3213   = 'P'                    L     Mess Ltr 48       = 'P'
L3214   = 292                    L     Mess Tbl 48       = 292
L3215   = 'P'                    L     Mess Ltr 56       = 'P'
L3216   = 324                    L     Mess Tbl 56       = 324
L3217   = 'P'                    L     Mess Ltr 64       = 'P'
L3218   = 356                    L     Mess Tbl 64       = 356
L3219   = 'P'                    L     Mess Ltr 72       = 'P'
L3220   = 388                    L     Mess Tbl 72       = 388
L3221   = 'P'                    L     Mess Ltr 80       = 'P'
L3222   = 420                    L     Mess Tbl 80       = 420
L3223   = 'P'                    L     Mess Ltr 88       = 'P'
L3224   = 452                    L     Mess Tbl 88       = 452
L3225   = 'W'                    L     Mess Ltr 96       = 'W'
L3226   = 624                    L     Mess Tbl 96       = 624
L3227   = 'W'                    L     Mess Ltr 104      = 'W'
L3228   = 656                    L     Mess Tbl 104      = 656
L3229   = 'W'                    L     Mess Ltr 112      = 'W'
L3230   = 624                    L     Mess Tbl 112      = 624
L3231   = 'W'                    L     Mess Ltr 120      = 'W'
L3232   = 656                    L     Mess Tbl 120      = 656
L3249   = @0                     L     Trip Alarm 0      = @0
L3250   = @0                     L     Trip Alarm 32     = @0
L3251   = @FFFFFFFF              L     Trip Alarm 64     = @FFFFFFFF
L3252   = @FFFF                  L     Trip Alarm 96     = @FFFF
L3253   = @FFFFFFFF              L     Trip Alarm 128    = @FFFFFFFF
L3254   = @FFFFFFFF              L     Trip Alarm 160    = @FFFFFFFF
L3255   = @80870A50              L     Hlthy Flag 0      = @80870A50
L3256   = @FA                    L     Hlthy Flag 32     = @FA
L3257   = @E3FF834C              L     Hlthy Flag 64     = @E3FF834C
L3258   = 0                      L     Hlthy Flag 96     = 0
L3259   = @FFFFFFFF              L     Hlthy Flag 128    = @FFFFFFFF
L3260   = @FFFFFFFF              L     Hlthy Flag 160    = @FFFFFFFF
L3265   = G1.11                  L     Reset             = RESET
L3267   = 200                    L     Start up Delay    = 200
L3268   = 4                      L     Inputs Scanned    = 4
L3276   = A34.4                  L     Next Flt Message  = Up key
L3277   = A34.5                  L     Prev Flt Message  = Down key

;----------FEEDER TRIPS STANDARD-----------------------------------------
L3301   = 0                      L     Fault Chan. 0     = LOW
L3302   = 0                      L     Fault Chan. 1     = LOW
L3303   = 0                      L     Fault Chan. 2     = LOW
L3304   = L12818                 L     Fault Chan. 3     = PIR Hlthy
L3305   = L16801                 L     Fault Chan. 4     = C0 Overcurrent
L3306   = G51.1                  L     Fault Chan. 5     = MOTOR OVERSPEED
L3307   = M9.15                  L     Fault Chan. 6     = DIG/OP TEST MODE
L3308   = G51.11                 L     Fault Chan. 7     = PIB CONFIG OK
L3309   = G51.4                  L     Fault Chan. 8     = PIB PLUG INTLK
L3310   = G300.4                 L     Fault Chan. 9     = START FAIL TRIP
L3311   = G300.3                 L     Fault Chan. 10    = BOTH REAC FANS
L3312   = G300.8                 L     Fault Chan. 11    = SUPPLY HI V TRIP
L3313   = L2714                  L     Fault Chan. 12    = Stall prot. ok
L3314   = L2727                  L     Fault Chan. 13    = I2t prot. ok
L3315   = L12819                 L     Fault Chan. 14    = EPF Hlthy
```

```
L3316   = A35.1                    L     Fault Chan. 15   = WATCHDOG TRIP
L3317   = G300.11                  L     Fault Chan. 16   = INV HIFREQ TRIP
L3318   = G300.10                  L     Fault Chan. 17   = INV HI V TRIP
L3319   = G300.9                   L     Fault Chan. 18   = INV LO V  TRIP
L3320   = G51.0                    L     Fault Chan. 19   = OVERVOLTS OK
L3321   = G51.9                    L     Fault Chan. 20   = MOTOR OVER FLUX
L3322   = G51.10                   L     Fault Chan. 21   = UNDER FLUX OK
L3323   = G51.2                    L     Fault Chan. 22   = SUP PHASE REF OK
L3324   = L16802                   L     Fault Chan. 23   = C1 Overcurrent
L3325   = A2.7                     L     Fault Chan. 24   = GATE PSU TRIP OK
L3326   = A2.13                    L     Fault Chan. 25   = CONTROL PSU'S OK
L3327   = A2.12                    L     Fault Chan. 26   = HV DOORS CLOSED
L3328   = G300.6                   L     Fault Chan. 27   = 6 PLS EXC FAIL
L3329   = H100.0                   L     Fault Chan. 28   = MOTOR GND FAULT
L3330   = G42.9                    L     Fault Chan. 29   = ENCLESS START OK
L3331   = G300.14                  L     Fault Chan. 30   = MODE1 ENCDR TRIP
L3332   = L16805                   L     Fault Chan. 31   = O/C Latch
;----------FEEDER TRIPS APPLICATION SPECIFIC-------------------------------
L3333   = H100.3                   L     Fault Chan. 32   = REACTOR O/T
L3334   = H100.4                   L     Fault Chan. 33   = TORQUE REF FAIL
L3335   = H100.5                   L     Fault Chan. 34   = EMERGENCY STOP
L3336   = G503.3                   L     Fault Chan. 35   = COUNTED FOUR
L3337   = G400.0                   L     Fault Chan. 36   = COOL RES LVL TRP
L3338   = G400.2                   L     Fault Chan. 37   = COOL LOW FLO TRP
L3339   = G400.4                   L     Fault Chan. 38   = COOL HI COND TRP
L3340   = G400.6                   L     Fault Chan. 39   = COOL HI TEMP TRP
L3341   = G300.15                  L     Fault Chan. 40   = RUN FAIL TRIP
L3342   = 1                        L     Fault Chan. 41   = HIGH
L3343   = 1                        L     Fault Chan. 42   = HIGH
L3344   = 1                        L     Fault Chan. 43   = HIGH
L3345   = 1                        L     Fault Chan. 44   = HIGH
L3346   = 1                        L     Fault Chan. 45   = HIGH
L3347   = 1                        L     Fault Chan. 46   = HIGH
L3348   = 1                        L     Fault Chan. 47   = HIGH
L3349   = 1                        L     Fault Chan. 48   = HIGH
L3350   = 1                        L     Fault Chan. 49   = HIGH
L3351   = 1                        L     Fault Chan. 50   = HIGH
L3352   = 1                        L     Fault Chan. 51   = HIGH
L3353   = 1                        L     Fault Chan. 52   = HIGH
L3354   = 1                        L     Fault Chan. 53   = HIGH
L3355   = 1                        L     Fault Chan. 54   = HIGH
L3356   = 1                        L     Fault Chan. 55   = HIGH
L3357   = 1                        L     Fault Chan. 56   = HIGH
L3358   = 1                        L     Fault Chan. 57   = HIGH
L3359   = 1                        L     Fault Chan. 58   = HIGH
L3360   = 1                        L     Fault Chan. 59   = HIGH
L3361   = 1                        L     Fault Chan. 60   = HIGH
L3362   = 1                        L     Fault Chan. 61   = HIGH
L3363   = 1                        L     Fault Chan. 62   = HIGH
L3364   = 1                        L     Fault Chan. 63   = HIGH
;---------ALARM CHANNELS-----------------------------------------------------
L3365   = G452.0                   L     Fault Chan. 64   = SIG BAT OK
L3366   = G301.14                  L     Fault Chan. 65   = MODE2 ENCD ALARM
L3367   = G301.7                   L     Fault Chan. 66   = SUPPLY LO V ALRM
L3368   = G301.8                   L     Fault Chan. 67   = SUPPLY HI V ALRM
L3369   = G300.1                   L     Fault Chan. 68   = REAC FAN 1 FAIL
L3370   = G300.2                   L     Fault Chan. 69   = REAC FAN 2 FAIL
```

```
L3371   = G543.0                L     Fault Chan. 70   = SRL COMMS FAIL
L3372   = A2.15                 L     Fault Chan. 71   = EXC CONTROLER OK
L3373   = L2726                 L     Fault Chan. 72   = I2t alarm
L3374   = B3.3                  L     Fault Chan. 73   = SPD REF LOSS SRF
L3375   = A2.6                  L     Fault Chan. 74   = GATE PSU ALRM OK
L3376   = G12.0                 L     Fault Chan. 75   = HDLC CARD FAIL
L3377   = L7308                 L     Fault Chan. 76   = Input data hlthy
L3378   = G15.0                 L     Fault Chan. 77   = OPTO LINK FAIL
L3379   = G300.0                L     Fault Chan. 78   = SURGE CCT ALARM
L3380   = H102.0                L     Fault Chan. 79   = S1 O/C RIDETHRO
L3381   = H102.1                L     Fault Chan. 80   = M1 O/C RIDETHRO
L3382   = H102.2                L     Fault Chan. 81   = PARITY RIDETHRO
L3383   = H102.3                L     Fault Chan. 82   = IP XFMR A PH O/T
L3384   = H102.4                L     Fault Chan. 83   = IP XFMR B PH O/T
L3385   = H102.5                L     Fault Chan. 84   = IP XFMR C PH O/T
L3386   = H102.7                L     Fault Chan. 85   = SIGMA TEMP HIGH
L3387   = G400.1                L     Fault Chan. 86   = COOL RES LVL ALM
L3388   = G400.3                L     Fault Chan. 87   = COOL LOW FLO ALM
L3389   = G400.5                L     Fault Chan. 88   = COOL HI COND ALM
L3390   = G400.7                L     Fault Chan. 89   = COOL HI TEMP ALM
L3391   = A4.6                  L     Fault Chan. 90   = COOL PAN H20 ALM
L3392   = A4.8                  L     Fault Chan. 91   = COOL PUMP 1 O/L
L3393   = A4.9                  L     Fault Chan. 92   = COOL PUMP 2 O/L
L3394   = G400.15               L     Fault Chan. 93   = NO HONEYWELL SIG
L3395   = G400.10               L     Fault Chan. 94   = PUMP 1 ALARM
L3396   = G400.11               L     Fault Chan. 95   = PUMP 2 ALARM

;------------------CONVERTER DIAGNOSTICS ALARMS-----------------------------
L3401   = L7310.0               L     Fault Chan. 96   = 1st alarm
L3402   = L7310.1               L     Fault Chan. 97   = 2nd alarm
L3403   = L7310.2               L     Fault Chan. 98   = 3rd alarm
L3404   = L7310.3               L     Fault Chan. 99   = 4th alarm
L3405   = L7310.4               L     Fault Chan. 100  = 5th alarm
L3406   = L7310.5               L     Fault Chan. 101  = 6th alarm
L3407   = L7310.6               L     Fault Chan. 102  = 7th alarm
L3408   = L7310.7               L     Fault Chan. 103  = 8th alarm
L3409   = L7310.8               L     Fault Chan. 104  = 9th alarm
L3410   = L7310.9               L     Fault Chan. 105  = 10th alarm
L3411   = L7310.10              L     Fault Chan. 106  = 11th alarm
L3412   = L7310.11              L     Fault Chan. 107  = 12th alarm
L3413   = L7310.12              L     Fault Chan. 108  = 13th alarm
L3414   = L7310.13              L     Fault Chan. 109  = 14th alarm
L3415   = L7310.14              L     Fault Chan. 110  = 15th alarm
L3416   = L7310.15              L     Fault Chan. 111  = 16th alarm
;------------------CONVERTER DIAGNOSTICS TRIPS------------------------------
L3417   = L7311.0               L     Fault Chan. 112  = 1st fault
L3418   = L7311.1               L     Fault Chan. 113  = 2nd fault
L3419   = L7311.2               L     Fault Chan. 114  = 3rd fault
L3420   = L7311.3               L     Fault Chan. 115  = 4th fault
L3421   = L7311.4               L     Fault Chan. 116  = 5th fault
L3422   = L7311.5               L     Fault Chan. 117  = 6th fault
L3423   = L7311.6               L     Fault Chan. 118  = 7th fault
L3424   = L7311.7               L     Fault Chan. 119  = 8th fault
L3425   = L7311.8               L     Fault Chan. 120  = 9th fault
L3426   = L7311.9               L     Fault Chan. 121  = 10th fault
L3427   = L7311.10              L     Fault Chan. 122  = 11th fault
L3428   = L7311.11              L     Fault Chan. 123  = 12th fault
```

```
L3429   = L7311.12                L     Fault Chan. 124  = 13th fault
L3430   = L7311.13                L     Fault Chan. 125  = 14th fault
L3431   = L7311.14                L     Fault Chan. 126  = 15th fault
L3432   = L7311.15                L     Fault Chan. 127  = 16th fault

;------------------SLOW HISTORY-----------------------------------------------
L3501   = G1.12                   L     History Enable   = TRIP HISTORY
L3504   = 'L'                     L     Ana chan 0 ltr   = 'L'
L3505   = 2119                    L     Ana chan 0 num   = 2119
L3506   = 'L'                     L     Ana chan 1 ltr   = 'L'
L3507   = 2106                    L     Ana chan 1 num   = 2106
L3508   = 'L'                     L     Ana chan 2 ltr   = 'L'
L3509   = 2115                    L     Ana chan 2 num   = 2115
L3510   = 'L'                     L     Ana chan 3 ltr   = 'L'
L3511   = 13924                   L     Ana chan 3 num   = 13924
L3512   = 'L'                     L     Ana chan 4 ltr   = 'L'
L3513   = 22208                   L     Ana chan 4 num   = 22208
L3514   = 'L'                     L     Ana chan 5 ltr   = 'L'
L3515   = 22220                   L     Ana chan 5 num   = 22220
L3516   = 'L'                     L     Ana chan 6 ltr   = 'L'
L3517   = 22115                   L     Ana chan 6 num   = 22115
L3518   = 'C'                     L     Ana chan 7 ltr   = 'C'
L3519   = 7                       L     Ana chan 7 num   = 7
L3520   = 'C'                     L     Ana chan 8 ltr   = 'C'
L3521   = 16                      L     Ana chan 8 num   = 16
L3522   = 'D'                     L     Ana chan 9 ltr   = 'D'
L3523   = 0                       L     Ana chan 9 num   = 0
L3524   = 'B'                     L     Log chan 0 ltr   = 'B'
L3525   = 1.08                    L     Log chan 0 num   = 1.08
L3526   = 'B'                     L     Log chan 1 ltr   = 'B'
L3527   = 1.09                    L     Log chan 1 num   = 1.09
L3528   = 'B'                     L     Log chan 2 ltr   = 'B'
L3529   = 1.10                    L     Log chan 2 num   = 1.10
L3530   = 'B'                     L     Log chan 3 ltr   = 'B'
L3531   = 1.11                    L     Log chan 3 num   = 1.11
L3532   = 'B'                     L     Log chan 4 ltr   = 'B'
L3533   = 1.12                    L     Log chan 4 num   = 1.12
L3534   = 'B'                     L     Log chan 5 ltr   = 'B'
L3535   = 1.13                    L     Log chan 5 num   = 1.13
L3536   = 'B'                     L     Log chan 6 ltr   = 'B'
L3537   = 1.14                    L     Log chan 6 num   = 1.14
L3538   = 'B'                     L     Log chan 7 ltr   = 'B'
L3539   = 1.15                    L     Log chan 7 num   = 1.15
L3540   = 'B'                     L     Log chan 8 ltr   = 'B'
L3541   = 3.00                    L     Log chan 8 num   = 3.00
L3542   = 'B'                     L     Log chan 9 ltr   = 'B'
L3543   = 3.01                    L     Log chan 9 num   = 3.01
L3544   = 'A'                     L     Log chan 10 ltr  = 'A'
L3545   = 4.04                    L     Log chan 10 num  = 4.04
L3546   = 'B'                     L     Log chan 11 ltr  = 'B'
L3547   = 3.03                    L     Log chan 11 num  = 3.03
L3548   = 'B'                     L     Log chan 12 ltr  = 'B'
L3549   = 3.04                    L     Log chan 12 num  = 3.04
L3550   = 'B'                     L     Log chan 13 ltr  = 'B'
L3551   = 3.05                    L     Log chan 13 num  = 3.05
L3552   = 'B'                     L     Log chan 14 ltr  = 'B'
L3553   = 3.06                    L     Log chan 14 num  = 3.06
```

```
L3554   = 'B'                    L     Log chan 15 ltr  = 'B'
L3555   = 3.07                   L     Log chan 15 num  = 3.07
L3556   = G552.0                 L     Reset history    =
L3558   = 10                     L     Num Analogue Ch  = 10
L3559   = 30                     L     Smpls after trip = 30 %
L3563   = L3275                  L     Fault Mess Ptr   = Fault Mess Ptr
L3564   = L3274                  L     Fault Number     = Fault Mess No.
L3568   = 1                      L     Scans/sample     = 1

;-------------------HDLC CARD SETUP-----------------------------------------
L7202   = E0.6                   L     Configure Links  = First scan flag
L7203   = 3                      L     Lnk 0 Type       = 3
L7204   = 12                     L     Lnk 0 Addr       = 12
L7205   = 3                      L     Lnk 0 Baud       = 3
L7206   = 0                      L     Lnk 0 Extra0     = 0
L7207   = 0                      L     Lnk 0 Extra1     = 0
L7208   = 0                      L     Lnk 1 Type       = 0
L7217   = 'W'                    L     0/0 Rx Letter    = 'W'
L7218   = 600                    L     0/0 Rx Offset    = 600
L7219   = 12                     L     0/0 Rx Size      = 12

;-------------------CONVERTER DIAGNOSTICS SETUP-----------------------------
L7301   = 'W'                    L     Data i/p letter  = 'W'
L7302   = 600                    L     Data i/p no.     = 600
L7303   = 12                     L     No. of tribs     = 12
L7304   = 'P'                    L     Mess i/p letter  = 'P'
L7305   = 600                    L     Mess i/p no.     = 600
L7306   = 'W'                    L     Mess o/p letter  = 'W'
L7307   = 624                    L     Mess o/p no.     = 624
L7314   = L3265                  L     Reset            = Reset
L7316   = 20                     L     Alarm period     = 20
L7317   = 20                     L     Alarm count      = 20
L7319   = L7284                  L     No. of loops     = Rx messages
L7321   = 0                      L     Inhibit Supply   = LOW
L7322   = 0                      L     Inhibit Machine  = LOW
L7324   = 0                      L     Inhibit All      = LOW
L7325   = 0                      L     Inhibit Cell Flt = LOW
L7326   = 0                      L     Inhibit Sys Flts = LOW

;-------------------TORQUE CONTROL------------------------------------------
L7602   = 5.00                   L     Reactive Ref     = 5.00 %
L7603   = G82                    L     Max. Amplitude   = I LIMIT MAX
L7604   = 0.10                   L     Min. Amplitude   = 0.10 %
L7618   = L13926                 L     Reversing        = F/B Reversing
L7619   = 1                      L     Enable Motoring  = HIGH
L7620   = 1                      L     Enble Generating = HIGH
L7637   = 0.8660                 L     Max PF Limit     = 0.8660
L7638   = -0.8660                L     Min PF Limit     = -0.8660
L7640   = L12618                 L     At Front Stop    = At Front Stop
L7641   = L12620                 L     At Back Stop     = At Back Stop
L7642   = 5.00                   L     Rate Limit       = 5.00 %/s

;----------MAINS SYNCHRONIZATION----------------------------------------------
L10711  = 55.0                   L     Min Frequency    = 55.0 Hz
L10712  = 65.0                   L     Max Frequency    = 65.0 Hz
L10713  = 7007                   L     Scaling Factor   = 7007
L10716  = 70.00                  L     Loss Threshold   = 70.00 %
```

```
L10717  = 10.00                    L     Loss Hysteresis  = 10.00 %

;----------FAST HISTORY-------------------------------------------------------
L11901  = G1.12                    L     History enable   = TRIP HISTORY
L11905  = 13402                    L     Ana chan 0 num   = 13402
L11907  = 13907                    L     Ana chan 1 num   = 13907
L11909  = 12614                    L     Ana chan 2 num   = 12614
L11911  = 12616                    L     Ana chan 3 num   = 12616
L11913  = 7617                     L     Ana chan 4 num   = 7617
L11915  = 12315                    L     Ana chan 5 num   = 12315
L11917  = 12102                    L     Ana chan 6 num   = 12102
L11919  = 12309                    L     Ana chan 7 num   = 12309
L11921  = 7624                     L     Ana chan 8 num   = 7624
L11923  = 12305                    L     Ana chan 9 num   = 12305
L11924  = 'A'                      L     Log chan 0 ltr   = 'A'
L11925  = 32.07                    L     Log chan 0 num   = 32.07
L11926  = 'A'                      L     Log chan 1 ltr   = 'A'
L11927  = 2.00                     L     Log chan 1 num   = 2.00
L11928  = 'A'                      L     Log chan 2 ltr   = 'A'
L11929  = 2.01                     L     Log chan 2 num   = 2.01
L11930  = 'A'                      L     Log chan 3 ltr   = 'A'
L11931  = 4.04                     L     Log chan 3 num   = 4.04
L11932  = 'A'                      L     Log chan 4 ltr   = 'A'
L11933  = 1.00                     L     Log chan 4 num   = 1.00
L11934  = 'A'                      L     Log chan 5 ltr   = 'A'
L11935  = 1.01                     L     Log chan 5 num   = 1.01
L11936  = 'A'                      L     Log chan 6 ltr   = 'A'
L11937  = 1.02                     L     Log chan 6 num   = 1.02
L11938  = 'A'                      L     Log chan 7 ltr   = 'A'
L11939  = 1.03                     L     Log chan 7 num   = 1.03
L11940  = 'G'                      L     Log chan 8 ltr   = 'G'
L11941  = 50.00                    L     Log chan 8 num   = 50.00
L11942  = 'L'                      L     Log chan 9 ltr   = 'L'
L11943  = 12802.00                 L     Log chan 9 num   = 12802.00
L11944  = 'A'                      L     Log chan 10 ltr  = 'A'
L11945  = 1.04                     L     Log chan 10 num  = 1.04
L11946  = 'G'                      L     Log chan 11 ltr  = 'G'
L11947  = 691.01                   L     Log chan 11 num  = 691.01
L11948  = 'G'                      L     Log chan 12 ltr  = 'G'
L11949  = 60.00                    L     Log chan 12 num  = 60.00
L11950  = 'G'                      L     Log chan 13 ltr  = 'G'
L11951  = 60.01                    L     Log chan 13 num  = 60.01
L11952  = 'G'                      L     Log chan 14 ltr  = 'G'
L11953  = 60.02                    L     Log chan 14 num  = 60.02
L11954  = 'G'                      L     Log chan 15 ltr  = 'G'
L11955  = 70.00                    L     Log chan 15 num  = 70.00
L11956  = G552.0                   L     Reset history    =
L11959  = 16                       L     Num Analog Chs   = 16
L11960  = 10                       L     % after trip     = 10 %
L11963  = L3275                    L     Fault mess ptr   = Fault Mess Ptr
L11964  = L3274                    L     Fault number     = Fault Mess No.
L11978  = 100                      L     Memory requd (k) = 100
L11981  = 'L'                      L     F/b 0 Letter     = 'L'
L11982  = 13102                    L     F/b 0 Num        = 13102
L11983  = 'L'                      L     F/b 1 Letter     = 'L'
L11984  = 13402                    L     F/b 1 Num        = 13402
L11985  = 'L'                      L     F/b 2 Letter     = 'L'
```

```
L11986  = 12302                    L     F/b 2 Num         = 12302
L11987  = 'L'                      L     F/b 3 Letter      = 'L'
L11988  = 12304                    L     F/b 3 Num         = 12304
L11989  = 'L'                      L     F/b 4 Letter      = 'L'
L11990  = 10719                    L     F/b 4 Num         = 10719
L11991  = 'L'                      L     F/b 5 Letter      = 'L'
L11992  = 10704                    L     F/b 5 Num         = 10704
L11993  = 1                        L     Num Fast Chs      = 1
L11997  = 300                      L     Sample limit      = 300
L11999  = 1                        L     Empty buffer      = HIGH

L12001  = 'L'                      L     Ana chan 10 ltr   = 'L'
L12002  = 10701                    L     Ana chan 10 num   = 10701
L12003  = 'L'                      L     Ana chan 11 ltr   = 'L'
L12004  = 12616                    L     Ana chan 11 num   = 12616
L12005  = 'L'                      L     Ana chan 12 ltr   = 'L'
L12006  = 12312                    L     Ana chan 12 num   = 12312
L12007  = 'L'                      L     Ana chan 13 ltr   = 'L'
L12008  = 13907                    L     Ana chan 13 num   = 13907
L12009  = 'L'                      L     Ana chan 14 ltr   = 'L'
L12010  = 12902                    L     Ana chan 14 num   = 12902
L12011  = 'L'                      L     Ana chan 15 ltr   = 'L'
L12012  = 10703                    L     Ana chan 15 num   = 10703

;---------SUPPLY BRIDGE FIRING CONTROL-------------------------------------
L12101  = 113.80                   L     Phase Shift       = 113.80 DEG

;---------STATOR VOLTAGE FEEDBACK------------------------------------------
L12301  = 19057                    L     Scaling Factor    = 19057
L12308  = 63.6                     L     Rated Frequency   = 63.6 Hz
L12320  = L12805                   L     Release Ramp      = Release Control
L12331  = 0                        L     Select Sync 2     = LOW
L12332  = 0                        L     Use Enh. Calcs    = LOW
L12333  = 0.20                     L     Max Phase Error   = 0.20

;---------CURRENT REGULATION-----------------------------------------------
L12601  = G80                      L     Current Ref       = CURRENT REF
L12602  = 0.090                    L     Source Reactance  = 0.090 PU
L12603  = 1.00                     L     Peak/Full Ratio   = 1.00
L12604  = 0.8660                   L     COS(safety ang)   = 0.8660
L12606  = 99.25                    L     Volt Front Limit  = 99.25 %
L12607  = 0.400                    L     Proportion Gain   = 0.400
L12608  = 2.500                    L     Integral Gain     = 2.500
L12612  = -100.00                  L     Open Loop Ref     = -100.00 %
L12615  = G88                      L     Beta Reference    = LIMITED BETA REF
L12617  = 1.00                     L     Front Stop Limit  = 1.00 %
L12619  = 1.00                     L     Back Stop Limit   = 1.00 %

;---------PROTECTION CONTROL-----------------------------------------------
L12801  = G50.4                    L     Run Request       = L128 PULS RELSED
L12820  = 1                        L     Disable S1/S2     = HIGH
L12821  = G23.10                   L     Disable S1/M1     = DIS PARITY TRIPS
L12822  = 1                        L     Disable S2/M2     = HIGH
L12823  = L12806                   L     Disable PIR Trip  = Suicide Control
L12826  = 1                        L     Dsbl S1/S2 Trip   = HIGH
L12827  = G23.10                   L     Dsbl S1/M1 Trip   = DIS PARITY TRIPS
L12828  = 1                        L     Dsbl S2/M2 Trip   = HIGH
```

```
L12831  = 50.00                    L     S1/S2 Threshold  = 50.00 %
L12832  = 50.00                    L     S1/M1 Pos Thresh = 50.00 %
L12833  = 50.00                    L     S1/M1 Neg Thresh = 50.00 %
L12834  = 100.00                   L     S2/M2 Pos Thresh = 100.00 %
L12835  = 100.00                   L     S2/M2 Neg Thresh = 100.00 %

;----------MACHINE BRIDGE FIRING CONTROL-----------------------------------
L12901  = 64.00                    L     Phase Shift      = 64.00 DEG

;----------CURRENT FEEDBACK SCALING----------------------------------------
L13101  = 10937                    L     Scaling Factor   = 10937
L13103  = 135.00                   L     Trip Threshold   = 135.00 %

L13401  = 10937                    L     Scaling Factor   = 10937
L13403  = 135.00                   L     Trip Threshold   = 135.00 %

;---------SET PULSE LENGTH-------------------------------------------------
L13851  = 0                        L     Use 25us Pulses  = LOW
L13854  = 1                        L     Use Dual History = HIGH

;---------ENCODER MODULE---------------------------------------------------
L13902  = 0.00                     L     Position Offset  = 0.00 DEG
L13903  = L7635                    L     Reverse Torque   = Reverse Torque
L13910  = 0.250                    L     Required time    = 0.250 s
L13912  = 63.60                    L     Rated Frequency  = 63.60 Hz
L13917  = L2257                    L     Speed Feedback   = Filter 1 output
L13918  = 9.00                     L     Cutoff Centre    = 9.00 %
L13919  = 1.00                     L     Cutoff Bandwidth = 1.00 %
L13920  = L12330                   L     Synchronised     = Synchronized
L13922  = L12309                   L     External Speed   = Stator Frequency
L13923  = L12330                   L     Sel Extrn Speed  = Synchronized

;----------MAINS SYCHRONIZATION 2 - USED FOR MONITORING - ------------------
L14713  = 7007                     L     Scaling Factor   = 7007
L14714  = 20.000                   L     Filter TC        = 20.000 ms

;----------FAST HISTORY RECORD 2-------------------------------------------
L15901  = G1.12                    L     History enable   = TRIP HISTORY
L15905  = 10704                    L     Ana chan 0 num   = 10704
L15906  = 'C'                      L     Ana chan 1 ltr   = 'C'
L15907  = 5                        L     Ana chan 1 num   = 5
L15909  = 10701                    L     Ana chan 2 num   = 10701
L15911  = 10703                    L     Ana chan 3 num   = 10703
L15913  = 12902                    L     Ana chan 4 num   = 12902
L15915  = 13907                    L     Ana chan 5 num   = 13907
L15917  = 12312                    L     Ana chan 6 num   = 12312
L15919  = 12305                    L     Ana chan 7 num   = 12305
L15921  = 12616                    L     Ana chan 8 num   = 12616
L15923  = 7623                     L     Ana chan 9 num   = 7623
L15924  = 'A'                      L     Log chan 0 ltr   = 'A'
L15925  = 32.07                    L     Log chan 0 num   = 32.07
L15926  = 'A'                      L     Log chan 1 ltr   = 'A'
L15927  = 2.00                     L     Log chan 1 num   = 2.00
L15928  = 'A'                      L     Log chan 2 ltr   = 'A'
L15929  = 2.10                     L     Log chan 2 num   = 2.10
L15930  = 'A'                      L     Log chan 3 ltr   = 'A'
L15931  = 2.15                     L     Log chan 3 num   = 2.15
```

```
L15932  = 'A'                    L     Log chan 4 ltr    = 'A'
L15933  = 1.00                   L     Log chan 4 num    = 1.00
L15934  = 'A'                    L     Log chan 5 ltr    = 'A'
L15935  = 1.01                   L     Log chan 5 num    = 1.01
L15936  = 'A'                    L     Log chan 6 ltr    = 'A'
L15937  = 1.02                   L     Log chan 6 num    = 1.02
L15938  = 'A'                    L     Log chan 7 ltr    = 'A'
L15939  = 1.03                   L     Log chan 7 num    = 1.03
L15940  = 'G'                    L     Log chan 8 ltr    = 'G'
L15941  = 50.00                  L     Log chan 8 num    = 50.00
L15942  = 'L'                    L     Log chan 9 ltr    = 'L'
L15943  = 12802.00               L     Log chan 9 num    = 12802.00
L15944  = 'L'                    L     Log chan 10 ltr   = 'L'
L15945  = 10708.00               L     Log chan 10 num   = 10708.00
L15946  = 'G'                    L     Log chan 11 ltr   = 'G'
L15947  = 691.01                 L     Log chan 11 num   = 691.01
L15948  = 'G'                    L     Log chan 12 ltr   = 'G'
L15949  = 60.00                  L     Log chan 12 num   = 60.00
L15950  = 'G'                    L     Log chan 13 ltr   = 'G'
L15951  = 60.01                  L     Log chan 13 num   = 60.01
L15952  = 'G'                    L     Log chan 14 ltr   = 'G'
L15953  = 60.02                  L     Log chan 14 num   = 60.02
L15954  = 'L'                    L     Log chan 15 ltr   = 'L'
L15955  = 10718.00               L     Log chan 15 num   = 10718.00
L15956  = G552.0                 L     Reset history     =
L15959  = 10                     L     Num Analog Chs    = 10
L15960  = 10                     L     % after trip      = 10 %
L15963  = L3275                  L     Fault mess ptr    = Fault Mess Ptr
L15964  = L3274                  L     Fault number      = Fault Mess No.
L15981  = 'L'                    L     F/b 0 Letter      = 'L'
L15982  = 13102                  L     F/b 0 Num         = 13102
L15983  = 'L'                    L     F/b 1 Letter      = 'L'
L15984  = 13402                  L     F/b 1 Num         = 13402
L15985  = 'L'                    L     F/b 2 Letter      = 'L'
L15986  = 12302                  L     F/b 2 Num         = 12302
L15987  = 'L'                    L     F/b 3 Letter      = 'L'
L15988  = 12304                  L     F/b 3 Num         = 12304
L15989  = 'L'                    L     F/b 4 Letter      = 'L'
L15990  = 10719                  L     F/b 4 Num         = 10719
L15991  = 'L'                    L     F/b 5 Letter      = 'L'
L15992  = 10704                  L     F/b 5 Num         = 10704
L15993  = 1                      L     Num Fast Chs      = 1
L15997  = 300                    L     Sample limit      = 300
L15999  = 1                      L     Empty buffer      = HIGH

;----------TYPE C CONFIGURATION-----------------------------------------------
L16841  = W444                   L     D4 MOTOR SPEED    = SCALED D4
L16842  = W449                   L     D5 MOTOR CURRENT  = SCALED D5
L16843  = W454                   L     D6 MOTOR VOLTS    = SCALED D6
L16844  = W459                   L     D7 SPARE          = SCALED D7
L16845  = 2                      L     Volt FB Select    = 2
L16846  = 1                      L     Enable R Integ.   = HIGH
L16847  = 1                      L     Enable S Integ.   = HIGH
L16848  = 1                      L     Enable T Integ.   = HIGH

;---------V/F REGULATION-----------------------------------------------------
L22101  = G50.6                  L     Release reg.      = START SEQUENCE
```

```
L22106  = L22220                L     V/F REFERENCE     = TOTAL V/F REF
L22112  = L12304                L     V/F FEEDBACK      = Filtered V/F
L22121  = 0.500                 L     Lead t.c.         = 0.500 s
L22122  = 0.500                 L     Integral t.c.     = 0.500 s
L22124  = 100.00                L     Max. output lim.  = 100.00 %
L22125  = 0.00                  L     Min. output lim.  = 0.00 %
L22132  = 10000                 L     V/F FDBCK SCALE   = 10000
L22142  = 37.00                 L     Preset contr o/p  = 37.00 %
L22143  = G110.2                L     Init preset o/p   = INHIBIT V/F REG
L22144  = 0.1000                L     Fdbk filter       = 0.1000 s

;---------V/F REFERENCE-----------------------------------------------------
L22206  = 1                     L     Sel. ramp output  = HIGH
L22207  = 1                     L     Start ramp        = HIGH
L22208  = W19                   L     Ramp input        = V/F REFERENCE
L22212  = L22126                L     In max limit      = In max limit
L22213  = L22128                L     In min limit      = In min limit
L22214  = 1                     L     Lift ref. clamp   = HIGH
L22222  = 100.0                 L     Rate 1 acc        = 100.0 %/s
L22223  = 100.0                 L     Rate 1 dec        = 100.0 %/s
L22224  = 120.00                L     + V/F LIMIT       = 120.00 %
L22225  = 0.00                  L     - V/F LIMIT       = 0.00 %
L22229  = 10000                 L     Ramp input scale  = 10000
L22235  = L12304                L     Preset ramp in.   = Filtered V/F
L22236  = G1.10                 L     Init preset ramp  = PRESET V/F RAMP
L22256  = 0.050                 L     Fltr 1 time cnst  = 0.050 s

;---------CONTROL HISTORY RECORD 2------------------------------------------
L23501  = G1.12                 L     History Enable    = TRIP HISTORY
L23504  = 'L'                   L     Ana chan 0 ltr    = 'L'
L23505  = 12305                 L     Ana chan 0 num    = 12305
L23506  = 'G'                   L     Ana chan 1 ltr    = 'G'
L23507  = 460                   L     Ana chan 1 num    = 460
L23508  = 'L'                   L     Ana chan 2 ltr    = 'L'
L23509  = 13109                 L     Ana chan 2 num    = 13109
L23510  = 'L'                   L     Ana chan 3 ltr    = 'L'
L23511  = 13409                 L     Ana chan 3 num    = 13409
L23512  = 'L'                   L     Ana chan 4 ltr    = 'L'
L23513  = 7624                  L     Ana chan 4 num    = 7624
L23514  = 'L'                   L     Ana chan 5 ltr    = 'L'
L23515  = 13924                 L     Ana chan 5 num    = 13924
L23516  = 'G'                   L     Ana chan 6 ltr    = 'G'
L23517  = 83                    L     Ana chan 6 num    = 83
L23518  = 'G'                   L     Ana chan 7 ltr    = 'G'
L23519  = 461                   L     Ana chan 7 num    = 461
L23520  = 'C'                   L     Ana chan 8 ltr    = 'C'
L23521  = 14                    L     Ana chan 8 num    = 14
L23522  = 'L'                   L     Ana chan 9 ltr    = 'L'
L23523  = 2730                  L     Ana chan 9 num    = 2730
L23524  = 'A'                   L     Log chan 0 ltr    = 'A'
L23525  = 32.07                 L     Log chan 0 num    = 32.07
L23526  = 'A'                   L     Log chan 1 ltr    = 'A'
L23527  = 2.00                  L     Log chan 1 num    = 2.00
L23528  = 'A'                   L     Log chan 2 ltr    = 'A'
L23529  = 2.01                  L     Log chan 2 num    = 2.01
L23530  = 'A'                   L     Log chan 3 ltr    = 'A'
L23531  = 2.15                  L     Log chan 3 num    = 2.15
```

```
L23532  = 'A'                    L     Log chan 4 ltr    = 'A'
L23533  = 1.00                   L     Log chan 4 num    = 1.00
L23534  = 'A'                    L     Log chan 5 ltr    = 'A'
L23535  = 4.04                   L     Log chan 5 num    = 4.04
L23536  = 'A'                    L     Log chan 6 ltr    = 'A'
L23537  = 1.02                   L     Log chan 6 num    = 1.02
L23538  = 'A'                    L     Log chan 7 ltr    = 'A'
L23539  = 1.03                   L     Log chan 7 num    = 1.03
L23540  = 'G'                    L     Log chan 8 ltr    = 'G'
L23541  = 50.00                  L     Log chan 8 num    = 50.00
L23542  = 'L'                    L     Log chan 9 ltr    = 'L'
L23543  = 12802.00               L     Log chan 9 num    = 12802.00
L23544  = 'A'                    L     Log chan 10 ltr   = 'A'
L23545  = 1.04                   L     Log chan 10 num   = 1.04
L23546  = 'G'                    L     Log chan 11 ltr   = 'G'
L23547  = 691.01                 L     Log chan 11 num   = 691.01
L23548  = 'G'                    L     Log chan 12 ltr   = 'G'
L23549  = 60.00                  L     Log chan 12 num   = 60.00
L23550  = 'G'                    L     Log chan 13 ltr   = 'G'
L23551  = 60.01                  L     Log chan 13 num   = 60.01
L23552  = 'G'                    L     Log chan 14 ltr   = 'G'
L23553  = 60.02                  L     Log chan 14 num   = 60.02
L23554  = 'G'                    L     Log chan 15 ltr   = 'G'
L23555  = 70.00                  L     Log chan 15 num   = 70.00
L23556  = G552.0                 L     Reset history     =
L23558  = 10                     L     Num Analogue Ch   = 10
L23559  = 30                     L     Smpls after trip  = 30 %
L23563  = L3275                  L     Fault Mess Ptr    = Fault Mess Ptr
L23564  = L3274                  L     Fault Number      = Fault Mess No.
L23568  = 1                      L     Scans/sample      = 1

;---------TEST REFERENCES-----------------------------------------------
M4      = 0.00                   L     CSP TEST SPD REF  = 0.00 %
M5.4    = 0                      L     SYNC 2 REQUIRED   = LOW
M5.11   = 1                      L     USE HMI CLOCK     = HIGH
M5.12   = 0                   U        EN COND HISTORY   = LOW
M6      = 0.00                   L     EXCTR TEST REF    = 0.00 %
M7      = 0                      L                       = 0
M9.4    = 1                      L     ENABLE DIAG       = HIGH
M9.10   = 1                      L     USE ENCODERS      = HIGH

;---------CONFIGURATION VARIABLES---------------------------------------
P0      = 0                      L     Drive ID          = 0
P1      = 5.000                  L     Scan time         = 5.000 ms
P3.14   = 1                      L                       = HIGH
P5      = 1.000                  L     Delay units       = 1.000 ms
P8      = 0                      L     Enable Drive ID   = LOW
P9.0    = 1                      L     Run on power up   = HIGH
P9.2    = 1                      L     4495 Cust. I/O    = HIGH
P9.5    = 0                      L     Program FLASH     = LOW
P10     = 'H'                    L     Monitor Letter    = 'H'
P11     = 1                      L     Monitor Offset    = 1
P25     = 72                     L     Eh card slot 1    = 72
;---------CRITICAL FAULT DISPLAY MESSAGES-------------------------------
P100    = "SUPPLY INST O/C "     L                       =
P104    = "MACHINE INST O/C"     L                       =
P108    = "S1/M1 CT PARITY "     L                       =
```

```
P112    = "INPUT BKR OPEN  "      L                    =
P116    = "S1 HARDWARE O/C "      L                    =
P120    = "MOTOR OVERSPEED "      L                    =
P124    = "DIG/OP TEST ON  "      L                    =
P128    = "PIB CONFIG ERROR"      L                    =
P132    = "PIB PLUG INTLOCK"      L                    =
P136    = "FAIL TO START   "      L                    =
P140    = "REAC FANS FAIL  "      L                    =
P144    = "SUPPLY HI VOLTS "      L                    =
P148    = "MOTOR STALL     "      L                    =
P152    = "MOTOR I2T-TEMP  "      L                    =
P156    = "EARLY POWER FAIL"      L                    =
P160    = "WATCHDOG FAULT  "      L                    =
P164    = "INV HI FREQ     "      L                    =
P168    = "INV HI VOLTS    "      L                    =
P172    = "INV LO VOLTS    "      L                    =
P176    = "MOTOR HI VOLTS  "      L                    =
P180    = "MOTOR OVERFLUX  "      L                    =
P184    = "MOTOR UNDERFLUX "      L                    =
P188    = "SYNC REF FAILURE"      L                    =
P192    = "M1 HARDWARE O/C "      L                    =
P196    = "GATE PSU FAIL   "      L                    =
P200    = "CONTROL PSU FAIL"      L                    =
P204    = "HV DOOR OPEN    "      L                    =
P208    = "6 PLS EXCITER   "      L                    =
P212    = "MOTOR GND FAULT "      L                    =
P216    = "NO ENC START FLT"      L                    =
P220    = "MODE 1 ENC FAULT"      L                    =
P224    = "LATCHED O/C     "      L                    =
;----------CHANNEL FAULT DISPLAY MESSAGES-----------------------------------
P228    = "REAC HIGH TEMP  "      L                    =
P232    = "TORQUE REF FAIL "      L                    =
P236    = "EMERGENCY STOP  "      L                    =
P240    = "3 FAULTS/MIN    "      L                    =
P244    = "RES LEVEL LOW   "      L                    =
P248    = "LOW FLOW        "      L                    =
P252    = "HI CONDUCTIVITY "      L                    =
P256    = "HI WATER TEMP   "      L                    =
P260    = "RUN FAIL TRIP   "      L                    =
P264    = "                "      L                    =
P268    = "                "      L                    =
P272    = "                "      L                    =
P276    = "                "      L                    =
P280    = "                "      L                    =
P284    = "                "      L                    =
P288    = "                "      L                    =
P292    = "                "      L                    =
P296    = "                "      L                    =
P300    = "                "      L                    =
P304    = "                "      L                    =
P308    = "                "      L                    =
P312    = "                "      L                    =
P316    = "                "      L                    =
P320    = "                "      L                    =
P324    = "                "      L                    =
P328    = "                "      L                    =
P332    = "                "      L                    =
```

```
P336    = "                    "      L                        =
P340    = "                    "      L                        =
P344    = "                    "      L                        =
P348    = "                    "      L                        =
P352    = "                    "      L                        =
;----------ALARM FAULT DISPLAY MESSAGES-------------------------------------
P356    = "BATTERIES LOW    "      L                        =
P360    = "MODE 2 ENCODER   "      L                        =
P364    = "SUPPLY LO VOLTS  "      L                        =
P368    = "SUPPLY HI VOLTS  "      L                        =
P372    = "REACTOR FAN 1    "      L                        =
P376    = "REACTOR FAN 2    "      L                        =
P380    = "HMI COMMS FAIL   "      L                        =
P384    = "EXCITER FAILURE  "      L                        =
P388    = "THERMAL OVERLOAD"       L                        =
P392    = "SPEED REF FAIL   "      L                        =
P396    = "GATE PSU FAULT   "      L                        =
P400    = "DIAG HDLC CARD   "      L                        =
P404    = "DIAG IP DATA FLT"       L                        =
P408    = "DIAG OPTIC LINK  "      L                        =
P412    = "SURGE CCT FUSE   "      L                        =
P416    = "S1 O/C RIDETHRO  "      L                        =
P420    = "M1 O/C RIDETHRO  "      L                        =
P424    = "PARITY RIDETHRO  "      L                        =
P428    = "XFMR A PHASE O/T"       L                        =
P432    = "XFMR B PHASE O/T"       L                        =
P436    = "XFMR C PHASE O/T"       L                        =
P440    = "HIGH SIGMA TEMP  "      L                        =
P444    = "RES LEVEL LOW    "      L                        =
P448    = "LOW FLOW         "      L                        =
P452    = "HI CONDUCTIVITY  "      L                        =
P456    = "HI TEMPERATURE   "      L                        =
P460    = "H2O IN DRIP PAN  "      L                        =
P464    = "COOL PUMP 1 O/L  "      L                        =
P468    = "COOL PUMP 2 O/L  "      L                        =
P472    = "NO COND/TEMP SIG"       L                        =
P476    = "PUMP 1 ALARM     "      L                        =
P480    = "PUMP 2 ALARM     "      L                        =
;-----------------DIAGNOSTIC FAULT MESSAGE TEXT STRINGS------------------
P600    = "S ARM 01 DEV  F "       L                        =
P604    = "S ARM 01 DEV  1 "       L                        =
P608    = "S ARM 02 DEV  F "       L                        =
P612    = "S ARM 02 DEV  1 "       L                        =
P616    = "S ARM 03 DEV  F "       L                        =
P620    = "S ARM 03 DEV  1 "       L                        =
P624    = "S ARM 04 DEV  F "       L                        =
P628    = "S ARM 04 DEV  1 "       L                        =
P632    = "S ARM 05 DEV  F "       L                        =
P636    = "S ARM 05 DEV  1 "       L                        =
P640    = "S ARM 06 DEV  F "       L                        =
P644    = "S ARM 06 DEV  1 "       L                        =
P648    = "M ARM 01 DEV  F "       L                        =
P652    = "M ARM 01 DEV  1 "       L                        =
P656    = "M ARM 02 DEV  F "       L                        =
P660    = "M ARM 02 DEV  1 "       L                        =
P664    = "M ARM 03 DEV  F "       L                        =
P668    = "M ARM 03 DEV  1 "       L                        =
```

```
P672    = "M ARM 04 DEV  F "      L                        =
P676    = "M ARM 04 DEV  1 "      L                        =
P680    = "M ARM 05 DEV  F "      L                        =
P684    = "M ARM 05 DEV  1 "      L                        =
P688    = "M ARM 06 DEV  F "      L                        =
P692    = "M ARM 06 DEV  1 "      L                        =
P696    = "                 "     L                        =
P700    = "                 "     L                        =
P704    = "                 "     L                        =
P708    = "                 "     L                        =
P712    = "                 "     L                        =
P716    = "                 "     L                        =
P720    = "                 "     L                        =
P724    = "                 "     L                        =
P728    = "                 "     L                        =
P732    = "                 "     L                        =
P736    = "                 "     L                        =
;---------SERIAL LINK 1 CONFIGURATION----------------------------------------
P800    = 1                       L     ESP LINK ADDRESS = 1
P801    = 1                       L     PARTNERS         = 1
P802    = 6                       L     BAUD RATE 38400  = 6
P803    = 1                       L     SLINK PARITY     = 1
P804    = 0                       L     NOT USED         = 0
P805    = -4                      L     DATA-TABLE EXCHG = -4
;---------SERIAL LINK 2 CONFIGURATION----------------------------------------
P810    = 1                       L                      = 1
P811    = 1                       L                      = 1
P812    = 5                       L                      = 5
P813    = 0                       L                      = 0
P814    = 0                       L                      = 0
P815    = -1                      L                      = -1

;------------VARIOUS LIMITS-----------------------------------------------
W1      = 3000                    L     EX REF LO LIMIT  = 3000
W2      = 16383                   L     EX REF HI LIMIT  = 16383
W4      = 0                       L     N F/B LO LIMIT   = 0
W5      = 32767                   L     N F/B HI LIMIT   = 32767
;----------VARIOUS PRESET VALUES----------------------------------------
W17     = 115.00                  L     STR O/VOLT LEVEL = 115.00 %
W18     = 102.20                  L     O/SPEED LEVEL    = 102.20 %
W19     = 0.00                    L     V/F REFERENCE    = 0.00 %
W22     = 140.00                  L     O/FLUX TRIP LVL  = 140.00 %
W23     = 10.00                   L     U/FLUX TRIP LVL  = 10.00 %
W27     = 9.00                    L     SLOW SPEED LEVEL = 9.00 %
W28     = 35000                   L     STRT FAIL TIMER  = 35000 ms
;------------SUPPLY MONITORING LEVELS + TIMERS------------------------------
W30     = 2000                    L     SURGE CCT FAIL   = 2000 ms
W31     = 150.00                  L     SPLY HV TR LEVEL = 150.00 %
W32     = 100                     L     SPLY HV TR TIMER = 100 ms
;------------INVERTER MONITORING LEVELS + TIMERS----------------------------
W33     = 40.00                   L     INV LV TR LEVEL  = 40.00 %
W34     = 1000                    L     INV LV TR TIMER  = 1000 ms
W35     = 60.00                   L     INV HV TR LEVEL  = 60.00 %
W36     = 100                     L     INV HV TR TIMER  = 100 ms
W37     = 105.00                  L     INV HIFREQ LEVEL = 105.00 %
W38     = 200                     L     INV HIFREQ TIMER = 200 ms
;------------MISCELANEOUS TIMERS------------------------------------------
```

```
W39     = 2000                      L     DEL UPON PLS REL = 2000 ms
W40     = 4000                      L     MIN EXC CURRENT  = 4000
W41     = 10000                     L     GND FLT DELAY    = 10000 ms

;-----------SIGMA CORE BOARD TEMPERATURE CALCULATION PARAMETERS-------------
W51     = 5000                      L     TEMP LINC 1 MULT = 5000
W52     = 1024                      L     TEMP LINC 1 DIV  = 1024
W53     = 0                         L     TEMP LINC 1 OFF  = 0
W55     = 9000                      L     TEMP LINC 2 MULT = 9000
W56     = 1575                      L     TEMP LINC 2 DIV  = 1575
W57     = 3200                      L     TEMP LINC 2 OFF  = 3200
W58     = 12200                     L     TEMP ALARM LEVEL = 12200
;-----------V/F THRESHOLDS--------------------------------------------------
W111    = 8.00                      L     V/F THRESH HI    = 8.00 %
W112    = 6.00                      L     V/F THRESH LO    = 6.00 %
W120    = 2.00                      L     ZERO SPEED       = 2.00 %
;-----------NORMAL/CRITICAL SPEEDS SETTINGS---------------------------------
W151    = 0                         L     CRT SPD1 DEADBND = 0
W152    = 0                         L     CRT SPD2 OFFSET  = 0
W153    = 0                         L     CRITICAL SPD 1   = 0
W155    = 0                         L     CRT SPD2 DEADBND = 0
W156    = 0                         L     CRT SPD2 OFFSEF  = 0
W157    = 0                         L     CRITICAL SPD 2   = 0
W166    = 100.00                    L     SPD REF UPR LIM  = 100.00 %
;-----------ANALOG INPUT C5 SCALING-----------------------------------------
W191    = 1200                      L     UPS MULT         = 1200
W192    = 6280                      L     UPS DIV          = 6280
W193    = 0                         L     UPS OFFSET       = 0
;-----------ANALOG INPUT C16 SACALING---------------------------------------
W195    = 2000                      L     COND MULT        = 2000
W196    = 26200                     L     COND DIV         = 26200
W197    = -500                      L     COND OFFSET      = -500
;-----------ACCELERATION/DECELERATION LEVELS + RATES-----------------------
W204    = 10                      S       MODE2 ACCEL LVL  = 10 %
W205    = 1.0                     S       MODE1 ACCEL RATE = 1.0 %/s
W206    = 2.0                     S       MODE2 ACCEL RATE = 2.0 %/s
W207    = 2.0                     S       DECEL RATE       = 2.0 %/s
;-----------SKIP BANDS------------------------------------------------------
W208    = 5                         L     SKIP BAND ACCEL1 = 5 %/s
W209    = 5                         L     SKIP BAND ACCEL2 = 5 %/s
W212    = 200.00                    L     SKIP 1 LO        = 200.00 %
W213    = 0.00                      L     SKIP 1 HI        = 0.00 %
W214    = 200.00                    L     SKIP 2 LO        = 200.00 %
W215    = 0                         L     SKIP 2 HI        = 0 %
;---------------CURRENT LIMITS + I2T LIMITS-------------------------------
W218    = 90.00                     L     6 PLSE I2T LIM   = 90.00 %
W219    = 87.00                     L     12 PLSE I2T LIM  = 87.00 %
W221    = 83.80                     L     6 PLSE I LIMIT   = 83.80 %
W222    = 73.50                     L     12 PLSE I LIMIT  = 73.50 %
;--------------SUPPLY MONITORING ALARMS-----------------------------------
W304    = 85.00                     L     LO SUPLV AL L SP = 85.00 %
W305    = 88.00                     L     LO SUPLV AL H SP = 88.00 %
W306    = 200                       L     LO SUPLV AL TIME = 200 ms
W307    = 108.00                    L     HI SUPLV AL L SP = 108.00 %
W308    = 110.00                    L     HI SUPLV AL H SP = 110.00 %
W309    = 100                       L     HI SUPLV AL TIME = 100 ms
;--------------FAULT TIMERS----------------------------------------------
```

```
W310    = 1000                      L     PROT HLY TMR      = 1000 ms
W311    = 1                         L     ENC TRIP TIMER    = 1 ms
W312    = 1                         L     ENC ALRM TIMER    = 1 ms
W313    = 5000                      L     RUN TIMER 1       = 5000 ms
W314    = 1000                      L     OVRSPD TRP TMR    = 1000 ms
W315    = 30000                     L     PHREF LOSS TMR    = 30000 ms
W316    = 300                       L     ZCREF LOSS TMR    = 300 ms
W317    = 2000                      L     HDLC FAIL TMR     = 2000 ms
W326    = 1.00                      L     ZERO SPEED LIM    = 1.00 %
W327    = 9.43                      L     TG SPEED LIM      = 9.43 %
W328    = 16.25                     L     MIN SPEED LIM     = 16.25 %
W329    = 9.96                      L     TG MIN SPEED      = 9.96 %
W330    = 16.25                     L     RUN MIN SPEED     = 16.25 %
W334    = 0.00                      L     A IREF LO LIM     = 0.00 %
W335    = 200.00                    L     A IREF HI LIM     = 200.00 %
W336    = 1000                      L     RUN TIMER 2       = 1000 ms
W337    = 80.00                     L     MODE 1 ILIM       = 80.00 %
W349    = 1000                      L     UNDR FLUX TMR     = 1000 ms
W350    = 1000                      L     OVER FLUX TMR     = 1000 ms
W351    = 5000                      L     OVER VOLT TMR     = 5000 ms
W353    = 2000                      L     TQ REF FAIL TIME = 2000 ms
W355    = 5000                      L     CT PARITY TIMER   = 5000 ms
;-------------ANALOG I/P C6 SCALING-----------------------------------------
W361    = 8                         L     ANLG I/P C6 MUL   = 8
W362    = 9                         L     ANLG I/P C6 DIV   = 9
W363    = -14564                    L     ANLG I/P C6 OFS   = -14564
;-------------ANALOG I/P C7 SCALING-----------------------------------------
W365    = 1                         L     ANLG I/P C7 MUL   = 1
W366    = 1                         L     ANLG I/P C7 DIV   = 1
W367    = 1                         L     ANLG I/P C7 OFS   = 1
;-------------ANALOG I/P C8 SCALING-----------------------------------------
W369    = 1                         L     ANLG I/P C8 MUL   = 1
W370    = 1                         L     ANLG I/P C8 DIV   = 1
W371    = 1                         L     ANLG I/P C8 OFS   = 1
;-------------ANALOG I/P C14 SCALER-----------------------------------------
W401    = 8428                      L     ANLG I/P C14 MUL = 8428
W402    = 26201                     L     ANLG I/P C14 DIV = 26201
W403    = -535                      L     ANLG I/P C14 OFS = -535
;-------------ANALOG I/P C15 SCALER-----------------------------------------
W406    = 32767                     L     ANLG I/P C15 MUL = 32767
W407    = 10000                     L     ANLG I/P C15 DIV = 10000
W408    = 0                         L     ANLG I/P C15 OFS = 0
;-------------ANALOG I/P C16 SCALER-----------------------------------------
W411    = 10000                     L     ANLG I/P C16 MUL = 10000
W412    = 32752                     L     ANLG I/P C16 DIV = 32752
W413    = 0                         L     ANLG I/P C16 OFS = 0
;------------ANALOG I/P C17 SCALAR----------------------------------------
W416    = 10000                     L     ANLG I/P C17 MUL = 10000
W417    = 32752                     L     ANLG I/P C17 DIV = 32752
W418    = 0                         L     ANLG I/P C17 OFS = 0
;------------ANALOG O/P D0 SCALER-----------------------------------------
W421    = 32767                     L     ANLG O/P D0 MUL   = 32767
W422    = 20000                     L     ANLG O/P D0 DIV   = 20000
W423    = 0                         L     ANLG O/P D0 OFS   = 0
;------------ANALOG O/P D1 SCALER-----------------------------------------
W426    = 9050                      L     ANLG O/P D1 MUL   = 9050
W427    = 8000                      L     ANLG O/P D1 DIV   = 8000
```

```
W428    = 16460                     L     ANLG O/P D1 OFS  = 16460
;------------ANALOG O/P D2 SCALER-----------------------------------------
W431    = 32767                     L     ANLG O/P D2 MUL  = 32767
W432    = 10000                     L     ANLG O/P D2 DIV  = 10000
W433    = 0                         L     ANLG O/P D2 OFS  = 0
;------------ANALOG O/P D3 SCALER-----------------------------------------
W436    = 32767                     L     ANLG O/P D3 MUL  = 32767
W437    = 10000                     L     ANLG O/P D3 DIV  = 10000
W438    = 0                         L     ANLG O/P D3 OFS  = 0
;------------ANALOG O/P D4 SCALER-----------------------------------------
W441    = 32752                     L     ANLG O/P D4 MUL  = 32752
W442    = 8428                      L     ANLG O/P D4 MUL  = 8428
W443    = -6108                     L     ANLG O/P D4 OFS  = -6108
;------------ANALOG O/P D5 SCALER-----------------------------------------
W446    = 28049                     L     ANLG O/P D5 MUL  = 28049
W447    = 10000                     L     ANLG O/P D5 DIV  = 10000
W448    = 0                         L     ANLG O/P D5 OFS  = 0
;------------ANALOG O/P D6 SCALER-----------------------------------------
W451    = 26660                     L     ANLG O/P D6 MUL  = 26660
W452    = 10000                     L     ANLG O/P D6 DIV  = 10000
W453    = 0                         L     ANLG O/P D6 OFS  = 0
;------------ANALOG O/P D7 SCALER-----------------------------------------
W456    = 32767                     L     ANLG O/P D7 MUL  = 32767
W457    = 10428                     L     ANLG O/P D7 DIV  = 10428
W458    = 0                         L     ANLG O/P D7 OFS  = 0
;------------MISCELANEOUS-------------------------------------------------
W461    = 0                         L     MIN HMI N REF    = 0
W462    = 10000                     L     MAX HMI N REF    = 10000
W464    = 50                        L     SPD REG DLY      = 50 ms
W465    = 2.0                       L     RATE 2 DECEL     = 2.0 %/s
W488    = -250                      L     -VE BETA RATE    = -250
W489    = 250                       L     + BETA RATE      = 250
W491    = 1                         L     HMI HP MULT      = 1
W492    = 100                       L     HMI HP DIV       = 100
W493    = 0                         L     HMI HP OFFSET    = 0
W504    = 15                        L     RAMP ADDER       = 15
W506    = 0                         L     PSET MIN LIMIT   = 0
W507    = W337                      L     PSET MAX LIMIT   = MODE 1 ILIM
W510    = 8.00                      L     HI FREQ FOR NCOM = 8.00 %
W511    = 6.00                      L     LO FREQ FOR NCOM = 6.00 %
W520    = G269                      L     HMI DC VOLTS M   = FILTERED SUPP V
W521    = 10000                     L     HMI DC VOLTS D   = 10000
W522    = 0                         L     HMI DC VOLTS OFF = 0
W524    = 5251                      L     HMI DC VOLTS M1  = 5251
W525    = 10000                     L     HMI DC VOLTS D1  = 10000
W526    = 0                         L     HMI DC VOLTS O1  = 0
```

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Drive Replacement Unit one and Unit two

Prepared By: Nathan Crop

IPSC Work Order # 02-53663-0

Date: 28 September 2005

Supervisor Nathan Crop

Page 1 of 3

Item 1 - Construction Drawings

Drawing Number	Rev. No.	Comments	Tag (**)	Date Submitted for Closeout	Date Closed Out

Item 2 - Manufacturer's Drawings

Drawing Number	Rev. No.	Comments	Date Submitted for Closeout	Date Closed Out

Item 3 - Instruction Manuals

Instruction Manual Number	Title	Vol.	Comments / Instructions	Date Submitted for Closeout	Date Closed Out
63.2203.1.07	Variable Frequency ID Fan Drives	I	replace Volume I, part 1 section 2 pages 7-24 with new pages 7-25	9/26/05	

Item 4 - System Desctiptions

System Code	System Title / Page	Comments / Instructions	Date Submitted for Closeout	Date Closed Out

Item 5 - DATATRAK Revisions

IP7015604

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Drive Replacement Unit one and Unit two

Prepared By: Nathan Crop

IPSC Work Order # 02-53663-0

Date: 28 September 2005

Supervisor Nathan Crop

Device Number	New/ Revised/ Deleted/	Comments	Date Submitted for Closeout	Date Closed Out

Item 6 - I&C Database Revisions

Device Number	New/ Revised/ Deleted/	Comments	Date Submitted for Closeout	Date Closed Out

Item 7 - Ladder Logic Revisions

System Code and Title	New/ Revised Network #	Comments	Date Submitted for Closeout	Date Closed Out

Item 8 - Relay Manual Updates

Manual and Page #	Relay #	Comments	Date Submitted for Closeout	Date Closed Out

Item 9 - Miscellaneous Documentation

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Drive Replacement Unit one and Unit two

Prepared By: Nathan Crop

IPSC Work Order # 02-53663-0

Date: 28 September 2005

Supervisor Nathan Crop

Page 3 of 3

Description	Date Submitted for Closeout	Date Closed Out
	3 Mar 04	20 May 04

IP7015606

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Drive

Prepared By: Nathan R. Crop

IPSC Work Order # 02-53663

Date: 27 Oct 2004

Supervisor Jon P. Christensen

Item 1 - Construction Drawings

Drawing Number	Rev. No.	Comments	Tag (**)	Date Submitted for Closeout	Date Closed Out
63.2203.1.05-90011	1	power-con output disconnect switch for Unit 2 1D ID fan only 11/20/03 data transmittal sheet QF0209		5-23-05	
63.2203.1.05-90012	1	power-con output disconnect switch for Unit 2 1D ID fan only 11/20/03 switchgear outline C-13467		5-23-05	
63.2203.1.05-90013	1	power-con output disconnect switch for Unit 2 1D ID fan only 11/04/03 summary of equipment S-17533		5-23-05	
63.2203.1.05-90014	1	power-con output disconnect switch for Unit 2 1D ID fan only 11/04/03 Nameplate drawing NP-11198		5-23-05	
63.2203.1.05-90015	1	power-con output disconnect switch for Unit 2 1D ID fan only 11/04/03 Schematic Diagram CW-12560		5-23-05	
63.2203.1.05-90016	1	power-con output disconnect switch for Unit 2 1D ID fan only 11/04/03 Wiring Diagram CW-12561		5-23-05	
63.2203.1.05-90170	1	power-con output disconnect switch for ID fans except unit 2 1D 01/10/05 Switchgear Outline C-13715		5-23-05	
63.2203.1.05-90171	1	power-con output disconnect switch for ID fans except unit 2 1D 01/10/05 Schematic Diagram CW-12639		5-23-05	
63.2203.1.05-90172	1	power-con output disconnect switch for ID fans except unit 2 1D 01/10/05 Wiring Diagram CW-12640		5-23-05	
63.2203.1.05-90173	1	power-con output disconnect switch for ID fans except unit 2 1D 01/10/05 Nameplates NP-11653		5-23-05	
63.2203.1.05-90174	1	power-con output disconnect switch for ID fans except unit 2 1D 01/10/05 Summary of equipment S-18052		5-23-05	
63.2203.1.05-90175	1	power-con output disconnect switch for ID fans except unit 2 1D 01/10/05 Switchgear Outline C-13716		5-23-05	
63.2203.1.05-90176	1	power-con output disconnect switch for ID fans except unit 2 1D 01/10/05 Schematic Diagram CW-12641		5-23-05	
63.2203.1.05-90177	1	power-con output disconnect switch for ID fans except unit 2 1D 01/10/05 Wiring Diagram CW-12642		5-23-05	
63.2203.1.05-90178	1	power-con output disconnect switch for ID fans except unit 2 1D 01/10/05 Nameplates NP-11654		5-23-05	

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Drive

Prepared By: Nathan R. Crop

IPSC Work Order # 02-53663

Date: 27 Oct 2004

Supervisor Jon P. Christensen

63.2203.1.05-90179	1	power-con output disconnect switch for ID fans except unit 2 1D 01/10/05 Summary of equipment S-18053	5-23-05
1CCE-K2103A	5	schematic diagram induced draft fan 1C	6-20-05
1CCE-K2103C	3	schematic diagram induced draft fan 1C wiring	6-16-05
1CCE-K2104C	4	schematic diagram induced draft fan 1D	6-20-05
1CCE-K2807B	6	schematic diagram ID FAN 1C remote I/O 1COF-CAB-33 wiring	6-20-05
1CCE-K2104C	3	schematic diagram induced draft fan 1D wiring	6-20-05
1CCE-K2115C	2	schematic diagram idf pwr xfmr 1C1 FDR BKR wiring	6-20-05
1CCE-K2116A	4	schematic diagram idf pwr xfmr 1C2 FDR BKR	6-20-05
1CCE-K2116C	2	schematic diagram idf pwr xfmr 1C2 FDR BKR wiring	6-20-05
1CCE-K2117A	4	schematic diagram idf pwr xfmr 1D1 FDR BKR	6-20-05
1CCE-K2117C	2	schematic diagram idf pwr xfmr 1D1 FDR BKR wiring	6-20-05
1CCE-K2118A	4	schematic diagram idf pwr xfmr 1D2 FDR BKR	6-20-05
1CCE-K2118C	2	schematic diagram idf pwr xfmr 1D2 FDR BKR wiring	6-20-05
1CCE-K2125A	4	schematic diagram idf var spd drv 1C1 pc i/o	6-20-05
1CCE-K2125B	4	schematic diagram idf var spd drv 1C1 wiring	6-20-05
1CCE-K2126A	4	schematic diagram idf var spd drv 1C2 pc i/o	6-20-05
1CCE-K2128B	5	schematic diagram idf var spd drv 1D2 wiring	6-20-05
1CCE-K2126B	4	schematic diagram idf var spd drv 1C2 wiring	6-20-05
1CCE-K2127A	4	schematic diagram idf var spd drv 1D1 pc i/o	6-20-05
1CCE-K2127B	5	schematic diagram idf var spd drv 1D1 wiring	6-20-05
1CCE-K2128A	4	schematic diagram idf var spd drv 1D2 pc i/o	6-20-05
1CCE-K2133	5	schematic diagram idf contactor 1D1 & 1D2	6-20-05
1CCE-K2134	5	schematic diagram idf contactor 1D1 & 1D2	6-20-05
1CCE-K2601	2	schematic diagram idf var spd drv bkr trip panel 1	6-20-05
1CCE-K2604	4	schematic diagram idf pwr xfmrs 1C1& 1C2 alarms and heating	6-20-05
1CCE-K2605	3	schematic diagram idf pwr xfmrs 1D1 & 1D2 alarms and heating	6-20-05
1CCE-K2606C	3	schematic diagram id fan var spd drv ann cab 1 wiring	6-20-05

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Drive

Prepared By: Nathan R. Crop

IPSC Work Order # 02-53663

Date: 27 Oct 2004

Supervisor Jon P. Christensen

1CCE-K2803A	4	schematic diagram plant motor control sys 1COF-CAB-4 sect 17 wiring (id fan 1C)	6-20-05
1CCE-K2803B	3	schematic diagram plant motor control sys 1COF-CAB-4 sect 17 wiring (id fan 1C)	6-20-05
1CCE-K2804A	4	schematic diagram plant motor control sys 1COF-CAB-4 sect 18 wiring (id fan 1D)	6-20-05
1CCE-K2804B	3	schematic diagram plant motor control sys 1COF-CAB-4 sect 18 wiring (id fan 1D)	6-20-05
1CCE-K2115A	4	schematic diagram idf pwr xfmr 1C1 FDR BKR	6-20-05
1CCE-K2807A	2	schematic diagram id fan 1C remote i/o 1cof-cab-33 wiring	6-20-05
1CCE-K2808A	2	schematic diagram id fan 1D remote i/o 1cof-cab-34 wiring	6-20-05
1CCE-K2808A	6	schematic diagram id fan 1D remote i/o 1cof-cab-34 wiring	6-20-05
63.3601.05-90170	3	elementary and schematic diagram 1B2 cub 5 id fan 1D2	6-20-05
63.3601.05-90171	3	elementary and schematic diagram 1B2 cub 4 id fan 1D1	6-20-05
63.3601.05-90172	3	elementary and schematic diagram 1B2 cub 3 id fan 1C2	6-20-05
63.3601.05-90173	3	elementary and schematic diagram 1B2 cub 2 id fan 1C1	6-20-05
63.3601.05-90249	1	switchgear cubicle connection diagram 1B2 cub 4 id fan 1D1	6-20-05
63.3601.05-90254	1	switchgear cubicle connection diagram 1B2 cub 5 id fan 1D2	6-20-05
63.3601.05-90253	1	switchgear cubicle connection diagram 1B2 cub 2 id fan 1C1	6-20-05
63.3601.05-90256	1	switchgear cubicle connection diagram 1B2 cub 3 id fan 1C2	6-20-05
2APA-E1641	14	one line diagram-AQCS programmable controller pwr distr panels	6-20-05

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Drive

Prepared By: Nathan R. Crop

IPSC Work Order # 02-53663

Date: 27 Oct 2004

Supervisor Jon P. Christensen

1EEC-E3328	12	raceway composite-west AQCS cntrl bldg and ID fan area-gnd floor el. 4676'-0"	6-20-05
1CCE-K2606B	4	schematic diagram id fan var spd drv ann cab 1 pc inputs -B	6-20-05
2CCE-K2117A	4	schematic drawing idf pwr xfmr 1D1 FDR BKR	6-20-05
2CCE-K2117C	2	schematic diagram idf pwr xfmr 1D1 fdr bkr wiring	6-20-05
2CCE-K2118A	3	schematic diagram idf pwr xfmr 1D2 fdr bkr	6-20-05
2CCE-K2118C	2	schematic diagram idf pwr xfmr 1D2 fdr bkf wiring	6-20-05
2CCE-K2104A	4	schematic diagram induced draft fan 1D	6-20-05
2CCE-K2104C	3	schematic diagram induced draft fan 1D wiring	6-20-05
2CCE-K2128A	4	schematic diagram idf var spd drv 1D2 pc i/o	6-20-05
2CCE-K2808B	4	schematic diagram id fan 1D remote i/o 2cof-cab-34 wiring	6-20-05
2CCE-K2808A	3	schematic diagram id fan 1D remote i/o 2cof-cab-34 wiring	6-20-05
2CCE-K2134	3	schematic diagram idf contactor 1D1 and 1D2	6-20-05
2CCE-K2601	3	schematic diagram idf var spd drv bkr trip panel 1	6-20-05
2CCE-K2127A	3	schematic diagram idf var spd drv 1D1 pc inputs and outputs	6-20-05
2CCE-K2127B	5	schematic diagram idf var spd drv 1D1 wiring	6-20-05

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Drive

Prepared By: Nathan R. Crop

IPSC Work Order # 02-53663

Date: 27 Oct 2004

Supervisor Jon P. Christensen

2CCE-K2606C	4	schematic diagram id fan var spd drv ann cab 1 wiring	6-20-05
2CCE-K2605	4	schematic diagram idf pwr xfmrs 1D1 and 1D2 alarms and heating	6-20-05
2CCE-K2606B	2	schematic diagram id fan var spd drv ann cab 1 pc inputs - B	6-20-05
2CCE-K2804A	5	schematic diagram pmcs 2cof-cab-4 sect 18 wiring (id fan 1D)	6-20-05
2CCE-K2128B	5	schematic diagram idf var spd drv 1D2 wiring	6-20-05
2CCE-K2804B	3	schematic diagram pmcs 2cof-cab-4 sect 18 wiring (ID fan 1D)	6-20-05

Item 2 - Manufacturer's Drawings

Drawing Number	Rev. No.	Comments	Date Submitted for Closeout	Date Closed Out
63.2203.05.1-				

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Drive

Prepared By: Nathan R. Crop

IPSC Work Order # 02-53663

Date: 27 Oct 2004

Supervisor Jon P. Christensen

Page 6 of 3

IP7015612

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Drive

Prepared By: Nathan R. Crop

IPSC Work Order # 02-53663

Date: 27 Oct 2004

Supervisor Jon P. Christensen

Page 7 of 3

Item 3 - Instruction Manuals

Instruction Manual Number	Title	Vol.	Comments / Instructions	Date Submitted for Closeout	Date Closed Out
63.2203.1.07	Variable Frequency ID Fan Drives	II	Place ITT Standardized Brazepak Heat Xchngr Spec Sheet into Vol. 2, part 7, section 3, at end of brazepak section.		
63.2203.1.07	Variable Frequency ID Fan Drives	I	Part 3; sections 1, 2 & 3. Replace all dwgs with replacement dwgs.		

Item 4 - System Descriptions

System Code	System Title / Page	Comments / Instructions	Date Submitted for Closeout	Date Closed Out

IP7015613

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Drive

Prepared By: Nathan R. Crop

IPSC Work Order # 02-53663

Date: 27 Oct 2004

Supervisor Jon P. Christensen

Page 8 of 3

Item 5 - DATATRAK Revisions

Device Number	New/ Revised/ Deleted/	Comments	Date Submitted for Closeout	Date Closed Out
1CCE-JBX-21	NEW	ENCODER PULSE RING SIGNALS 1A	12/02/04	
1CCE-JBX-22	NEW	ENCODER PULSE RING SIGNALS 1B	12/02/04	
1CCE-JBX-23	NEW	ENCODER PULSE RING SIGNALS 1C	12/02/04	
1CCE-JBX-24	NEW	ENCODER PULSE RING SIGNALS 1D	12/02/04	
2CCE-JBX-21	NEW	ENCODER PULSE RING SIGNALS 1A	12/02/04	
2CCE-JBX-22	NEW	ENCODER PULSE RING SIGNALS 1B	12/02/04	
2CCE-JBX-23	NEW	ENCODER PULSE RING SIGNALS 1C	12/02/04	
2CCE-JBX-24	NEW	ENCODER PULSE RING SIGNALS 1D	12/02/04	
1CCEK2111C03	DELETE/NEW	NOW WILL BE CO6	7-11-05	
1CCEK2111C05	DELETE/NEW	NOW WILL BE CO7	7-11-05	
1CCEK2112C03	DELETE/NEW	NOW WILL BE CO6	7-11-05	
1CCEK2112C05	DELETE/NEW	NOW WILL BE CO7	7-11-05	
1CCEK2113C03	DELETE/NEW	NOW WILL BE CO6	7-11-05	
1CCEK2113C05	DELETE/NEW	NOW WILL BE CO7	7-11-05	
1CCEK2114C03	DELETE/NEW	NOW WILL BE CO6	7-11-05	
1CCEK2114C05	DELETE/NEW	NOW WILL BE CO7	7-11-05	

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Drive

Prepared By: Nathan R. Crop

IPSC Work Order # 02-53663

Date: 27 Oct 2004

Supervisor Jon P. Christensen

1CCEK2115C03	DELETE/NEW	NOW WILL BE CO6	7-11-05
1CCEK2115C05	DELETE/NEW	NOW WILL BE CO7	7-11-05
1CCEK2116C03	DELETE/NEW	NOW WILL BE CO6	7-11-05
1CCEK2116C05	DELETE/NEW	NOW WILL BE CO7	7-11-05
1CCEK2117C03	DELETE/NEW	NOW WILL BE CO6	7-11-05
1CCEK2117C05	DELETE/NEW	NOW WILL BE CO7	7-11-05
1CCEK2118C03	DELETE/NEW	NOW WILL BE CO6	7-11-05
1CCEK2118C05	DELETE/NEW	NOW WILL BE CO7	7-11-05
2CCEK2111C03	DELETE/NEW	NOW WILL BE CO6	7-11-05
2CCEK2111C05	DELETE/NEW	NOW WILL BE CO7	7-11-05
2CCEK2112C03	DELETE/NEW	NOW WILL BE CO6	7-11-05
2CCEK2112C05	DELETE/NEW	NOW WILL BE CO7	7-11-05
2CCEK2113C03	DELETE/NEW	NOW WILL BE CO6	7-11-05
2CCEK2113C05	DELETE/NEW	NOW WILL BE CO7	7-11-05
2CCEK2114C03	DELETE/NEW	NOW WILL BE CO6	7-11-05
2CCEK2114C05	DELETE/NEW	NOW WILL BE CO7	7-11-05
2CCEK2115C03	DELETE/NEW	NOW WILL BE CO6	7-11-05
2CCEK2115C05	DELETE/NEW	NOW WILL BE CO7	7-11-05
2CCEK2116C03	DELETE/NEW	NOW WILL BE CO6	7-11-05
2CCEK2116C05	DELETE/NEW	NOW WILL BE CO7	7-11-05
2CCEK2117C03	DELETE/NEW	NOW WILL BE CO6	7-11-05
2CCEK2117C05	DELETE/NEW	NOW WILL BE CO7	7-11-05
2CCEK2118C03	DELETE/NEW	NOW WILL BE CO6	7-11-05

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Drive

Prepared By: Nathan R. Crop

IPSC Work Order # 02-53663

Date: 27 Oct 2004

Supervisor Jon P. Christensen

Page 10 of 3

2CCEK2118C05	DELETE/NEW	NOW WILL BE CO7	7-11-05
1CCEK213109	NEW		7-11-05
1CCEK213110	NEW		7-11-05
1CCEK213209	NEW		7-11-05
1CCEK213210	NEW		7-11-05
1CCEK213309	NEW		7-11-05
1CCEK213310	NEW		7-11-05
1CCEK213409	NEW		7-11-05
1CCEK213410	NEW		7-11-05
2CCEK213109	NEW		7-11-05
2CCEK213110	NEW		7-11-05
2CCEK213209	NEW		7-11-05
2CCEK213210	NEW		7-11-05
2CCEK213309	NEW		7-11-05
2CCEK213310	NEW		7-11-05

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07
Title: ID Fan Drive
Prepared By: Nathan R. Crop

IPSC Work Order # 02-53663
Date: 27 Oct 2004
Supervisor Jon P. Christensen
Page 11 of 3

2CCEK213409	NEW	7-11-05
2CCEK213410	NEW	7-11-05

Item 6 - I&C Database Revisions

Device Number	New/ Revised/ Deleted/	Comments	Date Submitted for Closeout	Date Closed Out

Item 7 - Ladder Logic Revisions

System Code and Title	New/ Revised Network #	Comments	Date Submitted for Closeout	Date Closed Out
n/a				

Item 8 - Relay Manual Updates

Manual and Page #	Relay #	Comments	Date Submitted for Closeout	Date Closed Out

IP7015617

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Drive

Prepared By: Nathan R. Crop

IPSC Work Order # 02-53663

Date: 27 Oct 2004

Supervisor Jon P. Christensen

Item 9 - Miscellaneous Documentation

Description	Date Submitted for Closeout	Date Closed Out

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Drive

Prepared By: Nathan R. Crop

IPSC Work Order # 02-53663

Date: 27 Oct 2004

Supervisor Jon P. Christensen

Item 1 - Construction Drawings

Drawing Number	Rev. No.	Comments	Tag (**)	Date Submitted for Closeout	Date Closed Out
63.2203.1.05-90011	1	power-con output disconnect switch for Unit 2 1D ID fan only 11/20/03 data transmittal sheet QF0209		5-23-05	
63.2203.1.05-90012	1	power-con output disconnect switch for Unit 2 1D ID fan only 11/20/03 switchgear outline C-13467		5-23-05	
63.2203.1.05-90013	1	power-con output disconnect switch for Unit 2 1D ID fan only 11/04/03 summary of equipment S-17533		5-23-05	
63.2203.1.05-90014	1	power-con output disconnect switch for Unit 2 1D ID fan only 11/04/03 Nameplate drawing NP-11198		5-23-05	
63.2203.1.05-90015	1	power-con output disconnect switch for Unit 2 1D ID fan only 11/04/03 Schematic Diagram CW-12560		5-23-05	
63.2203.1.05-90016	1	power-con output disconnect switch for Unit 2 1D ID fan only 11/04/03 Wiring Diagram CW-12561		5-23-05	
63.2203.1.05-90170	1	power-con output disconnect switch for ID fans except unit 2 1D 01/10/05 Switchgear Outline C-13715		5-23-05	
63.2203.1.05-90171	1	power-con output disconnect switch for ID fans except unit 2 1D 01/10/05 Schematic Diagram CW-12639		5-23-05	
63.2203.1.05-90172	1	power-con output disconnect switch for ID fans except unit 2 1D 01/10/05 Wiring Diagram CW-12640		5-23-05	
63.2203.1.05-90173	1	power-con output disconnect switch for ID fans except unit 2 1D 01/10/05 Nameplates NP-11653		5-23-05	
63.2203.1.05-90174	1	power-con output disconnect switch for ID fans except unit 2 1D 01/10/05 Summary of equipment S-18052		5-23-05	
63.2203.1.05-90175	1	power-con output disconnect switch for ID fans except unit 2 1D 01/10/05 Switchgear Outline C-13716		5-23-05	
63.2203.1.05-90176	1	power-con output disconnect switch for ID fans except unit 2 1D 01/10/05 Schematic Diagram CW-12641		5-23-05	
63.2203.1.05-90177	1	power-con output disconnect switch for ID fans except unit 2 1D 01/10/05 Wiring Diagram CW-12642		5-23-05	
63.2203.1.05-90178	1	power-con output disconnect switch for ID fans except unit 2 1D 01/10/05 Nameplates NP-11654		5-23-05	

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Drive

Prepared By: Nathan R. Crop

IPSC Work Order # 02-53663

Date: 27 Oct 2004

Supervisor Jon P. Christensen

63.2203.1.05-90179	1	power-con output disconnect switch for ID fans except unit 2 1D 01/10/05 Summary of equipment S-18053	5-23-05
1CCE-K2103A	5	schematic diagram induced draft fan 1C	6-20-05
1CCE-K2103C	3	schematic diagram induced draft fan 1C wiring	6-16-05
1CCE-K2104C	4	schematic diagram induced draft fan 1D	6-20-05
1CCE-K2807B	6	schematic diagram ID FAN 1C remote I/O 1COF-CAB-33 wiring	6-20-05
1CCE-K2104C	3	schematic diagram induced draft fan 1D wiring	6-20-05
1CCE-K2115C	2	schematic diagram idf pwr xfmr 1C1 FDR BKR wiring	6-20-05
1CCE-K2116A	4	schematic diagram idf pwr xfmr 1C2 FDR BKR	6-20-05
1CCE-K2116C	2	schematic diagram idf pwr xfmr 1C2 FDR BKR wiring	6-20-05
1CCE-K2117A	4	schematic diagram idf pwr xfmr 1D1 FDR BKR	6-20-05
1CCE-K2117C	2	schematic diagram idf pwr xfmr 1D1 FDR BKR wiring	6-20-05
1CCE-K2118A	4	schematic diagram idf pwr xfmr 1D2 FDR BKR	6-20-05
1CCE-K2118C	2	schematic diagram idf pwr xfmr 1D2 FDR BKR wiring	6-20-05
1CCE-K2125A	4	schematic diagram idf var spd drv 1C1 pc i/o	6-20-05
1CCE-K2125B	4	schematic diagram idf var spd drv 1C1 wiring	6-20-05
1CCE-K2126A	4	schematic diagram idf var spd drv 1C2 pc i/o	6-20-05
1CCE-K2128B	5	schematic diagram idf var spd drv 1D2 wiring	6-20-05
1CCE-K2126B	4	schematic diagram idf var spd drv 1C2 wiring	6-20-05
1CCE-K2127A	4	schematic diagram idf var spd drv 1D1 pc i/o	6-20-05
1CCE-K2127B	5	schematic diagram idf var spd drv 1D1 wiring	6-20-05
1CCE-K2128A	4	schematic diagram idf var spd drv 1D2 pc i/o	6-20-05
1CCE-K2133	5	schematic diagram idf contactor 1D1 & 1D2	6-20-05
1CCE-K2134	5	schematic diagram idf contactor 1D1 & 1D2	6-20-05
1CCE-K2601	2	schematic diagram idf var spd drv bkr trip panel 1	6-20-05
1CCE-K2604	4	schematic diagram idf pwr xfmrs 1C1& 1C2 alarms and heating	6-20-05
1CCE-K2605	3	schematic diagram idf pwr xfmrs 1D1 & 1D2 alarms and heating	6-20-05
1CCE-K2606C	3	schematic diagram id fan var spd drv ann cab 1 wiring	6-20-05

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Drive

Prepared By: Nathan R. Crop

IPSC Work Order # 02-53663

Date: 27 Oct 2004

Supervisor Jon P. Christensen

1CCE-K2803A	4	schematic diagram plant motor control sys 1COF-CAB-4 sect 17 wiring (id fan 1C)	6-20-05
1CCE-K2803B	3	schematic diagram plant motor control sys 1COF-CAB-4 sect 17 wiring (id fan 1C)	6-20-05
1CCE-K2804A	4	schematic diagram plant motor control sys 1COF-CAB-4 sect 18 wiring (id fan 1D)	6-20-05
1CCE-K2804B	3	schematic diagram plant motor control sys 1COF-CAB-4 sect 18 wiring (id fan 1D)	6-20-05
1CCE-K2115A	4	schematic diagram idf pwr xfmr 1C1 FDR BKR	6-20-05
1CCE-K2807A	2	schematic diagram id fan 1C remote i/o 1cof-cab-33 wiring	6-20-05
1CCE-K2808A	2	schematic diagram id fan 1D remote i/o 1cof-cab-34 wiring	6-20-05
1CCE-K2808A	6	schematic diagram id fan 1D remote i/o 1cof-cab-34 wiring	6-20-05
63.3601.05-90170	3	elementary and schematic diagram 1B2 cub 5 id fan 1D2	6-20-05
63.3601.05-90171	3	elementary and schematic diagram 1B2 cub 4 id fan 1D1	6-20-05
63.3601.05-90172	3	elementary and schematic diagram 1B2 cub 3 id fan 1C2	6-20-05
63.3601.05-90173	3	elementary and schematic diagram 1B2 cub 2 id fan 1C1	6-20-05
63.3601.05-90249	1	switchgear cubicle connection diagram 1B2 cub 4 id fan 1D1	6-20-05
63.3601.05-90254	1	switchgear cubicle connection diagram 1B2 cub 5 id fan 1D2	6-20-05
63.3601.05-90253	1	switchgear cubicle connection diagram 1B2 cub 2 id fan 1C1	6-20-05
63.3601.05-90256	1	switchgear cubicle connection diagram 1B2 cub 3 id fan 1C2	6-20-05
2APA-E1641	14	one line diagram-AQCS programmable controller pwr distr panels	6-20-05

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Drive

Prepared By: Nathan R. Crop

IPSC Work Order # 02-53663

Date: 27 Oct 2004

Supervisor Jon P. Christensen

Page 4 of 3

1EEC-E3328	12	raceway composite-west AQCS cntrl bldg and ID fan area-gnd floor el. 4676'-0"	6-20-05
1CCE-K2606B	4	schematic diagram id fan var spd drv ann cab 1 pc inputs -B	6-20-05
2CCE-K2117A	4	schematic drawing idf pwr xfmr 1D1 FDR BKR	6-20-05
2CCE-K2117C	2	schematic diagram idf pwr xfmr 1D1 fdr bkr wiring	6-20-05
2CCE-K2118A	3	schematic diagram idf pwr xfmr 1D2 fdr bkr	6-20-05
2CCE-K2118C	2	schematic diagram idf pwr xfmr 1D2 fdr bkf wiring	6-20-05
2CCE-K2104A	4	schematic diagram induced draft fan 1D	6-20-05
2CCE-K2104C	3	schematic diagram induced draft fan 1D wiring	6-20-05
2CCE-K2128A	4	schematic diagram idf var spd drv 1D2 pc i/o	6-20-05
2CCE-K2808B	4	schematic diagram id fan 1D remote i/o 2cof-cab-34 wiring	6-20-05
2CCE-K2808A	3	schematic diagram id fan 1D remote i/o 2cof-cab-34 wiring	6-20-05
2CCE-K2134	3	schematic diagram idf contactor 1D1 and 1D2	6-20-05
2CCE-K2601	3	schematic diagram idf var spd drv bkr trip panel 1	6-20-05
2CCE-K2127A	3	schematic diagram idf var spd drv 1D1 pc inputs and outputs	6-20-05
2CCE-K2127B	5	schematic diagram idf var spd drv 1D1 wiring	6-20-05

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Drive

Prepared By: Nathan R. Crop

IPSC Work Order # 02-53663

Date: 27 Oct 2004

Supervisor Jon P. Christensen

2CCE-K2606C	4	schematic diagram id fan var spd drv ann cab 1 wiring	6-20-05
2CCE-K2605	4	schematic diagram idf pwr xfmrs 1D1 and 1D2 alarms and heating	6-20-05
2CCE-K2606B	2	schematic diagram id fan var spd drv ann cab 1 pc inputs - B	6-20-05
2CCE-K2804A	5	schematic diagram pmcs 2cof-cab-4 sect 18 wiring (id fan 1D)	6-20-05
2CCE-K2128B	5	schematic diagram idf var spd drv 1D2 wiring	6-20-05
2CCE-K2804B	3	schematic diagram pmcs 2cof-cab-4 sect 18 wiring (ID fan 1D)	6-20-05

Item 2 - Manufacturer's Drawings

Drawing Number	Rev. No.	Comments	Date Submitted for Closeout	Date Closed Out
63.2203.05.1-				

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Drive

Prepared By: Nathan R. Crop

IPSC Work Order # 02-53663

Date: 27 Oct 2004

Supervisor Jon P. Christensen

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Drive

Prepared By: Nathan R. Crop

IPSC Work Order # 02-53663

Date: 27 Oct 2004

Supervisor Jon P. Christensen

Item 3 - Instruction Manuals

Instruction Manual Number	Title	Vol.	Comments / Instructions	Date Submitted for Closeout	Date Closed Out
63.2203.1.07	Variable Frequency ID Fan Drives	II	Place ITT Standardized Brazepak Heat Xchngr Spec Sheet into Vol. 2, part 7, section 3, at end of brazepak section.		
63.2203.1.07	Variable Frequency ID Fan Drives	I	Part 3; sections 1, 2 & 3. Replace all dwgs with replacement dwgs.		

Item 4 - System Descriptions

System Code	System Title / Page	Comments / Instructions	Date Submitted for Closeout	Date Closed Out

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Drive

Prepared By: Nathan R. Crop

IPSC Work Order # 02-53663

Date: 27 Oct 2004

Supervisor Jon P. Christensen

Item 5 - DATATRAK Revisions

Device Number	New/ Revised/ Deleted/	Comments	Date Submitted for Closeout	Date Closed Out
1CCE-JBX-21	NEW	ENCODER PULSE RING SIGNALS 1A	12/02/04	
1CCE-JBX-22	NEW	ENCODER PULSE RING SIGNALS 1B	12/02/04	
1CCE-JBX-23	NEW	ENCODER PULSE RING SIGNALS 1C	12/02/04	
1CCE-JBX-24	NEW	ENCODER PULSE RING SIGNALS 1D	12/02/04	
2CCE-JBX-21	NEW	ENCODER PULSE RING SIGNALS 1A	12/02/04	
2CCE-JBX-22	NEW	ENCODER PULSE RING SIGNALS 1B	12/02/04	
2CCE-JBX-23	NEW	ENCODER PULSE RING SIGNALS 1C	12/02/04	
2CCE-JBX-24	NEW	ENCODER PULSE RING SIGNALS 1D	12/02/04	
1CCEK2111C03	DELETE	NOW WILL BE CO6	7-11-05	
1CCEK2111C05	DELETE	NOW WILL BE CO7	7-11-05	
1CCEK2112C03	DELETE	NOW WILL BE CO6	7-11-05	
1CCEK2112C05	DELETE	NOW WILL BE CO7	7-11-05	
1CCEK2113C03	DELETE	NOW WILL BE CO6	7-11-05	
1CCEK2113C05	DELETE	NOW WILL BE CO7	7-11-05	
1CCEK2114C03	DELETE	NOW WILL BE CO6	7-11-05	
1CCEK2114C05	DELETE	NOW WILL BE CO7	7-11-05	

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Drive

Prepared By: Nathan R. Crop

IPSC Work Order # 02-53663

Date: 27 Oct 2004

Supervisor Jon P. Christensen

1CCEK2115C03	DELETE	NOW WILL BE CO6	7-11-05
1CCEK2115C05	DELETE	NOW WILL BE CO7	7-11-05
1CCEK2116C03	DELETE	NOW WILL BE CO6	7-11-05
1CCEK2116C05	DELETE	NOW WILL BE CO7	7-11-05
1CCEK2117C03	DELETE	NOW WILL BE CO6	7-11-05
1CCEK2117C05	DELETE	NOW WILL BE CO7	7-11-05
1CCEK2118C03	DELETE	NOW WILL BE CO6	7-11-05
1CCEK2118C05	DELETE	NOW WILL BE CO7	7-11-05
2CCEK2111C03	DELETE	NOW WILL BE CO6	7-11-05
2CCEK2111C05	DELETE	NOW WILL BE CO7	7-11-05
2CCEK2112C03	DELETE	NOW WILL BE CO6	7-11-05
2CCEK2112C05	DELETE	NOW WILL BE CO7	7-11-05
2CCEK2113C03	DELETE	NOW WILL BE CO6	7-11-05
2CCEK2113C05	DELETE	NOW WILL BE CO7	7-11-05
2CCEK2114C03	DELETE	NOW WILL BE CO6	7-11-05
2CCEK2114C05	DELETE	NOW WILL BE CO7	7-11-05
2CCEK2115C03	DELETE	NOW WILL BE CO6	7-11-05
2CCEK2115C05	DELETE	NOW WILL BE CO7	7-11-05
2CCEK2116C03	DELETE	NOW WILL BE CO6	7-11-05
2CCEK2116C05	DELETE	NOW WILL BE CO7	7-11-05
2CCEK2117C03	DELETE	NOW WILL BE CO6	7-11-05
2CCEK2117C05	DELETE	NOW WILL BE CO7	7-11-05
2CCEK2118C03	DELETE	NOW WILL BE CO6	7-11-05

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Drive

Prepared By: Nathan R. Crop

IPSC Work Order # 02-53663

Date: 27 Oct 2004

Supervisor Jon P. Christensen

2CCEK2118C05 DELETE NOW WILL BE CO7 7-11-05

Item 6 - I&C Database Revisions

Device Number	New/ Revised/ Deleted/	Comments	Date Submitted for Closeout	Date Closed Out

Item 7 - Ladder Logic Revisions

System Code and Title	New/ Revised Network #	Comments	Date Submitted for Closeout	Date Closed Out
n/a				

Item 8 - Relay Manual Updates

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Drive

Prepared By: Nathan R. Crop

IPSC Work Order # 02-53663

Date: 27 Oct 2004

Supervisor Jon P. Christensen

Page 11 of 3

Manual and Page #	Relay #	Comments	Date Submitted for Closeout	Date Closed Out

Item 9 - Miscellaneous Documentation

Description	Date Submitted for Closeout	Date Closed Out

IP7015629

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.:_____

Title: Update Instruction Book Adjustable Frequency

Prepared By: Travis G Fisher

IPSC Work Order # _____

Date: 11 August 2006

Supervisor Jon Christensen

Page 1 of 3

Item 1 - Construction Drawings

Drawing Number	Rev. No.	Comments	Tag (**)	Date Submitted for Closeout	Date Closed Out

Item 2 - Manufacturer's Drawings

Drawing Number	Rev. No.	Comments	Date Submitted for Closeout	Date Closed Out

Item 3 - Instruction Manuals

Instruction Manual Number	Title	Vol.	Comments / Instructions	Date Submitted for Closeout	Date Closed Out
63.2203	Instruction Book For Adjustable Frequency I. D. Fan Drives	2	Please Insert Multi Phase Electronic Temperature Monitor for Dry-Type Transformers Instruction Manual at the beginning of tab seven.		

Item 4 - System Descriptions

System Code	System Title / Page	Comments / Instructions	Date Submitted for Closeout	Date Closed Out

IP7015630

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.:_____

Title: Update Instruction Book Adjustable Frequency

Prepared By: Travis G Fisher

IPSC Work Order # _____

Date: 11 August 2006

Supervisor Jon Christensen

Item 5 - DATATRAK Revisions

Device Number	New/ Revised/ Deleted/	Comments	Date Submitted for Closeout	Date Closed Out

Item 6 - I&C Database Revisions

Device Number	New/ Revised/ Deleted/	Comments	Date Submitted for Closeout	Date Closed Out

Item 7 - Ladder Logic Revisions

System Code and Title	New/ Revised Network #	Comments	Date Submitted for Closeout	Date Closed Out

Item 8 - Relay Manual Updates

Manual and Page #	Relay #	Comments	Date Submitted for Closeout	Date Closed Out

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.:_____

Title: Update Instruction Book Adjustable Frequency

Prepared By: Travis G Fisher

IPSC Work Order # _____

Date: 11 August 2006

Supervisor Jon Christensen

Item 9 - Miscellaneous Documentation

Description	Date Submitted for Closeout	Date Closed Out

Honeywell

World Headquarters
Honeywell International Inc.
101 Columbia Road
Morristown, NJ 07962
Phone: (973) 455-2000
Fax: (973) 455-4807

Customer Service
1-800-423-9883
1-800-343-0228

PROJECT & NAMEPLATE

ALSTOM PROJECT #	
ALSTOM PRODUCT & SERIAL #	
HONEYWELL ANALYSER MODEL #	
HONEYWELL ANALYSER SERIAL #	

DIP SWITCH

Dip Switch S2

SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8
OFF	ON	ON	ON	ON	ON	ON	ON

This switch can be located inside the analyser on the extreme left hand side board.

I/O SET-UP MENU

See 9872 Series Two Cell Conductivity/Resistivity Analyser/Controller Operators Manual 70-82-25-74 Rev 3 of 6/99 Section 5.3 Performing I/O Setup

RELAY SETTINGS

RLY1	RLY2
ALM 1	ALM 2

>NEXT

ANALOG OUTPUTS

OUTPUT 1 (A+;A-)	TMP1
OUTPUT 2 (B+;B-)	C1

>NEXT

ATTENTION

ANY I/O SETUP CHANGE
CAN RESET PARAMETES

>NEXT

ATTENTION

AUTO CLEAN	NO
RANGE STATUS	NO

>NEXT

DISCRETE CONTROL

SELECT	NO

>NEXT

RELAY ASSIGNMENTS

RLY1	RLY2
ALM 1	ALM 2

>NEXT

RELAY ACTION STATE ON ALARM

SELECT	DE-ENERGISE

>NEXT

MEASUREMENT TYPE

SELECT	COND/TDS

>NEXT

DISPLAY RESOLUTION

RESOLUTION	HIGH
UNIT OF MEASURE (UOM)	µS

>NEXT

SELECT CELL CONSTANT

C1	See Cell 1 = 1.0
C2	See Cell 2 = 1.0

>NEXT

SOLUTION TEMP COMP

C1	NaCl
C2	NaCl

>NEXT

ANALOG OUTPUTS

OUTPUT 1	TMP 1
OUTPUT 2	C1

>NEXT

OUTPUT SCALING

SCALING 1	LINFIXEDRNG
SCALING 2	LINFIXEDRNG

CONFIGURATION

See 9872 Series Two Cell Conductivity/Resistivity Analyser/Controller Operators Manual 70-82-25-74 Rev 3 of 6/99 Section 5.4
Configuring Current Adjusting Type (CAT) Control and/or Retransmission of Process Variables

CAT/RETRANSMISSION>CAT

	CAT 1	CAT 2
SCALING	LINFIXEDRNG	LINFIXEDRNG
INPUT	TMP1	C1

SETPOINT	.0°C	.0µS
PB LIMIT	100.0°C	2.00µS

Seleting the MENU key will return to the CAT 1/CAT 2 menu

CAT/RETRANSMISSION> RETRANSMISSION

	OUTPUT 1	OUTPUT 2
SCALING	LINFIXEDRNG	LINFIXEDRNG
INPUT	TMP1	C1
0%	.0°C	.0µS
100%	100.0°C	2.00µS

Seleting the MENU key will return to the CAT 1/CAT 2 menu

CONFIGURATION>ALARMS

PARAMETERS	AL1	AL2	AL3	AL4
OUTPUT	RLY1	RLY2	N/A	N/A
INPUT	T1/T2	C1/2	This instrument has two analog outputs enabled which sacrifices the additional relay outputs, hence no setup is required for them. All alarm functionality is now done in the Sigma Controller.	
ACTION	HIGH	HIGH		
SETPOINT	60.0°C	1.000		
DEADBAND	2.0°C	0.200		
NAME	TEMPERATURE TRIP	CONDUCTIVITY TRIP		

Seleting the MENU key will return to the ALARM 1/ALARM 2/ALARM 3/ALARM/4 menu

CALIBRATION

CELL CAL FACTOR

C1	See Cell 1 tag
C2	See Cell 2 tag
CAL TRIM C1	See Cell 1
CAL TRIM C2	See Cell 2

MAINTENANCE

INSTRUMENT SETUP > SECURITY

ENABLE SECURITY	YES
PASSWORD	3511

Unit 1 ID Fan Drives

Unit 1 'A' ID Fan Problems

Date	Description	Problem

Unit 1 'B' ID Fan Problems

Date	Description	Problem

Unit 1 'C ID Fan Problems

Date	Description	Problem

Unit 1 'D' ID Fan Problems

Date	Description	Problem

Reference

Reference

Reference

Reference

IP7015637

ID Fan Variable Frequency Drive Upgrade

During the Unit 2 Outage, February 2005, the Unit 2 'D' Induced Draft Fan Variable Frequency Drive controls were modified to provide better access, increased monitoring capability and improved historical record information. The original controls were removed and replaced with new pre-wired control panels. After the new controls were installed, the variable frequency drives were tested in both single channel and dual channel operation to determine the maximum fan capability with the new equipment.

In addition, new motor shaft encoders were installed and calibrated on the Unit 1 'C' ID fan motor and the Unit 2 'B' ID fans. These encoders are required for the new drive installation in March of 2005 and 2006.

```
XXXXX XXXXX XXXXX          ITT STANDARD
  X     X     X            ITT Fluid Technology Corporation
  X     X     X            175 Standard Pkwy,Buffalo,N.Y 14240
XXXXX   X     X
```

Brazepak Heat Exchanger Specification Sheet

****

Customer	
Project	
Reference	
Item No	
Quotation No	
Date	Nov 25, 2003

****

BRAZEPACK Unit Size	BP415-30	5-686-05-030-003
Units Connected in Parallel	1	

****

Performance Of One Unit

Fluids Circulated	PROP GLYCOL 50%	Water	
Total Fluid Entering	5157.0	10500.0	lb/h
Gravity	64.377	61.894	lb/cuft
Viscosity	3.805	0.645	cP
Specific Heat	0.869	0.998	BTU/lb,F
Thermal Conductivity	0.218	0.365	BTU/ft,h,F
Temperature In	65.00	110.36	deg F
Temperature Out	101.00	95.00	deg F
Pressure Drop	2.9	9.9	psi
Heat Exchanged	160992.1	BTU/h	
Mtd	17.66	deg F	

****

Construction Of One Unit

Design Pressure(Psi)	435
Design Temperature(Deg F)	437(Max.)/-256(Min.)

Plate Material	316SS		
No of Passes * Plate Arr	1*15		
Connection Size	1 inch		
Material	316SS		
Type	MPT		
Braze Material	Copper		
Weight	10 kg	22.0	lb
Volume	3 lit	0.8	UsGal

****

Connection Arrangement:

```
                    Primary  |\_________\   Secondary
                    Side     |  +     +  |  Side
                    Inlet    |  S4    S1 |  Outlet
                             |           |
      Single Pass Only       |           |
                             |           |
                    Primary  |  +     +  |  Secondary
                    Side     |  S3    S2 |  Side
                    Outlet   \|_________|  Inlet
```


IP7015639

Shaft Encoders for SYNCDRIVES

For the Alstom Sigma based syncdrives it is necessary for the motor to be fitted with shaft position sensors. A description of the operation of the sensors and a recommendation for their placement is given below.

Function

The shaft encoders connect into the sigma digital I/O board using three (or six on dual wound single sigma systems) dedicated 24v digital inputs. These inputs are connected by the system firmware into the machine converter firing circuit. They are used during starting and low speed operation when the available back emf from the machine is insufficient to commutate the machine converter thyristors. Based on the pattern of received sensor feedback the firing circuit firmware determines which pair of machine bridge thyristors will conduct at any particular instant in time.

With the machine at standstill, the encoder pattern selects with thyristors and hence which phases of the stator will carry current. The direction of current flow is also selected. When the machine is turning the encoder determines when the stator current is transferred from one phase to another so that maximum torque is maintained at all times.
Once a certain speed is reached (normally around 10-12%) the machine can produce enough back emf to naturally comutate the thyristors, the encoders are then only used as a supplemental source of speed feedback.

Mechanical Arrangement

The encoder arrangement varies with machine pole number. There is always one rotor lobe per pair of motor poles and the rotor lobes always cover an arc of 180° electrical.

There are 3 or 6 inductive proximity sensors separated by an angle of 120° electrical. Each sensor produces an output voltage while sensing the presence of a rotor lobe. When the motor is turning at constant speed, each sensor produces a nominally square wave output voltage. In the case of six phase or dual wound machines, the second set of encoders have the same 120 degree electrical separation but are displaced 30 electrical degrees lagging the first set.

Provision should be made for angular adjustment of all three or six sensors simultaneously, by mounting them on a common slotted ring bolted to the machine housing. The slot range of adjustment should cover a 120° electrical arc. The mechanical arrangement should allow angular adjustment to be done without disturbing the air gap settings.

Initial Sensor Alignment

Check that the sensors are positioned so that with the motor shaft at its magnetic center, the sensor tips are at the axial center of the rotor lobes. The axial width of the rotor lobes should be such that no part of the sensor tip ever extends beyond the lobe surface at the limits of shaft end play.

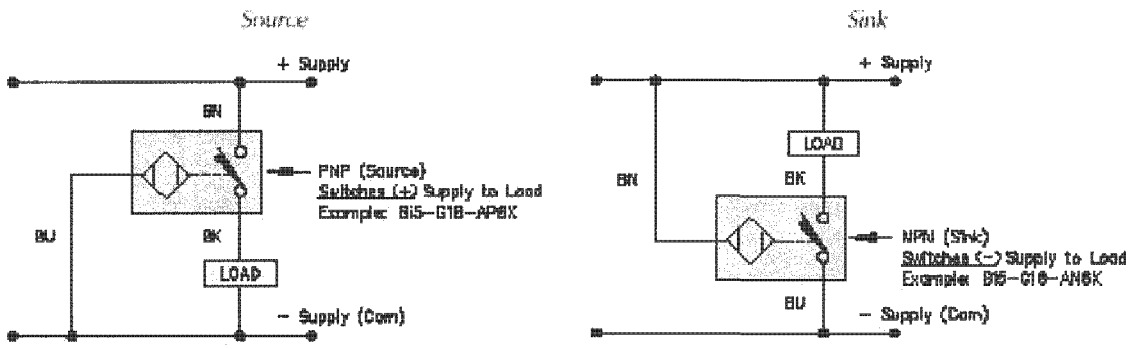
Check that the sensor bodies fan out radially from the shaft center and that they are also perpendicular to the shaft axis. The object is to ensure that the sensor tip is essentially parallel to the surface of the rotor lobe.

Sensor Air Gap Setting

Generally, the air gap between the sensor tip and rotor lobe surface should be set to 0.047 ± 0.004 inches. (1.2 ± 0.1mm) With this gap setting the sensor should switch to the on state when the edge of the rotor lobe just covers half the sensor tip.

DC power supply requirements for sensor testing

A suggested method of connection for the three wire Turck and or Pepperl & Fuchs type of encoders is shown below. The load can consist of a 10K ohm resistor.



Electrical Check of Encoder Operation

Having first set the sensor air gaps, the motor should be turned to check that all three sensors produce an output voltage across their load resistors. When a lobe is sensed, the output voltage should be 24v (or whatever V supply is used) In the absence of a lobe, the output voltage should be less than +1 volt. Check that each sensor changes state when approximately half the sensor tip is covered by a lobe.

If the motor can not be turned, a suitably shaped ferrous metal object can be used in place of the lobe (e.g., a screwdriver).

Setting of Encoder Phasing

It is suggested that the motor be run as an unloaded generator at some convenient low speed and that a comparison be made between the phasing of the induced stator voltages and the sensor signals.

First determine the specified direction of rotation for the motor and check electrically that the phase sequence of the induced stator voltages is 1,2,3 (or A,B,C) as marked on the stator cables/terminals. Also verify which motor winding is leading (in the case of a dual wound motor).

Permanently label each sensor and it's leads 1,2,3 (or Delta1, Delta2, Delta3, Wye1, Wye2, Wye3 in the case of a six phase machine) in the order in which the sensors come up as determined by the specified direction of shaft rotation. Sensor 2 will always be the middle sensor in the group. It must be noted that the leading winding is associated with the first set of encoders and the lagging winding with the second set of encoders.

With the encoders set up as shown in the above diagram, connect a single phase suitably rated potential transformer (with the secondary winding having the same polarity as the primary, as indicated by the dots on the windings) to the stator windings of the machine.
Adjust the angular position of the encoder mounting ring so that the phase relationship between the rising edge of the encoder signal and the positive going zero crossing of the stator voltage waveform conform with the following table.

1. Encoder 1 positive rising edge is in phase with the positive going zero crossing of stator phases 1-2
2. Encoder 2 positive rising edge is in phase with the positive going zero crossing of stator phases 2-3
3. Encoder 3 positive rising edge is in phase with the positive going zero crossing of stator phases 3-1

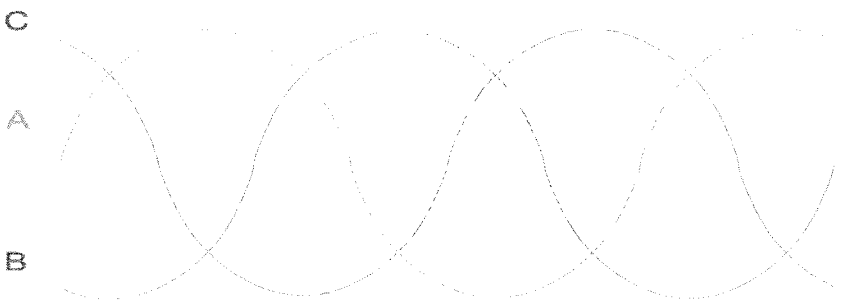
For a six phase machine, each set of encoders (Delta and Wye) must be aligned with the positive going zero crossing of the stator voltage waveform for that particular winding. After this test has been completed, there should be three or six encoders that are aligned with the three or six individual stator voltage zero crossings. Again ensure the probes are clearly identified.

The mark space ratio of the encoder signal should be 50%. If the mark space ratio is not equal then the airgap of the individual sensors should be adjusted to achieve this.

Final check out

Once the above tests have been successfully completed, clearly mark the correct position of the encoder mounting ring with reference to the frame of the machine. Ensure all mechanical fastenings are secure and that the probe terminations are clearly identified at the external termination box.

Stator voltage waveform with respect to encoder signals



IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Variable Frequency Drives (U1 A & B)

Prepared By: Nathan R. Crop

IPSC Work Order #02-53663

Date: 28 June 2004

Supervisor Jon P. Christensen

Item 1 - Construction Drawings

	Drawing Number	Rev. No.	Comments	Tag (**)	Date Submitted for Closeout	Date Closed Out
1.	1CCE-K2101A	4	SCHEM. DIAG. INDUCED DRAFT 1A	**		
2.	1CCE-K2101C	2	SCHEM. DIAG. INDUCED DRAFT 1A WIRING			
3.	1CCE-K2102A	4	SCHEM. DIAG. INDUCED DRAFT 1B			
4.	1CCE-K2102C	2	SCHEM. DIAG. INDUCED DRAFT 1B WIRING			
5.	1CCE-K2111C	1	SCHEM DIAG. IDF PWR XFMR 1A1 FDR BRKR WIRING			
6.	1CCE-K2112A	3	SCHEM. DIAG. IDF PWR XFMR 1A2 FDR BRKR			
7	1CCE-K2112C	1	SCHEM. DIAG. IDF PWR XFMR 1A2 FDR BRKR WIRING			
8	1CCE-K2113A	3	SCHEM. DIAG. IDF PWR XFMR 1B1 FDR BRKR			
9	1CCE-K2113C	1	SCHEM. DIAG. IDF PWR XFMR 1B1 FDR BRKR WIRING			
10	1CCE-K2114A	3	SCHEM. DIAG. IDF PWR XFMR 1B2 FDR BRKR			
11	1CCE-K2114C	1	SCHEM. DIAG. IDF PWR XFMR 1B2 FDR BRKR WIRING			
12	1CCE-K2121A	4	SCHEM. DIAG. IDF VFD 1A1 PC INPUTS & OUTPUTS			
13	1CCE-K2121B	3	SCHEM. DIAG. IDF VFD 1A1 WIRING			
14	1CCE-K2122A	3	SCHEM. DIAG. IDF VFD 1A2 PC INPUTS & OUTPUTS			
15	1CCE-K2122B	3	SCHEM. DIAG. IDF VFD 1A2 WIRING			
16	1CCE-K2123A	3	SCHEM. DIAG. IDF VFD 1B1 PC INPUTS & OUTPUTS			
17	1CCE-K2123B	3	SCHEM. DIAG. IDF VFD 1B1 WIRING			
18	1CCE-K2124A	3	SCHEM. DIAG. IDF VFD 1B2 PC INPUTS & OUTPUTS			
19	1CCE-K2124B	3	SCHEM. DIAG. IDF VFD 1B2 WIRING			

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Variable Frequency Drives (U1 A & B)

Prepared By: Nathan R. Crop

IPSC Work Order #02-53663

Date: 28 June 2004

Supervisor Jon P. Christensen

20	1CCE-K2131	4	SCHEM. DIAG. IDF CONTACTOR 1A1 & 1A2
21	1CCE-K2132	4	SCHEM. DIAG. IDF CONTACTOR 1B1 & 1B2
22	1CCE-K2602	3	SCHEM. DIAG. IDF PWR XFMRS 1A1 & 1A2 ALARMS & HEATING
23	1CCE-K2603	4	SCHEM. DIAG. IDF PWR XFMRS 1B1 & 1B2 ALARMS AND HEATING
24	1CCE-K2801A	3	SCHEM. DIAG. PLANT MOTOR CONTROL SYS 1COF-CAB-3 SECT 14 WIRING (ID FAN 1A)
25	1CCE-K2801B	3	SCHEM. DIAG. PLANT MOTOR CONTROL SYS. 1COF–CAB-3 SECT. 14 WIRING (ID FAN 1A)
26	1CCE-K2802B	3	SCHEM. DIAG. PLANT MOTOR CONTROL SYS 1COF-CAB-3 SECT 15 WIRING (ID FAN 1B)
27	1CCE-K2805A	3	SCHEM. DIAG. IDF 1A REMOTE I/O 1COF-CAB-31 WIRING
28	1CCE-K2805B	4	SCHEM. DIAG. IDF 1A REMOTE I/O 1COF-CAB-31 WIRING
29	1CCE-K2806A	2	SCHEM. DIAG. IDF 1B REMOTE I/O 1COF-CAB-32 WIRING
30	1CCE-K2806B	5	SCHEM. DIAG. IDF 1B REMOTE I/O 1COF-CAB-32 WIRING
31	1CCE-K2809	2	SCHEM. DIAG. IDF INTERLOCKS
31	1CCE-K2811	1	SCHEM. DIAG. MISCELLANEOUS INSTRUMENTATION

Item 2 - Manufacturer's Drawings

Drawing Number	Rev. No.	Comments	Date Submitted for Closeout	Date Closed Out

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Variable Frequency Drives (U1 A & B)

Prepared By: Nathan R. Crop

IPSC Work Order #02-53663

Date: 28 June 2004

Supervisor Jon P. Christensen

Item 3 - Instruction Manuals

Instruction Manual Number	Title	Vol.	Comments / Instructions	Date Submitted for Closeout	Date Closed Out

Item 4 - System Desctiptions

System Code	System Title / Page	Comments / Instructions	Date Submitted for Closeout	Date Closed Out

Item 5 - DATATRAK Revisions

Device Number	New/ Revised/ Deleted/	Comments	Date Submitted for Closeout	Date Closed Out

Item 6 - I&C Database Revisions

Device Number	New/ Revised/ Deleted/	Comments	Date Submitted for Closeout	Date Closed Out

Item 7 - Ladder Logic Revisions

System Code and Title	New/ Revised Network #	Comments	Date Submitted for Closeout	Date Closed Out

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Variable Frequency Drives (U1 A & B)

Prepared By: Nathan R. Crop

IPSC Work Order #02-53663

Date: 28 June 2004

Supervisor Jon P. Christensen

Item 8 - Relay Manual Updates

Manual and Page #	Relay #	Comments	Date Submitted for Closeout	Date Closed Out

Item 9 - Miscellaneous Documentation

Description	Date Submitted for Closeout	Date Closed Out
	3 Mar 04	20 May 04

Tel.: (412) 967-0765
Fax: (412) 967-7661

ADVICE NOTE

No. 8

Ship Date: 2/16/2005

Project No.: GD70116

Please reference above on all communication

Custom Intermountain Power Service Corp.
850 W. Brush Wellman Road
Delta, UT 84624-9546

Attention: John Christensen
435-864-6481

Ship to: (if different than customer address)

Customer Order No.: 05-41041

Carrier:
Waybill No.: Pro No.

Item	Qty.	Customer Part No.	Description of Goods	Serial Number and/or Comments
1	1	M91141/001	Signet Flow meter	
2	1	G310C000	Red Lion HMI	
3	1	M78309/007	Power Supply, 24V DC	
4	1	M78309/003	Power Supply, 24V DC	
5	4	M86900/001	24Vdc Digital Signal Isolator	
6	1	M86408/003	12Vdc Telemecanique relay	
7	1	M86408/006	24Vdc Telemecanique relay, 2NO, 2NC	
8	1	CA3-KN40BD3	24Vdc Telemecanique relay, 4NO	
9	1	CA3-KN31BD3	24Vdc Telemecanique relay, 3NO, 1NC	
10	1	M86408/009	48Vdc Telemecanique relay	
11	1	M84513/001	120Vac Siemens Relay, w/aux. Contact	
12	1	3RV1021-1CA10	Siemens Thermal Overload/Disconnect Relay	
13	1	8501-C022V20	120Vdc Square D (BKTP) relay	
14	1	1SVR450125R0000	Ground Fault relay	
15	1	M84050/218	Exciter Contactor	
16	1	M84050/103	Excitor Contactor Suppressor	
17	1	M98601/001	Strip Heater	
18	0	M86701/001	Moisture Detection Sensor	back ordered
19	1	M86700/001	Moisture Detection Relay	
20	1	560-252-1	2500:1 Current Transformer	
21	1	28 14 05 8	Phoenix 3-Way Isol Amplifier MCR-CLP-UI-4	
22	2	M59100/001	Deionization Tank	
23	10	M73329/00X	Thyristor	
24	35	M47104/002	Filter, paper, 10", 20 micron	
25	1	M78001/208	Gating Board	186111AF204
25	1	M78001/208	Gating Board	186111AF215
25	1	M78001/208	Gating Board	186111AF284
26	2	9782C-S0-C2-E0000-BD	Conductivity Analyzer	

Note: This shipment includes spares per items 1 & 2 of September 29, 2004 letter to increase the contract value. Please note that item 18 was used to replace the unit damaged during installation of the replacement regulator panels in drive 2D. It has been re-ordered and will be shipped upon receipt.

Number: CF40600
Revision: B
File name: CF40600-B.xls

ALSTOM Power Conversion
610 Epsilon Drive
Pittsburgh PA 15238 USA

IP7015648

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Variable Frequency Drives (U1 A&B)

Prepared By: Nathan R. Crop

IPSC Work Order #02-53663

Date: August, 2006

Supervisor Jon P. Christensen

Item 1 - Construction Drawings

Drawing Number	Rev. No.	Comments	Tag (**)	Date Submitted for Closeout	Date Closed Out
1CCE-K2000A		SCHEMATIC DIAGRAM INDUCED DRAFT	**		
1CCE-K2000B		SCHEMATIC DIAGRAM INDUCED DRAFT			
1CCE-K2000C		SCHEMATIC DIAGRAM INDUCED DRAFT			
1CCE-K2101A	5	SCHEMATIC DIAGRAM IDF 1A			
1CCE-K2102A	5	SCHEMATIC DIAGRAM IDF 1B			
1CCE-K2101C	3	SCHEMATIC DIAGRAM IDF 1A WIRING			
1CCE-K2102C	3	SCHEMATIC DIAGRAM IDF 1B WIRING			
1CCE-K2111A	4	ALREADY RESERVED BY BILL MORGAN			
1CCE-K2112A	4	PWER XFMR 1A2 FEEDER BREAKER			
1CCE-K2113A	5	PWER XFMR 1B1 FEEDER BREAKER			
1CCE-K2114A	4	PWER XFMR 1B2 FEEDER BREAKER			
1CCE-K2111C	2	PWER XFMR 1A1 FEEDER BREAKER			
1CCE-K2112C	2	PWER XFMR 1A2 FEEDER BREAKER			
1CCE-K2113C	2	PWER XFMR 1B1 FEEDER BREAKER			
1CCE-K2114C	2	PWER XFMR 1B2 FEEDER BREAKER			
1CCE-K2121A	5	SCHEMA. DIAG. IDF VFD 1A1 PC I/O			
1CCE-K2122A	4	SCHEMA. DIAG. IDF VFD 1A1 PC I/O			
1CCE-K2123A	4	SCHEMA. DIAG. IDF VFD 1B1 PC I/O			
1CCE-K2124A	4	SCHEMA. DIAG. IDF VFD 1B2 PC I/O			
1CCE-K2121B		SCHEM. DIAG. IDF VFD 1A1 WIRING			
1CCE-K2122B		SCHEM. DIAG. IDF VFD 1A2 WIRING			
1CCE-K2123B		SCHEM. DIAG. IDF VFD 1B1 WIRING			
1CCE-K2124B		SCHEM. DIAG. IDF VFD 1B2 WIRING			
1CCE-K2131		SCHEM. DIAG. IDF CONTACTOR 1A1 & 1A2			

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Variable Frequency Drives (U1 A&B)

Prepared By: Nathan R. Crop

IPSC Work Order #02-53663

Date: August, 2006

Supervisor Jon P. Christensen

1CCE-K2132		SCHEM. DIAG. IDF CONTACTOR 1B1 & 1B2
1CCE-K2601		SCHEM. DIAG. IDF VFD BREAKER TRIP PANEL1 ALREADY RESERVED BY JPC
1CCE-K2602		SCHEM. DIAG. IDF PWR XFMRS 1A1 & 1A2 ALARMS & HEATING
1CCE-K2603		SCHEM. DIAG. IDF PWR XFMRS 1B1 & 1B2 ALARMS & HEATING
1CCE-K2606A		SCHEM. DIAG. IDF VFD ANN CAB 1 PC INPUTS -A ALREADY RESERVED BY JPC
1CCE-K2606B		SCHEM. DIAG. IDF VFD ANN CAB 1 PC INPUTS -B ALREADY RESERVED BY JPC
1CCE-K2606C		SCHEM. DIAG. ID VFD ANN CAB 1 WIRING ALREADY RESERVED BY JPC
1CCE-K2805A		SCHEM. DIAG. ID FAN 1A REMOTE I/O 2COF-CAB-31 WIRING
1CCE-K2806A		SCHEM. DIAG. ID FAN 1B REMOTE I/O 2COF-CAB-32 WIRING
1CCE-K2805B		SCHEM. DIAG. ID FAN 1A REMOTE I/O 2COF-CAB-31 WIRING
1CCE-K2806B		SCHEM. DIAG. ID FAN 1B REMOTE I/O 2COF-CAB-32 WIRING
1EEC-E3327		RACEWAY COMPOSITE
63.3601.05-90153	3	Switchgear 1A2 cubicle 5 (feeds ID fan 1B2) WRG
63.3601.05-90154	3	Switchgear 1A2 cubicle 4 (feeds ID fan 1B1) WRG
63.3601.05-90155	3	Switchgear 1A2 cubicle 3 (feeds ID fan 1A2) WRG
63.3601.05-90156	3	Switchgear 1A2 cubicle 2 (feeds ID fan 1A1) WRG
63.3601.05-90240	1	Switchgear 1A2 cubicle 5 (feeds ID fan 1B2) SCHEMATIC
63.3601.05-90239	1	Switchgear 1A2 cubicle 4 (feeds ID fan 1B1) SCHEMATIC
63.3601.05-90232	1	Switchgear 1A2 cubicle 3 (feeds ID fan 1A2) SCHEMATIC

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Variable Frequency Drives (U1 A&B)

Prepared By: Nathan R. Crop

IPSC Work Order #02-53663

Date: August, 2006

Supervisor Jon P. Christensen

63.3601.05-90233	1	Switchgear 1A2 cubicle 2 (feeds ID fan 1A1) SCHEMATIC

Item 2 - Manufacturer's Drawings

Drawing Number	Rev. No.	Comments	Date Submitted for Closeout	Date Closed Out
63.2203.1.05-110001 THROUGH 63.2203.1.05-140005		UNIT 2 ID FAN SYSTEM BLOCK DIAGRAMS AND INTERNAL WIRING FOR EACH ID FAN DRIVE		

Item 3 - Instruction Manuals

Instruction Manual Number	Title	Vol.	Comments / Instructions	Date Submitted for Closeout	Date Closed Out

Item 4 - System Descriptions

System Code	System Title / Page	Comments / Instructions	Date Submitted for Closeout	Date Closed Out

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Variable Frequency Drives (U1 A&B)

Prepared By: Nathan R. Crop

IPSC Work Order #02-53663

Date: August, 2006

Supervisor Jon P. Christensen

Item 5 - DATATRAK Revisions

Device Number	New/ Revised/ Deleted/	Comments	Date Submitted for Closeout	Date Closed Out
1CCE-KXX-345	DELETE			
1CCE-KXX-344	DELETE			
1CCE-KXX-343	DELETE			
1CCE-KXX-342	DELETE			
1CCE-JBX-345	NEW	RE-NAMED KXX-342 THRU 345 TO JBX'S		
1CCE-JBX-344	NEW			
1CCE-JBX-343	NEW			
1CCE-JBX-342	NEW			

Item 6 - I&C Database Revisions

Device Number	New/ Revised/ Deleted/	Comments	Date Submitted for Closeout	Date Closed Out
1CCE-KXX-345	DELETE	DYNALCO SPEED INDICATORS ARE GONE.		
1CCE-KXX-344	DELETE			
1CCE-KXX-343	DELETE			
1CCE-KXX-342	DELETE			

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Variable Frequency Drives (U1 A&B)

Prepared By: Nathan R. Crop

IPSC Work Order #02-53663

Date: August, 2006

Supervisor Jon P. Christensen

Item 7 - Ladder Logic Revisions

System Code and Title	New/ Revised Network #	Comments	Date Submitted for Closeout	Date Closed Out

Item 8 - Relay Manual Updates

Manual and Page #	Relay #	Comments	Date Submitted for Closeout	Date Closed Out

Item 9 - Miscellaneous Documentation

Description	Date Submitted for Closeout	Date Closed Out

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

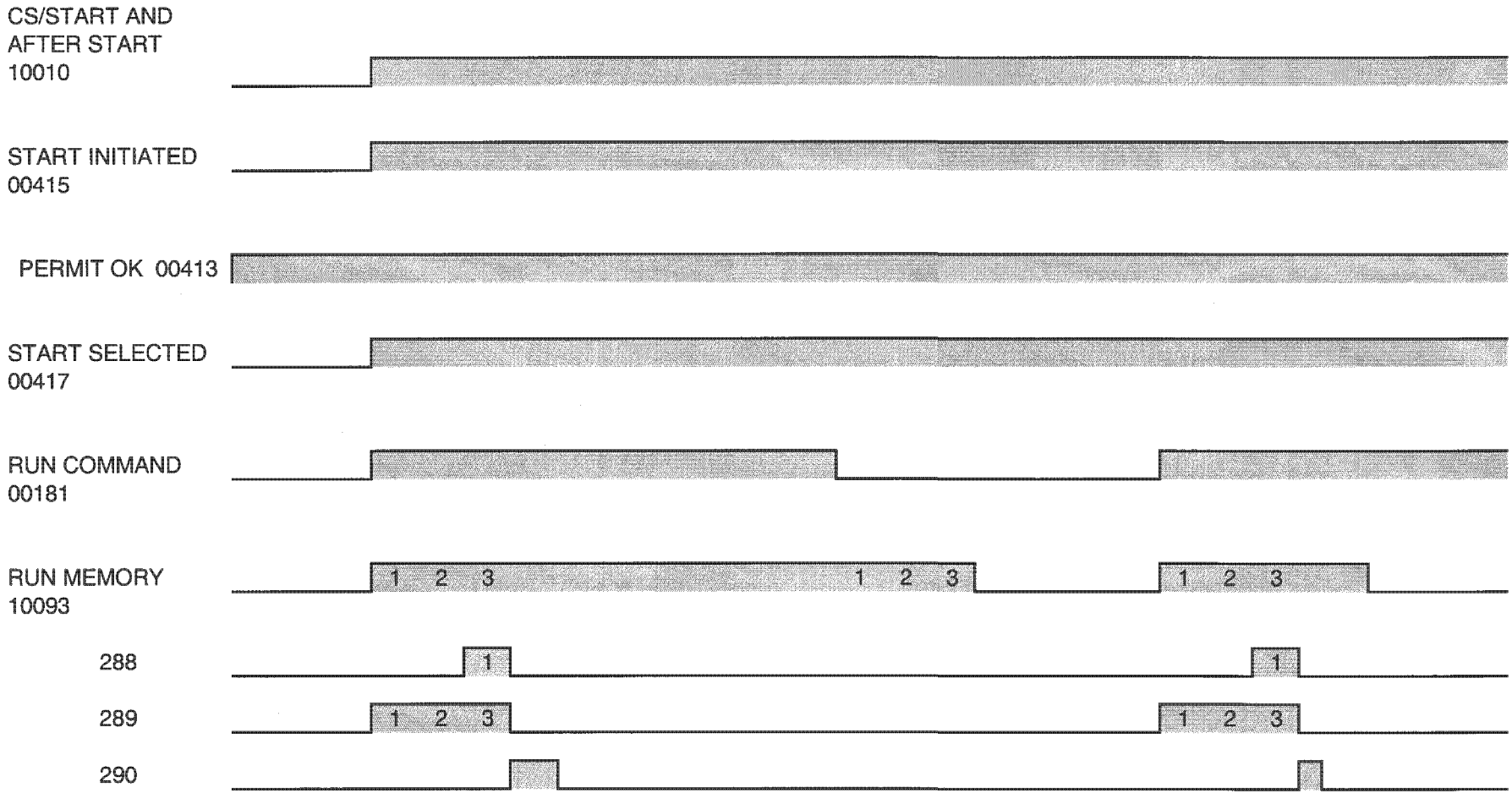
Title: ID Fan Variable Frequency Drives (U1 A&B)

Prepared By: Nathan R. Crop

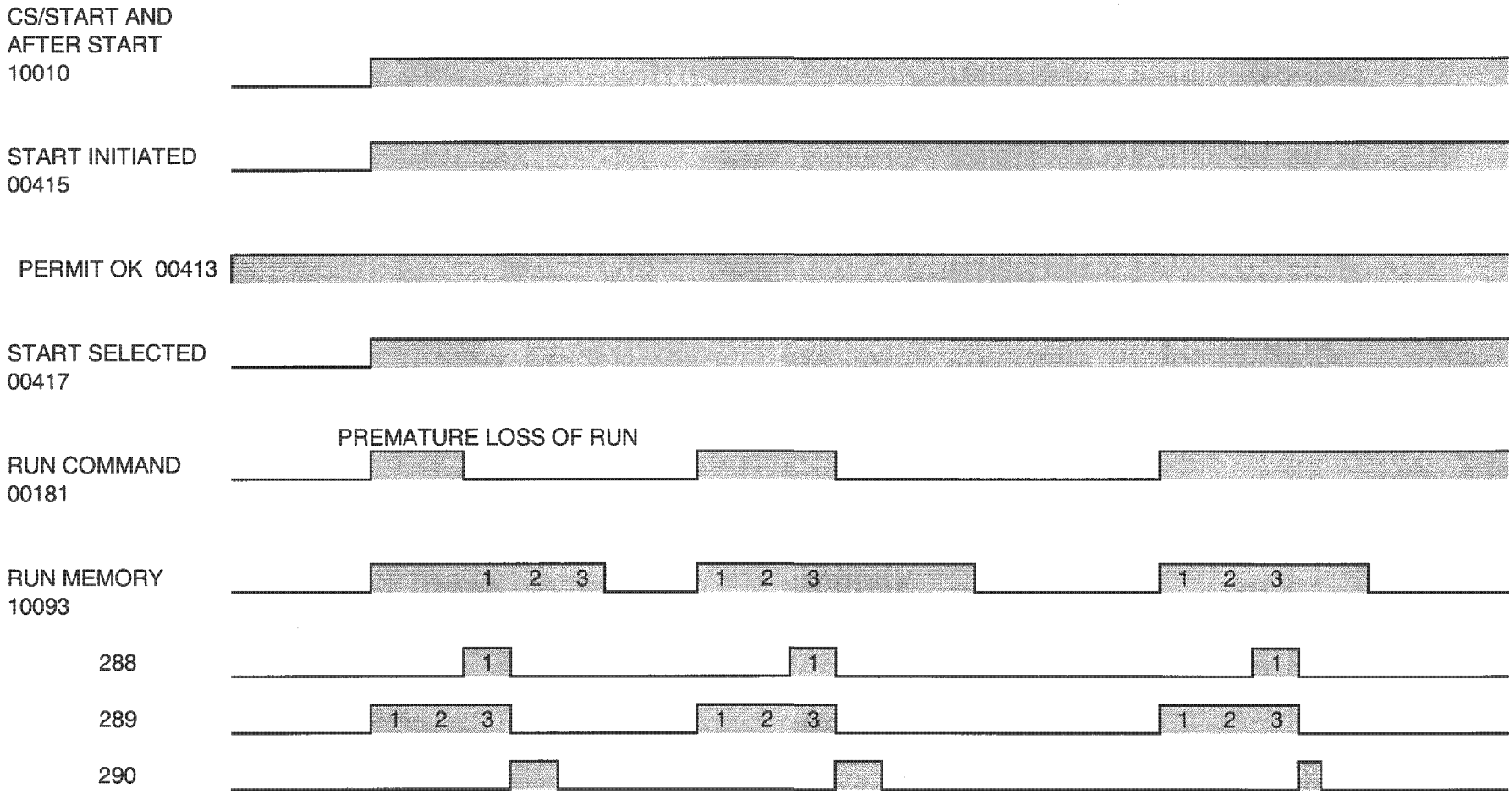
IPSC Work Order #02-53663

Date: August, 2006

Supervisor Jon P. Christensen


CS/START AND
AFTER START
10010
START INITIATED
00415
PERMIT OK 00413
START SELECTED
00417
RUN COMMAND
00181
RUN MEMORY
10093
1 2 3
1 2 3
1 2 3
288
1
1
289
1 2 3
1 2 3
290

IP7015655


CS/START AND
AFTER START
10010
START INITIATED
00415
PERMIT OK 00413
START SELECTED
00417
PREMATURE LOSS OF RUN
RUN COMMAND
00181
RUN MEMORY
10093
1 2 3
1 2 3
1 2 3
288
1
1
1
289
1 2 3
1 2 3
1 2 3
290

IP70156 56

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Variable Frequency Drives (U1 C & D)

Prepared By: Nathan R. Crop

IPSC Work Order #02-53663

Date: 22 June 2004

Supervisor Jon P. Christensen

Item 1 - Construction Drawings

Drawing Number	Rev. No.	Comments	Tag (**)	Date Submitted for Closeout	Date Closed Out
1CCE-K2000A			**		
1CCE-K2000B					
1CCE-K2000C					
1CCE-K2103A	4				
1CCE-K2104A	3				
1CCE-K2103C	2				
1CCE-K2104C	2				
1CCE-K2116A	3				
1CCE-K2117A	3	Already reserved by BRM Bill Morgan?			
1CCE-K2116C	1				
1CCE-K2117C	1				
1CCE-K2118A	3				
1CCE-K2118C	1				
1CCE-K2126A	3				
1CCE-K2127A	3				
1CCE-K2126B	3				
1CCE-K2127B	3				
1CCE-K2128A	3				
1CCE-K2128B	3				
1CCE-K2133	4				
1CCE-K2134	4				
1CCE-K2601	1	Breaker trip Panel			
1CCE-K2604	3				
1CCE-K2605	2				

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Variable Frequency Drives (U1 C & D)

Prepared By: Nathan R. Crop

IPSC Work Order #02-53663

Date: 22 June 2004

Supervisor Jon P. Christensen

1CCE-K2606A	2
1CCE-K2606B	3
1CCE-K2606C	2
1CCE-K2803A	4
1CCE-K2804A	4
1CCE-K2803B	3
1CCE-K2804B	3
1CCE-K2807A	2
1CCE-K2808A	2
1CCE-K2807B	5
1CCE-K2808B	5

Item 2 - Manufacturer's Drawings

Drawing Number	Rev. No.	Comments	Date Submitted for Closeout	Date Closed Out

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Variable Frequency Drives (U1 C & D)

Prepared By: Nathan R. Crop

IPSC Work Order #02-53663

Date: 22 June 2004

Supervisor Jon P. Christensen

Item 3 - Instruction Manuals

Instruction Manual Number	Title	Vol.	Comments / Instructions	Date Submitted for Closeout	Date Closed Out

Item 4 - System Desctiptions

System Code	System Title / Page	Comments / Instructions	Date Submitted for Closeout	Date Closed Out

Item 5 - DATATRAK Revisions

Device Number	New/ Revised/ Deleted/	Comments	Date Submitted for Closeout	Date Closed Out

Item 6 - I&C Database Revisions

Device Number	New/ Revised/ Deleted/	Comments	Date Submitted for Closeout	Date Closed Out

Item 7 - Ladder Logic Revisions

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Variable Frequency Drives (U1 C & D)

Prepared By: Nathan R. Crop

IPSC Work Order #02-53663

Date: 22 June 2004

Supervisor Jon P. Christensen

System Code and Title	New/ Revised Network #	Comments	Date Submitted for Closeout	Date Closed Out

Item 8 - Relay Manual Updates

Manual and Page #	Relay #	Comments	Date Submitted for Closeout	Date Closed Out

Item 9 - Miscellaneous Documentation

Description	Date Submitted for Closeout	Date Closed Out
	3 Mar 04	20 May 04

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Variable Frequency Drives (U1 C & D)

Prepared By: Nathan R. Crop

IPSC Work Order #02-53663

Date: 22 June 2004

Supervisor Jon P. Christensen

Item 1 - Construction Drawings

Drawing Number	Rev. No.	Comments	Tag (**)	Date Submitted for Closeout	Date Closed Out
1CCE-K2000A	11		**	8/15/05	
1CCE-K2000B	8			8/15/05	
1CCE-K2000C	6			8/15/05	
1CCE-K2103A	5			8/15/05	
1CCE-K2104A	3			8/15/05	
1CCE-K2103C	2			8/15/05	
1CCE-K2104C	2			8/15/05	
1CCE-K2116A	4			8/15/05	
1CCE-K2117A	5	Already reserved by BRM Bill Morgan?			
1CCE-K2116C	2			8/15/05	
1CCE-K2117C	2			8/15/05	
1CCE-K2118A	4			8/15/05	
1CCE-K2118C	2			8/15/05	
1CCE-K2125A	4			8/15/05	
1CCE-K2125B	4			8/15/05	
1CCE-K2126A	4			8/15/05	
1CCE-K2127A	4			8/15/05	
1CCE-K2126B	4			8/15/05	
1CCE-K2127B	4			8/15/05	
1CCE-K2128A	4			8/15/05	
1CCE-K2128B	4			8/15/05	
1CCE-K2133	5			8/15/05	
1CCE-K2134	5			8/15/05	
1CCE-K2601	2	Breaker trip Panel		8/15/05	

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Variable Frequency Drives (U1 C & D)

Prepared By: Nathan R. Crop

IPSC Work Order #02-53663

Date: 22 June 2004

Supervisor Jon P. Christensen

1CCE-K2604	4		8/15/05
1CCE-K2605	3		8/15/05
1CCE-K2606A	2	THIS DWG WAS NOT USED	
1CCE-K2606B	4		8/15/05
1CCE-K2606C	3		8/15/05
1CCE-K2803A	4	THIS DWG WAS NOT USED	
1CCE-K2804A	4	THIS DWG WAS NOT USED	
1CCE-K2803B	3	THIS DWG WAS NOT USED	
1CCE-K2804B	3	THIS DWG WAS NOT USED	
1CCE-K2807A	2	THIS DWG WAS NOT USED	
1CCE-K2808A	2	THIS DWG WAS NOT USED	
1CCE-K2807B	6		8/15/05
1CCE-K2808B	6		8/15/05
1EEC-E3327	10	STILL NOT MODIFIED	
1EEC-E3328	11	STILL NOT MODIFIED	

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Variable Frequency Drives (U1 C & D)

Prepared By: Nathan R. Crop

IPSC Work Order #02-53663

Date: 22 June 2004

Supervisor Jon P. Christensen

Item 2 - Manufacturer's Drawings

Drawing Number	Rev. No.	Comments	Date Submitted for Closeout	Date Closed Out

Item 3 - Instruction Manuals

Instruction Manual Number	Title	Vol.	Comments / Instructions	Date Submitted for Closeout	Date Closed Out

Item 4 - System Desctiptions

System Code	System Title / Page	Comments / Instructions	Date Submitted for Closeout	Date Closed Out

Item 5 - DATATRAK Revisions

Device Number	New/ Revised/ Deleted/	Comments	Date Submitted for Closeout	Date Closed Out

Item 6 - I&C Database Revisions

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Variable Frequency Drives (U1 C & D)

Prepared By: Nathan R. Crop

IPSC Work Order #02-53663

Date: 22 June 2004

Supervisor Jon P. Christensen

Device Number	New/ Revised/ Deleted/	Comments	Date Submitted for Closeout	Date Closed Out

Item 7 - Ladder Logic Revisions

System Code and Title	New/ Revised Network #	Comments	Date Submitted for Closeout	Date Closed Out

Item 8 - Relay Manual Updates

Manual and Page #	Relay #	Comments	Date Submitted for Closeout	Date Closed Out

Item 9 - Miscellaneous Documentation

Description	Date Submitted for Closeout	Date Closed Out
	3 Mar 04	20 May 04

CACHE VALLEY ELECTRIC
2345 South John Henry Drive
Salt Lake City, Utah 84119

January 13, 2006

Jon Christensen
IPSC
850 Brush Wellman Road
Delta, UT 84624

Subject: 2006 April Outage Work

ID Fan Drive Installation Project: The pricing is based on the following scope changes.

1. The labor rate has increase approximately 1.5%.
2. The new work scope includes the installation of 3 ID Fan Drives instead of 2 as required for the 2005 outage. This would represent a labor increase of 50% or 645 hours.
3. Pull 8 additional 120VDC , 3c/#8 cables to the generating station control building or 150 additional man-hours.
4. Deliver and stage all drives from warehouse #4 to the scrubber building, 48 man-hours.
5. Change taps on the isolation transformers and DC-Link reactors, 36 man-hours.
6. Additional drive start-up assistance 30 hours.
7. Tape (provided by IPSC) the high voltage terminations 30 man-hours.
8. Our work will begin April 1, 2006 at 9 a.m. and be completed ready for check-out at 9 a.m. April 5, 2006.

Total: $ 165,153.00

Cache Valley Electric

Mike Dameworth

Mike Dameworth

IP7015665

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Variable Frequency Drives (U2 A,B&C)

Prepared By: Nathan R. Crop

IPSC Work Order #02-53663

Date: 23 June 2004

Supervisor Jon P. Christensen

Item 1 - Construction Drawings

Drawing Number	Rev. No.	Comments	Tag (**)	Date Submitted for Closeout	Date Closed Out
2CCE-K2000A	8	SCHEMATIC DIAGRAM INDUCED DRAFT	**		
2CCE-K2000B	8	SCHEMATIC DIAGRAM INDUCED DRAFT			
2CCE-K2000C	6	SCHEMATIC DIAGRAM INDUCED DRAFT			
2CCE-K2101A	2	SCHEMATIC DIAGRAM IDF 1A			
2CCE-K2102A	2	SCHEMATIC DIAGRAM IDF 1B			
2CCE-K2103A	2	SCHEMATIC DIAGRAM IDF 1C			
2CCE-K2101C	2	SCHEMATIC DIAGRAM IDF 1A WIRING			
2CCE-K2102C	2	SCHEMATIC DIAGRAM IDF 1B WIRING			
2CCE-K2103C	2	SCHEMATIC DIAGRAM IDF 1C WIRING			
2CCE-K2111A	2	ALREADY RESERVED BY BILL MORGAN			
2CCE-K2112A	2	PWER XFMR 1A2 FEEDER BREAKER			
2CCE-K2113A	3	PWER XFMR 1B1 FEEDER BREAKER			
2CCE-K2114A	2	PWER XFMR 1B2 FEEDER BREAKER			
2CCE-K2115A	3	PWER XFMR 1C1 FEEDER BREAKER			
2CCE-K2116A	3	PWER XFMR 1C2 FEEDER BREAKER			
2CCE-K2117A	3	ALREADY RESERVED BY BILL MORGAN			
2CCE-K2111C	1	PWER XFMR 1A1 FEEDER BREAKER			
2CCE-K2112C	1	PWER XFMR 1A2 FEEDER BREAKER			
2CCE-K2113C	1	PWER XFMR 1B1 FEEDER BREAKER			
2CCE-K2114C	1	PWER XFMR 1B2 FEEDER BREAKER			
2CCE-K2115C	1	PWER XFMR 1C1 FEEDER BREAKER			
2CCE-K2116C	1	PWER XFMR 1C2 FEEDER BREAKER			
2CCE-K2121A	3	SCHEMA. DIAG. IDF VFD 1A1 PC I/O			
2CCE-K2122A	2	SCHEMA. DIAG. IDF VFD 1A1 PC I/O			

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Variable Frequency Drives (U2 A,B&C)

Prepared By: Nathan R. Crop

IPSC Work Order #02-53663

Date: 23 June 2004

Supervisor Jon P. Christensen

2CCE-K2123A	3	SCHEMA. DIAG. IDF VFD 1B1 PC I/O
2CCE-K2124A	2	SCHEMA. DIAG. IDF VFD 1B2 PC I/O
2CCE-K2125A	2	SCHEMA. DIAG. IDF VFD 1C1 PC I/O
2CCE-K2126A	2	SCHEMA. DIAG. IDF VFD 1C2 PC I/O
2CCE-K2121B	4	SCHEM. DIAG. IDF VFD 1A1 WIRING
2CCE-K2122B	4	SCHEM. DIAG. IDF VFD 1A2 WIRING
2CCE-K2123B	3	SCHEM. DIAG. IDF VFD 1B1 WIRING
2CCE-K2124B	4	SCHEM. DIAG. IDF VFD 1B2 WIRING
2CCE-K2125B	3	SCHEM. DIAG. IDF VFD 1C1 WIRING
2CCE-K2126B	4	SCHEM. DIAG. IDF VFD 1C2 WIRING
2CCE-K2131	3	SCHEM. DIAG. IDF CONTACTOR 1A1 & 1A2
2CCE-K2132	3	SCHEM. DIAG. IDF CONTACTOR 1B1 & 1B2
2CCE-K2133	2	SCHEM. DIAG. IDF CONTACTOR 1C1 & 1C2
2CCE-K2601	2	SCHEM. DIAG. IDF VFD BREAKER TRIP PANEL1 ALREADY RESERVED BY JPC
2CCE-K2602	4	SCHEM. DIAG. IDF PWR XFMRS 1A1 & 1A2 ALARMS & HEATING
2CCE-K2603	4	SCHEM. DIAG. IDF PWR XFMRS 1B1 & 1B2 ALARMS & HEATING
2CCE-K2604	4	SCHEM. DIAG. IDF PWR XFMRS 1C1 & 1C2 ALARMS & HEATING
2CCE-K2606A	1	SCHEM. DIAG. IDF VFD ANN CAB 1 PC INPUTS -A ALREADY RESERVED BY JPC
2CCE-K2606B	1	SCHEM. DIAG. IDF VFD ANN CAB 1 PC INPUTS -B ALREADY RESERVED BY JPC
2CCE-K2606C	3	SCHEM. DIAG. ID VFD ANN CAB 1 WIRING ALREADY RESERVED BY JPC
2CCE-K2801A	3	SCHEM. DIAG. PLANT MTR CONTROL SYS. 2COF-CAB-3 SECT 14 WIRING (ID FAN 1A)
2CCE-K2802A	3	SCHEM. DIAG. PLANT MTR CONTROL SYS. 2COF-CAB-3 SECT 15 WIRING (ID FAN 1B)

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Variable Frequency Drives (U2 A,B&C)

Prepared By: Nathan R. Crop

IPSC Work Order #02-53663

Date: 23 June 2004

Supervisor Jon P. Christensen

2CCE-K2803A	6	SCHEM. DIAG. PLANT MTR CONTROL SYS. 2COF-CAB-4 SECT 17 WIRING (ID FAN 1C)
2CCE-K2801B	3	SCHEM. DIAG. PLANT MTR. CONTROL SYS. 2COF-CAB-3 SECT 14 WIRING (ID FAN 1A)
2CCE-K2802B	3	SCHEM. DIAG. PLANT MTR. CONTROL SYS. 2COF-CAB-3 SECT 15 WIRING (ID FAN 1B)
2CCE-K2803B	3	SCHEM. DIAG. PLANT MTR CONTROL SYS. 2COF-CAB-4 SECT 17 WIRING (ID FAN 1C)
2CCE-K2805A	2	SCHEM. DIAG. ID FAN 1A REMOTE I/O 2COF-CAB-31 WIRING
2CCE-K2806A	3	SCHEM. DIAG. ID FAN 1B REMOTE I/O 2COF-CAB-32 WIRING
2CCE-K2807A	2	SCHEM. DIAG. ID FAN 1C REMOTE I/O 2COF-CAB-33 WIRING
2CCE-K2805B	4	SCHEM. DIAG. ID FAN 1A REMOTE I/O 2COF-CAB-31 WIRING
2CCE-K2806B	4	SCHEM. DIAG. ID FAN 1B REMOTE I/O 2COF-CAB-32 WIRING
2CCE-K2807B	4	SCHEM. DIAG. ID FAN 1C REMOTE I/O 2COF-CAB-33 WIRING
2CCE-K2809	2	SCHEM. DIAG. ID FANS INTERLOCKS
2CCE-K2811	2	SCHEM. DIAG. MISCELLANEOUS INSTRUMENTATION

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Variable Frequency Drives (U2 A,B&C)

Prepared By: Nathan R. Crop

IPSC Work Order #02-53663

Date: 23 June 2004

Supervisor Jon P. Christensen

Page 4 of 3

Item 2 - Manufacturer's Drawings

Drawing Number	Rev. No.	Comments	Date Submitted for Closeout	Date Closed Out

Item 3 - Instruction Manuals

Instruction Manual Number	Title	Vol.	Comments / Instructions	Date Submitted for Closeout	Date Closed Out

Item 4 - System Desctiptions

System Code	System Title / Page	Comments / Instructions	Date Submitted for Closeout	Date Closed Out

Item 5 - DATATRAK Revisions

Device Number	New/ Revised/ Deleted/	Comments	Date Submitted for Closeout	Date Closed Out

Item 6 - I&C Database Revisions

IP7015669

IPSC

INTERMOUNTAIN POWER SERVICE CORPORATION

Document Tracking Form

Capital Project No.: IGS02-07

Title: ID Fan Variable Frequency Drives (U2 A,B&C)

Prepared By: Nathan R. Crop

IPSC Work Order #02-53663

Date: 23 June 2004

Supervisor Jon P. Christensen

Device Number	New/ Revised/ Deleted/	Comments	Date Submitted for Closeout	Date Closed Out

Item 7 - Ladder Logic Revisions

System Code and Title	New/ Revised Network #	Comments	Date Submitted for Closeout	Date Closed Out

Item 8 - Relay Manual Updates

Manual and Page #	Relay #	Comments	Date Submitted for Closeout	Date Closed Out

Item 9 - Miscellaneous Documentation

Description	Date Submitted for Closeout	Date Closed Out
	3 Mar 04	20 May 04

TABLE OF CONTENTS
ID fan drive replacement for fans 1A, 1B and 1C
IPSC Outage April 2006

Reference Drawings:

ID fan drive replacement for fans 1A, 1B and 1C
IPSC Outage April 2006

General Arrangement and System Block Diagrams

63.2203.05-90025	Old Westinghouse Drive Cabinet General Arrangement
63.2203.1.05-210000	New Alstom Drive 1A system block diagram
63.2203.1.05-220000	New Alstom Drive 1B system block diagram
63.2203.1.05-230000	New Alstom Drive 1C system block diagram
63.2203.1.05-900041	New Alstom Drive Cabinet General Arrangement
63.2203.1.05-900042	New Alstom Drive Cabinet General Arrangement
63.2203.1.05-900043	New Alstom Drive Bolt Hole Pattern (For anchoring)
63.2203.1.05-900044	New Alstom Drive shipping splits and lifting specification

Load Disconnect Switch Drawings

C-13716 (Powercon)	Metal Enclosed Switchgear cabinet dimensions
CW-12632 (Powercon)	Metal Enclosed Switchgear TB arrangement

Raceway Drawings

2EEC-E3327	Raceway for East ID fan drive bldg with ID fans 1A & 1B
2EEC-E3328	Raceway for West ID fan drive bldg with ID fan 1C

Data-Trak routing sheet for 120 power circuit from ESS to unit 1 1D2 regulator cab.

1EEC-E3512	Raceway dwg mezz flr. For the 1100 ft wire pulls (120 VAC)
1EEC-E3511	Raceway dwg grnd flr. For the 1100 ft wire pulls (120 VAC)
9EEC-E3250	Units one and two electrical tunnel.
9EEC-E2314	Electrical Duct Bank (Underground)
1EEC-E3327	Raceway for East ID fan drive bldg with ID fans 1A & 1B

1EEC-E3328	Raceway for West ID fan drive bldg with ID fans
1C & 1D	
1EEC-E3329	Raceway for ID fan drive bldg with ID fans Mezz.
level	

Electrical Drawings

2CCE-K2101C	Induced Draft Fan 1A (Encoder JBX)
2CCE-K2102C	Induced Draft Fan 1B (Encoder JBX)
2CCE-K2103C	Induced Draft Fan 1C (Encoder JBX)
2CCE-K2111C	Idf pwr xfmr 1A1 feeder breaker wiring
2CCE-K2112C	Idf pwr xfmr 1A2 feeder breaker wiring
2CCE-K2113C	Idf pwr xfmr 1B1 feeder breaker wiring
2CCE-K2114C	Idf pwr xfmr 1B2 feeder breaker wiring
2CCE-K2115C	Idf pwr xfmr 1C1 feeder breaker wiring
2CCE-K2116C	Idf pwr xfmr 1C2 feeder breaker wiring
63.3601.05-20234	Idf pwr xfmr 1A1 feeder breaker wiring (Internal)
63.3601.05-20233	Idf pwr xfmr 1A2 feeder breaker wiring (Internal)
63.3601.05-20232	Idf pwr xfmr 1B1 feeder breaker wiring (Internal)
63.3601.05-20231	Idf pwr xfmr 1B2 feeder breaker wiring (Internal)
63.3601.05-20284	Idf pwr xfmr 1C1 feeder breaker wiring (Internal)
63.3601.05-20283	Idf pwr xfmr 1C2 feeder breaker wiring (Internal)
2CCE-K2121B	Old Westinghouse Var. Spd. Drv. 1A1 wiring
2CCE-K2121B	New Alstom Var. Spd. Drv. 1A1 wiring
2CCE-K2122B	Old Westinghouse Var. Spd. Drv. 1A2 wiring
2CCE-K2122B	New Alstom Var. Spd. Drv. 1A2 wiring
2CCE-K2123B	Old Westinghouse Var. Spd. Drv. 1B1 wiring
2CCE-K2123B	New Alstom Var. Spd. Drv. 1B1 wiring
2CCE-K2124B	Old Westinghouse Var. Spd. Drv. 1B2 wiring
2CCE-K2124B	New Alstom Var. Spd. Drv. 1B2 wiring
2CCE-K2125B	Old Westinghouse Var. Spd. Drv. 1C1 wiring
2CCE-K2125B	New Alstom Var. Spd. Drv. 1C1 wiring
2CCE-K2126B	Old Westinghouse Var. Spd. Drv. 1C2 wiring
2CCE-K2126B	New Alstom Var. Spd. Drv. 1C2 wiring
2CCE-K2131	Old Westinghouse Contactor 1A1&1A2
2CCE-K2131	New Alstom Powercon Load Disconnect Switch
1A1&1A2	
2CCE-K2132	Old Westinghouse IDF Contactor 1B1&1B2
2CCE-K2132	New Alstom Powercon Load Disconnect Switch
1B1&1B2	
2CCE-K2133	Old Westinghouse IDF Contactor 1C1&1C2
2CCE-K2134	New Alstom Powercon Load Disconnect Switch
1C1&1C2	
2CCE-K2601	Old ID fan breaker trip panel wiring (Includes all fans)

2CCE-K2606C	Old ID fan annunciator cabinet wiring (Includes all fans)

IP7015673

1551 FLORIDA AVENUE
P.O. BOX 477
SEVERN, MARYLAND 21144
REF: S.O.#00-90019
DATE: 11/20/95

STRUCTURAL ANALYSIS FOR SEISMIC DESIGN REQUIREMENTS FOR SWITCHGEAR METAL ENCLOSURE

SEISMIC RESISTANCE OF POWERCON M/E SWITCHGEAR RATED (15KV, 1200A) TO ZONE 4 CONDITIONS.

1.0 PURPOSE: THE PURPOSE OF THIS ANALYSIS IS TO EXAMINE THE ABILITY OF THE METAL ENCLOSED SWITCHGEAR CABINET TO WITHSTAND SEISMIC FORCES INDUCED UNDER SEISMIC ZONE 4 CONDITIONS:

$$a = .4g$$

2.0 REFERENCES:
A. UNIFORM BUILDING CODE (1991 EDITION).
B. SPECIFICATION FOR THE DESIGN OF COLD FORMED STEEL STRUCTURE MEMEBERS AISI SEPTEMBER 1980.
C. MARK'S STANDARD HANDBOOK FOR MECHANICAL ENGINEERS, 8th EDITION.
D. MACHINERY'S HANDBOOK, 20th EDITION.
E. POWERCON STANDARD 474 (PC001 ENCL.)

3.0 ANALYSIS:

3.1. LATERAL FORCE REQUIREMENT:
Fp= .4W WITH 133% ALLOWABLE STRESS, WHERE
Fp= HORIZONTAL FORCE IN ANY DIRECTION AND W= WEIGHT

3.2. DATA:
SHEET METAL USED IN FABRICATION IS #11GA. STEEL @ 5#/FT^2 AND THICKNESS OF 0.1196". SWITCH AND FUSE ASSEMBLY WT.=300#.

3.3. WEIGHTS:

TOP PLATE = $\frac{36 \times 44 \times 5}{144}$ = 55 LBS.

SIDE PLATES = 2 X $\frac{44 \times 90 \times 5}{144}$ = 275 LBS.

END PLATES = 2 X $\frac{36 \times 90 \times 5}{144}$ = 225 LBS.

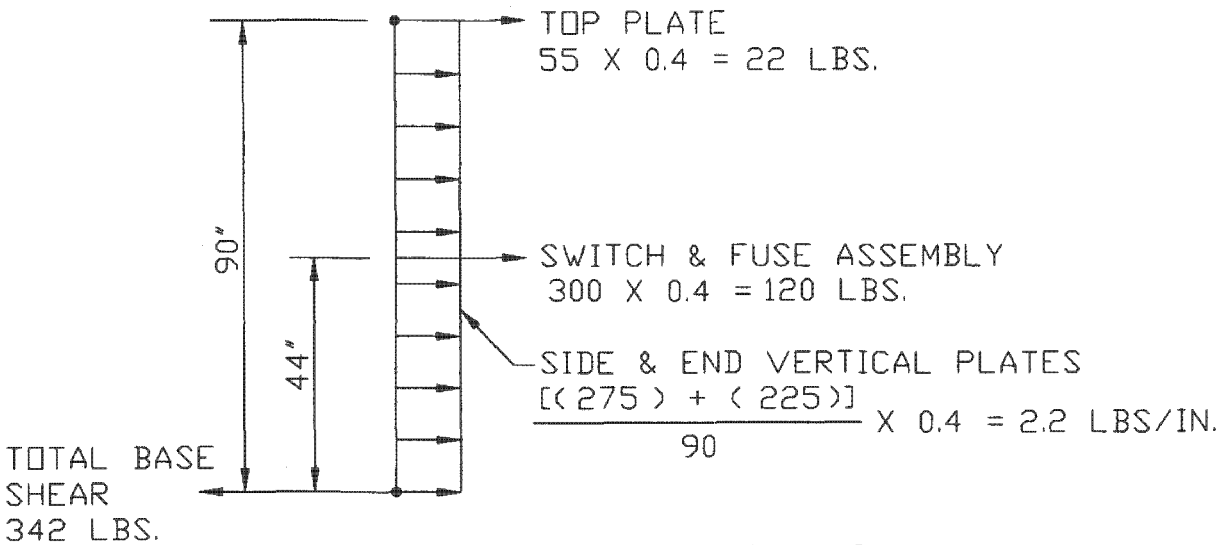
CABINET TOTAL----------555 LBS.

WT. OF SWITCH & FUSE----------300 LBS.

TOTAL WT. OF FREE STANDING UNIT-- 855 LBS.

IP7015674

3.4. SEISMIC HORIZONTAL COEFFICIENT = .4 (UBC TABLE 23-I)
TOTAL BASE SHEAR = (.4)(855) = 342 LBS.



VERTICAL DISTRIBUTUION OF LATERAL LOADS

FIG. 1

MIN. CROSS SECTIONAL AREA UNDER SHEAR IS THE SUM OF THE (2) SIDE PLATES $2 \pm X$ W = (2)(.1196)(44) = $10.52 IN^2$
THUS A= 10.52 SQ.IN. (MIN. SHEAR AREA & CRITICAL SECTION)

$$\text{AVERAGE SHEAR STRESS} = \frac{\text{TOTAL BASE SHEAR}}{\text{MIN. SHEAR AREA}} = \frac{342}{10.52} = 32.5 \text{ PSI}$$

THUS $S_{AV} \approx$ 33PSI

FROM AISC SECTION 1.5.1.2
Fv= 0.4Fy WHERE Fy = YIELD STRESS = 33,000PSI
SO, Fv = (0.4)(33,000) = 13,200PSI (ALLOWABLE)
133% OF ACTUAL AVERAGE BASE SHEAR STRESS
1.33 S_{AV} = (1.33)(33) = 43.89 ≈ 44PSI
SO, 44PSI (133% OF ACTUAL STRESS) < 13,200PSI (ALLOWABLE)

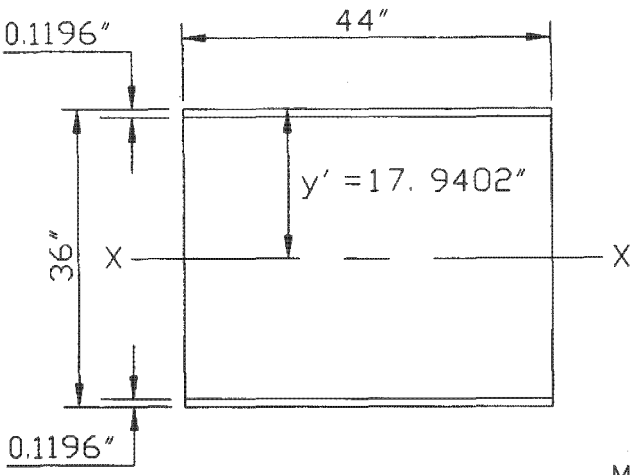
3.5. BENDING BEHAVIOR:
THE BOX SHAPE OF THE CABINET (36"W X 44"D) IS HIGHLY EFFICIENT IN CARRYING THE BENDING STRESS. TWO SIDE PLATES WITH STIFFENING MOUNTING FRAME WILL CONSERVATIVELY BE ASSUMED TO CARRYING THE BENDING MOMENT.

LOOKING @ FIGURE 1, THE BENDING MOMENT ABOUT THE BOTTOM IS AS FOLLOWS:

$$M = [(22)(90)] + [(120)(44)] + \left[\frac{(2.2)(90)(90)}{2}\right] \text{ IN-LBS}$$

M = 16,170 IN-LBS

IP7015675



I_{xc} = MOMENT OF INERTIA

$I_{xc} = A \times 2(y')^2$

$= [(.1196)(44)]2(17.9402)^2$

$I_{xc} = 3387 IN^4$

S_{xc} = SECTION MODULUS

$S_{xc} = \frac{Ixc}{y} = \frac{3387}{18}$

$S_{xc} = 188 IN^3$

MAX BENDING STRESS $= \frac{M}{S_{xc}} = \frac{16170}{188} = 86.01$

$\approx$ 86PSI

ALLOWABLE BENDING STRESS
Fb= .60Fy
Fb= .60(33,000PSI)
Fb= 19,800PSI (ALLOWABLE)

MAX BENDING STRESS X 133% = (86)(1.33) = <u>114.38PSI</u>

SO, 114.38PSI (133% OF ACTUAL STRESS) < 19,800PSI (ALLOWABLE) MAXIMUM BENDING STRESS IS CONSIDERABLY LESS THAN ALLOWABLE. FROM THIS WE CONCLUDE THAT A CONSIDERABLE MARGIN EXISTS IN THE CABINET DESIGN.

3.6. LATERAL STABILITY:
ASSUMING THE COEFFICIENT OF SLIDING FRICTION FOR MILD STEEL OVER CONCRETE PAD TO BE .8, THE RESISTING FORCE AGAINST SLIDING IS:
fW = (.8)(855 LBS) = 684 LBS. THIS IS GREATER THAN 342 LBS. (TOTAL BASE SHEAR). WE MAY CONCLUDE THAT NO SLIDING OF EQUIPMENT WILL TAKE PLACE.

3.7. STABILITY AGAINST OVERTURNING:
OVERTURNING MOMENT M = 16,170 IN-LBS
STABILIZING MOMENT M = 855 X 18 = 15,390 IN-LBS
THE OVERTURNING MOMENT EXCEEDS THE STABILIZING MOMENT BY 16,170 - 15,390 = <u>780 IN-LBS</u>.
ANCHORING WILL BE REQUIRED TO PREVENT OVERTURNING. ANCHORS ARE TO BE PLACED 4" FROM EACH SIDE AND 4" FROM FRONT AND REAR (4-ANCHORS TOTAL FOR EACH FREE STANDING UNIT). (2) ANCHORS WILL BE UNDER TENSION AT ANY ONE TIME.

CALCULATING TENSILE STRESS ON EACH ANCHOR.

$M = xF_T$ THEREFORE $F_T = \frac{M}{X} = (1/2)\ \frac{780 IN\text{-}LBS}{32 IN} = \frac{24.4}{2} \approx 12 LBS$

IP7015676