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ENGINEERING CHANGE NOTICE

Page 1 of 2

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ECN

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	5. Project Title/No./Work Order No. B610	6. Bldg./Sys./Fac. No. 234-5Z/93A	7. Approval Designator N/A
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Abstract: This document contains the complete printout of the MICON A/S system configuration used in the Plutonium Finishing Plant. The document is divided into several volumes. Volume 1 covers the workstation display and configuration. All other volumes contain the controller configurations, or programs.

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TABLE OF CONTENTS

INTRODUCTION	3
GROUP DISPLAYS	6
group.txt	7
GRAPHIC DISPLAYS	11
AA-WTF	13
WTF-HVAC	14
WTF-IN	15
WTF-KOH	16
WTF-OUT	17
AA-CLC	18
CLC-291	19
CLC-PRF	20
CLC-SEC	21
CLC-VP	22
AA-ZB	23
ZB-2736	24
ZB-MAIN	25
ZB-NDA	26
APPENDIX A: SPARC SET-UP FOR MICON VIEW	27
Disk Partitions	27
Time Zone	28
Network Host Information	28
Creating a New Kernel	29
Micon User Password, Directories and Files	30
Extra Swap	30
RAM Drive	31
Printer Files	31
Display Files	32
Operator Keyboards	33
Miscellaneous	33
MICON View & Configuration Files	34

APPENDIX B: SYSTEM FILES	35
/etc/rc	36
/etc/printcap	40
/home/users/micon/.cshrc	41
/home/users/micon/.login	42
/home/users/micon/.openwin-init	43
/home/users/micon/openwin-menu-ops (.openwin-menu)	44
/home/users/micon/openwin-menu-eng	44
/home/users/micon/.openwin-menu-micon	44
/home/users/micon/menu-eng	44
/home/users/micon/menu-ops	44
APPENDIX C	45

INTRODUCTION

The MICON¹ A/S distributed control system consists of four consoles or workstations (2 operator, 1 supervisor, and 1 engineer), a data highway, and seven process controller cabinets.

Each console is based on a Sun Microsystem's SPARC 20 workstation. The SPARC 20 workstation is based on a Scalable Process Architecture (SPARC) micro-processor. Each workstation contains 64 megabytes of memory, a one gigabyte hard drive, a 150 megabyte tape drive, a keyboard, and a trackball. Select SARC stations also contain an additional one gigabyte hard drive, a CD-ROM drive, and a 5 gigabyte tape drive. In addition, each SPARC 20

¹For a list of trademarks see APPENDIX C

provides two video outputs, two RS-232 serial ports, and two ethernet ports (a thick-net and a thin-net). The video ports are connected to two high resolution color monitors. The RS-232 ports are connected to two Emerald model FPXT single board IBM XT compatible computers with touchscreen. One of the FPXTs is designated as an annunciator panel and is unused. The other is used as a Universal Operator Keyboard (UOK). One of the two ethernet ports -- the thin-net -- is connected to the data highway via a MICON Company General Purpose LAN Interface (GPLI). The thicknet provides a Local Area Network (LAN) between the four consoles. It also connects each SPARC 20 with a Rockwell/CMC TranServer. The TranServer provides eight additional RS-232 serial ports for each workstation. One of these serial ports is connected to an Output Technology Corporation 800 series text printer. Another port is connected to a Hewlett-Packard PaintJet color graphics printer.

The Data Highway is the main data link between the consoles and the process control cabinets. It consists of two redundant coax cables that run between all four consoles and six cabinets. The Data Highway is a local area network using a high speed token ring passing protocol. The Data Highway is also redundant. This means that if one of the two cables fail, communication is automatically passed to the other.

The process control cabinets consist of two redundant main controllers, called U-32s, and several process controllers called RCM-32s. The U-32s and RCM-32s communicate via a small local area network called a Field Bus. The U-32 is a MICON built controller based on the Motorola 68020 processor. Although it can be used to directly control instruments and devices in the field, its primary purpose is to pass information between the consoles and the RCM-32s. Each U-32 has a redundant backup. That way if one fails, the other can automatically take over. The RCM-32s are also built by MICON and are based on a Motorola 68030 processor. These controllers provide input and output directly to field instruments and other devices.

There are four types of RCM-32s used in this system: A, C, D, and Dr. The A and C cards are used primarily for analog signals. They provide hardware for any standard analog instrument input (4-20 mA, 10-50 mA, and DC voltages) and provide a standard 4-20 mA output signal. In addition, they provide two 28 Volt DC discrete (on/off) channels. These may be used for input, output, or both. An A card provides 26 analog inputs and 4 analog outputs. Each C card provides 18 analog inputs and 12 analog outputs. The D card is used only for discrete control. It provides 32 on/off type channels that can be used as inputs, outputs, or both. Both inputs and outputs are 28 volt DC. The Dr cards are similar to the D cards except inputs are 120 volt AC or DC and the outputs are 3 amp (120 VAC) dry contact relays.

Since MICON A/S systems are installed by engineers rather than computer programmers, they are designed to minimize the need for programming. All of the software needed to monitor and control a process is already programmed into the system by MICON Company. The engineer need only "configure" the system to a specific application.

The process is very similar to the method used to install an older analog instrument system. First, a set of Pipe and Instrument Diagrams (P&ID) are created. These drawings show a schematic of the chemical process and the instrumentation to be installed to control it. With an analog system, the engineer would purchase the necessary individual components and wire them together to create the control strategy. With the MICON A/S system, the engineer would call function blocks to invoke preprogrammed modules and create the control strategy. The only difference between the two is that one uses hardware devices wired together, and the other uses software modules connected via a data base.

The MICON configuration is done in two parts. First, the RCM-32 and, if needed, the U-32 controllers are configured. Next, the workstation displays are created.

The RCM-32 and U-32 configuration consists of both the controller "program" and all display information for each "tag". Tags consist of all inputs and outputs from the controller, PID control loops, and any other displayed value. This information is requested by the MICON View software as the engineer creates the controller configuration.

Since all the display information (colors, ranges, etc.) was input during the controller configuration, the workstation configuration consists only of display creation. These are created by calling up a form and filling in the blanks. The only exception to this are the custom created graphics displays. Graphics are created by drawing a picture of the process and overlaying this with tag information. This is done with a special drawing program supplied with MICON View.

To keep size manageable, this document has been divided into several volumes. Volume 1 contains the display configuration for the four workstations. The other volumes each contain the configuration for one process Controller cabinet.

This volume (number 1) contains information on the group and graphic displays. All other type of displays are information only and not controlled.

GROUP DISPLAYS

Group displays are a group of up to eight "instruments". These instruments can be analog inputs, virtual analogs, discrete (on/off) indicators, switches, or controllers. See the PFP MICON View users document (WHC-SD-CP-CSUD-004) for information on calling up and using these displays.

These groups are created by the configure group option in MICON View under System Maintenance. The data base created by this option, however, isn't in a readable format. To get a readable file a program called grpexp is available in the SPARC II's /home2/Run directory. When run, this program creates a file called group.txt in the /home2/Data directory.

The group.txt file consists of 3,168 lines. One for each of the 3,168 possible groups on the console. Each line is divided into eleven fields. Each field is followed by the "|" character. The first field is the group number. The Second field is the group name. And, the third field a brief description of the group. The last eight fields contain the tag names for the "instruments" displayed in each of the group's eight slots. If a field is blank, then the corresponding slot is empty. Lines with all fields blank except the number indicate an unused group.

group.txt

1	CLC-FC1 CLC FLUID COOLER 1 HS FCF1 HS SP1 HS SCW1 PAL 1 TIR SCW1 TIRSCWA FIR SCW1
2	CLC-FC2 CLC FLUID COOLER 2 HS FCF2 HS SP2 HS SCW2 PAL 1 TIR SCW2 TIRSCWA FIR SCW2
3	CLC-SEC CLC SECONDARY LOOP YI FCF1 ZI SCW1 YI FCF2 ZI SCW2 HS P1 HS P2 PAL TK1
4	CLC-PRF CLC PRF LOOP HS P101 HS P102 PALTK101 PIR_PCW1 TIR_PCW1 FIR_PCW1
5	CLC-VP1 CLC VACUUM PUMP 1 LOOP XA VP1 HS P106 LALTK105 PIR_PCW5 TIR_PCW5 FIR_PCW5
6	CLC-VP2 CLC VACUUM PUMP 2 LOOP XA VP2 HS P108 LALTK105 PIR_PCW6 TIR_PCW6 FIR_PCW6
7	CLC-Z91 Z91-Z PUMPS AND COMPRESSORS TI 23J1 TI 23J2 TI 23A1 TI 23A2 HS 23A HS 23A 1 HS 23A 2
8	WTF-IN LLWTF INLET SUMP HS 101 HS 101A HS 101B LIC 101 FIC 1 LIC 102 FIC 102 HS 103
9	WTF-KOH LLWTF KOH NEUTRALIZATION AI 201 FIC 1 FIC 2 HS 102 HS 201 LI 201 AIC 201 PIC 2
10	WTF-F202 LLWTF FILTERS F202A & F202B PDI 202 HS 28 ZI MOV1 ZI MOV3 HS 29 ZI MOV2 ZI MOV4
11	WTF-TRAI LLWTF TREATMENT TRAINS HS 30 ZI MOV6 ZI MOV8 HS 31 ZI MOV5 ZI MOV7
12	WTF-OUT LLWTF OUTLET PIC 2 HS 30 HS 31 AI 3 AI TR2 HS 32 PI_243
13	WTF-HVAC LLWTF BUILDING HVAC ZI 2 ZI 1 FI 4
14	WTF-TECH LLWTF OVERRIDES HS 101
15	ZB-EF1 /2 2726-ZB EF-1 & 2 HS MAIN HS LL 3 HS EF 1 YI EF 1 II EF 1 HS EF 2 VI EF 2 II EF 2
16	ZB-SF1 /2 2726-ZB SF-1 & 2 HS MN S HS LL 1 HS SF 1 YI SF 1 II SF 1 HS SF 2 VI SF 2 II SF 2
17	ZB-PCI /2 ADMIN & PROCESS AREAS PDIC 1 HS 1 PDI 1A PDIC 2 HS 2 PDI 2A II COND1
18	ZB-PC4 /5 GLOVEBOX & EXHAUST PLENUM PDIC 4 HS 4 PDI 4A RAH NDA PDIC 5 HS 5 PDI 5A
19	ZB-RE1 /2 RETURN FANS 1 & 2 HS NDA HS LL 4 HS RF 1 VI RF 1 II RF 1 HS RF 2 VI RF 2 II RF 2
20	ZB-SF3 /4 SUPPLY FANS 3 & 4 HS NDA S HS LL 2 HS SF 3 YI SF 3 II SF 3 HS SF 4 VI SF 4 II SF 4
21	ZB-PC3 NDA AREA PDIC 3 HS 3 PDI 3 XA CSA II COND2
22	ZB-EF1-1 EF-1-1 AND SF-5 HS 1 YI 1 II 1 HS SF 5 YI SF 5 II SF 5
23	ZB-EF1-2 EF-1-2 AND SF-6 HS 1 YI 1 II 1 HS SF 6 YI SF 6 II SF 6
24	ZB-ZA /2736-ZA CONTROLS PDIC 6 HS 6 PDI 6A HS ZA AC PA_ZA AC
25	ZB-AUX /2736-ZB II AC 1 II AC 2 PI 1A II VP 1 II VP 2 PDAL_IZ XA_FAZB
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Index	Value
100	0
101	0
102	0
103	0
104	0
105	0
106	0
107	0
108	0
109	0
110	0
111	0
112	0
113	0
114	0
115	0
116	0
117	0
118	0
119	0
120	0
121	0
122	0
123	0
124	0
125	0
126	0
127	0
128	0
129	0
3168	0

GRAPHIC DISPLAYS

Graphics displays are a special "picture" of the process. They consist of a static background picture overlaid with active process information. The picture is usually a drawing of the process being controlled. And, the process information can take the form of a digital text readout, moving bargraphs, or color changing symbols. See the PFP MICON View users document (WHC-SD-CP-CSUD-004) for information on calling up and using these displays.

These displays are created from the Display Builder option available in MICON View through the System Maintenance menu. Display builder creates up to four files for each graphic display. Unfortunately, none of these files are readable. Therefor, we have created drawings of each graphic display used on each console. These displays show the background picture and the instrument tag names for all the process data displayed. All tag names are shown in italics.

Using the Display builder option, these drawing can be compared against the actual display to verify proper configuration.

LEGEND

S-201A

Standard text indicates background, non-changing, text.

AI_201.cmt

Italics indicate tagged data displayed as text information. The letters before the period are the tag name, and the letters after are the type of information.

```
.cur = current value
.out = controller output
.pv = controller process value
.sp = controller set point
.tag = tag name
```

WTF-IN

Goto Tag.

Moving vertical bar bargraph. The driving tag is shown inside the bargraph or pointing to it.

21_MOV2'.cur

Color changing symbol. The color change is based on the tag pointing to it.

WTF-HVAC

PROCESS: AA-WTF

WTF-IN

TK-201

LEVEL
LI_201.curIN
LI_201.cur
YI_T201..cur
HS_201.tag
HS_201.cur
XA_201.cur

Adjusted pH
AIC_201.pv
AIC_201.tag pH

Filter Differential Pressure
PDI_202 PDI_202.cur PSI
ZA_MOV1.cur ZI_MOV1.cur ZA_MOV3.cur ZI_MOV3.cur

MOV-1
HS_28.tag
HS_28.cur
ZI_MOV1.cur

F-202A
MOV-3
ZI_MOV3.cur

ZA_MOV2.cur ZI_MOV2.cur ZA_MOV4.cur ZI_MOV4.cur

MOV-2
HS_29.tag
HS_29.cur
ZI_MOV2.cur

F-202B
MOV-4
ZI_MOV4.cur

PIC_2.sp
PIC_2.pv
PIC_2.out
Train 1 & 2
Inlet Pressure
PIC_2.tag
PIC_2.pv PSI

FIC_1.sp
FIC_1.pv
FIC_1.out
FVC-2
Primary Flow
FIC_1.tag
FIC_1.pv GPM

FIC_2.sp
FIC_2.pv
FIC_2.out
Secondary Flow
FIC_2.tag
FIC_2.pv GPM

Crossover (Allows FIC_2)
HS_102.tag
HS_102.cur

Inlet Conductivity
AI_201 AI_201.cur %

WTF-IN

From LIC 102

WTF-OUT

WTF-OUT

AA-CLC

CLC-291

OVERVIEW: AA-CLC

CLC-PRF

OVERVIEW:

AA-CLC

CLC-SEC

CLC-SEC

PAL_1.cur
WATER

OVERVIEW:

AA-CLC

TK-1

Expansion Tank
PAL_TK1.cur

CLC-VP

CLC-SEC

OVERVIEW:

AA-CLC

CLC-SEC

AA-ZB

ZB-2736

ZB-NDA

APPENDIX A: SPARC SET-UP FOR MICON VIEW (SPARC 20)

This appendix is intended as a reference only. It assumes that the user has a working knowledge of the SUN Unix operating system and has completed the MICON A/S engineer's training course. Refer to the *SUN System and Network Administration* manual and the *MICON A/S View Installation Manual* for more information. In addition, help can be obtained from MICON Company (1-713-947-9470).

Unless otherwise told, you must be logged in as root to perform any of these procedures.

Disk Partitions

The SPARC 20 workstations used at PFP have one or two internal 1 gigabyte hard drives (sd0 & sd1). The partition table for these drives are:

sd0			
<u>Partition</u>	<u>Starting Cylinder</u>	<u># Blocks</u>	<u>Mounted On</u>
a	0	66528 (66/0/0)	/
b	66	133056 (132/0/0)	
c	0	2052288 (2036/0/0)	
d	0	0 (0/0/0)	
e	0	0 (0/0/0)	
f	0	0 (0/0/0)	
g	198	559440 (555/0/0)	/usr
h	753	1293264 (1283/0/0)	/home

sd1			
<u>Partition</u>	<u>Starting Cylinder</u>	<u># Blocks</u>	<u>Mounted On</u>
a	0	0 (0/0/0)	
b	0	0 (0/0/0)	
c	0	2052288 (2036/0/0)	
d	0	0 (0/0/0)	
e	0	0 (0/0/0)	
f	0	0 (0/0/0)	
g	0	2052288 (2036/0/0)	/home2
h	0	0 (0/0/0)	

NOTE: For sd1 to be recognized, make sure the following line exists in /etc/fstab:

```
/dev/sd1g /home2 4.2 rw 1 1
```

Also, make sure that there is a /home2 directory to mount onto.

NOTE: If you reformat sdl, and you don't need to run SunInstall, you must run "newfs" to create a new file system. This must be run from a single user shell.

1. Halt the system if you're running multi-user.
2. From the boot prompt (">"), type "b -s"
3. From the single user prompt ("#"), type "newfs sdlg"

Time Zone

When installing the operating system, SunInstall will ask for the time zone. This time zone is US/Pacific.

Network Host Information

Two networks are used on each workstation, 1e0 and 1e1. The required information for these networks are:

1e0 (thicknet)

<u>Workstation</u>	<u>Ethernet Address</u>	<u>Internet Address</u>	<u>Workstation Name</u>
Engineer	8:0:20:22:e9:2d	192.9.200.5	ews
Operator #1	8:0:20:77:42:93	192.9.200.11	ows1
Operator #2	8:0:20:23:19:1d	192.9.200.6	ows2
Supervisor	8:0:20:73:d8:76	92.9.200.4	sws

1e1 (thinnet)

<u>Workstation</u>	<u>Internet Address</u>	<u>Workstation Name</u>
Engineer	192.9.300.5	engineer
Operator #1	192.9.300.11	operator1
Operator #2	192.9.300.6	operator2
Supervisor	192.9.300.4	supervisor

Each workstation must have three files to identify its network names and address. These files are /etc/ethers, /etc/hostname.1e0, and /etc/hostname.1e1. Ethers contains that stations ethernet address (eg. 8:0:20:d.e8.3 for the engineer's station). Hostname.1e0 contains the workstation name for 1e0 (ews for the engineer's station). And, hostname.1e1 contains the workstation name for 1e1 (engineer for the engineer's station).

Also, each workstation should have a /etc/hosts and a /etc/hosts.equiv file. These files are required for the stations to have access to each other over 1e0. MICON View requires this access.

The /etc/hosts has one line for localhost (required even if you don't have a network) and one line each for all stations you need access to. Each line contains the station's internet address and its name. The localhost internet address is always 127.0.0.1. In addition, the station should have a line for

itself followed by "loghost", a line for the lel address and a line for the TranServer attached to it. The TranServers address are:

<u>Workstation</u>	<u>Internet Address</u>	<u>TranServer Name</u>
Engineer	192.9.200.52	tserv1
Operator #1	192.9.200.50	tserv1
Operator #2	192.9.200.53	tserv1
Supervisor	192.9.200.51	tserv1

For example, the /etc/hosts file for the supervisor's workstation looks like:

```
#
# Sun Host Database
#
# If the NIS is running, this file is only consulted when booting
#
127.0.0.1      localhost
#
192.9.200.4    sws loghosts
192.9.300.4    supervisor
192.9.200.5    ews
192.9.200.11   ows1
192.9.200.6    ows2
192.9.200.51   tserv1
```

The /etc/hosts.equiv file is a permission file to allow access from other workstations. This file should have two lines:

```
+ micon
+
```

Creating a New Kernel

In order for MICON View to run properly the standard kernel must be modified. See the *Sun System and Network Administration* manual, section 9.4, method 1 for information on modifying the kernel.

/usr/share/sys/sun4m/conf/POWELL contains the needed modifications. You can create a new kernel from this file. If it's not on the workstation, copy it over from one of the other stations or create a new POWELL file from the GENERIC file supplied by Sun.

To modify the GENERIC file, change maxusers from 8 to 48, and add the following lines to the end of the file:

```
options MSGPOOL = 250
options SEMMNI = 200
options SEMMNS = 250
options FIFOCNT = 250
```

Micon User Password, Directories and Files

MICON View runs under the Sun user name "micon". Therefore, each station must be set up to recognize this user and provide a home directory.

To set up recognition, add the following line to /etc/passwd:

```
micon::101:100:A/S View User:/home/users/micon:/bin/csh
```

And, add this line to /etc/group just before the last line (+:):

```
micon*:100:micon
```

To create a home directory for micon, make a new directory called /home/users/micon, and change ownership of this directory to micon ("chown micon /home/users/micon"). NOTE: Change ownership of /home/users/micon only. /home and /home/users should still be owned by root.

Finally, copy the following files from another station or a backup tape into /home/users/micon: .cshrc, .login, .openwin-init, .openwin-menu, .openwin-menu-micon, .openwin-menu-programs, .openwin-menu-utilities, menu-eng, and menu-ops. NOTE: only .cshrc, .login, and .openwin-init are required by MICON View. The other files are designed to modify the standard menu into either an operator's or an engineer's format. If these are left out, a default menu is used. This menu is similar to the engineer's menu.

Extra Swap

The standard swap space provided by Sun is not enough for MICON View. To increase it, create /home/extraswap. Change directories to /home, and create extraswap using the following command:

```
mkfile 40m extraswap
```

Next add this line to /etc/fstab:

```
/home/extraswap swap swap rw 0 0
```

RAM Drive

MICON View requires the use of a RAM drive to speed program operation. To create one, make a new directory, /home/Ram, and set it up for read write list access by everybody ("chmod 777 /home/Ram").

Add this line to /etc/fstab:

```
swap /home/Ram tmp rw 0 0
```

And, add this line to /etc/rc.local

```
mount /home/Ram
```

Printer Files

Both a video color printer and black and white text printer are connected to each workstation through a TranServer on the thicknet (le0). Several files must be created and/or modified to allow the workstation access to them.

To begin with, copy the following files from a backup tape or another workstation into /usr/lib:

<u>File Name</u>	<u>Description</u>
hppaintjet	Video Printer Driver
lpf	Text Printer Driver
tcpcon	TranServer Driver
nd	TranServer Driver

These files are not part of the Sun operating system. They are supplied by the printer and TranServer manufacturers.

Also, make sure the /etc/hosts file has an entry for tserv1. See Network Host Information (above).

Next, create a /usr/spool/hp and a /usr/spool/alarm directory. These will be the printer spool directories.

Next, add the following lines to the bottom of /etc/printcap:

```
hp|hppj|HP PaintJet:\
:lp=/dev/ttytype:\
:sd=/usr/spool/hp:\
:br#9600:pw#80:\
:ms=-parity,-cstopb,-clocal,-cread,crtscts,-ixon,-opost:\
:sh:of=/usr/lib/hppaintjet:
alarm|Alarm Printer:\
:lp=/dev/ttypf:\
:sd=/usr/spool/alarm:\
:of=/usr/lib/lpf:
```

Then, insert the following lines in /etc/rc. Existing lines are shown in *bold italics*.

```
if [ -f /usr/lib/lpd ]; then
    rm -f /dev/printer /var/spool/lpd.lock
    /usr/lib/lpd;          echo -n ' printer'
    /usr/lib/nd /usr/lib/tcpcon -d -l /dev/pttypf tservl 2200 &
    /usr/lib/nd /usr/lib/tcpcon -d -l /dev/ptypf tservl 2201 &
fi
```

You may find it easier just to copy printcap and rc from another workstation.

Finally, create /dev/lpline and link it to ttypf so MICON View will recognize the text printer as the alarm printer. Change directories to /dev, and type:

```
link ttypf lpline
```

Display Files

Each workstation uses two color monitors. Since the second monitor isn't standard, a driver must be created for it. Also, due to a quirk in the software, some manipulation of the device drivers is needed before OpenWindows will recognize both screens.

Change directories to /dev, and create the second screen driver using:

```
MAKEDEV cgsixl
```

Interchange the screen drivers as follows:

```
Move cgthree0 to cgthree0.orig
Move cgsix0 to cgthree0
Move cgsixl to cgsix0
```

Operator Keyboards

The annunciator panel and Universal Operator Keyboard are connected to the two serial ports on the SPARC II. In order for MICON View to recognize them, two link files must be created.

Change to the /dev directory and:

```
create kbdp1, and link it to ttya using "link ttya kbdp1"
create kbdp2, and link it to ttyb using "link ttyb kbdp2"
```

Miscellaneous

There are a few other things that must be done for MICON View to work properly.

The /tmp directory must be changed to allow read, write, and list access for everybody ("chmod 777 /tmp").

The /dev/nit driver must be changed to allow read and write access for everybody ("chmod 666 /dev/nit").

All stations, except operator workstation #1, must be set up to update their time everyday at midnight. Operator workstation #1 is used as the time keeper. To accomplish this, edit the crontab file (using "crontab -e"), and add the following line to the bottom:

```
0 0 * * * /usr/ucb/rdate ows1 >/dev/null
```

Although this isn't required, inserting these lines at the bottom of /etc/rc before "exit 0" will cause a message to print on the screen when the SPARC is done booting.

```
echo
echo
echo
echo
echo
echo
echo To start Micon-view:
echo 1. Type 'micon' followed by enter at the login prompt.
echo 2. Wait for OpenWindows to start.
echo 3. Select system startup from the Utilities menu.
echo
echo System startup takes time. So, please be patient.
```

MICON View & Configuration Files

Now that everything's been set-up, MICON View can be loaded.

First, create three new directories: /home/Run, /home/Data, and /home/tmp.

Change ownership of /home/Run and /home/Data to micon ("chown micon /home/Run" and "chown micon /home/Data").

Next, change the /home/tmp directory to read, write, and list access for everybody ("chmod 777 /home/tmp").

After that, load the Run and Data directory contents from a backup tape or another workstation. NOTE: If this is a new or completely cleaned Data directory, copy it from another workstation. The normal Data directory backup tape doesn't include several subdirectories required by MICON View.

Finally, create /home/users/micon/hosts.dat. This file contains the le0 names of the other workstations. See Network Host Information for the list of le0 network names. When MICON View first starts, it uses the names in this file to poll all workstations to see if any other stations are already running. If no other stations are running, then MICON View starts up in master mode. If MICON View is already running on another station, then this station starts up in a slave mode. The station running as master has a red "master" in the upper portion of its recent alarm display window.

It's very important that only one station be running as master at one time. If more than one station is master, the communications can become confused and crash. For this reason, the /home/users/micon/hosts.dat file must contain the names off all workstations that you expect to be running MICON View. As an example, the hosts.dat file for the supervisor workstation should look like this:

```
ews  
ows1  
ows2
```

APPENDIX B: SYSTEM FILES

As shown in Appendix A, several Sun operating system files must be modified to allow MICON View to work properly. These files are documented in this appendix. Please note that it's possible for the files in the workstations to differ from the files shown here and still work. For this reason, the files shown here are presented as a reference only.

/etc/rc

```
#!/bin/sh -
#
#      @(#)rc 1.45 90/08/08 SMI; from UCB 4.3
#
# The rc sh gets the console. All commands are by
# default protected from tty signals (i.e. are not interruptable).
# Interrupts can be enabled by proceeding any command line with "intr".
# Console redirection is no longer needed.
#
# Make sure PATH is exported or intr won't find what it needs.
HOME=/; export HOME
PATH=/bin:/usr/bin:/usr/etc; export PATH

#
# See if things look like they are still mounted read-only.
# If so, perform all the remounting and set up work now.
#
touch /
if [ $? -ne 0 ]; then
    echo "Remounting file systems"
    sh /etc/rc.single
fi
#
# Make sure ld.so.cache is removed (rc.single may not be invoked
# when going from multi-user mode to single-user then back to multi-user)
#
if [ -f /etc/ld.so.cache ]; then
    #
    # Carefully delete ld.so cache in case it is corrupted.
    #
    mv /etc/ld.so.cache /etc/ld.so.cache-
    rm /etc/ld.so.cache-
fi
if [ -r /fastboot ]; then
    rm -f /fastboot
elif [ $lx = autobootx ]; then
    echo Automatic reboot in progress...
else
    echo Multiuser startup in progress...
fi
date
```

```
# attempt to rationally recover the passwd file if needed
if [ -s /etc/ptmp ]; then
    if [ -s /etc/passwd ]; then
        ls -l /etc/passwd /etc/ptmp
        rm -f /etc/ptmp          # should really remove the shorter
    else
        echo 'passwd file recovered from ptmp'
        mv /etc/ptmp /etc/passwd
    fi
elif [ -r /etc/ptmp ]; then
    echo 'removing passwd lock file'
    rm -f /etc/ptmp
fi

intr mount -at 4.2
                                echo -n 'checking quotas: '
intr quotacheck -a -p
                                echo 'done.'
quotaon -a

/bin/ps -U
rm -f /etc/nologin
if [ -f /dev/ttyp0 ]; then
    chown 0 /dev/tty[pqrs]*
    chmod 666 /dev/tty[pqrs]*
fi
/usr/etc/ttysoftcar -a > /dev/null 2>&1

sh /etc/rc.local

swapon -a
                                echo preserving editor files
(cd /tmp; /usr/lib/exprpreserve -a)
                                echo clearing /tmp
(cd /tmp; rm -f - *)

                                echo -n 'standard daemons:'
update;
                                echo -n ' update'
rm -f /var/spool/cron/FIFO
cron;
                                echo -n ' cron'
#
# accounting,
#   accounting is off by default.
#
#/usr/lib/acct/startup
```

```
if [ -d /var/spool/uucp ]; then
    (cd /var/spool/uucp
    >LCK.0
    rm -f LCK.*
    if [ -d /usr/lib/uucp ]; then
        su uucp -c /usr/lib/uucp/uusched & \
        echo -n ' uucp'
    fi)
fi

echo '.'

echo -n 'starting network daemons:'
# rwhod (currently) is a real performance pig for systems with limited memory.
#if [ -f /usr/etc/in.rwhod ]; then
#    in.rwhod;          echo -n ' rwhod'
#fi
if [ -f /usr/etc/inetd ]; then
    inetd;              echo -n ' inetd'
fi
if [ -f /usr/lib/lpd ]; then
    rm -f /dev/printer /var/spool/lpd.lock
    /usr/lib/lpd;        echo -n ' printer'
    /usr/lib/nd /usr/lib/tcpcon -d -l /dev/ptypf tservl 2200 &
    /usr/lib/nd /usr/lib/tcpcon -d -l /dev/ptype tservl 2201 &
fi
    echo '.'
#if [ -f /usr/nserve/rfmaster ]; then
#    echo -n starting rfs:
#    if [ ! -f /usr/nserve/loc.passwd ]; then
#        echo "" > /usr/nserve/loc.passwd
#        echo "" > /usr/nserve/loc.passwd.dummy
#    fi
#    /usr/bin/dorfs start; echo ' done.'
#    if [ -f /usr/nserve/loc.passwd.dummy ]; then
#        rm -f /usr/nserve/loc.passwd /usr/nserve/loc.passwd.dummy
#    fi
#fi
```

date

```
echo
echo
echo
echo
echo
echo
echo To start Micon-View:
echo 1. Type 'micon' followed by enter at the login prompt.
echo 2. Wait for OpenWindows to start.
echo 3. Select system startup from the Utilities menu.
echo
echo System startup takes time. So, please be patient.
exit 0
```


[illegible]

/home/users/micon/.cshrc

```
umask 2
if ( $?prompt ) then
    set history=32
endif
set history = 32
alias h history
set lpath = ( /usr/openwin/bin/xview /usr/openwin/bin )
set path = ( . ~ $lpath ~/bin /usr/local /usr/ucb /usr/bin /usr/etc )
# settings for interactive shells
alias lf      ls -F
alias l       ls -l
alias la      ls -al
alias lx      ls -C
alias rm      rm -i
alias extras  'source /usr/bin/friendly_aliases'
alias cls clear
alias newprompt 'set prompt="$cwd{\\!}% "'
newprompt
alias cd 'cd \\!*; newprompt'
alias run cd /home/Run
alias data cd /home/Data
setenv OPENWINHOME /usr/openwin
setenv FONTPATH "$OPENWINHOME/lib/fonts:/usr/lib/SoftPC/fonts/X"
setenv GUIDEHOME /usr/guide
setenv HASHHOME /home/tmp
setenv LD_LIBRARY_PATH $OPENWINHOME/lib
setenv ETHERPORT Tel
setenv UOKBD U
cd /home/Run
```

/home/users/micon/.login

```
# If possible, start the windows system.  Give user a chance to bail out
#
if ( 'tty' != "/dev/console" || $TERM != "sun" ) then
    exit # leave user at regular C shell prompt
endif
```

```
setenv OPENWINHOME /usr/openwin
```

```
echo ""
echo ""
echo -n "Starting OpenWindows"
sleep 5
run
$OPENWINHOME/bin/startx
clear_colormap # get rid of annoying colourmap bug
clear_         # get rid of annoying cursor rectangle
```

```
# shutdown Scadix if it's running
#ps -ax | scdxup pvproc
#sleep 5
#if ( { test -s /tmp/sysup.true } ) then
#    scdxdown OK
#endif
echo ""
echo ""
echo "Your Micon-View Console is now shut down"
echo ""
echo "To restart:"
echo "  1. Type in 'micon' followed by enter at the login prompt."
echo "  2. Wait for OpenWindows to restart."
echo "  3. Select 'system startup' from the Utilities menu."
echo "System startup takes time.  So, please be patient."
echo ""
echo ""
#eject          Uncomment if floppy drive is present
logout          # logout after leaving windows system
```

```
/home/users/micon/.openwin-init
```

```
# astool replaces the normal console window  
astool -fg white -bg navy -Wp 10 650 -Ws 1105 50 -C -M 50000 &
```

```
# this shuts off the screen saver routine  
xset s off
```

/home/users/micon/openwin-menu-ops (.openwin-menu)

```
#  
# @(#)openwin-menu      23.15 91/09/14 openwin-menu  
#  
#      OpenWindows default root menu file - top level menu  
#
```

"Menu Not Available" TITLE

/home/users/micon/openwin-menu-eng

```
#  
# @(#)openwin-menu      23.15 91/09/14 openwin-menu  
#  
#      OpenWindows default root menu file - top level menu  
#
```

"Workspace" TITLE

"Programs" MENU \$OPENWINHOME/lib/openwin-menu-programs

"Utilities" MENU \$OPENWINHOME/lib/openwin-menu-utilities

"Properties..." PROPERTIES

SEPARATOR

"Micon" MENU \$HOME/.openwin-menu-micon

SEPARATOR

"Exit..." EXIT

/home/users/micon/.openwin-menu-micon

"Micon View" TITLE PIN

"MCP" exec /home/Run/mcp

"ANNUNCIATOR" exec /home/Run/anunpanel system

/home/users/micon/menu-eng

cp openwin-menu-eng .openwin-menu

/home/users/micon/menu-ops

cp openwin-menu-ops .openwin-menu

APPENDIX C
Trademarks

<u>Trademark</u>	<u>Company</u>
CMC	CMC Corp.
DecWriter	Digital Equipment Corp.
Emerald	Emerald Computers Inc.
FPXT	Emerald Computers Inc.
Hewlett Packard	Hewlett Packard Corp.
IBM	International Business Machines Corp.
MICON	Powell Process Systems Inc.
Motorola	Motorola Corp.
Rockwell	Rockwell International Corp.
Sun	Sun Microsystems Inc.
TranServer	CMC Corporation
UNIX	X/Open Company Ltd.
Versatec	Versatec Inc.

TABLE OF CONTENTS

INTRODUCTION	2
MICON CONFIGURATION FILES	5
WTF_1_3.mic2_r0	7
WTF_1_4.mic3_r0	28
WTF_2_1.mic4_r0	52
WTF_2_2.mic5_r0	79
WTF_2_3.mic6_r0	106
MICON PROGRAM FILES	119
mic2_r0	120
mic3_r0	125
mic4_r0	130
mic5_r0	136
mic6_r0	142
APPENDIX A: MICON INPUT/OUTPUT	146
MICON Number: 2	147
MICON Number: 3	148
MICON Number: 4	149
MICON Number: 5	150
MICON Number: 6	151

INTRODUCTION

The MICON¹ A/S distributed control system consists of four consoles or workstations (2 operator, 1 supervisor, and 1 engineer), a data highway, and eight process controller cabinets.

Each console is based on a Sun Microsystem's SPARC 20 workstation. The SPARC 20 workstation is based on a Scalable Process Architecture (SPARC) micro-processor. Each workstation contains 64 megabytes of memory, a one gigabyte hard drive, a 150 megabyte tape drive, a keyboard, and a trackball. Select SARC stations also contain an additional one gigabyte hard drive, a CD-ROM drive, and a 5 gigabyte tape drive. In addition, each SPARC 20

¹For a list of Trademarks, see Volume 1, APPENDIX C

provides two video outputs, two RS-232 serial ports, and two ethernet ports (a thick-net and a thin-net). The video ports are connected to two high resolution color monitors. The RS-232 ports are connected to two Emerald model FPXT single board IBM XT compatible computers with touchscreen. One of the FPXTs is designated as an annunciator panel and is unused. The other is used as a Universal Operator Keyboard (UOK). One of the two ethernet ports -- the thin-net -- is connected to the data highway via a MICON Company General Purpose LAN Interface (GPLI). The thicknet provides a Local Area Network (LAN) between the four consoles. It also connects each SPARC 20 with a Rockwell/CMC TranServer. The TranServer provides eight additional RS-232 serial ports for each workstation. One of these serial ports is connected to an Output Technology Corporation 800 series text printer. Another port is connected to a Hewlett-Packard PaintJet color graphics printer.

The Data Highway is the main data link between the consoles and the process control cabinets. It consists of two redundant coax cables that run between all four consoles and six cabinets. The Data Highway is a local area network using a high speed token ring passing protocol. The Data Highway is also redundant. This means that if one of the two cables fail, communication is automatically passed to the other.

The process control cabinets consist of two redundant main controllers, called U-32s, and several process controllers called RCM-32s. The U-32s and RCM-32s communicate via a small local area network called a Field Bus. The U-32 is a MICON built controller based on the Motorola 68020 processor. Although it can be used to directly control instruments and devices in the field, its primary purpose is to pass information between the consoles and the RCM-32s. Each U-32 has a redundant backup. That way if one fails, the other can automatically take over. The RCM-32s are also built by MICON and are based on a Motorola 68030 processor. These controllers provide input and output directly to field instruments and other devices.

There are four types of RCM-32s used in this system: A, C, D, and Dr. The A and C cards are used primarily for analog signals. They provide hardware for any standard analog instrument input (4-20 mA, 10-50 mA, and DC voltages) and provide a standard 4-20 mA output signal. In addition, they provide two 28 Volt DC discrete (on/off) channels. These may be used for input, output, or both. An A card provides 26 analog inputs and 4 analog outputs. Each C card provides 18 analog inputs and 12 analog outputs. The D card is used only for discrete control. It provides 32 on/off type channels that can be used as inputs, outputs, or both. Both inputs and outputs are 28 volt DC. The Dr cards are similar to the D cards except inputs are 120 volt AC or DC and the outputs are 3 amp (120 VAC) dry contact relays.

Since MICON A/S systems are installed by engineers rather than computer programmers, they are designed to minimize the need for programming. All of the software needed to monitor and control a process is already programmed into the system by MICON Company. The engineer need only "configure" the system to a specific application.

The process is very similar to the method used to install an older analog instrument system. First, a set of Pipe and instrument Diagrams (P&ID) are created. These drawings show a schematic of the chemical process and the instrumentation to be installed to control it. With an analog system, the engineer would purchase the necessary individual components and wire them together to create the control strategy. With the MICON A/S system, the engineer would call function blocks to invoke preprogrammed modules and create the control strategy. The only difference between the two is that one uses hardware devices wired together, and the other uses software modules connected via a data base.

The MICON configuration is done in two parts. First the RCM-32 and, if needed the U-32 controllers are configured. Next, the workstation displays are created.

The RCM-32 and U-32 configuration consists of both the controller "program" and all display information for each "tag". Tags consists of all inputs and outputs from the controller, PID control loops, and any other displayed value. This information is requested by the MICON View software as the engineer creates the controller configuration.

Since all the display information (colors, ranges, etc.) was input during the controller configuration, the workstation configuration consists only of display creation. These are created by calling up a form and filling in the blanks. The only exception to this are the custom created graphics displays. Graphics are created by drawing a picture of the process and overlaying this with tag information. This is done with a special drawing program supplied with MICON View.

To keep size manageable, this document has been divided into several volumes. Volume 1 contains the display configuration for the four workstations. The other volumes each contain the configuration for one process Controller cabinet.

This volume (number 2) contains the configuration files for the cabinet located in 243-Z. This cabinet consists of six controllers:

1. U-32 (with backup)	Controller Number: 1	Tagname: WTF MAIN
2. RCM-32 C	Controller Number: 2	Tagname: WTF_1_3
3. RCM-32 C	Controller Number: 3	Tagname: WTF_1_4
4. RCM-32 Dr	Controller Number: 4	Tagname: WTF_2_1
5. RCM-32 Dr	Controller Number: 5	Tagname: WTF_2_2
6. RCM-32 Dr	Controller Number: 6	Tagname: WTF_2_3

WTF MAIN is being used for communications only and does not contain a configuration. Therefore, only configurations for the other five controllers are shown.

MICON CONFIGURATION FILES

The MICON configuration file is a text file that the MICON View software creates as the user configures or "programs" each MICON controller. A MICON controller is configured by selecting preprogrammed functions and filling in the required information. As this is done, MICON View places this information into the configuration file. This file contains both display and program information. For a detailed description see *U-32 and RCM-32 Controller/RTU Function Description* published by MICON Company (Vendor Information file - 22068).

This file is named by MICON View based on input from the user. The file name's format is TAG.file where TAG is the controllers tag name and file is the program file name. The first eight lines of the file are the information on the controller itself. These lines are:

- MICON TYPE - The type of MICON being programmed (A, C, or D). In this case, D and Dr cards are considered the same.
- MICON UNIT NO - The controller card's number (user assigned).
- MICON TAG - The controller card's tag name (user assigned). For consistency, we have assigned tags in the following format:

CABINET_RACK_SLOT

CABINET is the MICON controller cabinet location. RACK is the rack number (1 to 3). Rack 1 is at the top of the cabinet. SLOT is the slot number (1 to 6). Slot 1 is at the far left of the rack. Therefore, a controller tagged WTF_1_3 is the card in rack 1 slot 3 of the cabinet located in the Low Level Waste Treatment Facility (243-Z).

- MICON DESCRIPTION - A brief description of the controller card
- MICON CONFIGURATION FILE - The name of the file that contains the controller card's program (user assigned).

POINT ALLOCATION - The memory allocation for the controller. Memory allocation is based on the types of inputs and outputs (I/O) and the number of storage locations desired. The types of I/O and storage locations are:

- VAI - Virtual Analog (User assigned). An analog value storage location.
- VDI - Virtual Discrete (User assigned). A Discrete (on/off) storage location with alarm capability.
- ISW - Internal Switch (User assigned). A Discrete storage location without alarm capability.
- LOOPS - Loops (User Assigned). Loops are used to hold a series of program steps. If one of those steps is a PID controller function, The loop tag name becomes the controller tag name.
- MSD - Multi-State Discrete (User assigned). This is a special sixteen position indicator.
- AI - Analog Inputs (Assigned based on card type used).
- AO - Analog Outputs (Assigned based on card type used).
- DI - Discrete Inputs (Assigned based on card type used).
- DO - Discrete Outputs (Assigned based on card type used).

The remaining information is the actual controller configuration. Right at first, you will notice several blocks of information titled VIRTUAL ANALOG and DISCRETE TAG. These blocks are the configuration information for the virtual analog and internal switch type storage locations. These must always be configured first. After that are the controller loops. Each loop starts with a block of information titled LOOP NO followed by several steps. The last step is always a function 0 (END). Everything except virtual analogs and internal switches are configured inside of a loop.

Loops are a way of organizing the controller configuration. Although most controllers could be programmed using only one loop, using several loops makes the program more understandable. Loops are generally invisible to the operator. The exception to this rule is when a PID function (function 20) is used in the loop. When this happens, the loop name becomes the controller name. Otherwise, the loop name is used as an internal reference only

NOTE: Each loop using a PID function has two lines showing the tuning parameters -- for example:

TUNING PARAMETER :
P(GAIN) : 1.00, I(REP/MIN) : 5.00, D(RATE) : 0.00, MANUAL RESET : 0.00

These tuning parameters are not controlled by this document. Therefore, these numbers may be different than the ones that appear in the workstation listings.

WTF_1_3.mic2_r0

MICON TYPE :RCM-C
MICON UNIT NO : 2
MICON TAG : WTF 1 3
MICON DESCRIPTION : 243-Z RACK 1 SLOT 3
MICON CONFIGURATION FILE : mic2_r0
POINT ALLOCATION :
VAI : 32, VDI : 32, ISW : 32, LOOPS : 12, MSD : 1,
AI : 18, AO : 12, DI : 2, DO : 2
=====

VIRTUAL ANALOG : AI_3
INPUT # : 1
INPUT DESC : OUTPUT
INPUT UNIT : PH
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 14.00 BAR LO : 0.00 BAR HI : 14.00
ACTUATE XMTR ALARM DISCRETES :
XMTR Hi AL DISCRETE : ASH_3
XMTR Lo AL DISCRETE :
XMTR HI HI AL DISCRETE :
XMTR LO LO AL DISCRETE :
XMTR MAX AL DISCRETE :
XMTR MIN AL DISCRETE :
XMTR ALARM :
XMTR ALARM Hi 10.00 PRIORITY URGENT
XMTR ALARM Lo 6.00 PRIORITY URGENT
XMTR ALARM HI HI 99999.99 PRIORITY EVENT
XMTR ALARM LO LO -9999.99 PRIORITY EVENT
XMTR ALARM MAX 99999.99 PRIORITY EVENT
XMTR ALARM MIN -9999.99 PRIORITY EVENT
XMTR ALARM DESC :243-Z OUTLET PH
XMTR ALARM DEADBAND : 0.10
XMTR ALARM GROUP :0
XMTR ALARM MGMT :0
XMTR ALARM COMMAND DISCR :
XMTR ALARM INDEX :0

=====

VIRTUAL ANALOG : AI_201
INPUT # : 2
INPUT DESC : IN COND
INPUT UNIT : PERCENT
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 100.00 BAR LO : 0.00 BAR HI : 100.00
ACTUATE XMTR ALARM DISCRETES :
XMTR Hi AL DISCRETE : ASH_201
XMTR Lo AL DISCRETE :
XMTR HI HI AL DISCRETE :
XMTR LO LO AL DISCRETE :
XMTR MAX AL DISCRETE :
XMTR MIN AL DISCRETE :
XMTR ALARM :
XMTR ALARM Hi 50.00 PRIORITY ATTENTION
XMTR ALARM Lo -9999.99 PRIORITY EVENT
XMTR ALARM HI HI 99999.99 PRIORITY EVENT
XMTR ALARM LO LO -9999.99 PRIORITY EVENT
XMTR ALARM MAX 99999.99 PRIORITY EVENT
XMTR ALARM MIN -9999.99 PRIORITY EVENT
XMTR ALARM DESC :243-Z INLET HI CONDUCTIVITY
XMTR ALARM DEADBAND : 0.00
XMTR ALARM GROUP :0
XMTR ALARM MGMT :0
XMTR ALARM COMMAND DISCR :
XMTR ALARM INDEX :0

=====

VIRTUAL ANALOG : FQ_2
INPUT # : 3
INPUT DESC : INLET 2
INPUT UNIT : GAL
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 100000.00 BAR LO : 0.00 BAR HI :
100000.00

```
=====
VIRTUAL ANALOG : PDI_202
INPUT # : 4
INPUT DESC      : F-202 DP
INPUT UNIT      : PSI
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 20.00 BAR LO : 0.00 BAR HI : 20.00
XMTR ALARM :
XMTR ALARM Hi 10.00 PRIORITY CAUTION
XMTR ALARM Lo -9999.99 PRIORITY EVENT
XMTR ALARM HI HI 99999.99 PRIORITY EVENT
XMTR ALARM LO LO -9999.99 PRIORITY EVENT
XMTR ALARM MAX 99999.99 PRIORITY EVENT
XMTR ALARM MIN -9999.99 PRIORITY EVENT
XMTR ALARM DESC :243-Z INLET FILTERS HI DP
XMTR ALARM DEADBAND : 0.50
XMTR ALARM GROUP :0
XMTR ALARM MGMT :0
XMTR ALARM COMMAND DISCR :
XMTR ALARM INDEX :0
=====
```

```
=====
VIRTUAL ANALOG : ARC_201
INPUT # : 5
INPUT DESC      : INLET PH
INPUT UNIT      : PH
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 14.00 BAR LO : 0.00 BAR HI : 14.00
=====
```

```
=====
VIRTUAL ANALOG : FRC_2
INPUT # : 6
INPUT DESC      : INLET 2 FLOW
INPUT UNIT      : GPM
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 60.00 BAR LO : 0.00 BAR HI : 60.00
=====
```

```
=====
VIRTUAL ANALOG : LRC_101
INPUT # : 7
INPUT DESC      : T101 LVL
INPUT UNIT      : FEET
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 7.00 BAR LO : 0.00 BAR HI : 7.00
=====
```

=====

VIRTUAL ANALOG : TI_23J1
INPUT # : 8
INPUT DESC : 23J-3001 TEMP
INPUT UNIT : DEG F
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 100.00 BAR LO : 0.00 BAR HI : 100.00
XMTR ALARM :
XMTR ALARM Hi 95.00 PRIORITY URGENT
XMTR ALARM Lo -9999.99 PRIORITY EVENT
XMTR ALARM HI HI 99999.99 PRIORITY EVENT
XMTR ALARM LO LO -9999.99 PRIORITY EVENT
XMTR ALARM MAX 99999.99 PRIORITY EVENT
XMTR ALARM MIN -9999.99 PRIORITY EVENT
XMTR ALARM DESC :COMPRESSOR 1 HI COOLANT TEMP
XMTR ALARM DEADBAND : 1.00
XMTR ALARM GROUP :0
XMTR ALARM MGMT :0
XMTR ALARM COMMAND DISCR :
XMTR ALARM INDEX :0

=====

VIRTUAL ANALOG : TI_23A1
INPUT # : 9
INPUT DESC : 23A-3001 TEMP
INPUT UNIT : DEG F
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 100.00 BAR LO : 0.00 BAR HI : 100.00
XMTR ALARM :
XMTR ALARM Hi 90.00 PRIORITY URGENT
XMTR ALARM Lo -9999.99 PRIORITY EVENT
XMTR ALARM HI HI 99999.99 PRIORITY EVENT
XMTR ALARM LO LO -9999.99 PRIORITY EVENT
XMTR ALARM MAX 99999.99 PRIORITY EVENT
XMTR ALARM MIN -9999.99 PRIORITY EVENT
XMTR ALARM DESC :VP-23A-1 HI COOLANT TEMP
XMTR ALARM DEADBAND : 1.00
XMTR ALARM GROUP :0
XMTR ALARM MGMT :0
XMTR ALARM COMMAND DISCR :
XMTR ALARM INDEX :0

=====

VIRTUAL ANALOG : TI_RM500
INPUT # : 10
INPUT DESC : RM 500 291-Z
INPUT UNIT : DEG F
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 100.00 BAR LO : 0.00 BAR HI : 100.00

=====

DISCRETE TAG : ASH 201
DISCRETE (Internal Switch) # : 1
DISCRETE DESC : HI INPUT CONDUCTIVITY
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :HI COND COLOR : YELLOW

=====

DISCRETE TAG : ASH 3
DISCRETE (Internal Switch) # : 2
DISCRETE DESC : HI OUTPUT PH
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :HI PH COLOR : RED

=====

DISCRETE TAG : LSH 101
DISCRETE (Internal Switch) # : 3
DISCRETE DESC : HI SUMP LEVEL
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :HI LEVEL COLOR : YELLOW

=====

DISCRETE TAG : LSHH 101
DISCRETE (Internal Switch) # : 4
DISCRETE DESC : HI HI SUMP LEVEL
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :HIHI LEVL COLOR : RED

=====

DISCRETE TAG : LSL 101
DISCRETE (Internal Switch) # : 5
DISCRETE DESC : LOW SUMP LEVEL
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :LO LEVEL COLOR : RED

```
=====
DISCRETE TAG      : HS 102
DISCRETE (Internal Switch) # : 6
DISCRETE DESC     : CROSSOVR
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : GREEN
DISCRETE STATE 1 DESC :FIC 2 ON COLOR : GREEN
*****
LOOP NO          : 1
LOOP TAG         : AIC_201
LOOP DESCRIPTION  : INLET PH
LOOP SCAN        : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
PV ALARM :
PV ALARM Hi 10.00 PRIORITY CAUTION
PV ALARM Lo 6.00 PRIORITY CAUTION
PV ALARM HI HI 99999.99 PRIORITY EVENT
PV ALARM LO LO -9999.99 PRIORITY EVENT
PV ALARM MAX 99999.99 PRIORITY EVENT
PV ALARM MIN -9999.99 PRIORITY EVENT
PV ALARM DESC :243-Z INLET PH
PV ALARM DEADBAND : 0.00
PV ALARM GROUP :0
PV ALARM MGMT :0
PV ALARM COMMAND DISCR :
PV ALARM INDEX :0
PID AUXILIARY :
S-P RAMP : 10000
LOOP UNITS : PH
LOOP SCALE LO : 0.00, SCALE HI : 14.00, DEV IND LO :99999.00, IND HI
:99999.00
TUNING PARAMETER :
P(GAIN) : 0.50, I(REP/MIN) : 10.00, D(RATE) : 0.00, MANUAL RESET : 0.00
```

#####

STEP NO : 1
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_8
INPUT # : 4
INPUT DESC : INLET PH (TO AIC_201)
INPUT UNIT : PH
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 14.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 14.00
DIGITAL FILTER : 0

#####

STEP NO : 2
LABEL :
FUNCTION : 10 (L)
COMMENT :SAVE INPUT TO ARC_201 FOR HISTORIAN

PARAMETERS :
1) ARC 201 2) AI 8

#####

STEP NO : 3
LABEL :
FUNCTION : 20 (PID)
COMMENT :LINEARIZE PH WITH INPUT COMPENSATION

PARAMETERS :
1) PV=AI_8 2) Non-Balancing 3) Reverse 4) Yes 5) LOOP AO
6) Interactive 7) PV 8) Positional 9) 0

#####

STEP NO : 4
LABEL :
FUNCTION : 55 (CAO)
COMMENT :

=====

OUTPUT TAG : AO_5
OUTPUT # : 6
OUTPUT DESC : INLET PH
OUTPUT CURRENT : 4-20

#####

STEP NO : 5
LABEL :
FUNCTION : 0 (END)
COMMENT :

```
*****
LOOP NO      : 2
LOOP TAG     : AIC201I
LOOP DESCRIPTION : OUTPUT TO LOCAL INDICATOR AI-1
LOOP SCAN    : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
#####
STEP NO     : 1
LABEL :
FUNCTION : 86 (MSI )
COMMENT : LOCK OUT MANUAL & CASCADE MODES
PARAMETERS :
1) MANUAL+CASCADE
#####
STEP NO     : 2
LABEL :
FUNCTION : 10 (L )
COMMENT : PUT LOOP IN AUTO (REQUIRED FOR FNC 55)
PARAMETERS :
1) MODE=1
#####
STEP NO     : 3
LABEL :
FUNCTION : 30 (MULT )
COMMENT : CONVERT 0-14 pH TO .04 TO 1.116 FOR OUTPUT
PARAMETERS :
1) AI 8. 2) 0.08
#####
STEP NO     : 4
LABEL :
FUNCTION : 32 (ADD )
COMMENT : NOTE: 0-20mA OUTPUT = -0.5 TO 12
PARAMETERS :
1) MSV 2) 0.04
```

#####

STEP NO : 5
LABEL :
FUNCTION : 55 (CAO)
COMMENT :

=====

OUTPUT TAG : AO_9
OUTPUT # : 5
OUTPUT DESC : LOCAL INDICATOR AI-1
OUTPUT CURRENT : 0-20
OUTPUT INDICATION : DIRECT
OUTPUT USED : RECORDER/MANUAL LOADER
OUTPUT LIMIT LO : 0.00 LIMIT HI : 100.00
OUTPUT SLEW DEC : 1000.00 SLEW INC : 1000.00
OUTPUT TRACK VALUE : TRACK COMMAND :
OUTPUT RECALL : 2

#####

STEP NO : 6
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 3
LOOP TAG : FIC_2
LOOP DESCRIPTION : INLET 2 FLOW
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
IMPORT AI : WTF_1_4::AI_5
PID AUXILIARY :
PID AUXILIARY :
S-P RAMP : 10000
LOOP UNITS : GPM
LOOP SCALE LO : 0.00, SCALE HI : 60.00, DEV IND LO : 99999.00, IND HI : 99999.00
TUNING PARAMETER :
P(GAIN) : 1.00, I(REP/MIN) : 5.00, D(RATE) : 0.00, MANUAL RESET : 0.00

#####

STEP NO : 1
LABEL : FLOW1
FUNCTION : 10 (L)
COMMENT : LOAD FLOW 1 (FIC_1)
PARAMETERS :
1)AI_5

#####

STEP NO : 2
LABEL : TOTFLOW
FUNCTION : 32 (ADD)
COMMENT :ADD INLET 1 AND INLET 2 FLOWS
PARAMETERS :
1)AI 6 2)FLOW1

#####

STEP NO : 3
LABEL : INTERLOCK
FUNCTION : 69 (LC)
COMMENT :INTERLOCK WHEN HS_102 IS OFF OR (FIC_1>=1 AND FIC_1+FIC_2<30)
PARAMETERS :
1)-HS 102!((FLOW1>=1)&(TOTFLOW<30))

#####

STEP NO : 4
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_6
INPUT # : 3
INPUT DESC : INLET 2 FLOW
INPUT UNIT : GPM
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 60.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 60.00
DIGITAL FILTER : 0

#####

STEP NO : 5
LABEL :
FUNCTION : 53 (TOT)
COMMENT :TOTALIZE FLOW
PARAMETERS :
1)TOTFLOW 2)0 3)0 4)100000.00 5)0

#####

STEP NO : 6
LABEL :
FUNCTION : 10 (L)
COMMENT :SAVE RESULT AS FQ_2
PARAMETERS :
1) FQ_2 2) MSV

#####

STEP NO : 7

LABEL :

FUNCTION : 10 (L)

COMMENT :SAVE AI_6 AS INLET 2 FLOW FOR HISTORIAN

PARAMETERS :

1) FRC 2 2) AI 6

#####

STEP NO : 8

LABEL :

FUNCTION : 20 (PID)

COMMENT :

PARAMETERS :

1) PV=AI_6 2) Non-Balancing 3) Reverse 4) Yes 5) LOOP AO

6) Interactive 7) PV 8) Positional 9) 0

#####

STEP NO : 9

LABEL :

FUNCTION : 55 (CAO)

COMMENT :

=====

OUTPUT TAG : AO_3

OUTPUT # : 4

OUTPUT DESC : INLET 2 FLOW

OUTPUT CURRENT : 4-20

OUTPUT INDICATION : DIRECT

OUTPUT USED : CONTROL

OUTPUT LIMIT LO : 0.00 LIMIT HI : 100.00

OUTPUT SLEW DEC : 1000.00 SLEW INC : 1000.00

OUTPUT TRACK VALUE : 0 TRACK COMMAND : INTERLOCK

OUTPUT RECALL : 2

#####

STEP NO : 10

LABEL :

FUNCTION : 0 (END)

COMMENT :

LOOP NO : 4

LOOP TAG : FIC2I

LOOP DESCRIPTION : INLET 2 FLOW INDICATOR

LOOP SCAN : 0.30 SEC

NON-PID AUXILIARY :

RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00

RATIO CURR : 0.00, BIAS CURR : 0.00

STEP NO : 1
LABEL :
FUNCTION : 86 (MSI)
COMMENT : LOCK OUT MANUAL & CASCADE MODES
PARAMETERS :
1) MANUAL+CASCADE

STEP NO : 2
LABEL :
FUNCTION : 10 (L)
COMMENT : PUT LOOP IN AUTO
PARAMETERS :
1) MODE=1

STEP NO : 3
LABEL :
FUNCTION : 31 (DIV)
PARAMETERS :
1) AI 6 2) 60

COMMENT : RESCALE 0-60 TO 0-1 FOR OUTPUT

STEP NO : 4
LABEL :
FUNCTION : 55 (CAO)

OUTPUT TAG : AO_16
OUTPUT # : 3
OUTPUT DESC : OUTPUT TO FI-2
OUTPUT CURRENT : 4-20
OUTPUT INDICATION : DIRECT
OUTPUT USED : RECORDER/MANUAL LOADER
OUTPUT LIMIT LO : 0.00 LIMIT HI : 100.00
OUTPUT SLEW DEC : 1000.00 SLEW INC : 1000.00
OUTPUT TRACK VALUE : TRACK COMMAND :
OUTPUT RECALL : 2
COMMENT :

STEP NO : 5
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 5
LOOP TAG : FY_101
LOOP DESCRIPTION : INLET SAMPLER
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
EXPORT :AI 6

#####

STEP NO : 1
LABEL : FLOW1
FUNCTION : 10 (L)
COMMENT :LOAD FIC_1 FLOW
PARAMETERS :

1)AI 5

#####

STEP NO : 2
LABEL :
FUNCTION : 86 (MSI)
COMMENT :LOCK OUT MANUAL & CASCADE MODES
PARAMETERS :

1)MANUAL+CASCADE

#####

STEP NO : 3
LABEL :
FUNCTION : 10 (L)
COMMENT :PUT LOOP IN AUTO
PARAMETERS :

1) MODE=1

#####

STEP NO : 4
LABEL :
FUNCTION : 32 (ADD)
COMMENT :ADD FIC_1 & FIC_2 FLOWS
PARAMETERS :

1)AI 6 2)FLOW1

#####

STEP NO : 5
LABEL :
FUNCTION : 31 (DIV)
COMMENT :SCALE 0-30 GPM TO 0-1 FOR OUTPUT
PARAMETERS :
1)MSV 2)30

#####

STEP NO : 6

LABEL :

FUNCTION : 47 (CBA)

COMMENT : SET MAX TO OUTPUT AT 1

PARAMETERS :

1)MSV 2)1 3) A>=B 4)1

#####

STEP NO : 7

LABEL :

FUNCTION : 55 (CAO)

=====

OUTPUT TAG : AO_6

OUTPUT # : 2

OUTPUT DESC : INLET SAMPLER

OUTPUT CURRENT : 4-20

OUTPUT INDICATION : DIRECT

OUTPUT USED : RECORDER/MANUAL LOADER

OUTPUT LIMIT LO : 0.00 LIMIT HI : 100.00

OUTPUT SLEW DEC : 1000.00 SLEW INC : 1000.00

OUTPUT TRACK VALUE : TRACK COMMAND :

OUTPUT RECALL : 2

COMMENT :

#####

STEP NO : 8

LABEL :

FUNCTION : 0 (END)

COMMENT :

LOOP NO : 6
LOOP TAG : LIC_101
LOOP DESCRIPTION : T101 LVL
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
PID AUXILIARY :
PID AUXILIARY :
S-P RAMP : 10000
LOOP UNITS : FEET
LOOP SCALE LO : 0.00, SCALE HI : 7.00, DEV IND LO : 99999.00, IND HI : 99999.00
TUNING PARAMETER :
P(GAIN) : 8.00, I(REP/MIN) : 0.50, D(RATE) : 0.00, MANUAL RESET : 0.00
EXPORT : LSL_101, LSH_101, LSHH_101
ACTUATE PV ALARM DISCRETES :
PV Hi AL DISCRETE : LSH_101
PV Lo AL DISCRETE : LSL_101
PV HI HI AL DISCRETE : LSHH_101
PV LO LO AL DISCRETE :
PV MAX AL DISCRETE :
PV MIN AL DISCRETE :
PV ALARM :
PV ALARM Hi 5.00 PRIORITY CAUTION
PV ALARM Lo 3.00 PRIORITY URGENT
PV ALARM HI HI 6.00 PRIORITY URGENT
PV ALARM LO LO -99999.99 PRIORITY EVENT
PV ALARM MAX 99999.99 PRIORITY EVENT
PV ALARM MIN -99999.99 PRIORITY EVENT
PV ALARM DESC : T-101 (SUMP) LEVEL ALARM
PV ALARM DEADBAND : 0.05
PV ALARM GROUP : 0
PV ALARM MGMT : 0
PV ALARM COMMAND DISCR :
PV ALARM INDEX : 0

#####

STEP NO : 1

LABEL :

FUNCTION : 11 (AI)

COMMENT :

=====

ANALOG INPUT : AI_1

INPUT # : 1

INPUT DESC : T101 LVL

INPUT UNIT : FEET

INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

INPUT HIST. DEFINITION : 0

INPUT PLOT LO : 0.00 PLOT HI : 7.00

INPUT TYPE : LINEAR 4-20mA

INPUT RANGE LO : 0.00 RANGE HI : 7.00

DIGITAL FILTER : 0

#####

STEP NO : 2

LABEL :

FUNCTION : 10 (L)

COMMENT :SAVE AI_1 AS T-101 LEVEL FOR HISTORIAN

PARAMETERS :

1) LRC 101 2) AI 1

#####

STEP NO : 3

LABEL :

FUNCTION : 20 (PID)

COMMENT :

PARAMETERS :

1) PV=AI_1 2) Non-Balancing 3) Direct 4) Yes 5) LOOP AO

6) Interactive 7) PV 8) Positional 9) 0

#####

STEP NO : 4

LABEL :

FUNCTION : 55 (CAO)

COMMENT :

=====

OUTPUT TAG : AO_1

OUTPUT # : 1

OUTPUT DESC : T101 (SUMP) LEVEL

OUTPUT CURRENT : 4-20

#####

STEP NO : 5

LABEL :

FUNCTION : 0 (END)

COMMENT :

LOOP NO : 7
LOOP TAG : PDI202I
LOOP DESCRIPTION : F-202 DP LOCAL INDICATOR
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00

#####

STEP NO : 1

LABEL :

FUNCTION : 86 (MSI)

COMMENT : LOCK OUT MANUAL & CASCADE MODES

PARAMETERS :

1) MANUAL+CASCADE

#####

STEP NO : 2

LABEL :

FUNCTION : 10 (L)

COMMENT : PUT LOOP IN AUTO

PARAMETERS :

1) MODE=1

#####

STEP NO : 3

LABEL :

FUNCTION : 11 (AI)

COMMENT :

=====

ANALOG INPUT : AI_2

INPUT # : 5

INPUT DESC : F-202 DP

INPUT UNIT : PSI

INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

INPUT HIST. DEFINITION : 0

INPUT PLOT LO : 0.00 PLOT HI : 20.00

INPUT TYPE : LINEAR 4-20mA

INPUT RANGE LO : 0.00 RANGE HI : 20.00

DIGITAL FILTER : 0

#####

STEP NO : 4

LABEL :

FUNCTION : 10 (L)

COMMENT : SAVE ANALOG INPUT AS FILTER DP

PARAMETERS :

1) PDI_202 2) AI_2

STEP NO : 5
LABEL :
FUNCTION : 31 (DIV)
PARAMETERS :
1)AI 2. 2)20
COMMENT :RESCALE 0-20 PSI TO 0-1 FOR OUTPUT

STEP NO : 6
LABEL :
FUNCTION : 55 (CAO)
=====

OUTPUT TAG : AO_13
OUTPUT # : 7
OUTPUT DESC : LOCAL INDICATOR PDI-1
OUTPUT CURRENT : 4-20
OUTPUT INDICATION : DIRECT
OUTPUT USED : RECORDER/MANUAL LOADER
OUTPUT LIMIT LO : 0.00 LIMIT HI : 100.00
OUTPUT SLEW DEC : 1000.00 SLEW INC : 1000.00
OUTPUT TRACK VALUE : TRACK COMMAND :
OUTPUT RECALL : 2
COMMENT :

STEP NO : 7
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 8
LOOP TAG : MISC_M2
LOOP DESCRIPTION : MISC INPUTS
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
EXPORT :ASH_201,ASH_3

#####

STEP NO : 1
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_11
INPUT # : 2
INPUT DESC : IN COND
INPUT UNIT : PERCENT
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 100.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 100.00
DIGITAL FILTER : 0

#####

STEP NO : 2
LABEL :
FUNCTION : 10 (L)
COMMENT :SAVE AI_11 (ANALOG IN) AS AI_201
PARAMETERS :
1) AI 201 2) MSV

#####

STEP NO : 3
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_10
INPUT # : 6
INPUT DESC : OULET PH
INPUT UNIT : PH
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 14.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 14.00
DIGITAL FILTER : 0

#####

STEP NO : 4
LABEL :
FUNCTION : 10 (L)
COMMENT :SAVE AI_10 (ANALOG IN) AS AI_3 (pH)
PARAMETERS :
1)AI_3. 2)AI_10.

#####

STEP NO : 5
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_23J_2
INPUT # : 7
INPUT DESC : 23J-3001 TEMP
INPUT UNIT : DEG F
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 100.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 100.00
DIGITAL FILTER : 0

#####

STEP NO : 6
LABEL :
FUNCTION : 10 (L)
COMMENT : COMPRESSOR 1 COOLANT TEMP
PARAMETERS :
1)TI 23J1. 2)AI 23J 2.

#####

STEP NO : 7
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_23A_5
INPUT # : 8
INPUT DESC : 23A-3001 TEMP
INPUT UNIT : DEG F
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 100.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 100.00
DIGITAL FILTER : 0

#####

STEP NO : 8
LABEL :
FUNCTION : 10 (L)
COMMENT : VP-23A-1 COOLANT TEMP
PARAMETERS :
1)TI_23A1. 2)AI_23A_5.

#####

STEP NO : 9
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_RM500
INPUT # : 9
INPUT DESC : RM 500 291-Z
INPUT UNIT : DEG F
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 100.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 100.00
DIGITAL FILTER : 0

#####

STEP NO : 10
LABEL :
FUNCTION : 10 (L)
COMMENT : 291-Z RM 500 TEMP
PARAMETERS :
1)TI RM500. 2)AI RM500.

#####

STEP NO : 11
LABEL :
FUNCTION : 0 (END)
COMMENT :

WTF_1_4.mic3_r0

MICON TYPE :RCM-C
MICON CONFIGURATION FILE : mic3_r0
POINT ALLOCATION :
VAI : 32, VDI : 32, ISW : 32, LOOPS : 12, MSD : 1,
AI : 18, AO : 12, DI : 2, DO : 2

=====

VIRTUAL ANALOG : AI_TR2

INPUT # : 1

INPUT DESC : OUT CONDUCTIVITY

INPUT UNIT : PERCENT

INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC

INPUT HIST. DEFINITION : 1

INPUT PLOT LO : 0.00 PLOT HI : 100.00 BAR LO : 0.00 BAR HI : 100.00

ACTUATE XMTR ALARM DISCRETES :

XMTR Hi AL DISCRETE : ASH_TR2

XMTR Lo AL DISCRETE :

XMTR HI HI AL DISCRETE :

XMTR LO LO AL DISCRETE :

XMTR MAX AL DISCRETE :

XMTR MIN AL DISCRETE :

XMTR ALARM :

XMTR ALARM Hi 50.00 PRIORITY ATTENTION

XMTR ALARM Lo -9999.99 PRIORITY EVENT

XMTR ALARM HI HI 99999.99 PRIORITY EVENT

XMTR ALARM LO LO -9999.99 PRIORITY EVENT

XMTR ALARM MAX 99999.99 PRIORITY EVENT

XMTR ALARM MIN -9999.99 PRIORITY EVENT

XMTR ALARM DESC :243-Z HI OUTLET CONDUCTIVITY

XMTR ALARM DEADBAND : 1.00

XMTR ALARM GROUP :0

XMTR ALARM MGMT :0

XMTR ALARM COMMAND DISCR :

XMTR ALARM INDEX :0

=====

VIRTUAL ANALOG : FQ_1

INPUT # : 2

INPUT DESC : INLET 2

INPUT UNIT : GAL

INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC

INPUT HIST. DEFINITION : 1

INPUT PLOT LO : 0.00 PLOT HI : 100000.00 BAR LO : 0.00 BAR HI :
100000.00

=====

VIRTUAL ANALOG : FY_201H
INPUT # : 3
INPUT DESC : OVERRIDE -- PIC_2
INPUT UNIT :
INPUT SYNC SCAN : 1 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 1.00 BAR LO : 0.00 BAR HI : 1.00

=====

VIRTUAL ANALOG : LRC_102
INPUT # : 4
INPUT DESC : T102 LVL
INPUT UNIT : FEET
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 18.00 BAR LO : 0.00 BAR HI : 18.00

ACTUATE XMTR ALARM DISCRETES :
XMTR Hi AL DISCRETE :
XMTR Lo AL DISCRETE : LSL_102
XMTR HI HI AL DISCRETE :
XMTR LO LO AL DISCRETE :
XMTR MAX AL DISCRETE :
XMTR MIN AL DISCRETE :
XMTR ALARM :
XMTR ALARM Hi 11.50 PRIORITY URGENT
XMTR ALARM Lo 2.00 PRIORITY EVENT
XMTR ALARM HI HI 13.50 PRIORITY URGENT
XMTR ALARM LO LO -9999.99 PRIORITY EVENT
XMTR ALARM MAX 99999.99 PRIORITY EVENT
XMTR ALARM MIN -9999.99 PRIORITY EVENT
XMTR ALARM DESC :T-102 LEVEL ALARM
XMTR ALARM DEADBAND : 0.20
XMTR ALARM GROUP :0
XMTR ALARM MGMT :0
XMTR ALARM COMMAND DISCR :
XMTR ALARM INDEX :0

=====

VIRTUAL ANALOG : PI_243
INPUT # : 5
INPUT DESC : 243Z DP
INPUT UNIT : IN H2O
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 0.20 BAR LO : 0.00 BAR HI : 0.20

=====

VIRTUAL ANALOG : FIC1_OUT
INPUT # : 6
INPUT DESC : FLOW 1 CONTROLLER OUT
INPUT UNIT :
INPUT SYNC SCAN : 1 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 1.00 BAR LO : 0.00 BAR HI : 1.00

=====

VIRTUAL ANALOG : FRC_1
INPUT # : 7
INPUT DESC : INLET 1 FLOW
INPUT UNIT : GPM
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 60.00 BAR LO : 0.00 BAR HI : 60.00

=====

VIRTUAL ANALOG : FRC_102
INPUT # : 8
INPUT DESC : T102 OUTLET
INPUT UNIT : GPM
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 60.00 BAR LO : 0.00 BAR HI : 60.00

=====

VIRTUAL ANALOG : PRC_2
INPUT # : 9
INPUT DESC : IN PRESSURE
INPUT UNIT : PSI
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 15.00 BAR LO : 0.00 BAR HI : 15.00

```
=====
VIRTUAL ANALOG : LI_201
INPUT # : 10
INPUT DESC      : KOH TANK
INPUT UNIT      : INCHES
INPUT SYNC SCAN : 1 SEC  HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 46.00 BAR LO : 0.00 BAR HI : 46.00
XMTR ALARM :
XMTR ALARM Hi 99999.99 PRIORITY EVENT
XMTR ALARM Lo -10.00 PRIORITY CAUTION
XMTR ALARM HI HI 99999.99 PRIORITY EVENT
XMTR ALARM LO LO -10.00 PRIORITY URGENT
XMTR ALARM MAX 99999.99 PRIORITY EVENT
XMTR ALARM MIN -99999.99 PRIORITY EVENT
XMTR ALARM DESC :KOH TANK LEVEL LOW
XMTR ALARM DEADBAND : 0.50
XMTR ALARM GROUP :0
XMTR ALARM MGMT :0
XMTR ALARM COMMAND DISCR :
XMTR ALARM INDEX :0
=====
```

```
=====
VIRTUAL ANALOG : TI_23J2
INPUT # : 11
INPUT DESC      : 23J-3002 TEMP
INPUT UNIT      : DEG F
INPUT SYNC SCAN : 0 SEC  HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 100.00 BAR LO : 0.00 BAR HI : 100.00
XMTR ALARM :
XMTR ALARM Hi 95.00 PRIORITY URGENT
XMTR ALARM Lo -9999.99 PRIORITY EVENT
XMTR ALARM HI HI 99999.99 PRIORITY EVENT
XMTR ALARM LO LO -9999.99 PRIORITY EVENT
XMTR ALARM MAX 99999.99 PRIORITY EVENT
XMTR ALARM MIN -9999.99 PRIORITY EVENT
XMTR ALARM DESC :COMPRESSOR 2 HI COOLANT TEMP
XMTR ALARM DEADBAND : 1.00
XMTR ALARM GROUP :0
XMTR ALARM MGMT :0
XMTR ALARM COMMAND DISCR :
XMTR ALARM INDEX :0
```

```
=====
VIRTUAL ANALOG : TI_23A2
INPUT # : 12
INPUT DESC      : 23A-3002 TEMP
INPUT UNIT      : DEG F
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 100.00 BAR LO : 0.00 BAR HI : 100.00
XMTR ALARM :
XMTR ALARM Hi 90.00 PRIORITY URGENT
XMTR ALARM Lo -9999.99 PRIORITY EVENT
XMTR ALARM HI HI 99999.99 PRIORITY EVENT
XMTR ALARM LO LO -9999.99 PRIORITY EVENT
XMTR ALARM MAX 99999.99 PRIORITY EVENT
XMTR ALARM MIN -9999.99 PRIORITY EVENT
XMTR ALARM DESC :VP-23A-2 HI COOLANT TEMP
XMTR ALARM DEADBAND : 1.00
XMTR ALARM GROUP :0
XMTR ALARM MGMT :0
XMTR ALARM COMMAND DISCR :
XMTR ALARM INDEX :0
=====
```

```
=====
VIRTUAL ANALOG : TI_RM501
INPUT # : 13
INPUT DESC      : RM 501 291-Z
INPUT UNIT      : DEG F
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 100.00 BAR LO : 0.00 BAR HI : 100.00
=====
```

```
=====
DISCRETE TAG      : ASH TR2
DISCRETE (Internal Switch) # : 1
DISCRETE DESC      : HI OUTLET CONDUCTIVITY
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :HI COND COLOR : RED
=====
```

```
=====
DISCRETE TAG      : HS 103
DISCRETE (Internal Switch) # : 2
DISCRETE DESC      : OVERRIDE T102 OUTLET CUTOFF
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :NORMAL COLOR : GREEN
DISCRETE STATE 1 DESC :BYPASS COLOR : YELLOW
=====
```

```
=====
DISCRETE TAG      : LSL 102
DISCRETE (Internal Switch) # : 3
DISCRETE DESC     : T102 LVL SWITCH
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : LO LEVEL COLOR : WHITE
*****
LOOP NO          : 1
LOOP TAG         : FIC_1
LOOP DESCRIPTION  : INLET 1
LOOP SCAN        : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
PID AUXILIARY :
S-P RAMP      : 10000
LOOP UNITS     : GPM
LOOP SCALE LO : 0.00, SCALE HI : 60.00, DEV IND LO : 99999.00, IND HI : 99999.00
TUNING PARAMETER :
P(GAIN) : 1.00, I(REP/MIN) : 10.00, D(RATE) : 0.00, MANUAL RESET : 0.00
#####
STEP NO      : 1
LABEL :
FUNCTION : 11 (AI )
COMMENT :
=====
ANALOG INPUT      : AI_5
INPUT # : 3
INPUT DESC        : INLET 1
INPUT UNIT        : GPM
INPUT SYNC SCAN   : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 60.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 60.00
DIGITAL FILTER : 0
#####
STEP NO      : 2
LABEL :
FUNCTION : 53 (TOT )
COMMENT : TOTALIZE FIC_1 FLOW
PARAMETERS :
1)AI_5. 2)0 3)0 4)100000.00 5)0
```

```
#####  
STEP NO      : 3  
LABEL :  
FUNCTION : 10 (L      )  
COMMENT :SAVE RESULT AS FQ_1  
PARAMETERS :  
1) FQ 1 2) MSV  
#####  
STEP NO      : 4  
LABEL :  
FUNCTION : 10 (L      )  
COMMENT :SAVE AI_5 AS INLET 1 FLOW FOR HISTORIAN  
PARAMETERS :  
1) FRC 1 2) AI 5  
#####  
STEP NO      : 5  
LABEL :  
FUNCTION : 20 (PID    )  
COMMENT :  
PARAMETERS :  
1) PV=AI 5 2) Non-Balancing 3) Reverse 4) Yes 5) LOOP AO  
6) Interactive 7) PV 8) Positional 9) 0  
#####  
STEP NO      : 6  
LABEL :  
FUNCTION : 10 (L      )  
COMMENT :SAVE PID FIC_1 OUTPUT FOR PIC_2 EXTERNAL RESET  
PARAMETERS :  
1) FIC1 OUT 2) MSV  
#####  
STEP NO      : 7  
LABEL :  
FUNCTION : 47 (CBA    )  
COMMENT :OVERRIDE SIGNAL FROM PIC_2  
PARAMETERS :  
1)MSV 2)FY 201H 3) A>=B 4)FY 201H  
#####  
STEP NO      : 8  
LABEL :  
FUNCTION : 55 (CAO    )  
COMMENT :  
=====
```

OUTPUT TAG : AO_2
OUTPUT # : 6
OUTPUT DESC : INLET 1 FLOW
OUTPUT CURRENT : 4-20


```
#####  
STEP NO      : 9  
LABEL :  
FUNCTION : 0 (END )  
COMMENT :  
*****  
LOOP NO      : 2  
LOOP TAG     : FIC1I  
LOOP DESCRIPTION : INLET 2 FLOW INDICATOR  
LOOP SCAN    : 0.30 SEC  
NON-PID AUXILIARY :  
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00  
RATIO CURR : 0.00, BIAS CURR : 0.00  
#####  
STEP NO      : 1  
LABEL :  
FUNCTION : 86 (MSI )  
COMMENT : LOCK OUT MANUAL & CASCADE MODES  
PARAMETERS :  
1) MANUAL+CASCADE  
#####  
STEP NO      : 2  
LABEL :  
FUNCTION : 10 (L )  
COMMENT : SET LOOP IN AUTO (REQUIRED BY FNC 55)  
PARAMETERS :  
1) MODE=1  
#####  
STEP NO      : 3  
LABEL :  
FUNCTION : 31 (DIV )  
COMMENT : SCALE 0-60 GPM TO 0-1 FOR OUTPUT  
PARAMETERS :  
1) AI_5 2) 60
```

#####

STEP NO : 4
LABEL :
FUNCTION : 55 (CAO)

=====
OUTPUT TAG : AO_15
OUTPUT # : 5
OUTPUT DESC : OUTPUT TO FI_1
OUTPUT CURRENT : 4-20
OUTPUT INDICATION : DIRECT
OUTPUT USED : MSV
OUTPUT LIMIT LO : 0.00 LIMIT HI : 100.00
OUTPUT SLEW DEC : 1000.00 SLEW INC : 1000.00
OUTPUT TRACK VALUE : TRACK COMMAND :
OUTPUT RECALL : 2

COMMENT :
#####

STEP NO : 5
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 3
LOOP TAG : FIC_102
LOOP DESCRIPTION : T102 OUTLET
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
IMPORT DI :WTF_1_3::!LSHH_101
PID AUXILIARY :
S-P RAMP : 10000
LOOP UNITS : GPM
LOOP SCALE LO : 0.00,SCALE HI : 60.00,DEV IND LO :99999.00,IND HI :99999.00
TUNING PARAMETER :
P(GAIN) : 0.50, I(REP/MIN) : 10.00, D(RATE) : 0.00, MANUAL RESET : 0.00

#####

STEP NO : 1
LABEL : LSHH
FUNCTION : 10 (L)
COMMENT :LOAD T-101 HIHI LEVEL ALARM SWITCH
PARAMETERS :
1)LSHH_101

#####

STEP NO : 2
LABEL : INTERLOCK
FUNCTION : 69 (LC)
COMMENT : INTERLOCK ON T-101 HIHI LEVEL WHEN HS_103 IS OFF (NORMAL)
PARAMETERS :
1)-HS 103&LSHH

#####

STEP NO : 3
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_7
INPUT # : 2
INPUT DESC : T-102 OUTLET
INPUT UNIT : GPM
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 60.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 60.00
DIGITAL FILTER : 0

#####

STEP NO : 4
LABEL :
FUNCTION : 10 (L)
COMMENT : SAVE AI_7 AS T-201 OUTLET FLOW FOR HISTORIAN
PARAMETERS :
1) FRC 102 2) AI 7

#####

STEP NO : 5
LABEL :
FUNCTION : 20 (PID)
COMMENT :
PARAMETERS :
1) PV=AI_7. 2) Non-Balancing 3) Reverse 4) Yes 5) LOOP AO
6) Interactive 7) PV 8) Positional 9) 0

#####

STEP NO : 6
LABEL :
FUNCTION : 55 (CAO)
COMMENT :

=====

OUTPUT TAG : AO_4
OUTPUT # : 3
OUTPUT DESC : T-102 OUTLET FLOW
OUTPUT CURRENT : 4-20
OUTPUT INDICATION : REVERSED
OUTPUT USED : CONTROL
OUTPUT LIMIT LO : 0.00 LIMIT HI : 100.00
OUTPUT SLEW DEC : 1000.00 SLEW INC : 1000.00
OUTPUT TRACK VALUE : 0 TRACK COMMAND : INTERLOCK
OUTPUT RECALL : 2

#####

STEP NO : 7
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 4
LOOP TAG : FIC102I
LOOP DESCRIPTION : T-102 OUTLET FLOW INDICATOR
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00

#####

STEP NO : 1
LABEL :
FUNCTION : 86 (MSI)
COMMENT : LOCK OUT MANUAL & CASCADE MODES
PARAMETERS :
1) MANUAL+CASCADE

#####

STEP NO : 2
LABEL :
FUNCTION : 10 (L)
COMMENT : PUT LOOP IN AUTO
PARAMETERS :
1) MODE=1

#####

STEP NO : 3
LABEL :
FUNCTION : 31 (DIV)
COMMENT : SCALE 0-60 GPM TO 0-1 FOR OUTPUT
PARAMETERS :
1)AI 7 2)60

#####

STEP NO : 4
LABEL :
FUNCTION : 55 (CAO)

=====

OUTPUT TAG : AO_17
OUTPUT # : 2
OUTPUT DESC : OUTPUT TO FI-3
OUTPUT CURRENT : 4-20
OUTPUT INDICATION : DIRECT
OUTPUT USED : MSV
OUTPUT LIMIT LO : 0.00 LIMIT HI : 100.00
OUTPUT SLEW DEC : 1000.00 SLEW INC : 1000.00
OUTPUT TRACK VALUE : TRACK COMMAND :
OUTPUT RECALL : 2
COMMENT :

#####

STEP NO : 5
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 5
LOOP TAG : FY_203
LOOP DESCRIPTION : OUTLET SAMPLER
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
IMPORT AI :WTF_1_3::AI_6
EXPORT :AI 5

#####

STEP NO : 1
LABEL : FLOW2
FUNCTION : 10 (L)
COMMENT : LOAD INLET 2 FLOW (FIC_2)
PARAMETERS :
1)AI_6

```
#####  
STEP NO      : 2  
LABEL :  
FUNCTION : 86 (MSI )  
COMMENT :LOCK OUT MANUAL & CASCADE MODES  
PARAMETERS :  
1)MANUAL+CASCADE  
#####  
STEP NO      : 3  
LABEL :  
FUNCTION : 10 (L )  
COMMENT :PUT LOOP IN AUTO  
PARAMETERS :  
1) MODE=1  
#####  
STEP NO      : 4  
LABEL :  
FUNCTION : 32 (ADD )  
COMMENT :ADD FIC_1 AND FIC_2 FLOWS  
PARAMETERS :  
1)AI 5 2)FLOW2  
#####  
STEP NO      : 5  
LABEL :  
FUNCTION : 31 (DIV )  
COMMENT :SCALE 0-30 GPM TO 0-1 FOR OUTPUT  
PARAMETERS :  
1)MSV 2)30  
#####  
STEP NO      : 6  
LABEL :  
FUNCTION : 47 (CBA )  
COMMENT :SET MAX TO OUTPUT AT 1  
PARAMETERS :  
1)MSV 2)1 3) A>=B 4)1
```

#####

STEP NO : 7
LABEL :
FUNCTION : 55 (CAO)

=====

OUTPUT TAG : AO_7
OUTPUT # : 4
OUTPUT DESC : OUTLET SAMPLER
OUTPUT CURRENT : 4-20
OUTPUT INDICATION : DIRECT
OUTPUT USED : MSV
OUTPUT LIMIT LO : 0.00 LIMIT HI : 100.00
OUTPUT SLEW DEC : 1000.00 SLEW INC : 1000.00
OUTPUT TRACK VALUE : TRACK COMMAND :
OUTPUT RECALL : 2

COMMENT :
#####

STEP NO : 8
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 6
LOOP TAG : LI102I
LOOP DESCRIPTION : T102 LEVEL INDICATOR
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00

#####

STEP NO : 1
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : LAL_102
DISCRETE (Virtual Discrete) # : 1
DISCRETE DESC : T-102 LVL LO
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : LO LEVEL COLOR : WHITE
DI Alarm State : 1
DI Alarm Priority : Attention
DI Alarm Desc : T-102 LO LEVEL/SHUT OFF FIC_102
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 2
LABEL :
FUNCTION : 75 (DST)
COMMENT :ACTIVATE LO LEVEL ALARM FOR 5 MIN ON T-102 LO LEVEL
PARAMETERS :
1)LSL 102 2)0 3)1 4)300 5)LAL 102

#####

STEP NO : 3
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_3_
INPUT # : 1
INPUT DESC : T-102 LVL
INPUT UNIT : FEET
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 18.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 18.00
DIGITAL FILTER : 0

#####

STEP NO : 4
LABEL :
FUNCTION : 10 (L)
COMMENT :SAVE INPUT AS T-102 LEVEL (LRC_102)
PARAMETERS :
1)LRC 102. 2)AI 3 .

#####

STEP NO : 5
LABEL :
FUNCTION : 86 (MSI)
COMMENT :LOCK OUT MANUAL & CASCADE MODES
PARAMETERS :
1)MANUAL+CASCADE

#####

STEP NO : 6
LABEL :
FUNCTION : 10 (L)
COMMENT :PUT LOOP IN AUTO
PARAMETERS :
1) MODE=1

STEP NO : 7
LABEL :
FUNCTION : 31 (DIV)
PARAMETERS :
1)AI 3 . 2)20
COMMENT :SCALE 0-20 FT TO 0-1 FOR OUTPUT
#####

STEP NO : 8
LABEL :
FUNCTION : 55 (CAO)
=====

OUTPUT TAG : AO_8
OUTPUT # : 1
OUTPUT DESC : OUTPUT TO LI-2
OUTPUT CURRENT : 4-20
OUTPUT INDICATION : DIRECT
OUTPUT USED : MSV
OUTPUT LIMIT LO : 0.00 LIMIT HI : 100.00
OUTPUT SLEW DEC : 1000.00 SLEW INC : 1000.00
OUTPUT TRACK VALUE : TRACK COMMAND :
OUTPUT RECALL : 2
COMMENT :

STEP NO : 9
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 7
LOOP TAG : PIC_2
LOOP DESCRIPTION : IN PRESSURE
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
PID AUXILIARY :
PID AUXILIARY :
S-P RAMP : 10000
LOOP UNITS : PSI
LOOP SCALE LO : 0.00, SCALE HI : 15.00, DEV IND LO : 99999.00, IND HI : 99999.00
TUNING PARAMETER :
P(GAIN) : 10.00, I(REP/MIN) : 10.00, D(RATE) : 0.00, MANUAL RESET : 0.00
PV ALARM :
PV ALARM Hi 11.00 PRIORITY CAUTION
PV ALARM Lo -9999.99 PRIORITY EVENT
PV ALARM HI HI 99999.99 PRIORITY EVENT
PV ALARM LO LO -9999.99 PRIORITY EVENT
PV ALARM MAX 99999.99 PRIORITY EVENT
PV ALARM MIN -9999.99 PRIORITY EVENT
PV ALARM DESC : TRAIN INLET HI PRESSURE
PV ALARM DEADBAND : 0.50
PV ALARM GROUP : 0
PV ALARM MGMT : 0
PV ALARM COMMAND DISCR :
PV ALARM INDEX : 0
DEV ALARM :
DEV ALARM HI 9999.99 PRIORITY EVENT
DEV ALARM LO -99999.99 PRIORITY EVENT
DEV ALARM DESC :
DEV ALARM DEADBAND : 0.00
DEV ALARM GROUP : 0
DEV ALARM SUPP : 0
DEV ALARM COMMAND DISCR :
DEV ALARM INDEX : 0

#####

STEP NO : 1
LABEL :
FUNCTION : 11 (AI)
COMMENT :
=====

ANALOG INPUT : AI_4
INPUT # : 4
INPUT DESC : TRAIN INLET
INPUT UNIT : PSI
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 15.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 15.00
DIGITAL FILTER : 0
EXPRESSION : (null)

#####

STEP NO : 2
LABEL :
FUNCTION : 10 (L)
COMMENT :SAVE AI_4 AS TRAIN INLET PRESSURE FOR HISTORIAN
PARAMETERS :
1) PRC 2 2) AI 4

#####

STEP NO : 3
LABEL :
FUNCTION : 20 (PID)
COMMENT :OVERRIDE CONTROL TO FIC_1
PARAMETERS :
1) PV=AI_4 2) Non-Balancing 3) Reverse 4) Yes 5) TAG=FIC1_OUT
6) Interactive 7) PV 8) Positional 9) 0

#####

STEP NO : 4
LABEL :
FUNCTION : 10 (L)
COMMENT :SAVE OUTPUT AS FY_102H FOR USE AS OVERRIDE SIGNAL
PARAMETERS :
1) FY 201H 2) MSV

#####

STEP NO : 5
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 8
LOOP TAG : PIC2I
LOOP DESCRIPTION : TRAIN INLET PRESSURE INDICATOR
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00

#####

STEP NO : 1

LABEL :

FUNCTION : 86 (MSI)

COMMENT : LOCK OUT MANUAL & CASCADE MODES

PARAMETERS :

1) MANUAL+CASCADE

#####

STEP NO : 2

LABEL :

FUNCTION : 10 (L)

COMMENT : PUT LOOP IN AUTO

PARAMETERS :

1) MODE=1

#####

STEP NO : 3

LABEL :

FUNCTION : 31 (DIV)

PARAMETERS :

1) AI 4. 2) 15

COMMENT : RESCALE 0-15 PSI TO 0-1 FOR OUTPUT

#####

STEP NO : 4

LABEL :

FUNCTION : 55 (CAO)

=====

OUTPUT TAG : AO_14
OUTPUT # : 7
OUTPUT DESC : OUTPUT TO PI_4
OUTPUT CURRENT : 4-20
OUTPUT INDICATION : DIRECT
OUTPUT USED : MSV
OUTPUT LIMIT LO : 0.00 LIMIT HI : 100.00
OUTPUT SLEW DEC : 1000.00 SLEW INC : 1000.00
OUTPUT TRACK VALUE : TRACK COMMAND :
OUTPUT RECALL : 2
COMMENT :

#####

STEP NO : 5

LABEL :

FUNCTION : 0 (END)

COMMENT :

LOOP NO : 9

LOOP TAG : LIC_102

LOOP DESCRIPTION : T102 LVL

LOOP SCAN : 0.30 SEC

NON-PID AUXILIARY :

RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00

RATIO CURR : 0.00, BIAS CURR : 0.00

EXPORT :ASH TR2

PID AUXILIARY :

S-P RAMP : 10000

LOOP UNITS : FEET

LOOP SCALE LO : 0.00,SCALE HI : 18.00,DEV IND LO :99999.00,IND HI :99999.00

TUNING PARAMETER :

P(GAIN) : 5.00, I(REP/MIN) : 0.01, D(RATE) : 0.00, MANUAL RESET : 0.00

#####

STEP NO : 1

LABEL :

FUNCTION : 20 (PID)

COMMENT :T-102 LEVEL CONTROLLER

PARAMETERS :

1) PV-AI 3 . 2) Tracking 3) Direct 4) Yes 5) LOOP AO

6) Interactive 7) PV 8) Positional 9) 0

#####

STEP NO : 2

LABEL :

FUNCTION : 24 (PIDC)

COMMENT :CASCADE TO FIC_1

PARAMETERS :

1)FIC_1.

#####

STEP NO : 3
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_9
INPUT # : 5
INPUT DESC : OUT COND
INPUT UNIT : PERCENT
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 100.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 100.00
DIGITAL FILTER : 0

#####

STEP NO : 4
LABEL :
FUNCTION : 10 (L)
COMMENT :SAVE INPUT AS OUTPUT CONDUCTIVITY (AI_TR2)
PARAMETERS :
1)AI TR2. 2)AI 9.

#####

STEP NO : 5
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_12
INPUT # : 6
INPUT DESC : 243Z DP
INPUT UNIT : IN H2O
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 0.20
INPUT TYPE : SPECIAL
INPUT RANGE LO : 0.00 RANGE HI : 0.20
DIGITAL FILTER : 0

SPECIAL INPUT TYPE : VOLTAGE
SIGNAL LO : 0.00 SIGNAL HI : 10.00

#####

STEP NO : 6
LABEL :
FUNCTION : 10 (L)
COMMENT :SAVE INPUT AS BUILDING DP (PI_243)
PARAMETERS :
1)PI_243. 2)AI_12.

#####

STEP NO : 7
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_15
INPUT # : 7
INPUT DESC : KOH TANK LEVEL
INPUT UNIT : INCHES
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 46.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 46.00
DIGITAL FILTER : 0

#####

STEP NO : 8
LABEL :
FUNCTION : 10 (L)
COMMENT : SAVE AI_15 AS KOH TANK LEVEL
PARAMETERS :
1)LI 201. 2)AI 15.

#####

STEP NO : 9
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_23J_4
INPUT # : 8
INPUT DESC : 23J-3002 TEMP
INPUT UNIT : DEG F
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 100.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 100.00
DIGITAL FILTER : 0

#####

STEP NO : 10
LABEL :
FUNCTION : 10 (L)
COMMENT : 23J-3002 TEMP
PARAMETERS :
1)TI_23J2. 2)AI_23J_4.

#####

STEP NO : 11
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_23A_10
INPUT # : 9
INPUT DESC : 23A-3002 TEMP
INPUT UNIT : DEG F
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 100.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 100.00
DIGITAL FILTER : 0

#####

STEP NO : 12
LABEL :
FUNCTION : 10 (L)
COMMENT : VP-23A-2 COOLANT TEMP
PARAMETERS :
1)TI 23A2. 2)AI 23A 10.

#####

STEP NO : 13
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_RM501
INPUT # : 10
INPUT DESC : RM 501 291-Z
INPUT UNIT : DEG F
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 100.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 100.00
DIGITAL FILTER : 0

#####

STEP NO : 14
LABEL :
FUNCTION : 10 (L)
COMMENT : 291- RM 501 TEMP
PARAMETERS :
1)TI_RM501. 2)AI_RM501.

STEP NO : 15
LABEL :
FUNCTION : 0 (END)
COMMENT :

WTF_2_1.mic4_r0

MICON TYPE :RCM-D
MICON UNIT NO : 4
MICON TAG : WTF 2 1
MICON DESCRIPTION : 243-Z RACK 2 SLOT 1
MICON CONFIGURATION FILE : mic4_r0
POINT ALLOCATION :
VAI : 32, VDI : 32, ISW : 32, LOOPS : 12, MSD : 16,
AI : 0, AO : 0, DI : 32, DO : 32

=====

DISCRETE TAG : FI TR2
DISCRETE (Internal Switch) # : 1
DISCRETE DESC : TRAIN 2
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :FLOW OFF COLOR : GREEN
DISCRETE STATE 1 DESC :FLOW ON COLOR : YELLOW

=====

DISCRETE TAG : HS 28
DISCRETE (Internal Switch) # : 2
DISCRETE DESC : F-202A
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :CLOSE COLOR : GREEN
DISCRETE STATE 1 DESC :OPEN COLOR : YELLOW

=====

DISCRETE TAG : HS 31
DISCRETE (Internal Switch) # : 3
DISCRETE DESC : TRAIN 2
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :CLOSE COLOR : GREEN
DISCRETE STATE 1 DESC :OPEN COLOR : YELLOW

=====

DISCRETE TAG : HS 101A
DISCRETE (Internal Switch) # : 4
DISCRETE DESC : P-101A
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :STOP COLOR : GREEN
DISCRETE STATE 1 DESC :START COLOR : YELLOW

```
=====
DISCRETE TAG      : ZI 101A
DISCRETE (Internal Switch) # : 5
DISCRETE DESC     : P-101A
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : GREEN
DISCRETE STATE 1 DESC :ON COLOR : YELLOW
=====
```

```
DISCRETE TAG      : HS 23A 1
DISCRETE (Internal Switch) # : 6
DISCRETE DESC     : VP-23A-1 CONTROL
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 1
DISCRETE STATE 0 DESC :STOP COLOR : GREEN
DISCRETE STATE 1 DESC :START COLOR : YELLOW
=====
```

```
DISCRETE TAG      : YI 23A1
DISCRETE (Internal Switch) # : 7
DISCRETE DESC     : VP-23A-1 STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC :OFF COLOR : GREEN
DISCRETE STATE 1 DESC :ON COLOR : YELLOW
=====
```

```
DISCRETE TAG      : YI P23A1
DISCRETE (Internal Switch) # : 8
DISCRETE DESC     : P-23A-1 STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC :OFF COLOR : GREEN
DISCRETE STATE 1 DESC :ON COLOR : YELLOW
=====
```

```
DISCRETE TAG      : VP1 FAIL
DISCRETE (Internal Switch) # : 9
DISCRETE DESC     : VP-23A-1 FAILURE
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC :OFF COLOR : WHITE
DISCRETE STATE 1 DESC :FAIL COLOR : WHITE
=====
```

```
*****
LOOP NO          : 1
LOOP TAG         : MOV1
LOOP DESCRIPTION : F-202A INLET
LOOP SCAN       : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
```

#####

STEP NO : 1
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_20
DISCRETE (Discrete Input) # : 4
DISCRETE DESC : MOV1 OPEN STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC : OPEN COLOR : YELLOW
DISCRETE STATE 1 DESC : OFF COLOR : BLACK

#####

STEP NO : 2
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_21
DISCRETE (Discrete Input) # : 5
DISCRETE DESC : MOV1 CLOSED STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC : CLOSED COLOR : GREEN
DISCRETE STATE 1 DESC : OFF COLOR : BLACK

#####

STEP NO : 3

LABEL :

FUNCTION : 9 (DSCC)

=====

MULTI-STATE DI TAG : ZI_M0V1

MULTI-STATE DI # : 1

MULTI-STATE DI DESC : M0V1 F-202A INLET

MULTI-STATE DI SYNC SCAN : 0

MULTI-STATE DI1 : DI_21

MULTI-STATE DI2 : DI_20

MULTI-STATE DI3 :

MULTI-STATE DI4 :

MULTI-STATE STATE 0 :DESC FAILED COLOR White

MULTI-STATE STATE 1 :DESC OPEN COLOR Yellow

MULTI-STATE STATE 2 :DESC CLOSED COLOR Green

MULTI-STATE STATE 3 :DESC MOVING COLOR White

MULTI-STATE STATE 4 :DESC COLOR Black

MULTI-STATE STATE 5 :DESC COLOR Black

MULTI-STATE STATE 6 :DESC COLOR Black

MULTI-STATE STATE 7 :DESC COLOR Black

MULTI-STATE STATE 8 :DESC COLOR Black

MULTI-STATE STATE 9 :DESC COLOR Black

MULTI-STATE STATE 10 :DESC COLOR Black

MULTI-STATE STATE 11 :DESC COLOR Black

MULTI-STATE STATE 12 :DESC COLOR Black

MULTI-STATE STATE 13 :DESC COLOR Black

MULTI-STATE STATE 14 :DESC COLOR Black

MULTI-STATE STATE 15 :DESC COLOR Black

COMMENT :

#####

STEP NO : 4

LABEL :

FUNCTION : 57 (DO)

COMMENT :

=====

DISCRETE TAG : DO 18

DISCRETE (Discrete Output) # : 6

DISCRETE DESC : M0V1 OPEN COMMAND

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0

DISCRETE STATE 0 DESC :OFF COLOR : BLACK

DISCRETE STATE 1 DESC :OPEN COLOR : YELLOW

#####

STEP NO : 5
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO 19
DISCRETE (Discrete Output) # : 7
DISCRETE DESC : MOV1 CLOSE COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :CLOSE COLOR : GREEN
#####

STEP NO : 6
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : ZA MOV1
DISCRETE (Virtual Discrete) # : 2
DISCRETE DESC : MOV1
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :FAILED COLOR : WHITE
DI Alarm State : 1
DI Alarm Priority : Attention
DI Alarm Desc :MOV1 OUT OF POSITION
DI Alarm Mgmt Discrete :
DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0
#####

STEP NO : 7
LABEL :
FUNCTION : 68 (VC)
COMMENT :
PARAMETERS :
1)HS 28. 2)DO 18. 3)30.00 4)DO 19. 5)30.00
6)DI 21. 7)DI 20. 8)ZA MOV1. 9)40.00
#####

STEP NO : 8
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 2
LOOP TAG : MOV3
LOOP DESCRIPTION : F-202A OUTLET
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00

#####

STEP NO : 1
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_24
DISCRETE (Discrete Input) # : 8
DISCRETE DESC : MOV3 OPEN STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC : OPEN COLOR : YELLOW
DISCRETE STATE 1 DESC : OFF COLOR : BLACK

#####

STEP NO : 2
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_25
DISCRETE (Discrete Input) # : 9
DISCRETE DESC : MOV3 CLOSED STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC : CLOSED COLOR : GREEN
DISCRETE STATE 1 DESC : OFF COLOR : BLACK

#####

STEP NO : 3
LABEL :
FUNCTION : 9 (DSCC)

=====

MULTI-STATE DI TAG : ZI MOV3
MULTI-STATE DI # : 2
MULTI-STATE DI DESC : MOV3 F-202A INLET
MULTI-STATE DI SYNC SCAN : 0
MULTI-STATE DI1 : DI 25
MULTI-STATE DI2 : DI 24
MULTI-STATE DI3 :
MULTI-STATE DI4 :
MULTI-STATE STATE 0 :DESC FAILED COLOR White
MULTI-STATE STATE 1 :DESC OPEN COLOR Yellow
MULTI-STATE STATE 2 :DESC CLOSED COLOR Green
MULTI-STATE STATE 3 :DESC MOVING COLOR White
MULTI-STATE STATE 4 :DESC COLOR Black
MULTI-STATE STATE 5 :DESC COLOR Black
MULTI-STATE STATE 6 :DESC COLOR Black
MULTI-STATE STATE 7 :DESC COLOR Black
MULTI-STATE STATE 8 :DESC COLOR Black
MULTI-STATE STATE 9 :DESC COLOR Black
MULTI-STATE STATE 10 :DESC COLOR Black
MULTI-STATE STATE 11 :DESC COLOR Black
MULTI-STATE STATE 12 :DESC COLOR Black
MULTI-STATE STATE 13 :DESC COLOR Black
MULTI-STATE STATE 14 :DESC COLOR Black
MULTI-STATE STATE 15 :DESC COLOR Black

COMMENT :
#####

STEP NO : 4
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO 22
DISCRETE (Discrete Output) # : 10
DISCRETE DESC : MOV3 OPEN COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :OPEN COLOR : YELLOW

#####

STEP NO : 5
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO 23
DISCRETE (Discrete Output) # : 11
DISCRETE DESC : MOV3 CLOSE COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :CLOSE COLOR : GREEN

#####

STEP NO : 6
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : ZA MOV3
DISCRETE (Virtual Discrete) # : 3
DISCRETE DESC : MOV3
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :FAILED COLOR : WHITE
DI Alarm State : 1
DI Alarm Priority : Attention
DI Alarm Desc :MOV3 OUT OF POSITION
DI Alarm Mgmt Discrete :
DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0

#####

STEP NO : 7
LABEL :
FUNCTION : 68 (VC)
COMMENT :
PARAMETERS :
1)HS 28. 2)DO 22. 3)30.00 4)DO 23. 5)30.00
6)DI 25. 7)DI 24. 8)ZA MOV3. 9)40.00

#####

STEP NO : 8
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 3
LOOP TAG : MOV5
LOOP DESCRIPTION : TRAIN 2 INLET
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00

#####

STEP NO : 1
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI 30
DISCRETE (Discrete Input) # : 12
DISCRETE DESC : MOV5 OPEN STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC : OPEN COLOR : BLUE
DISCRETE STATE 1 DESC : OFF COLOR : BLACK

#####

STEP NO : 2
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI 31
DISCRETE (Discrete Input) # : 13
DISCRETE DESC : MOV5 CLOSED STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC : CLOSED COLOR : GREEN
DISCRETE STATE 1 DESC : OFF COLOR : BLACK

#####

STEP NO : 3
LABEL :
FUNCTION : 9 (DSCC)

=====

MULTI-STATE DI TAG : ZI_MOV5
MULTI-STATE DI # : 3
MULTI-STATE DI DESC : MOV5 TRAIN 2 INLET
MULTI-STATE DI SYNC SCAN : 0
MULTI-STATE DI1 : DI_31
MULTI-STATE DI2 : DI_30
MULTI-STATE DI3 :
MULTI-STATE DI4 :
MULTI-STATE STATE 0 :DESC FAILED COLOR White
MULTI-STATE STATE 1 :DESC OPEN COLOR Yellow
MULTI-STATE STATE 2 :DESC CLOSED COLOR Green
MULTI-STATE STATE 3 :DESC MOVING COLOR White
MULTI-STATE STATE 4 :DESC COLOR Black
MULTI-STATE STATE 5 :DESC COLOR Black
MULTI-STATE STATE 6 :DESC COLOR Black
MULTI-STATE STATE 7 :DESC COLOR Black
MULTI-STATE STATE 8 :DESC COLOR Black
MULTI-STATE STATE 9 :DESC COLOR Black
MULTI-STATE STATE 10 :DESC COLOR Black
MULTI-STATE STATE 11 :DESC COLOR Black
MULTI-STATE STATE 12 :DESC COLOR Black
MULTI-STATE STATE 13 :DESC COLOR Black
MULTI-STATE STATE 14 :DESC COLOR Black
MULTI-STATE STATE 15 :DESC COLOR Black
COMMENT :

#####

STEP NO : 4
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO 28
DISCRETE (Discrete Output) # : 14
DISCRETE DESC : MOV5 OPEN COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :OPEN COLOR : YELLOW

#####

STEP NO : 5
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO 29
DISCRETE (Discrete Output) # : 15
DISCRETE DESC : MOV5 CLOSE COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :CLOSE COLOR : GREEN

#####

STEP NO : 6
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : ZA MOV5
DISCRETE (Virtual Discrete) # : 4
DISCRETE DESC : MOV5
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :FAILED COLOR : WHITE
DI Alarm State : 1
DI Alarm Priority : Attention
DI Alarm Desc :MOV5 OUT OF POSITION
DI Alarm Mgmt Discrete :
DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0

#####

STEP NO : 7
LABEL :
FUNCTION : 68 (VC)
COMMENT :
PARAMETERS :
1)HS 31. 2)DO 28. 3)30.00 4)DO 29. 5)30.00
6)DI 31. 7)DI 30. 8)ZA MOV5. 9)40.00

#####

STEP NO : 8
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 4
LOOP TAG : MOV7
LOOP DESCRIPTION : TRAIN 2 OUTLET
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00

#####

STEP NO : 1
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI 36
DISCRETE (Discrete Input) # : 16
DISCRETE DESC : MOV7 OPEN STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC : OPEN COLOR : YELLOW
DISCRETE STATE 1 DESC : OFF COLOR : BLACK

#####

STEP NO : 2
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI 37
DISCRETE (Discrete Input) # : 17
DISCRETE DESC : MOV7 CLOSED STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC : CLOSED COLOR : GREEN
DISCRETE STATE 1 DESC : OFF COLOR : BLACK

#####

STEP NO : 3
LABEL :
FUNCTION : 9 (DSCC)

=====

MULTI-STATE DI TAG : ZI_MOV7
MULTI-STATE DI # : 4
MULTI-STATE DI DESC : MOV7 TRAIN 2 OUTLET
MULTI-STATE DI SYNC SCAN : 0
MULTI-STATE DI1 : DI_37
MULTI-STATE DI2 : DI_36
MULTI-STATE DI3 :
MULTI-STATE DI4 :
MULTI-STATE STATE 0 :DESC FAILED COLOR White
MULTI-STATE STATE 1 :DESC OPEN COLOR Yellow
MULTI-STATE STATE 2 :DESC CLOSED COLOR Green
MULTI-STATE STATE 3 :DESC MOVING COLOR White
MULTI-STATE STATE 4 :DESC COLOR Black
MULTI-STATE STATE 5 :DESC COLOR Black
MULTI-STATE STATE 6 :DESC COLOR Black
MULTI-STATE STATE 7 :DESC COLOR Black
MULTI-STATE STATE 8 :DESC COLOR Black
MULTI-STATE STATE 9 :DESC COLOR Black
MULTI-STATE STATE 10 :DESC COLOR Black
MULTI-STATE STATE 11 :DESC COLOR Black
MULTI-STATE STATE 12 :DESC COLOR Black
MULTI-STATE STATE 13 :DESC COLOR Black
MULTI-STATE STATE 14 :DESC COLOR Black
MULTI-STATE STATE 15 :DESC COLOR Black

COMMENT :
#####

STEP NO : 4
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO 32
DISCRETE (Discrete Output) # : 18
DISCRETE DESC : MOV7 OPEN COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :OPEN COLOR : YELLOW

#####

STEP NO : 5
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO 33
DISCRETE (Discrete Output) # : 19
DISCRETE DESC : MOV7 CLOSE COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :CLOSE COLOR : GREEN

#####

STEP NO : 6
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : ZA MOV7
DISCRETE (Virtual Discrete) # : 5
DISCRETE DESC : MOV7
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :FAILED COLOR : WHITE
DI Alarm State : 1
DI Alarm Priority : Attention
DI Alarm Desc :MOV7 OUT OF POSITION
DI Alarm Mgmt Discrete :
DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0

#####

STEP NO : 7
LABEL :
FUNCTION : 68 (VC)
COMMENT :

PARAMETERS :

1)HS 31. 2)DO 32. 3)30.00 4)DO 33. 5)30.00
6)DI 37. 7)DI 36. 8)ZA MOV7. 9)40.00

#####

STEP NO : 8
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 5
LOOP TAG : P101A
LOOP DESCRIPTION : T-101 (SUMP) PUMP A
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
IMPORT DI :WTF 1 3::!LSL_101,WTF_1_3::!LSH_101,WTF_2_3::!HS_101L,WTF_2_3::!H
EXPORT :ZI 101A,HS 101A

#####

STEP NO : 1
LABEL : LOLVL
FUNCTION : 10 (L)
COMMENT :LOAD SUMP LO LEVEL ALARM
PARAMETERS :
1)LSL 101

#####

STEP NO : 2
LABEL : HILVL
FUNCTION : 10 (L)
COMMENT :SUMP HI LEVEL ALARM
PARAMETERS :
1)LSH 101

#####

STEP NO : 3
LABEL : BYPASS
FUNCTION : 10 (L)
COMMENT :SUMP LO LEVEL BYPASS
PARAMETERS :
1)HS 101L

#####

STEP NO : 4
LABEL : SLCT
FUNCTION : 10 (L)
COMMENT :P-101A/B SELECTOR SWITCH
PARAMETERS :
1)HS 101

#####

STEP NO : 5
LABEL : STATB
FUNCTION : 10 (L)
COMMENT :PUMP 101B STATUS
PARAMETERS :
1)ZI_101B

#####

STEP NO : 6
LABEL : SWTB
FUNCTION : 10 (L)
COMMENT : PUMP 101B ON/OFF SWITCH
PARAMETERS :
1)HS 101B

#####

STEP NO : 7
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : XA_101A
DISCRETE (Virtual Discrete) # : 1
DISCRETE DESC : P-101A
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : FAILED COLOR : WHITE
DI Alarm State : 1
DI Alarm Priority : Attention
DI Alarm Desc : P-101A SHUT OFF
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 8
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_1
DISCRETE (Discrete Input) # : 1
DISCRETE DESC : P-101A STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC : OFF COLOR : GREEN
DISCRETE STATE 1 DESC : ON COLOR : YELLOW

#####

STEP NO : 9
LABEL :
FUNCTION : 75 (DST)
COMMENT : SAVE DI_1 AS PUMP 101A STATUS
PARAMETERS :
1)DI_1 2)0 3)0 4)0 5)ZI_101A

#####

STEP NO : 10
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO 1
DISCRETE (Discrete Output) # : 2
DISCRETE DESC : P-101A START COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :START COLOR : YELLOW

#####

STEP NO : 11
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO 2
DISCRETE (Discrete Output) # : 3
DISCRETE DESC : P-101A STOP COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :STOP COLOR : GREEN
DISCRETE STATE 1 DESC :OFF COLOR : BLACK

#####

STEP NO : 12
LABEL :
FUNCTION : 69 (LC)
COMMENT :PULSE ON HS_101=A OR (HS_101B & PUMP FAILED)
PARAMETERS :

1)(PULSE(!SLCT)|(PULSE(SLCT&!STATB)&SWTB))

#####

STEP NO : 13
LABEL :
FUNCTION : 62 (GTD)
COMMENT :JUMP NEXT STEP IF NO PULSE
PARAMETERS :

1)IMSV 2) Normal 3)JUMPA

#####

STEP NO : 14
LABEL : JUMPA
FUNCTION : 10 (L)
COMMENT :TURN PUMP ON WHEN HS_101 "ON" INTERLOCK ACTIVE
PARAMETERS :
1) HS_101A 2) 1

```
#####  
STEP NO      : 15  
LABEL :  
FUNCTION : 69 (LC      )  
COMMENT :SEND PULSE WHEN HS_101="P-101B" (ON)  
PARAMETERS :  
1)PULSE(SLCT)  
#####  
STEP NO      : 16  
LABEL :  
FUNCTION : 62 (GTD      )  
COMMENT :JUMP NEXT LINE WHEN NO PULSE  
PARAMETERS :  
1)!MSV 2) Normal 3)JUMPB  
#####  
STEP NO      : 17  
LABEL : JUMPB  
FUNCTION : 10 (L      )  
COMMENT :TURN OFF PUMP WHEN HS_101 "OFF" INTERLOCK ACTIVE  
PARAMETERS :  
1) HS 101A 2) 0  
#####  
STEP NO      : 18  
LABEL :  
FUNCTION : 69 (LC      )  
COMMENT :LO INTERLOCK (ONLY WHEN BYPASS IS OFF)  
PARAMETERS :  
1)-!BYPASS&LOLVL  
#####  
STEP NO      : 19  
LABEL :  
FUNCTION : 62 (GTD      )  
COMMENT :JUMP NEXT STEP IF NO LOW LEVEL ALARM  
PARAMETERS :  
1)!MSV 2) Normal 3)JMPLO  
#####  
STEP NO      : 20  
LABEL : JMPLO  
FUNCTION : 10 (L      )  
COMMENT :PUMP OFF ON LO LEVEL INTERLOCK  
PARAMETERS :  
1) HS 101A 2) 0  
#####  
STEP NO      : 21  
LABEL :  
FUNCTION : 69 (LC      )  
COMMENT :PULSE ON HI LEVEL ALARM WHEN HS_101='A'  
PARAMETERS :  
1)PULSE(HILVL&-!SLCT)
```

```
#####  
STEP NO      : 22  
LABEL :  
FUNCTION : 62 (GTD )  
COMMENT :JUMP NEXT STEP IF NO PULSE  
PARAMETERS :  
1)MSV 2) Normal 3)JMPHI  
#####  
STEP NO      : 23  
LABEL : JMPHI  
FUNCTION : 10 (L )  
COMMENT :PUMP ON ON HI INTERLOCK  
PARAMETERS :  
1) HS 101A 2) 1  
#####  
STEP NO      : 24  
LABEL :  
FUNCTION : 78 (MC )  
COMMENT :  
PARAMETERS :  
1)HS 101A 2)DO 1 3)DO_2 4) 5.00 5) 1.00  
6)(null) 7)(null)  
#####  
STEP NO      : 25  
LABEL :  
FUNCTION : 69 (LC )  
COMMENT :ALARM WHEN MOTOR STATUS OFF AND SWITCH ON (EXCEPT WHEN PUMP 1ST  
TURNED ON)  
PARAMETERS :  
1)HS 101A&-DI 1&-DO 1  
#####  
STEP NO      : 26  
LABEL :  
FUNCTION : 75 (DST )  
COMMENT :  
PARAMETERS :  
1)MSV 2)0 3)0 4)0 5)XA 101A  
#####  
STEP NO      : 27  
LABEL :  
FUNCTION : 0 (END )  
COMMENT :
```

LOOP NO : 6
LOOP TAG : MISC_M4
LOOP DESCRIPTION : MISC INPUTS AND OUTPUTS
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00

#####

STEP NO : 1
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_5
DISCRETE (Discrete Input) # : 20
DISCRETE DESC : TRAIN 2 FLOW SWITCH
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC : FLOW OFF COLOR : GREEN
DISCRETE STATE 1 DESC : FLOW ON COLOR : YELLOW

#####

STEP NO : 2
LABEL :
FUNCTION : 75 (DST)
COMMENT : SAVE DI_5 AS TRAIN 2 FLOW INDICATOR
PARAMETERS :

1)DI_5 2)0 3)0 4)0 5)FI TR2

#####

STEP NO : 3
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : LAL_23A1
DISCRETE (Virtual Discrete) # : 6
DISCRETE DESC : 23A-3001
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0 MODIFY : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : LO LEVEL COLOR : WHITE
DI Alarm State : 1
DI Alarm Priority : Attention
DI Alarm Desc : TK-23A-3001 LO LEVEL
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 4
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI 23A 1
DISCRETE (Discrete Input) # : 22
DISCRETE DESC : 23A-3002
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : WHITE
DISCRETE STATE 1 DESC : LO LEVEL COLOR : WHITE

#####

STEP NO : 5
LABEL :
FUNCTION : 75 (DST)
COMMENT : TK-23A-3001 LO LEVEL
PARAMETERS :

1) DI 23A 1. 2) 0 3) 0 4) 0 5) LAL 23A1.

#####

STEP NO : 6
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : XA 23A1
DISCRETE (Virtual Discrete) # : 7
DISCRETE DESC : 23A-3001
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0 MODIFY : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : FAIL COLOR : WHITE
DI Alarm State : 1
DI Alarm Priority : Attention
DI Alarm Desc : VP-23A-1 LOOP LO FLOW OR DP
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 7
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI 23A 3
DISCRETE (Discrete Input) # : 23
DISCRETE DESC : 23A-3001
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : WHITE
DISCRETE STATE 1 DESC : FAIL COLOR : WHITE

#####

STEP NO : 8
LABEL :
FUNCTION : 69 (LC)
COMMENT : ALARM ACTIVE 10 SEC AFTER PUMP SWITCH IS TURNED ON
PARAMETERS :
1) DI 23A 3 & DELAY (HS 23A 1, 10)

#####

STEP NO : 9
LABEL :
FUNCTION : 75 (DST)
COMMENT : 23A-1 LO FLOW & DP ALARM
PARAMETERS :
1) MSV 2) 0 3) 0 4) 5) XA 23A1.

#####

STEP NO : 10
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : FAL 23J1
DISCRETE (Virtual Discrete) # : 8
DISCRETE DESC : 23J-3001
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : LO COOL COLOR : YELLOW
DI Alarm State : 1
DI Alarm Priority : Caution
DI Alarm Desc : COMPRESSOR 1 LO COOLANT FLOW
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 11
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_23J_1
DISCRETE (Discrete Input) # : 24
DISCRETE DESC : COMP 1 LO FLOW
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : WHITE
DISCRETE STATE 1 DESC : LO COOL COLOR : WHITE

#####

STEP NO : 12
LABEL :
FUNCTION : 75 (DST)
COMMENT : COMPRESSOR 1 LO FLOW

PARAMETERS :
1)DI_23J_1. 2)0 3)0 4)0 5)FAL_23J1.

#####

STEP NO : 13
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 7
LOOP TAG : VP_23A_1
LOOP DESCRIPTION : P-2006-23A
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
EXPORT : VPI FAIL
IMPORT DI : WTF_2_2::IVP2_FAIL,WTF_2_3::IHS_23A

#####

STEP NO : 1
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : XA_23VP1
DISCRETE (Virtual Discrete) # : 9
DISCRETE DESC : VP-23A-1 FAILURE
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : FAIL COLOR : YELLOW
DI Alarm State : 1
DI Alarm Priority : Caution
DI Alarm Desc : VP-23A-1 FAILURE
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 2
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_23A_4
DISCRETE (Discrete Input) # : 25
DISCRETE DESC : P-23A-1 STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : WHITE
DISCRETE STATE 1 DESC : ON COLOR : WHITE

#####

STEP NO : 3
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_23A_2
DISCRETE (Discrete Input) # : 27
DISCRETE DESC : VP-23A-1 STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : GREEN
DISCRETE STATE 1 DESC : ON COLOR : YELLOW

#####

STEP NO : 4
LABEL :
FUNCTION : 57 (DO)
COMMENT :

DISCRETE TAG : DO 23A 3
DISCRETE (Discrete Output) # : 26
DISCRETE DESC : P-23A-1 CONTROL
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : OFF COLOR : GREEN
DISCRETE STATE 1 DESC : ON COLOR : YELLOW
#####

STEP NO : 5
LABEL :
FUNCTION : 57 (DO)
COMMENT :

DISCRETE TAG : DO 23A 1
DISCRETE (Discrete Output) # : 28
DISCRETE DESC : VP-23A-1 START
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : START COLOR : YELLOW
#####

STEP NO : 6
LABEL :
FUNCTION : 57 (DO)
COMMENT :

DISCRETE TAG : DO 23A 2
DISCRETE (Discrete Output) # : 29
DISCRETE DESC : VP-23A-1 STOP
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : STOP COLOR : GREEN
DISCRETE STATE 1 DESC : OFF COLOR : BLACK
#####

STEP NO : 7
LABEL :
FUNCTION : 10 (L)
COMMENT : VP-23A-1 STATUS (P-3006-23A)
PARAMETERS :
1)YI_23A1. 2)DI_23A_2.

```
#####
STEP NO      : 8
LABEL :
FUNCTION : 10 (L      )
COMMENT :P-23A-3001 STATUS
PARAMETERS :
1)YI P23A1. 2)DI 23A 4.
#####
STEP NO      : 9
LABEL :
FUNCTION : 69 (LC      )
COMMENT : "0" PULSE ON HS_23A=VP2 AND FAILURE ALARM
PARAMETERS :
1)-!PULSE(HS 23A&VP2 FAIL)
#####
STEP NO      : 10
LABEL :
FUNCTION : 62 (GTD      )
COMMENT :JUMP IF NO PULSE
PARAMETERS :
1)MSV 2) Off-Noma1 3)JMPON
#####
STEP NO      : 11
LABEL : JMPON
FUNCTION : 10 (L      )
COMMENT :TURN VP1 ON IF VP2 HAS FAILED
PARAMETERS :
1)HS 23A 1. 2)1
#####
STEP NO      : 12
LABEL :
FUNCTION : 73 (LAT      )
COMMENT :UNLATCH PUMP OUTPUT IF NO STATUS AFTER 5 SEC
PARAMETERS :
1) LATCH=HS 23A 1. 2) UNLATCH=(-YI P23A1&DELAY(HS_ 3)0 4)DO_23A_3. 5)0
#####
STEP NO      : 13
LABEL :
FUNCTION : 69 (LC      )
COMMENT :FAILURE ON LO FLOW & DP ALARM OR VP1 FAIL
PARAMETERS :
1)XA 23A1|XA 23VP1
#####
STEP NO      : 14
LABEL :
FUNCTION : 75 (DST      )
COMMENT :
PARAMETERS :
1)MSV 2)0 3)0 4) 5)VP1_FAIL.
```

```
#####
STEP NO      : 15
LABEL : VPON
FUNCTION : 69 (LC      )
COMMENT :START VAC PUMP 15 SEC AFTER CIRC PUMP IF NO ALARM
PARAMETERS :
1)DELAY(YI P23A1,15)&-DI 23A 3&HS 23A 1
#####
STEP NO      : 16
LABEL :
FUNCTION : 78 (MC      )
COMMENT :
PARAMETERS :
1)MSV 2)DO 23A 1. 3)DO 23A 2. 4) 10.00 5) 1.00
6)(null) 7)(null) 8)(null) 9)(null) 10)(null)
11)(null)
#####
STEP NO      : 17
LABEL :
FUNCTION : 69 (LC      )
COMMENT :ALARM ON VP STATUS OFF AND SWITCH ON (EXCEPT STARTUP)
PARAMETERS :
1)VPON&-YI 23A1&-DO 23A 1
#####
STEP NO      : 18
LABEL :
FUNCTION : 10 (L      )
COMMENT :
PARAMETERS :
1)XA 23VP1. 2)MSV
#####
STEP NO      : 19
LABEL :
FUNCTION : 0 (END      )
COMMENT :
```

WTF_2_2.mic5_r0

MICON TYPE :RCM-D
MICON UNIT NO : 5
MICON TAG : WTF 2 2
MICON DESCRIPTION : 243-Z RACK 2 SLOT 2
MICON CONFIGURATION FILE : mic5_r0
POINT ALLOCATION :
VAI : 32, VDI : 32, ISW : 32, LOOPS : 12, MSD : 16,
AI : 0, AO : 0, DI : 32, DO : 32

=====

DISCRETE TAG : FI TRI
DISCRETE (Internal Switch) # : 1
DISCRETE DESC : TRAIN 2
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :FLOW OFF COLOR : GREEN
DISCRETE STATE 1 DESC :FLOW ON COLOR : YELLOW

=====

DISCRETE TAG : HS 29
DISCRETE (Internal Switch) # : 2
DISCRETE DESC : F-202B
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :CLOSE COLOR : GREEN
DISCRETE STATE 1 DESC :OPEN COLOR : YELLOW

=====

DISCRETE TAG : HS 30
DISCRETE (Internal Switch) # : 3
DISCRETE DESC : TRAIN 1
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :CLOSE COLOR : GREEN
DISCRETE STATE 1 DESC :OPEN COLOR : YELLOW

=====

DISCRETE TAG : HS 101B
DISCRETE (Internal Switch) # : 4
DISCRETE DESC : P-101B
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :STOP COLOR : GREEN
DISCRETE STATE 1 DESC :START COLOR : YELLOW

=====

DISCRETE TAG : ZI 101B
DISCRETE (Internal Switch) # : 5
DISCRETE DESC : P-101B
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : GREEN
DISCRETE STATE 1 DESC :ON COLOR : YELLOW

=====

DISCRETE TAG : HS 23A 2
DISCRETE (Internal Switch) # : 6
DISCRETE DESC : VP-23A-2 CONTROL
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 1
DISCRETE STATE 0 DESC :STOP COLOR : GREEN
DISCRETE STATE 1 DESC :START COLOR : YELLOW

=====

DISCRETE TAG : YI 23A2
DISCRETE (Internal Switch) # : 7
DISCRETE DESC : VP-23A-2 STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC :OFF COLOR : GREEN
DISCRETE STATE 1 DESC :ON COLOR : YELLOW

=====

DISCRETE TAG : YI P23A2
DISCRETE (Internal Switch) # : 8
DISCRETE DESC : P-23A-2 STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC :OFF COLOR : GREEN
DISCRETE STATE 1 DESC :ON COLOR : YELLOW

=====

DISCRETE TAG : VP2 FAIL
DISCRETE (Internal Switch) # : 9
DISCRETE DESC : VP-23A-2 FAILURE
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC :OFF COLOR : WHITE
DISCRETE STATE 1 DESC :FAIL COLOR : WHITE

LOOP NO : 1
LOOP TAG : MOV2
LOOP DESCRIPTION : F-202B INLET
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00

#####

STEP NO : 1
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_22
DISCRETE (Discrete Input) # : 4
DISCRETE DESC : MOV2 OPEN STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC : OPEN COLOR : YELLOW
DISCRETE STATE 1 DESC : OFF COLOR : BLACK

#####

STEP NO : 2
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_23
DISCRETE (Discrete Input) # : 5
DISCRETE DESC : MOV2 CLOSED STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC : CLOSED COLOR : GREEN
DISCRETE STATE 1 DESC : OFF COLOR : BLACK

#####

STEP NO : 3
LABEL :
FUNCTION : 9 (DSCC)

MULTI-STATE DI TAG : ZI_MOV2
MULTI-STATE DI # : 1
MULTI-STATE DI DESC : MOV2 F-202B INLET
MULTI-STATE DI SYNC SCAN : 0
MULTI-STATE DI1 : DI_23
MULTI-STATE DI2 : DI_22
MULTI-STATE DI3 :
MULTI-STATE DI4 :
MULTI-STATE STATE 0 :DESC FAILED COLOR White
MULTI-STATE STATE 1 :DESC OPEN COLOR Yellow
MULTI-STATE STATE 2 :DESC CLOSED COLOR Green
MULTI-STATE STATE 3 :DESC MOVING COLOR White
MULTI-STATE STATE 4 :DESC COLOR Black
MULTI-STATE STATE 5 :DESC COLOR Black
MULTI-STATE STATE 6 :DESC COLOR Black
MULTI-STATE STATE 7 :DESC COLOR Black
MULTI-STATE STATE 8 :DESC COLOR Black
MULTI-STATE STATE 9 :DESC COLOR Black
MULTI-STATE STATE 10 :DESC COLOR Black
MULTI-STATE STATE 11 :DESC COLOR Black
MULTI-STATE STATE 12 :DESC COLOR Black
MULTI-STATE STATE 13 :DESC COLOR Black
MULTI-STATE STATE 14 :DESC COLOR Black
MULTI-STATE STATE 15 :DESC COLOR Black
COMMENT :

#####

STEP NO : 4
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO 20
DISCRETE (Discrete Output) # : 6
DISCRETE DESC : MOV2 OPEN COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :OPEN COLOR : YELLOW

#####

STEP NO : 5
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO 21
DISCRETE (Discrete Output) # : 7
DISCRETE DESC : MOV2 CLOSE COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :CLOSE COLOR : GREEN

#####

STEP NO : 6
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : ZA MOV2
DISCRETE (Virtual Discrete) # : 2
DISCRETE DESC : MOV2
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :FAILED COLOR : WHITE
DI Alarm State : 1
DI Alarm Priority : Attention
DI Alarm Desc :MOV2 OUT OF POSITION
DI Alarm Mgmt Discrete :
DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0

#####

STEP NO : 7
LABEL :
FUNCTION : 68 (VC)
COMMENT :
PARAMETERS :
1)HS 29. 2)DO 20. 3)30.00 4)DO 21. 5)30.00
6)DI 23. 7)DI 22. 8)ZA MOV2. 9)40.00

#####

STEP NO : 8
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 2
LOOP TAG : MOV4
LOOP DESCRIPTION : F-202B OUTLET
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00

#####

STEP NO : 1
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_26
DISCRETE (Discrete Input) # : 8
DISCRETE DESC : MOV4 OPEN STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC : OPEN COLOR : YELLOW
DISCRETE STATE 1 DESC : OFF COLOR : BLACK

#####

STEP NO : 2
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_27
DISCRETE (Discrete Input) # : 9
DISCRETE DESC : MOV4 CLOSED STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC : CLOSED COLOR : GREEN
DISCRETE STATE 1 DESC : OFF COLOR : BLACK

#####

STEP NO : 3
LABEL :
FUNCTION : 9 (DSCC)

=====

MULTI-STATE DI TAG : ZI_MOV4
MULTI-STATE DI # : 2
MULTI-STATE DI DESC : MOV4 F-202B OUTLET
MULTI-STATE DI SYNC SCAN : 0
MULTI-STATE DI1 : DI_27
MULTI-STATE DI2 : DI_26
MULTI-STATE DI3 :
MULTI-STATE DI4 :
MULTI-STATE STATE 0 :DESC FAILED COLOR White
MULTI-STATE STATE 1 :DESC OPEN COLOR Yellow
MULTI-STATE STATE 2 :DESC CLOSED COLOR Green
MULTI-STATE STATE 3 :DESC MOVING COLOR White
MULTI-STATE STATE 4 :DESC COLOR Black
MULTI-STATE STATE 5 :DESC COLOR Black
MULTI-STATE STATE 6 :DESC COLOR Black
MULTI-STATE STATE 7 :DESC COLOR Black
MULTI-STATE STATE 8 :DESC COLOR Black
MULTI-STATE STATE 9 :DESC COLOR Black
MULTI-STATE STATE 10 :DESC COLOR Black
MULTI-STATE STATE 11 :DESC COLOR Black
MULTI-STATE STATE 12 :DESC COLOR Black
MULTI-STATE STATE 13 :DESC COLOR Black
MULTI-STATE STATE 14 :DESC COLOR Black
MULTI-STATE STATE 15 :DESC COLOR Black

COMMENT :

#####

STEP NO : 4
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO 24
DISCRETE (Discrete Output) # : 10
DISCRETE DESC : MOV4 OPEN COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :OPEN COLOR : YELLOW

#####

STEP NO : 5
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO 25
DISCRETE (Discrete Output) # : 11
DISCRETE DESC : MOV4 CLOSE COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :CLOSE COLOR : GREEN

#####

STEP NO : 6
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : ZA MOV4
DISCRETE (Virtual Discrete) # : 3
DISCRETE DESC : MOV4
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :FAILED COLOR : WHITE
DI Alarm State : 1
DI Alarm Priority : Attention
DI Alarm Desc :MOV4 OUT OF POSITION
DI Alarm Mgmt Discrete :
DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0

#####

STEP NO : 7
LABEL :
FUNCTION : 68 (VC)
COMMENT :

PARAMETERS :
1)HS 29. 2)DO 24. 3)30.00 4)DO 25. 5)30.00
6)DI 27. 7)DI 26. 8)ZA MOV4. 9)40.00

#####

STEP NO : 8
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 3
LOOP TAG : MOV6
LOOP DESCRIPTION : TRAIN 1 INLET
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00

STEP NO : 1
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI 32
DISCRETE (Discrete Input) # : 12
DISCRETE DESC : MOV6 OPEN STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC : OPEN COLOR : YELLOW
DISCRETE STATE 1 DESC : OFF COLOR : BLACK

STEP NO : 2
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI 33
DISCRETE (Discrete Input) # : 13
DISCRETE DESC : MOV6 CLOSED STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC : CLOSED COLOR : GREEN
DISCRETE STATE 1 DESC : OFF COLOR : BLACK

#####

STEP NO : 3
LABEL :
FUNCTION : 9 (DSCC)

=====
MULTI-STATE DI TAG : ZI_MOV6
MULTI-STATE DI # : 3
MULTI-STATE DI DESC : MOV6 TRAIN INLET
MULTI-STATE DI SYNC SCAN : 0
MULTI-STATE DI1 : DI_33
MULTI-STATE DI2 : DI_32
MULTI-STATE DI3 :
MULTI-STATE DI4 :
MULTI-STATE STATE 0 :DESC FAILED COLOR White
MULTI-STATE STATE 1 :DESC OPEN COLOR Yellow
MULTI-STATE STATE 2 :DESC CLOSED COLOR Green
MULTI-STATE STATE 3 :DESC MOVING COLOR White
MULTI-STATE STATE 4 :DESC COLOR Black
MULTI-STATE STATE 5 :DESC COLOR Black
MULTI-STATE STATE 6 :DESC COLOR Black
MULTI-STATE STATE 7 :DESC COLOR Black
MULTI-STATE STATE 8 :DESC COLOR Black
MULTI-STATE STATE 9 :DESC COLOR Black
MULTI-STATE STATE 10 :DESC COLOR Black
MULTI-STATE STATE 11 :DESC COLOR Black
MULTI-STATE STATE 12 :DESC COLOR Black
MULTI-STATE STATE 13 :DESC COLOR Black
MULTI-STATE STATE 14 :DESC COLOR Black
MULTI-STATE STATE 15 :DESC COLOR Black

COMMENT :

#####

STEP NO : 4
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====
DISCRETE TAG : DO 30
DISCRETE (Discrete Output) # : 14
DISCRETE DESC : MOV6 OPEN COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :OPEN COLOR : YELLOW

#####

STEP NO : 5
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO 31
DISCRETE (Discrete Output) # : 15
DISCRETE DESC : MOV6 CLOSE COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :CLOSE COLOR : GREEN

#####

STEP NO : 6
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : ZA MOV6
DISCRETE (Virtual Discrete) # : 4
DISCRETE DESC : MOV6
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :FAILED COLOR : WHITE
DI Alarm State : 1
DI Alarm Priority : Attention
DI Alarm Desc :MOV6 OUT OF POSITION
DI Alarm Mgmt Discrete :
DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0

#####

STEP NO : 7
LABEL :
FUNCTION : 68 (VC)
COMMENT :

PARAMETERS :
1)HS 30. 2)DO 30. 3)30.00 4)DO 31. 5)30.00
6)DI 33. 7)DI 32. 8)ZA MOV6. 9)40.00

#####

STEP NO : 8
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 4
LOOP TAG : MOV8
LOOP DESCRIPTION :
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00

#####

STEP NO : 1
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI 38
DISCRETE (Discrete Input) # : 16
DISCRETE DESC : MOV8 OPEN STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC : OPEN COLOR : YELLOW
DISCRETE STATE 1 DESC : OFF COLOR : BLACK

#####

STEP NO : 2
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI 39
DISCRETE (Discrete Input) # : 17
DISCRETE DESC : MOV8 CLOSED STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC : CLOSED COLOR : GREEN
DISCRETE STATE 1 DESC : OFF COLOR : BLACK

#####

STEP NO : 3
LABEL :
FUNCTION : 9 (DSCC)

=====

MULTI-STATE DI TAG : ZI_MOV8
MULTI-STATE DI # : 4
MULTI-STATE DI DESC : MOV8 TRAIN 1 OUTLET
MULTI-STATE DI SYNC SCAN : 0
MULTI-STATE DI1 : DI_39
MULTI-STATE DI2 : DI_38
MULTI-STATE DI3 :
MULTI-STATE DI4 :
MULTI-STATE STATE 0 :DESC FAILED COLOR White
MULTI-STATE STATE 1 :DESC OPEN COLOR Yellow
MULTI-STATE STATE 2 :DESC CLOSED COLOR Green
MULTI-STATE STATE 3 :DESC MOVING COLOR White
MULTI-STATE STATE 4 :DESC COLOR Black
MULTI-STATE STATE 5 :DESC COLOR Black
MULTI-STATE STATE 6 :DESC COLOR Black
MULTI-STATE STATE 7 :DESC COLOR Black
MULTI-STATE STATE 8 :DESC COLOR Black
MULTI-STATE STATE 9 :DESC COLOR Black
MULTI-STATE STATE 10 :DESC COLOR Black
MULTI-STATE STATE 11 :DESC COLOR Black
MULTI-STATE STATE 12 :DESC COLOR Black
MULTI-STATE STATE 13 :DESC COLOR Black
MULTI-STATE STATE 14 :DESC COLOR Black
MULTI-STATE STATE 15 :DESC COLOR Black
COMMENT :

#####

STEP NO : 4
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO 34
DISCRETE (Discrete Output) # : 18
DISCRETE DESC : MOV8 OPEN COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :OPEN COLOR : YELLOW

#####

STEP NO : 5
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO 35
DISCRETE (Discrete Output) # : 19
DISCRETE DESC : MOV8 CLOSE STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :CLOSE COLOR : GREEN

#####

STEP NO : 6
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : ZA MOV8
DISCRETE (Virtual Discrete) # : 5
DISCRETE DESC : MOV8
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :FAILED COLOR : WHITE
DI Alarm State : 1
DI Alarm Priority : Attention
DI Alarm Desc :MOV8 OUT OF POSITION
DI Alarm Mgmt Discrete :
DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0

#####

STEP NO : 7
LABEL :
FUNCTION : 68 (VC)
COMMENT :

PARAMETERS :
1)HS 30. 2)DO 34. 3)30.00 4)DO 35. 5)30.00
6)DI 39. 7)DI 38. 8)ZA MOV8. 9)40.00

#####

STEP NO : 8
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 5
LOOP TAG : P101B
LOOP DESCRIPTION : T-101 (SUMP) PUMP B
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
IMPORT DI :WTF 1 3::!LSL_101,WTF_1_3::!LSH_101,WTF_2_3::!HS_101L,WTF_2_3::!H
EXPORT :ZI 101B,HS 101B

#####

STEP NO : 1
LABEL : LOLVL
FUNCTION : 10 (L)
COMMENT :LOAD SUMP LO LEVEL ALARM
PARAMETERS :
1)LSL_101

#####

STEP NO : 2
LABEL : HILVL
FUNCTION : 10 (L)
COMMENT :SUMP HI LEVEL ALARM
PARAMETERS :
1)LSH_101

#####

STEP NO : 3
LABEL : BYPASS
FUNCTION : 10 (L)
COMMENT :SUMP LO LEVEL BYPASS
PARAMETERS :
1)HS_101L

#####

STEP NO : 4
LABEL : SLCT
FUNCTION : 10 (L)
COMMENT :P-101A/B SELECTOR SWITCH -- ON=B
PARAMETERS :
1)HS_101

#####

STEP NO : 5
LABEL : STATA
FUNCTION : 10 (L)
COMMENT :PUMP 101A STATUS
PARAMETERS :
1)ZI_101A

#####

STEP NO : 6
LABEL : SWTA
FUNCTION : 10 (L)
COMMENT :PUMP 101A START/STOP SWITCH
PARAMETERS :
1)HS 101A

#####

STEP NO : 7
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : XA 101B
DISCRETE (Virtual Discrete) # : 1
DISCRETE DESC : P-101B
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :FAILED COLOR : WHITE
DI Alarm State : 1
DI Alarm Priority : Attention
DI Alarm Desc :P-101B SHUT OFF
DI Alarm Mgmt Discrete :
DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0

#####

STEP NO : 8
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_2
DISCRETE (Discrete Input) # : 1
DISCRETE DESC : P-101A STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC :OFF COLOR : GREEN
DISCRETE STATE 1 DESC :ON COLOR : YELLOW

#####

STEP NO : 9
LABEL :
FUNCTION : 75 (DST)
COMMENT :SAVE DI_2 AS PUMP 101B STATUS
PARAMETERS :
1)DI_2. 2)0 3)0 4)0 5)ZI_101B.

#####

STEP NO : 10
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO 3
DISCRETE (Discrete Output) # : 2
DISCRETE DESC : P-101B START COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :START COLOR : YELLOW

#####

STEP NO : 11
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO 4
DISCRETE (Discrete Output) # : 3
DISCRETE DESC : P-101B STOP COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :STOP COLOR : GREEN
DISCRETE STATE 1 DESC :OFF COLOR : BLACK

#####

STEP NO : 12
LABEL :
FUNCTION : 69 (LC)
COMMENT :PULSE WHEN HS_101=B OR (HS_101=1 AND PUMP FAILED)
PARAMETERS :

1)(PULSE(SLCT)|(PULSE(-!SLCT&-!STATA)&SWTA))

#####

STEP NO : 13
LABEL :
FUNCTION : 62 (GTD)
COMMENT :JUMP NEXT STEP IF NO PULSE
PARAMETERS :

1)!MSV 2) Normal 3)JUMPA

#####

STEP NO : 14
LABEL : JUMPA
FUNCTION : 10 (L)
COMMENT :TURN PUMP ON WHEN HS_101 "ON" INTERLOCK ACTIVE
PARAMETERS :
1) HS_101B 2) 1

```
#####  
STEP NO      : 15  
LABEL :  
FUNCTION : 69 (LC      )  
COMMENT :SEND PULSE WHEN HS_101="P-101A" (OFF)  
PARAMETERS :  
1)PULSE(!SLCT)  
#####  
STEP NO      : 16  
LABEL :  
FUNCTION : 62 (GTD      )  
COMMENT :SKIP NEXT STEP WHEN NO PULSE  
PARAMETERS :  
1)!MSV 2) Normal 3)JUMPB  
#####  
STEP NO      : 17  
LABEL : JUMPB  
FUNCTION : 10 (L      )  
COMMENT :TURN OFF PUMP WHEN HS_101 "OFF" INTERLOCK ACTIVE  
PARAMETERS :  
1) HS 101B 2) 0  
#####  
STEP NO      : 18  
LABEL :  
FUNCTION : 69 (LC      )  
COMMENT :LO INTERLOCK (ONLY WHEN BYPASS IS OFF)  
PARAMETERS :  
1)-!BYPASS&LOLVL  
#####  
STEP NO      : 19  
LABEL :  
FUNCTION : 62 (GTD      )  
COMMENT :JUMP NEXT STEP IF NO LOW LEVEL ALARM  
PARAMETERS :  
1)!MSV 2) Normal 3)JMPLO  
#####  
STEP NO      : 20  
LABEL : JMPLO  
FUNCTION : 10 (L      )  
COMMENT :PUMP OFF ON LO LEVEL INTERLOCK  
PARAMETERS :  
1) HS 101B 2) 0  
#####  
STEP NO      : 21  
LABEL :  
FUNCTION : 69 (LC      )  
COMMENT :PULSE ON HI LEVEL ALARM & P_101='B'  
PARAMETERS :  
1)PULSE(HILVL&SLCT)
```

#####

STEP NO : 22

LABEL :

FUNCTION : 62 (GTD)

COMMENT : JUMP NEXT STEP IF NO PULSE

PARAMETERS :

1) !MSV 2) Normal 3) JMPHI

#####

STEP NO : 23

LABEL : JMPHI

FUNCTION : 10 (L)

COMMENT : PUMP ON ON HI LEVEL INTERLOCK

PARAMETERS :

1) HS 101B 2) 1

#####

STEP NO : 24

LABEL :

FUNCTION : 78 (MC)

COMMENT :

PARAMETERS :

1) HS 101B 2) DO 3 3) DO_4 4) 5.00 5) 1.00

6) (null) 7) (null)

#####

STEP NO : 25

LABEL :

FUNCTION : 69 (LC)

COMMENT : ALARM WHEN MOTOR STATUS OFF AND SWITCH ON (EXCEPT WHEN PUMP 1ST TURNED ON)

PARAMETERS :

1) HS 101B & -DI 2 & -DO 3

#####

STEP NO : 26

LABEL :

FUNCTION : 75 (DST)

COMMENT :

PARAMETERS :

1) MSV 2) 0 3) 0 4) 0 5) XA 101B

#####

STEP NO : 27

LABEL :

FUNCTION : 0 (END)

COMMENT :

LOOP NO : 6
LOOP TAG : MISC_M5
LOOP DESCRIPTION :
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00

#####

STEP NO : 1
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI 4
DISCRETE (Discrete Input) # : 20
DISCRETE DESC : TRAIN 1 FLOW SWITCH
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC : FLOW OFF COLOR : GREEN
DISCRETE STATE 1 DESC : FLOW ON COLOR : YELLOW

#####

STEP NO : 2
LABEL :
FUNCTION : 75 (DST)
COMMENT :

PARAMETERS :
1)DI 4 2)0 3)0 4)0 5)FI TR1

#####

STEP NO : 3
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : LAL 23A2
DISCRETE (Virtual Discrete) # : 6
DISCRETE DESC : 23A-3002
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0 MODIFY : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : HI LEVEL COLOR : WHITE
DI Alarm State : 1
DI Alarm Priority : Attention
DI Alarm Desc : TK-23A-3002 LO LEVEL
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 4
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI 23A 6
DISCRETE (Discrete Input) # : 22
DISCRETE DESC : 23A-3002
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : WHITE
DISCRETE STATE 1 DESC : LO LEVEL COLOR : WHITE

#####

STEP NO : 5
LABEL :
FUNCTION : 75 (DST)
COMMENT : TK-23A-3002 LO LEVEL

PARAMETERS :
1) DI 23A 6. 2) 0 3) 0 4) 0 5) LAL 23A2.

#####

STEP NO : 6
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : XA 23A2
DISCRETE (Virtual Discrete) # : 7
DISCRETE DESC : 23A-3002
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0 MODIFY : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : FAIL COLOR : WHITE
DI Alarm State : 1
DI Alarm Priority : Attention
DI Alarm Desc : VP-23A-2 LOOP LO FLOW OR DP
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 7
LABEL :
FUNCTION : 7 (DI)
COMMENT :

DISCRETE TAG : DI 23A 8
DISCRETE (Discrete Input) # : 23
DISCRETE DESC : 23A-3002
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : WHITE
DISCRETE STATE 1 DESC : FAIL COLOR : WHITE

#####

STEP NO : 8
LABEL :
FUNCTION : 69 (LC)
COMMENT : ALARM ACTIVE 10 SEC AFTER PUMP SWITCH IS TURNED ON
PARAMETERS :

1) DI 23A 8 & DELAY (HS 23A 2, 10)
#####

STEP NO : 9
LABEL :
FUNCTION : 75 (DST)
COMMENT : VP-23A-2 LO FLOW & DP ALARM
PARAMETERS :

1) MSV 2) 0 3) 0 4) 5) XA 23A2.
#####

STEP NO : 10
LABEL :
FUNCTION : 6 (VD)
COMMENT :

DISCRETE TAG : FAL 23J2
DISCRETE (Virtual Discrete) # : 8
DISCRETE DESC : 23J-3002
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0 MODIFY : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : LO COOL COLOR : YELLOW
DI Alarm State : 1
DI Alarm Priority : Caution
DI Alarm Desc : COMPRESSOR 2 LO COOLANT FLOW
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 11
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_23J_3
DISCRETE (Discrete Input)_# : 24
DISCRETE DESC : 23j-3002
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : WHITE
DISCRETE STATE 1 DESC : LO COOL COLOR : WHITE

#####

STEP NO : 12
LABEL :
FUNCTION : 75 (DST)
COMMENT : COMPRESSOR 2 LO COOLANT FLOW
PARAMETERS :
1)DI_23J_3. 2)0 3)0 4)0 5)FAL_23J2.

#####

STEP NO : 13
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 7
LOOP TAG : VP_23A_2
LOOP DESCRIPTION : P-3014-23A
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
EXPORT : VP2_FAIL
IMPORT DI : WTF_2_1::!VP1_FAIL,WTF_2_3::!HS_23A

#####

STEP NO : 1
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : XA 23VP2
DISCRETE (Virtual Discrete) # : 9
DISCRETE DESC : VP-23A-2 FAILURE
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : FAIL COLOR : YELLOW
DI Alarm State : 1
DI Alarm Priority : Caution
DI Alarm Desc : VP-23A-2 FAILURE
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 2
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI 23A 9
DISCRETE (Discrete Input) # : 25
DISCRETE DESC : P-23A-2 STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : GREEN
DISCRETE STATE 1 DESC : ON COLOR : YELLOW

#####

STEP NO : 3
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI 23A 7
DISCRETE (Discrete Input) # : 27
DISCRETE DESC : VP-23A-2 STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : GREEN
DISCRETE STATE 1 DESC : ON COLOR : YELLOW

#####

STEP NO : 4
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO 23A 6
DISCRETE (Discrete Output) # : 26
DISCRETE DESC : P-23A-2 CONTROL
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : OFF COLOR : GREEN
DISCRETE STATE 1 DESC : ON COLOR : YELLOW
#####

STEP NO : 5
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO 23A 4
DISCRETE (Discrete Output) # : 28
DISCRETE DESC : VP-23A-2 START
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : START COLOR : YELLOW
#####

STEP NO : 6
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO 23A 5
DISCRETE (Discrete Output) # : 29
DISCRETE DESC : VP-23A-2 STOP
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : STOP COLOR : GREEN
DISCRETE STATE 1 DESC : OFF COLOR : BLACK
#####

STEP NO : 7
LABEL :
FUNCTION : 10 (L)
COMMENT : VP-23A-2 STATUS (P-3014-23A)
PARAMETERS :
1)YI_23A2. 2)DI_23A_7.

```
#####  
STEP NO      : 8  
LABEL :  
FUNCTION : 10 (L      )  
COMMENT :P-23A-3002 STATUS  
PARAMETERS :  
1)YI P23A2. 2)DI 23A 9.  
#####  
STEP NO      : 9  
LABEL :  
FUNCTION : 69 (LC      )  
COMMENT : "0" PULSE ON HS_23A=VP1 AND FAILURE ALARM  
PARAMETERS :  
1)-IPULSE(-HS 23A&VP1 FAIL)  
#####  
STEP NO      : 10  
LABEL :  
FUNCTION : 62 (GTD      )  
COMMENT :JUMP IF NO PULSE  
PARAMETERS :  
1)MSV 2) Off-Noma1 3)JMPON  
#####  
STEP NO      : 11  
LABEL : JMPON  
FUNCTION : 10 (L      )  
COMMENT :TURN VP2 ON IF VP1 HAS FAILED  
PARAMETERS :  
1)HS 23A 2. 2)1  
#####  
STEP NO      : 12  
LABEL :  
FUNCTION : 73 (LAT      )  
COMMENT :UNLATCH PUMP OUTPUT IF NO STATUS AFTER 5 SEC  
PARAMETERS :  
1) LATCH=HS 23A 2. 2) UNLATCH=(-YI P23A2&DELAY(HS_ 3)0 4)DO_23A_6. 5)0  
#####  
STEP NO      : 13  
LABEL :  
FUNCTION : 69 (LC      )  
COMMENT :FAILURE ON LO FLOW & DP OR VP2 FAIL  
PARAMETERS :  
1)XA 23A2|XA 23VP2  
#####  
STEP NO      : 14  
LABEL :  
FUNCTION : 75 (DST      )  
COMMENT :  
PARAMETERS :  
1)MSV 2)0 3)0 4) 5)VP2_FAIL.
```

```
#####
STEP NO      : 15
LABEL : VPON
FUNCTION : 69 (LC      )
COMMENT :START VAC PUMP 15 SEC AFTER CIRC PUMP IF NO ALARM
PARAMETERS :
1)DELAY(YI P23A2,15)&-DI 23A 8&HS 23A 2
#####
STEP NO      : 16
LABEL :
FUNCTION : 78 (MC      )
COMMENT :
PARAMETERS :
1)MSV 2)DO 23A 4. 3)DO 23A 5. 4) 10.00 5) 1.00
6)(null) 7)(null) 8)(null) 9)(null) 10)(null)
11)(null)
#####
STEP NO      : 17
LABEL :
FUNCTION : 69 (LC      )
COMMENT :ALARM ON VP STATUS OFF AND SWITCH ON (EXCEPT STARTUP)
PARAMETERS :
1)VPON&-YI 23A2&-DO 23A 4
#####
STEP NO      : 18
LABEL :
FUNCTION : 10 (L      )
COMMENT :
PARAMETERS :
1)XA 23VP2. 2)MSV
#####
STEP NO      : 19
LABEL :
FUNCTION : 0 (END      )
COMMENT :
```

WTF_2_3.mic6_r0

MICON TYPE :RCM-D
MICON UNIT NO : 6
MICON TAG : WTF_2_3
MICON DESCRIPTION : 243-Z RACK 2 SLOT 3
MICON CONFIGURATION FILE : mic6_r0
POINT ALLOCATION :
VAI : 32, VDI : 32, ISW : 32, LOOPS : 12, MSD : 16,
AI : 0, AO : 0, DI : 32, DO : 32

=====

DISCRETE TAG : FI 4
DISCRETE (Internal Switch) # : 1
DISCRETE DESC : 243 EXH AUST FLOW
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :FLOW ON COLOR : YELLOW
DISCRETE STATE 1 DESC :LO FLOW COLOR : WHITE

=====

DISCRETE TAG : HS 32
DISCRETE (Internal Switch) # : 2
DISCRETE DESC : MOV9
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :RECLCLE COLOR : GREEN
DISCRETE STATE 1 DESC :TO MH-6 COLOR : YELLOW

=====

DISCRETE TAG : HS 101
DISCRETE (Internal Switch) # : 3
DISCRETE DESC : SELECTOR
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :P-101A COLOR : WHITE
DISCRETE STATE 1 DESC :P-101B COLOR : WHITE

=====

DISCRETE TAG : HS 101L
DISCRETE (Internal Switch) # : 4
DISCRETE DESC : BYPASS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :NORMAL COLOR : GREEN
DISCRETE STATE 1 DESC :BYPASSED COLOR : YELLOW


```
=====
DISCRETE TAG      : HS 201
DISCRETE (Internal SwTch) # : 5
DISCRETE DESC     : KOH PUMP
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :NO ACT'N COLOR : GREEN
DISCRETE STATE 1 DESC :ON COLOR : YELLOW
=====
```

```
DISCRETE TAG      : YI T201
DISCRETE (Internal SwTch) # : 6
DISCRETE DESC     : KOH PUMP
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : GREEN
DISCRETE STATE 1 DESC :ON COLOR : YELLOW
=====
```

```
DISCRETE TAG      : ZI 1
DISCRETE (Internal SwTch) # : 7
DISCRETE DESC     : 243 EXH AUST
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : GREEN
DISCRETE STATE 1 DESC :ON COLOR : YELLOW
=====
```

```
DISCRETE TAG      : ZI 2
DISCRETE (Internal SwTch) # : 8
DISCRETE DESC     : 243 SUP PLY
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : GREEN
DISCRETE STATE 1 DESC :ON COLOR : YELLOW
=====
```

```
DISCRETE TAG      : HS 23A
DISCRETE (Internal SwTch) # : 9
DISCRETE DESC     : SELECTOR 23A VPs
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 1
DISCRETE STATE 0 DESC :VP-23A-1 COLOR : WHITE
DISCRETE STATE 1 DESC :VP-23A-2 COLOR : WHITE
=====
```

```
*****
LOOP NO      : 1
LOOP TAG     : MOV9
LOOP DESCRIPTION : 243 OUTLET DIVERTER
LOOP SCAN    : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
```

#####

STEP NO : 1
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_40
DISCRETE (Discrete Input) # : 9
DISCRETE DESC : MOV9 MH6 STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :TO MH-6 COLOR : YELLOW
#####

STEP NO : 2
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_41
DISCRETE (Discrete Input) # : 10
DISCRETE DESC : MOV9 RECYCLE STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :RECYCLE COLOR : GREEN

#####

STEP NO : 3
LABEL :
FUNCTION : 9 (DSCC)
COMMENT :

=====

MULTI-STATE DI TAG : ZI_MOV9
MULTI-STATE DI # : 1
MULTI-STATE DI DESC : MOV9 243 OUTLET DIVERTER
MULTI-STATE DI SYNC SCAN : 0
MULTI-STATE DI1 : DI_40
MULTI-STATE DI2 : DI_41
MULTI-STATE DI3 :
MULTI-STATE DI4 :
MULTI-STATE STATE 0 :DESC MOVING COLOR White
MULTI-STATE STATE 1 :DESC TO MH-6 COLOR Yellow
MULTI-STATE STATE 2 :DESC RECYCLE COLOR Green
MULTI-STATE STATE 3 :DESC FAILED COLOR White
MULTI-STATE STATE 4 :DESC COLOR Black
MULTI-STATE STATE 5 :DESC COLOR Black
MULTI-STATE STATE 6 :DESC COLOR Black
MULTI-STATE STATE 7 :DESC COLOR Black
MULTI-STATE STATE 8 :DESC COLOR Black
MULTI-STATE STATE 9 :DESC COLOR Black
MULTI-STATE STATE 10 :DESC COLOR Black
MULTI-STATE STATE 11 :DESC COLOR Black
MULTI-STATE STATE 12 :DESC COLOR Black
MULTI-STATE STATE 13 :DESC COLOR Black
MULTI-STATE STATE 14 :DESC COLOR Black
MULTI-STATE STATE 15 :DESC COLOR Black

#####

STEP NO : 4
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO 36
DISCRETE (Discrete Output) # : 11
DISCRETE DESC : MOV9 MH6 COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :TO MH-6 COLOR : YELLOW

#####

STEP NO : 5
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO 37
DISCRETE (Discrete Output) # : 12
DISCRETE DESC : MOV9 RECYCLE COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :RECYCLE COLOR : GREEN

#####

STEP NO : 6
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : ZA MOV9
DISCRETE (Virtual Discrete) # : 5
DISCRETE DESC : MOV9
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :FAILED COLOR : WHITE
DI Alarm State : 1
DI Alarm Priority : Attention
DI Alarm Desc :MOV9 OUT OF POSITION
DI Alarm Mgmt Discrete :
DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0

#####

STEP NO : 7
LABEL :
FUNCTION : 68 (VC)
COMMENT :

PARAMETERS :
1)HS 32. 2)DO 36. 3)30.00 4)DO 37. 5)30.00
6)DI 40. 7)DI 41. 8)ZA MOV9. 9)40.00

#####

STEP NO : 8
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 2
LOOP TAG : P MET
LOOP DESCRIPTION : KOH METERING PUMP
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00

#####

STEP NO : 1
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_28
DISCRETE (Discrete Input) # : 5
DISCRETE DESC : KOH PUMP STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : GREEN
DISCRETE STATE 1 DESC :ON COLOR : YELLOW

#####

STEP NO : 2
LABEL :
FUNCTION : 75 (DST)
COMMENT :SAVE DI_28 AS KOH PUMP STATUS
PARAMETERS :

1)DI 28 2)0 3)0 4)0 5)YI T201

#####

STEP NO : 3
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO 9
DISCRETE (Discrete Output) # : 6
DISCRETE DESC : KOH PUMP START COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :START COLOR : YELLOW

#####

STEP NO : 4
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : XA 201
DISCRETE (Virtual Discrete) # : 4
DISCRETE DESC : KOH PUMP
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :FAILED COLOR : RED
DI Alarm State : 1
DI Alarm Priority : Urgent
DI Alarm Desc :KOH PUMP SHUT OFF
DI Alarm Mgmt Discrete :
DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0

#####

STEP NO : 5
LABEL :
FUNCTION : 75 (DST)
COMMENT :MOTOR CONTROL -- START ON FOR 5 SEC (NO STOP)
PARAMETERS :
1)HS 201 2)0 3)1 4)05 5)DO 9

#####

STEP NO : 6
LABEL :
FUNCTION : 69 (LC)
COMMENT :ALARM WHEN MOTOR STATUS OFF AND SWITCH ON (EXCEPT WHEN PUMP 1ST
TURNED ON)
PARAMETERS :
1)HS 201&-DI 28&-DO 9

#####

STEP NO : 7
LABEL :
FUNCTION : 75 (DST)
COMMENT :
PARAMETERS :
1)MSV 2)0 3)0 4)0 5)XA 201

#####

STEP NO : 8
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 3
LOOP TAG : MISC_M6
LOOP DESCRIPTION : MISC I/O
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
IMPORT DI :WTF_1_3::!LSH 101,WTF_1_3::!ASH_201,WTF_1_3::!ASH_3,WTF_1_4::!ASH
EXPORT :HS 101,HS 101L,HS 23A

STEP NO : 1
LABEL : HILVL
FUNCTION : 10 (L)
COMMENT :LOAD SUMP HI LEVEL ALARM
PARAMETERS :
1)LSH 101

STEP NO : 2
LABEL : HICDIN
FUNCTION : 10 (L)
COMMENT :LOAD INPUT CONDUCTIVITY HI ALARM
PARAMETERS :
1)ASH 201

STEP NO : 3
LABEL : HIPHO
FUNCTION : 10 (L)
COMMENT :LOAD HI OUTPUT PH ALARM
PARAMETERS :
1)ASH 3

STEP NO : 4
LABEL : HICDO
FUNCTION : 10 (L)
COMMENT :LOAD OUTPUT HI CONDUCTIVITY ALARM
PARAMETERS :
1)ASH_TR2

#####

STEP NO : 5
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : FI_102
DISCRETE (Virtual Discrete) # : 1
DISCRETE DESC : T-102 INLET
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0 MODIFY : 0
DISCRETE STATE 0 DESC : FLOW OFF COLOR : GREEN
DISCRETE STATE 1 DESC : FLOW ON COLOR : YELLOW

#####

STEP NO : 6
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_3
DISCRETE (Discrete Input) # : 1
DISCRETE DESC : T-102 INLET LO FLOW SWITCH
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : LO FLOW COLOR : WHITE

#####

STEP NO : 7
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_6
DISCRETE (Discrete Input) # : 13
DISCRETE DESC : 243-Z EXHAUST FLOW SWITCH
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : LO FLOW COLOR : YELLOW

#####

STEP NO : 8
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_11
DISCRETE (Discrete Input) # : 14
DISCRETE DESC : 243-Z EXHAUST FAN STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : GREEN
DISCRETE STATE 1 DESC :ON COLOR : YELLOW

#####

STEP NO : 9
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_12
DISCRETE (Discrete Input) # : 15
DISCRETE DESC : 243-Z SUPPLY FAN STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : GREEN
DISCRETE STATE 1 DESC :ON COLOR : YELLOW

#####

STEP NO : 10
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : LDI_84A
DISCRETE (Discrete Input) # : 17
DISCRETE DESC : D8 XFER LINE A (MAIN)
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0 INVERT : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :LEAK COLOR : YELLOW
DI Alarm State : 1
DI Alarm Priority : Caution
DI Alarm Desc :TK-D8 XFER LINE LEAK
DI Alarm Mgmt Discrete :
DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0

#####

STEP NO : 11
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : LDI 84B
DISCRETE (Discrete Input) # : 18
DISCRETE DESC : D8 XFER LINE B (SPARE)
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : LEAK COLOR : YELLOW

#####

STEP NO : 12
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO 5
DISCRETE (Discrete Output) # : 2
DISCRETE DESC : INLET HI COND ALARM
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : HI COND COLOR : YELLOW

#####

STEP NO : 13
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO 7
DISCRETE (Discrete Output) # : 7
DISCRETE DESC : OUTLET HI COND ALARM
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : HI COND COLOR : RED

#####

STEP NO : 14
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO 8
DISCRETE (Discrete Output) # : 8
DISCRETE DESC : OUTLET HI PH ALARM
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :HI PH COLOR : RED

#####

STEP NO : 15
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO 6
DISCRETE (Discrete Output) # : 16
DISCRETE DESC : T-101 (SUMP) HI LEVEL ALARM
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :HI LEVEL COLOR : YELLOW

#####

STEP NO : 16
LABEL :
FUNCTION : 75 (DST)
COMMENT :OUTPUT T-101 HI LEVEL ALARM TO LIGHT
PARAMETERS :

1)HILVL 2)0 3)0 4)0 5)DO 6

#####

STEP NO : 17
LABEL :
FUNCTION : 75 (DST)
COMMENT :OUTPUT HI INPUT COND ALARM TO LIGHT
PARAMETERS :

1)HICDIN 2)0 3)0 4)0 5)DO 5

#####

STEP NO : 18
LABEL :
FUNCTION : 75 (DST)
COMMENT :OUTPUT HI OUTPUT PH ALARM TO LIGHT
PARAMETERS :

1)HIPHO 2)0 3)0 4)0 5)DO_8

```
#####  
STEP NO      : 19  
LABEL :  
FUNCTION : 75 (DST )  
COMMENT :OUTPUT HI OUTPUT COND ALARM TO LIGHT  
PARAMETERS :  
1)HICDO 2)0 3)0 4)0 5)DO 7  
#####  
STEP NO      : 20  
LABEL :  
FUNCTION : 75 (DST )  
COMMENT :SAVE DI_6 AS 253-Z EXHAUST FLOW INDICATOR  
PARAMETERS :  
1)DI 6 2)0 3)0 4)0 5)FI 4  
#####  
STEP NO      : 21  
LABEL :  
FUNCTION : 75 (DST )  
COMMENT :SAVE DI_11 AS EXHAUST FAN INDICATOR  
PARAMETERS :  
1)DI 11. 2)0 3)0 4)0 5)ZI 1.  
#####  
STEP NO      : 22  
LABEL :  
FUNCTION : 75 (DST )  
COMMENT :SAVE DI_12 AS SUPPLY FAN INDICATOR  
PARAMETERS :  
1)DI 12. 2)0 3)0 4)0 5)ZI 2.  
#####  
STEP NO      : 23  
LABEL :  
FUNCTION : 75 (DST )  
COMMENT :SAVE DI_3 AS T-102 INLET FLOW INDICATION  
PARAMETERS :  
1)DI 3. 2)0 3)0 4) 5)FI 102.  
#####  
STEP NO      : 24  
LABEL :  
FUNCTION : 0 (END )  
COMMENT :
```

MICON PROGRAM FILES

MICON program files are created by MICON View from the configuration file listings (above). This file is the actual program that is run by the controller card. When you request a program upload from a controller card, these are the files you'll get.

These files should not be directly modified by the user. All modifications should be through the configuration file using the configure controller option on MICON View.

The programming language is a custom language developed by MICON Company. A description of this language can be found in the *U-32/RCM Function Compiler Documentation* available from MICON Company (Houston, TX 1-713-947-9470).

You will notice that, like the configuration file, the program file is organized into loops. With the exception of two loops, these are the same ones created by the user in the controller's configuration file. The two exceptions are loop "ZERO" at the top and loop "NINETY NINE" at the bottom. These are house-keeping loops created by MICON View.

The following file listings have been edited to make them easier to read. Spaces have been put between the loops and extra long lines have been indented. Therefore, the actual file's format may look a little different.

NOTE: The DEF line under each loop name contains fields showing the tuning parameters -- for example:

CGAIN=0.50,CRESET=10.00,CRATE=0.00,M_RESET=0.00

These tuning parameters are not controlled by this document. Therefore, these numbers may be different than the ones that appear in the workstation listings. This will also be true of program files uploaded from the controllers.

mic2_r0

```
LOOP ZERO;
DEF :TAG=AI 1.,AI 11.,AI 6.,AI 8.,AI 2.,AI 10.,AI 23J 2.,AI 23A 5.,AI RM500.;
DEF :TAG=AI 3.,AI 201.,FQ 2.,PDI 202.,ARC 201.,FRC 2.,LRC 101.,TI 23J1.,TI 23A1.,TI RM500.;
DEF :ACCESS=1:TAG=IHS 102.;
DEF :TAG=IASH 201.,IASH 3.,ILSH 101.,ILSHH 101.,ILSL 101.;
DEF :TAG=PERIOD=1;
END;
```

```
LOOP AIC 201.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=14.00,SPANLO=0.00,SPANHI=14.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.50,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
AI :TAG=AI 8.:CHAN=4:SPANLO=0.00:SPANHI=14.00;
LET :TAG=ARC 201=AI 8; /*SAVE INPUT TO ARC 201 FOR HISTORIAN*/
PID :PV=AI 8:RECALL=1; /*LINEARIZE PH WITH INPUT COMPENSATION*/
AO :TAG=AO 5.:CHAN=24:STEP=MSV:OPLOLM=0.00:OPHILM=100.00:OPNRLM=1000.00:OPPRLM=1000.00;
ALARM :TAG=AIC 201.PV:TYPE=3:PRI=149778:LIMITS={?-,?-,6.00,10.00,?+,?+}:DEADBAND=0.00;
END;
```

```
LOOP AIC201I.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
MODE INTERLOCK :REF MODE=5; /*LOCK OUT MANUAL & CASCADE MODES*/
LET :TAG=MODE=1; /*PUT LOOP IN AUTO (REQUIRED FOR FNC 55)*/
LET :TAG=AI 8.*0.08; /*CONVERT 0-14 pH TO .04 TO 1.116 FOR OUTPUT*/
LET :TAG=MSV+0.04; /*NOTE: 0-20mA OUTPUT = -0.5 TO 12*/
AO :TAG=AO 9.:CHAN=23:TYPE=0:POSITION=MSV:OPLOLM=0.00:OPHILM=100.00:OPNRLM=1000.00:OPPRLM=1000.00;
END;
```

```
LOOP FIC 2.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=60.00,SPANLO=0.00,SPANHI=60.00,RATIO=0.00,
    BIAS=0.00,CGAIN=1.00,CRESET=5.00,CRATE=0.00,M_RESET=0.00;
DEF :TAG=WTF 1 4::AI 5;
LET :TAG=AI 5; /*LOAD FLOW 1 (FIC_1)*/
LABEL :TAG=FLOW1;
LET :TAG=AI 6+FLOW1; /*ADD INLET 1 AND INLET 2 FLOWS*/
LABEL :TAG=TOTFLOW;
LET :TAG=-HS 102|((FLOW1>=1)&(TOTFLOW<30)); /*INTERLOCK WHEN HS_102 IS OFF OR (FIC_1>=1 AND FIC_1+FIC_2<30)*/
LABEL :TAG=INTERLOCK;
AI :TAG=AI 6.:CHAN=3:SPANLO=0.00:SPANHI=60.00;
TOTALIZE :SIGNAL=TOTFLOW:CUTOFF=0:TIMEBASE=0:ROLLOVER=100000.00; /*TOTALIZE FLOW*/
LET :TAG=FQ 2=MSV; /*SAVE RESULT AS FQ 2*/
LET :TAG=FRC 2=AI 6; /*SAVE AI_6 AS INLET 2 FLOW FOR HISTORIAN*/
PID :PV=AI 6:RECALL=1;
AO :TAG=AO 3.:CHAN=22:STEP=MSV:OPLOLM=0.00:OPHILM=100.00:OPNRLM=1000.00:OPPRLM=1000.00:TRACK_REF=0:
    TRACK=INTERLOCK;
END;

LOOP FIC2I.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
MODE INTERLOCK :REF MODE=5; /*LOCK OUT MANUAL & CASCADE MODES*/
LET :TAG=MODE=1; /*PUT LOOP IN AUTO*/
LET :TAG =AI 6/60; /*RESCALE 0-60 TO 0-1 FOR OUTPUT*/
AO :TAG=AO 16.:CHAN=21:POSITION=MSV:OPLOLM=0.00:OPHILM=100.00:OPNRLM=1000.00:OPPRLM=1000.00;
END;
```

```
LOOP FY 101.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
LET :TAG=AI 5; /*LOAD FIC 1 FLOW*/
LABEL :TAG=FLOW1;
MODE INTERLOCK :REF MODE=5; /*LOCK OUT MANUAL & CASCADE MODES*/
LET :TAG=MODE=1; /*PUT LOOP IN AUTO*/
LET :TAG=AI 6+FLOW1; /*ADD FIC 1 & FIC 2 FLOWS*/
LET :TAG=MSV/30; /*SCALE 0-30 GPM TO 0-1 FOR OUTPUT*/
LET :TAG=IF(MSV>=1,1,MSV); /*SET MAX TO OUTPUT AT 1*/
AO :TAG=AO 6.:CHAN=20:POSITION=MSV:OPLOLM=0.00:OPHILM=100.00:OPNRLM=1000.00:OPPRLM=1000.00;
EXPORT AI 6;
END;
```

```
LOOP LIC 101.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=7.00,SPANLO=0.00,SPANHI=7.00,RATIO=0.00,
    BIAS=0.00,CGAIN=8.00,CRESET=0.50,CRATE=0.00,M_RESET=0.00;
AI :TAG=AI 1.:CHAN=1:SPANLO=0.00:SPANHI=7.00;
LET :TAG=LRC 101=AI 1; /*SAVE AI 1 AS T-101 LEVEL FOR HISTORIAN*/
PID :PV=AI 1:DIRECT=1:RECALL=1;
AO :TAG=AO 1.:CHAN=19:STEP=MSV:OPLOLM=0.00:OPHILM=100.00:OPNRLM=1000.00:OPPRLM=1000.00;
ALARM :TAG=LIC 101.PV:TYPE=3:PRI=148241:LIMITS={?-,?-,3.00,5.00,6.00,?+}:DEADBAND=0.05;
LET :TAG=LSL 101=LIC 101.PV@PV1,LSH 101=LIC 101.PV@PV2,LSHH 101=LIC 101.PV@PV8;
EXPORT LSL 101,LSH 101,LSHH 101;
END;
```



```

LOOP PDI201.;
DEF :TAG=PERIOD=0.30,SP RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M RESET=0.00;
MODE INTERLOCK :REF MODE=5; /*LOCK OUT MANUAL & CASCADE MODES*/
LET :TAG=MODE=1; /*PUT LOOP IN AUTO*/
AI :TAG=AI 2.:CHAN=5:SPANLO=0.00:SPANHI=20.00;
LET :TAG=PDI 202=AI 2; /*SAVE ANALOG INPUT AS FILTER DP*/
LET :TAG =AI 2./20; /*RESCALE 0-20 PSI TO 0-1 FOR OUTPUT*/
AO :TAG=AO 13.:CHAN=25:POSITION=MSV:OPLOLM=0.00:OPHILM=100.00:OPPRLM=1000.00:OPPRLM=1000.00;
END;

```

```

LOOP MISC M2.;
DEF :TAG=PERIOD=0.30,SP RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M RESET=0.00;
AI :TAG=AI 11.:CHAN=2:SPANLO=0.00:SPANHI=100.00;
LET :TAG=AI 201=MSV; /*SAVE AI 11 (ANALOG IN) AS AI 201*/
AI :TAG=AI 10.:CHAN=6:SPANLO=0.00:SPANHI=14.00;
LET :TAG=AI 3.=AI 10.; /*SAVE AI 10 (ANALOG IN) AS AI 3 (pH)*/
AI :TAG=AI 23J 2.:CHAN=7:SPANLO=0.00:SPANHI=100.00;
LET :TAG=TI 23J1.=AI 23J 2.; /*COMPRESSOR 1 COOLANT TEMP*/
AI :TAG=AI 23A 5.:CHAN=8:SPANLO=0.00:SPANHI=100.00;
LET :TAG=TI 23A1.=AI 23A 5.; /*VP-23A-1 COOLANT TEMP*/
AI :TAG=AI RM500.:CHAN=9:SPANLO=0.00:SPANHI=100.00;
LET :TAG=TI RM500.=AI RM500.; /*291-Z RM 500 TEMP*/
EXPORT ASH 201,ASH 3;
END;

```

```
LOOP_NINETY_NINE;
ALARM :TAG=AI_3.:REF=AI_3.:TYPE=1:PRI=149769:LIMITS={?-,?-,6.00,10.00,?+,?+}:DEADBAND=0.10;
LET :TAG=ASH_3=AI_3@XM2;
ALARM :TAG=AI_20I.:REF=AI_20I.:TYPE=1:PRI=149788:LIMITS={?-,?-,50.00,?+,?+}:DEADBAND=0.00;
LET :TAG=ASH_20I=AI_20I@XM2;
ALARM :TAG=PDI_202.:REF=PDI_202.:TYPE=1:PRI=149780:LIMITS={?-,?-,10.00,?+,?+}:DEADBAND=0.50;
ALARM :TAG=TI_23J1.:REF=TI_23J1.:TYPE=1:PRI=149772:LIMITS={?-,?-,95.00,?+,?+}:DEADBAND=1.00;
ALARM :TAG=TI_23A1.:REF=TI_23A1.:TYPE=1:PRI=149772:LIMITS={?-,?-,90.00,?+,?+}:DEADBAND=1.00;
DEF :TAG=PERIOD=1;
END;
```

mic3 r0

```

LOOP ZERO;
DEF :TAG=AI_3_.,AI_7_.,AI_5_.,AI_4_.,AI_9_.,AI_12_.,AI_15_.,AI_23J_4_.,AI_23A_10_.,AI_RM501.;
DEF
:TAG=AI_TR2_.,FQ_1_.,FY_20IH_.,LRC_102_.,PI_243_.,FIC1_OUT_.,FRC_1_.,FRC_102_.,PRC_2_.,LI_201_.,TI_23J2_.,TI_23A2_.,TI_R
M501.;
DEF :ACCESS=1:TAG=IHS_103.;
DEF :TAG=IASH_TR2_.,ILSL_102.;
DEF :TAG=PERIOD=1;
END;

LOOP FIC_1.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=60.00,SPANLO=0.00,SPANHI=60.00,RATIO=0.00,
BIAS=0.00,CGAIN=1.00,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
AI :TAG=AI_5_.:CHAN=3:SPANLO=0.00:SPANHI=60.00;
TOTALIZE :SIGNAL=AI_5_.:CUTOFF=0:TIMEBASE=0:ROLLOVER=100000.00; /*TOTALIZE FIC_1_FLOW*/
LET :TAG=FQ_1=MSV; /*SAVE RESULT AS FQ_1*/
LET :TAG=FRC_1=AI_5; /*SAVE AI_5 AS INLET 1 FLOW FOR HISTORIAN*/
PID :PV=AI_5:RECALL=1;
LET :TAG=FIC1_OUT=MSV; /*SAVE PID FIC_1 OUTPUT FOR PIC_2 EXTERNAL RESET*/
LET :TAG=IF(MSV>FY_20IH,MSV); /*OVERRIDE SIGNAL FROM PIC_2*/
AO :TAG=AO_2_.:CHAN=24:STEP=MSV:OPLOLM=0.00:OPHILM=100.00:OPNRLM=1000.00:OPPRLM=1000.00;
END;

LOOP FIC1I.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
MODE INTERLOCK :REF MODE=5; /*LOCK OUT MANUAL & CASCADE MODES*/
LET :TAG=MODE=1; /*SET LOOP IN AUTO (REQUIRED BY FNC 55)*/
LET :TAG =AI_5/60; /*SCALE 0-60 GPM TO 0-1 FOR OUTPUT*/
AO :TAG=AO_15_.:CHAN=23:POSITION=MSV:OPLOLM=0.00:OPHILM=100.00:OPNRLM=1000.00:OPPRLM=1000.00;
END;

```

```

LOOP FIC 102.;
DEF :TAG=PERIOD=0.30, SP RATE=10000.00, SPLOLM=0.00, SPHILM=60.00, SPANLO=0.00, SPANHI=60.00, RATIO=0.00,
    BIAS=0.00, CGAIN=0.50, CRESET=10.00, CRATE=0.00, M RESET=0.00;
DEF :TAG=WTF 1 3::ILSHH 101;
LET :TAG=LSHH 101; /*LOAD T-101 HIHI LEVEL ALARM SWITCH*/
LABEL :TAG=LSHH;
LET :TAG=-HS 103&LSHH; /*INTERLOCK ON T-101 HIHI LEVEL WHEN HS_103 IS OFF (NORMAL)*/
LABEL :TAG=INTERLOCK;
AI :TAG=AI 7::CHAN=2:SPANLO=0.00:SPANHI=60.00;
LET :TAG=FRC 102=AI 7; /*SAVE AI 7 AS T-201 OUTLET FLOW FOR HISTORIAN*/
PID :PV=AI 7::RECALL=1;
AO :TAG=AO 4::CHAN=21:REVERSE=1:STEP=MSV:OPLOLM=0.00:OPHILM=100.00:OPNRLM=1000.00:OPPRLM=1000.00;
    TRACK_REF=0:TRACK=INTERLOCK;
END;

LOOP FIC102I.;
DEF :TAG=PERIOD=0.30, SP RATE=10000.00, SPLOLM=0.00, SPHILM=100.00, SPANLO=0.00, SPANHI=100.00, RATIO=0.00,
    BIAS=0.00, CGAIN=0.20, CRESET=10.00, CRATE=0.00, M RESET=0.00;
MODE INTERLOCK :REF MODE=5; /*LOCK OUT MANUAL & CASCADE MODES*/
LET :TAG=MODE=1; /*PUT LOOP IN AUTO*/
LET :TAG =AI 7/60; /*SCALE 0-60 GPM TO 0-1 FOR OUTPUT*/
AO :TAG=AO 17::CHAN=20:POSITION=MSV:OPLOLM=0.00:OPHILM=100.00:OPNRLM=1000.00:OPPRLM=1000.00;
END;

```

```
LOOP FY 203.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
DEF :TAG=WTF 1 3::AI 6;
LET :TAG=AI 6; /*LOAD INLET 2 FLOW (FIC_2)*/
LABEL :TAG=FLOW2;
MODE INTERLOCK :REF MODE=5; /*LOCK OUT MANUAL & CASCADE MODES*/
LET :TAG=MODE=1; /*PUT LOOP IN AUTO*/
LET :TAG=AI 5+FLOW2; /*ADD FIC 1 AND FIC 2 FLOWS*/
LET :TAG =MSV/30; /*SCALE 0-30 GPM TO 0-1 FOR OUTPUT*/
LET :TAG=IF(MSV>=1,1,MSV); /*SET MAX TO OUTPUT AT 1*/
AO :TAG=AO 7.:CHAN=22:POSITION=MSV:OPLOLM=0.00:OPHILM=100.00:OPNRLM=1000.00:OPPRLM=1000.00;
EXPORT AI 5;
END;
```

```
LOOP LI102I.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
DEF :TAG=|+3LAL 102.;
LET :TAG=LAL 102=PULSE(LSL 102,300); /*ACTIVATE LO LEVEL ALARM FOR 5 MIN ON T-102 LO LEVEL*/
AI :TAG=AI 3.:CHAN=1:SPANLO=0.00:SPANHI=18.00;
LET :TAG=LRC 102.=AI 3.; /*SAVE INPUT AS T-102 LEVEL (LRC 102)*/
MODE INTERLOCK :REF MODE=5; /*LOCK OUT MANUAL & CASCADE MODES*/
LET :TAG=MODE=1; /*PUT LOOP IN AUTO*/
LET :TAG =AI 3 ./20; /*SCALE 0-20 FT TO 0-1 FOR OUTPUT*/
AO :TAG=AO 8.:CHAN=19:POSITION=MSV:OPLOLM=0.00:OPHILM=100.00:OPNRLM=1000.00:OPPRLM=1000.00;
END;
```

```
LOOP PIC 2.;
DEF :TAG=PERIOD=0.30,SP RATE=10000.00,SPLOLM=0.00,SPHILM=15.00,SPANLO=0.00,SPANHI=15.00,RATIO=0.00,
    BIAS=0.00,CGAIN=10.00,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
AI :TAG=AI 4.:CHAN=4:SPANLO=0.00:SPANHI=15.00;
LET :TAG=PRC 2=AI 4; /*SAVE AI 4 AS TRAIN INLET PRESSURE FOR HISTORIAN*/
PID :PV=AI 4:RECALL=1:FEEDBACK=FIC1 OUT; /*OVERRIDE CONTROL TO FIC 1*/
LET :TAG=FY 201H=MSV; /*SAVE OUTPUT AS FY 102H FOR USE AS OVERRIDE SIGNAL*/
ALARM :TAG=PI_C 2.DEV:TYPE=4:PRI=36:LIMITS={?- ,9999.99}:DEADBAND=0.00;
ALARM :TAG=PI_C 2.PV:TYPE=3:PRI=149780:LIMITS={?- ,?- ,11.00,?- ,?+}:DEADBAND=0.50;
END;

LOOP PIC21.;
DEF :TAG=PERIOD=0.30,SP RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
MODE INTERLOCK :REF MODE=5; /*LOCK OUT MANUAL & CASCADE MODES*/
LET :TAG=MODE=1; /*PUT LOOP IN AUTO*/
LET :TAG =AI 4./15; /*RESCALE 0-15 PSI TO 0-1 FOR OUTPUT*/
AO :TAG=AO_14.:CHAN=25:POSITION=MSV:OPLOLM=0.00:OPHILM=100.00:OPNRLM=1000.00:OPPRLM=1000.00;
END;
```

```
LOOP LIC 102.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=18.00,SPANLO=0.00,SPANHI=18.00,RATIO=0.00,
    BIAS=0.00,CGAIN=5.00,CRESET=0.01,CRATE=0.00,M RESET=0.00;
PID :PV=AI 3.:BALANCING=2:DIRECT=1:RECALL=1; /*T-102 LEVEL CONTROLLER*/
PID CASCADE :TAG=FIC 1.; /*CASCADE TO FIC 1*/
AI :TAG=AI 9.:CHAN=5:SPANLO=0.00:SPANHI=100.00;
LET :TAG=AI TR2.=AI 9.; /*SAVE INPUT AS OUTPUT CONDUCTIVITY (AI TR2)*/
AI :TAG=AI I2.:CHAN=6:TYPE=10:LO=0.00:HI=10.00:SPANLO=0.00:SPANHI=0.20;
LET :TAG=PI 243.=AI 12.; /*SAVE INPUT AS BUILDING DP (PI 243)*/
AI :TAG=AI I5.:CHAN=7:SPANLO=0.00:SPANHI=46.00;
LET :TAG=LI 201.=AI 15.; /*SAVE AI 15 AS KOH TANK LEVEL*/
AI :TAG=AI 23J 4.:CHAN=8:SPANLO=0.00:SPANHI=100.00;
LET :TAG=TI 23J2.=AI 23J 4.; /*23J-3002 TEMP*/
AI :TAG=AI 23A 10.:CHAN=9:SPANLO=0.00:SPANHI=100.00;
LET :TAG=TI 23A2.=AI 23A 10.; /*VP-23A-2 COOLANT TEMP*/
AI :TAG=AI RM501.:CHAN=10:SPANLO=0.00:SPANHI=100.00;
LET :TAG=TI RM501.=AI RM501.; /*291- RM 501 TEMP*/
EXPORT ASH_TR2;
END;

LOOP NINETY NINE;
ALARM :TAG=AI TR2.:REF=AI TR2.:TYPE=1:PRI=149788:LIMITS={?-,?-,?-,50.00,?+,?+}:DEADBAND=1.00;
LET :TAG=ASH TR2=AI TR2@XM2;
ALARM :TAG=LRC 102.:REF=LRC 102.:TYPE=1:PRI=148236:LIMITS={?-,?-,2.00,11.50,13.50,?+}:DEADBAND=0.20;
LET :TAG=LRL 102=LRC 102@XM1;
ALARM :TAG=LI 201.:REF=LI 201.:TYPE=1:PRI=149602:LIMITS={?-, -10.00, -10.00,?+,?+,?+}:DEADBAND=0.50;
ALARM :TAG=TI 23J2.:REF=TI 23J2.:TYPE=1:PRI=149772:LIMITS={?-,?-,?-,95.00,?+,?+}:DEADBAND=1.00;
ALARM :TAG=TI 23A2.:REF=TI 23A2.:TYPE=1:PRI=149772:LIMITS={?-,?-,?-,90.00,?+,?+}:DEADBAND=1.00;
DEF :TAG=PERIOD=1;
END;
```

mic4_r0

LOOP ZERO;

DEF :TAG=IDI 1.,IDI 20.,IDI 21.,IDI 24.,IDI 25.,IDI 30.,IDI 31.,IDI 36.,IDI 37.,IDI 5.,IDI 23A 1.,
IDI 23A 3.,IDI 23J 1.,IDI 23A 4.,IDI 23A 2.;

DEF :ACCESS=1:TAG=IHS 28.,IHS 3I.,IHS 101A.,IHS 23A 1.;

DEF :TAG=IFI TR2.,IZI 101A.,IYI 23A1.,IYI P23A1.,IVPI FAIL.,IDO 1.,IDO 2.,IDO 18.,IDO 19.,IDO 22.,
IDO 23.,IDO 28.,IDO 29.,IDO 32.,IDO 33.,IDO 23A 3.,IDO 23A 1.,IDO 23A 2.;

DEF :TAG=#ZI MOV1.,#ZI MOV3.,#ZI MOV5.,#ZI MOV7.;

DEF :TAG=PERIOD=1;

END;

LOOP MOV1.;

DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;

DI :TAG=DI 20.:CHAN=-4;

DI :TAG=DI 21.:CHAN=-5;

MULTI STATE DI :TAG=ZI MOV1.:DI1=DI 21.:DI2=DI 20.;

DO :TAG=DO 18.:CHAN=6:DAD=0;

DO :TAG=DO 19.:CHAN=7:DAD=0;

DEF :TAG=I+3ZA MOV1.;

VALVE CONTROL :SWITCH=HS 28.:OPEN=DO 18.:OPEN_TIME=30.00:CLOSE=DO 19.:CLOSE_TIME=30.00:SENSE_OPEN=DI 21.:

SENSE_CLOSE=DI 20.:ALARM=ZA MOV1.:ALARM_TIME=40.00;

END;


```
LOOP MOV3.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
DI :TAG=DI_24.:CHAN=-8;
DI :TAG=DI_25.:CHAN=-9;
MULTI STATE DI :TAG=ZI MOV3.:DI1=DI_25.:DI2=DI_24.;
DO :TAG=DO_22.:CHAN=10:DAD=0;
DO :TAG=DO_23.:CHAN=11:DAD=0;
DEF :TAG=|+3ZA MOV3.;
VALVE CONTROL :SWITCH=HS_28.:OPEN=DO_22.:OPEN_TIME=30.00:CLOSE=DO_23.:CLOSE_TIME=30.00:SENSE_OPEN=DI_25.:
    SENSE_CLOSE=DI_24.:ALARM=ZA_MOV3.:ALARM_TIME=40.00;
END;
```

```
LOOP MOV5.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
DI :TAG=DI_30.:CHAN=-12;
DI :TAG=DI_31.:CHAN=-13;
MULTI STATE DI :TAG=ZI MOV5.:DI1=DI_31.:DI2=DI_30.;
DO :TAG=DO_28.:CHAN=14:DAD=0;
DO :TAG=DO_29.:CHAN=15:DAD=0;
DEF :TAG=|+3ZA MOV5.;
VALVE CONTROL :SWITCH=HS_31.:OPEN=DO_28.:OPEN_TIME=30.00:CLOSE=DO_29.:CLOSE_TIME=30.00:SENSE_OPEN=DI_31.:
    SENSE_CLOSE=DI_30.:ALARM=ZA_MOV5.:ALARM_TIME=40.00;
END;
```

```
LOOP MOV7.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
DI :TAG=DI_36.:CHAN=-16;
DI :TAG=DI_37.:CHAN=-17;
MULTI STATE DI :TAG=ZI MOV7.:DI1=DI_37.:DI2=DI_36.;
DO :TAG=DO_32.:CHAN=18:DAD=0;
DO :TAG=DO_33.:CHAN=19:DAD=0;
DEF :TAG=|+3ZA MOV7.;
VALVE_CONTROL :SWITCH=HS 31.:OPEN=DO 32.:OPEN_TIME=30.00:CLOSE=DO_33.:CLOSE_TIME=30.00:SENSE_OPEN=DI_37.:
    SENSE_CLOSE=DI_36.:ALARM=ZA MOV7.:ALARM_TIME=40.00;
END;
```

```
LOOP P101A.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
DEF :TAG=WTF_1_3::!LSL_101,WTF_1_3::!LSH_101,WTF_2_3::!HS_101L,WTF_2_3::!HS_101,WTF_2_2::!ZI_101B,
    WTF_2_2::!HS_101B;
LET :TAG=[SL_101; /*LOAD SUMP LO LEVEL ALARM*/
LABEL :TAG=L0LVL;
LET :TAG=LSH_101; /*SUMP HI LEVEL ALARM*/
LABEL :TAG=H1LVL;
LET :TAG=HS_101L; /*SUMP LO LEVEL BYPASS*/
LABEL :TAG=BYPASS;
LET :TAG=HS_101; /*P-101A/B SELECTOR SWITCH*/
LABEL :TAG=SLCT;
LET :TAG=ZI_101B; /*PUMP 101B STATUS*/
LABEL :TAG=STATB;
LET :TAG=HS_101B; /*PUMP 101B ON/OFF SWITCH*/
LABEL :TAG=SWTB;
DEF :TAG=|+3XA 101A.;
DI :TAG=DI_1.:CHAN=1;
LET :TAG=ZI_101A=DI_1; /*SAVE DI_1 AS PUMP 101A STATUS*/
DO :TAG=DO_1.:CHAN=2:DAD=0;
```

```
DO :TAG=DO 2.:CHAN=3:DAD=0;
LET :TAG=(PULSE(-!SLCT)|(PULSE(SLCT&!STATB)&SWTB));/*PULSE ON HS_101=A OR (HS_101B & PUMP FAILED)*/
GOTO :COND=-IMSV:TAG=JUMPA;/*JUMP NEXT STEP IF NO PULSE*/
LET :TAG=HS_101A=1;/*TURN PUMP ON WHEN HS_101 "ON" INTERLOCK ACTIVE*/
LABEL :TAG=JUMPA;
LET :TAG=PULSE(SLCT);/*SEND PULSE WHEN HS_101="P-101B" (ON)*/
GOTO :COND=-IMSV:TAG=JUMPB;/*JUMP NEXT LINE WHEN NO PULSE*/
LET :TAG=HS_101A=0;/*TURN OFF PUMP WHEN HS_101 "OFF" INTERLOCK ACTIVE*/
LABEL :TAG=JUMPB;
LET :TAG=-!BYPASS&LOLVL;/*LO INTERLOCK (ONLY WHEN BYPASS IS OFF)*/
GOTO :COND=-IMSV:TAG=JMPLO;/*JUMP NEXT STEP IF NO LOW LEVEL ALARM*/
LET :TAG=HS_101A=0;/*PUMP OFF ON LO LEVEL INTERLOCK*/
LABEL :TAG=JMPLO;
LET :TAG=PULSE(HILVL&!SLCT);/*PULSE ON HI LEVEL ALARM WHEN HS_101='A'*/
GOTO :COND=-IMSV:TAG=JMPHI;/*JUMP NEXT STEP IF NO PULSE*/
LET :TAG=HS_101A=1;/*PUMP ON ON HI INTERLOCK*/
LABEL :TAG=JMPHI;
MOTOR CONTROL :SWITCH=HS_101A:START=DO 1:STOP=DO 2:START TIME=5.00:STOP TIME=1.00;
LET :TAG=HS_101A&-DI_1&-DO_1;/*ALARM WHEN MOTOR STATUS OFF AND SWITCH ON (EXCEPT WHEN PUMP 1ST TURNED ON)*/
LET :TAG=XA_101A=MSV;
EXPORT ZI_101A,HS_101A;
END;
```

```

LOOP MISC M4.;
DEF :TAG=PERIOD=0.30,SP RATE=10000.00,SPLOLM=0.00,SPHLM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
DI :TAG=DI 5.:CHAN=20;
LET :TAG=FI TR2=DI 5; /*SAVE DI_5 AS TRAIN 2 FLOW INDICATOR*/
DEF :TAG=I+3LAL 23A1.;
DI :TAG=DI 23A I.:CHAN=22;
LET :TAG=LAL 23A1.=DI 23A 1.; /*TK-23A-3001 LO LEVEL*/
DEF :TAG=I+3XA 23A1.;
DI :TAG=DI 23A 3.:CHAN=23;
LET :TAG=DI 23A 3&DELAY(HS 23A 1,10); /*ALARM ACTIVE 10 SEC AFTER PUMP SWITCH IS TURNED ON*/
LET :TAG=XA 23A1.=MSV; /*23A-1 LO FLOW & DP ALARM*/
DEF :TAG=I+2FAL 23J1.;
DI :TAG=DI 23J I.:CHAN=24;
LET :TAG=FAL 23J1.=DI 23J 1.; /*COMPRESSOR 1 LO FLOW*/
END;

```

```

LOOP VP 23A 1.;
DEF :TAG=PERIOD=0.30, SP RATE=10000.00, SPL0LM=0.00, SPHILM=100.00, SPANLO=0.00, SPANHI=100.00, RATIO=0.00,
    BIAS=0.00, CGAIN=0.20, CRESET=10.00, CRATE=0.00, M_RESET=0.00;
DEF :TAG=WTF 2 2::1VP2_FAIL,WTF 2 3::1HS_23A;
DEF :TAG=1+2XA_23VP1.;
DI :TAG=DI 23A 4.:CHAN=25;
DI :TAG=DI 23A 2.:CHAN=27;
DO :TAG=DO 23A 3.:CHAN=26:DAD=0;
DO :TAG=DO 23A 1.:CHAN=28:DAD=0;
DO :TAG=DO 23A 2.:CHAN=29:DAD=0;
LET :TAG=YI 23A1.=DI 23A 2.;/*VP-23A-1 STATUS (P-3006-23A)*/
LET :TAG=YI_P23A1.=DI 23A 4.;/*P-23A-3001 STATUS*/
LET :TAG=--1PULSE(HS_23A&VP2_FAIL);/*"0" PULSE ON HS_23A=VP2 AND FAILURE ALARM*/
GOTO :COND=MSV:TAG=JMPON;/*JUMP IF NO PULSE*/
LET :TAG=HS 23A 1.=1;/*TURN VP1 ON IF VP2 HAS FAILED*/
LABEL :TAG=JMPON;
LATCH :TAG=DO 23A 3.:LATCH=HS 23A 1.:UNLATCH=(-YI_P23A1&DELAY(HS_23A 1,5))|-HS_23A 1:RECALL=0;/*UNLATCH PUMP
    OUTPUT IF NO STATUS AFTER 5 SEC*/
LET :TAG=XA 23A1|XA 23VP1;/*FAILURE ON LO FLOW & DP ALARM OR VP1 FAIL*/
LET :TAG=VP1_FAIL.=MSV;
LET :TAG=DELAY(YI_P23A1,15)&-DI 23A 3&HS_23A 1;/*START VAC PUMP 15 SEC AFTER CIRC PUMP IF NO ALARM*/
LABEL :TAG=VPON;
MOTOR CONTROL :SWITCH=MSV:START=DO 23A 1.:STOP=DO 23A 2.:START TIME=10.00:STOP TIME=1.00;
LET :TAG=VPON&-YI 23A1&-DO 23A 1;/*ALARM ON VP STATUS OFF AND SWITCH ON (EXCEPT_STARTUP)*/
LET :TAG=XA 23VP1.=MSV;
EXPORT VP1_FAIL;
END;

LOOP NINETY NINE;
DEF :TAG=PERIOD=1;
END;

```

m1c5_r0

```

LOOP ZERO;
DEF :TAG=IDI 2.,IDI 22.,IDI 23.,IDI 26.,IDI 27.,IDI 32.,IDI 33.,IDI 38.,IDI 39.,IDI 4.,IDI 23A 6.,
    IDI 23A 8.,IDI 23J 3.,IDI 23A 9.,IDI 23A 7.;
DEF :ACCESS=I:TAG=IHS 29.,IHS 30.,IHS 101B.,IHS 23A 2.;
DEF :TAG=IFI TRI.,IZI 101B.,IVI 23A2.,IVI P23A2.,IVP2 FAIL.,IDO 3.,IDO 4.,IDO 20.,IDO 21.,IDO 24.,
    IDO 25.,IDO 30.,IDO 31.,IDO 34.,IDO 35.,IDO 23A 6.,IDO 23A 4.,IDO 23A 5.;
DEF :TAG=#ZI MOV2.,#ZI MOV4.,#ZI MOV6.,#ZI MOV8.;
DEF :TAG=PERIOD=1;
END;

LOOP MOV2.;
DEF :TAG=PERIOD=0.30,SP RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M RESET=0.00;
DI :TAG=DI 22.:CHAN=-4;
DI :TAG=DI 23.:CHAN=-5;
MULTI STATE DI :TAG=ZI MOV2.:DI1=DI 23.:DI2=DI 22.;
DO :TAG=DO 20.:CHAN=6:DAD=0;
DO :TAG=DO 21.:CHAN=7:DAD=0;
DEF :TAG=I+3ZA MOV2.;
VALVE CONTROL :SWITCH=HS 29.:OPEN=DO 20.:OPEN TIME=30.00:CLOSE=DO 21.:CLOSE TIME=30.00:SENSE_OPEN=DI 23.:
    SENSE_CLOSE=DI 22.:ALARM=ZA MOV2.:ALARM TIME=40.00;
END;

```

```
LOOP MOV4.;
DEF :TAG=PERIOD=0.30,SP RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
DI :TAG=DI_26.:CHAN=-8;
DI :TAG=DI_27.:CHAN=-9;
MULTI STATE DI :TAG=ZI MOV4.:DI1=DI_27.:DI2=DI_26.;
DO :TAG=DO_24.:CHAN=10:DAD=0;
DO :TAG=DO_25.:CHAN=11:DAD=0;
DEF :TAG=|+3ZA MOV4.;
VALVE CONTROL :SWITCH=HS 29.:OPEN=DO 24.:OPEN TIME=30.00:CLOSE=DO 25.:CLOSE TIME=30.00:SENSE_OPEN=DI_27.:
    _SENSE_CLOSE=DI_26.:ALARM=ZA MOV4.:ALARM_TIME=40.00;
END;
```

```
LOOP MOV6.;
DEF :TAG=PERIOD=0.30,SP RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
DI :TAG=DI_32.:CHAN=-12;
DI :TAG=DI_33.:CHAN=-13;
MULTI STATE DI :TAG=ZI MOV6.:DI1=DI_33.:DI2=DI_32.;
DO :TAG=DO_30.:CHAN=14:DAD=0;
DO :TAG=DO_31.:CHAN=15:DAD=0;
DEF :TAG=|+3ZA MOV6.;
VALVE CONTROL :SWITCH=HS 30.:OPEN=DO 30.:OPEN TIME=30.00:CLOSE=DO 31.:CLOSE TIME=30.00:SENSE_OPEN=DI_33.:
    _SENSE_CLOSE=DI_32.:ALARM=ZA MOV6.:ALARM_TIME=40.00;
END;
```

```

LOOP MOV8.;
DEF : TAG=PERIOD=0.30, SP RATE=10000.00, SPLOLM=0.00, SPHILM=100.00, SPANLO=0.00, SPANHI=100.00, RATIO=0.00,
    BIAS=0.00, CGAIN=0.20, CRESET=10.00, CRATE=0.00, M_RESET=0.00;
DI : TAG=DI_38.:CHAN=-16;
DI : TAG=DI_39.:CHAN=-17;
MULTI STATE DI : TAG=ZI MOV8.:DI1=DI_39.:DI2=DI_38.;
DO : TAG=DO_34.:CHAN=18:DAD=0;
DO : TAG=DO_35.:CHAN=19:DAD=0;
DEF : TAG=I+3ZA MOV8.;
VALVE CONTROL : SWITCH=HS 30.:OPEN=DO_34.:OPEN TIME=30.00:CLOSE=DO_35.:CLOSE TIME=30.00:SENSE_OPEN=DI_39.:
    SENSE_CLOSE=DI_38.:ALARM=ZA MOV8.:ALARM_TIME=40.00;
END;

LOOP P101B.;
DEF : TAG=PERIOD=0.30, SP RATE=10000.00, SPLOLM=0.00, SPHILM=100.00, SPANLO=0.00, SPANHI=100.00, RATIO=0.00,
    BIAS=0.00, CGAIN=0.20, CRESET=10.00, CRATE=0.00, M_RESET=0.00;
DEF : TAG=WTF_1_3::ILSL_101,WTF_1_3::ILSH_101,WTF_2_3::IHS_101L,WTF_2_3::IHS_101,WTF_2_1::IZI_101A,WTF_2_1::IHS_1
    01A;
LET : TAG=LSL_101; /*LOAD SUMP LO LEVEL ALARM*/
LABEL : TAG=L01VL;
LET : TAG=LSH_101; /*SUMP HI LEVEL ALARM*/
LABEL : TAG=H11VL;
LET : TAG=HS_101L; /*SUMP LO LEVEL BYPASS*/
LABEL : TAG=BYPASS;
LET : TAG=HS_101; /*P-101A/B SELECTOR SWITCH -- ON=B*/
LABEL : TAG=SLCT;
LET : TAG=ZI_101A; /*PUMP 101A STATUS*/
LABEL : TAG=STATA;
LET : TAG=HS_101A; /*PUMP 101A START/STOP SWITCH*/
LABEL : TAG=SWTA;
DEF : TAG=I+3XA 101B.;
DI : TAG=DI_2.:CHAN=1;
LET : TAG=ZI_101B.=DI_2.; /*SAVE DI_2 AS PUMP 101B STATUS*/

```



```
DO :TAG=DO_3.:CHAN=2:DAD=0;
DO :TAG=DO_4.:CHAN=3:DAD=0;
LET :TAG=(PULSE(SLCT)|(PULSE(!SLCT&!STATA)&SWTA));/*PULSE WHEN HS_101=B OR (HS_101=1 AND PUMP FAILED)*/
GOTO :COND=!MSV:TAG=JUMPA;/*JUMP NEXT STEP IF NO PULSE*/
LET :TAG=HS_101B=1;/*TURN PUMP ON WHEN HS_101 "ON" INTERLOCK ACTIVE*/
LABEL :TAG=JUMPA;
LET :TAG=PULSE(!SLCT);/*SEND PULSE WHEN HS_101="P-101A" (OFF)*/
GOTO :COND=!MSV:TAG=JUMPB;/*SKIP NEXT STEP WHEN NO PULSE*/
LET :TAG=HS_101B=0;/*TURN OFF PUMP WHEN HS_101 "OFF" INTERLOCK ACTIVE*/
LABEL :TAG=JUMPB;
LET :TAG=!BYPASS&LOLVL;/*LO INTERLOCK (ONLY WHEN BYPASS IS OFF)*/
GOTO :COND=!MSV:TAG=JMPLO;/*JUMP NEXT STEP IF NO LOW LEVEL ALARM*/
LET :TAG=HS_101B=0;/*PUMP OFF ON LO LEVEL INTERLOCK*/
LABEL :TAG=JMPLO;
LET :TAG=PULSE(HILVL&SLCT);/*PULSE ON HI LEVEL ALARM & P_101='B'*/
GOTO :COND=!MSV:TAG=JMPHI;/*JUMP NEXT STEP IF NO PULSE*/
LET :TAG=HS_101B=1;/*PUMP ON ON HI LEVEL INTERLOCK*/
LABEL :TAG=JMPHI;
MOTOR CONTROL :SWITCH=HS_101B:START=DO_3:STOP=DO_4:START TIME=5.00:STOP TIME=1.00;
LET :TAG=HS_101B&DI_2&DO_3;/*ALARM WHEN MOTOR STATUS OFF AND SWITCH ON (EXCEPT WHEN PUMP 1ST TURNED ON)*/
LET :TAG=XA_101B=MSV;
EXPORT ZI_101B,HS_101B;
END;
```

```
LOOP MISC M5.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
DI :TAG=DI 4.:CHAN=20;
LET :TAG=FI TR1=DI 4;
DEF :TAG=|+3LAL 23A2.;
DI :TAG=DI 23A 6.:CHAN=22;
LET :TAG=LAL 23A2.=DI 23A 6.;/*TK-23A-3002 LO LEVEL*/
DEF :TAG=|+3XA 23A2.;
DI :TAG=DI 23A 8.:CHAN=23;
LET :TAG=DI 23A 8&DELAY(HS 23A 2,10);/*ALARM ACTIVE 10 SEC AFTER PUMP SWITCH IS TURNED ON*/
LET :TAG=XA 23A2.=MSV;/*VP-23A-2 LO FLOW & DP ALARM*/
DEF :TAG=|+2FAL 23J2.;
DI :TAG=DI 23J 3.:CHAN=24;
LET :TAG=FAL 23J2.=DI 23J 3.;/*COMPRESSOR 2 LO COOLANT FLOW*/
END;
```

```

LOOP VP 23A 2.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
DEF :TAG=WTF 2 1::!VP1 FAIL,WTF 2 3::!HS 23A;
DEF :TAG=|+2XA_23VP2.;
DI :TAG=DI 23A 9.:CHAN=25;
DI :TAG=DI 23A 7.:CHAN=27;
DO :TAG=DO 23A 6.:CHAN=26:DAD=0;
DO :TAG=DO 23A 4.:CHAN=28:DAD=0;
DO :TAG=DO 23A 5.:CHAN=29:DAD=0;
LET :TAG=YI 23A 2.=DI 23A 7.;/*VP-23A-2 STATUS (P-3014-23A)*/
LET :TAG=YI P23A 2.=DI 23A 9.;/*P-23A-3002 STATUS*/
LET :TAG=-!PULSE(-HS 23A&VP1 FAIL);/*"0" PULSE ON HS_23A=VP1 AND FAILURE ALARM*/
GOTO :COND=MSV:TAG=JMPON;/*JUMP IF NO PULSE*/
LET :TAG=HS 23A 2.=1;/*TURN VP2 ON IF VP1 HAS FAILED*/
LABEL :TAG=JMPON;
LATCH :TAG=DO 23A 6.:LATCH=HS 23A 2.:UNLATCH=(-YI P23A 2&DELAY(HS_23A 2,5))!-HS_23A 2:RECALL=0;/*UNLATCH
PUMP OUTPUT IF NO STATUS AFTER 5 SEC*/
LET :TAG=XA 23A 2|XA 23VP2;/*FAILURE ON LO FLOW & DP OR VP2 FAIL*/
LET :TAG=VP2 FAIL.=MSV;
LET :TAG=DELAY(YI P23A 2,15)&-DI 23A 8&HS_23A 2;/*START VAC PUMP 15 SEC AFTER CIRC PUMP IF NO ALARM*/
LABEL :TAG=VPON;
MOTOR CONTROL :SWITCH=MSV:START=DO 23A 4.:STOP=DO 23A 5.:START TIME=10.00:STOP TIME=1.00;
LET :TAG=VPON&-YI 23A 2&-DO 23A 4;/*ALARM ON VP STATUS OFF AND SWITCH ON (EXCEPT STARTUP)*/
LET :TAG=XA 23VP2.=MSV;
EXPORT VP2_FAIL;
END;

LOOP NINETY NINE;
DEF :TAG=PERIOD=1;
END;

```

mic6_r0

LOOP ZERO;

DEF :TAG=IDI 3.,IDI 28.,IDI 40.,IDI 41.,IDI 6.,IDI 11.,IDI 12.,ILDI_84A.,ILDI_84B.;

DEF :ACCESS=I:TAG=IHS 32.,IHS 101.,THS 101L.,IHS 201.,IHS 23A.;

DEF :TAG=IFI 4.,IYI_T201.,IZI_1.,IZI_2.,IDO 5.,IDO 9.,IDO 7.,IDO 8.,IDO 36.,IDO 37.,IDO 6.;

DEF :TAG=#ZI MOV9.;

DEF :TAG=PERIOD=1;

END;

LOOP MOV9.;

DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;

DI :TAG=DI 40.:CHAN=9;

DI :TAG=DI 41.:CHAN=10;

MULTI STATE DI :TAG=ZI MOV9.:DI1=DI 40:DI2=DI 41;

DO :TAG=DO 36.:CHAN=11:DAD=0;

DO :TAG=DO 37.:CHAN=12:DAD=0;

DEF :TAG=I+3ZA MOV9.;

VALVE_CONTROL :SWITCH=HS 32.:OPEN=DO 36.:OPEN_TIME=30.00:CLOSE=DO 37.:CLOSE_TIME=30.00:SENSE_OPEN=DI 40.:
SENSE_CLOSE=DI 41.:ALARM=ZA MOV9.:ALARM_TIME=40.00;

END;

```
LOOP P MET.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
DI :TAG=DI_28.:CHAN=5;
LET :TAG=YI_T201=DI_28; /*SAVE DI_28 AS KOH PUMP STATUS*/
DO :TAG=DO_9.:CHAN=6:DAD=0;
DEF :TAG=|+XA_201.;
LET :TAG=DO_9=PULSE(HS_201,05); /*MOTOR CONTROL -- START ON FOR 5 SEC (NO STOP)*/
LET :TAG=HS_201&-DI_28&-DO_9; /*ALARM WHEN MOTOR STATUS OFF AND SWITCH ON (EXCEPT WHEN PUMP 1ST TURNED ON)*/
LET :TAG=XA_201=MSV;
END;
```

```

LOOP MISC M6.;
DEF :TAG=PERIOD=0.30,SP RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M RESET=0.00;
DEF :TAG=WTF 1 3::ILSH 101,WTF 1 3::IASH 201,WTF 1 3::IASH 3,WTF 1 4::IASH TR2;
LET :TAG=LSH 101; /*LOAD SUMP HI LEVEL ALARM*/
LABEL :TAG=HILVL;
LET :TAG=ASH 201; /*LOAD INPUT CONDUCTIVITY HI ALARM*/
LABEL :TAG=HICDIN;
LET :TAG=ASH 3; /*LOAD HI OUTPUT PH ALARM*/
LABEL :TAG=HIPHO;
LET :TAG=ASH TR2; /*LOAD OUTPUT HI CONDUCTIVITY ALARM*/
LABEL :TAG=HICDO;
DEF :TAG=FI 102.;
DI :TAG=DI 3::CHAN=1;
DI :TAG=DI 6::CHAN=-13;
DI :TAG=DI 11::CHAN=14;
DI :TAG=DI 12::CHAN=15;
DI :TAG=LDI 84A::CHAN=17:ALARM=1:PRI=2;
DI :TAG=LDI 84B::CHAN=18;
DO :TAG=DO 5::CHAN=2:DAD=0;
DO :TAG=DO 7::CHAN=7:DAD=0;
DO :TAG=DO 8::CHAN=8:DAD=0;
DO :TAG=DO 6::CHAN=16:DAD=0;
LET :TAG=DO 6=HILVL; /*OUTPUT T-101 HI LEVEL ALARM TO LIGHT*/
LET :TAG=DO 5=HICDIN; /*OUTPUT HI INPUT COND ALARM TO LIGHT*/
LET :TAG=DO 8=HIPHO; /*OUTPUT HI OUTPUT PH ALARM TO LIGHT*/
LET :TAG=DO 7=HICDO; /*OUTPUT HI OUTPUT COND ALARM TO LIGHT*/
LET :TAG=FI 4=DI 6; /*SAVE DI 6 AS 253-Z EXHAUST FLOW INDICATOR*/
LET :TAG=ZI 1=DI 11; /*SAVE DI 11 AS EXHAUST FAN INDICATOR*/
LET :TAG=ZI 2=DI 12; /*SAVE DI 12 AS SUPPLY FAN INDICATOR*/
LET :TAG=FI 102=DI 3; /*SAVE DI 3 AS T-102 INLET FLOW INDICATION*/
EXPORT HS 101,HS 10IL,HS 23A;
END;

```

WHC-SD-CP-CSMD-016
Volume 2
Revision 1
Page 145

```
LOOP  NINETY NINE;  
DEF  :TAG=PERIOD=1;  
END;
```

APPENDIX A: MICON INPUT/OUTPUT

Analog inputs and discrete Input/Outputs can be set up in different ways. Analog inputs can be set to accept one of three types of signals: a 4-20 milliamp input with the MICON powering the loop, a 4-20 milliamp input with an external power supply, or a voltage input. Twentyfour volt discrete input/outputs can be set up as an input only, an output only, or as both an input and output. Since the hardware requirements are different for each of these setups, the controller cards have on-board jumpers for each analog input or discrete. These jumpers must be set to the desired type of analog input or discrete for the card to work properly.

Analog outputs are 4-20 milliamp internally powered only. Since they can't be changed they don't have any jumpers.

Before replacing an existing card with a new one or installing a backup card, you must make sure the jumpers in the new card are set the same as the jumpers in the old card.

The following tables show the Input/Output types for each controller card in the 243-Z cabinet. See the *RCM-32 Remote Control Module User Manual* (Vendor Information file 22068) for a description of the I/O jumper placement.

MICON Number: 2 Tag Name:WTF_1_3

Type: RCM-32C

Location: 243-Z Rack Number: 1

Slot Number: 3

<u>Point</u>	<u>Tag</u>	<u>I/O Type</u>	<u>Jumper Assignment</u> ¹
1	AI_1	Analog Input	4-20 mA - External Power
2	AI_11	Analog Input	4-20 mA - External Power
3	AI_6	Analog Input	4-20 mA - External Power
4	AI_8	Analog Input	4-20 mA - External Power
5	AI_2	Analog Input	4-20 mA - MICON Powered
6	AI_10	Analog Input	4-20 mA - External Power
7	AI_23J_2	Analog Input	4-20 mA - External Power
8	AI_23A_5	Analog Input	4-20 mA - External Power
9	AI_RM500	Analog Input	4-20 mA - External Power
10	Not Used	Analog Input	Voltage
11	Not Used	Analog Input	Voltage
12	Not Used	Analog Input	Voltage
13	Not Used	Analog Input	Voltage
14	Not Used	Analog Input	Voltage
15	Not Used	Analog Input	Voltage
16	Not Used	Analog Input	Voltage
17	Not Used	Analog Input	Voltage
18	Not Used	Analog Input	Voltage
19	AO_1	Analog Output	N/A
20	AO_6	Analog Output	N/A
21	AO_16	Analog Output	N/A
22	AO_3	Analog Output	N/A
23	AO_9	Analog Output	N/A
24	AO_5	Analog Output	N/A
25	AO_13	Analog Output	N/A
26	Not Used	Analog Output	N/A
27	Not Used	Analog Output	N/A
28	Not Used	Analog Output	N/A
29	Not Used	Analog Output	N/A
30	Not Used	Analog Output	N/A
31	Not Used	Discrete	Input & Output
32	Not Used	Discrete	Input & Output

¹See RCM-32 Remote Control Module User Manual for description of I/O jumper placement.

MICON Number: 3 Tag Name:WTF_1_4 Type: RCM-32C
Location: 243-Z Rack Number: 1 Slot Number: 4

<u>Point</u>	<u>Tag</u>	<u>I/O Type</u>	<u>Jumper Assignment</u> ¹
1	AI_3	Analog Input	4-20 mA - External Power
2	AI_7	Analog Input	4-20 mA - External Power
3	AI_5	Analog Input	4-20 mA - External Power
4	AI_4	Analog Input	4-20 mA - MICON Powered
5	AI_9	Analog Input	4-20 mA - External Power
6	AI_12	Analog Input	Voltage
7	AI_15	Analog Input	4-20 mA - External Power
8	AI_23J_4	Analog Input	4-20 mA - External Power
9	AI_23A_10	Analog Input	4-20 mA - External Power
10	AI_RM501	Analog Input	4-20 mA - External Power
11	Not Used	Analog Input	Voltage
12	Not Used	Analog Input	Voltage
13	Not Used	Analog Input	Voltage
14	Not Used	Analog Input	Voltage
15	Not Used	Analog Input	Voltage
16	Not Used	Analog Input	Voltage
17	Not Used	Analog Input	Voltage
18	Not Used	Analog Input	Voltage
19	AO_8	Analog Output	N/A
20	AO_17	Analog Output	N/A
21	AO_4	Analog Output	N/A
22	AO_7	Analog Output	N/A
23	AO_15	Analog Output	N/A
24	AO_2	Analog Output	N/A
25	AO_14	Analog Output	N/A
26	Not Used	Analog Output	N/A
27	Not Used	Analog Output	N/A
28	Not Used	Analog Output	N/A
29	Not Used	Analog Output	N/A
30	Not Used	Analog Output	N/A
31	Not Used	Discrete	Input & Output
32	Not Used	Discrete	Input & Output

¹See RCM-32 Remote Control Module User Manual for description of I/O jumper placement.

MICON Number: 4 Tag Name:WTF_2_1 Type: RCM-32Dr

Location: 243-Z Rack Number: 2 Slot Number: 1

<u>Point</u>	<u>Tag</u>	<u>I/O Type</u>	<u>Jumper Assignment</u> ¹
1	DI_1	Discrete Input	N/A
2	DO_1	Discrete Output	N/A
3	DO_2	Discrete Output	N/A
4	DI_20	Discrete Input	N/A
5	DI_21	Discrete Input	N/A
6	DO_18	Discrete Output	N/A
7	DO_19	Discrete Output	N/A
8	DI_24	Discrete Input	N/A
9	DI_25	Discrete Input	N/A
10	DO_22	Discrete Output	N/A
11	DO_23	Discrete Output	N/A
12	DI_30	Discrete Input	N/A
13	DI_31	Discrete Input	N/A
14	DO_28	Discrete Output	N/A
15	DO_29	Discrete Output	N/A
16	DI_36	Discrete Input	N/A
17	DI_37	Discrete Input	N/A
18	DO_32	Discrete Output	N/A
19	DO_33	Discrete Output	N/A
20	DI_5	Discrete Input	N/A
21	Not Used	Discrete	N/A
22	DI_23A_1	Discrete Input	N/A
23	DI_23A_3	Discrete Input	N/A
24	DI_23J_1	Discrete Input	N/A
25	DI_23A_4	Discrete Input	N/A
26	DO_23A_3	Discrete Output	N/A
27	DI_23A_2	Discrete Input	N/A
28	DO_23A_1	Discrete Output	N/A
29	DO_23A_2	Discrete Output	N/A
30	Not Used	Discrete	N/A
31	Not Used	Discrete	N/A
32	Not Used	Discrete	N/A

¹See RCM-32 Remote Control Module User Manual for description of I/O jumper placement.

MICON Number: 5 Tag Name:WTF_2_2 Type: RCM-32Dr
Location: 243-Z Rack Number: 2 Slot Number: 2

<u>Point</u>	<u>Tag</u>	<u>I/O Type</u>	<u>Jumper Assignment</u> ¹
1	DI_2	Discrete Input	N/A
2	DO_3	Discrete Output	N/A
3	DO_4	Discrete Output	N/A
4	DI_22	Discrete Input	N/A
5	DI_23	Discrete Input	N/A
6	DO_20	Discrete Output	N/A
7	DO_21	Discrete Output	N/A
8	DI_26	Discrete Input	N/A
9	DI_27	Discrete Input	N/A
10	DO_24	Discrete Output	N/A
11	DO_25	Discrete Output	N/A
12	DI_32	Discrete Input	N/A
13	DI_33	Discrete Input	N/A
14	DO_30	Discrete Output	N/A
15	DO_31	Discrete Output	N/A
16	DI_38	Discrete Input	N/A
17	DI_39	Discrete Input	N/A
18	DO_34	Discrete Output	N/A
19	DO_35	Discrete Output	N/A
20	DI_4	Discrete Input	N/A
21	Not Used	Discrete	N/A
22	DI_23A_6	Discrete	N/A
23	DI_23A_8	Discrete	N/A
24	DI_23J_3	Discrete Input	N/A
25	DI_23A_9	Discrete Input	N/A
26	DO_23A_6	Discrete Output	N/A
27	DI_23A_7	Discrete Input	N/A
28	DO_23A_4	Discrete Output	N/A
29	DO_23A_5	Discrete Output	N/A
30	Not Used	Discrete	N/A
31	Not Used	Discrete	N/A
32	Not Used	Discrete	N/A

¹See RCM-32 Remote Control Module User Manual for description of I/O jumper placement.

MICON Number: 6 Tag Name:WTF_2_3 Type: RCM-32Dr

Location: 243-Z Rack Number: 2 Slot Number: 3

<u>Point</u>	<u>Tag</u>	<u>I/O Type</u>	<u>Jumper Assignment</u> ¹
1	DI_3	Discrete Input	N/A
2	DO_5	Discrete Output	N/A
3	Not Used	Discrete	N/A
4	Not Used	Discrete	N/A
5	DI_28	Discrete Input	N/A
6	DO_9	Discrete Output	N/A
7	DO_7	Discrete Output	N/A
8	DO_8	Discrete Output	N/A
9	DI_40	Discrete Input	N/A
10	DI_41	Discrete Input	N/A
11	DO_36	Discrete Output	N/A
12	DO_37	Discrete Output	N/A
13	DI_6	Discrete Input	N/A
14	DI_11	Discrete Input	N/A
15	DI_12	Discrete Input	N/A
16	DO_6	Discrete Output	N/A
17	LDE_84A	Discrete Input	N/A
18	LDE_84B	Discrete Input	N/A
19	Not Used	Discrete	N/A
20	Not Used	Discrete	N/A
21	Not Used	Discrete	N/A
22	Not Used	Discrete	N/A
23	Not Used	Discrete	N/A
24	Not Used	Discrete	N/A
25	Not Used	Discrete	N/A
26	Not Used	Discrete	N/A
27	Not Used	Discrete	N/A
28	Not Used	Discrete	N/A
29	Not Used	Discrete	N/A
30	Not Used	Discrete	N/A
31	Not Used	Discrete	N/A
32	Not Used	Discrete	N/A

¹See RCM-32 Remote Control Module User Manual for description of I/O jumper placement.

TABLE OF CONTENTS

INTRODUCTION	2
MICON CONFIGURATION FILES	6
RM45_1_3.mic8_r0	8
RM45_1_4.mic9_r0	17
RM45_2_1.mic11_r0	31
RM45_2_1.mic12_r0	57
MICON PROGRAM FILES	80
mic8_r0	81
mic9_r0	83
mic11_r0	86
mic12_r0	92
APPENDIX A: MICON INPUT/OUTPUT	99
MICON Number: 8	100
MICON Number: 9	101
MICON Number: 11	102
MICON Number: 12	103

INTRODUCTION

The MICON¹ A/S distributed control system consists of four consoles or workstations (2 operator, 1 supervisor, and 1 engineer), a data highway, and eight process controller cabinets.

Each console is based on a Sun Microsystem's SPARC 20 workstation. The SPARC 20 workstation is based on a Scalable Process Architecture (SPARC) micro-processor. Each workstation contains 64 megabytes of memory, a one gigabyte hard drive, a 150 megabyte tape drive, a keyboard, and a trackball. Select SARC stations also contain an additional one gigabyte hard drive, a CD-ROM drive, and a 5 gigabyte tape drive. In addition, each SPARC 20

¹For a list of Trademarks, see Volume 1, APPENDIX C

provides two video outputs, two RS-232 serial ports, and two ethernet ports (a thick-net and a thin-net). The video ports are connected to two high resolution color monitors. The RS-232 ports are connected to two Emerald model FPXT single board IBM XT compatible computers with touchscreen. One of the FPXTs is designated as an annunciator panel and is unused. The other is used as a Universal Operator Keyboard (UOK). One of the two ethernet ports -- the thin-net -- is connected to the data highway via a MICON Company General Purpose LAN Interface (GPLI). The thicknet provides a Local Area Network (LAN) between the four consoles. It also connects each SPARC 20 with a Rockwell/CMC TranServer. The TranServer provides eight additional RS-232 serial ports for each workstation. One of these serial ports is connected to an Output Technology Corporation 800 series text printer. Another port is connected to a Hewlett-Packard PaintJet color graphics printer.

The Data Highway is the main data link between the consoles and the process control cabinets. It consists of two redundant coax cables that run between all four consoles and six cabinets. The Data Highway is a local area network using a high speed token ring passing protocol. The Data Highway is also redundant. This means that if one of the two cables fail, communication is automatically passed to the other.

The process control cabinets consist of two redundant main controllers, called U-32s, and several process controllers called RCM-32s. The U-32s and RCM-32s communicate via a small local area network called a Field Bus. The U-32 is a MICON built controller based on the Motorola 68020 processor. Although it can be used to directly control instruments and devices in the field, its primary purpose is to pass information between the consoles and the RCM-32s. Each U-32 has a redundant backup. That way if one fails, the other can automatically take over. The RCM-32s are also built by MICON and are based on a Motorola 68030 processor. These controllers provide input and output directly to field instruments and other devices.

There are four types of RCM-32s used in this system: A, C, D, and Dr. The A and C cards are used primarily for analog signals. They provide hardware for any standard analog instrument input (4-20 mA, 10-50 mA, and DC voltages) and provide a standard 4-20 mA output signal. In addition, they provide two 28 Volt DC discrete (on/off) channels. These may be used for input, output, or both. An A card provides 26 analog inputs and 4 analog outputs. Each C card provides 18 analog inputs and 12 analog outputs. The D card is used only for discrete control. It provides 32 on/off type channels that can be used as inputs, outputs, or both. Both inputs and outputs are 28 volt DC. The Dr cards are similar to the D cards except inputs are 120 volt AC or DC and the outputs are 3 amp (120 VAC) dry contact relays.

Since MICON A/S systems are installed by engineers rather than computer programmers, they are designed to minimize the need for programming. All of the software needed to monitor and control a process is already programmed into the system by MICON Company. The engineer need only "configure" the system to a specific application.

The process is very similar to the method used to install an older analog instrument system. First, a set of Pipe and instrument Diagrams (P&ID) are created. These drawings show a schematic of the chemical process and the instrumentation to be installed to control it. With an analog system, the engineer would purchase the necessary individual components and wire them together to create the control strategy. With the MICON A/S system, the engineer would call function blocks to invoke preprogrammed modules and create the control strategy. The only difference between the two is that one uses hardware devices wired together, and the other uses software modules connected via a data base.

The MICON configuration is done in two parts. First the RCM-32 and, if needed the U-32 controllers are configured. Next, the workstation displays are created.

The RCM-32 and U-32 configuration consists of both the controller "program" and all display information for each "tag". Tags consists of all inputs and outputs from the controller, PID control loops, and any other displayed value. This information is requested by the MICON View software as the engineer creates the controller configuration.

Since all the display information (colors, ranges, etc.) was input during the controller configuration, the workstation configuration consists only of display creation. These are created by calling up a form and filling in the blanks. The only exception to this are the custom created graphics displays. Graphics are created by drawing a picture of the process and overlaying this with tag information. This is done with a special drawing program supplied with MICON View.

To keep size manageable, this document has been divided into several volumes. Volume 1 contains the display configuration for the four workstations. The other volumes each contain the configuration for one process Controller cabinet.

This volume (number 3) contains the configuration files for the cabinet located in 236-Z Room 45. This cabinet consists of six controllers:

1. U-32 (with backup)	Controller Number: 7	Tagname: RM45 MAIN
2. RCM-32 A	Controller Number: 8	Tagname: RM45_1_3
3. RCM-32 A	Controller Number: 9	Tagname: RM45_1_4
4. RCM-32 A	Controller Number: 10	Tagname: RM45_1_5
5. RCM-32 Dr	Controller Number: 11	Tagname: RM45_2_1
6. RCM-32 Dr	Controller Number: 12	Tagname: RM45_2_2
7. RCM-32 Dr	Controller Number: 13	Tagname: RM45_2_3
8. RCM-32 Dr	Controller Number: 14	Tagname: RM45_2_4

RM45 MAIN is being used for communications only and does not contain a configuration. In addition, controllers RM45 1 5, RM45 2 3, and RM45 2 4 are not used and, therefore, do not contain a configuration. Only configurations for the other four controllers are shown.

MICON CONFIGURATION FILES

The MICON configuration file is a text file that the MICON View software creates as the user configures or "programs" each MICON controller. A MICON controller is configured by selecting preprogrammed functions and filling in the required information. As this is done, MICON View places this information into the configuration file. This file contains both display and program information. For a detailed description see *U-32 and RCM-32 Controller/RTU Function Description* published by MICON Company (Vendor Information file - 22068).

This file is named by MICON View based on input from the user. The file name's format is TAG.file where TAG is the controllers tag name and file is the program file name. The first eight lines of the file are the information on the controller itself. These lines are:

- MICON TYPE - The type of MICON being programmed (A, C, or D). In this case, D and Dr cards are considered the same.
- MICON UNIT NO - The controller card's number (user assigned).
- MICON TAG - The controller card's tag name (user assigned). For consistency, we have assigned tags in the following format:

CABINET_RACK_SLOT

CABINET is the MICON controller cabinet location. RACK is the rack number (1 to 3). Rack 1 is at the top of the cabinet. SLOT is the slot number (1 to 6). Slot 1 is at the far left of the rack. Therefore, a controller tagged WTF_1_3 is the card in rack 1 slot 3 of the cabinet located in the Low Level Waste Treatment Facility (243-Z).

- MICON DESCRIPTION - A brief description of the controller card
- MICON CONFIGURATION FILE - The name of the file that contains the controller card's program (user assigned).

POINT ALLOCATION - The memory allocation for the controller. Memory allocation is based on the types of inputs and outputs (I/O) and the number of storage locations desired. The types of I/O and storage locations are:

- VAI - Virtual Analog (User assigned). An analog value storage location.
- VDI - Virtual Discrete (User assigned). A Discrete (on/off) storage location with alarm capability.
- ISW - Internal Switch (User assigned). A Discrete storage location without alarm capability.
- LOOPS - Loops (User Assigned). Loops are used to hold a series of program steps. If one of those steps is a PID controller function, The loop tag name becomes the controller tag name.
- MSD - Multi-State Discrete (User assigned). This is a special sixteen position indicator.
- AI - Analog Inputs (Assigned based on card type used).
- AO - Analog Outputs (Assigned based on card type used).
- DI - Discrete Inputs (Assigned based on card type used).
- DO - Discrete Outputs (Assigned based on card type used).

The remaining information is the actual controller configuration. Right at first, you will notice several blocks of information titled VIRTUAL ANALOG and DISCRETE TAG. These blocks are the configuration information for the virtual analog and internal switch type storage locations. These must always be configured first. After that are the controller loops. Each loop starts with a block of information titled LOOP NO followed by several steps. The last step is always a function 0 (END). Everything except virtual analogs and internal switches are configured inside of a loop.

Loops are a way of organizing the controller configuration. Although most controllers could be programmed using only one loop, using several loops makes the program more understandable. Loops are generally invisible to the operator. The exception to this rule is when a PID function (function 20) is used in the loop. When this happens, the loop name becomes the controller name. Otherwise, the loop name is used as an internal reference only

NOTE: Each loop using a PID function has two lines showing the tuning parameters -- for example:

TUNING PARAMETER :

P(GAIN) : 1.00, I(REP/MIN) : 5.00, D(RATE) : 0.00, MANUAL RESET : 0.00

These tuning parameters are not controlled by this document. Therefore, these numbers may be different than the ones that appear in the workstation listings.

RM45_1_3.mic8_r0

MICON TYPE :RCM-A
MICON UNIT NO : 8
MICON TAG : RM45_1_3
MICON DESCRIPTION : ROOM 45 RACK 1 SLOT 3
MICON CONFIGURATION FILE : mic8_r0
POINT ALLOCATION :
VAI : 32, VDI : 32, ISW : 32, LOOPS : 6, MSD : 1,
AI : 26, AO : 4, DI : 2, DO : 2
=====

VIRTUAL ANALOG : CIR_PCW5
INPUT # : 1
INPUT DESC : VP1 LOOP
INPUT UNIT : uS/cm
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 1000.00 BAR LO : 0.00 BAR HI : 1000.00

XMTR ALARM :
XMTR ALARM Hi 99999.99 PRIORITY EVENT
XMTR ALARM Lo -9999.99 PRIORITY EVENT
XMTR ALARM HI HI 99999.99 PRIORITY EVENT
XMTR ALARM LO LO -9999.99 PRIORITY EVENT
XMTR ALARM MAX 99999.99 PRIORITY EVENT
XMTR ALARM MIN -9999.99 PRIORITY EVENT
XMTR ALARM DESC :VAC PUMP 1 LOOP HI CONDUCTIVITY
XMTR ALARM DEADBAND : 10.00
XMTR ALARM GROUP :0
XMTR ALARM MGMT :0
XMTR ALARM COMMAND DISCR :
XMTR ALARM INDEX :0

```
=====
VIRTUAL ANALOG : FIR_PCW5
INPUT # : 2
INPUT DESC      : VP1 LOOP
INPUT UNIT      : GPM
INPUT SYNC SCAN : 1 SEC  HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 15.00 BAR LO : 0.00 BAR HI : 15.00
ACTUATE XMTR ALARM DISCRETES :
XMTR Hi AL DISCRETE :
XMTR Lo AL DISCRETE : FSL_PCW5
XMTR HI HI AL DISCRETE :
XMTR LO LO AL DISCRETE :
XMTR MAX AL DISCRETE :
XMTR MIN AL DISCRETE :
XMTR ALARM :
XMTR ALARM Hi 99999.99 PRIORITY EVENT
XMTR ALARM Lo 9.60 PRIORITY ATTENTION
XMTR ALARM HI HI 99999.99 PRIORITY EVENT
XMTR ALARM LO LO -9999.99 PRIORITY EVENT
XMTR ALARM MAX 99999.99 PRIORITY EVENT
XMTR ALARM MIN -9999.99 PRIORITY EVENT
XMTR ALARM DESC :VAC PUMP 1 LOOP LOW FLOW
XMTR ALARM DEADBAND : 0.10
XMTR ALARM GROUP :0
XMTR ALARM MGMT :0
XMTR ALARM COMMAND DISCR :
XMTR ALARM INDEX :0
```

```

=====
VIRTUAL ANALOG : FIR_SCW1
INPUT # : 3
INPUT DESC      : FC-1 OUTLET
INPUT UNIT      : GPM
INPUT SYNC SCAN : 1 SEC  HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 100.00 BAR LO : 0.00 BAR HI : 100.00
XMTR ALARM :
XMTR ALARM Hi 99999.99 PRIORITY EVENT
XMTR ALARM Lo 25.00 PRIORITY ATTENTION
XMTR ALARM HI HI 99999.99 PRIORITY EVENT
XMTR ALARM LO LO 15.00 PRIORITY ATTENTION
XMTR ALARM MAX 99999.99 PRIORITY EVENT
XMTR ALARM MIN -9999.99 PRIORITY EVENT
XMTR ALARM DESC :SEC. LOOP 1 LOW FLOW
XMTR ALARM DEADBAND : 1.00
XMTR ALARM GROUP :0
XMTR ALARM MGMT :0
XMTR ALARM COMMAND DISCR :
XMTR ALARM INDEX :0
ACTUATE XMTR ALARM DISCRETES :
XMTR Hi AL DISCRETE :
XMTR Lo AL DISCRETE :
XMTR HI HI AL DISCRETE :
XMTR LO LO AL DISCRETE : FSL_SCW1
XMTR MAX AL DISCRETE :
XMTR MIN AL DISCRETE :
=====

```

```

=====
VIRTUAL ANALOG : PIR_PCW5
INPUT # : 4
INPUT DESC      : VP1 LOOP
INPUT UNIT      : PSI
INPUT SYNC SCAN : 1 SEC  HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 20.00 BAR LO : 0.00 BAR HI : 20.00
XMTR ALARM :
XMTR ALARM Hi 99999.99 PRIORITY EVENT
XMTR ALARM Lo 2.00 PRIORITY ATTENTION
XMTR ALARM HI HI 99999.99 PRIORITY EVENT
XMTR ALARM LO LO -9999.99 PRIORITY EVENT
XMTR ALARM MAX 99999.99 PRIORITY EVENT
XMTR ALARM MIN -9999.99 PRIORITY EVENT
XMTR ALARM DESC :VAC PUMP 1 LOOP LOW PRESSURE
XMTR ALARM DEADBAND : 0.20
XMTR ALARM GROUP :0
XMTR ALARM MGMT :0
XMTR ALARM COMMAND DISCR :
XMTR ALARM INDEX :0
=====

```

=====

VIRTUAL ANALOG : TIR_PCW5

INPUT # : 5

INPUT DESC : VP1 LOOP

INPUT UNIT : DEG F

INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC

INPUT HIST. DEFINITION : 1

INPUT PLOT LO : 0.00 PLOT HI : 100.00 BAR LO : 0.00 BAR HI : 100.00

XMTR ALARM :

XMTR ALARM Hi 90.00 PRIORITY CAUTION

XMTR ALARM Lo -9999.99 PRIORITY EVENT

XMTR ALARM HI HI 99999.99 PRIORITY EVENT

XMTR ALARM LO LO -9999.99 PRIORITY EVENT

XMTR ALARM MAX 99999.99 PRIORITY EVENT

XMTR ALARM MIN -9999.99 PRIORITY EVENT

XMTR ALARM DESC : VAC PUMP 1 LOOP HI TEMP.

XMTR ALARM DEADBAND : 1.00

XMTR ALARM GROUP : 0

XMTR ALARM MGMT : 0

XMTR ALARM COMMAND DISCR :

XMTR ALARM INDEX : 0

=====

VIRTUAL ANALOG : TIR_SCW1

INPUT # : 6

INPUT DESC : FC-1 IN LET

INPUT UNIT : DEG F

INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC

INPUT HIST. DEFINITION : 1

INPUT PLOT LO : 0.00 PLOT HI : 100.00 BAR LO : 0.00 BAR HI : 100.00


```
=====
VIRTUAL ANALOG : TIRSCW1A
INPUT # : 7
INPUT DESC      : FC-1 OUTLET
INPUT UNIT      : DEG F
INPUT SYNC SCAN : 1 SEC  HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 100.00 BAR LO : 0.00 BAR HI : 100.00
XMTR ALARM :
XMTR ALARM Hi 76.00 PRIORITY CAUTION
XMTR ALARM Lo 40.00 PRIORITY CAUTION
XMTR ALARM HI HI 99999.99 PRIORITY EVENT
XMTR ALARM LO LO -9999.99 PRIORITY EVENT
XMTR ALARM MAX 99999.99 PRIORITY EVENT
XMTR ALARM MIN -9999.99 PRIORITY EVENT
XMTR ALARM DESC :COOLER 1 OUTLET TEMP HI/LO
XMTR ALARM DEADBAND : 1.00
XMTR ALARM GROUP :0
XMTR ALARM MGMT :0
XMTR ALARM COMMAND DISCR :
XMTR ALARM INDEX :0
=====
```

```
DISCRETE TAG      : FSL PCW5
DISCRETE (Internal Switch) # : 1
DISCRETE DESC      : VP1 LOOP LOW FLOW
DISCRETE SYNC SCAN : 0 SEC  HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :LO FLOW COLOR : YELLOW
=====
```

```
DISCRETE TAG      : FSL SCW1
DISCRETE (Internal Switch) # : 2
DISCRETE DESC      : SCW1 FLOW
DISCRETE SYNC SCAN : 0 SEC  HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :LO FLOW COLOR : YELLOW
=====
```

```
LOOP NO      : 1
LOOP TAG      : MISC_M8
LOOP DESCRIPTION : MISC I/O
LOOP SCAN     : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
EXPORT :FSL_PCW5,FSL_SCW1
```

#####

STEP NO : 1
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_SCW1A
INPUT # : 1
INPUT DESC : FC-1 OUTLET TEMP
INPUT UNIT : DEG F
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 100.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 100.00
DIGITAL FILTER : 0

#####

STEP NO : 2
LABEL :
FUNCTION : 10 (L)
COMMENT :SAVE AI_SCW1A AS FC-1 OUTLET TEMP
PARAMETERS :
1)TIRSCW1A. 2)AI SCW1A.

#####

STEP NO : 3
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_SCW1_1
INPUT # : 2
INPUT DESC : FC-1 INLET TEMP
INPUT UNIT : DEG F
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 100.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 100.00
DIGITAL FILTER : 0

#####

STEP NO : 4
LABEL :
FUNCTION : 10 (L)
COMMENT :SAVE INPUT AS FC-1 INLET TEMP
PARAMETERS :
1)TIR_SCW1. 2)AI_SCW1_1.

#####

STEP NO : 5
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_SCW1_2
INPUT # : 3
INPUT DESC : FC-1 OUTLET FLOW
INPUT UNIT : GPM
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 100.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 100.00
DIGITAL FILTER : 0

#####

STEP NO : 6
LABEL :
FUNCTION : 10 (L)
COMMENT :SAVE AI_SCW1_2 AS FC-1 OUTLET FLOW
PARAMETERS :
1)FIR SCW1. 2)AI SCW1 2.

#####

STEP NO : 7
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_PCW5_1
INPUT # : 4
INPUT DESC : VP1 LOOP TEMP
INPUT UNIT : DEG F
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 100.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 100.00
DIGITAL FILTER : 0

#####

STEP NO : 8
LABEL :
FUNCTION : 10 (L)
COMMENT :SAVE AI_PCW5_1 AS VP-1 LOOP TEMP
PARAMETERS :
1)TIR_PCW5. 2)AI_PCW5_1.

#####

STEP NO : 9
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_PCW5_2
INPUT # : 5
INPUT DESC : VP1 LOOP PRESS
INPUT UNIT : PSI
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 20.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 20.00
DIGITAL FILTER : 0

#####

STEP NO : 10
LABEL :
FUNCTION : 10 (L)
COMMENT :SAVE AI_PCW5_2 AS VP-1 LOOP PRESS
PARAMETERS :
1)PIR PCW5. 2)AI PCW5 2.

#####

STEP NO : 11
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_PCW5_3
INPUT # : 6
INPUT DESC : VP1 LOOP CONDUCTIVITY
INPUT UNIT : uS/cm
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 1000.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 1000.00
DIGITAL FILTER : 0

#####

STEP NO : 12
LABEL :
FUNCTION : 10 (L)
COMMENT :SAVE AI_PCW5_3 AS VP-1 LOOP CONDUCTIVITY
PARAMETERS :
1)CIR_PCW5. 2)AI_PCW5_3.

#####

STEP NO : 13

LABEL :

FUNCTION : 11 (AI)

COMMENT :

=====

ANALOG INPUT : AI_PCW5_4

INPUT # : 7

INPUT DESC : VP1 LOOP FLOW

INPUT UNIT : GPM

INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

INPUT HIST. DEFINITION : 0

INPUT PLOT LO : 0.00 PLOT HI : 15.00

INPUT TYPE : LINEAR 4-20mA

INPUT RANGE LO : 0.00 RANGE HI : 15.00

DIGITAL FILTER : 0

#####

STEP NO : 14

LABEL :

FUNCTION : 10 (L)

COMMENT :SAVE AI_PCW5_4 AS VP-1 LOOP FLOW

PARAMETERS :

1)FIR PCW5. 2)AI PCW5 4.

#####

STEP NO : 15

LABEL :

FUNCTION : 0 (END)

COMMENT :

RM45_1_4.mic9_r0

MICON TYPE :RCM-A
MICON CONFIGURATION FILE : mic9_r0
POINT ALLOCATION :
VAI : 32, VDI : 32, ISW : 32, LOOPS : 6, MSD : 1,
AI : 26, AO : 4, DI : 2, DO : 2
=====

VIRTUAL ANALOG : CIR_PCW1
INPUT # : 1
INPUT DESC : PRF LOOP
INPUT UNIT : uS/cm
INPUT SYNC SCAN : 0 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 1000.00 BAR LO : 0.00 BAR HI : 1000.00

XMTR ALARM :
XMTR ALARM Hi 99999.99 PRIORITY EVENT
XMTR ALARM Lo -9999.99 PRIORITY EVENT
XMTR ALARM HI HI 99999.99 PRIORITY EVENT
XMTR ALARM LO LO -9999.99 PRIORITY EVENT
XMTR ALARM MAX 99999.99 PRIORITY EVENT
XMTR ALARM MIN -9999.99 PRIORITY EVENT
XMTR ALARM DESC :PRF LOOP HI CONDUCTIVITY
XMTR ALARM DEADBAND : 10.00
XMTR ALARM GROUP :0
XMTR ALARM MGMT :0
XMTR ALARM COMMAND DISCR :
XMTR ALARM INDEX :0

```
=====
VIRTUAL ANALOG : CIR_PCW6
INPUT # : 2
INPUT DESC      : VP2 LOOP
INPUT UNIT      : uS/cm
INPUT SYNC SCAN : 0 SEC  HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 1000.00 BAR LO : 0.00 BAR HI : 1000.00
XMTR ALARM :
XMTR ALARM Hi 99999.99 PRIORITY EVENT
XMTR ALARM Lo -9999.99 PRIORITY EVENT
XMTR ALARM HI HI 99999.99 PRIORITY EVENT
XMTR ALARM LO LO -9999.99 PRIORITY EVENT
XMTR ALARM MAX 99999.99 PRIORITY EVENT
XMTR ALARM MIN -9999.99 PRIORITY EVENT
XMTR ALARM DESC :VAC PUMP 2 LOOP HI CONDUCTIVITY
XMTR ALARM DEADBAND : 10.00
XMTR ALARM GROUP :0
XMTR ALARM MGMT :0
XMTR ALARM COMMAND DISCR :
XMTR ALARM INDEX :0
=====
```

```
=====
VIRTUAL ANALOG : CIR_SCW1
INPUT # : 3
INPUT DESC      : SEC LOOP
INPUT UNIT      : uS/cm
INPUT SYNC SCAN : 0 SEC  HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 1000.00 BAR LO : 0.00 BAR HI : 1000.00
XMTR ALARM :
XMTR ALARM Hi 99999.99 PRIORITY EVENT
XMTR ALARM Lo -9999.99 PRIORITY EVENT
XMTR ALARM HI HI 99999.99 PRIORITY EVENT
XMTR ALARM LO LO -9999.99 PRIORITY EVENT
XMTR ALARM MAX 99999.99 PRIORITY EVENT
XMTR ALARM MIN -9999.99 PRIORITY EVENT
XMTR ALARM DESC :SECONDARY LOOP HI CONDUCTIVITY
XMTR ALARM DEADBAND : 10.00
XMTR ALARM GROUP :0
XMTR ALARM MGMT :0
XMTR ALARM COMMAND DISCR :
XMTR ALARM INDEX :0
```

=====

VIRTUAL ANALOG : FIR_PCW1
INPUT # : 4
INPUT DESC : PRF LOOP
INPUT UNIT : GPM
INPUT SYNC SCAN : 0 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 70.00 BAR LO : 0.00 BAR HI : 70.00
XMTR ALARM :
XMTR ALARM Hi 99999.99 PRIORITY EVENT
XMTR ALARM Lo 25.00 PRIORITY ATTENTION
XMTR ALARM HI HI 99999.99 PRIORITY EVENT
XMTR ALARM LO LO -9999.99 PRIORITY EVENT
XMTR ALARM MAX 99999.99 PRIORITY EVENT
XMTR ALARM MIN -9999.99 PRIORITY EVENT
XMTR ALARM DESC :PRF LOOP LOW FLOW
XMTR ALARM DEADBAND : 0.70
XMTR ALARM GROUP :0
XMTR ALARM MGMT :0
XMTR ALARM COMMAND DISCR :
XMTR ALARM INDEX :0

=====

VIRTUAL ANALOG : FIR_PCW6
INPUT # : 5
INPUT DESC : VP2 LOOP
INPUT UNIT : GPM
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 15.00 BAR LO : 0.00 BAR HI : 15.00
ACTUATE XMTR ALARM DISCRETES :
XMTR Hi AL DISCRETE :
XMTR Lo AL DISCRETE : FSL_PCW6
XMTR HI HI AL DISCRETE :
XMTR LO LO AL DISCRETE :
XMTR MAX AL DISCRETE :
XMTR MIN AL DISCRETE :
XMTR ALARM :
XMTR ALARM Hi 99999.99 PRIORITY EVENT
XMTR ALARM Lo 9.60 PRIORITY ATTENTION
XMTR ALARM HI HI 99999.99 PRIORITY EVENT
XMTR ALARM LO LO -9999.99 PRIORITY EVENT
XMTR ALARM MAX 99999.99 PRIORITY EVENT
XMTR ALARM MIN -9999.99 PRIORITY EVENT
XMTR ALARM DESC :VAC PUMP 2 LOOP LOW FLOW
XMTR ALARM DEADBAND : 0.10
XMTR ALARM GROUP :0
XMTR ALARM MGMT :0
XMTR ALARM COMMAND DISCR :
XMTR ALARM INDEX :0

=====

VIRTUAL ANALOG : FIR_SCW2

INPUT # : 6

INPUT DESC : FC-2 OUTLET

INPUT UNIT : GPM

INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC

INPUT HIST. DEFINITION : 1

INPUT PLOT LO : 0.00 PLOT HI : 100.00 BAR LO : 0.00 BAR HI : 100.00

XMTR ALARM :

XMTR ALARM Hi 99999.99 PRIORITY EVENT

XMTR ALARM Lo 25.00 PRIORITY ATTENTION

XMTR ALARM HI HI 99999.99 PRIORITY EVENT

XMTR ALARM LO LO 15.00 PRIORITY ATTENTION

XMTR ALARM MAX 99999.99 PRIORITY EVENT

XMTR ALARM MIN -9999.99 PRIORITY EVENT

XMTR ALARM DESC : SEC. LOOP 2 LOW FLOW

XMTR ALARM DEADBAND : 1.00

XMTR ALARM GROUP : 0

XMTR ALARM MGMT : 0

XMTR ALARM COMMAND DISCR :

XMTR ALARM INDEX : 0

ACTUATE XMTR ALARM DISCRETES :

XMTR Hi AL DISCRETE :

XMTR Lo AL DISCRETE :

XMTR HI HI AL DISCRETE :

XMTR LO LO AL DISCRETE : FSL_SCW2

XMTR MAX AL DISCRETE :

XMTR MIN AL DISCRETE :

=====

VIRTUAL ANALOG : PIR_PCW1

INPUT # : 7

INPUT DESC : PRF LOOP

INPUT UNIT : PSI

INPUT SYNC SCAN : 0 SEC HIST SCAN : 30 SEC

INPUT HIST. DEFINITION : 1

INPUT PLOT LO : 0.00 PLOT HI : 100.00 BAR LO : 0.00 BAR HI : 100.00

XMTR ALARM :

XMTR ALARM Hi 99999.99 PRIORITY EVENT

XMTR ALARM Lo 50.00 PRIORITY CAUTION

XMTR ALARM HI HI 99999.99 PRIORITY EVENT

XMTR ALARM LO LO -9999.99 PRIORITY EVENT

XMTR ALARM MAX 99999.99 PRIORITY EVENT

XMTR ALARM MIN -9999.99 PRIORITY EVENT

XMTR ALARM DESC : PRF LOOP LOW PRESSURE

XMTR ALARM DEADBAND : 1.00

XMTR ALARM GROUP : 0

XMTR ALARM MGMT : 0

XMTR ALARM COMMAND DISCR :

XMTR ALARM INDEX : 0

```
=====
VIRTUAL ANALOG : PIR_PCW6
INPUT # : 8
INPUT DESC      : VP2 LOOP
INPUT UNIT      : PSI
INPUT SYNC SCAN : 0 SEC  HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 20.00 BAR LO : 0.00 BAR HI : 20.00
XMTR ALARM :
XMTR ALARM Hi 99999.99 PRIORITY EVENT
XMTR ALARM Lo 2.00 PRIORITY ATTENTION
XMTR ALARM HI HI 99999.99 PRIORITY EVENT
XMTR ALARM LO LO -9999.99 PRIORITY EVENT
XMTR ALARM MAX 99999.99 PRIORITY EVENT
XMTR ALARM MIN -9999.99 PRIORITY EVENT
XMTR ALARM DESC :VAC PUMP 2 LOOP LOW PRESSURE
XMTR ALARM DEADBAND : 0.20
XMTR ALARM GROUP :0
XMTR ALARM MGMT :0
XMTR ALARM COMMAND DISCR :
XMTR ALARM INDEX :0
=====
```

```
=====
VIRTUAL ANALOG : TIR_PCW1
INPUT # : 9
INPUT DESC      : PRF LOOP
INPUT UNIT      : DEG F
INPUT SYNC SCAN : 0 SEC  HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 100.00 BAR LO : 0.00 BAR HI : 100.00
XMTR ALARM :
XMTR ALARM Hi 75.00 PRIORITY CAUTION
XMTR ALARM Lo -9999.99 PRIORITY EVENT
XMTR ALARM HI HI 99999.99 PRIORITY EVENT
XMTR ALARM LO LO -9999.99 PRIORITY EVENT
XMTR ALARM MAX 99999.99 PRIORITY EVENT
XMTR ALARM MIN -9999.99 PRIORITY EVENT
XMTR ALARM DESC :PRF LOOP HI TEMPERATURE
XMTR ALARM DEADBAND : 1.00
XMTR ALARM GROUP :0
XMTR ALARM MGMT :0
XMTR ALARM COMMAND DISCR :
XMTR ALARM INDEX :0
```

```
=====
VIRTUAL ANALOG : TIR_PCW6
INPUT # : 10
INPUT DESC      : VP2 LOOP
INPUT UNIT      : DEG F
INPUT SYNC SCAN : 0 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 100.00 BAR LO : 0.00 BAR HI : 100.00
XMTR ALARM :
XMTR ALARM Hi 90.00 PRIORITY CAUTION
XMTR ALARM Lo -9999.99 PRIORITY EVENT
XMTR ALARM HI HI 99999.99 PRIORITY EVENT
XMTR ALARM LO LO -9999.99 PRIORITY EVENT
XMTR ALARM MAX 99999.99 PRIORITY EVENT
XMTR ALARM MIN -9999.99 PRIORITY EVENT
XMTR ALARM DESC :VAC PUMP 2 LOOP HI TEMPERATURE
XMTR ALARM DEADBAND : 1.00
XMTR ALARM GROUP :0
XMTR ALARM MGMT :0
XMTR ALARM COMMAND DISCR :
XMTR ALARM INDEX :0
=====
```

```
=====
VIRTUAL ANALOG : TIR_SCW2
INPUT # : 11
INPUT DESC      : FC-2 IN LET
INPUT UNIT      : DEG F
INPUT SYNC SCAN : 0 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 100.00 BAR LO : 0.00 BAR HI : 100.00
```

=====

VIRTUAL ANALOG : TIRSCW2A
INPUT # : 12
INPUT DESC : FC-2 OUTLET
INPUT UNIT : DEG F
INPUT SYNC SCAN : 0 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 100.00 BAR LO : 0.00 BAR HI : 100.00
XMTR ALARM :
XMTR ALARM Hi 76.00 PRIORITY CAUTION
XMTR ALARM Lo 40.00 PRIORITY CAUTION
XMTR ALARM HI HI 99999.99 PRIORITY EVENT
XMTR ALARM LO LO -9999.99 PRIORITY EVENT
XMTR ALARM MAX 99999.99 PRIORITY EVENT
XMTR ALARM MIN -9999.99 PRIORITY EVENT
XMTR ALARM DESC :COOLER 2 OUTLET TEMP HI/LO
XMTR ALARM DEADBAND : 1.00
XMTR ALARM GROUP :0
XMTR ALARM MGMT :0
XMTR ALARM COMMAND DISCR :
XMTR ALARM INDEX :0

=====

DISCRETE TAG : FSL PCW6
DISCRETE (Internal Switch) # : 1
DISCRETE DESC : VP-2 LOOP LOW FLOW
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :LO FLOW COLOR : YELLOW

=====

DISCRETE TAG : FSL SCW2
DISCRETE (Internal Switch) # : 2
DISCRETE DESC : SCW2 FLOW
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :LO FLOW COLOR : YELLOW

LOOP NO : 1
LOOP TAG : MISC M9
LOOP DESCRIPTION : MISC I/O
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
EXPORT :FSL_PCW6,FSL_SCW2

#####

STEP NO : 1
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_SCW2A
INPUT # : 1
INPUT DESC : FC-2 OUTLET TEMP
INPUT UNIT : DEG F
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 100.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 100.00
DIGITAL FILTER : 0

#####

STEP NO : 2
LABEL :
FUNCTION : 10 (L)
COMMENT :SAVE AI_SCW2A AS FC-2 OUTLET TEMP
PARAMETERS :
1)TIRSCW2A 2)AI_SCW2A

#####

STEP NO : 3
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_SCW2_1
INPUT # : 2
INPUT DESC : FC-1 INLET TEMP
INPUT UNIT : DEG F
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 100.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 100.00
DIGITAL FILTER : 0

#####

STEP NO : 4
LABEL :
FUNCTION : 10 (L)
COMMENT :SAVE AI_SCW2_1 AS FC-2 INLET TMEP
PARAMETERS :
1)TIR_SCW2 2)AI_SCW2_1

#####

STEP NO : 5
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_SCW2_2
INPUT # : 3
INPUT DESC : FC-2 OUTLET FLOW
INPUT UNIT : GPM
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 100.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 100.00
DIGITAL FILTER : 0

#####

STEP NO : 6
LABEL :
FUNCTION : 10 (L)
COMMENT :SAVE AI_SCW2_2 AS FC-2 OUTLET FLOW
PARAMETERS :
1)FIR SCW2 2)AI SCW2 2

#####

STEP NO : 7
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_PCW6_1
INPUT # : 4
INPUT DESC : VP2 LOOP TEMP
INPUT UNIT : DEG F
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 100.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 100.00
DIGITAL FILTER : 0

#####

STEP NO : 8
LABEL :
FUNCTION : 10 (L)
COMMENT :SAVE AI_PCW6_1 AS VP-2 LOOP TEMP
PARAMETERS :
1)TIR_PCW6 2)AI_PCW6_1

#####

STEP NO : 9

LABEL :

FUNCTION : 11 (AI)

COMMENT :

=====

ANALOG INPUT : AI_PCW6_2

INPUT # : 5

INPUT DESC : VP2 LOOP PRESS

INPUT UNIT : PSI

INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

INPUT HIST. DEFINITION : 0

INPUT PLOT LO : 0.00 PLOT HI : 20.00

INPUT TYPE : LINEAR 4-20mA

INPUT RANGE LO : 0.00 RANGE HI : 20.00

DIGITAL FILTER : 0

#####

STEP NO : 10

LABEL :

FUNCTION : 10 (L)

COMMENT :SAVE AI_PCW6_2 AS VP-2 LOOP PRESS

PARAMETERS :

1)PIR PCW6 2)AI PCW6 2

#####

STEP NO : 11

LABEL :

FUNCTION : 11 (AI)

COMMENT :

=====

ANALOG INPUT : AI_PCW6_3

INPUT # : 6

INPUT DESC : VP2 LOOP CONDUCTIVITY

INPUT UNIT : uS/cm

INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

INPUT HIST. DEFINITION : 0

INPUT PLOT LO : 0.00 PLOT HI : 1000.00

INPUT TYPE : LINEAR 4-20mA

INPUT RANGE LO : 0.00 RANGE HI : 1000.00

DIGITAL FILTER : 0

#####

STEP NO : 12

LABEL :

FUNCTION : 10 (L)

COMMENT :SAVE AI_PCW6_3 AS VP-2 LOOP CONDUCTIVITY

PARAMETERS :

1)CIR_PCW6 2)AI_PCW6_3

#####

STEP NO : 13

LABEL :

FUNCTION : 11 (AI)

COMMENT :

=====

ANALOG INPUT : AI_PCW6_4

INPUT # : 7

INPUT DESC : VP2 LOOP FLOW

INPUT UNIT : GPM

INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

INPUT HIST. DEFINITION : 0

INPUT PLOT LO : 0.00 PLOT HI : 15.00

INPUT TYPE : LINEAR 4-20mA

INPUT RANGE LO : 0.00 RANGE HI : 15.00

DIGITAL FILTER : 0

#####

STEP NO : 14

LABEL :

FUNCTION : 10 (L)

COMMENT :SAVE AI_PCW6_4 AS VP-2 LOOP FLOW

PARAMETERS :

1)FIR PCW6 2)AI PCW6 4

#####

STEP NO : 15

LABEL :

FUNCTION : 11 (AI)

COMMENT :

=====

ANALOG INPUT : AI_SCW1_3

INPUT # : 8

INPUT DESC : SEC LOOP CONDUCTIVITY

INPUT UNIT : uS/cm

INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

INPUT HIST. DEFINITION : 0

INPUT PLOT LO : 0.00 PLOT HI : 1000.00

INPUT TYPE : LINEAR 4-20mA

INPUT RANGE LO : 0.00 RANGE HI : 1000.00

DIGITAL FILTER : 0

#####

STEP NO : 16

LABEL :

FUNCTION : 10 (L)

COMMENT :SAVE AI_SCW1_3 AS SECONDARY LOOP CONDUCTIVITY

PARAMETERS :

1)CIR_SCW1 2)AI_SCW1_3

#####

STEP NO : 17
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_PCW1_1
INPUT # : 9
INPUT DESC : PRF LOOP
INPUT UNIT : uS/cm
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 1000.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 1000.00
DIGITAL FILTER : 0

#####

STEP NO : 18
LABEL :
FUNCTION : 10 (L)
COMMENT :SAVE AI_PCW1_1 AS PRF LOOP CONDUCTIVITY
PARAMETERS :
1)CIR PCW1 2)AI PCW1 1

#####

STEP NO : 19
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_PCW1_2
INPUT # : 10
INPUT DESC : PRF LOOP FLOW
INPUT UNIT : GPM
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 70.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 70.00
DIGITAL FILTER : 0

#####

STEP NO : 20
LABEL :
FUNCTION : 10 (L)
COMMENT :SAVE AI_PCW1_2 AS PRF LOOP FLOW
PARAMETERS :
1)FIR_PCW1 2)AI_PCW1_2

#####

STEP NO : 21
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_PCW1_3
INPUT # : 11
INPUT DESC : PRF LOOP TEMP
INPUT UNIT : DEG F
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 100.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 100.00
DIGITAL FILTER : 0

#####

STEP NO : 22
LABEL :
FUNCTION : 10 (L)
COMMENT :SAVE AI_PCW1_3 AS PRF LOOP TEMP
PARAMETERS :
1)TIR PCW1 2)AI PCW1 3

#####

STEP NO : 23
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_PCW1_4
INPUT # : 12
INPUT DESC : PRF LOOP PRESS
INPUT UNIT : PSI
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 100.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 100.00
DIGITAL FILTER : 0

#####

STEP NO : 24
LABEL :
FUNCTION : 10 (L)
COMMENT :SAVE AI_PCW1_4 AS PRF LOOP PRESS
PARAMETERS :
1)PIR_PCW1 2)AI_PCW1_4

#####

STEP NO : 25

LABEL :

FUNCTION : 0 (END)

COMMENT :

RM45_2_1.mic11_r0

MICON TYPE :RCM-D
MICON UNIT NO : 11
MICON TAG : RM45 2 1
MICON DESCRIPTION : ROOM 45 RACK 2 SLOT 1
MICON CONFIGURATION FILE : mic11_r0
POINT ALLOCATION :
VAI : 32, VDI : 32, ISW : 32, LOOPS : 12, MSD : 16,
AI : 0, AO : 0, DI : 32, DO : 32

=====

DISCRETE TAG : HS FCF1
DISCRETE (Internal Swtch) # : 1
DISCRETE DESC : FCF FAN
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :STOP COLOR : GREEN
DISCRETE STATE 1 DESC :START COLOR : YELLOW

=====

DISCRETE TAG : HS P1
DISCRETE (Internal Swtch) # : 2
DISCRETE DESC : CIRC P-1
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :STOP COLOR : GREEN
DISCRETE STATE 1 DESC :START COLOR : YELLOW

=====

DISCRETE TAG : HS P101
DISCRETE (Internal Swtch) # : 3
DISCRETE DESC : PRF LOOP
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :STOP COLOR : GREEN
DISCRETE STATE 1 DESC :START COLOR : YELLOW

=====

DISCRETE TAG : HS P106
DISCRETE (Internal Swtch) # : 4
DISCRETE DESC : VP1 LOOP
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :STOP COLOR : GREEN
DISCRETE STATE 1 DESC :START COLOR : YELLOW

=====

DISCRETE TAG : HS SCW1
DISCRETE (Internal Switch) # : 5
DISCRETE DESC : FC1 VALVE
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :CLOSE COLOR : GREEN
DISCRETE STATE 1 DESC :OPEN COLOR : YELLOW

=====

DISCRETE TAG : HS SP1
DISCRETE (Internal Switch) # : 6
DISCRETE DESC : FC1 PUMP
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :STOP COLOR : GREEN
DISCRETE STATE 1 DESC :START COLOR : YELLOW

=====

DISCRETE TAG : YI FCF1
DISCRETE (Internal Switch) # : 7
DISCRETE DESC : FC1 FAN
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : GREEN
DISCRETE STATE 1 DESC :ON COLOR : YELLOW

=====

DISCRETE TAG : YI P1
DISCRETE (Internal Switch) # : 8
DISCRETE DESC : CIRC P-1
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : GREEN
DISCRETE STATE 1 DESC :ON COLOR : YELLOW

=====

DISCRETE TAG : YI P101
DISCRETE (Internal Switch) # : 9
DISCRETE DESC : PRF LOOP
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : GREEN
DISCRETE STATE 1 DESC :ON COLOR : YELLOW

```
=====
DISCRETE TAG      : YI P106
DISCRETE (Internal Switch) # : 10
DISCRETE DESC     : VPI LOOP
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : GREEN
DISCRETE STATE 1 DESC :ON COLOR : YELLOW
=====
DISCRETE TAG      : YI SP1
DISCRETE (Internal Switch) # : 11
DISCRETE DESC     : FC1 PUMP
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : GREEN
DISCRETE STATE 1 DESC :ON COLOR : YELLOW
*****
LOOP NO          : 1
LOOP TAG         : FCF1
LOOP DESCRIPTION  : FLUID COOLER 1 FAN
LOOP SCAN        : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
#####
STEP NO         : 1
LABEL :
FUNCTION : 7 (DI )
COMMENT :
=====
DISCRETE TAG      : DI_FCF1
DISCRETE (Discrete Input) # : 2
DISCRETE DESC     : FC1 FAN
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : GREEN
DISCRETE STATE 1 DESC :ON COLOR : YELLOW
#####
STEP NO         : 2
LABEL :
FUNCTION : 75 (DST )
COMMENT :SAVE DI_FCF1 AS FC-1 FAN STATUS
PARAMETERS :
1)DI_FCF1 2)0 3)0 4)0 5)YI_FCF1
```

#####

STEP NO : 3
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO FCF1A
DISCRETE (Discrete Output) # : 3
DISCRETE DESC : FC1 FAN START COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :START COLOR : YELLOW

#####

STEP NO : 4
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO FCF1B
DISCRETE (Discrete Output) # : 4
DISCRETE DESC : FC1 FAN STOP COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :STOP COLOR : GREEN
DISCRETE STATE 1 DESC :OFF COLOR : BLACK

#####

STEP NO : 5
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : XA FCF1
DISCRETE (Virtual Discrete) # : 9
DISCRETE DESC : FC1 FAN ALARM
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :FAILED COLOR : YELLOW
DI Alarm State : 1
DI Alarm Priority : Caution
DI Alarm Desc :FC-1 FAN SHUT OFF
DI Alarm Mgmt Discrete :
DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0

```
#####
STEP NO      : 6
LABEL :
FUNCTION : 78 (MC      )
COMMENT :
PARAMETERS :
1)HS FCF1 2)DO FCF1A 3)DO_FCF1B 4) 5.00 5) 1.00
6)(nu11) 7)(nu11)
#####
STEP NO      : 7
LABEL :
FUNCTION : 69 (LC      )
COMMENT :FAN FAILURE LOGIC (NOT USED)
PARAMETERS :
1)HS FCF1&-DI FCF1&-DO FCF1A
#####
STEP NO      : 8
LABEL :
FUNCTION : 0 (END      )
COMMENT :
*****
LOOP NO      : 2
LOOP TAG     : HV SCW1
LOOP DESCRIPTION : FC-1 OUTLET VALVE
LOOP SCAN    : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
#####
STEP NO      : 1
LABEL :
FUNCTION : 7 (DI      )
COMMENT :
=====
DISCRETE TAG      : DI SCW1A
DISCRETE (Discrete Input) # : 8
DISCRETE DESC     : SCW1 OPEN STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :OPEN COLOR : YELLOW
```


#####

STEP NO : 2
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_SCW1B
DISCRETE (Discrete Input) # : 9
DISCRETE DESC : SCW1 CLOSED STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :CLOSED COLOR : GREEN

#####

STEP NO : 3
LABEL :
FUNCTION : 9 (DSCC)
COMMENT :

=====

MULTI-STATE DI TAG : ZI_SCW1
MULTI-STATE DI # : 1
MULTI-STATE DI DESC : FC1 VALVE
MULTI-STATE DI SYNC SCAN : 0
MULTI-STATE DI1 : DI_SCW1A
MULTI-STATE DI2 : DI_SCW1B
MULTI-STATE DI3 :
MULTI-STATE DI4 :
MULTI-STATE STATE 0 :DESC MOVING COLOR White
MULTI-STATE STATE 1 :DESC OPEN COLOR Yellow
MULTI-STATE STATE 2 :DESC CLOSED COLOR Green
MULTI-STATE STATE 3 :DESC FAILED COLOR White
MULTI-STATE STATE 4 :DESC COLOR Black
MULTI-STATE STATE 5 :DESC COLOR Black
MULTI-STATE STATE 6 :DESC COLOR Black
MULTI-STATE STATE 7 :DESC COLOR Black
MULTI-STATE STATE 8 :DESC COLOR Black
MULTI-STATE STATE 9 :DESC COLOR Black
MULTI-STATE STATE 10 :DESC COLOR Black
MULTI-STATE STATE 11 :DESC COLOR Black
MULTI-STATE STATE 12 :DESC COLOR Black
MULTI-STATE STATE 13 :DESC COLOR Black
MULTI-STATE STATE 14 :DESC COLOR Black
MULTI-STATE STATE 15 :DESC COLOR Black

#####

STEP NO : 4
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO SCW1A
DISCRETE (Discrete Output) # : 10
DISCRETE DESC : SCW1 OPEN COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :OPEN COLOR : YELLOW

#####

STEP NO : 5
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO SCW1B
DISCRETE (Discrete Output) # : 11
DISCRETE DESC : SCW1 CLOSE COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :CLOSE COLOR : GREEN

#####

STEP NO : 6
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : ZA SCW1
DISCRETE (Virtual Discrete) # : 8
DISCRETE DESC : FC1 VALVE
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :FAILED COLOR : YELLOW
DI Alarm State : 1
DI Alarm Priority : Caution
DI Alarm Desc :HV-SCW1 OUT OF POSITION
DI Alarm Mgmt Discrete :
DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0

```
#####  
STEP NO      : 7  
LABEL :  
FUNCTION : 75 (DST )  
COMMENT : VALVE OPEN COMMAND  
PARAMETERS :  
1)HS SCW1. 2)0 3)0 4)0 5)DO SCW1A.  
#####  
STEP NO      : 8  
LABEL :  
FUNCTION : 75 (DST )  
COMMENT : CLOSE COMMAND  
PARAMETERS :  
1)HS SCW1. 2)1 3)0 4)0 5)DO SCW1B.  
#####  
STEP NO      : 9  
LABEL :  
FUNCTION : 69 (LC )  
COMMENT : ALARM IF VALVE OUT OF POSITION (AFTER 30 SEC DELAY)  
PARAMETERS :  
1)(DELAY(HS_SCW1,30)&-DI_SCW1A)!(DELAY(-HS_SCW1,30)&-DI_SCW1B)  
#####  
STEP NO      : 10  
LABEL :  
FUNCTION : 75 (DST )  
COMMENT :  
PARAMETERS :  
1)MSV 2)0 3)0 4)0 5)ZA SCW1.  
#####  
STEP NO      : 11  
LABEL :  
FUNCTION : 0 (END )  
COMMENT :  
*****  
LOOP NO      : 3  
LOOP TAG     : P1  
LOOP DESCRIPTION : CIRCULATION PUMP 1  
LOOP SCAN    : 0.30 SEC  
NON-PID AUXILIARY :  
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00  
RATIO CURR : 0.00, BIAS CURR : 0.00  
IMPORT DI : RM45_1_3::!FSL_SCW1,RM45_1_4::!FSL_SCW2
```

#####

STEP NO : 1
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_P1_1
DISCRETE (Discrete Input) # : 12
DISCRETE DESC : CIRC P-1 STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : GREEN
DISCRETE STATE 1 DESC :ON COLOR : YELLOW

#####

STEP NO : 2
LABEL :
FUNCTION : 75 (DST)
COMMENT :SAVE DI_P1_1 AS P-1 STATUS
PARAMETERS :

1)DI P1_1 2)0 3)0 4)0 5)YI P1

#####

STEP NO : 3
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_P1_2
DISCRETE (Discrete Input) # : 15
DISCRETE DESC : P1 LO FLOW SWITCH
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :LO FLOW COLOR : YELLOW

#####

STEP NO : 4
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : FAL_P1
DISCRETE (Virtual Discrete) # : 1
DISCRETE DESC : CIRC P-1 LO FLOW
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :LO FLOW COLOR : YELLOW
DI Alarm State : 1
DI Alarm Priority : Caution
DI Alarm Desc :P-1 LOW FLOW/PUMP OFF
DI Alarm Mgmt Discrete :
DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0

#####

STEP NO : 5
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO P1 1
DISCRETE (Discrete Output) # : 13
DISCRETE DESC : CIRC P-1 START COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :START COLOR : YELLOW

#####

STEP NO : 6
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO P1 2
DISCRETE (Discrete Output) # : 14
DISCRETE DESC : CIRC P-1 STOP COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :STOP COLOR : GREEN
DISCRETE STATE 1 DESC :OFF COLOR : BLACK

```
#####
STEP NO      : 7
LABEL :
FUNCTION : 78 (MC      )
COMMENT :
PARAMETERS :
1)HS P1 2)DO P1 1 3)DO_P1_2 4)    5.00 5)    1.00
6)(null) 7)(null)
#####
STEP NO      : 8
LABEL :
FUNCTION : 69 (LC      )
COMMENT :ALARM ON LO FLOW & P1 OFF (EXCEPT STARTUP)
PARAMETERS :
1)-DO P1 1&((FSL SCW1&FSL SCW2)|(HS P1&-DI_P1_1))
#####
STEP NO      : 9
LABEL :
FUNCTION : 75 (DST      )
COMMENT :
PARAMETERS :
1)MSV 2)0 3)0 4)0 5)FAL P1
#####
STEP NO      : 10
LABEL :
FUNCTION : 69 (LC      )
COMMENT :SEND PULSE ON LO FLOW (RESTART RESETS)
PARAMETERS :
1)PULSE(FSL SCW1&FSL SCW2&-DO P1 1)
#####
STEP NO      : 11
LABEL :
FUNCTION : 62 (GTD      )
COMMENT :SKIP NEXT STEP IF NO PULSE
PARAMETERS :
1)MSV 2) Normal 3)JMP
#####
STEP NO      : 12
LABEL : JMP
FUNCTION : 10 (L      )
COMMENT :TURN PUMP OFF IF PULSE (LOW FLOW)
PARAMETERS :
1) HS P1 2) 0
#####
STEP NO      : 13
LABEL :
FUNCTION : 0 (END      )
COMMENT :
```

LOOP NO : 4
LOOP TAG : P101
LOOP DESCRIPTION : PRF COOLING LOOP PUMP 101
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
IMPORT DI : RM45 2 2::!DI PCW1A

#####

STEP NO : 1
LABEL : LOFLOW
FUNCTION : 10 (L)
COMMENT : LOAD LOW FLOW SWITCH

PARAMETERS :

1)DI PCW1A

#####

STEP NO : 2
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_101_1
DISCRETE (Discrete Input) # : 17
DISCRETE DESC : P101 STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC : OFF COLOR : GREEN
DISCRETE STATE 1 DESC : ON COLOR : YELLOW

#####

STEP NO : 3
LABEL :
FUNCTION : 75 (DST)
COMMENT : SAVE DI_101_1 AS P-101 STATUS

PARAMETERS :

1)DI_101_1 2)0 3)0 4)0 5)YI_P101

#####

STEP NO : 4
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : XA P101
DISCRETE (Virtual Discrete) # : 5
DISCRETE DESC : P101 ALARM
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :LO FLOW COLOR : YELLOW
DI Alarm State : 1
DI Alarm Priority : Caution
DI Alarm Desc :PRF LOOP LO FLOW/P-101 OFF
DI Alarm Mgmt Discrete :
DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0

#####

STEP NO : 5
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO 101 1
DISCRETE (Discrete Output) # : 18
DISCRETE DESC : P101 START COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :START COLOR : YELLOW

#####

STEP NO : 6
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO 101 2
DISCRETE (Discrete Output) # : 19
DISCRETE DESC : P101 STOP COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :STOP COLOR : GREEN
DISCRETE STATE 1 DESC :OFF COLOR : BLACK


```
#####
STEP NO      : 7
LABEL :
FUNCTION : 78 (MC      )
COMMENT :
PARAMETERS :
1)HS P101 2)DO 101_1 3)DO_101_2 4)    5.00 5)    1.00
6)(null) 7)(null)
#####
STEP NO      : 8
LABEL :
FUNCTION : 69 (LC      )
COMMENT :ALARM ON LO FLOW & P101 OFF (EXCEPT STARTUP)
PARAMETERS :
1)-DO 101 1&(LOFLOW!(HS P101&-DI 101 1))
#####
STEP NO      : 9
LABEL :
FUNCTION : 75 (DST      )
COMMENT :SAVE ALARM
PARAMETERS :
1)MSV 2)0 3)0 4)0 5)XA P101
#####
STEP NO      : 10
LABEL :
FUNCTION : 69 (LC      )
COMMENT :SEND PULSE ON LOW FLOW (RESTART RESETS)
PARAMETERS :
1)PULSE(LOFLOW&-DO 101 1)
#####
STEP NO      : 11
LABEL :
FUNCTION : 62 (GTD      )
COMMENT :SKIP NEXT STEP IF NO PULSE
PARAMETERS :
1)!MSV 2) Normal 3)JMP
#####
STEP NO      : 12
LABEL : JMP
FUNCTION : 10 (L      )
COMMENT :TURN OFF PUMP ON PULSE (LOW FLOW)
PARAMETERS :
1) HS P101 2) 0
#####
STEP NO      : 13
LABEL :
FUNCTION : 0 (END      )
COMMENT :
```

LOOP NO : 5
LOOP TAG : P106
LOOP DESCRIPTION : VP1 LOOP PUMP STATUS
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
IMPORT DI : RM45 2 2::!DI VP2,RM45 1 3::!FSL_PCW5

#####

STEP NO : 1
LABEL : VP2STAT
FUNCTION : 10 (L)
COMMENT : LOAD VACUUM PUMP 2 STATUS
PARAMETERS :

1)DI VP2

#####

STEP NO : 2
LABEL : LOFLW
FUNCTION : 10 (L)
COMMENT : LOAD VP-1 LOOP LOW FLOW ALARM SWITCH
PARAMETERS :

1)FSL PCW5

#####

STEP NO : 3
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI 106 2
DISCRETE (Discrete Input) # : 21
DISCRETE DESC : P-106 STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC : OFF COLOR : GREEN
DISCRETE STATE 1 DESC : ON COLOR : YELLOW

#####

STEP NO : 4
LABEL :
FUNCTION : 75 (DST)
COMMENT : SAVE DI_106_2 AS P-106 STATUS
PARAMETERS :
1)DI_106_2 2)0 3)0 4)0 5)YI_P106

#####

STEP NO : 5
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : XA_P106
DISCRETE (Virtual Discrete) # : 6
DISCRETE DESC : P-106 ALARM
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :LO FLOW COLOR : YELLOW
DI Alarm State : 1
DI Alarm Priority : Caution
DI Alarm Desc :VP1 LOOP LO FLOW/P106 OFF
DI Alarm Mgmt Discrete :
DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0

#####

STEP NO : 6
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO 106 1A
DISCRETE (Discrete Output) # : 22
DISCRETE DESC : P106 START COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :START COLOR : YELLOW

#####

STEP NO : 7
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO 106 1B
DISCRETE (Discrete Output) # : 23
DISCRETE DESC : P106 STOP COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :STOP COLOR : GREEN
DISCRETE STATE 1 DESC :OFF COLOR : BLACK

```
#####  
STEP NO      : 8  
LABEL : VPSTATS  
FUNCTION : 71 (ORG )  
COMMENT : DETERMINE COMBINED VAC PUMP STATUS 1=ON  
PARAMETERS :  
1)DI VP1 2)VP2STAT 3) 4)  
#####  
STEP NO      : 9  
LABEL :  
FUNCTION : 78 (MC )  
COMMENT : 30 SECOND START TO ALLOW TIME TO START VAC PUMP  
PARAMETERS :  
1)HS P106 2)DO 106_1A 3)DO 106_1B 4) 30.00 5) 1.00  
6)(null) 7)(null)  
#####  
STEP NO      : 10  
LABEL :  
FUNCTION : 69 (LC )  
COMMENT : ALARM ON LO FLOW OR PUMP OFF (EXCEPT DURING RESTART)  
PARAMETERS :  
1)-DO 106 1A&(LOFLW!(HS P106&-DI 106 2))  
#####  
STEP NO      : 11  
LABEL :  
FUNCTION : 75 (DST )  
COMMENT :  
PARAMETERS :  
1)MSV 2)0 3)0 4)0 5)XA P106  
#####  
STEP NO      : 12  
LABEL :  
FUNCTION : 69 (LC )  
COMMENT : SEND PULSE ON LOW FLOW (RESTART RESETS)  
PARAMETERS :  
1)PULSE(!LOFLW&-DO 106 1A)  
#####  
STEP NO      : 13  
LABEL :  
FUNCTION : 62 (GTD )  
COMMENT : SKIP NEXT STEP IF NO PULSE  
PARAMETERS :  
1)!MSV 2) Normal 3)JMPFL
```

```
#####
STEP NO      : 14
LABEL : JMPFL
FUNCTION : 10 (L      )
COMMENT :TURN OFF PUMP ON PULSE (LOW FLOW)
PARAMETERS :
1) HS P106 2) 0
#####
STEP NO      : 15
LABEL :
FUNCTION : 71 (ORG    )
COMMENT :OUTPUT=1 IF A VAC PUMP IS RUNNING OR P106 IS RESTARTING
PARAMETERS :
1)VPSTATS 2)DO 106 1A 3) 4)
#####
STEP NO      : 16
LABEL :
FUNCTION : 62 (GTD    )
COMMENT :SKIP NEXT STEP IF VP's RUNING OR P106 IN RESTART
PARAMETERS :
1)MSV 2) Off-Noma1 3)JMPVP
#####
STEP NO      : 17
LABEL : JMPVP
FUNCTION : 10 (L      )
COMMENT :TURN OFF PUMP IF BOTH VAC PUMPS OFF (EXCEPT DURING RESTART)
PARAMETERS :
1) HS P106 2) 0
#####
STEP NO      : 18
LABEL :
FUNCTION : 0 (END     )
COMMENT :
*****
LOOP NO      : 6
LOOP TAG     : SP1
LOOP DESCRIPTION : FLUID COOLER 1 SPRAY PUMP
LOOP SCAN    : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
```

```
#####  
STEP NO      : 1  
LABEL :  
FUNCTION : 7 (DI      )  
COMMENT :  
=====
```

DISCRETE TAG : DI_SP1
DISCRETE (Discrete Input) # : 5
DISCRETE DESC : SP-1 STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : GREEN
DISCRETE STATE 1 DESC :ON COLOR : YELLOW
#####

```
STEP NO      : 2  
LABEL :  
FUNCTION : 75 (DST    )  
COMMENT :SAVE DI_SP1 AS SP-1 STATUS  
PARAMETERS :  
1)DI SP1 2)0 3)0 4)0 5)YI SP1  
#####
```

```
STEP NO      : 3  
LABEL :  
FUNCTION : 57 (DO      )  
COMMENT :  
=====
```

DISCRETE TAG : DO SP1A
DISCRETE (Discrete Output) # : 6
DISCRETE DESC : SP-1 START COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :START COLOR : YELLOW
#####

```
STEP NO      : 4  
LABEL :  
FUNCTION : 57 (DO      )  
COMMENT :  
=====
```

DISCRETE TAG : DO SP1B
DISCRETE (Discrete Output) # : 7
DISCRETE DESC : SP-1 STOP COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :STOP COLOR : GREEN
DISCRETE STATE 1 DESC :OFF COLOR : BLACK

#####

STEP NO : 5

LABEL :

FUNCTION : 6 (VD)

COMMENT :

=====

DISCRETE TAG : XA SP1

DISCRETE (Virtual Discrete) # : 10

DISCRETE DESC : FC1 PUMP ALARM

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0

DISCRETE STATE 0 DESC :OFF COLOR : BLACK

DISCRETE STATE 1 DESC :FAILED COLOR : YELLOW

DI Alarm State : 1

DI Alarm Priority : Caution

DI Alarm Desc :FC-1 PUMP SHUT OFF

DI Alarm Mgmt Discrete :

DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0

#####

STEP NO : 6

LABEL :

FUNCTION : 78 (MC)

COMMENT :

PARAMETERS :

1)HS SP1 2)DO SP1A 3)DO SP1B 4) 5.00 5) 1.00

6)(null) 7)(null)

#####

STEP NO : 7

LABEL :

FUNCTION : 69 (LC)

COMMENT :ALARM WHEN PUMP OFF AND SWITCH ON (EXCEPT DURING RESTART)

PARAMETERS :

1)HS SP1&-DI SP1&-DO SP1A

#####

STEP NO : 8

LABEL :

FUNCTION : 75 (DST)

COMMENT :

PARAMETERS :

1)MSV 2)0 3)0 4)0 5)XA SP1

#####

STEP NO : 9

LABEL :

FUNCTION : 0 (END)

COMMENT :

LOOP NO : 7
LOOP TAG : VP1
LOOP DESCRIPTION : VACUUM PUMP 1
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
IMPORT DI : RM45_1_4::!FSL_PCW6
EXPORT : DI VP1

#####

STEP NO : 1
LABEL : LOFLW
FUNCTION : 10 (L)
COMMENT : LOAD VP-1 & 2 LOW FLOW ALARMS
PARAMETERS :
1)FSL PCW5&FSL PCW6

#####

STEP NO : 2
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_VP1
DISCRETE (Discrete Input) # : 25
DISCRETE DESC : VP-1 STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC : OFF COLOR : GREEN
DISCRETE STATE 1 DESC : ON COLOR : YELLOW

#####

STEP NO : 3
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO_VP1
DISCRETE (Discrete Output) # : 26
DISCRETE DESC : VP-1 STOP COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0 MODIFY : 0
DISCRETE STATE 0 DESC : STOP COLOR : GREEN
DISCRETE STATE 1 DESC : OFF COLOR : BLACK

#####

STEP NO : 4
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : XA VP1
DISCRETE (Virtual Discrete) # : 7
DISCRETE DESC : VP1 ALARM
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :LO FLOW COLOR : YELLOW
DI Alarm State : 1
DI Alarm Priority : Caution
DI Alarm Desc :LO COOLANT FLOW - VP1 OFF
DI Alarm Mgmt Discrete :
DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0

#####

STEP NO : 5
LABEL :
FUNCTION : 69 (LC)
COMMENT :OUTPUT=1 IF VP-1 ON<60SEC OR NO LO FLOW ALARM
PARAMETERS :
1)PULSE(DI VP1,60)!-!LOFLW

#####

STEP NO : 6
LABEL :
FUNCTION : 75 (DST)
COMMENT :ALARM ON LOW FLOW WHEN VP-1 IS ON > 60 SEC
PARAMETERS :
1)IMSV 2)1 3)0 4)0 5)XA VP1

#####

STEP NO : 7
LABEL :
FUNCTION : 69 (LC)
COMMENT :SEND 1 SECOND PULSE ON LOW FLOW ALARM
PARAMETERS :
1)PULSE(XA VP1,1)

#####

STEP NO : 8
LABEL :
FUNCTION : 75 (DST)
COMMENT :VP1 STOP CONTACT OPENS 1 SEC ON LO FLOW
PARAMETERS :
1)IMSV 2)1 3)0 4)0 5)DO_VP1

#####

STEP NO : 9

LABEL :

FUNCTION : 0 (END)

COMMENT :

LOOP NO : 8

LOOP TAG : MISC_M11

LOOP DESCRIPTION : MISC I/O

LOOP SCAN : 0.30 SEC

NON-PID AUXILIARY :

RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00

RATIO CURR : 0.00, BIAS CURR : 0.00

#####

STEP NO : 1

LABEL :

FUNCTION : 6 (VD)

COMMENT :

=====

DISCRETE TAG : LALTK105

DISCRETE (Virtual Discrete) # : 2

DISCRETE DESC : TK-105 ALARM,

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0

DISCRETE STATE 0 DESC :OFF COLOR : BLACK

DISCRETE STATE 1 DESC :LO LEVEL COLOR : YELLOW_

DI Alarm State : 1

DI Alarm Priority : Caution

DI Alarm Desc :VAC PUMP SEAL WATER TANK LO LEVEL

DI Alarm Mgmt Discrete :

DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0

#####

STEP NO : 2

LABEL :

FUNCTION : 7 (DI)

COMMENT :

=====

DISCRETE TAG : DI_105_2

DISCRETE (Discrete Input) # : 27

DISCRETE DESC : TK-105 LO LEVEL SWITCH

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0

DISCRETE STATE 0 DESC :OFF COLOR : BLACK

DISCRETE STATE 1 DESC :LO LEVEL COLOR : YELLOW

#####

STEP NO : 3
LABEL :
FUNCTION : 75 (DST)
COMMENT :SAVE DI_105_2 AS TK-105 LO LEVEL ALARM
PARAMETERS :
1)DI 105 2 2)0 3)0 4)0 5)LALTK105

#####

STEP NO : 4
LABEL :
FUNCTION : 6 (VD)
COMMENT :

DISCRETE TAG : PAL_1
DISCRETE (Virtual Discrete) # : 3
DISCRETE DESC : FC WATER LO PRESSURE ALARM
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :LO PRESS COLOR : WHITE
DI Alarm State : 1
DI Alarm Priority : Attention
DI Alarm Desc :FLUID COOLER WATER LO PRESSURE
DI Alarm Mgmt Discrete :
DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0

#####

STEP NO : 5
LABEL :
FUNCTION : 7 (DI)
COMMENT :

DISCRETE TAG : DI_PSL_1
DISCRETE (Discrete Input) # : 1
DISCRETE DESC : FC WATER LO PRESSURE SWITCH
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :LO PRESS COLOR : WHITE

#####

STEP NO : 6
LABEL :
FUNCTION : 69 (LC)
COMMENT :LO PRESS ALARM AFTER 10 MIN
PARAMETERS :
1)DELAY(DI_PSL_1,600)&DI_PSL_1

#####

STEP NO : 7
LABEL :
FUNCTION : 75 (DST)
COMMENT :SAVE AS FC WATER LO PRESSURE ALARM
PARAMETERS :
1)MSV 2)0 3)0 4)0 5)PAL 1.

#####

STEP NO : 8
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : PALTK101
DISCRETE (Virtual Discrete) # : 4
DISCRETE DESC : TK-101 LO PRESS ALARM
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :LO PRESS COLOR : WHITE
DI Alarm State : 1
DI Alarm Priority : Attention
DI Alarm Desc :
DI Alarm Mgmt Discrete :
DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0

#####

STEP NO : 9
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_101_2
DISCRETE (Discrete Input) # : 16
DISCRETE DESC : TK-101 LO PRESS SWITCH
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :LO PRESS COLOR : WHITE

#####

STEP NO : 10
LABEL :
FUNCTION : 75 (DST)
COMMENT :SAVE DI_101_2 AS TK-101 (EXP TANK) LO PRESS ALARM
PARAMETERS :
1)DI_101_2 2)0 3)0 4)0 5)PALTK101

STEP NO : 11
LABEL :
FUNCTION : 0 (END)
COMMENT :

RM45_2_1.mic12_r0

MICON TYPE :RCM-D
MICON CONFIGURATION FILE : mic12_r0
POINT ALLOCATION :

=====

DISCRETE TAG : DI_SP2
DISCRETE (Discrete Input) # : 5
DISCRETE DESC : SP-2 STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : GREEN
DISCRETE STATE 1 DESC :ON COLOR : YELLOW
VAI : 32, VDI : 32, ISW : 32, LOOPS : 12, MSD : 16,
AI : 0, AO : 0, DI : 32, DO : 32

=====

DISCRETE TAG : HS_FCF2
DISCRETE (Internal Switch) # : 1
DISCRETE DESC : FC2 FAN
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :STOP COLOR : GREEN
DISCRETE STATE 1 DESC :START COLOR : YELLOW

=====

DISCRETE TAG : HS_P2
DISCRETE (Internal Switch) # : 2
DISCRETE DESC : CIRC P-2
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :STOP COLOR : GREEN
DISCRETE STATE 1 DESC :START COLOR : YELLOW

=====

DISCRETE TAG : HS_P102
DISCRETE (Internal Switch) # : 3
DISCRETE DESC : PRF LOOP
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :STOP COLOR : GREEN
DISCRETE STATE 1 DESC :START COLOR : YELLOW

=====

DISCRETE TAG : HS_P108
DISCRETE (Internal Switch) # : 4
DISCRETE DESC : VP2 LOOP
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :STOP COLOR : GREEN
DISCRETE STATE 1 DESC :START COLOR : YELLOW

=====

DISCRETE TAG : HS SCW2
DISCRETE (Internal Switch) # : 5
DISCRETE DESC : FC2 VALVE
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :CLOSE COLOR : GREEN
DISCRETE STATE 1 DESC :OPEN COLOR : YELLOW

=====

DISCRETE TAG : HS SP2
DISCRETE (Internal Switch) # : 6
DISCRETE DESC : FC2 PUMP
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :STOP COLOR : GREEN
DISCRETE STATE 1 DESC :START COLOR : YELLOW

=====

DISCRETE TAG : YI FCF2
DISCRETE (Internal Switch) # : 7
DISCRETE DESC : FC1 FAN
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : GREEN
DISCRETE STATE 1 DESC :ON COLOR : YELLOW

=====

DISCRETE TAG : YI P2
DISCRETE (Internal Switch) # : 8
DISCRETE DESC : CIRC P-2
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : GREEN
DISCRETE STATE 1 DESC :ON COLOR : YELLOW

=====

DISCRETE TAG : YI P102
DISCRETE (Internal Switch) # : 9
DISCRETE DESC : PRF LOOP
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : GREEN
DISCRETE STATE 1 DESC :ON COLOR : YELLOW

=====

DISCRETE TAG : YI P108
DISCRETE (Internal Switch) # : 10
DISCRETE DESC : VP2 LOOP
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : GREEN
DISCRETE STATE 1 DESC :ON COLOR : YELLOW

```
=====
DISCRETE TAG      : YI SP2
DISCRETE (Internal Switch) # : 11
DISCRETE DESC     : FC2 PUMP
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : GREEN
DISCRETE STATE 1 DESC :ON COLOR : YELLOW
*****
LOOP NO          : 1
LOOP TAG         : FCF2
LOOP DESCRIPTION  : FLUID COOLER 2 FAN
LOOP SCAN        : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
#####
STEP NO         : 1
LABEL :
FUNCTION : 7 (DI )
COMMENT :
=====
DISCRETE TAG      : DI_FCF2
DISCRETE (Discrete Input) # : 2
DISCRETE DESC     : FC2 FAN STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : GREEN
DISCRETE STATE 1 DESC :ON COLOR : YELLOW
#####
STEP NO         : 2
LABEL :
FUNCTION : 75 (DST )
COMMENT :SAVE DI_FCF2 AS FC-2 FAN STATUS
PARAMETERS :
1)DI_FCF2 2)0 3)0 4)0 5)YI_FCF2
#####
STEP NO         : 3
LABEL :
FUNCTION : 57 (DO )
COMMENT :
=====
DISCRETE TAG      : DO_FCF2A
DISCRETE (Discrete Output) # : 3
DISCRETE DESC     : FC2 FAN START COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :START COLOR : YELLOW
```


#####

STEP NO : 4
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO_FCF2B
DISCRETE (Discrete Output) # : 4
DISCRETE DESC : FC2 FAN STOP COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC : STOP COLOR : GREEN
DISCRETE STATE 1 DESC : OFF COLOR : BLACK

#####

STEP NO : 5
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : XA_FCF2
DISCRETE (Virtual Discrete) # : 7
DISCRETE DESC : FC2 FAN ALARM
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : FAILED COLOR : YELLOW
DI Alarm State : 1
DI Alarm Priority : Caution
DI Alarm Desc : FC-2 FAN SHUT OFF
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 6
LABEL :
FUNCTION : 78 (MC)
COMMENT :

PARAMETERS :
1)HS_FCF2 2)DO_FCF2A 3)DO_FCF2B 4) 5.00 5) 1.00
6)(null) 7)(null)

#####

STEP NO : 7
LABEL :
FUNCTION : 69 (LC)
COMMENT : FAN FAILURE LOGIC (NOT USED)
PARAMETERS :
1)HS_FCF2&-DI_FCF2&-DO_FCF2A

#####

STEP NO : 8

LABEL :

FUNCTION : 0 (END)

COMMENT :

LOOP NO : 2

LOOP TAG : HV_SCW2

LOOP DESCRIPTION : FC-2 OUTLET VALVE

LOOP SCAN : 0.30 SEC

NON-PID AUXILIARY :

RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00

RATIO CURR : 0.00, BIAS CURR : 0.00

#####

STEP NO : 1

LABEL :

FUNCTION : 7 (DI)

COMMENT :

=====

DISCRETE TAG : DI_SCW2A

DISCRETE (Discrete Input) # : 8

DISCRETE DESC : SCW2 OPEN STATUS

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0

DISCRETE STATE 0 DESC :OFF COLOR : BLACK

DISCRETE STATE 1 DESC :OPEN COLOR : YELLOW

#####

STEP NO : 2

LABEL :

FUNCTION : 7 (DI)

COMMENT :

=====

DISCRETE TAG : DI_SCW2B

DISCRETE (Discrete Input) # : 9

DISCRETE DESC : SCW2 CLOSED STATUS

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0

DISCRETE STATE 0 DESC :OFF COLOR : BLACK

DISCRETE STATE 1 DESC :CLOSED COLOR : GREEN

#####

STEP NO : 3
LABEL :
FUNCTION : 9 (DSCC)
COMMENT :

=====

MULTI-STATE DI TAG : ZI_SCW2
MULTI-STATE DI # : 1
MULTI-STATE DI DESC : FC2 VALVE
MULTI-STATE DI SYNC SCAN : 0
MULTI-STATE DI1 : DI_SCW2A
MULTI-STATE DI2 : DI_SCW2B
MULTI-STATE DI3 :
MULTI-STATE DI4 :
MULTI-STATE STATE 0 :DESC MOVING COLOR White
MULTI-STATE STATE 1 :DESC OPEN COLOR Yellow
MULTI-STATE STATE 2 :DESC CLOSED COLOR Green
MULTI-STATE STATE 3 :DESC FAILED COLOR White
MULTI-STATE STATE 4 :DESC COLOR Black
MULTI-STATE STATE 5 :DESC COLOR Black
MULTI-STATE STATE 6 :DESC COLOR Black
MULTI-STATE STATE 7 :DESC COLOR Black
MULTI-STATE STATE 8 :DESC COLOR Black
MULTI-STATE STATE 9 :DESC COLOR Black
MULTI-STATE STATE 10 :DESC COLOR Black
MULTI-STATE STATE 11 :DESC COLOR Black
MULTI-STATE STATE 12 :DESC COLOR Black
MULTI-STATE STATE 13 :DESC COLOR Black
MULTI-STATE STATE 14 :DESC COLOR Black
MULTI-STATE STATE 15 :DESC COLOR Black

#####

STEP NO : 4
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO SCW2A
DISCRETE (Discrete Output) # : 10
DISCRETE DESC : SCW2 OPEN COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :OPEN COLOR : YELLOW

#####

STEP NO : 5
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO SCW2B
DISCRETE (Discrete Output) # : 11
DISCRETE DESC : SCW2 CLOSE COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :CLOSE COLOR : GREEN

#####

STEP NO : 6
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : ZA SCW2
DISCRETE (Virtual Discrete) # : 6
DISCRETE DESC : FC1 VALVE ALARM
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :FAILED COLOR : YELLOW
DI Alarm State : 1
DI Alarm Priority : Caution
DI Alarm Desc :HV SCW2 OUT OF POSITION
DI Alarm Mgmt Discrete :
DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0

#####

STEP NO : 7
LABEL :
FUNCTION : 75 (DST)
COMMENT :OPEN COMMAND

PARAMETERS :
1)HS SCW2. 2)0 3)0 4)0 5)DO SCW2A.

#####

STEP NO : 8
LABEL :
FUNCTION : 75 (DST)
COMMENT :CLOSE COMMAND

PARAMETERS :
1)HS_SCW2. 2)1 3)0 4)0 5)DO_SCW2B.

```
#####
STEP NO      : 9
LABEL :
FUNCTION : 69 (LC      )
COMMENT :ALARM IF VALVE OUT OF POSITION (AFTER 30 SEC)
PARAMETERS :
1)(DELAY(HS_SCW2,30)&-DI_SCW2A)!(DELAY(-HS_SCW2,30)&-DI_SCW2B)
#####
STEP NO      : 10
LABEL :
FUNCTION : 75 (DST      )
COMMENT :
PARAMETERS :
1)MSV 2)0 3)0 4)0 5)ZA SCW2.
#####
STEP NO      : 11
LABEL :
FUNCTION : 0 (END      )
COMMENT :
*****
LOOP NO      : 3
LOOP TAG     : P2
LOOP DESCRIPTION : CIRCULATION PUMP 2
LOOP SCAN    : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
IMPORT DI :RM45 1 4::!FSL SCW2,RM45 1 3::!FSL_SCW1
#####
STEP NO      : 1
LABEL :
FUNCTION : 7 (DI      )
COMMENT :
=====
DISCRETE TAG : DI_P2_1
DISCRETE (Discrete Input) # : 12
DISCRETE DESC : CIRC P-2 STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : GREEN
DISCRETE STATE 1 DESC :ON COLOR : YELLOW
#####
STEP NO      : 2
LABEL :
FUNCTION : 75 (DST      )
COMMENT :SAVE DI_P2_1 AS P-2 STATUS
PARAMETERS :
1)DI_P2_1 2)0 3)0 4)0 5)YI_P2
```

#####

STEP NO : 3
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI P2 2
DISCRETE (Discrete Input) # : 15
DISCRETE DESC : P2 LO FLOW SWITCH
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :LO FLOW COLOR : YELLOW

#####

STEP NO : 4
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : FAL P2
DISCRETE (Virtual Discrete) # : 1
DISCRETE DESC : CIRC P-2 LOW FLOW ALARM
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :LO FLOW COLOR : YELLOW
DI Alarm State : 1
DI Alarm Priority : Caution
DI Alarm Desc :P-2 LOW FLOW/PUMP OFF
DI Alarm Mgmt Discrete :
DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0

#####

STEP NO : 5
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO P2 1
DISCRETE (Discrete Output) # : 13
DISCRETE DESC : CIRC P-2 START COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :START COLOR : YELLOW

```
#####  
STEP NO      : 6  
LABEL :  
FUNCTION : 57 (DO      )  
COMMENT :  
=====
```

DISCRETE TAG : DO P2 2
DISCRETE (Discrete Output) # : 14
DISCRETE DESC : CIRC P-2 STOP COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :STOP COLOR : GREEN
DISCRETE STATE 1 DESC :OFF COLOR : BLACK
#####

STEP NO : 7
LABEL :
FUNCTION : 78 (MC)
COMMENT :
PARAMETERS :
1)HS P2 2)DO P2 1 3)DO_P2_2 4) 5.00 5) 1.00
6)(nū11) 7)(nū1T)
#####

STEP NO : 8
LABEL :
FUNCTION : 69 (LC)
COMMENT :ALARM ON LO FLOW OR P2 OFF (EXCEPT DURING RESTART)
PARAMETERS :
1)-DO P2 1&((FSL SCW2&FSL SCW1)!(HS P2&-DI_P2_1))
#####

STEP NO : 9
LABEL :
FUNCTION : 75 (DST)
COMMENT :SAVE TO ALARM
PARAMETERS :
1)MSV 2)0 3)0 4)0 5)FAL P2
#####

STEP NO : 10
LABEL :
FUNCTION : 69 (LC)
COMMENT :SEND PULSE ON LO FLOW ALARM (RESTART RESETS)
PARAMETERS :
1)PULSE(FSL SCW2&FSL SCW1&-DO P2 1)
#####

STEP NO : 11
LABEL :
FUNCTION : 62 (GTD)
COMMENT :SKIP NEXT STEP IF NO PULSE
PARAMETERS :
1)!MSV 2) Normal 3)JMP

```
#####
STEP NO      : 12
LABEL : JMP
FUNCTION : 10 (L      )
COMMENT :TURN OFF PUMP IF PULSE (LOW FLOW)
PARAMETERS :
1) HS P2 2) 0
#####
STEP NO      : 13
LABEL :
FUNCTION : 0 (END    )
COMMENT :
*****
LOOP NO      : 4
LOOP TAG     : P102
LOOP DESCRIPTION : PRF COOLING LOOP PUMP 102
LOOP SCAN    : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
EXPORT :DI PCW1A
#####
STEP NO      : 1
LABEL :
FUNCTION : 7 (DI    )
COMMENT :
=====
DISCRETE TAG      : DI_PCW1A
DISCRETE (Discrete Input) # : 16
DISCRETE DESC     : PRF LOOP LO FLOW SWITCH
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :LO FLOW COLOR : YELLOW
#####
STEP NO      : 2
LABEL :
FUNCTION : 7 (DI    )
COMMENT :
=====
DISCRETE TAG      : DI_102_1
DISCRETE (Discrete Input) # : 17
DISCRETE DESC     : P-102 STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : GREEN
DISCRETE STATE 1 DESC :ON COLOR : YELLOW
```


#####

STEP NO : 3
LABEL :
FUNCTION : 75 (DST)
COMMENT :SAVE DI_102_1 AS PUMP STATUS
PARAMETERS :
1)DI 102 1 2)O 3)O 4)O 5)YI P102

#####

STEP NO : 4
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : XA P102
DISCRETE (Virtual Discrete) # : 3
DISCRETE DESC : P102 ALARM
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :LO FLOW COLOR : YELLOW
DI Alarm State : 1
DI Alarm Priority : Caution
DI Alarm Desc :PRF LOOP LO FLOW/P-102 OFF
DI Alarm Mgmt Discrete :
DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0

#####

STEP NO : 5
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO 102 1
DISCRETE (Discrete Output) # : 18
DISCRETE DESC : P102 START COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :START COLOR : YELLOW

```
#####  
STEP NO      : 6  
LABEL :  
FUNCTION : 57 (DO      )  
COMMENT :  
=====
```

DISCRETE TAG : DO 102 2
DISCRETE (Discrete Output) # : 19
DISCRETE DESC : P102 STOP COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :STOP COLOR : GREEN
DISCRETE STATE 1 DESC :OFF COLOR : BLACK
#####

STEP NO : 7
LABEL :
FUNCTION : 78 (MC)
COMMENT :
PARAMETERS :
1)HS P102 2)DO 102_1 3)DO 102_2 4) 5.00 5) 1.00
6)(null) 7)(null)
#####

STEP NO : 8
LABEL :
FUNCTION : 69 (LC)
COMMENT :ALARM ON LO FLOW & P102 OFF (EXCEPT STARTUP)
PARAMETERS :
1)-DO 102 1&(DI PCW1A|(HS P102&-DI 102 1))
#####

STEP NO : 9
LABEL :
FUNCTION : 75 (DST)
COMMENT :SAVE ALARM
PARAMETERS :
1)MSV 2)0 3)0 4)0 5)XA P102
#####

STEP NO : 10
LABEL :
FUNCTION : 69 (LC)
COMMENT :SEND PULSE ON LO FLOW (RESTART RESETS)
PARAMETERS :
1)PULSE(DI PCW1A&-DO 102 1)
#####

STEP NO : 11
LABEL :
FUNCTION : 62 (GTD)
COMMENT :SKIP NEXT STEP IF NO PULSE
PARAMETERS :
1)!MSV 2) Normal 3)JMP

```
#####  
STEP NO      : 12  
LABEL : JMP  
FUNCTION : 10 (L      )  
COMMENT :TURN PUMP OFF ON PULSE (LOW FLOW)  
PARAMETERS :  
1) HS P102 2) 0  
#####  
STEP NO      : 13  
LABEL :  
FUNCTION : 0 (END      )  
COMMENT :  
*****  
LOOP NO      : 5  
LOOP TAG     : P108  
LOOP DESCRIPTION : VP2 LOOP PUMP  
LOOP SCAN    : 0.30 SEC  
NON-PID AUXILIARY :  
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00  
RATIO CURR : 0.00, BIAS CURR : 0.00  
IMPORT DI :RM45 2 1::!DI VP1,RM45 1 4::!FSL_PCW6  
#####  
STEP NO      : 1  
LABEL : VP1STAT  
FUNCTION : 10 (L      )  
COMMENT :LOAD VACUUM PUMP 1 STATUS  
PARAMETERS :  
1)DI VP1  
#####  
STEP NO      : 2  
LABEL : LOFLW  
FUNCTION : 10 (L      )  
COMMENT :LOAD VP-2 LOOP LOW FLOW ALARM SWITCH  
PARAMETERS :  
1)FSL PCW6  
#####  
STEP NO      : 3  
LABEL :  
FUNCTION : 7 (DI      )  
COMMENT :  
=====
```

DISCRETE TAG : DI 108 2
DISCRETE (Discrete Input) # : 21
DISCRETE DESC : P-108 STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : GREEN
DISCRETE STATE 1 DESC :ON COLOR : YELLOW

#####

STEP NO : 4

LABEL :

FUNCTION : 75 (DST)

COMMENT :SAVE DI_108_2 AS P-108 STATUS

PARAMETERS :

1)DI 108 2 2)0 3)0 4)0 5)YI P108

#####

STEP NO : 5

LABEL :

FUNCTION : 6 (VD)

COMMENT :

=====

DISCRETE TAG : XA P108

DISCRETE (Virtual Discrete) # : 4

DISCRETE DESC : P-108 ALARM

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0

DISCRETE STATE 0 DESC :OFF COLOR : BLACK

DISCRETE STATE 1 DESC :LO FLOW COLOR : YELLOW

DI Alarm State : 1

DI Alarm Priority : Caution

DI Alarm Desc :VP2 LOOP LO FLOW/P108 OFF

DI Alarm Mgmt Discrete :

DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0

#####

STEP NO : 6

LABEL :

FUNCTION : 57 (DO)

COMMENT :

=====

DISCRETE TAG : DO 108 1A

DISCRETE (Discrete Output) # : 22

DISCRETE DESC : P108 START COMMAND

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0

DISCRETE STATE 0 DESC :OFF COLOR : BLACK

DISCRETE STATE 1 DESC :START COLOR : YELLOW

```
#####  
STEP NO      : 7  
LABEL :  
FUNCTION : 57 (DO      )  
COMMENT :  
=====
```

DISCRETE TAG : DO 108 1B
DISCRETE (Discrete Output) # : 23
DISCRETE DESC : P108 STOP COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :STOP COLOR : GREEN
DISCRETE STATE 1 DESC :OFF COLOR : BLACK
#####

STEP NO : 8
LABEL : VPSTATS
FUNCTION : 71 (ORG)
COMMENT :DETERMINE COMBINED VAC PUMP STATUS 1=ON
PARAMETERS :
1)VP1STAT 2)DI VP2 3) 4)
#####

STEP NO : 9
LABEL :
FUNCTION : 78 (MC)
COMMENT :30 SEC START TO ALLOW TIME TO START VAC PUMP
PARAMETERS :
1)HS P108 2)DO 108_1A 3)DO_108_1B 4) 30.00 5) 1.00
6)(null) 7)(null)
#####

STEP NO : 10
LABEL :
FUNCTION : 69 (LC)
COMMENT :ALARM ON LOW FLOW OR PUMP OFF (EXCEPT DURING RESTART)
PARAMETERS :
1)-DO 108 1A&(LOFLW!(HS P108&-DI 108 2))
#####

STEP NO : 11
LABEL :
FUNCTION : 75 (DST)
COMMENT :SAVE AS ALARM
PARAMETERS :
1)MSV 2)0 3)0 4)0 5)XA P108
#####

STEP NO : 12
LABEL :
FUNCTION : 69 (LC)
COMMENT :SEND PULSE ON LOW FLOW (RESTART RESETS)
PARAMETERS :
1)PULSE(!LOFLW&-DO_108_1A)

```
#####  
STEP NO      : 13  
LABEL :  
FUNCTION : 62 (GTD )  
COMMENT :SKIP NEXT STEP IF NO PULSE  
PARAMETERS :  
1)MSV 2) Normal 3)JMPFL  
#####  
STEP NO      : 14  
LABEL : JMPFL  
FUNCTION : 10 (L )  
COMMENT :TURN OFF PUMP ON PULSE (LOW FLOW)  
PARAMETERS :  
1) HS P108 2) 0  
#####  
STEP NO      : 15  
LABEL :  
FUNCTION : 71 (ORG )  
COMMENT :OUTPUT=1 IF A VAC PUMP IS RUNING OR P108 IF RESTARTING  
PARAMETERS :  
1)VPSTATS 2)DO 108 1A 3) 4)  
#####  
STEP NO      : 16  
LABEL :  
FUNCTION : 62 (GTD )  
COMMENT :SKIP NEXT STEP IF VP RUNNING OR P106 IN RESTART  
PARAMETERS :  
1)MSV 2) Off-Nomal 3)JMPVP  
#####  
STEP NO      : 17  
LABEL : JMPVP  
FUNCTION : 10 (L )  
COMMENT :TURN OFF PUMP IF BOTH VAC PUMPS OFF (EXCEPT DURING RESTART)  
PARAMETERS :  
1) HS P108 2) 0  
#####  
STEP NO      : 18  
LABEL :  
FUNCTION : 0 (END )  
COMMENT :  
*****  
LOOP NO      : 6  
LOOP TAG      : SP2  
LOOP DESCRIPTION : FLUID COOLER 2 SPRAY PUMP  
LOOP SCAN      : 0.30 SEC  
NON-PID AUXILIARY :  
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00  
RATIO CURR : 0.00, BIAS CURR : 0.00
```

#####

STEP NO : 1
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_SP2
DISCRETE (Discrete Input) # : 5
DISCRETE DESC : SP-2 STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : GREEN
DISCRETE STATE 1 DESC :ON COLOR : YELLOW

#####

STEP NO : 2
LABEL :
FUNCTION : 75 (DST)
COMMENT :SAVE DI_SP2 AS SP-2 STATUS

PARAMETERS :
1)DI SP2 2)0 3)0 4)0 5)YI SP2

#####

STEP NO : 3
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO SP2A
DISCRETE (Discrete Output) # : 6
DISCRETE DESC : SP-2 START COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :START COLOR : YELLOW

#####

STEP NO : 4
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO SP2B
DISCRETE (Discrete Output) # : 7
DISCRETE DESC : SP-2 STOP COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC :STOP COLOR : GREEN
DISCRETE STATE 1 DESC :OFF COLOR : BLACK

#####

STEP NO : 5
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : XA_SP2
DISCRETE (Virtual Discrete) # : 8
DISCRETE DESC : FC2 PUMP ALARM
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :FAILED COLOR : YELLOW
DI Alarm State : 1
DI Alarm Priority : Caution
DI Alarm Desc :FC-1 PUMP SHUT OFF
DI Alarm Mgmt Discrete :
DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0

#####

STEP NO : 6
LABEL :
FUNCTION : 78 (MC)
COMMENT :
PARAMETERS :
1)HS SP2 2)DO SP2A 3)DO_SP2B 4) 5.00 5) 1.00
6)(null) 7)(null)

#####

STEP NO : 7
LABEL :
FUNCTION : 69 (LC)
COMMENT :ALARM WHEN PUMP OFF AND SWITCH ON (EXCEPT DURING RESTART)
PARAMETERS :
1)HS SP2&-DI SP2&-DO SP2A

#####

STEP NO : 8
LABEL :
FUNCTION : 75 (DST)
COMMENT :SAVE ALARM
PARAMETERS :

#####

1)MSV 2)0 3)0 4)0 5)XA SP2
STEP NO : 9
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 7
LOOP TAG : VP2
LOOP DESCRIPTION : VACUUM PUMP 2
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
IMPORT DI : RM45_1_3::!FSL_PCW5
EXPORT : DI VP2

#####

STEP NO : 1
LABEL : LOFLW
FUNCTION : 10 (L)
COMMENT : LOAD VP-2 & 1 LOW FLOW ALARMS
PARAMETERS :
1)FSL PCW6&FSL PCW5

#####

STEP NO : 2
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI VP2
DISCRETE (Discrete Input) # : 25
DISCRETE DESC : VP-2 STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC : OFF COLOR : GREEN
DISCRETE STATE 1 DESC : ON COLOR : YELLOW

#####

STEP NO : 3
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO VP2
DISCRETE (Discrete Output) # : 26
DISCRETE DESC : VP-2 STOP COMMAND
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0
DISCRETE STATE 0 DESC : STOP COLOR : GREEN
DISCRETE STATE 1 DESC : OFF COLOR : BLACK

```
#####  
STEP NO      : 4  
LABEL :  
FUNCTION : 6 (VD      )  
COMMENT :  
=====
```

DISCRETE TAG : XA VP2
DISCRETE (Virtual Discrete) # : 5
DISCRETE DESC : VP2 ALARM
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :LO FLOW COLOR : YELLOW
DI Alarm State : 1
DI Alarm Priority : Caution
DI Alarm Desc :LO COOLANT FLOW - VP2 OFF
DI Alarm Mgmt Discrete :
DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0
#####

STEP NO : 5
LABEL :
FUNCTION : 69 (LC)
COMMENT :OUTPUT=1 IF VP2 ON<60 SEC OR NO LO FLOW ALARM
PARAMETERS :
1)PULSE(DI VP2,60)|-!LOFLW
#####

STEP NO : 6
LABEL :
FUNCTION : 75 (DST)
COMMENT :ALARM ON LOW FLOW WHEN VP2 IS ON > 60 SEC
PARAMETERS :
1)!MSV 2)1 3)0 4)0 5)XA VP2
#####

STEP NO : 7
LABEL :
FUNCTION : 69 (LC)
COMMENT :SEND 1 SEC PULSE ON LOW FLOW ALARM
PARAMETERS :
1)PULSE(XA VP2,1)
#####

STEP NO : 8
LABEL :
FUNCTION : 75 (DST)
COMMENT :VP2 STOP CONTACT OPEN 1 SEC ON LO FLOW
PARAMETERS :
1)!MSV 2)1 3)0 4)0 5)DO_VP2

#####

STEP NO : 9

LABEL :

FUNCTION : 0 (END)

COMMENT :

LOOP NO : 8

LOOP TAG : MISC_M12

LOOP DESCRIPTION : MISC I/O

LOOP SCAN : 0.30 SEC

NON-PID AUXILIARY :

RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00

RATIO CURR : 0.00, BIAS CURR : 0.00

#####

STEP NO : 1

LABEL :

FUNCTION : 6 (VD)

COMMENT :

=====

DISCRETE TAG : PAL TK1

DISCRETE (Virtual Discrete) # : 2

DISCRETE DESC : SEC LOOP EXP TANK LO PRESS ALARM

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0

DISCRETE STATE 0 DESC :OFF COLOR : BLACK

DISCRETE STATE 1 DESC :LO PRESS COLOR : YELLOW

DI Alarm State : 1

DI Alarm Priority : Caution

DI Alarm Desc :SECONDARY LOOP TK-1 LO PRESS

DI Alarm Mgmt Discrete :

DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0

#####

STEP NO : 2

LABEL :

FUNCTION : 7 (DI)

COMMENT :

=====

DISCRETE TAG : DI TK1

DISCRETE (Discrete Input) # : 1

DISCRETE DESC : SEC LOOP EXP TANK PRESS SWITCH

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0

DISCRETE STATE 0 DESC :OFF COLOR : BLACK

DISCRETE STATE 1 DESC :LO PRESS COLOR : YELLOW

```
#####  
STEP NO      : 3  
LABEL :  
FUNCTION : 75 (DST )  
COMMENT :SAVE DI_TK1 AS TK-1 LOW PRESSURE ALARM  
PARAMETERS :  
1)DI TK1 2)0 3)0 4)0 5)PAL TK1  
#####  
STEP NO      : 4  
LABEL :  
FUNCTION : 0 (END )  
COMMENT :
```

MICON PROGRAM FILES

MICON program files are created by MICON View from the configuration file listings (above). This file is the actual program that is run by the controller card. When you request a program upload from a controller card, these are the files you'll get.

These files should not be directly modified by the user. All modifications should be through the configuration file using the configure controller option on MICON View.

The programming language is a custom language developed by MICON Company. A description of this language can be found in the *U-32/RCM Function Compiler Documentation* available from MICON Company (Houston, TX 1-713-947-9470).

You will notice that, like the configuration file, the program file is organized into loops. With the exception of two loops, these are the same ones created by the user in the controller's configuration file. The two exceptions are loop "ZERO" at the top and loop "NINETY NINE" at the bottom. These are house-keeping loops created by MICON View.

The following file listings have been edited to make them easier to read. Spaces have been put between the loops and extra long lines have been indented. Therefore, the actual file's format may look a little different.

NOTE: The DEF line under each loop name contains fields showing the tuning parameters -- for example:

CGAIN=0.50,CRESET=10.00,CRATE=0.00,M_RESET=0.00

These tuning parameters are not controlled by this document. Therefore, these numbers may be different than the ones that appear in the workstation listings. This will also be true of program files uploaded from the controllers.

mic8_r0

```
LOOP ZERO;
DEF :TAG=AI SCW1A.,AI SCW1 1.,AI SCW1 2.,AI PCW5 1.,AI PCW5 2.,AI PCW5 3.,AI PCW5 4.;
DEF :TAG=CIR PCW5.,FIR PCW5.,FIR SCW1.,PIR PCW5.,TIR PCW5.,TIR SCW1.,TIRSCW1A.;
DEF :TAG=FSL PCW5.,FSL SCW1.;
DEF :TAG=PERIOD=1;
END;
```

```
LOOP MISC M8.;
DEF :TAG=PERIOD=0.30,SP RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M RESET=0.00;
AI :TAG=AI SCW1A.:CHAN=1:SPANLO=0.00:SPANHI=100.00;
LET :TAG=TIRSCW1A.=AI SCW1A.;/*SAVE AI SCW1A AS FC-1 OUTLET TEMP*/
AI :TAG=AI SCW1 1.:CHAN=2:SPANLO=0.00:SPANHI=100.00;
LET :TAG=TIR SCW1.=AI SCW1 1.;/*SAVE INPUT AS FC-1 INLET TEMP*/
AI :TAG=AI SCW1 2.:CHAN=3:SPANLO=0.00:SPANHI=100.00;
LET :TAG=FIR SCW1.=AI SCW1 2.;/*SAVE AI SCW1 2 AS FC-1 OUTLET FLOW*/
AI :TAG=AI PCW5 1.:CHAN=4:SPANLO=0.00:SPANHI=100.00;
LET :TAG=TIR PCW5.=AI PCW5 1.;/*SAVE AI PCW5 1 AS VP-1 LOOP TEMP*/
AI :TAG=AI PCW5 2.:CHAN=5:SPANLO=0.00:SPANHI=20.00;
LET :TAG=PIR PCW5.=AI PCW5 2.;/*SAVE AI PCW5 2 AS VP-1 LOOP PRESS*/
AI :TAG=AI PCW5 3.:CHAN=6:SPANLO=0.00:SPANHI=1000.00;
LET :TAG=CIR PCW5.=AI PCW5 3.;/*SAVE AI PCW5 3 AS VP-1 LOOP CONDUCTIVITY*/
AI :TAG=AI PCW5 4.:CHAN=7:SPANLO=0.00:SPANHI=15.00;
LET :TAG=FIR PCW5.=AI PCW5 4.;/*SAVE AI PCW5 4 AS VP-1 LOOP FLOW*/
EXPORT FSL PCW5,FSL SCW1;
END;
```

```
LOOP   NINETY NINE;
ALARM :TAG=CIR_PCW5.:REF=CIR_PCW5.:TYPE=1:PRI=149796:LIMITS={?-,?-,?-,?+,?+,?+}:DEADBAND=10.00;
ALARM :TAG=FIR_PCW5.:REF=FIR_PCW5.:TYPE=1:PRI=149795:LIMITS={?-,?-,9.60,?+,?+,?+}:DEADBAND=0.10;
LET    :TAG=FSL_PCW5=FIR_PCW5@XM1;
ALARM :TAG=FIR_SCW1.:REF=FIR_SCW1.:TYPE=1:PRI=149731:LIMITS={?-,15.00,25.00,?+,?+,?+}:DEADBAND=1.00;
LET    :TAG=FSL_SCW1=FIR_SCW1@XM4;
ALARM :TAG=PIR_PCW5.:REF=PIR_PCW5.:TYPE=1:PRI=149795:LIMITS={?-,?-,2.00,?+,?+,?+}:DEADBAND=0.20;
ALARM :TAG=TIR_PCW5.:REF=TIR_PCW5.:TYPE=1:PRI=149780:LIMITS={?-,?-,?-,90.00,?+,?+}:DEADBAND=1.00;
ALARM :TAG=TIRSCW1A.:REF=TIRSCW1A.:TYPE=1:PRI=149778:LIMITS={?-,?-,40.00,76.00,?+,?+}:DEADBAND=1.00;
DEF :TAG=PERIOD=1;
END;
```

mic9_r0

```
LOOP    ZERO;
DEF :TAG=AI SCW2A.,AI SCW2_1.,AI SCW2_2.,AI PCW6_1.,AI_PCW6_2.,AI_PCW6_3.,AI_PCW6_4.,AI_SCW1_3.,
      AI_PCW1_1.,AI_PCW1_2.,AI_PCW1_3.,AI_PCW1_4.;
DEF :TAG=CIR_PCW1.,CIR_PCW6.,CIR_SCW1.,FIR_PCW1.,FIR_PCW6.,FIR_SCW2.,PIR_PCW1.,PIR_PCW6.,TIR_PCW1.,
      TIR_PCW6.,TIR_SCW2.,TIRSCW2A.;
DEF :TAG=TFSL_PCW6.,TFSL_SCW2.;
DEF :TAG=PERIOD=1;
END;
```



```

LOOP MISC M9.;
DEF :TAG=PERIOD=0.30, SP RATE=10000.00, SPLOLM=0.00, SPHLM=100.00, SPANLO=0.00, SPANHI=100.00, RATIO=0.00,
    BIAS=0.00, CGAIN=0.20, CRESET=10.00, CRATE=0.00, M_RESET=0.00;
AI :TAG=AI SCW2A.:CHAN=1:SPANLO=0.00:SPANHI=100.00;
LET :TAG=TIRSCW2A=AI SCW2A; /*SAVE AI SCW2A AS FC-2 OUTLET TEMP*/
AI :TAG=AI SCW2 1.:CHAN=2:SPANLO=0.00:SPANHI=100.00;
LET :TAG=TIR SCW2=AI SCW2 1; /*SAVE AI SCW2 1 AS FC-2 INLET TMEP*/
AI :TAG=AI SCW2 2.:CHAN=3:SPANLO=0.00:SPANHI=100.00;
LET :TAG=FIR SCW2=AI SCW2 2; /*SAVE AI SCW2 2 AS FC-2 OUTLET FLOW*/
AI :TAG=AI PCW6 1.:CHAN=4:SPANLO=0.00:SPANHI=100.00;
LET :TAG=TIR PCW6=AI PCW6 1; /*SAVE AI PCW6 1 AS VP-2 LOOP TEMP*/
AI :TAG=AI PCW6 2.:CHAN=5:SPANLO=0.00:SPANHI=20.00;
LET :TAG=PIR PCW6=AI PCW6 2; /*SAVE AI PCW6 2 AS VP-2 LOOP PRESS*/
AI :TAG=AI PCW6 3.:CHAN=6:SPANLO=0.00:SPANHI=1000.00;
LET :TAG=CIR PCW6=AI PCW6 3; /*SAVE AI PCW6 3 AS VP-2 LOOP CONDUCTIVITY*/
AI :TAG=AI PCW6 4.:CHAN=7:SPANLO=0.00:SPANHI=15.00;
LET :TAG=FIR PCW6=AI PCW6 4; /*SAVE AI PCW6 4 AS VP-2 LOOP FLOW*/
AI :TAG=AI SCW1 3.:CHAN=8:SPANLO=0.00:SPANHI=1000.00;
LET :TAG=CIR SCW1=AI SCW1 3; /*SAVE AI SCW1 3 AS SECONDARY LOOP CONDUCTIVITY*/
AI :TAG=AI PCW1 1.:CHAN=9:SPANLO=0.00:SPANHI=1000.00;
LET :TAG=CIR PCW1=AI PCW1 1; /*SAVE AI PCW1 1 AS PRF LOOP CONDUCTIVITY*/
AI :TAG=AI PCW1 2.:CHAN=10:SPANLO=0.00:SPANHI=70.00;
LET :TAG=FIR PCW1=AI PCW1 2; /*SAVE AI PCW1 2 AS PRF LOOP FLOW*/
AI :TAG=AI PCW1 3.:CHAN=11:SPANLO=0.00:SPANHI=100.00;
LET :TAG=TIR PCW1=AI PCW1 3; /*SAVE AI PCW1 3 AS PRF LOOP TEMP*/
AI :TAG=AI PCW1 4.:CHAN=12:SPANLO=0.00:SPANHI=100.00;
LET :TAG=PIR PCW1=AI PCW1 4; /*SAVE AI PCW1 4 AS PRF LOOP PRESS*/
EXPORT FSL_PCW6,FSL_SCW2;
END;

```

```
LOOP    NINETY NINE;
ALARM :TAG=CIR_PCW1.:REF=CIR_PCW1.:TYPE=1:PRI=149796:LIMITS={?-,?-,?-,?+,?+,?+}:DEADBAND=10.00;
ALARM :TAG=CIR_PCW6.:REF=CIR_PCW6.:TYPE=1:PRI=149796:LIMITS={?-,?-,?-,?+,?+,?+}:DEADBAND=10.00;
ALARM :TAG=CIR_SCW1.:REF=CIR_SCW1.:TYPE=1:PRI=149796:LIMITS={?-,?-,?-,?+,?+,?+}:DEADBAND=10.00;
ALARM :TAG=FIR_PCW1.:REF=FIR_PCW1.:TYPE=1:PRI=149795:LIMITS={?-,?-,25.00,?+,?+,?+}:DEADBAND=0.70;
ALARM :TAG=FIR_PCW6.:REF=FIR_PCW6.:TYPE=1:PRI=149795:LIMITS={?-,?-,9.60,?+,?+,?+}:DEADBAND=0.10;
LET     :TAG=FSL_PCW6=FIR_PCW6@XM1;
ALARM :TAG=FIR_SCW2.:REF=FIR_SCW2.:TYPE=1:PRI=149731:LIMITS={?-,15.00,25.00,?+,?+,?+}:DEADBAND=1.00;
LET     :TAG=FSL_SCW2=FIR_SCW2@XM4;
ALARM :TAG=PIR_PCW1.:REF=PIR_PCW1.:TYPE=1:PRI=149794:LIMITS={?-,?-,50.00,?+,?+,?+}:DEADBAND=1.00;
ALARM :TAG=PIR_PCW6.:REF=PIR_PCW6.:TYPE=1:PRI=149795:LIMITS={?-,?-,2.00,?+,?+,?+}:DEADBAND=0.20;
ALARM :TAG=TIR_PCW1.:REF=TIR_PCW1.:TYPE=1:PRI=149780:LIMITS={?-,?-,?-,75.00,?+,?+}:DEADBAND=1.00;
ALARM :TAG=TIR_PCW6.:REF=TIR_PCW6.:TYPE=1:PRI=149780:LIMITS={?-,?-,?-,90.00,?+,?+}:DEADBAND=1.00;
ALARM :TAG=TIRSCW2A.:REF=TIRSCW2A.:TYPE=1:PRI=149778:LIMITS={?-,?-,40.00,76.00,?+,?+}:DEADBAND=1.00;
DEF :TAG=PERIOD=1;
END;
```

mic11_r0

```

LOOP ZERO;
DEF :TAG=IDI_PSL_1.,IDI_FCF1.,IDI_SPI.,IDI_SCMIA.,IDI_SCMIB.,IDI_P1_1.,IDI_P1_2.,IDI_101_2.,
    IDI_101_1.,IDI_106_2.,IDI_VP1.,IDI_105_2.;
DEF :ACCESS=1:TAG=IHS_FCF1.,IHS_P1.,IHS_P101.,IHS_P106.,IHS_SCM1.,IHS_SPI.;
DEF :TAG=IYI_FCF1.,IYI_P1.,IYI_P101.,IYI_P106.,IYI_SPI.,IDO_FCF1A.,IDO_FCF1B.,IDO_SPIA.,IDO_SPIB.,
    IDO_SCMIA.,IDO_SCMIB.,IDO_P1_1.,IDO_P1_2.,IDO_101_1.,IDO_101_2.,IDO_106_1A.,IDO_106_1B.,IDO_VP1.;
DEF :TAG=#ZI_SCM1.;
DEF :TAG=PERIOD=1;
END;

LOOP FCF1.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
DI :TAG=DI_FCF1.:CHAN=2;
LET :TAG=YI_FCF1=DI_FCF1; /*SAVE DI_FCF1 AS FC-1 FAN STATUS*/
DO :TAG=DO_FCF1A.:CHAN=3:DAD=0;
DO :TAG=DO_FCF1B.:CHAN=4:DAD=0;
DEF :TAG=|+2XA_FCF1.;
MOTOR CONTROL :SWITCH=HS_FCF1:START=DO_FCF1A:STOP=DO_FCF1B:START_TIME=5.00:STOP_TIME=1.00;
LET :TAG=HS_FCF1&-DI_FCF1&-DO_FCF1A; /*FAN FAILURE LOGIC (NOT USED)*/
END;

```

```

LOOP HV SCW1.;
DEF :TAG=PERIOD=0.30,SP RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M RESET=0.00;
DI :TAG=DI_SCW1A.:CHAN=8;
DI :TAG=DI_SCW1B.:CHAN=9;
MULTI STATE DI :TAG=ZI SCW1.:DI1=DI_SCW1A:DI2=DI_SCW1B;
DO :TAG=DO_SCW1A.:CHAN=10:DAD=0;
DO :TAG=DO_SCW1B.:CHAN=11:DAD=0;
DEF :TAG=|+2ZA SCW1.;
LET :TAG=DO_SCW1A.=HS SCW1.;/*VALVE OPEN COMMAND*/
LET :TAG=DO_SCW1B.=HS SCW1.;/*CLOSE COMMAND*/
LET :TAG=(DELAY(HS SCW1,30)&-DI_SCW1A)|(DELAY(-HS SCW1,30)&-DI_SCW1B);/*ALARM IF VALVE OUT OF POSITION
(AFTER 30 SEC DELAY)*/
LET :TAG=ZA_SCW1.=MSV;
END;

```

```

LOOP P1.;
DEF :TAG=PERIOD=0.30,SP RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M RESET=0.00;
DEF :TAG=RM45 1 3.:|FSL SCW1, RM45 1 4.:|FSL SCW2;
DI :TAG=DI_P1_1.:CHAN=12;
LET :TAG=YT PI=DI_P1_1;/*SAVE DI_P1_1 AS P-1 STATUS*/
DI :TAG=DI_P1_2.:CHAN=-15;
DEF :TAG=|+2FAL P1.;
DO :TAG=DO_P1_1.:CHAN=13:DAD=0;
DO :TAG=DO_P1_2.:CHAN=14:DAD=0;
MOTOR CONTROL :SWITCH=HS P1:START=DO P1 1:STOP=DO P1 2:START TIME=5.00:STOP TIME=1.00;
LET :TAG=-DO P1 1&((FSL_SCW1&FSL_SCW2)|(HS_P1&-DI_P1_1));/*ALARM ON LO FLOW & P1 OFF (EXCEPT STARTUP)*/
LET :TAG=FAL_P1=MSV;
LET :TAG=PULSE(FSL_SCW1&FSL_SCW2&-DO P1 1);/*SEND PULSE ON LO FLOW (RESTART RESETS)*/
GOTO :COND=-|MSV:TAG=JMP;/*SKIP NEXT STEP IF NO PULSE*/
LET :TAG=HS P1=0;/*TURN PUMP OFF IF PULSE (LOW FLOW)*/
LABEL :TAG=JMP;
END;

```

```
LOOP P101.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHLM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
DEF :TAG=RM45 2 2::IDI PCWIA;
LET :TAG=DI PCWIA; /*LOAD LOW FLOW SWITCH*/
LABEL :TAG=LOFLOW;
DI :TAG=DI 101 1.:CHAN=17;
LET :TAG=YI P101=DI 101 1; /*SAVE DI_101_1 AS P-101 STATUS*/
DEF :TAG=1+2XA P101.;
DO :TAG=DO 101 1.:CHAN=18:DAD=0;
DO :TAG=DO 101 2.:CHAN=19:DAD=0;
MOTOR CONTROL :SWITCH=HS P101:START=DO 101 1:STOP=DO 101 2:START TIME=5.00:STOP TIME=1.00;
LET :TAG=-DO 101 1&(LOFLOW|(HS P101&-DI_101_1)); /*ALARM ON LO FLOW & P101 OFF (EXCEPT STARTUP)*/
LET :TAG=XA P101=MSV; /*SAVE ALARM*/
LET :TAG=PULSE(LOFLOW&-DO 101 1); /*SEND PULSE ON LOW FLOW (RESTART RESETS)*/
GOTO :COND=-!MSV:TAG=JMP; /*SKIP NEXT STEP IF NO PULSE*/
LET :TAG=HS P101=0; /*TURN OFF PUMP ON PULSE (LOW FLOW)*/
LABEL :TAG=JMP;
END;
```

```

LOOP P106.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
DEF :TAG=RM45 2 2::!DI VP2,RM45 1 3::!FSL PCW5;
LET :TAG=DI VP2; /*LOAD VACUUM PUMP 2 STATUS*/
LABEL :TAG=VP2STAT;
LET :TAG=FSL PCW5; /*LOAD VP-1 LOOP LOW FLOW ALARM SWITCH*/
LABEL :TAG=LOFLW;
DI :TAG=DI 106 2::CHAN=21;
LET :TAG=YI P106=DI 106 2; /*SAVE DI_106_2 AS P-106 STATUS*/
DEF :TAG=|+2XA P106.;
DO :TAG=DO 106 1A::CHAN=22:DAD=0;
DO :TAG=DO 106 1B::CHAN=23:DAD=0;
LET :TAG=DI VP1|VP2STAT|0|0; /*DETERMINE COMBINED VAC PUMP STATUS 1=ON*/
LABEL :TAG=VPSTATS;
MOTOR CONTROL :SWITCH=HS P106:START=DO 106 1A:STOP=DO 106 1B:START_TIME=30.00:STOP_TIME=1.00; /*30 SECOND
START TO ALLOW TIME TO START VAC PUMP*/
LET :TAG=-DO 106 1A&(LOFLW| (HS_P106&-DI_106_2)); /*ALARM ON LO FLOW OR PUMP OFF (EXCEPT DURING RESTART)*/
LET :TAG=XA P106=MSV;
LET :TAG=PULSE(ILOFLW&-DO 106 1A); /*SEND PULSE ON LOW FLOW (RESTART RESETS)*/
GOTO :COND=-!MSV:TAG=JMPFL; /*SKIP NEXT STEP IF NO PULSE*/
LET :TAG=HS P106=0; /*TURN OFF PUMP ON PULSE (LOW FLOW)*/
LABEL :TAG=JMPFL;
LET :TAG=VPSTATS|DO 106 1A|0|0; /*OUTPUT=1 IF A VAC PUMP IS RUNNING OR P106 IS RESTARTING*/
GOTO :COND=MSV:TAG=JMPVP; /*SKIP NEXT STEP IF VP's RUNING OR P106 IN RESTART*/
LET :TAG=HS P106=0; /*TURN OFF PUMP IF BOTH VAC PUMPS OFF (EXCEPT DURING RESTART)*/
LABEL :TAG=JMPVP;
END;

```

```
LOOP SP1.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
DI :TAG=DI SP1.:CHAN=5;
LET :TAG=YI SP1=DI SP1; /*SAVE DI SP1 AS SP-1 STATUS*/
DO :TAG=DO SP1A.:CHAN=6:DAD=0;
DO :TAG=DO SP1B.:CHAN=7:DAD=0;
DEF :TAG=I+2XA SP1.;
MOTOR CONTROL :SWITCH=HS SP1:START=DO SP1A:STOP=DO SP1B:START TIME=5.00:STOP TIME=1.00;
LET :TAG=HS SP1&DI SP1&DO SP1A; /*ALARM WHEN PUMP OFF AND SWITCH ON (EXCEPT DURING RESTART)*/
LET :TAG=XA SP1=MSV;
END;

LOOP VP1.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
DEF :TAG=RM45 1 4::IFSL PCW6;
LET :TAG=FSL PCW5&FSL PCW6; /*LOAD VP-1 & 2 LOW FLOW ALARMS*/
LABEL :TAG=LOFLW;
DI :TAG=DI VP1.:CHAN=25;
DO :TAG=DO VP1.:CHAN=26:DAD=0;
DEF :TAG=I+2XA VP1.;
LET :TAG=PULSE(DI VP1,60)|-!LOFLW; /*OUTPUT=1 IF VP-1 ON<60SEC OR NO LO FLOW ALARM*/
LET :TAG=XA VP1=-TMSV; /*ALARM ON LOW FLOW WHEN VP-1 IS ON > 60 SEC*/
LET :TAG=PULSE(XA VP1,1); /*SEND 1 SECOND PULSE ON LOW FLOW ALARM*/
LET :TAG=DO VP1=-TMSV; /*VP1 STOP CONTACT OPENS 1 SEC ON LO FLOW*/
EXPORT DI VP1;
END;
```

```

LOOP MISC M11.;
DEF :TAG=PERIOD=0.30, SP RATE=10000.00, SPL0LM=0.00, SPHILM=100.00, SPANLO=0.00, SPANH1=100.00, RATIO=0.00,
    BIAS=0.00, CGAIN=0.20, CRESET=10.00, CRATE=0.00, M_RESET=0.00;
DEF :TAG=I+2LALTK105.;
DI :TAG=DI 105 2.:CHAN=27;
LET :TAG=LALTK105=DI 105 2; /*SAVE DI 105 2 AS TK-105 LO LEVEL ALARM*/
DEF :TAG=I+3PAL 1.;
DI :TAG=DI PSL 1.:CHAN=-1;
LET :TAG=DELAY(DI PSL 1,600)&DI PSL 1; /*LO PRESS ALARM AFTER 10 MIN*/
LET :TAG=PAL 1.=MSV; /*SAVE AS FC WATER LO PRESSURE ALARM*/
DEF :TAG=I+3PALTK101.;
DI :TAG=DI 101 2.:CHAN=-16;
LET :TAG=PALTK101=DI 101 2; /*SAVE DI 101 2 AS TK-101 (EXP TANK) LO PRESS ALARM*/
END;

LOOP NINETY NINE;
DEF :TAG=PERIOD=1;
END;

```


mic12 r0

```

LOOP ZERO;
DEF :TAG=IDI TK1.,IDI_FCF2.,IDI_SP2.,IDI_SCW2A.,IDI_SCW2B.,IDI_P2_1.,IDI_P2_2.,IDI_PCW1A.,IDI_102_1.,
    IDI_108_2.,IDI_VP2.;
DEF :ACCESS=1:TAG=IHS_FCF2.,IHS_P2.,IHS_P102.,IHS_SCW2.,IHS_SP2.;
DEF :TAG=IYI_FCF2.,IYI_P2.,IYI_P102.,IYI_SP2.,ID0_FCF2A.,ID0_FCF2B.,ID0_SP2A.,ID0_SP2B.,
    ID0_SCW2A.,ID0_SCW2B.,ID0_P2_1.,ID0_P2_2.,ID0_102_1.,ID0_102_2.,ID0_108_1A.,ID0_108_1B.,ID0_VP2.;
DEF :TAG=#ZI_SCW2.;
DEF :TAG=PERIOD=1;
END;

LOOP FCF2.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHLM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
DI :TAG=DI_FCF2.:CHAN=2;
LET :TAG=YI_FCF2=DI_FCF2; /*SAVE DI_FCF2 AS FC-2 FAN STATUS*/
DO :TAG=DO_FCF2A.:CHAN=3:DAD=0;
DO :TAG=DO_FCF2B.:CHAN=4:DAD=0;
DEF :TAG=I+2XA_FCF2.;
MOTOR CONTROL :SWITCH=HS_FCF2:START=DO_FCF2A:STOP=DO_FCF2B:START_TIME=5.00:STOP_TIME=1.00;
LET :TAG=HS_FCF2&-DI_FCF2&-DO_FCF2A; /*FAN FAILURE LOGIC (NOT USED)*/
END;

```

```
LOOP HV SCW2.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
DI :TAG=DI_SCW2A.:CHAN=8;
DI :TAG=DI_SCW2B.:CHAN=9;
MULTI STATE DI :TAG=ZI_SCW2.:DI1=DI_SCW2A:DI2=DI_SCW2B;
DO :TAG=DO_SCW2A.:CHAN=10:DAD=0;
DO :TAG=DO_SCW2B.:CHAN=11:DAD=0;
DEF :TAG=|+2ZA SCW2.;
LET :TAG=DO_SCW2A.=HS SCW2.;/*OPEN COMMAND*/
LET :TAG=DO_SCW2B.=-HS SCW2.;/*CLOSE COMMAND*/
LET :TAG=(DELAY(HS SCW2,30)&-DI_SCW2A)|(DELAY(-HS SCW2,30)&-DI_SCW2B);/*ALARM IF VALVE OUT OF
    POSITION (AFTER 30 SEC)*/
LET :TAG=ZA_SCW2.=MSV;
END;
```

```
LOOP P2.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
DEF :TAG=RM45_1_4::IFSL_SCW2,RM45_1_3::IFSL_SCW1;
DI :TAG=DI_P2_1::CHAN=12;
LET :TAG=YI_P2=DI_P2_1; /*SAVE DI_P2_1 AS P-2 STATUS*/
DI :TAG=DI_P2_2::CHAN=-15;
DEF :TAG=I+2FAL_P2.;
DO :TAG=DO_P2_1::CHAN=13:DAD=0;
DO :TAG=DO_P2_2::CHAN=14:DAD=0;
MOTOR CONTROL :SWITCH=HS_P2:START=DO_P2_1:STOP=DO_P2_2:START TIME=5.00:STOP TIME=1.00;
LET :TAG=-DO_P2_1&((FSL_SCW2&FSL_SCW1)|(HS_P2&DI_P2_1)); /*ALARM ON LO FLOW OR P2 OFF
    (EXCEPT DURING RESTART)*/
LET :TAG=FAL_P2=MSV; /*SAVE TO ALARM*/
LET :TAG=PULSE(FSL_SCW2&FSL_SCW1&-DO_P2_1); /*SEND PULSE ON LO FLOW ALARM (RESTART RESETS)*/
GOTO :COND=-IMSV:TAG=JMP; /*SKIP NEXT STEP IF NO PULSE*/
LET :TAG=HS_P2=0; /*TURN OFF PUMP IF PULSE (LOW FLOW)*/
LABEL :TAG=JMP;
END;
```

```

LOOP P102.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHLM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
DI :TAG=DI_PCW1A.:CHAN=-16;
DI :TAG=DI_102_1.:CHAN=17;
LET :TAG=YI_P102=DI_102_1; /*SAVE DI_102_1 AS PUMP STATUS*/
DEF :TAG=|+2XA P102.;
DO :TAG=DO_102_1.:CHAN=18:DAD=0;
DO :TAG=DO_102_2.:CHAN=19:DAD=0;
MOTOR CONTROL :SWITCH=HS_P102:START=DO_102_1:STOP=DO_102_2:START_TIME=5.00:STOP_TIME=1.00;
LET :TAG=-DO_102_1&(DI_PCW1A|(HS_P102&-DI_102_1)); /*ALARM ON LO FLOW & P102 OFF (EXCEPT STARTUP)*/
LET :TAG=XA_P102=MSV; /*SAVE ALARM*/
LET :TAG=PULSE(DI_PCW1A&-DO_102_1); /*SEND PULSE ON LO FLOW (RESTART RESETS)*/
GOTO :COND=-IMSV:TAG=JMP; /*SKIP NEXT STEP IF NO PULSE*/
LET :TAG=HS_P102=0; /*TURN PUMP OFF ON PULSE (LOW FLOW)*/
LABEL :TAG=JMP;
EXPORT DI_PCW1A;
END;

```

```

LOOP P108.;
DEF :TAG=PERIOD=0.30,SP RATE=10000.00,SPL0LM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M RESET=0.00;
DEF :TAG=RM45 2 1::!DI VP1, RM45 1 4::!FSL PCW6;
LET :TAG=DI VP1; /*LOAD VACUUM PUMP 1 STATUS*/
LABEL :TAG=VP1STAT;
LET :TAG=FSL PCW6; /*LOAD VP-2 LOOP LOW FLOW ALARM SWITCH*/
LABEL :TAG=L0FLW;
DI :TAG=DI 108 2::CHAN=21;
LET :TAG=YI P108=DI 108 2; /*SAVE DI_108_2 AS P-108 STATUS*/
DEF :TAG=1+2XA P108.;
DO :TAG=DO 108 1A::CHAN=22:DAD=0;
DO :TAG=DO 108 1B::CHAN=23:DAD=0;
LET :TAG=VP1STAT;DI VP2;0;0; /*DETERMINE COMBINED VAC PUMP STATUS 1=ON*/
LABEL :TAG=VPSTATS;
MOTOR CONTROL :SWITCH=HS P108:START=DO 108 1A:STOP=DO 108 1B:START_TIME=30.00:STOP_TIME=1.00; /*30 SEC START
    TO ALLOW TIME TO START VAC PUMP*/
LET :TAG=DO 108 1A&(L0FLW! (HS P108&-DI 108 2)); /*ALARM ON LOW FLOW OR PUMP OFF (EXCEPT DURING RESTART)*/
LET :TAG=XA P108=MSV; /*SAVE AS ALARM*/
LET :TAG=PULSE(!L0FLW&-DO 108 1A); /*SEND PULSE ON LOW FLOW (RESTART RESETS)*/
GOTO :COND=-!MSV:TAG=JMPFL; /*SKIP NEXT STEP IF NO PULSE*/
LET :TAG=HS P108=0; /*TURN OFF PUMP ON PULSE (LOW FLOW)*/
LABEL :TAG=JMPFL;
LET :TAG=VPSTATS;DO 108 1A;0;0; /*OUTPUT=1 IF A VAC PUMP IS RUNNING OR P108 IF RESTARTING*/
GOTO :COND=MSV:TAG=JMPVP; /*SKIP NEXT STEP IF VP RUNNING OR P106 IN RESTART*/
LET :TAG=HS P108=0; /*TURN OFF PUMP IF BOTH VAC PUMPS OFF (EXCEPT DURING RESTART)*/
LABEL :TAG=JMPVP;
END;

```

```

LOOP SP2.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANHI=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
DI :TAG=DI SP2.:CHAN=5;
LET :TAG=YI SP2=DI SP2; /*SAVE DI SP2 AS SP-2 STATUS*/
DO :TAG=DO SP2A.:CHAN=6:DAD=0;
DO :TAG=DO SP2B.:CHAN=7:DAD=0;
DEF :TAG=I+2XA SP2.;
MOTOR CONTROL :SWITCH=HS SP2:START=DO SP2A:STOP=DO SP2B:START TIME=5.00:STOP TIME=1.00;
LET :TAG=HS SP2&-DI SP2&-DO SP2A; /*ALARM WHEN PUMP OFF AND SWITCH ON (EXCEPT DURING RESTART)*/
LET :TAG=XA SP2=MSV; /*SAVE ALARM*/
END;

```

```

LOOP VP2.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANHI=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
DEF :TAG=RM45 1 3::IFSL PCW5;
LET :TAG=FSL PCW6&FSL PCW5; /*LOAD VP-2 & 1 LOW FLOW ALARMS*/
LABEL :TAG=LOFLW;
DI :TAG=DI VP2.:CHAN=25;
DO :TAG=DO VP2.:CHAN=26:DAD=0;
DEF :TAG=I+2XA VP2.;
LET :TAG=PULSE(DI VP2,60)|-!LOFLW; /*OUTPUT=1 IF VP2 ON<60 SEC OR NO LO FLOW ALARM*/
LET :TAG=XA VP2=-!MSV; /*ALARM ON LOW FLOW WHEN VP2 IS ON > 60 SEC*/
LET :TAG=PULSE(XA VP2,1); /*SEND 1 SEC PULSE ON LOW FLOW ALARM*/
LET :TAG=DO VP2=-!MSV; /*VP2 STOP CONTACT OPEN 1 SEC ON LO FLOW*/
EXPORT DI VP2;
END;

```

WHC-SD-CP-CSWD-016

Volume 3

Revision 1

Page 98

LOOP MISC M12.;

DEF :TAG=PERIOD=0.30,SP RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;

DEF :TAG=|+2PAL_TK1.;

DI :TAG=DI_TK1.:CHAN=-1;

LET :TAG=PAL_TK1=DI_TK1; /*SAVE DI_TK1 AS TK-1 LOW PRESSURE ALARM*/

END;

LOOP NINETY NINE;

DEF :TAG=PERIOD=1;

END;

APPENDIX A: MICON INPUT/OUTPUT

Analog inputs and discrete Input/Outputs can be set up in different ways. Analog inputs can be set to accept one of three types of signals: a 4-20 miliamp input with the MICON powering the loop, a 4-20 miliamp input with an external power supply, or a voltage input. Twentyfour volt discrete input/outputs can be set up as an input only, an output only, or as both an input and output. Since the hardware requirements are different for each of these setups, the controller cards have on-board jumpers for each analog input or discrete. These jumpers must be set to the desired type of analog input or discrete for the card to work properly.

Analog outputs are 4-20 miliamp internally powered only. Since they can't be changed they don't have any jumpers.

Before replacing an existing card with a new one or installing a backup card, you must make sure the jumpers in the new card are set the same as the jumpers in the old card.

The following tables show the Input/Output types for each controller card in the 243-Z cabinet. See the *RCM-32 Remote Control Module User Manual* (Vendor Information file 22068) for a description of the I/O jumper placement.

MICON Number: 8 Tag Name:RM45_1_3

Type: RCM-32A

Location: 236-Z Room 45 Rack Number: 1

Slot Number: 3

<u>Point</u>	<u>Tag</u>	<u>I/O Type</u>	<u>Jumper Assignment¹</u>
1	AI_SCW1A	Analog Input	4-20 mA MICON Powered
2	AI_SCW1_1	Analog Input	4-20 mA MICON Powered
3	AI_SCW1_2	Analog Input	4-20 mA MICON Powered
4	AI_PCW5_1	Analog Input	4-20 mA External Power
5	AI_PCW5_2	Analog Input	4-20 mA External Power
6	AI_PCW5_3	Analog Input	4-20 mA MICON Powered
7	AI_PCW5_4	Analog Input	4-20 mA External Power
8	Not Used	Analog Input	Voltage
9	Not Used	Analog Input	Voltage
10	Not Used	Analog Input	Voltage
11	Not Used	Analog Input	Voltage
12	Not Used	Analog Input	Voltage
13	Not Used	Analog Input	Voltage
14	Not Used	Analog Input	Voltage
15	Not Used	Analog Input	Voltage
16	Not Used	Analog Input	Voltage
17	Not Used	Analog Input	Voltage
18	Not Used	Analog Input	Voltage
19	Not Used	Analog Input	Voltage
20	Not Used	Analog Input	Voltage
21	Not Used	Analog Input	Voltage
22	Not Used	Analog Input	Voltage
23	Not Used	Analog Input	Voltage
24	Not Used	Analog Input	Voltage
25	Not Used	Analog Input	Voltage
26	Not Used	Analog Input	Voltage
27	Not Used	Analog Output	N/A
28	Not Used	Analog Output	N/A
29	Not Used	Analog Output	N/A
30	Not Used	Analog Output	N/A
31	Not Used	Discrete	Input & Output
32	Not Used	Discrete	Input & Output

¹See RCM-32 Remote Control Module User Manual for description of I/O jumper placement.

MICON Number: 9 Tag Name: RM45_1_4

Type: RCM-32A

Location: 236-Z Room 45 Rack Number: 1

Slot Number: 4

<u>Point</u>	<u>Tag</u>	<u>I/O Type</u>	<u>Jumper Assignment</u> ¹
1	AI_SCW2A	Analog Input	4-20 mA MICON Powered
2	AI_SCW2_1	Analog Input	4-20 mA MICON Powered
3	AI_SCW2_2	Analog Input	4-20 mA MICON Powered
4	AI_PCW6_1	Analog Input	4-20 mA External Power
5	AI_PCW6_2	Analog Input	4-20 mA External Power
6	AI_PCW6_3	Analog Input	4-20 mA MICON Powered
7	AI_PCW6_4	Analog Input	4-20 mA External Power
8	AI_SCW1_3	Analog Input	4-20 mA MICON Powered
9	AI_PCW1_1	Analog Input	4-20 mA External Power
10	AI_PCW1_2	Analog Input	4-20 mA External Power
11	AI_PCW1_3	Analog Input	4-20 mA External Power
12	AI_PCW1_4	Analog Input	4-20 mA External Power
13	Not Used	Analog Input	Voltage
14	Not Used	Analog Input	Voltage
15	Not Used	Analog Input	Voltage
16	Not Used	Analog Input	Voltage
17	Not Used	Analog Input	Voltage
18	Not Used	Analog Input	Voltage
19	Not Used	Analog Input	Voltage
20	Not Used	Analog Input	Voltage
21	Not Used	Analog Input	Voltage
22	Not Used	Analog Input	Voltage
23	Not Used	Analog Input	Voltage
24	Not Used	Analog Input	Voltage
25	Not Used	Analog Input	Voltage
26	Not Used	Analog Input	Voltage
27	Not Used	Analog Output	N/A
28	Not Used	Analog Output	N/A
29	Not Used	Analog Output	N/A
30	Not Used	Analog Output	N/A
31	Not Used	Discrete	Input & Output
32	Not Used	Discrete	Input & Output

¹See RCM-32 Remote Control Module User Manual for description of I/O jumper placement.

MICON Number: 11 Tag Name:RM45_2_1

Type: RCM-32Dr

Location: 236-Z Room 45 Rack Number: 2

Slot Number: 1

<u>Point</u>	<u>Tag</u>	<u>I/O Type</u>	<u>Jumper Assignment</u> ¹
1	DI_PSL 1	Discrete Input	N/A
2	DI_FCFI	Discrete Input	N/A
3	DO_FCF1A	Discrete Output	N/A
4	DO_FCF1B	Discrete Output	N/A
5	DI_SP1	Discrete Input	N/A
6	DO_SP1A	Discrete Output	N/A
7	DO_SP1B	Discrete Output	N/A
8	DI_SCW1A	Discrete Input	N/A
9	DI_SCW1B	Discrete Input	N/A
10	DO_SCW1A	Discrete Output	N/A
11	DO_SCW1B	Discrete Output	N/A
12	DI_P1_1	Discrete Input	N/A
13	DO_P1_1	Discrete Output	N/A
14	DO_P1_2	Discrete Output	N/A
15	DI_P1_2	Discrete Input	N/A
16	DI_101_2	Discrete Input	N/A
17	DI_101_1	Discrete Input	N/A
18	DO_101_1	Discrete Output	N/A
19	DO_101_2	Discrete Output	N/A
20	Not Used	Discrete	N/A
21	DI_106_2	Discrete Input	N/A
22	DO_106_1	Discrete Output	N/A
23	DO_106_2	Discrete Output	N/A
24	Not Used	Discrete	N/A
25	DI_VP1	Discrete Input	N/A
26	DO_VP1	Discrete Output	N/A
27	DI_105_2	Discrete Input	N/A
28	Not Used	Discrete	N/A
29	Not Used	Discrete	N/A
30	Not Used	Discrete	N/A
31	Not Used	Discrete	N/A
32	Not Used	Discrete	N/A

¹See RCM-32 Remote Control Module User Manual for description of I/O jumper placement.

MICON Number: 12 Tag Name: RM45_2_2 Type: RCM-32Dr

Location: 236-Z Room 45 Rack Number: 2 Slot Number: 2

<u>Point</u>	<u>Tag</u>	<u>I/O Type</u>	<u>Jumper Assignment</u> ¹
1	DI TK1	Discrete Input	N/A
2	DI_FCF2	Discrete Input	N/A
3	DO_FCF2A	Discrete Output	N/A
4	DO_FCF2B	Discrete Output	N/A
5	DI_SP2	Discrete Input	N/A
6	DO_SP2A	Discrete Output	N/A
7	DO_SP2B	Discrete Output	N/A
8	DI_SCW2A	Discrete Input	N/A
9	DI_SCW2B	Discrete Input	N/A
10	DO_SCW2A	Discrete Output	N/A
11	DO_SCW2B	Discrete Output	N/A
12	DI_P2_1	Discrete Input	N/A
13	DO_P2_1	Discrete Output	N/A
14	DO_P2_2	Discrete Output	N/A
15	DI_P2_2	Discrete Input	N/A
16	DI_PCW1A	Discrete Input	N/A
17	DI_102_1	Discrete Input	N/A
18	DO_102_1	Discrete Output	N/A
19	DO_102_2	Discrete Output	N/A
20	Not Used	Discrete	N/A
21	DI_108_2	Discrete Input	N/A
22	DO_108_1	Discrete Output	N/A
23	DO_108_2	Discrete Output	N/A
24	Not Used	Discrete	N/A
25	DI_VP2	Discrete Input	N/A
26	DO_VP2	Discrete Output	N/A
27	Not Used	Discrete	N/A
28	Not Used	Discrete	N/A
29	Not Used	Discrete	N/A
30	Not Used	Discrete	N/A
31	Not Used	Discrete	N/A
32	Not Used	Discrete	N/A

¹See RCM-32 Remote Control Module User Manual for description of I/O jumper placement.

TABLE OF CONTENTS

INTRODUCTION	2
MICON CONFIGURATION FILES	5
ZB_1_3.mic16_r0	7
ZB_1_4.mic17_r0	20
ZB_2_1.mic18_r0	38
ZB_2_2.mic19_r0	74
ZB_2_3.mic20_r0	110
ZB_2_4.mic21_r0	132
ZB_2_5.mic22_r0	144
ZB_2_6.mic23_r0	155
MICON PROGRAM FILES	168
mic16_r0	169
mic17_r0	172
mic18_r0	175
mic19_r0	183
mic20_r0	191
mic21_r0	196
mic22_r0	198
mic23_r0	200
APPENDIX A: MICON INPUT/OUTPUT	202
MICON Number: 16	203
MICON Number: 17	204
MICON Number: 18	205
MICON Number: 19	206
MICON Number: 20	207
MICON Number: 21	208
MICON Number: 22	209
MICON Number: 23	210

INTRODUCTION

The MICON¹ A/S distributed control system consists of four consoles or workstations (2 operator, 1 supervisor, and 1 engineer), a data highway, and eight process controller cabinets.

Each console is based on a Sun Microsystem's SPARC 20 workstation. The SPARC 20 workstation is based on a Scalable Process Architecture (SPARC) micro-processor. Each workstation contains 64 megabytes of memory, a one gigabyte hard drive, a 150 megabyte tape drive, a keyboard, and a trackball. Select SARC stations also contain an additional one gigabyte hard drive, a CD-ROM drive, and a 5 gigabyte tape drive. In addition, each SPARC 20

¹For a list of Trademarks, see Volume 1, APPENDIX C

provides two video outputs, two RS-232 serial ports, and two ethernet ports (a thick-net and a thin-net). The video ports are connected to two high resolution color monitors. The RS-232 ports are connected to two Emerald model FPXT single board IBM XT compatible computers with touchscreen. One of the FPXTs is designated as an annunciator panel and is unused. The other is used as a Universal Operator Keyboard (UOK). One of the two ethernet ports -- the thin-net -- is connected to the data highway via a MICON Company General Purpose LAN Interface (GPLI). The thicknet provides a Local Area Network (LAN) between the four consoles. It also connects each SPARC 20 with a Rockwell/CMC TranServer. The TranServer provides eight additional RS-232 serial ports for each workstation. One of these serial ports is connected to an Output Technology Corporation 800 series text printer. Another port is connected to a Hewlett-Packard PaintJet color graphics printer.

The Data Highway is the main data link between the consoles and the process control cabinets. It consists of two redundant coax cables that run between all four consoles and six cabinets. The Data Highway is a local area network using a high speed token ring passing protocol. The Data Highway is also redundant. This means that if one of the two cables fail, communication is automatically passed to the other.

The process control cabinets consist of two redundant main controllers, called U-32s, and several process controllers called RCM-32s. The U-32s and RCM-32s communicate via a small local area network called a Field Bus. The U-32 is a MICON built controller based on the Motorola 68020 processor. Although it can be used to directly control instruments and devices in the field, its primary purpose is to pass information between the consoles and the RCM-32s. Each U-32 has a redundant backup. That way if one fails, the other can automatically take over. The RCM-32s are also built by MICON and are based on a Motorola 68030 processor. These controllers provide input and output directly to field instruments and other devices.

There are four types of RCM-32s used in this system: A, C, D, and Dr. The A and C cards are used primarily for analog signals. They provide hardware for any standard analog instrument input (4-20 mA, 10-50 mA, and DC voltages) and provide a standard 4-20 mA output signal. In addition, they provide two 28 Volt DC discrete (on/off) channels. These may be used for input, output, or both. An A card provides 26 analog inputs and 4 analog outputs. Each C card provides 18 analog inputs and 12 analog outputs. The D card is used only for discrete control. It provides 32 on/off type channels that can be used as inputs, outputs, or both. Both inputs and outputs are 28 volt DC. The Dr cards are similar to the D cards except inputs are 120 volt AC or DC and the outputs are 3 amp (120 VAC) dry contact relays.

Since MICON A/S systems are installed by engineers rather than computer programmers, they are designed to minimize the need for programming. All of the software needed to monitor and control a process is already programmed into the system by MICON Company. The engineer need only "configure" the system to a specific application.

The process is very similar to the method used to install an older analog instrument system. First, a set of Pipe and Instrument Diagrams (P&ID) are created. These drawings show a schematic of the chemical process and the instrumentation to be installed to control it. With an analog system, the engineer would purchase the necessary individual components and wire them together to create the control strategy. With the MICON A/S system, the engineer would call function blocks to invoke preprogrammed modules and create the control strategy. The only difference between the two is that one uses hardware devices wired together, and the other uses software modules connected via a data base.

The MICON configuration is done in two parts. First the RCM-32 and, if needed the U-32 controllers are configured. Next, the workstation displays are created.

The RCM-32 and U-32 configuration consists of both the controller "program" and all display information for each "tag". Tags consists of all inputs and outputs from the controller, PID control loops, and any other displayed value. This information is requested by the MICON View software as the engineer creates the controller configuration.

Since all the display information (colors, ranges, etc.) was input during the controller configuration, the workstation configuration consists only of display creation. These are created by calling up a form and filling in the blanks. The only exception to this are the custom created graphics displays. Graphics are created by drawing a picture of the process and overlaying this with tag information. This is done with a special drawing program supplied with MICON View.

To keep size manageable, this document has been divided into several volumes. Volume 1 contains the display configuration for the four workstations. The other volumes each contain the configuration for one process Controller cabinet.

This volume (number 4) contains the configuration files for the cabinet located in 2736-ZB Room 602. This cabinet consists of six controllers:

1. U-32 (with backup)	Controller Number: 15	Tagname: ZB_MAIN
2. RCM-32 C	Controller Number: 16	Tagname: ZB_1_3
3. RCM-32 A	Controller Number: 17	Tagname: ZB_1_4
4. RCM-32 Dr	Controller Number: 18	Tagname: ZB_2_1
5. RCM-32 Dr	Controller Number: 19	Tagname: ZB_2_2
6. RCM-32 Dr	Controller Number: 20	Tagname: ZB_2_3
7. RCM-32 D	Controller Number: 21	Tagname: ZB_2_4
8. RCM-32 D	Controller Number: 22	Tagname: ZB_2_5
9. RCM-32 D	Controller Number: 23	Tagname: ZB_2_6

ZB_MAIN is being used for communications only and does not contain a configuration file.

MICON CONFIGURATION FILES

The MICON configuration file is a text file that the MICON View software creates as the user configures or "programs" each MICON controller. A MICON controller is configured by selecting preprogrammed functions and filling in the required information. As this is done, MICON View places this information into the configuration file. This file contains both display and program information. For a detailed description see *U-32 and RCM-32 Controller/RTU Function Description* published by MICON Company (Vendor Information file - 22068).

This file is named by MICON View based on input from the user. The file name's format is TAG.file where TAG is the controllers tag name and file is the program file name. The first eight lines of the file are the information on the controller itself. These lines are:

MICON TYPE - The type of MICON being programmed (A, C, or D). In this case, D and Dr cards are considered the same.

MICON UNIT NO - The controller card's number (user assigned).

MICON TAG - The controller card's tag name (user assigned). For consistency, we have assigned tags in the following format:

CABINET_RACK_SLOT

CABINET is the MICON controller cabinet location. RACK is the rack number (1 to 3). Rack 1 is at the top of the cabinet. SLOT is the slot number (1 to 6). Slot 1 is at the far left of the rack. Therefor, a controller tagged WTF_1_3 is the card in rack 1 slot 3 of the cabinet located in the Low Level Waste Treatment Facility (243-Z).

MICON DESCRIPTION - A brief description of the controller card

MICON CONFIGURATION FILE - The name of the file that contains the controller card's program (user assigned).

POINT ALLOCATION - The memory allocation for the controller. Memory allocation is based on the types of inputs and outputs (I/O) and the number of storage locations desired. The types of I/O and storage locations are:

- VAI - Virtual Analog (User assigned). An analog value storage location.
- VDI - Virtual Discrete (User assigned). A Discrete (on/off) storage location with alarm capability.
- ISW - Internal Switch (User assigned). A Discrete storage location without alarm capability.
- LOOPS - Loops (User Assigned). Loops are used to hold a series of program steps. If one of those steps is a PID controller function, The loop tag name becomes the controller tag name.
- MSD - Multi-State Discrete (User assigned). This is a special sixteen position indicator.
- AI - Analog Inputs (Assigned based on card type used).
- AO - Analog Outputs (Assigned based on card type used).
- DI - Discrete Inputs (Assigned based on card type used).
- DO - Discrete Outputs (Assigned based on card type used).

The remaining information is the actual controller configuration. Right at first, you will notice several blocks of information titled VIRTUAL ANALOG and DISCRETE TAG. These blocks are the configuration information for the virtual analog and internal switch type storage locations. These must always be configured first. After that are the controller loops. Each loop starts with a block of information titled LOOP NO followed by several steps. The last step is always a function 0 (END). Everything except virtual analogs and internal switches are configured inside of a loop.

Loops are a way of organizing the controller configuration. Although most controllers could be programmed using only one loop, using several loops makes the program more understandable. Loops are generally invisible to the operator. The exception to this rule is when a PID function (function 20) is used in the loop. When this happens, the loop name becomes the controller name. Otherwise, the loop name is used as an internal reference only

NOTE: Each loop using a PID function has two lines showing the tuning parameters -- for example:

TUNING PARAMETER :
P(GAIN) : 1.00, I(REP/MIN) : 5.00, D(RATE) : 0.00, MANUAL RESET : 0.00

These tuning parameters are not controlled by this document. Therefore, these numbers may be different than the ones that appear in the workstation listings.

ZB_1_3.mic16_r0

MICON TYPE :RCM-C
MICON UNIT NO : 16
MICON TAG : ZB_1_3
MICON DESCRIPTION : 2736-ZB RACK 1 SLOT 3
MICON CONFIGURATION FILE : mic16_r0
POINT ALLOCATION :
VAI : 32, VDI : 32, ISW : 32, LOOPS : 12, MSD : 1,
AI : 18, AO : 12, DI : 2, DO : 2

=====

VIRTUAL ANALOG : PDRC_1
INPUT # : 1
INPUT DESC : ADM AREA PRESS ZN IV
INPUT UNIT : IN WG
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 0.15 BAR LO : 0.00 BAR HI : 0.15

=====

VIRTUAL ANALOG : PDRC_2
INPUT # : 2
INPUT DESC : PRCs AREA PRESS ZN II
INPUT UNIT : -IN WG
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 0.50 BAR LO : 0.00 BAR HI : 0.50

=====

VIRTUAL ANALOG : PDRC_3
INPUT # : 3
INPUT DESC : NDA AREA PRESS ZN II
INPUT UNIT : -IN WG
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 0.50 BAR LO : 0.00 BAR HI : 0.50

=====

VIRTUAL ANALOG : PDRC_4
INPUT # : 4
INPUT DESC : GBX PRESS ZN I
INPUT UNIT : IN WG
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 2.00 BAR LO : 0.00 BAR HI : 2.00

=====

VIRTUAL ANALOG : PDRC_5
INPUT # : 5
INPUT DESC : EXHAUST PLENUM PRESS
INPUT UNIT : -IN WG
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 10.00 BAR LO : 0.00 BAR HI : 10.00

=====

VIRTUAL ANALOG : PDRC_6
INPUT # : 6
INPUT DESC : 2736-Z PRESS
INPUT UNIT : -IN WG
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 0.50 BAR LO : 0.00 BAR HI : 0.50

LOOP NO : 1
LOOP TAG : PDIC_1
LOOP DESCRIPTION : ADM AREA PRESS ZN 1V
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
PID AUXILIARY :
S-P RAMP : 10000
LOOP UNITS : IN WG
LOOP SCALE LO : 0.00, SCALE HI : 0.15, DEV IND LO : 0.01, IND HI : 0.01
TUNING PARAMETER :
P(GAIN) : 1.75, I(REP/MIN) : 0.50, D(RATE) : 0.00, MANUAL RESET : 0.00
PV ALARM :
PV ALARM Hi 99999.99 PRIORITY EVENT
PV ALARM Lo 0.01 PRIORITY URGENT
PV ALARM HI HI 99999.99 PRIORITY EVENT
PV ALARM LO LO -99999.99 PRIORITY EVENT
PV ALARM MAX 99999.99 PRIORITY EVENT
PV ALARM MIN -99999.99 PRIORITY EVENT
PV ALARM DESC : ZB ADMIN AREA LO DP
PV ALARM DEADBAND : 0.00
PV ALARM GROUP : 0
PV ALARM MGMT : 0
PV ALARM COMMAND DISCR :
PV ALARM INDEX : 0

#####

STEP NO : 1
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_PE_1
INPUT # : 1
INPUT DESC : ADM AREA PRESS ZN IV
INPUT UNIT : IN WG
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 0.15
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 0.15
DIGITAL FILTER : 0

#####

STEP NO : 2
LABEL :
FUNCTION : 10 (L)
COMMENT : HISTORIAN

PARAMETERS :

1) PDRC 1. 2) MSV

#####

STEP NO : 3
LABEL :
FUNCTION : 20 (PID)
COMMENT :

PARAMETERS :

1) PV=AI PE 1. 2) Non-Balancing 3) Reverse 4) Yes 5) LOOP AO
6) Interactive 7) PV 8) Positional 9) 0

#####

STEP NO : 4
LABEL :
FUNCTION : 55 (CAO)
COMMENT :

=====

OUTPUT TAG : AO_EP_1
OUTPUT # : 1
OUTPUT DESC : ADM AREA PRESS
OUTPUT CURRENT : 4-20

#####

STEP NO : 5
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 2
LOOP TAG : PDIC_2
LOOP DESCRIPTION : PRCS AREA PRESS ZN II
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
PID AUXILIARY :
S-P RAMP : 10000
LOOP UNITS : -IN WG
LOOP SCALE LO : 0.00, SCALE HI : 0.50, DEV IND LO : 0.05, IND HI : 0.05
TUNING PARAMETER :
P(GAIN) : 2.00, I(REP/MIN) : 0.50, D(RATE) : 0.00, MANUAL RESET : 0.00
PV ALARM :
PV ALARM Hi 99999.99 PRIORITY EVENT
PV ALARM Lo 0.05 PRIORITY URGENT
PV ALARM HI HI 99999.99 PRIORITY EVENT
PV ALARM LO LO -9999.99 PRIORITY EVENT
PV ALARM MAX 99999.99 PRIORITY EVENT
PV ALARM MIN -9999.99 PRIORITY EVENT
PV ALARM DESC : ZB PROCESS AREA LO DP
PV ALARM DEADBAND : 0.00
PV ALARM GROUP : 0
PV ALARM MGMT : 0
PV ALARM COMMAND DISCR :
PV ALARM INDEX : 0

#####

STEP NO : 1
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====
ANALOG INPUT : AI_PE_2
INPUT # : 2
INPUT DESC : PRCS AREA PRESS ZN II
INPUT UNIT : -IN WG
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 0.50
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 0.50
DIGITAL FILTER : 0

#####

STEP NO : 2
LABEL :
FUNCTION : 10 (L)
COMMENT : HISTORIAN
PARAMETERS :
1) PDRC 2. 2) MSV

#####

STEP NO : 3
LABEL :
FUNCTION : 20 (PID)
COMMENT :
PARAMETERS :
1) PV=AI PE 2. 2) Non-Balancing 3) Direct 4) Yes 5) LOOP AO
6) Interactive 7) PV 8) Positional 9) 0

#####

STEP NO : 4
LABEL :
FUNCTION : 55 (CAO)
COMMENT :

=====

OUTPUT TAG : AO_EP_2
OUTPUT # : 2
OUTPUT DESC : PRCS AREA PRESS
OUTPUT CURRENT : 4-20

#####

STEP NO : 5
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 3
LOOP TAG : PDIC 4
LOOP DESCRIPTION : GBX PRESS ZN I
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
PID AUXILIARY :
S-P RAMP : 10000
LOOP UNITS : -IN WG
LOOP SCALE LO : 0.00, SCALE HI : 2.00, DEV IND LO : 0.20, IND HI : 0.20
TUNING PARAMETER :
P(GAIN) : 0.50, I(REP/MIN) : 1.50, D(RATE) : 0.00, MANUAL RESET : 0.00
PV ALARM :
PV ALARM Hi 99999.99 PRIORITY EVENT
PV ALARM Lo 0.25 PRIORITY URGENT
PV ALARM HI HI 99999.99 PRIORITY EVENT
PV ALARM LO LO -9999.99 PRIORITY EVENT
PV ALARM MAX 99999.99 PRIORITY EVENT
PV ALARM MIN -9999.99 PRIORITY EVENT
PV ALARM DESC : ZB GLOVEBOX LO DP
PV ALARM DEADBAND : 0.00
PV ALARM GROUP : 0
PV ALARM MGMT : 0
PV ALARM COMMAND DISCR :
PV ALARM INDEX : 0

STEP NO : 1
LABEL :
FUNCTION : 69 (LC)
COMMENT : "0" PULSE ON STARTUP
PARAMETERS :
1)-!PULSE(1)

STEP NO : 2
LABEL :
FUNCTION : 62 (GTD)
COMMENT :
PARAMETERS :
1)MSV 2) Off-Noma 3)JUMP

STEP NO : 3
LABEL : JUMP
FUNCTION : 10 (L)
COMMENT : OPEN DAMPER ON STARTUP
PARAMETERS :
1)OUT=1

#####

STEP NO : 4
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_PE_5
INPUT # : 3
INPUT DESC : GBX PRESS ZN I
INPUT UNIT : -IN WG
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 2.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 2.00
DIGITAL FILTER : 0

#####

STEP NO : 5
LABEL :
FUNCTION : 10 (L)
COMMENT : HISTORIAN

PARAMETERS :
1) PDRC 4. 2) MSV

#####

STEP NO : 6
LABEL :
FUNCTION : 20 (PID)
COMMENT :

PARAMETERS :
1) PV=AI PE 5. 2) Non-Balancing 3) Reverse 4) Yes 5) LOOP AO
6) Interactive 7) PV 8) Positional 9) 0

#####

STEP NO : 7
LABEL :
FUNCTION : 55 (CAO)
COMMENT :

=====

OUTPUT TAG : AO_EP_4
OUTPUT # : 3
OUTPUT DESC : GBX PRESSURE
OUTPUT CURRENT : 4-20
OUTPUT INDICATION : REVERSED
OUTPUT USED : CONTROL
OUTPUT LIMIT LO : 0.00 LIMIT HI : 100.00
OUTPUT SLEW DEC : 1000.00 SLEW INC : 1000.00
OUTPUT TRACK VALUE : TRACK COMMAND :
OUTPUT RECALL : 2

#####

STEP NO : 8

LABEL :

FUNCTION : 0 (END)

COMMENT :

LOOP NO : 4

LOOP TAG : PDIC_5

LOOP DESCRIPTION : EXH PRESS

LOOP SCAN : 0.30 SEC

NON-PID AUXILIARY :

RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00

RATIO CURR : 0.00, BIAS CURR : 0.00

PID AUXILIARY :

S-P RAMP : 10000

LOOP UNITS : -IN WG

LOOP SCALE LO : 0.00, SCALE HI : 10.00, DEV IND LO : 1.00, IND HI : 1.00

TUNING PARAMETER :

P(GAIN) : 2.00, I(REP/MIN) : 0.75, D(RATE) : 0.00, MANUAL RESET : 0.00

PV ALARM :

PV ALARM Hi 99999.99 PRIORITY EVENT

PV ALARM Lo 1.00 PRIORITY URGENT

PV ALARM HI HI 99999.99 PRIORITY EVENT

PV ALARM LO LO -9999.99 PRIORITY EVENT

PV ALARM MAX 99999.99 PRIORITY EVENT

PV ALARM MIN -9999.99 PRIORITY EVENT

PV ALARM DESC : ZB EXHAUST PLENUM LO DP

PV ALARM DEADBAND : 0.00

PV ALARM GROUP : 0

PV ALARM MGMT : 0

PV ALARM COMMAND DISCR :

PV ALARM INDEX : 0

#####

STEP NO : 1

LABEL :

FUNCTION : 11 (AI)

COMMENT :

=====

ANALOG INPUT : AI_PE_3

INPUT # : 4

INPUT DESC : EXH PRESS

INPUT UNIT : -IN WG

INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

INPUT HIST. DEFINITION : 0

INPUT PLOT LO : 0.00 PLOT HI : 10.00

INPUT TYPE : LINEAR 4-20mA

INPUT RANGE LO : 0.00 RANGE HI : 10.00

DIGITAL FILTER : 0

#####

STEP NO : 2

LABEL :

FUNCTION : 10 (L)

COMMENT :HISTORIAN

PARAMETERS :

1)PDRC 5. 2)MSV

#####

STEP NO : 3

LABEL :

FUNCTION : 20 (PID)

COMMENT :

PARAMETERS :

1) PV=AI PE 3. 2) Non-Balancing 3) Reverse 4) Yes 5) LOOP AO

6) InterActive 7) PV 8) Positional 9) 0

#####

STEP NO : 4

LABEL :

FUNCTION : 55 (CAO)

COMMENT :

=====

OUTPUT TAG : AO_EP_5

OUTPUT # : 4

OUTPUT DESC : EXHAUST PLENUM PRESS

OUTPUT CURRENT : 4-20

#####

STEP NO : 5

LABEL :

FUNCTION : 0 (END)

COMMENT :

LOOP NO : 5
LOOP TAG : PDIC_6
LOOP DESCRIPTION : 2736-Z PRESS
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
PID AUXILIARY :
S-P RAMP : 10000
LOOP UNITS : -IN WG
LOOP SCALE LO : 0.00, SCALE HI : 0.50, DEV IND LO : 0.05, IND HI : 0.05
TUNING PARAMETER :
P(GAIN) : 2.00, I(REP/MIN) : 2.00, D(RATE) : 0.00, MANUAL RESET : 0.00
PV ALARM :
PV ALARM Hi 99999.99 PRIORITY EVENT
PV ALARM Lo 0.05 PRIORITY URGENT
PV ALARM HI HI 99999.99 PRIORITY EVENT
PV ALARM LO LO -9999.99 PRIORITY EVENT
PV ALARM MAX 99999.99 PRIORITY EVENT
PV ALARM MIN -9999.99 PRIORITY EVENT
PV ALARM DESC : 2736-Z LO DP
PV ALARM DEADBAND : 0.00
PV ALARM GROUP : 0
PV ALARM MGMT : 0
PV ALARM COMMAND DISCR : -
PV ALARM INDEX : 0

#####

STEP NO : 1
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_PE_7
INPUT # : 5
INPUT DESC : 2736-Z PRESS
INPUT UNIT : -IN WG
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 0.50
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 0.50
DIGITAL FILTER : 0

#####

STEP NO : 2

LABEL :

FUNCTION : 10 (L)

COMMENT :HISTORIAN

PARAMETERS :

1)PDR 6. 2)MSV

#####

STEP NO : 3

LABEL :

FUNCTION : 20 (PID)

COMMENT :

PARAMETERS :

1) PV=AI_PE 7. 2) Non-Balancing 3) Direct 4) Yes 5) LOOP AO

6) Interactive 7) PV 8) Positional 9) 0

#####

STEP NO : 4

LABEL :

FUNCTION : 55 (CAO)

COMMENT :

=====

OUTPUT TAG : AO_EP_6

OUTPUT # : 5

OUTPUT DESC : 2736-Z PRESS

OUTPUT CURRENT : 4-20

#####

STEP NO : 5

LABEL :

FUNCTION : 0 (END)

COMMENT :

LOOP NO : 6
LOOP TAG : PDIC_3
LOOP DESCRIPTION : NDA PRESS ZN II
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
PID AUXILIARY :
S-P RAMP : 10000
LOOP UNITS : -IN WG
LOOP SCALE LO : 0.00, SCALE HI : 0.50, DEV IND LO : 0.05, IND HI : 0.05
TUNING PARAMETER :
P(GAIN) : 1.00, I(REP/MIN) : 0.10, D(RATE) : 0.00, MANUAL RESET : 0.00
PV ALARM :
PV ALARM Hi 99999.99 PRIORITY EVENT
PV ALARM Lo 0.10 PRIORITY URGENT
PV ALARM HI HI 99999.99 PRIORITY EVENT
PV ALARM LO LO -9999.99 PRIORITY EVENT
PV ALARM MAX 99999.99 PRIORITY EVENT
PV ALARM MIN -9999.99 PRIORITY EVENT
PV ALARM DESC : ZB NDA AREA LO DP
PV ALARM DEADBAND : 0.00
PV ALARM GROUP : 0
PV ALARM MGMT : 0
PV ALARM COMMAND DISCR :
PV ALARM INDEX : 0

STEP NO : 1
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_PE_4
INPUT # : 6
INPUT DESC : NDA PRESS ZN II
INPUT UNIT : -IN WG
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 0.50
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 0.50
DIGITAL FILTER : 0

#####

STEP NO : 2

LABEL :

FUNCTION : 10 (L)

COMMENT :HISTORIAN

PARAMETERS :

1)PDRC 3. 2)MSV

#####

STEP NO : 3

LABEL :

FUNCTION : 20 (PID)

COMMENT :

PARAMETERS :

1) PV=AI PE 4. 2) Non-Balancing 3) Direct 4) Yes 5) LOOP AO

6) Interactīve 7) PV 8) Positional 9) 0

#####

STEP NO : 4

LABEL :

FUNCTION : 55 (CAO)

COMMENT :

=====

OUTPUT TAG : AO_EP_3

OUTPUT # : 6

OUTPUT DESC : NDA PRESS ZN II

OUTPUT CURRENT : 4-20

#####

STEP NO : 5

LABEL :

FUNCTION : 0 (END)

COMMENT :

ZB_1_4.mic17_r0

```
MICON TYPE :RCM-A
MICON UNIT NO      : 17
MICON TAG          : ZB 1 4
MICON DESCRIPTION  : 2736-ZB RACK 1 SLOT 4
MICON CONFIGURATION FILE : mic17_r0
POINT ALLOCATION :
VAI : 32, VDI : 32, ISW : 32, LOOPS : 6, MSD : 1,
AI : 26, AO : 4, DI : 2, DO : 2
=====
VIRTUAL ANALOG : II_1_1
INPUT # : 1
INPUT DESC      : EF-1-1
INPUT UNIT      : AMPS
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 50.00 BAR LO : 0.00 BAR HI : 50.00
=====
VIRTUAL ANALOG : II_1_2
INPUT # : 2
INPUT DESC      : EF-1-2
INPUT UNIT      : AMPS
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 50.00 BAR LO : 0.00 BAR HI : 50.00
=====
VIRTUAL ANALOG : II_AC_1
INPUT # : 3
INPUT DESC      : ZB AC-1
INPUT UNIT      : AMPS
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 40.00 BAR LO : 0.00 BAR HI : 40.00
=====
VIRTUAL ANALOG : II_AC_2
INPUT # : 4
INPUT DESC      : ZB AC-2
INPUT UNIT      : AMPS
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 40.00 BAR LO : 0.00 BAR HI : 40.00
```


=====

VIRTUAL ANALOG : II_COND1
INPUT # : 5
INPUT DESC : ZB COND1
INPUT UNIT : AMPS
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 100.00 BAR LO : 0.00 BAR HI : 100.00

=====

VIRTUAL ANALOG : II_COND2
INPUT # : 6
INPUT DESC : ZB COND2
INPUT UNIT : AMPS
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 100.00 BAR LO : 0.00 BAR HI : 100.00

=====

VIRTUAL ANALOG : II_EF_1
INPUT # : 7
INPUT DESC : ZB EF-1
INPUT UNIT : AMPS
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 50.00 BAR LO : 0.00 BAR HI : 50.00

=====

VIRTUAL ANALOG : II_EF_2
INPUT # : 8
INPUT DESC : ZB EF-2
INPUT UNIT : AMPS
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 50.00 BAR LO : 0.00 BAR HI : 50.00

=====

VIRTUAL ANALOG : II_RF_1
INPUT # : 9
INPUT DESC : ZB RF-1
INPUT UNIT : AMPS
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 40.00 BAR LO : 0.00 BAR HI : 40.00

=====

VIRTUAL ANALOG : II_RF_2
INPUT # : 10
INPUT DESC : ZB RF-2
INPUT UNIT : AMPS
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 40.00 BAR LO : 0.00 BAR HI : 40.00

=====

VIRTUAL ANALOG : II_SF_1
INPUT # : 11
INPUT DESC : ZB SF-1
INPUT UNIT : AMPS
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 40.00 BAR LO : 0.00 BAR HI : 40.00

=====

VIRTUAL ANALOG : II_SF_2
INPUT # : 12
INPUT DESC : SB SF-2
INPUT UNIT : AMPS
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 40.00 BAR LO : 0.00 BAR HI : 40.00

=====

VIRTUAL ANALOG : II_SF_3
INPUT # : 13
INPUT DESC : ZB SF-3
INPUT UNIT : AMPS
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 20.00 BAR LO : 0.00 BAR HI : 20.00

=====

VIRTUAL ANALOG : II_SF_4
INPUT # : 14
INPUT DESC : ZB SF-4
INPUT UNIT : AMPS
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 20.00 BAR LO : 0.00 BAR HI : 20.00

=====

VIRTUAL ANALOG : II_SF_5
INPUT # : 15
INPUT DESC : ZB SF-5
INPUT UNIT : AMPS
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 20.00 BAR LO : 0.00 BAR HI : 20.00

=====

VIRTUAL ANALOG : II_SF_6
INPUT # : 16
INPUT DESC : ZB SF-6
INPUT UNIT : AMPS
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 20.00 BAR LO : 0.00 BAR HI : 20.00

=====

VIRTUAL ANALOG : II_VP_1
INPUT # : 17
INPUT DESC : ZB VP-1
INPUT UNIT : AMPS
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 40.00 BAR LO : 0.00 BAR HI : 40.00

=====

VIRTUAL ANALOG : PDI_1A
INPUT # : 18
INPUT DESC : ADM AREA BALANCE
INPUT UNIT :
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : -10.00 PLOT HI : 10.00 BAR LO : -10.00 BAR HI : 10.00

=====

VIRTUAL ANALOG : PDI_2A
INPUT # : 19
INPUT DESC : PRCS AREA BALANCE
INPUT UNIT :
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : -10.00 PLOT HI : 10.00 BAR LO : -10.00 BAR HI : 10.00

=====

VIRTUAL ANALOG : PDI_3
INPUT # : 20
INPUT DESC : NDA AREA BALANCE
INPUT UNIT :
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : -10.00 PLOT HI : 10.00 BAR LO : -10.00 BAR HI : 10.00

=====

VIRTUAL ANALOG : PDI_4A
INPUT # : 21
INPUT DESC : GLOVEBOX BALANCE
INPUT UNIT :
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : -10.00 PLOT HI : 10.00 BAR LO : -10.00 BAR HI : 10.00

=====

VIRTUAL ANALOG : PDI_5A
INPUT # : 22
INPUT DESC : EXHAUST PLENUM BALANCE
INPUT UNIT :
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : -10.00 PLOT HI : 10.00 BAR LO : -10.00 BAR HI : 10.00

=====

VIRTUAL ANALOG : PDI_6A
INPUT # : 23
INPUT DESC : 2736-Z BALANCE
INPUT UNIT :
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : -10.00 PLOT HI : 10.00 BAR LO : -10.00 BAR HI : 10.00

=====

VIRTUAL ANALOG : PI_1A
INPUT # : 24
INPUT DESC : ZB INST AIR
INPUT UNIT : PSI
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 50.00 PLOT HI : 100.00 BAR LO : 50.00 BAR HI : 100.00

XMTR ALARM :
XMTR ALARM Hi 99999.99 PRIORITY EVENT
XMTR ALARM Lo 55.00 PRIORITY CAUTION
XMTR ALARM HI HI 99999.99 PRIORITY EVENT
XMTR ALARM LO LO -9999.99 PRIORITY EVENT
XMTR ALARM MAX 99999.99 PRIORITY EVENT
XMTR ALARM MIN -9999.99 PRIORITY EVENT
XMTR ALARM DESC :2736-ZB INST AIR LO PRESS
XMTR ALARM DEADBAND : 1.00
XMTR ALARM GROUP :0
XMTR ALARM MGMT :0
XMTR ALARM COMMAND DISCR :
XMTR ALARM INDEX :0

=====

VIRTUAL ANALOG : II_VP_2
INPUT # : 25
INPUT DESC : ZB VP-2
INPUT UNIT : AMPS
INPUT SYNC SCAN : 1 SEC HIST SCAN : 30 SEC
INPUT HIST. DEFINITION : 1
INPUT PLOT LO : 0.00 PLOT HI : 40.00 BAR LO : 0.00 BAR HI : 40.00

LOOP NO : 1
LOOP TAG : MISC_M17
LOOP DESCRIPTION : ZB MISC ANALOGS
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00

#####

STEP NO : 1
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_CON_1
INPUT # : 1
INPUT DESC : ZB COND1
INPUT UNIT : AMPS
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 100.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 100.00
DIGITAL FILTER : 0

#####

STEP NO : 2
LABEL :
FUNCTION : 10 (L)
COMMENT : ZB CONDENSER 1 AMPS
PARAMETERS :
1) II COND1. 2) MSV

#####

STEP NO : 3
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_SF_1A
INPUT # : 2
INPUT DESC : ZB SF-1
INPUT UNIT : AMPS
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 40.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 40.00
DIGITAL FILTER : 0

#####

STEP NO : 4
LABEL :
FUNCTION : 10 (L)
COMMENT : ZB SF-1 AMPS
PARAMETERS :
1) II_SF_1. 2) MSV

#####

STEP NO : 5
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_SF_2A
INPUT # : 3
INPUT DESC : ZB SF-2
INPUT UNIT : AMPS
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 40.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 40.00
DIGITAL FILTER : 0

#####

STEP NO : 6
LABEL :
FUNCTION : 10 (L)
COMMENT : ZB SF-2 AMPS

PARAMETERS :
1) II SF 2. 2) MSV

#####

STEP NO : 7
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_DPY_1
INPUT # : 4
INPUT DESC : ADM AREA PRESS CONTROL BALANCE
INPUT UNIT :
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : -10.00 PLOT HI : 10.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : -10.00 RANGE HI : 10.00
DIGITAL FILTER : 0

#####

STEP NO : 8
LABEL :
FUNCTION : 10 (L)
COMMENT : ADM AREA BALANCE
PARAMETERS :
1) PDI_1A. 2) MSV

#####

STEP NO : 9
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_AC_1A
INPUT # : 5
INPUT DESC : ZB AC-1
INPUT UNIT : AMPS
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 40.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 40.00
DIGITAL FILTER : 0

#####

STEP NO : 10
LABEL :
FUNCTION : 10 (L)
COMMENT :AIR COMP 1 AMPS

PARAMETERS :
1)II AC 1. 2)MSV

#####

STEP NO : 11
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_AC_2A
INPUT # : 6
INPUT DESC : ZB ZC-2
INPUT UNIT : AMPS
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 40.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 40.00
DIGITAL FILTER : 0

#####

STEP NO : 12
LABEL :
FUNCTION : 10 (L)
COMMENT :AIR COMP 2 AMPS

PARAMETERS :
1)II_AC_2. 2)MSV

#####

STEP NO : 13
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_DPY_2
INPUT # : 7
INPUT DESC : PRCS AREA BALANCE
INPUT UNIT :
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : -10.00 PLOT HI : 10.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : -10.00 RANGE HI : 10.00
DIGITAL FILTER : 0

#####

STEP NO : 14
LABEL :
FUNCTION : 10 (L)
COMMENT : PROCESS AREA BALANCE
PARAMETERS :

1)PDI 2A. 2)MSV

#####

STEP NO : 15
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_DPY_4
INPUT # : 8
INPUT DESC : GLOVEBOX BALANCE
INPUT UNIT :
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : -10.00 PLOT HI : 10.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : -10.00 RANGE HI : 10.00
DIGITAL FILTER : 0

#####

STEP NO : 16
LABEL :
FUNCTION : 10 (L)
COMMENT : GLOVEBOX BALANCE
PARAMETERS :
1)PDI_4A. 2)MSV

#####

STEP NO : 21
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_RF_1A
INPUT # : 11
INPUT DESC : ZB RF-1
INPUT UNIT : AMPS
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 40.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 40.00
DIGITAL FILTER : 0

#####

STEP NO : 22
LABEL :
FUNCTION : 10 (L)
COMMENT : RF-1 AMPS

PARAMETERS :
1)II RF 1. 2)MSV

#####

STEP NO : 23
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_RF_2A
INPUT # : 12
INPUT DESC : ZB RF-2
INPUT UNIT : AMPS
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 40.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 40.00
DIGITAL FILTER : 0

#####

STEP NO : 24
LABEL :
FUNCTION : 10 (L)
COMMENT : RF-2 AMPS
PARAMETERS :
1)II_RF_2. 2)MSV

#####

STEP NO : 25
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_DPY1A
INPUT # : 13
INPUT DESC : ZB INSTR AIR
INPUT UNIT : PSI
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 50.00 PLOT HI : 100.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 50.00 RANGE HI : 100.00
DIGITAL FILTER : 0

#####

STEP NO : 26
LABEL :
FUNCTION : 10 (L)
COMMENT : INSTR AIR PRESS
PARAMETERS :
1)PI 1A. 2)MSV

#####

STEP NO : 27
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_DPY_5
INPUT # : 14
INPUT DESC : EXHAUST BALANCE
INPUT UNIT :
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : -10.00 PLOT HI : 10.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : -10.00 RANGE HI : 10.00
DIGITAL FILTER : 0

#####

STEP NO : 28
LABEL :
FUNCTION : 10 (L)
COMMENT : EXHAUST PLENUM BALANCE
PARAMETERS :
1)PDI_5A. 2)MSV

#####

STEP NO : 29
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_1_1A
INPUT # : 15
INPUT DESC : EF-1-1
INPUT UNIT : AMPS
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 50.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 50.00
DIGITAL FILTER : 0

#####

STEP NO : 30
LABEL :
FUNCTION : 10 (L)
COMMENT : EF-1-1 AMPS

PARAMETERS :
1)II 1 1. 2)MSV

#####

STEP NO : 31
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_1_2A
INPUT # : 16
INPUT DESC : EF-1-2
INPUT UNIT : AMPS
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 50.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 50.00
DIGITAL FILTER : 0

#####

STEP NO : 32
LABEL :
FUNCTION : 10 (L)
COMMENT : EF-1-2 AMPS
PARAMETERS :
1)II_1_2. 2)MSV

#####

STEP NO : 33
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_SF_5A
INPUT # : 17
INPUT DESC : ZB SF-5
INPUT UNIT : AMPS
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 20.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 20.00
DIGITAL FILTER : 0

#####

STEP NO : 34
LABEL :
FUNCTION : 10 (L)
COMMENT :SF-5 AMPS

PARAMETERS :
1)II SF 5. 2)MSV

#####

STEP NO : 35
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_SF_6A
INPUT # : 18
INPUT DESC : ZB SF-6
INPUT UNIT : AMPS
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 20.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 20.00
DIGITAL FILTER : 0

#####

STEP NO : 36
LABEL :
FUNCTION : 10 (L)
COMMENT :SF-6 AMPS

PARAMETERS :
1)II_SF_6. 2)MSV

#####

STEP NO : 37
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_VP_1A
INPUT # : 19
INPUT DESC : ZB VP-1
INPUT UNIT : AMPS
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 40.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 40.00
DIGITAL FILTER : 0

#####

STEP NO : 38
LABEL :
FUNCTION : 10 (L)
COMMENT : VAC PUMP 1 AMPS
PARAMETERS :

1)II VP 1. 2)MSV

#####

STEP NO : 39
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_DPY_6
INPUT # : 20
INPUT DESC : 2736-Z BALANCE
INPUT UNIT :
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : -10.00 PLOT HI : 10.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : -10.00 RANGE HI : 10.00
DIGITAL FILTER : 0

#####

STEP NO : 40
LABEL :
FUNCTION : 10 (L)
COMMENT : 2736-Z BALANCE
PARAMETERS :

1)PDI_6A. 2)MSV

#####

STEP NO : 41
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_CON_2
INPUT # : 21
INPUT DESC : ZB COND2
INPUT UNIT : AMPS
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 100.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 100.00
DIGITAL FILTER : 0

#####

STEP NO : 42
LABEL :
FUNCTION : 10 (L)
COMMENT : CONDENSER 2 AMPS
PARAMETERS :
1) II COND2. 2) MSV

#####

STEP NO : 43
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_SF_3A
INPUT # : 22
INPUT DESC : ZB SF-3
INPUT UNIT : AMPS
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 20.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 20.00
DIGITAL FILTER : 0

#####

STEP NO : 44
LABEL :
FUNCTION : 10 (L)
COMMENT : SF-3 AMPS
PARAMETERS :
1) II_SF_3. 2) MSV

#####

STEP NO : 45
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_SF_4A
INPUT # : 23
INPUT DESC : ZB SF-4
INPUT UNIT : AMPS
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : 0.00 PLOT HI : 20.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : 0.00 RANGE HI : 20.00
DIGITAL FILTER : 0

#####

STEP NO : 46
LABEL :
FUNCTION : 10 (L)
COMMENT : SF-4 AMPS

PARAMETERS :
1) II SF 4. 2) MSV

#####

STEP NO : 47
LABEL :
FUNCTION : 11 (AI)
COMMENT :

=====

ANALOG INPUT : AI_DPY_3
INPUT # : 24
INPUT DESC : NDA AREA BALANCE
INPUT UNIT :
INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
INPUT HIST. DEFINITION : 0
INPUT PLOT LO : -10.00 PLOT HI : 10.00
INPUT TYPE : LINEAR 4-20mA
INPUT RANGE LO : -10.00 RANGE HI : 10.00
DIGITAL FILTER : 0

#####

STEP NO : 48
LABEL :
FUNCTION : 10 (L)
COMMENT : NDA AREA BALANCE

PARAMETERS :
1) PDI_3. 2) MSV

#####

STEP NO : 49

LABEL :

FUNCTION : 11 (AI)

COMMENT :

=====

ANALOG INPUT : AI_VP_2A

INPUT # : 25

INPUT DESC : ZB VP-2

INPUT UNIT : AMPS

INPUT SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

INPUT HIST. DEFINITION : 0

INPUT PLOT LO : 0.00 PLOT HI : 40.00

INPUT TYPE : LINEAR 4-20mA

INPUT RANGE LO : 0.00 RANGE HI : 40.00

DIGITAL FILTER : 0

#####

STEP NO : 50

LABEL :

FUNCTION : 10 (L)

COMMENT : VP-2 AMPS

PARAMETERS :

1)II VP 2. 2)MSV

#####

STEP NO : 51

LABEL :

FUNCTION : 0 (END)

COMMENT :

ZB_2_1.mic18_r0

MICON TYPE :RCM-D
MICON UNIT NO : 18
MICON TAG : ZB_2_1
MICON DESCRIPTION : 2736-ZB RACK 2 SLOT 1
MICON CONFIGURATION FILE : mic18_r0
POINT ALLOCATION :
VAI : 32, VDI : 32, ISW : 32, LOOPS : 12, MSD : 16,
AI : 0, AO : 0, DI : 32, DO : 32

=====

DISCRETE TAG : HS 1 1
DISCRETE (Internal Switch) # : 1
DISCRETE DESC : EF-1-1
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 1
DISCRETE STATE 0 DESC :STOP COLOR : GREEN
DISCRETE STATE 1 DESC :START COLOR : YELLOW

=====

DISCRETE TAG : HS EF 1
DISCRETE (Internal Switch) # : 2
DISCRETE DESC : ZB EF-1
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 1
DISCRETE STATE 0 DESC :STOP COLOR : GREEN
DISCRETE STATE 1 DESC :START COLOR : YELLOW

=====

DISCRETE TAG : HS RF 1
DISCRETE (Internal Switch) # : 3
DISCRETE DESC : RF-1
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 1
DISCRETE STATE 0 DESC :STOP COLOR : GREEN
DISCRETE STATE 1 DESC :START COLOR : YELLOW

=====

DISCRETE TAG : HS SF 1
DISCRETE (Internal Switch) # : 4
DISCRETE DESC : ZB SF-1
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 1
DISCRETE STATE 0 DESC :STOP COLOR : GREEN
DISCRETE STATE 1 DESC :START COLOR : YELLOW

```
=====
DISCRETE TAG      : HS SF 3
DISCRETE (Internal SwItch) # : 5
DISCRETE DESC     : ZB SF-3
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 1
DISCRETE STATE 0 DESC :STOP COLOR : GREEN
DISCRETE STATE 1 DESC :START COLOR : YELLOW
=====
```

```
DISCRETE TAG      : HS SF 5
DISCRETE (Internal SwItch) # : 6
DISCRETE DESC     : ZB SF-5
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 1
DISCRETE STATE 0 DESC :STOP COLOR : GREEN
DISCRETE STATE 1 DESC :START COLOR : YELLOW
=====
```

```
DISCRETE TAG      : RUN 1 1
DISCRETE (Internal SwItch) # : 7
DISCRETE DESC     : EF-1-1 PSUEDO RUN
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC :OFF COLOR : GREEN
DISCRETE STATE 1 DESC :ON COLOR : YELLOW
=====
```

```
DISCRETE TAG      : HS VP 1
DISCRETE (Internal SwItch) # : 8
DISCRETE DESC     : ZB VP-1
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 1
DISCRETE STATE 0 DESC :STOP COLOR : GREEN
DISCRETE STATE 1 DESC :START COLOR : YELLOW
=====
```

```
*****
LOOP NO      : 1
LOOP TAG     : EF_1
LOOP DESCRIPTION : ZB EF-1
LOOP SCAN    : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
EXPORT : DI EF 1A,FA EF 1
IMPORT DI :ZB_2_2::!FA_EF_2,ZB_2_3::!HS_LL_3,ZB_2_3::!HS_MAIN,ZB_2_3::!HS_MN
```

#####

STEP NO : 1
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : FA EF 1
DISCRETE (Virtual Discrete) # : 2
DISCRETE DESC : ZB EF-1
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : FAIL COLOR : RED
DI Alarm State : 1
DI Alarm Priority : Urgent
DI Alarm Desc : ZB EF-1 LOW FLOW / FAIL
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 2
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI EF 1B
DISCRETE (Discrete Input) # : 4
DISCRETE DESC : EF-1 READY
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : PWR OFF COLOR : WHITE
DISCRETE STATE 1 DESC : PWR ON COLOR : WHITE

#####

STEP NO : 3
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI EF 1A
DISCRETE (Discrete Input) # : 5
DISCRETE DESC : EF-1 RUN
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : WHITE
DISCRETE STATE 1 DESC : ON COLOR : WHITE

#####

STEP NO : 4

LABEL :

FUNCTION : 9 (DSCC)

COMMENT :

=====

MULTI-STATE DI TAG : YI_EF_1

MULTI-STATE DI # : 2

MULTI-STATE DI DESC : ZB EF-1

MULTI-STATE DI SYNC SCAN : 0

MULTI-STATE DI1 : DI_EF_1A

MULTI-STATE DI2 : DI_EF_1B

MULTI-STATE DI3 :

MULTI-STATE DI4 :

MULTI-STATE STATE 0 :DESC PWR OFF COLOR White

MULTI-STATE STATE 1 :DESC ON COLOR Yellow

MULTI-STATE STATE 2 :DESC OFF COLOR Green

MULTI-STATE STATE 3 :DESC FAILED COLOR White

MULTI-STATE STATE 4 :DESC COLOR Black

MULTI-STATE STATE 5 :DESC COLOR Black

MULTI-STATE STATE 6 :DESC COLOR Black

MULTI-STATE STATE 7 :DESC COLOR Black

MULTI-STATE STATE 8 :DESC COLOR Black

MULTI-STATE STATE 9 :DESC COLOR Black

MULTI-STATE STATE 10 :DESC COLOR Black

MULTI-STATE STATE 11 :DESC COLOR Black

MULTI-STATE STATE 12 :DESC COLOR Black

MULTI-STATE STATE 13 :DESC COLOR Black

MULTI-STATE STATE 14 :DESC COLOR Black

MULTI-STATE STATE 15 :DESC COLOR Black

#####

STEP NO : 5

LABEL :

FUNCTION : 57 (DO)

COMMENT :

=====

DISCRETE TAG : DO EF 1

DISCRETE (Discrete Output) # : 6

DISCRETE DESC : EF-1 CONTROL

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0

DISCRETE STATE 0 DESC :OFF COLOR : WHITE

DISCRETE STATE 1 DESC :ON COLOR : WHITE

```
#####  
STEP NO      : 6  
LABEL :  
FUNCTION : 57 (DO      )  
COMMENT :  
=====
```

DISCRETE TAG : DO EV 11
DISCRETE (Discrete Output) # : 22
DISCRETE DESC : DM-13
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC :CLOSED COLOR : WHITE
DISCRETE STATE 1 DESC :OPEN COLOR : WHITE
#####

```
STEP NO      : 7  
LABEL :  
FUNCTION : 57 (DO      )  
COMMENT :  
=====
```

DISCRETE TAG : DO EV 12
DISCRETE (Discrete Output) # : 23
DISCRETE DESC : DM-14
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC :CLOSED COLOR : WHITE
DISCRETE STATE 1 DESC :OPEN COLOR : WHITE
#####

```
STEP NO      : 8  
LABEL :  
FUNCTION : 75 (DST      )  
COMMENT :OPEN DM-13 ON EF-1 ON  
PARAMETERS :  
1)DI EF 1A. 2)0 3)0 4)0 5)DO EV 11.  
#####
```

```
STEP NO      : 9  
LABEL :  
FUNCTION : 75 (DST      )  
COMMENT :OPEN DM-14 ON EF-1 ON  
PARAMETERS :  
1)DI EF 1A. 2)0 3)0 4)0 5)DO EV 12.  
#####
```

```
STEP NO      : 10  
LABEL : FIRE  
FUNCTION : 69 (LC      )  
COMMENT :FIRE ALARM  
PARAMETERS :  
1)XA_CSA|XA_FAZB|XA_FAZN8
```

```
#####  
STEP NO      : 11  
LABEL :  
FUNCTION : 69 (LC      )  
COMMENT : "0" PULSE ON AUTO START OR EF-2 FAIL  
PARAMETERS :  
1)-!PULSE(!HS LL 3&HS MAIN)&!PULSE(HS LL_3&(FA_EF_2|PULSE(!DI_EF  
#####  
STEP NO      : 12  
LABEL :  
FUNCTION : 62 (GTD     )  
COMMENT : EF-1 "START" JUMP  
PARAMETERS :  
1)MSV 2) Off-Noma1 3)JUMPA  
#####  
STEP NO      : 13  
LABEL : JUMPA  
FUNCTION : 10 (L       )  
COMMENT : START EF-1  
PARAMETERS :  
1)HS EF 1. 2)1  
#####  
STEP NO      : 14  
LABEL :  
FUNCTION : 69 (LC      )  
COMMENT : PREVENT FALSE START ON RESET  
PARAMETERS :  
1)-!PULSE(1)  
#####  
STEP NO      : 15  
LABEL :  
FUNCTION : 62 (GTD     )  
COMMENT :  
PARAMETERS :  
1)MSV 2) Off-Noma1 3)JUMPST  
#####  
STEP NO      : 16  
LABEL : JUMPST  
FUNCTION : 10 (L       )  
COMMENT :  
PARAMETERS :  
1)HS EF 1. 2)0  
#####  
STEP NO      : 17  
LABEL :  
FUNCTION : 69 (LC      )  
COMMENT : "0" PULSE ON MAIN STOP  
PARAMETERS :  
1)-!PULSE(HS_MN_S,5)
```

#####

STEP NO : 18
LABEL :
FUNCTION : 62 (GTD)
COMMENT :EF-1 "STOP" JUMP
PARAMETERS :
1)MSV 2) Off-Noma1 3)JUMPB

#####

STEP NO : 19
LABEL : JUMPB
FUNCTION : 10 (L)
COMMENT :STOP EF-1
PARAMETERS :
1)HS EF 1. 2)0

#####

STEP NO : 20
LABEL :
FUNCTION : 69 (LC)
COMMENT :EF-1 HELD ON "STOP" IF COLD SMOKE ALARM
PARAMETERS :
1)-!FIRE

#####

STEP NO : 21
LABEL :
FUNCTION : 62 (GTD)
COMMENT :COLD SMOKE "STOP" JUMP
PARAMETERS :
1)MSV 2) Off-Noma1 3)JUMPC

#####

STEP NO : 22
LABEL : JUMPC
FUNCTION : 10 (L)
COMMENT :HOLD EF-1 ON "STOP"
PARAMETERS :
1)HS EF 1. 2)0

#####

STEP NO : 23
LABEL :
FUNCTION : 73 (LAT)
COMMENT :EF-1 CONTROL LOGIC
PARAMETERS :
1) LATCH=PULSE(HS_EF_1,5) 2) UNLATCH=-HS_EF_1!(DELAY(HS_E 3)0 4)DO_EF_1. 5)0
0

```
#####
STEP NO      : 24
LABEL :
FUNCTION : 69 (LC      )
COMMENT :ALARM ON NO FLOW OR OFF WHEN HS IS ON (EXCEPT STARTUP)
PARAMETERS :
1)DELAY(HS EF 1,15)&-(!DI EF 1A&!DI FS 5)
#####
STEP NO      : 25
LABEL :
FUNCTION : 75 (DST      )
COMMENT :
PARAMETERS :
1)MSV 2)0 3)0 4)0 5)FA EF 1.
#####
STEP NO      : 26
LABEL :
FUNCTION : 0 (END      )
COMMENT :
*****
LOOP NO      : 2
LOOP TAG      : EF_1_1
LOOP DESCRIPTION : EF-1-1
LOOP SCAN      : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
EXPORT :HS 1 1,RUN 1 1,FA 1 1
IMPORT DI :ZB 2 4:~!DI 1 IB~
#####
STEP NO      : 1
LABEL :
FUNCTION : 6 (VD      )
COMMENT :
=====
DISCRETE TAG      : FA_1_1
DISCRETE (Virtual Discrete) # : 1
DISCRETE DESC      : EF-1-1
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :FAIL COLOR : RED
DI Alarm State : 1
DI Alarm Priority : Urgent
DI Alarm Desc :EF-1-1 LOW FLOW / FAIL
DI Alarm Mgmt Discrete :
DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0
```


#####

STEP NO : 2
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_1_1A
DISCRETE (Discrete Input) # : 10
DISCRETE DESC : EF-1-1 READY
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : PWR OFF COLOR : WHITE
DISCRETE STATE 1 DESC : PWR ON COLOR : WHITE

#####

STEP NO : 3
LABEL :
FUNCTION : 9 (DSCC)
COMMENT :

=====

MULTI-STATE DI TAG : YI_1_1
MULTI-STATE DI # : 1
MULTI-STATE DI DESC : EF-1-1
MULTI-STATE DI SYNC SCAN : 0
MULTI-STATE DI1 : RUN 1 1
MULTI-STATE DI2 : DI_1_1A
MULTI-STATE DI3 :
MULTI-STATE DI4 :
MULTI-STATE STATE 0 : DESC PWR OFF COLOR White
MULTI-STATE STATE 1 : DESC ON COLOR Yellow
MULTI-STATE STATE 2 : DESC OFF COLOR Green
MULTI-STATE STATE 3 : DESC FAILED COLOR White
MULTI-STATE STATE 4 : DESC COLOR Black
MULTI-STATE STATE 5 : DESC COLOR Black
MULTI-STATE STATE 6 : DESC COLOR Black
MULTI-STATE STATE 7 : DESC COLOR Black
MULTI-STATE STATE 8 : DESC COLOR Black
MULTI-STATE STATE 9 : DESC COLOR Black
MULTI-STATE STATE 10 : DESC COLOR Black
MULTI-STATE STATE 11 : DESC COLOR Black
MULTI-STATE STATE 12 : DESC COLOR Black
MULTI-STATE STATE 13 : DESC COLOR Black
MULTI-STATE STATE 14 : DESC COLOR Black
MULTI-STATE STATE 15 : DESC COLOR Black

#####

STEP NO : 4
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI KFS21
DISCRETE (Discrete Input) # : 18
DISCRETE DESC : EF-1-1 FLOW SWITCH
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : WHITE
DISCRETE STATE 1 DESC : FLOW ON COLOR : WHITE

#####

STEP NO : 5
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO 1 1
DISCRETE (Discrete Output) # : 11
DISCRETE DESC : EF-1-1 CONTROL
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : OFF COLOR : WHITE
DISCRETE STATE 1 DESC : ON COLOR : WHITE

#####

STEP NO : 6
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO EV 33
DISCRETE (Discrete Output) # : 28
DISCRETE DESC : DM-28
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : CLOSED COLOR : WHITE
DISCRETE STATE 1 DESC : OPEN COLOR : WHITE

#####

STEP NO : 7
LABEL :
FUNCTION : 75 (DST)
COMMENT : OPEN DM-28 ON EF-1-1 RUN
PARAMETERS :
1)DI_1_1B. 2)0 3)0 4)0 5)DO_EV_33.

```
#####
STEP NO      : 8
LABEL :
FUNCTION : 69 (LC      )
COMMENT :HELD ON "STOP" IF COLD SMOKE ALARM
PARAMETERS :
1)-!XA CSA
#####
STEP NO      : 9
LABEL :
FUNCTION : 62 (GTD      )
COMMENT :COLD SMOKE "STOP" JUMP
PARAMETERS :
1)MSV 2) Off-Noma1 3)JUMPA
#####
STEP NO      : 10
LABEL : JUMPA
FUNCTION : 10 (L      )
COMMENT :STOP EF-1-1
PARAMETERS :
1)HS 1 1. 2)0
#####
STEP NO      : 11
LABEL :
FUNCTION : 73 (LAT      )
COMMENT :EF-1-1 CONTROL LOGIC
PARAMETERS :
1) LATCH=PULSE(HS 1 1,5) 2) UNLATCH=-HS 1_1|(DELAY(HS_1_ 3)0 4)DO_1_1. 5)0
#####
STEP NO      : 12
LABEL :
FUNCTION : 69 (LC      )
COMMENT :ALARM ON NO FLOW OR OFF WHEN HS IS ON (EXCEPT STARTUP)
PARAMETERS :
1)DELAY(HS 1 1,30)&-(!DI 1 1B&!DI KFS21)
#####
STEP NO      : 13
LABEL :
FUNCTION : 75 (DST      )
COMMENT :
PARAMETERS :
1)MSV 2)0 3)0 4)0 5)FA 1 1.
#####
STEP NO      : 14
LABEL :
FUNCTION : 69 (LC      )
COMMENT :PSUEDO RUN = (HS ON AND NO FLOW ALARM) OR REAL RUN
PARAMETERS :
1)(HS_1_1&-FA_1_1)|DI_1_1B
```

#####

STEP NO : 15
LABEL :
FUNCTION : 75 (DST)
COMMENT :
PARAMETERS :

1)MSV 2)0 3)0 4)0 5)RUN 1 1.

#####

STEP NO : 16
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 3
LOOP TAG : RF_1
LOOP DESCRIPTION : RF-1
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :

RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00

RATIO CURR : 0.00, BIAS CURR : 0.00

EXPORT :DI RF_1A,FA RF_1

IMPORT DI :ZB_2_2::TFA_RF_2,ZB_2_3::IHS_LL_4,ZB_2_3::IHS_NDA,ZB_2_3::IHS_NDA

#####

STEP NO : 1
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : FA RF_1
DISCRETE (Virtual Discrete) # : 3
DISCRETE DESC : RF-1
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :FAIL COLOR : RED
DI Alarm State : 1
DI Alarm Priority : Urgent
DI Alarm Desc :RF-1 LOW FLOW / FAIL
DI Alarm Mgmt Discrete :
DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0

#####

STEP NO : 2
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI RF 1B
DISCRETE (Discrete Input) # : 7
DISCRETE DESC : RF-1 READY
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : PWR OFF COLOR : WHITE
DISCRETE STATE 1 DESC : PWR ON COLOR : WHITE

#####

STEP NO : 3
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI RF 1A
DISCRETE (Discrete Input) # : 8
DISCRETE DESC : RF-1 RUN
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : WHITE
DISCRETE STATE 1 DESC : ON COLOR : WHITE

#####

STEP NO : 4
LABEL :
FUNCTION : 9 (DSCC)
COMMENT :

=====

MULTI-STATE DI TAG : YI_RF_1
MULTI-STATE DI # : 3
MULTI-STATE DI DESC : RF-1
MULTI-STATE DI SYNC SCAN : 0
MULTI-STATE DI1 : DI_RF_1A
MULTI-STATE DI2 : DI_RF_1B
MULTI-STATE DI3 :
MULTI-STATE DI4 :
MULTI-STATE STATE 0 :DESC PWR OFF COLOR White
MULTI-STATE STATE 1 :DESC ON COLOR Yellow
MULTI-STATE STATE 2 :DESC OFF COLOR Green
MULTI-STATE STATE 3 :DESC FAILED COLOR White
MULTI-STATE STATE 4 :DESC COLOR Black
MULTI-STATE STATE 5 :DESC COLOR Black
MULTI-STATE STATE 6 :DESC COLOR Black
MULTI-STATE STATE 7 :DESC COLOR Black
MULTI-STATE STATE 8 :DESC COLOR Black
MULTI-STATE STATE 9 :DESC COLOR Black
MULTI-STATE STATE 10 :DESC COLOR Black
MULTI-STATE STATE 11 :DESC COLOR Black
MULTI-STATE STATE 12 :DESC COLOR Black
MULTI-STATE STATE 13 :DESC COLOR Black
MULTI-STATE STATE 14 :DESC COLOR Black
MULTI-STATE STATE 15 :DESC COLOR Black

#####

STEP NO : 5
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO RF 1
DISCRETE (Discrete Output) # : 9
DISCRETE DESC : RF-1 CONTROL
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC :OFF COLOR : WHITE
DISCRETE STATE 1 DESC :ON COLOR : WHITE

#####

STEP NO : 6
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO EV 15
DISCRETE (Discrete Output) # : 24
DISCRETE DESC : DM-17
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : CLOSED COLOR : WHITE
DISCRETE STATE 1 DESC : OPEN COLOR : WHITE

#####

STEP NO : 7
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO EV 16
DISCRETE (Discrete Output) # : 25
DISCRETE DESC : DM-18
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : CLOSED COLOR : WHITE
DISCRETE STATE 1 DESC : OPEN COLOR : WHITE

#####

STEP NO : 8
LABEL :
FUNCTION : 75 (DST)
COMMENT : OPEN DM-17 ON RF-1 ON
PARAMETERS :

1)DI RF 1A. 2)0 3)0 4)0 5)DO EV 15.

#####

STEP NO : 9
LABEL :
FUNCTION : 75 (DST)
COMMENT : OPEN DM-18 ON RF-1 ON
PARAMETERS :

1)DI RF 1A. 2)0 3)0 4)0 5)DO EV 16.

#####

STEP NO : 10
LABEL : FIRE
FUNCTION : 69 (LC)
COMMENT : FIRE ALARM
PARAMETERS :
1)XA_CSA|XA_FAZB|XA_FAZN8

```
#####  
STEP NO      : 11  
LABEL :  
FUNCTION : 69 (LC      )  
COMMENT :PULSE "0" ON AUTO START OR RF-2 FAIL  
PARAMETERS :  
1)-!PULSE(!HS_LL_4&HS_NDA)&!PULSE(HS_LL_4&(FA_RF_2!PULSE(!DI_RF_  
#####  
STEP NO      : 12  
LABEL :  
FUNCTION : 62 (GTD      )  
COMMENT :RF-1 START JUMP  
PARAMETERS :  
1)MSV 2) Off-Noma1 3)JUMPA  
#####  
STEP NO      : 13  
LABEL : JUMPA  
FUNCTION : 10 (L      )  
COMMENT :  
PARAMETERS :  
1)HS RF 1. 2)1  
#####  
STEP NO      : 14  
LABEL :  
FUNCTION : 69 (LC      )  
COMMENT :PREVENT FALSE START ON RESET  
PARAMETERS :  
1)-!PULSE(1)  
#####  
STEP NO      : 15  
LABEL :  
FUNCTION : 62 (GTD      )  
COMMENT :  
PARAMETERS :  
1)MSV 2) Off-Noma1 3)JUMPST  
#####  
STEP NO      : 16  
LABEL : JUMPST  
FUNCTION : 10 (L      )  
COMMENT :  
PARAMETERS :  
1)HS RF 1. 2)0  
#####  
STEP NO      : 17  
LABEL :  
FUNCTION : 69 (LC      )  
COMMENT :PULSE "0" ON NDA STOP  
PARAMETERS :  
1)-!PULSE(HS_NDA_S,5)
```


#####

STEP NO : 18

LABEL :

FUNCTION : 62 (GTD)

COMMENT :RF-1 STOP JUMP

PARAMETERS :

1)MSV 2) Off-Noma1 3)JUMPB

#####

STEP NO : 19

LABEL : JUMPB

FUNCTION : 10 (L)

COMMENT :

PARAMETERS :

1)HS RF 1. 2)0

#####

STEP NO : 20

LABEL :

FUNCTION : 69 (LC)

COMMENT :HOLD ON "STOP" IF FIRE ALARM

PARAMETERS :

1)-!FIRE

#####

STEP NO : 21

LABEL :

FUNCTION : 62 (GTD)

COMMENT :RF-1 FIRE "STOP" JUMP

PARAMETERS :

1)MSV 2) Off-Noma1 3)JUMPC

#####

STEP NO : 22

LABEL : JUMPC

FUNCTION : 10 (L)

COMMENT :

PARAMETERS :

1)HS RF 1. 2)0

#####

STEP NO : 23

LABEL :

FUNCTION : 73 (LAT)

COMMENT :RF-1 CONTROL LOGIC

PARAMETERS :

1) LATCH=PULSE(HS_RF_1,5) 2) UNLATCH=-HS_RF_1|(DELAY(HS_R 3)0 4)DO_RF_1. 5)0

#####

STEP NO : 24

LABEL :

FUNCTION : 69 (LC)

COMMENT :ALARM ON NO FLOW OR OFF WHEN HS IS ON (EXCEPT STARTUP)

PARAMETERS :

1)DELAY(HS_RF_1,15)&-(!DI_RF_1A&!DI_FS_7)

#####

STEP NO : 25
LABEL :
FUNCTION : 75 (DST)
COMMENT :
PARAMETERS :

1)MSV 2)0 3)0 4)0 5)FA RF 1.

#####

STEP NO : 26
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 4
LOOP TAG : SF_1
LOOP DESCRIPTION : ZB SF-1
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :

RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00

EXPORT :DI SF 1A,FA SF 1

IMPORT DI :ZB_2_2::TFA_SF 2,ZB 2 3::!HS LL1,ZB_2_4::!DI_FS_1,ZB_2_5::!DI_DPS

#####

STEP NO : 1
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : FA SF 1
DISCRETE (Virtual Discrete) # : 4
DISCRETE DESC : ZB SF-1
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :FAIL COLOR : YELLOW
DI Alarm State : 1
DI Alarm Priority : Caution
DI Alarm Desc :ZB SF-1 LOW FLOW / FAIL
DI Alarm Mgmt Discrete :
DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0

#####

STEP NO : 2
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI SF 1B
DISCRETE (Discrete Input) # : 1
DISCRETE DESC : SF-1 READY
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : PWR OFF COLOR : WHITE
DISCRETE STATE 1 DESC : PWR ON COLOR : WHITE

#####

STEP NO : 3
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI SF 1A
DISCRETE (Discrete Input) # : 2
DISCRETE DESC : SF-1 RUN
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : WHITE
DISCRETE STATE 1 DESC : ON COLOR : WHITE

#####

STEP NO : 4
LABEL :
FUNCTION : 9 (DSCC)
COMMENT :

=====
MULTI-STATE DI TAG : YI_SF_1
MULTI-STATE DI # : 4
MULTI-STATE DI DESC : ZB SF-1
MULTI-STATE DI SYNC SCAN : 0
MULTI-STATE DI1 : DI_SF_1A
MULTI-STATE DI2 : DI_SF_1B
MULTI-STATE DI3 :
MULTI-STATE DI4 :
MULTI-STATE STATE 0 :DESC PWR OFF COLOR White
MULTI-STATE STATE 1 :DESC ON COLOR Yellow
MULTI-STATE STATE 2 :DESC OFF COLOR Green
MULTI-STATE STATE 3 :DESC FAILED COLOR White
MULTI-STATE STATE 4 :DESC COLOR Black
MULTI-STATE STATE 5 :DESC COLOR Black
MULTI-STATE STATE 6 :DESC COLOR Black
MULTI-STATE STATE 7 :DESC COLOR Black
MULTI-STATE STATE 8 :DESC COLOR Black
MULTI-STATE STATE 9 :DESC COLOR Black
MULTI-STATE STATE 10 :DESC COLOR Black
MULTI-STATE STATE 11 :DESC COLOR Black
MULTI-STATE STATE 12 :DESC COLOR Black
MULTI-STATE STATE 13 :DESC COLOR Black
MULTI-STATE STATE 14 :DESC COLOR Black
MULTI-STATE STATE 15 :DESC COLOR Black

#####

STEP NO : 5
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====
DISCRETE TAG : DO_SF_1
DISCRETE (Discrete Output) # : 3
DISCRETE DESC : SF-1 CONTROL
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC :OFF COLOR : WHITE
DISCRETE STATE 1 DESC :ON COLOR : WHITE

#####

STEP NO : 6
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO EV 1
DISCRETE (Discrete Output) # : 20
DISCRETE DESC : DM-1
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : CLOSED COLOR : WHITE
DISCRETE STATE 1 DESC : OPEN COLOR : WHITE

#####

STEP NO : 7
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO EV 2
DISCRETE (Discrete Output) # : 21
DISCRETE DESC : DM-3
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : CLOSED COLOR : WHITE
DISCRETE STATE 1 DESC : OPEN COLOR : WHITE

#####

STEP NO : 8
LABEL :
FUNCTION : 75 (DST)
COMMENT : OPEN DM-1 ON SF-1 ON

PARAMETERS :

1)DI SF 1A. 2)0 3)0 4)0 5)DO EV 1.

#####

STEP NO : 9
LABEL :
FUNCTION : 75 (DST)
COMMENT : OPEN DM-3 ON SF-1 ON

PARAMETERS :

1)DI SF 1A. 2)0 3)0 4)0 5)DO EV 2.

#####

STEP NO : 10
LABEL : FIRE
FUNCTION : 69 (LC)
COMMENT : FIRE ALARM
PARAMETERS :
1)XA_CSA|XA_FAZB|XA_FAZN8

```
#####  
STEP NO      : 11  
LABEL :  
FUNCTION : 69 (LC      )  
COMMENT : "0" PULSE ON EXHAUST DP UP OR SF-2 FAIL  
PARAMETERS :  
1)-!PULSE(!HS_LL1&PULSE(DI_DPS_2))&!PULSE(HS_LL1&FA_SF_2&DI_DPS_2  
#####  
STEP NO      : 12  
LABEL :  
FUNCTION : 62 (GTD     )  
COMMENT : SF-1 START JUMP  
PARAMETERS :  
1)MSV 2) Off-Noma1 3)JUMPA  
#####  
STEP NO      : 13  
LABEL : JUMPA  
FUNCTION : 10 (L       )  
COMMENT :  
PARAMETERS :  
1)HS SF 1. 2)1  
#####  
STEP NO      : 14  
LABEL :  
FUNCTION : 69 (LC      )  
COMMENT :  
PARAMETERS :  
1)-!PULSE(1)  
#####  
STEP NO      : 15  
LABEL :  
FUNCTION : 62 (GTD     )  
COMMENT :  
PARAMETERS :  
1)MSV 2) Off-Noma1 3)JUMPST  
#####  
STEP NO      : 16  
LABEL : JUMPST  
FUNCTION : 10 (L       )  
COMMENT :  
PARAMETERS :  
1)HS SF 1. 2)0  
#####  
STEP NO      : 17  
LABEL :  
FUNCTION : 69 (LC      )  
COMMENT : "0" PULSE ON MAIN STOP OR LO EXHAUST DP  
PARAMETERS :  
1)-!PULSE(HS_MN_S|-!DI_DPS_2,5)
```

```
#####
STEP NO      : 18
LABEL :
FUNCTION : 62 (GTD  )
COMMENT :STOP JUMP
PARAMETERS :
1)MSV 2) Off-Noma1 3)JUMPB
#####
STEP NO      : 19
LABEL : JUMPB
FUNCTION : 10 (L  )
COMMENT :
PARAMETERS :
1)HS SF 1. 2)0
#####
STEP NO      : 20
LABEL :
FUNCTION : 69 (LC  )
COMMENT :HOLD ON "STOP" IF FIRE ALARM
PARAMETERS :
1)-!FIRE
#####
STEP NO      : 21
LABEL :
FUNCTION : 62 (GTD  )
COMMENT :SF-1 FIRE ALARM STOP JUMP
PARAMETERS :
1)MSV 2) Off-Noma1 3)JUMPC
#####
STEP NO      : 22
LABEL : JUMPC
FUNCTION : 10 (L  )
COMMENT :
PARAMETERS :
1)HS SF 1. 2)0
#####
STEP NO      : 23
LABEL :
FUNCTION : 73 (LAT  )
COMMENT :SF-1 CONTROL LOGIC
PARAMETERS :
1) LATCH=PULSE(HS_SF_1,5) 2) UNLATCH=-HS_SF_1|(DELAY(HS_S 3)0 4)DO_SF_1. 5)0
#####
STEP NO      : 24
LABEL :
FUNCTION : 69 (LC  )
COMMENT :ALARM ON NO FLOW OR OFF WHEN HS IS ON (EXCEPT STARTUP)
PARAMETERS :
1)DELAY(HS_SF_1,15)&-(!DI_SF_1A&!DI_FS_1)
```

#####

STEP NO : 25
LABEL :
FUNCTION : 75 (DST)
COMMENT :
PARAMETERS :

1)MSV 2)0 3)0 4)0 5)FA SF 1.

#####

STEP NO : 26
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 5
LOOP TAG : SF_3
LOOP DESCRIPTION : ZB SF-3
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
EXPORT :DI_SF_3A,FA_SF_3

IMPORT DI :ZB_2_2::TFA_SF_4,ZB_2_3::!HS_LL2,ZB_2_4::!DI_FS_3,ZB_2_2::!DI_SF_

#####

STEP NO : 1
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : FA_SF_3
DISCRETE (Virtual Discrete) # : 5
DISCRETE DESC : ZB_SF-3
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :FAIL COLOR : YELLOW
DI Alarm State : 1
DI Alarm Priority : Caution
DI Alarm Desc :ZB_SF-3 LOW FLOW / FAIL
DI Alarm Mgmt Discrete :
DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0

#####

STEP NO : 2
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI SF 3B
DISCRETE (Discrete Input) # : 15
DISCRETE DESC : SF-3 READY
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : PWR OFF COLOR : WHITE
DISCRETE STATE 1 DESC : PWR ON COLOR : WHITE

#####

STEP NO : 3
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI SF 3A
DISCRETE (Discrete Input) # : 16
DISCRETE DESC : SF-3 RUN
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : WHITE
DISCRETE STATE 1 DESC : ON COLOR : WHITE

#####

STEP NO : 4
LABEL :
FUNCTION : 9 (DSCC)
COMMENT :

=====

MULTI-STATE DI TAG	: YI_SF_3
MULTI-STATE DI #	: 5
MULTI-STATE DI DESC	: ZB SF-3
MULTI-STATE DI SYNC SCAN	: 0
MULTI-STATE DI1	: DI_SF_3A
MULTI-STATE DI2	: DI_SF_3B
MULTI-STATE DI3	:
MULTI-STATE DI4	:
MULTI-STATE STATE 0	:DESC PWR OFF COLOR White
MULTI-STATE STATE 1	:DESC ON COLOR Yellow
MULTI-STATE STATE 2	:DESC OFF COLOR Green
MULTI-STATE STATE 3	:DESC FAILED COLOR White
MULTI-STATE STATE 4	:DESC COLOR Black
MULTI-STATE STATE 5	:DESC COLOR Black
MULTI-STATE STATE 6	:DESC COLOR Black
MULTI-STATE STATE 7	:DESC COLOR Black
MULTI-STATE STATE 8	:DESC COLOR Black
MULTI-STATE STATE 9	:DESC COLOR Black
MULTI-STATE STATE 10	:DESC COLOR Black
MULTI-STATE STATE 11	:DESC COLOR Black
MULTI-STATE STATE 12	:DESC COLOR Black
MULTI-STATE STATE 13	:DESC COLOR Black
MULTI-STATE STATE 14	:DESC COLOR Black
MULTI-STATE STATE 15	:DESC COLOR Black

#####

STEP NO : 5
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG	: DO SF 3
DISCRETE (Discrete Output) #	: 17
DISCRETE DESC	: SF-3 CONTROL
DISCRETE SYNC SCAN	: 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION	: 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC	:OFF COLOR : WHITE
DISCRETE STATE 1 DESC	:ON COLOR : WHITE

#####

STEP NO : 6
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO EV 5
DISCRETE (Discrete Output) # : 29
DISCRETE DESC : DM-7
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : CLOSED COLOR : WHITE
DISCRETE STATE 1 DESC : OPEN COLOR : WHITE

#####

STEP NO : 7
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO EV 6
DISCRETE (Discrete Output) # : 30
DISCRETE DESC : DM-8
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : CLOSED COLOR : WHITE
DISCRETE STATE 1 DESC : OPEN COLOR : WHITE

#####

STEP NO : 8
LABEL :
FUNCTION : 75 (DST)
COMMENT : OPEN DM-7 ON SF-3 ON

PARAMETERS :
1)DI SF 3A. 2)0 3)0 4)0 5)DO EV 5.

#####

STEP NO : 9
LABEL :
FUNCTION : 75 (DST)
COMMENT : OPEN DM-8 ON SF-3 ON

PARAMETERS :
1)DI SF 3A. 2)0 3)0 4)0 5)DO EV 6.

#####

STEP NO : 10
LABEL : FIRE
FUNCTION : 69 (LC)
COMMENT : FIRE ALARM

PARAMETERS :
1)XA_CSA|XA_FAZB|XA_FAZN8

```
#####  
STEP NO      : 11  
LABEL : RFON  
FUNCTION : 69 (LC )  
COMMENT : RETURN FAN "ON" SIGNAL  
PARAMETERS :  
1)(-!FA RF 1&DI RF 1A)|(-!FA RF 2&DI RF 2A)  
#####  
STEP NO      : 12  
LABEL :  
FUNCTION : 69 (LC )  
COMMENT : "0" PULSE ON RFs ON OR SF-4 FAIL  
PARAMETERS :  
1)-!PULSE(-!HS_LL2&PULSE(RFON))&-!PULSE(HS_LL2&FA_SF_4&RFON)&-!PULS  
#####  
STEP NO      : 13  
LABEL :  
FUNCTION : 62 (GTD )  
COMMENT : SF-3 START JUMP  
PARAMETERS :  
1)MSV 2) Off-Noma1 3)JUMPA  
#####  
STEP NO      : 14  
LABEL : JUMPA  
FUNCTION : 10 (L )  
COMMENT :  
PARAMETERS :  
1)HS SF 3. 2)1  
#####  
STEP NO      : 15  
LABEL :  
FUNCTION : 69 (LC )  
COMMENT :  
PARAMETERS :  
1)-!PULSE(1)  
#####  
STEP NO      : 16  
LABEL :  
FUNCTION : 62 (GTD )  
COMMENT :  
PARAMETERS :  
1)MSV 2) Off-Noma1 3)JUMPST  
#####  
STEP NO      : 17  
LABEL : JUMPST  
FUNCTION : 10 (L )  
COMMENT :  
PARAMETERS :  
1)HS_SF_3. 2)0
```

```
#####
STEP NO      : 18
LABEL :
FUNCTION : 69 (LC      )
COMMENT : "0" PULSE ON NDA STOP OR RFs OFF
PARAMETERS :
1)-!PULSE(HS_NDA_S,5)&-!PULSE(-!RFON)
#####
```

```
STEP NO      : 19
LABEL :
FUNCTION : 62 (GTD     )
COMMENT : STOP JUMP
PARAMETERS :
1)MSV 2) Off-Noma1 3)JUMPB
#####
```

```
STEP NO      : 20
LABEL : JUMPB
FUNCTION : 10 (L       )
COMMENT :
PARAMETERS :
1)HS_SF 3. 2)0
#####
```

```
STEP NO      : 21
LABEL :
FUNCTION : 69 (LC      )
COMMENT : HOLD ON "STOP" IF FIRE ALARM
PARAMETERS :
1)-!FIRE
#####
```

```
STEP NO      : 22
LABEL :
FUNCTION : 62 (GTD     )
COMMENT : FIRE ALARM STOP JUMP
PARAMETERS :
1)MSV 2) Off-Noma1 3)JUMPC
#####
```

```
STEP NO      : 23
LABEL : JUMPC
FUNCTION : 10 (L       )
COMMENT :
PARAMETERS :
1)HS_SF 3. 2)0
#####
```

```
STEP NO      : 24
LABEL :
FUNCTION : 73 (LAT      )
COMMENT : SF-3 CONTROL LOGIC
PARAMETERS :
1) LATCH=PULSE(HS_SF_3,5) 2) UNLATCH=-HS_SF_3!(DELAY(HS_S 3)0 4)DO_SF_3. 5)0
```

```
#####
STEP NO      : 25
LABEL :
FUNCTION : 69 (LC      )
COMMENT :ALARM ON NO FLOW OR OFF WHEN HS IS ON (EXCEPT STARTUP)
PARAMETERS :
1)DELAY(HS SF 3,15)&-(IDI SF 3A&IDI FS 3)
#####
STEP NO      : 26
LABEL :
FUNCTION : 75 (DST      )
COMMENT :
PARAMETERS :
1)MSV 2)0 3)0 4)0 5)FA SF 3.
#####
STEP NO      : 27
LABEL :
FUNCTION : 0 (END      )
COMMENT :
*****
LOOP NO      : 6
LOOP TAG     : SF_5
LOOP DESCRIPTION : ZB SF-5
LOOP SCAN    : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
EXPORT :DI SF_5A,FA SF 5
IMPORT DI :ZB_2 4::DI FS 10
#####
STEP NO      : 1
LABEL :
FUNCTION : 6 (VD      )
COMMENT :
=====
DISCRETE TAG : FA SF 5
DISCRETE (Virtual Discrete) # : 6
DISCRETE DESC : ZB SF-5
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :FAIL COLOR : YELLOW
DI Alarm State : 1
DI Alarm Priority : Caution
DI Alarm Desc :ZB SF-5 LOW FLOW / FAIL
DI Alarm Mgmt Discrete :
DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0
```

#####

STEP NO : 2
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_SF 5B
DISCRETE (Discrete Input) # : 12
DISCRETE DESC : SF-5 READY
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : PWR OFF COLOR : WHITE
DISCRETE STATE 1 DESC : PWR ON COLOR : WHITE

#####

STEP NO : 3
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_SF 5A
DISCRETE (Discrete Input) # : 13
DISCRETE DESC : SF-5 RUN
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : WHITE
DISCRETE STATE 1 DESC : ON COLOR : WHITE

#####

STEP NO : 4
LABEL :
FUNCTION : 9 (DSCC)
COMMENT :

=====

MULTI-STATE DI TAG	: YI_SF_5
MULTI-STATE DI #	: 6
MULTI-STATE DI DESC	: ZB SF-5
MULTI-STATE DI SYNC SCAN	: 0
MULTI-STATE DI1	: DI_SF_5A
MULTI-STATE DI2	: DI_SF_5B
MULTI-STATE DI3	:
MULTI-STATE DI4	:
MULTI-STATE STATE 0	:DESC PWR OFF COLOR White
MULTI-STATE STATE 1	:DESC ON COLOR Yellow
MULTI-STATE STATE 2	:DESC OFF COLOR Green
MULTI-STATE STATE 3	:DESC FAILED COLOR White
MULTI-STATE STATE 4	:DESC COLOR Black
MULTI-STATE STATE 5	:DESC COLOR Black
MULTI-STATE STATE 6	:DESC COLOR Black
MULTI-STATE STATE 7	:DESC COLOR Black
MULTI-STATE STATE 8	:DESC COLOR Black
MULTI-STATE STATE 9	:DESC COLOR Black
MULTI-STATE STATE 10	:DESC COLOR Black
MULTI-STATE STATE 11	:DESC COLOR Black
MULTI-STATE STATE 12	:DESC COLOR Black
MULTI-STATE STATE 13	:DESC COLOR Black
MULTI-STATE STATE 14	:DESC COLOR Black
MULTI-STATE STATE 15	:DESC COLOR Black

#####

STEP NO : 5
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG	: DO_SF_5
DISCRETE (Discrete Output) #	: 14
DISCRETE DESC	: SF-5 CONTROL
DISCRETE SYNC SCAN	: 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION	: 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC	:OFF COLOR : WHITE
DISCRETE STATE 1 DESC	:ON COLOR : WHITE

#####

STEP NO : 6
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO EV 9
DISCRETE (Discrete Output) # : 26
DISCRETE DESC : DM-11
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : CLOSED COLOR : WHITE
DISCRETE STATE 1 DESC : OPEN COLOR : WHITE

#####

STEP NO : 7
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO EV 31
DISCRETE (Discrete Output) # : 27
DISCRETE DESC : DM-26
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : CLOSED COLOR : WHITE
DISCRETE STATE 1 DESC : OPEN COLOR : WHITE

#####

STEP NO : 8
LABEL :
FUNCTION : 75 (DST)
COMMENT : OPEN DM-11 ON SF-5 ON
PARAMETERS :

1)DI SF 5A. 2)0 3)0 4)0 5)DO EV 9.

#####

STEP NO : 9
LABEL :
FUNCTION : 75 (DST)
COMMENT : OPEN DM-26 ON SF-5 ON
PARAMETERS :

1)DI SF 5A. 2)0 3)0 4)0 5)DO EV 31.

#####

STEP NO : 10
LABEL :
FUNCTION : 69 (LC)
COMMENT : "0" PULSE ON EF-1-1 RUNNING
PARAMETERS :
1)-!PULSE(HS_1_1&DI_1_1&DI_KFS21)

```
#####  
STEP NO      : 11  
LABEL :  
FUNCTION : 62 (GTD )  
COMMENT :SF-5 START JUMP  
PARAMETERS :  
1)MSV 2) Off-Noma1 3)JUMPA  
#####  
STEP NO      : 12  
LABEL : JUMPA  
FUNCTION : 10 (L )  
COMMENT :  
PARAMETERS :  
1)HS SF 5. 2)1  
#####  
STEP NO      : 13  
LABEL :  
FUNCTION : 69 (LC )  
COMMENT : "0" PULSE OF EF-1-1 FAIL OR OFF  
PARAMETERS :  
1)-!PULSE(FA 1 1!-RUN 1 1)  
#####  
STEP NO      : 14  
LABEL :  
FUNCTION : 62 (GTD )  
COMMENT :SF-5 STOP JUMP  
PARAMETERS :  
1)MSV 2) Off-Noma1 3)JUMPB  
#####  
STEP NO      : 15  
LABEL : JUMPB  
FUNCTION : 10 (L )  
COMMENT :  
PARAMETERS :  
1)HS SF 5. 2)0  
#####  
STEP NO      : 16  
LABEL :  
FUNCTION : 69 (LC )  
COMMENT :HOLD ON STOP IF COLD SMOKE ALARM  
PARAMETERS :  
1)-!XA CSA  
#####  
STEP NO      : 17  
LABEL :  
FUNCTION : 62 (GTD )  
COMMENT :SF-5 STOP JUMP  
PARAMETERS :  
1)MSV 2) Off-Noma1 3)JUMPC
```

```
#####
STEP NO      : 18
LABEL : JUMPC
FUNCTION : 10 (L      )
COMMENT :
PARAMETERS :
1)HS SF 5. 2)0
#####
STEP NO      : 19
LABEL :
FUNCTION : 73 (LAT    )
COMMENT :SF-5 CONTROL LOGIC
PARAMETERS :
1) LATCH=PULSE(HS SF 5,5) 2) UNLATCH=-HS_SF_5 3)0 4)DO_SF_5. 5)0
#####
STEP NO      : 20
LABEL :
FUNCTION : 69 (LC      )
COMMENT :ALARM ON NO FLOW OR OFF WHEN HS IS ON (EXCEPT STARTUP)
PARAMETERS :
1)HS SF 5&-!PULSE(HS SF 5,15)&-(!DI SF 5A&!DI_FS_10)
#####
STEP NO      : 21
LABEL :
FUNCTION : 75 (DST     )
COMMENT :
PARAMETERS :
1)MSV 2)0 3)0 4)0 5)FA SF 5.
#####
STEP NO      : 22
LABEL :
FUNCTION : 0 (END      )
COMMENT :
*****
LOOP NO      : 7
LOOP TAG     : MISC_M18
LOOP DESCRIPTION : MICON 18 MISC.
LOOP SCAN    : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
```

#####

STEP NO : 1

LABEL :

FUNCTION : 57 (DO)

COMMENT :

=====

DISCRETE TAG : DO VP 1A

DISCRETE (Discrete Output) # : 19

DISCRETE DESC : ZB VP-1 CONTROL

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0 MODIFY : 0

DISCRETE STATE 0 DESC : OFF COLOR : WHITE

DISCRETE STATE 1 DESC : ON COLOR : WHITE

#####

STEP NO : 2

LABEL :

FUNCTION : 75 (DST)

COMMENT : ZB VACUUM PUMP 1

PARAMETERS :

1) HS VP 1. 2) 0 3) 0 4) 0 5) DO VP 1A.

#####

STEP NO : 3

LABEL :

FUNCTION : 0 (END)

COMMENT :

ZB_2_2.mic19_r0

MICON TYPE :RCM-D
MICON UNIT NO : 19
MICON TAG : ZB_2_2
MICON DESCRIPTION : 2736-ZB RACK 2 SLOT 2
MICON CONFIGURATION FILE : mic19_r0
POINT ALLOCATION :
VAI : 32, VDI : 32, ISW : 32, LOOPS : 12, MSD : 16,
AI : 0, AO : 0, DI : 32, DO : 32

=====

DISCRETE TAG : HS 1 2
DISCRETE (Internal Switch) # : 1
DISCRETE DESC : EF-1-2
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 1
DISCRETE STATE 0 DESC :STOP COLOR : GREEN
DISCRETE STATE 1 DESC :START COLOR : YELLOW

=====

DISCRETE TAG : HS EF 2
DISCRETE (Internal Switch) # : 2
DISCRETE DESC : ZB EF-2
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 1
DISCRETE STATE 0 DESC :STOP COLOR : GREEN
DISCRETE STATE 1 DESC :START COLOR : YELLOW

=====

DISCRETE TAG : HS RF 2
DISCRETE (Internal Switch) # : 3
DISCRETE DESC : RF-2
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 1
DISCRETE STATE 0 DESC :STOP COLOR : GREEN
DISCRETE STATE 1 DESC :START COLOR : YELLOW

=====

DISCRETE TAG : HS SF 2
DISCRETE (Internal Switch) # : 4
DISCRETE DESC : ZB SF-2
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 1
DISCRETE STATE 0 DESC :STOP COLOR : GREEN
DISCRETE STATE 1 DESC :START COLOR : YELLOW

```
=====
DISCRETE TAG      : HS SF 4
DISCRETE (Internal Switch) # : 5
DISCRETE DESC     : ZB SF-4
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 1
DISCRETE STATE 0 DESC : STOP COLOR : GREEN
DISCRETE STATE 1 DESC : START COLOR : YELLOW
=====
```

```
DISCRETE TAG      : HS SF 6
DISCRETE (Internal Switch) # : 6
DISCRETE DESC     : ZB SF-6
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 1
DISCRETE STATE 0 DESC : STOP COLOR : GREEN
DISCRETE STATE 1 DESC : START COLOR : YELLOW
=====
```

```
DISCRETE TAG      : RUN 1 2
DISCRETE (Internal Switch) # : 7
DISCRETE DESC     : EF-1-2 PSUEDO RUN
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : OFF COLOR : GREEN
DISCRETE STATE 1 DESC : ON COLOR : YELLOW
=====
```

```
DISCRETE TAG      : HS VP 2
DISCRETE (Internal Switch) # : 8
DISCRETE DESC     : ZB VP-2
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 1
DISCRETE STATE 0 DESC : STOP COLOR : GREEN
DISCRETE STATE 1 DESC : START COLOR : YELLOW
=====
```

```
*****
LOOP NO      : 1
LOOP TAG     : EF_2
LOOP DESCRIPTION : ZB EF-2
LOOP SCAN    : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
EXPORT : DI EF_2A, FA EF_2
IMPORT DI : ZB_2_1::TFA_EF_1,ZB_2_3::IHS_LL_3,ZB_2_3::IHS_MAIN,ZB_2_3::IHS_MN
```

#####

STEP NO : 1
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : FA EF 2
DISCRETE (Virtual Discrete) # : 2
DISCRETE DESC : ZB EF-2
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : FAIL COLOR : RED
DI Alarm State : 1
DI Alarm Priority : Urgent
DI Alarm Desc : ZB EF-2 LOW FLOW / FAIL
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 2
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI EF 2B
DISCRETE (Discrete Input) # : 4
DISCRETE DESC : EF-2 READY
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : PWR OFF COLOR : WHITE
DISCRETE STATE 1 DESC : PWR ON COLOR : WHITE

#####

STEP NO : 3
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI EF 2A
DISCRETE (Discrete Input) # : 5
DISCRETE DESC : EF-2 RUN
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : WHITE
DISCRETE STATE 1 DESC : ON COLOR : WHITE

#####

STEP NO : 4
LABEL :
FUNCTION : 9 (DSCC)
COMMENT :

=====
MULTI-STATE DI TAG : YI_EF_2
MULTI-STATE DI # : 2
MULTI-STATE DI DESC : ZB EF-2
MULTI-STATE DI SYNC SCAN : 0
MULTI-STATE DI1 : DI_EF_2A
MULTI-STATE DI2 : DI_EF_2B
MULTI-STATE DI3 :
MULTI-STATE DI4 :
MULTI-STATE STATE 0 :DESC PWR OFF COLOR White
MULTI-STATE STATE 1 :DESC ON COLOR Yellow
MULTI-STATE STATE 2 :DESC OFF COLOR Green
MULTI-STATE STATE 3 :DESC FAILED COLOR White
MULTI-STATE STATE 4 :DESC COLOR Black
MULTI-STATE STATE 5 :DESC COLOR Black
MULTI-STATE STATE 6 :DESC COLOR Black
MULTI-STATE STATE 7 :DESC COLOR Black
MULTI-STATE STATE 8 :DESC COLOR Black
MULTI-STATE STATE 9 :DESC COLOR Black
MULTI-STATE STATE 10 :DESC COLOR Black
MULTI-STATE STATE 11 :DESC COLOR Black
MULTI-STATE STATE 12 :DESC COLOR Black
MULTI-STATE STATE 13 :DESC COLOR Black
MULTI-STATE STATE 14 :DESC COLOR Black
MULTI-STATE STATE 15 :DESC COLOR Black

#####

STEP NO : 5
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====
DISCRETE TAG : DO EF 2
DISCRETE (Discrete Output) # : 6
DISCRETE DESC : EF-2 CONTROL
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC :OFF COLOR : WHITE
DISCRETE STATE 1 DESC :ON COLOR : WHITE

#####

STEP NO : 6
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO EV 13
DISCRETE (Discrete Output) # : 22
DISCRETE DESC : DM-15
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0 MODIFY : 0
DISCRETE STATE 0 DESC : CLOSED COLOR : WHITE
DISCRETE STATE 1 DESC : OPEN COLOR : WHITE

#####

STEP NO : 7
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO EV 14
DISCRETE (Discrete Output) # : 23
DISCRETE DESC : DM-16
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0 MODIFY : 0
DISCRETE STATE 0 DESC : CLOSED COLOR : WHITE
DISCRETE STATE 1 DESC : OPEN COLOR : WHITE

#####

STEP NO : 8
LABEL :
FUNCTION : 75 (DST)
COMMENT : OPEN DM-15 ON EF-2 ON
PARAMETERS :

1)DI EF 2A. 2)0 3)0 4)0 5)DO EV 13.

#####

STEP NO : 9
LABEL :
FUNCTION : 75 (DST)
COMMENT : OPEN DM-16 ON EF-2 ON
PARAMETERS :

1)DI EF 2A. 2)0 3)0 4)0 5)DO EV 14.

#####

STEP NO : 10
LABEL : FIRE
FUNCTION : 69 (LC)
COMMENT : FIRE ALARM
PARAMETERS :
1)XA_CSA|XA_FAZB|XA_FAZN8

```
#####  
STEP NO      : 11  
LABEL :  
FUNCTION : 69 (LC      )  
COMMENT : "0" PULSE ON AUTO START OR EF-1 FAIL  
PARAMETERS :  
1)-!PULSE(HS LL 3&HS MAIN)&-!PULSE(!HS LL_3&(FA_EF_1!PULSE(!DI_EF  
#####  
STEP NO      : 12  
LABEL :  
FUNCTION : 62 (GTD      )  
COMMENT : EF-2 "START" JUMP  
PARAMETERS :  
1)MSV 2) Off-Noma1 3)JUMPA  
#####  
STEP NO      : 13  
LABEL : JUMPA  
FUNCTION : 10 (L      )  
COMMENT : START EF-2  
PARAMETERS :  
1)HS EF 2. 2)1  
#####  
STEP NO      : 14  
LABEL :  
FUNCTION : 69 (LC      )  
COMMENT : PREVENT FALSE START ON RESET  
PARAMETERS :  
1)-!PULSE(1)  
#####  
STEP NO      : 15  
LABEL :  
FUNCTION : 62 (GTD      )  
COMMENT :  
PARAMETERS :  
1)MSV 2) Off-Noma1 3)JUMPST  
#####  
STEP NO      : 16  
LABEL : JUMPST  
FUNCTION : 10 (L      )  
COMMENT :  
PARAMETERS :  
1)HS EF 2. 2)0  
#####  
STEP NO      : 17  
LABEL :  
FUNCTION : 69 (LC      )  
COMMENT : "0" PULSE ON MAIN STOP  
PARAMETERS :  
1)-!PULSE(HS_MN_S,5)
```

```
#####  
STEP NO      : 18  
LABEL :  
FUNCTION : 62 (GTD )  
COMMENT :EF-2 "STOP" JUMP  
PARAMETERS :  
1)MSV 2) Off-Noma1 3)JUMPB  
#####  
STEP NO      : 19  
LABEL : JUMPB  
FUNCTION : 10 (L )  
COMMENT :STOP EF-2  
PARAMETERS :  
1)HS EF 2. 2)0  
#####  
STEP NO      : 20  
LABEL :  
FUNCTION : 69 (LC )  
COMMENT :HELD ON "STOP" IF COLD SMOKE ALARM  
PARAMETERS :  
1)-!FIRE  
#####  
STEP NO      : 21  
LABEL :  
FUNCTION : 62 (GTD )  
COMMENT :COLD SMOKE "STOP" JUMP  
PARAMETERS :  
1)MSV 2) Off-Noma1 3)JUMPC  
#####  
STEP NO      : 22  
LABEL : JUMPC  
FUNCTION : 10 (L )  
COMMENT :HOLD EF-2 ON "STOP"  
PARAMETERS :  
1)HS EF 2. 2)0  
#####  
STEP NO      : 23  
LABEL :  
FUNCTION : 73 (LAT )  
COMMENT :EF-2 CONTROL LOGIC  
PARAMETERS :  
1) LATCH=PULSE(HS EF 2,5) 2) UNLATCH=-HS_EF_2!(DELAY(HS_E 3)0 4)DO_EF_2. 5)0  
#####  
STEP NO      : 24  
LABEL :  
FUNCTION : 69 (LC )  
COMMENT :ALARM ON NO FLOW OR OFF WHEN HS IS ON (EXCEPT STARTUP)  
PARAMETERS :  
1)DELAY(HS_EF_2,15)&-(!DI_EF_2A&!DI_FS_6)
```

#####

STEP NO : 25
LABEL :
FUNCTION : 75 (DST)
COMMENT :
PARAMETERS :

1)MSV 2)0 3)0 4)0 5)FA EF 2.

#####

STEP NO : 26
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 2
LOOP TAG : EF_1_2
LOOP DESCRIPTION : EF-1-2
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
EXPORT :HS 1 2,RUN 1 2,FA 1 2

IMPORT DI :ZB 2 1::!FA 1 I,ZB 2 1::!RUN 1_1,ZB_2_1::!FA_SF_5,ZB_2_1::!DI_SF_

#####

STEP NO : 1
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : FA 1_2
DISCRETE (Virtual Discrete) # : 1
DISCRETE DESC : EF-1-2
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :FAIL COLOR : RED
DI Alarm State : 1
DI Alarm Priority : Urgent
DI Alarm Desc :EF-1-2 LOW FLOW / FAIL
DI Alarm Mgmt Discrete :
DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0

#####

STEP NO : 2
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_1_2A
DISCRETE (Discrete Input) # : 10
DISCRETE DESC : EF-1-2 READY
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : PWR OFF COLOR : WHITE
DISCRETE STATE 1 DESC : PWR ON COLOR : WHITE
#####

STEP NO : 3
LABEL :
FUNCTION : 9 (DSCC)
COMMENT :

=====

MULTI-STATE DI TAG : YI_1_2
MULTI-STATE DI # : 1
MULTI-STATE DI DESC : EF-1-2
MULTI-STATE DI SYNC SCAN : 0
MULTI-STATE DI1 : RUN_1_2
MULTI-STATE DI2 : DI_1_2A
MULTI-STATE DI3 :
MULTI-STATE DI4 :
MULTI-STATE STATE 0 : DESC PWR OFF COLOR White
MULTI-STATE STATE 1 : DESC ON COLOR Yellow
MULTI-STATE STATE 2 : DESC OFF COLOR Green
MULTI-STATE STATE 3 : DESC FAILED COLOR White
MULTI-STATE STATE 4 : DESC COLOR Black
MULTI-STATE STATE 5 : DESC COLOR Black
MULTI-STATE STATE 6 : DESC COLOR Black
MULTI-STATE STATE 7 : DESC COLOR Black
MULTI-STATE STATE 8 : DESC COLOR Black
MULTI-STATE STATE 9 : DESC COLOR Black
MULTI-STATE STATE 10 : DESC COLOR Black
MULTI-STATE STATE 11 : DESC COLOR Black
MULTI-STATE STATE 12 : DESC COLOR Black
MULTI-STATE STATE 13 : DESC COLOR Black
MULTI-STATE STATE 14 : DESC COLOR Black
MULTI-STATE STATE 15 : DESC COLOR Black

#####

STEP NO : 4
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_KFS11
DISCRETE (Discrete Input) # : 18
DISCRETE DESC : EF-1-2 FLOW SWITCH
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : WHITE
DISCRETE STATE 1 DESC : FLOW ON COLOR : WHITE

#####

STEP NO : 5
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO_1_2
DISCRETE (Discrete Output) # : 11
DISCRETE DESC : EF-1-2 CONTROL
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : OFF COLOR : WHITE
DISCRETE STATE 1 DESC : ON COLOR : WHITE

#####

STEP NO : 6
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO_EV_34
DISCRETE (Discrete Output) # : 28
DISCRETE DESC : DM-29
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : CLOSED COLOR : WHITE
DISCRETE STATE 1 DESC : OPEN COLOR : WHITE

#####

STEP NO : 7
LABEL :
FUNCTION : 75 (DST)
COMMENT : OPEN DM-29 OF EF-1-2 RUN
PARAMETERS :
1)DI_1_2B. 2)0 3)0 4)0 5)DO_EV_34.

```
#####  
STEP NO      : 8  
LABEL :  
FUNCTION : 69 (LC      )  
COMMENT : "0" PULSE ON EF-1-1 FAILED AND SF-5 OFF  
PARAMETERS :  
1)-!PULSE(FA 1 1)|DI SF 5A  
#####  
STEP NO      : 9  
LABEL :  
FUNCTION : 62 (GTD      )  
COMMENT : EF-1-1 FAILURE JUMP  
PARAMETERS :  
1)MSV 2) Off-Noma1 3)JUMPA  
#####  
STEP NO      : 10  
LABEL : JUMPA  
FUNCTION : 10 (L      )  
COMMENT : "START" EF-1-2  
PARAMETERS :  
1)HS 1 2. 2)1  
#####  
STEP NO      : 11  
LABEL :  
FUNCTION : 69 (LC      )  
COMMENT : "0" PULSE 10 SEC AFTER SF-5 START IF EF-1-1 RUNNING  
PARAMETERS :  
1)-!PULSE(DELAY(DI SF 5A,10))!-!RUN 1 1|FA_1_1  
#####  
STEP NO      : 12  
LABEL :  
FUNCTION : 62 (GTD      )  
COMMENT : AUTO START JUMP  
PARAMETERS :  
1)MSV 2) Off-Noma1 3)JUMPB  
#####  
STEP NO      : 13  
LABEL : JUMPB  
FUNCTION : 10 (L      )  
COMMENT : START EF-1-2  
PARAMETERS :  
1)HS 1 2. 2)1  
#####  
STEP NO      : 14  
LABEL :  
FUNCTION : 69 (LC      )  
COMMENT : HOLD ON "STOP" IF COLD SMOKE ALARM  
PARAMETERS :  
1)-!XA_CSA
```

```
#####
STEP NO      : 15
LABEL :
FUNCTION : 62 (GTD  )
COMMENT :COLD SMOKE ALARM JUMP
PARAMETERS :
1)MSV 2) Off-Noma1 3)JUMPC
#####
STEP NO      : 16
LABEL : JUMPC
FUNCTION : 10 (L      )
COMMENT :STOP EF-1-2
PARAMETERS :
1)HS 1 2. 2)0
#####
STEP NO      : 17
LABEL :
FUNCTION : 73 (LAT      )
COMMENT :EF-1-2 CONTROL LOGIC
PARAMETERS :
1) LATCH=PULSE(HS 1 2) 2) UNLATCH=-HS 1 2!(DELAY(HS_1_ 3)0 4)DO_1_2. 5)0
#####
STEP NO      : 18
LABEL :
FUNCTION : 69 (LC      )
COMMENT :ALARM ON NO FLOW OR OFF WHEN HS IS ON (EXCEPT STARTUP)
PARAMETERS :
1)HS 1 2&-!PULSE(HS 1 2,30)&-(!DI 1 2B&!DI_KFS11)
#####
STEP NO      : 19
LABEL :
FUNCTION : 75 (DST      )
COMMENT :
PARAMETERS :
1)MSV 2)0 3)0 4)0 5)FA 1 2.
#####
STEP NO      : 20
LABEL :
FUNCTION : 69 (LC      )
COMMENT :PSEUDO RUN = (HS ON AND NO FLOW ALRM) OR REAL RUN ON
PARAMETERS :
1)(HS 1 2&-FA 1 2)!DI 1 2B
#####
STEP NO      : 21
LABEL :
FUNCTION : 75 (DST      )
COMMENT :
PARAMETERS :
1)MSV 2)0 3)0 4)0 5)RUN_1_2.
```


#####

STEP NO : 22
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 3
LOOP TAG : RF_2
LOOP DESCRIPTION : RF-2
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
EXPORT :DI RF 2A,FA RF 2
IMPORT DI :ZB_2 1::TFA_RF 1,ZB 2 3::!HS_LL_4,ZB_2_3::!HS_NDA,ZB_2_3::!HS_NDA

#####

STEP NO : 1
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : FA RF 2
DISCRETE (Virtual Discrete) # : 3
DISCRETE DESC : RF-2
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :FAIL COLOR : RED
DI Alarm State : 1
DI Alarm Priority : Urgent
DI Alarm Desc :RF-2 LOW FLOW / FAIL
DI Alarm Mgmt Discrete :
DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0

#####

STEP NO : 2
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI RF 2B
DISCRETE (Discrete Input) # : 7
DISCRETE DESC : RF-2 READY
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC :PWR OFF COLOR : WHITE
DISCRETE STATE 1 DESC :PWR ON COLOR : WHITE

#####

STEP NO : 3
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI RF 2A
DISCRETE (Discrete Input) # : 8
DISCRETE DESC : RF-2 RUN
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : WHITE
DISCRETE STATE 1 DESC : ON COLOR : WHITE

#####

STEP NO : 4
LABEL :
FUNCTION : 9 (DSCC)
COMMENT :

=====

MULTI-STATE DI TAG : YI_RF_2
MULTI-STATE DI # : 3
MULTI-STATE DI DESC : RF-2
MULTI-STATE DI SYNC SCAN : 0
MULTI-STATE DI1 : DI RF 2A
MULTI-STATE DI2 : DI_RF_2B
MULTI-STATE DI3 :
MULTI-STATE DI4 :
MULTI-STATE STATE 0 : DESC PWR OFF COLOR White
MULTI-STATE STATE 1 : DESC ON COLOR Yellow
MULTI-STATE STATE 2 : DESC OFF COLOR Green
MULTI-STATE STATE 3 : DESC FAILED COLOR White
MULTI-STATE STATE 4 : DESC COLOR Black
MULTI-STATE STATE 5 : DESC COLOR Black
MULTI-STATE STATE 6 : DESC COLOR Black
MULTI-STATE STATE 7 : DESC COLOR Black
MULTI-STATE STATE 8 : DESC COLOR Black
MULTI-STATE STATE 9 : DESC COLOR Black
MULTI-STATE STATE 10 : DESC COLOR Black
MULTI-STATE STATE 11 : DESC COLOR Black
MULTI-STATE STATE 12 : DESC COLOR Black
MULTI-STATE STATE 13 : DESC COLOR Black
MULTI-STATE STATE 14 : DESC COLOR Black
MULTI-STATE STATE 15 : DESC COLOR Black

```
#####  
STEP NO      : 5  
LABEL :  
FUNCTION : 57 (DO      )  
COMMENT :  
=====
```

DISCRETE TAG : DO RF 2
DISCRETE (Discrete Output) # : 9
DISCRETE DESC : RF-2 CONTROL
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : OFF COLOR : WHITE
DISCRETE STATE 1 DESC : ON COLOR : WHITE
#####

```
STEP NO      : 6  
LABEL :  
FUNCTION : 57 (DO      )  
COMMENT :  
=====
```

DISCRETE TAG : DO EV 17
DISCRETE (Discrete Output) # : 24
DISCRETE DESC : DM-19
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : CLOSED COLOR : WHITE
DISCRETE STATE 1 DESC : OPEN COLOR : WHITE
#####

```
STEP NO      : 7  
LABEL :  
FUNCTION : 57 (DO      )  
COMMENT :  
=====
```

DISCRETE TAG : DO EV 18
DISCRETE (Discrete Output) # : 25
DISCRETE DESC : DM-20
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : CLOSED COLOR : WHITE
DISCRETE STATE 1 DESC : OPEN COLOR : WHITE
#####

```
STEP NO      : 8  
LABEL :  
FUNCTION : 75 (DST      )  
COMMENT : OPEN DM-19 ON RF-2 ON  
PARAMETERS :  
1)DI_RF_2A. 2)0 3)0 4)0 5)DO_EV_17.
```

```
#####  
STEP NO      : 9  
LABEL :  
FUNCTION : 75 (DST )  
COMMENT : OPEN DM-20 ON RF-2 ON  
PARAMETERS :  
1)DI RF 2A. 2)0 3)0 4)0 5)DO EV 18.  
#####  
STEP NO      : 10  
LABEL : FIRE  
FUNCTION : 69 (LC )  
COMMENT : FIRE ALARM  
PARAMETERS :  
1)XA CSA|XA FAZB|XA FAZN8  
#####  
STEP NO      : 11  
LABEL :  
FUNCTION : 69 (LC )  
COMMENT : PULSE "0" ON AUTO START OR RF-1 FAIL  
PARAMETERS :  
1)-!PULSE(HS LL 4&HS NDA)&-!PULSE(-!HS LL 4&(FA_RF_1|PULSE(-!DI_RF_  
#####  
STEP NO      : 12  
LABEL :  
FUNCTION : 62 (GTD )  
COMMENT : RF-2 START JUMP  
PARAMETERS :  
1)MSV 2) Off-Noma1 3)JUMPA  
#####  
STEP NO      : 13  
LABEL : JUMPA  
FUNCTION : 10 (L )  
COMMENT :  
PARAMETERS :  
1)HS RF 2. 2)1  
#####  
STEP NO      : 14  
LABEL :  
FUNCTION : 69 (LC )  
COMMENT :  
PARAMETERS :  
1)-!PULSE(1)  
#####  
STEP NO      : 15  
LABEL :  
FUNCTION : 62 (GTD )  
COMMENT :  
PARAMETERS :  
1)MSV 2) Off-Noma1 3)JUMPST
```

```
#####  
STEP NO      : 16  
LABEL : JUMPST  
FUNCTION : 10 (L      )  
COMMENT :  
PARAMETERS :  
1)HS RF 2. 2)0  
#####  
STEP NO      : 17  
LABEL :  
FUNCTION : 69 (LC      )  
COMMENT :PULSE "0" ON NDA STOP  
PARAMETERS :  
1)-!PULSE(HS NDA S,5)  
#####  
STEP NO      : 18  
LABEL :  
FUNCTION : 62 (GTD      )  
COMMENT :RF-2 NDA STOP JUMP  
PARAMETERS :  
1)MSV 2) Off-Noma1 3)JUMPB  
#####  
STEP NO      : 19  
LABEL : JUMPB  
FUNCTION : 10 (L      )  
COMMENT :  
PARAMETERS :  
1)HS RF 2. 2)0  
#####  
STEP NO      : 20  
LABEL :  
FUNCTION : 69 (LC      )  
COMMENT :HOLD ON "STOP" IF FIRE ALARM  
PARAMETERS :  
1)-!FIRE  
#####  
STEP NO      : 21  
LABEL :  
FUNCTION : 62 (GTD      )  
COMMENT :RF-2 FIRE ALARM STOP JUMP  
PARAMETERS :  
1)MSV 2) Off-Noma1 3)JUMPC  
#####  
STEP NO      : 22  
LABEL : JUMPC  
FUNCTION : 10 (L      )  
COMMENT :  
PARAMETERS :  
1)HS_RF_2. 2)0
```

```
#####
STEP NO      : 23
LABEL :
FUNCTION : 73 (LAT  )
COMMENT : RF-2 CONTROL LOGIC
PARAMETERS :
1) LATCH=PULSE(HS RF 2,5) 2) UNLATCH=-HS_RF_2!(DELAY(HS_R 3)0 4)DO_RF_2. 5)0
#####
STEP NO      : 24
LABEL :
FUNCTION : 69 (LC  )
COMMENT : ALARM ON NO FLOW OR OFF WHEN HS IS ON (EXCEPT STARTUP)
PARAMETERS :
1)DELAY(HS RF 2,15)&-(!DI RF 2A&!DI FS 8)
#####
STEP NO      : 25
LABEL :
FUNCTION : 75 (DST  )
COMMENT :
PARAMETERS :
1)MSV 2)0 3)0 4)0 5)FA RF 2.
#####
STEP NO      : 26
LABEL :
FUNCTION : 0 (END  )
COMMENT :
*****
LOOP NO      : 4
LOOP TAG     : SF_2
LOOP DESCRIPTION : ZB SF-2
LOOP SCAN    : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
EXPORT :DI_SF_2A,FA_SF_2
IMPORT DI :ZB_2_1::TFA_SF_1,ZB_2_3::!HS_LL1,ZB_2_5::!DI_FS_2,ZB_2_5::!DI_DPS
```

#####

STEP NO : 1
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : FA_SF 2
DISCRETE (Virtual Discrete) # : 4
DISCRETE DESC : ZB_SF-2
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : FAIL COLOR : YELLOW
DI Alarm State : 1
DI Alarm Priority : Caution
DI Alarm Desc : ZB_SF-2 LOW FLOW / FAIL
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 2
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_SF 2B
DISCRETE (Discrete Input) # : 1
DISCRETE DESC : SF-2 READY
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : PWR OFF COLOR : WHITE
DISCRETE STATE 1 DESC : PWR ON COLOR : WHITE

#####

STEP NO : 3
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_SF 2A
DISCRETE (Discrete Input) # : 2
DISCRETE DESC : SF-2 RUN
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : WHITE
DISCRETE STATE 1 DESC : ON COLOR : WHITE

#####

STEP NO : 4
LABEL :
FUNCTION : 9 (DSCC)
COMMENT :

=====

MULTI-STATE DI TAG	:	YI_SF_2
MULTI-STATE DI #	:	4
MULTI-STATE DI DESC	:	ZB SF-2
MULTI-STATE DI SYNC SCAN	:	0
MULTI-STATE DI1	:	DI_SF_2A
MULTI-STATE DI2	:	DI_SF_2B
MULTI-STATE DI3	:	
MULTI-STATE DI4	:	
MULTI-STATE STATE 0	:	DESC PWR OFF COLOR White
MULTI-STATE STATE 1	:	DESC ON COLOR Yellow
MULTI-STATE STATE 2	:	DESC OFF COLOR Green
MULTI-STATE STATE 3	:	DESC FAILED COLOR White
MULTI-STATE STATE 4	:	DESC COLOR Black
MULTI-STATE STATE 5	:	DESC COLOR Black
MULTI-STATE STATE 6	:	DESC COLOR Black
MULTI-STATE STATE 7	:	DESC COLOR Black
MULTI-STATE STATE 8	:	DESC COLOR Black
MULTI-STATE STATE 9	:	DESC COLOR Black
MULTI-STATE STATE 10	:	DESC COLOR Black
MULTI-STATE STATE 11	:	DESC COLOR Black
MULTI-STATE STATE 12	:	DESC COLOR Black
MULTI-STATE STATE 13	:	DESC COLOR Black
MULTI-STATE STATE 14	:	DESC COLOR Black
MULTI-STATE STATE 15	:	DESC COLOR Black

#####

STEP NO : 5
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG	:	DO SF 2
DISCRETE (Discrete Output) #	:	3
DISCRETE DESC	:	SF-2 CONTROL
DISCRETE SYNC SCAN	:	0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION	:	0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC	:	OFF COLOR : WHITE
DISCRETE STATE 1 DESC	:	ON COLOR : WHITE

#####

STEP NO : 6

LABEL :

FUNCTION : 57 (DO)

COMMENT :

=====

DISCRETE TAG : DO EV 3

DISCRETE (Discrete Output) # : 20

DISCRETE DESC : DM-5

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0

DISCRETE STATE 0 DESC : CLOSED COLOR : WHITE

DISCRETE STATE 1 DESC : OPEN COLOR : WHITE

#####

STEP NO : 7

LABEL :

FUNCTION : 57 (DO)

COMMENT :

=====

DISCRETE TAG : DO EV 4

DISCRETE (Discrete Output) # : 21

DISCRETE DESC : DM-2

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0

DISCRETE STATE 0 DESC : CLOSED COLOR : WHITE

DISCRETE STATE 1 DESC : OPEN COLOR : WHITE

#####

STEP NO : 8

LABEL :

FUNCTION : 75 (DST)

COMMENT : DM-5 OPEN ON SF-2 ON

PARAMETERS :

1)DI SF 2A. 2)0 3)0 4)0 5)DO EV 3.

#####

STEP NO : 9

LABEL :

FUNCTION : 75 (DST)

COMMENT : DM-2 OPEN ON SF-2 ON

PARAMETERS :

1)DI SF 2A. 2)0 3)0 4)0 5)DO EV 4.

#####

STEP NO : 10

LABEL : FIRE

FUNCTION : 69 (LC)

COMMENT : FIRE ALARM

PARAMETERS :

1)XA_CSA|XA_FAZB|XA_FAZN8

```
#####  
STEP NO      : 11  
LABEL :  
FUNCTION : 69 (LC      )  
COMMENT : "0" PULSE ON EXHAUST DP UP OR SF-2 FAIL  
PARAMETERS :  
1)-!PULSE(HS_LL1&PULSE(DI_DPS_2))&-!PULSE(!HS_LL1&FA_SF_1&DI_DPS_2  
#####  
STEP NO      : 12  
LABEL :  
FUNCTION : 62 (GTD      )  
COMMENT : AUTO START JUMP  
PARAMETERS :  
1)MSV 2) Off-Noma1 3)JUMPA  
#####  
STEP NO      : 13  
LABEL : JUMPA  
FUNCTION : 10 (L      )  
COMMENT :  
PARAMETERS :  
1)HS SF 2. 2)1  
#####  
STEP NO      : 14  
LABEL :  
FUNCTION : 69 (LC      )  
COMMENT : PREVENT FALSE START ON RESET  
PARAMETERS :  
1)-!PULSE(1)  
#####  
STEP NO      : 15  
LABEL :  
FUNCTION : 62 (GTD      )  
COMMENT :  
PARAMETERS :  
1)MSV 2) Off-Noma1 3)JUMPST  
#####  
STEP NO      : 16  
LABEL : JUMPST  
FUNCTION : 10 (L      )  
COMMENT :  
PARAMETERS :  
1)HS SF 2. 2)0  
#####  
STEP NO      : 17  
LABEL :  
FUNCTION : 69 (LC      )  
COMMENT : "0" PULSE ON MAIN STOP OR LO EXHAUST DP  
PARAMETERS :  
1)-!PULSE(HS_MN_S|-!DI_DPS_2,5)
```

#####

STEP NO : 18
LABEL :
FUNCTION : 62 (GTD)
COMMENT :STOP JUMP
PARAMETERS :

1)MSV 2) Off-Noma1 3)JUMPB

#####

STEP NO : 19
LABEL : JUMPB
FUNCTION : 10 (L)
COMMENT :
PARAMETERS :

1)HS SF 2. 2)0

#####

STEP NO : 20
LABEL :
FUNCTION : 69 (LC)
COMMENT :HOLD ON "STOP" IF FIRE ALARM
PARAMETERS :

1)-!FIRE

#####

STEP NO : 21
LABEL :
FUNCTION : 62 (GTD)
COMMENT :FIRE ALARM STOP JUMP
PARAMETERS :

1)MSV 2) Off-Noma1 3)JUMPC

#####

STEP NO : 22
LABEL : JUMPC
FUNCTION : 10 (L)
COMMENT :
PARAMETERS :

1)HS SF 2. 2)0

#####

STEP NO : 23
LABEL :
FUNCTION : 73 (LAT)
COMMENT :SF-2 CONTROL LOGIC
PARAMETERS :

1) LATCH=PULSE(HS SF 2,5) 2) UNLATCH=-HS_SF_2|(DELAY(HS_S 3)0 4)DO_SF_2. 5)0

#####

STEP NO : 24
LABEL :
FUNCTION : 69 (LC)
COMMENT :ALARM ON NO FLOW OR OFF WHEN HS IS ON (EXCEPT STARTUP)
PARAMETERS :

1)DELAY(HS_SF_2,15)&-(!DI_SF_2A&IDI_FS_2)

#####

STEP NO : 25

LABEL :

FUNCTION : 75 (DST)

COMMENT :

PARAMETERS :

1)MSV 2)0 3)0 4)0 5)FA SF 2.

#####

STEP NO : 26

LABEL :

FUNCTION : 0 (END)

COMMENT :

LOOP NO : 5

LOOP TAG : SF 4

LOOP DESCRIPTION : ZB SF-4

LOOP SCAN : 0.30 SEC

NON-PID AUXILIARY :

RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00

RATIO CURR : 0.00, BIAS CURR : 0.00

EXPORT :DI SF 4A,FA SF 4

IMPORT DI :ZB_2_1::TFA_SF 3,ZB 2 3::!HS_LL2,ZB_2_5::!DI_FS_4,ZB_2_1::!DI_SF_

#####

STEP NO : 1

LABEL :

FUNCTION : 6 (VD)

COMMENT :

=====

DISCRETE TAG : FA SF 4

DISCRETE (Virtual Discrete) # : 5

DISCRETE DESC : ZB SF-4

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 0

DISCRETE STATE 0 DESC :OFF COLOR : BLACK

DISCRETE STATE 1 DESC :FAIL COLOR : YELLOW

DI Alarm State : 1

DI Alarm Priority : Caution

DI Alarm Desc :ZB SF-4 LOW FLOW / FAIL

DI Alarm Mgmt Discrete :

DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0

#####

STEP NO : 2

LABEL :

FUNCTION : 7 (DI)

COMMENT :

=====

DISCRETE TAG : DI SF 4B

DISCRETE (Discrete Input) # : 15

DISCRETE DESC : SF-4 READY

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0

DISCRETE STATE 0 DESC : PWR OFF COLOR : WHITE

DISCRETE STATE 1 DESC : PWR ON COLOR : WHITE

#####

STEP NO : 3

LABEL :

FUNCTION : 7 (DI)

COMMENT :

=====

DISCRETE TAG : DI SF 4A

DISCRETE (Discrete Input) # : 16

DISCRETE DESC : SF-4 RUN

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0

DISCRETE STATE 0 DESC : OFF COLOR : WHITE

DISCRETE STATE 1 DESC : ON-COLOR : WHITE

#####

STEP NO : 4
LABEL :
FUNCTION : 9 (DSCC)
COMMENT :

=====
MULTI-STATE DI TAG : YI_SF_4
MULTI-STATE DI # : 5
MULTI-STATE DI DESC : ZB SF-4
MULTI-STATE DI SYNC SCAN : 0
MULTI-STATE DI1 : DI_SF_4A
MULTI-STATE DI2 : DI_SF_4B
MULTI-STATE DI3 :
MULTI-STATE DI4 :
MULTI-STATE STATE 0 :DESC PWR OFF COLOR White
MULTI-STATE STATE 1 :DESC ON COLOR Yellow
MULTI-STATE STATE 2 :DESC OFF COLOR Green
MULTI-STATE STATE 3 :DESC FAILED COLOR White
MULTI-STATE STATE 4 :DESC COLOR Black
MULTI-STATE STATE 5 :DESC COLOR Black
MULTI-STATE STATE 6 :DESC COLOR Black
MULTI-STATE STATE 7 :DESC COLOR Black
MULTI-STATE STATE 8 :DESC COLOR Black
MULTI-STATE STATE 9 :DESC COLOR Black
MULTI-STATE STATE 10 :DESC COLOR Black
MULTI-STATE STATE 11 :DESC COLOR Black
MULTI-STATE STATE 12 :DESC COLOR Black
MULTI-STATE STATE 13 :DESC COLOR Black
MULTI-STATE STATE 14 :DESC COLOR Black
MULTI-STATE STATE 15 :DESC COLOR Black

#####

STEP NO : 5
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====
DISCRETE TAG : DO SF 4
DISCRETE (Discrete Output) # : 17
DISCRETE DESC : SF-4 CONTROL
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC :OFF COLOR : WHITE
DISCRETE STATE 1 DESC :ON COLOR : WHITE

#####

STEP NO : 6

LABEL :

FUNCTION : 57 (DO)

COMMENT :

=====

DISCRETE TAG : DO EV 7

DISCRETE (Discrete Output) # : 29

DISCRETE DESC : DM-9

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0 MODIFY : 0

DISCRETE STATE 0 DESC : CLOSED COLOR : WHITE

DISCRETE STATE 1 DESC : OPEN COLOR : WHITE

#####

STEP NO : 7

LABEL :

FUNCTION : 57 (DO)

COMMENT :

=====

DISCRETE TAG : DO EV 8

DISCRETE (Discrete Output) # : 30

DISCRETE DESC : DM-10

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0 MODIFY : 0

DISCRETE STATE 0 DESC : CLOSED COLOR : WHITE

DISCRETE STATE 1 DESC : OPEN COLOR : WHITE

#####

STEP NO : 8

LABEL :

FUNCTION : 75 (DST)

COMMENT : OPEN DM-9 ON SF-4 ON

PARAMETERS :

1)DI SF 4A. 2)0 3)0 4)0 5)DO EV 7.

#####

STEP NO : 9

LABEL :

FUNCTION : 75 (DST)

COMMENT : OPEN DM-10 ON SF-4 ON

PARAMETERS :

1)DI SF 4A. 2)0 3)0 4)0 5)DO EV 8.

#####

STEP NO : 10

LABEL : FIRE

FUNCTION : 69 (LC)

COMMENT : FIRE ALARM

PARAMETERS :

1)XA_CSA|XA_FAZB|XA_FAZN8

```
#####  
STEP NO      : 11  
LABEL : RFON  
FUNCTION : 69 (LC      )  
COMMENT : RETURN FAN "ON" SIGNAL  
PARAMETERS :  
1)(-!FA RF 1&DI RF 1A)|(-!FA RF 2&DI RF 2A)  
#####  
STEP NO      : 12  
LABEL :  
FUNCTION : 69 (LC      )  
COMMENT : "0" PULSE ON RFs ON OR SF-3 FAIL  
PARAMETERS :  
1)-!PULSE(HS_LL2&PULSE(RFON))&-!PULSE(-!HS_LL2&FA_SF_3&RFON)&-!PULS  
#####  
STEP NO      : 13  
LABEL :  
FUNCTION : 62 (GTD      )  
COMMENT : SF-4 START JUMP  
PARAMETERS :  
1)MSV 2) Off-Noma1 3)JUMPA  
#####  
STEP NO      : 14  
LABEL : JUMPA  
FUNCTION : 10 (L      )  
COMMENT :  
PARAMETERS :  
1)HS_SF_4. 2)1  
#####  
STEP NO      : 15  
LABEL :  
FUNCTION : 69 (LC      )  
COMMENT : PREVENT FALSE START ON RESET  
PARAMETERS :  
1)-!PULSE(1)  
#####  
STEP NO      : 16  
LABEL :  
FUNCTION : 62 (GTD      )  
COMMENT :  
PARAMETERS :  
1)MSV 2) Off-Noma1 3)JUMPST  
#####  
STEP NO      : 17  
LABEL : JUMPST  
FUNCTION : 10 (L      )  
COMMENT :  
PARAMETERS :  
1)HS_SF_4. 2)0
```



```
#####  
STEP NO      : 18  
LABEL :  
FUNCTION : 69 (LC      )  
COMMENT : "0" PULSE ON NDA STOP OR RFs OFF  
PARAMETERS :  
1)-!PULSE(HS_NDA_S,5)&-!PULSE(-!RFON)
```

```
#####  
STEP NO      : 19  
LABEL :  
FUNCTION : 62 (GTD     )  
COMMENT : STOP JUMP  
PARAMETERS :  
1)MSV 2) Off-Noma1 3)JUMPB
```

```
#####  
STEP NO      : 20  
LABEL : JUMPB  
FUNCTION : 10 (L       )  
COMMENT :  
PARAMETERS :  
1)HS_SF_4. 2)0
```

```
#####  
STEP NO      : 21  
LABEL :  
FUNCTION : 69 (LC      )  
COMMENT : HOLD ON STOP IF FIRE ALARM  
PARAMETERS :  
1)-!FIRE
```

```
#####  
STEP NO      : 22  
LABEL :  
FUNCTION : 62 (GTD     )  
COMMENT : FIRE ALARM STOP JUMP  
PARAMETERS :  
1)MSV 2) Off-Noma1 3)JUMPC
```

```
#####  
STEP NO      : 23  
LABEL : JUMPC  
FUNCTION : 10 (L       )  
COMMENT :  
PARAMETERS :  
1)HS_SF_4. 2)0
```

```
#####  
STEP NO      : 24  
LABEL :  
FUNCTION : 73 (LAT      )  
COMMENT : SF-4 CONTROL LOGIC  
PARAMETERS :  
1) LATCH=PULSE(HS_SF_4,5) 2) UNLATCH=-HS_SF_4!(DELAY(HS_S 3)0 4)DO_SF_4. 5)0
```

```
#####  
STEP NO      : 25  
LABEL :  
FUNCTION : 69 (LC      )  
COMMENT :ALARM ON NO FLOW OR OFF WHEN HS IS ON (EXCEPT STARTUP)  
PARAMETERS :  
1)DELAY(HS SF 4,15)&-(!DI SF 4A&!DI FS 4)  
#####  
STEP NO      : 26  
LABEL :  
FUNCTION : 75 (DST      )  
COMMENT :  
PARAMETERS :  
1)MSV 2)0 3)0 4)0 5)FA SF 4.  
#####  
STEP NO      : 27  
LABEL :  
FUNCTION : 0 (END      )  
COMMENT :  
*****  
LOOP NO      : 6  
LOOP TAG      : SF_6  
LOOP DESCRIPTION : ZB SF-6  
LOOP SCAN      : 0.30 SEC  
NON-PID AUXILIARY :  
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00  
RATIO CURR : 0.00, BIAS CURR : 0.00  
EXPORT :DI SF 6A,FA SF 6  
IMPORT DI :ZB_2 5::TDI FS 9  
#####  
STEP NO      : 1  
LABEL :  
FUNCTION : 6 (VD      )  
COMMENT :  
=====
```

DISCRETE TAG : FA SF 6
DISCRETE (Virtual Discrete) # : 6
DISCRETE DESC : ZB SF-6
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :FAIL COLOR : YELLOW
DI Alarm State : 1
DI Alarm Priority : Caution
DI Alarm Desc :ZB SF-6 LOW FLOW / FAIL
DI Alarm Mgmt Discrete :
DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0

#####

STEP NO : 2
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_SF 6B
DISCRETE (Discrete Input) # : 12
DISCRETE DESC : SF-6 READY
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : PWR OFF COLOR : WHITE
DISCRETE STATE 1 DESC : PWR ON COLOR : WHITE

#####

STEP NO : 3
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_SF 6A
DISCRETE (Discrete Input) # : 13
DISCRETE DESC : SF-6 RUN
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : WHITE
DISCRETE STATE 1 DESC : ON COLOR : WHITE

#####

STEP NO : 4
LABEL :
FUNCTION : 9 (DSCC)
COMMENT :

=====
MULTI-STATE DI TAG : YI_SF_6
MULTI-STATE DI # : 6
MULTI-STATE DI DESC : ZB SF-6
MULTI-STATE DI SYNC SCAN : 0
MULTI-STATE DI1 : DI_SF_6A
MULTI-STATE DI2 : DI_SF_6B
MULTI-STATE DI3 :
MULTI-STATE DI4 :
MULTI-STATE STATE 0 :DESC PWR OFF COLOR White
MULTI-STATE STATE 1 :DESC ON COLOR Yellow
MULTI-STATE STATE 2 :DESC OFF COLOR Green
MULTI-STATE STATE 3 :DESC FAILED COLOR White
MULTI-STATE STATE 4 :DESC COLOR Black
MULTI-STATE STATE 5 :DESC COLOR Black
MULTI-STATE STATE 6 :DESC COLOR Black
MULTI-STATE STATE 7 :DESC COLOR Black
MULTI-STATE STATE 8 :DESC COLOR Black
MULTI-STATE STATE 9 :DESC COLOR Black
MULTI-STATE STATE 10 :DESC COLOR Black
MULTI-STATE STATE 11 :DESC COLOR Black
MULTI-STATE STATE 12 :DESC COLOR Black
MULTI-STATE STATE 13 :DESC COLOR Black
MULTI-STATE STATE 14 :DESC COLOR Black
MULTI-STATE STATE 15 :DESC COLOR Black

#####

STEP NO : 5
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====
DISCRETE TAG : DO SF 6
DISCRETE (Discrete Output) # : 14
DISCRETE DESC : SF-6 CONTROL
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC :OFF COLOR : WHITE
DISCRETE STATE 1 DESC :ON COLOR : WHITE

```
#####
STEP NO      : 6
LABEL :
FUNCTION : 57 (DO      )
COMMENT :
=====
DISCRETE TAG      : DO EV 10
DISCRETE (Discrete Output) # : 26
DISCRETE DESC     : DM-12
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC :CLOSED COLOR : WHITE
DISCRETE STATE 1 DESC :OPEN COLOR : WHITE
#####
STEP NO      : 7
LABEL :
FUNCTION : 57 (DO      )
COMMENT :
=====
DISCRETE TAG      : DO EV 32
DISCRETE (Discrete Output) # : 27
DISCRETE DESC     : DM-27
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC :CLOSED COLOR : WHITE
DISCRETE STATE 1 DESC :OPEN COLOR : WHITE
#####
STEP NO      : 8
LABEL :
FUNCTION : 75 (DST      )
COMMENT :OPEN DM-12 ON SF-6 ON
PARAMETERS :
1)DI SF 6A. 2)0 3)0 4)0 5)DO EV 10.
#####
STEP NO      : 9
LABEL :
FUNCTION : 75 (DST      )
COMMENT :OPEN DM-27 ON SF-6 ON
PARAMETERS :
1)DI SF 6A. 2)0 3)0 4)0 5)DO EV 32.
#####
STEP NO      : 10
LABEL :
FUNCTION : 69 (LC      )
COMMENT : "0" PULSE ON EF-1-2 RUNNING
PARAMETERS :
1)-!PULSE(HS_1_2&DI_1_2B&DI_KFS11)
```

```
#####
STEP NO      : 11
LABEL :
FUNCTION : 62 (GTD )
COMMENT :SF-6 START JUMP
PARAMETERS :
1)MSV 2) Off-Noma1 3)JUMPA
#####
STEP NO      : 12
LABEL : JUMPA
FUNCTION : 10 (L )
COMMENT :
PARAMETERS :
1)HS SF 6. 2)1
#####
STEP NO      : 13
LABEL :
FUNCTION : 69 (LC )
COMMENT : "0" PULSE ON EF-1-2 FAIL OR OFF
PARAMETERS :
1)-!PULSE(FA 1 2!-RUN 1 2)
#####
STEP NO      : 14
LABEL :
FUNCTION : 62 (GTD )
COMMENT :STOP JUMP
PARAMETERS :
1)MSV 2) Off-Noma1 3)JUMPB
#####
STEP NO      : 15
LABEL : JUMPB
FUNCTION : 10 (L )
COMMENT :
PARAMETERS :
1)HS SF 6. 2)0
#####
STEP NO      : 16
LABEL :
FUNCTION : 69 (LC )
COMMENT :HOLD ON STOP IF COLD SMOKE ALARM
PARAMETERS :
1)-!XA CSA
#####
STEP NO      : 17
LABEL :
FUNCTION : 62 (GTD )
COMMENT :COLD SMOKE ALARM STOP JUMP
PARAMETERS :
1)MSV 2) Off-Noma1 3)JUMPC
```

```
#####
STEP NO      : 18
LABEL : JUMPC
FUNCTION : 10 (L      )
COMMENT :
PARAMETERS :
1)HS SF 6. 2)0
#####
STEP NO      : 19
LABEL :
FUNCTION : 73 (LAT    )
COMMENT :SF-6 CONTROL LOGIC
PARAMETERS :
1) LATCH=PULSE(HS_SF_6,5) 2) UNLATCH=-HS_SF_6 3)0 4)DO_SF_6. 5)0
#####
STEP NO      : 20
LABEL :
FUNCTION : 69 (LC      )
COMMENT :ALARM ON NO FLOW OR OFF WHEN HS IS ON (EXCEPT STARTUP)
PARAMETERS :
1)HS_SF_6&~!PULSE(HS_SF_6,15)&~(!DI_SF_6A&!DI_FS_9)
#####
STEP NO      : 21
LABEL :
FUNCTION : 75 (DST     )
COMMENT :
PARAMETERS :
1)MSV 2)0 3)0 4)0 5)FA_SF_6.
#####
STEP NO      : 22
LABEL :
FUNCTION : 0 (END      )
COMMENT :
*****
LOOP NO      : 7
LOOP TAG     : MISC_M19
LOOP DESCRIPTION : MICON 19 MISC
LOOP SCAN    : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
```

#####

STEP NO : 1
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO VP 2A
DISCRETE (Discrete Output) # : 19
DISCRETE DESC : MICON 19 MISC.
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0 MODIFY : 0
DISCRETE STATE 0 DESC : OFF COLOR : WHITE
DISCRETE STATE 1 DESC : ON COLOR : WHITE

#####

STEP NO : 2
LABEL :
FUNCTION : 75 (DST)
COMMENT : ZB VACUUM PUMP 2
PARAMETERS :
1) HS VP 2. 2) 0 3) 0 4) 0 5) DO VP 2A.

#####

STEP NO : 3
LABEL :
FUNCTION : 0 (END)
COMMENT :

ZB_2_3.mic20_r0

MICON TYPE :RCM-D
MICON UNIT NO : 20
MICON TAG : ZB 2 3
MICON DESCRIPTION : 2736-ZB RACK 2 SLOT 3
MICON CONFIGURATION FILE : mic20_r0
POINT ALLOCATION :
VAI : 32, VDI : 32, ISW : 32, LOOPS : 12, MSD : 16,
AI : 0, AO : 0, DI : 32, DO : 32

=====

DISCRETE TAG : HS 1
DISCRETE (Internal Switch) # : 1
DISCRETE DESC : ADM AREA
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 1
DISCRETE STATE 0 DESC :AUTO COLOR : CYAN
DISCRETE STATE 1 DESC :MANUAL COLOR : YELLOW

=====

DISCRETE TAG : HS 2
DISCRETE (Internal Switch) # : 2
DISCRETE DESC : PROCESS AREA
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 1
DISCRETE STATE 0 DESC :AUTO COLOR : CYAN
DISCRETE STATE 1 DESC :MANUAL COLOR : YELLOW

=====

DISCRETE TAG : HS 3
DISCRETE (Internal Switch) # : 3
DISCRETE DESC : NDA AREA
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 1
DISCRETE STATE 0 DESC :AUTO COLOR : CYAN
DISCRETE STATE 1 DESC :MANUAL COLOR : YELLOW

=====

DISCRETE TAG : HS 4
DISCRETE (Internal Switch) # : 4
DISCRETE DESC : GLOVEBOX
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 1
DISCRETE STATE 0 DESC :AUTO COLOR : CYAN
DISCRETE STATE 1 DESC :MANUAL COLOR : YELLOW

=====

DISCRETE TAG : HS 5
DISCRETE (Internal Switch) # : 5
DISCRETE DESC : EXHAUST
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0 MODIFY : 1
DISCRETE STATE 0 DESC : AUTO COLOR : CYAN
DISCRETE STATE 1 DESC : MANUAL COLOR : YELLOW

=====

DISCRETE TAG : HS 6
DISCRETE (Internal Switch) # : 6
DISCRETE DESC : 2736-Z
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0 MODIFY : 1
DISCRETE STATE 0 DESC : AUTO COLOR : CYAN
DISCRETE STATE 1 DESC : MANUAL COLOR : YELLOW

=====

DISCRETE TAG : HS LL1
DISCRETE (Internal Switch) # : 7
DISCRETE DESC : SF-1/2
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0 MODIFY : 1
DISCRETE STATE 0 DESC : SF-1 COLOR : GREEN
DISCRETE STATE 1 DESC : SF-2 COLOR : GREEN

=====

DISCRETE TAG : HS LL2
DISCRETE (Internal Switch) # : 8
DISCRETE DESC : SF-3/4
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0 MODIFY : 1
DISCRETE STATE 0 DESC : SF-3 COLOR : GREEN
DISCRETE STATE 1 DESC : SF-4 COLOR : GREEN

=====

DISCRETE TAG : HS LL 3
DISCRETE (Internal Switch) # : 9
DISCRETE DESC : EF-1/2
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0 MODIFY : 1
DISCRETE STATE 0 DESC : EF-1 COLOR : GREEN
DISCRETE STATE 1 DESC : EF-2 COLOR : GREEN

=====

DISCRETE TAG : HS LL 4
DISCRETE (Internal Switch) # : 10
DISCRETE DESC : RF-1/2
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0 MODIFY : 1
DISCRETE STATE 0 DESC : RF-1 COLOR : GREEN
DISCRETE STATE 1 DESC : RF-2 COLOR : GREEN

=====

DISCRETE TAG : HS MAIN
DISCRETE (Internal Switch) # : 11
DISCRETE DESC : ZB MAIN
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 1
DISCRETE STATE 0 DESC : OFF COLOR : GREEN
DISCRETE STATE 1 DESC : START COLOR : YELLOW

=====

DISCRETE TAG : HS NDA
DISCRETE (Internal Switch) # : 12
DISCRETE DESC : NDA AREA
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 1
DISCRETE STATE 0 DESC : OFF COLOR : GREEN
DISCRETE STATE 1 DESC : START COLOR : YELLOW

=====

DISCRETE TAG : HS ZA AC
DISCRETE (Internal Switch) # : 13
DISCRETE DESC : ZB INSTR AIR
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 1
DISCRETE STATE 0 DESC : STOP COLOR : GREEN
DISCRETE STATE 1 DESC : START COLOR : YELLOW

=====

DISCRETE TAG : HS MN S
DISCRETE (Internal Switch) # : 14
DISCRETE DESC : ZB MAIN
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 1
DISCRETE STATE 0 DESC : NORMAL COLOR : GREEN
DISCRETE STATE 1 DESC : E STOP COLOR : YELLOW

=====

DISCRETE TAG : HS NDA S
DISCRETE (Internal Switch) # : 15
DISCRETE DESC : NDA AREA
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 1
DISCRETE STATE 0 DESC : NORMAL COLOR : GREEN
DISCRETE STATE 1 DESC : E STOP COLOR : YELLOW

=====

DISCRETE TAG : YI VP 1
DISCRETE (Internal Switch) # : 16
DISCRETE DESC : ZB VP-1 STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : OFF COLOR : GREEN
DISCRETE STATE 1 DESC : ON COLOR : YELLOW

```
=====
DISCRETE TAG      : YI VP 2
DISCRETE (Internal Switch) # : 17
DISCRETE DESC     : ZB VP-2 STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC :OFF COLOR : GREEN
DISCRETE STATE 1 DESC :ON COLOR : YELLOW
*****
LOOP NO          : 1
LOOP TAG         : COND_1
LOOP DESCRIPTION  : CONDENSER 1
LOOP SCAN        : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
IMPORT DI :ZB 2 1::!DI SF 1A,ZB 2 2::!DI_SF_2A,ZB_2_4::!XA_CSA
#####
STEP NO         : 1
LABEL :
FUNCTION : 57 (DO )
COMMENT :
=====
DISCRETE TAG      : DO CON 1
DISCRETE (Discrete Output) # : 1
DISCRETE DESC     : COND 1
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC :OFF COLOR : GREEN
DISCRETE STATE 1 DESC :ON COLOR : YELLOW
#####
STEP NO         : 2
LABEL :
FUNCTION : 69 (LC )
COMMENT :COND 1 ON WHEN SF-1 OR 2 ON IF NO COLD SMOKE ALARM
PARAMETERS :
1)-!XA CSA&(DI SF 1A!DI SF 2A)
#####
STEP NO         : 3
LABEL :
FUNCTION : 75 (DST )
COMMENT :
PARAMETERS :
1)MSV 2)0 3)0 4)0 5)DO CON 1.
#####
STEP NO         : 4
LABEL :
FUNCTION : 0 (END )
COMMENT :
```

LOOP NO : 2
LOOP TAG : COND_2
LOOP DESCRIPTION : CONDENSER 2
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
IMPORT DI : ZB 2 1::!DI SF 3A,ZB 2 2::!DI SF_4A

STEP NO : 1
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO CON 2
DISCRETE (Discrete Output) # : 5
DISCRETE DESC : COND 2
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : OFF COLOR : GREEN
DISCRETE STATE 1 DESC : ON COLOR : YELLOW
#####

STEP NO : 2
LABEL :
FUNCTION : 69 (LC)
COMMENT : COND 2 ON WHEN SF-3 OR 4 ON IF NO COLD SMOKE ALARM
PARAMETERS :

1)-!XA CSA&(DI SF 3A!DI SF 4A)
#####

STEP NO : 3
LABEL :
FUNCTION : 75 (DST)
COMMENT :

PARAMETERS :
1)MSV 2)0 3)0 4)0 5)DO CON 2.
#####

STEP NO : 4
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 3
LOOP TAG : EF_3
LOOP DESCRIPTION : REST ROOM FAN
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
IMPORT DI : ZB 2 1::!FA SF 1,ZB 2 2::!FA SF_2

#####

STEP NO : 1
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO EF 3
DISCRETE (Discrete Output) # : 2
DISCRETE DESC : REST RM FAN
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : OFF COLOR : GREEN
DISCRETE STATE 1 DESC : ON COLOR : YELLOW

#####

STEP NO : 2
LABEL :
FUNCTION : 69 (LC)
COMMENT : EF-3 ON WHEN SF-1 & SF-2 ON AND NO LOW FLOW
PARAMETERS :

1)(-!FA SF 1&DI SF 1A)!(-!FA SF 2&DI SF 2A)

#####

STEP NO : 3
LABEL :
FUNCTION : 75 (DST)
COMMENT :

PARAMETERS :
1)MSV 2)0 3)0 4)0 5)DO EF 3.

#####

STEP NO : 4
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 4
LOOP TAG : EV19
LOOP DESCRIPTION : NDA CAM INTERLOCK
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
IMPORT DI : ZB 2 4::!RAH NDA

#####

STEP NO : 1
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO EV 19
DISCRETE (Discrete Output) # : 22
DISCRETE DESC : DM-21/23/24
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : EXHAUST COLOR : YELLOW
DISCRETE STATE 1 DESC : RECIRC COLOR : GREEN

#####

STEP NO : 2
LABEL :
FUNCTION : 69 (LC)
COMMENT : RECYCLE MODE ALLOWED IF NO CAM OR COLD SMOKE ALARM
PARAMETERS :

1)-!XA CSA&-!RAH NDA

#####

STEP NO : 3
LABEL :
FUNCTION : 75 (DST)
COMMENT :

PARAMETERS :

1)MSV 2)0 3)0 4)0 5)DO EV 19.

#####

STEP NO : 4
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 5
LOOP TAG : EV20
LOOP DESCRIPTION : M2 INSTR AIR INTERLOCK
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
IMPORT DI : ZB 2 1::!DI RF 1A,ZB 2 2::!DI RF 2A

STEP NO : 1
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO EV 20
DISCRETE (Discrete Output) # : 23
DISCRETE DESC : M2 INSTRUMENT AIR
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : OPEN COLOR : YELLOW
DISCRETE STATE 1 DESC : CLOSED COLOR : GREEN

#####

STEP NO : 2
LABEL :
FUNCTION : 69 (LC)
COMMENT : AIR ON TO M2 IF RF-1 OR 2 IS ON
PARAMETERS :
1)-!DI RF 1A&!DI RF 2A

#####

STEP NO : 3
LABEL :
FUNCTION : 75 (DST)
COMMENT :

PARAMETERS :
1)MSV 2)0 3)0 4)0 5)DO EV 20.

#####

STEP NO : 4
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 6
LOOP TAG : EV21
LOOP DESCRIPTION : MI INSTR AIR INTERLOCK
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
IMPORT DI : ZB_2_1::!DI_EF_1A,ZB_2_2::!DI_EF_2A
PID AUXILIARY :
S-P RAMP : 10000
LOOP UNITS :
LOOP SCALE LO: 0.00, SCALE HI: 100.00, DEV IND LO:99999.00, IND HI:99999.00
TUNING PARAMETER :
P(GAIN) : 0.20, I(REP/MIN) : 10.00, D(RATE) : 0.00, MANUAL RESET : 0.00

STEP NO : 1
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO EV 21
DISCRETE (Discrete Output) # : 24
DISCRETE DESC : MI INSTRUMENT AIR
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : OPEN COLOR : YELLOW
DISCRETE STATE 1 DESC : CLOSED COLOR : GREEN

#####

STEP NO : 2
LABEL :
FUNCTION : 69 (LC)
COMMENT : M1 AIR ON IF EF-1 OR EF-2 ON
PARAMETERS :

1)-!DI EF 1A&!DI EF 2A

#####

STEP NO : 3
LABEL :
FUNCTION : 75 (DST)
COMMENT :

PARAMETERS :
1)MSV 2)0 3)0 4)0 5)DO EV 21.

#####

STEP NO : 4
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 7
LOOP TAG : EV22
LOOP DESCRIPTION : M3 INSTR AIR INTERLOCK
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
IMPORT DI : ZB 2 1::!RUN 1 1,ZB 2 2::!RUN 1 2

#####

STEP NO : 1
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO EV 22
DISCRETE (Discrete Output) # : 25
DISCRETE DESC : M3 INSTRUMENT AIR
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : OPEN COLOR : YELLOW
DISCRETE STATE 1 DESC : CLOSED COLOR : GREEN
#####

STEP NO : 2
LABEL :
FUNCTION : 69 (LC)
COMMENT : M3 AIR ON IF EF-1-1 OR EF-1-2 ON AND NO COLD SMOKE ALARM
PARAMETERS :

1)(-!RUN 1 1&-!RUN 1 2)!XA CSA
#####

STEP NO : 3
LABEL :
FUNCTION : 75 (DST)
COMMENT :

PARAMETERS :
1)MSV 2)0 3)0 4)0 5)DO EV 22.
#####

STEP NO : 4
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 8
LOOP TAG : EV23
LOOP DESCRIPTION : DRY AIR TO GBX
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
IMPORT DI : ZB 2 4::!PDAL 1Z,ZB 2 5::!XA FAZB,ZB 2 6::!XA FAZN8

STEP NO : 1
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO EV 23
DISCRETE (Discrete Output) # : 19
DISCRETE DESC : GBX DRY AIR
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : CLOSED COLOR : GREEN
DISCRETE STATE 1 DESC : OPEN COLOR : YELLOW
#####

STEP NO : 2
LABEL : FIREAL
FUNCTION : 69 (LC)
COMMENT : MAKE ONE FIRE ALARM FROM THREE
PARAMETERS :
1)XA CSA|XA FAZB|XA FAZN8
#####

STEP NO : 3
LABEL :
FUNCTION : 69 (LC)
COMMENT : DRY AIR ON ON NO FIRE OR DP ALARMS AND EF-1 OR EF-2 ON
PARAMETERS :
1)(-!FIREAL&-!PDAL 1Z)&(DI EF 1A|DI EF 2A)
#####

STEP NO : 4
LABEL :
FUNCTION : 75 (DST)
COMMENT :
PARAMETERS :
1)MSV 2)0 3)0 4)0 5)DO EV 23.
#####

STEP NO : 5
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 9
LOOP TAG : EV24A
LOOP DESCRIPTION : NDA DP INTERLOCK
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
IMPORT DI : ZB 2 5::IDI PS 8

#####

STEP NO : 1
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO EV24A
DISCRETE (Discrete Output) # : 30
DISCRETE DESC : DPC-3 OR FC-2 TO DM
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : AUTO COLOR : CYAN
DISCRETE STATE 1 DESC : OVERRIDE COLOR : YELLOW

#####

STEP NO : 2
LABEL :
FUNCTION : 10 (L)
COMMENT : EV-24A TO OVERRIDE ON LO NDA DP
PARAMETERS :

1)-IDI PS 8 2)

#####

STEP NO : 3
LABEL :
FUNCTION : 75 (DST)
COMMENT :

PARAMETERS :

1)MSV 2)0 3)0 4)0 5)DO EV24A.

#####

STEP NO : 4
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 10
LOOP TAG : EV29
LOOP DESCRIPTION : 2736-Z SUPPLY INTERLOCK
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
IMPORT DI : ZB 2 1::!DI SF 5A,ZB 2 2::!DI SF 6A

STEP NO : 1
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO EV 29
DISCRETE (Discrete Output) # : 27
DISCRETE DESC : DM-25 OPEN/CLOSE
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : CLOSED COLOR : GREEN
DISCRETE STATE 1 DESC : OPEN COLOR : YELLOW
#####

STEP NO : 2
LABEL :
FUNCTION : 69 (LC)
COMMENT : DAMPER CLOSED WHEN SF-5 OR 6 ARE OFF
PARAMETERS :

1)DI SF 5A|DI SF 6A
#####

STEP NO : 3
LABEL :
FUNCTION : 75 (DST)
COMMENT :

PARAMETERS :
1)MSV 2)0 3)0 4)0 5)DO EV 29.
#####

STEP NO : 4
LABEL :
FUNCTION : 0 (END)
COMMENT :

LOOP NO : 11
LOOP TAG : MISC_M20
LOOP DESCRIPTION : MICON 20 AUX
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
EXPORT :HS_LL1,HS_LL2,HS_LL_3,HS_LL_4,HS_MAIN,HS_NDA,HS_MN_S,HS_NDA_S
#####

STEP NO : 1
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : PA_ZA_AC
DISCRETE (Virtual Discrete) # : 1
DISCRETE DESC : INSTR AIR 2736-ZA
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC :OFF COLOR : BLACK
DISCRETE STATE 1 DESC :ALARM COLOR : YELLOW
DI Alarm State : 1
DI Alarm Priority : Caution
DI Alarm Desc :LOSS OF INSTR AIR 2736-ZA
DI Alarm Mgmt Discrete :
DI Alarm Group :0 Alarm Mgmt :0 Alarm Index :0
#####

STEP NO : 2
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_2_1PS
DISCRETE (Discrete Input) # : 4
DISCRETE DESC : INSTR AIR 2736-ZA
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 INVERT : 1
DISCRETE STATE 0 DESC :OFF COLOR : WHITE
DISCRETE STATE 1 DESC :ALARM COLOR : WHITE
#####

STEP NO : 3
LABEL :
FUNCTION : 75 (DST)
COMMENT :INTR AIR ALARM 2736-ZA
PARAMETERS :
1)DI_2_1PS. 2)0 3)0 4)0 5)PA_ZA_AC.

#####

STEP NO : 4

LABEL :

FUNCTION : 57 (DO)

COMMENT :

=====

DISCRETE TAG : DO ZA

DISCRETE (Discrete Output) # : 3

DISCRETE DESC : COMPRESSOR 2736-ZA

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0

DISCRETE STATE 0 DESC : OFF COLOR : GREEN

DISCRETE STATE 1 DESC : ON COLOR : YELLOW

#####

STEP NO : 5

LABEL :

FUNCTION : 75 (DST)

COMMENT : INSTR AIR COMPR 2736-ZA

PARAMETERS :

1)HS ZA AC. 2)0 3)0 4)0 5)DO ZA.

#####

STEP NO : 6

LABEL :

FUNCTION : 57 (DO)

COMMENT :

=====

DISCRETE TAG : DO EV 27

DISCRETE (Discrete Output) # : 18

DISCRETE DESC : ADM AREA ZN IV

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0

DISCRETE STATE 0 DESC : AUTO COLOR : CYAN

DISCRETE STATE 1 DESC : MANUAL COLOR : YELLOW

#####

STEP NO : 7

LABEL :

FUNCTION : 75 (DST)

COMMENT : ADMIN AREA ZN IV AUTO/MANUAL

PARAMETERS :

1)HS_1. 2)0 3)0 4)0 5)DO_EV_27.

#####

STEP NO : 8

LABEL :

FUNCTION : 57 (DO)

COMMENT :

=====

DISCRETE TAG : DO EV 25

DISCRETE (Discrete Output) # : 20

DISCRETE DESC : GLOVEBOX ZN I

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0

DISCRETE STATE 0 DESC : AUTO COLOR : CYAN

DISCRETE STATE 1 DESC : MANUAL COLOR : YELLOW

#####

STEP NO : 9

LABEL :

FUNCTION : 75 (DST)

COMMENT : GLOVEBOX AUTO/MANUAL

PARAMETERS :

1)HS 4. 2)0 3)0 4)0 5)DO EV 25.

#####

STEP NO : 10

LABEL :

FUNCTION : 57 (DO)

COMMENT :

=====

DISCRETE TAG : DO EV 26

DISCRETE (Discrete Output) # : 21

DISCRETE DESC : PROCESS AREA

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0

DISCRETE STATE 0 DESC : AUTO COLOR : CYAN

DISCRETE STATE 1 DESC : MANUAL COLOR : YELLOW

#####

STEP NO : 11

LABEL :

FUNCTION : 75 (DST)

COMMENT : PROCESS AREA AUTO/MANUAL

PARAMETERS :

1)HS_2. 2)0 3)0 4)0 5)DO_EV_26.

#####

STEP NO : 12

LABEL :

FUNCTION : 57 (DO)

COMMENT :

=====

DISCRETE TAG : DO EV 28

DISCRETE (Discrete Output) # : 26

DISCRETE DESC : EXHAUST PLENUM

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0

DISCRETE STATE 0 DESC : AUTO COLOR : CYAN

DISCRETE STATE 1 DESC : MANUAL COLOR : YELLOW

#####

STEP NO : 13

LABEL :

FUNCTION : 75 (DST)

COMMENT : EXHAUST PLENUM AUTO/MANUAL

PARAMETERS :

1)HS 5. 2)0 3)0 4)0 5)DO EV 28.

#####

STEP NO : 14

LABEL :

FUNCTION : 57 (DO)

COMMENT :

=====

DISCRETE TAG : DO EV 30

DISCRETE (Discrete Output) # : 28

DISCRETE DESC : 2736-Z

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0

DISCRETE STATE 0 DESC : AUTO COLOR : CYAN

DISCRETE STATE 1 DESC : MANUAL COLOR : YELLOW

#####

STEP NO : 15

LABEL :

FUNCTION : 75 (DST)

COMMENT : 2736-Z AUTO/MANUAL

PARAMETERS :

1)HS_6. 2)0 3)0 4)0 5)DO_EV_30.

#####

STEP NO : 16
LABEL :
FUNCTION : 57 (DO)
COMMENT :

=====

DISCRETE TAG : DO EV 24
DISCRETE (Discrete Output) # : 29
DISCRETE DESC : NDA AREA
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : AUTO COLOR : CYAN
DISCRETE STATE 1 DESC : MANUAL COLOR : YELLOW

#####

STEP NO : 17
LABEL :
FUNCTION : 75 (DST)
COMMENT : NDA AREA AUTO/MANUAL
PARAMETERS :

1)HS 3. 2)0 3)0 4)0 5)DO EV 24.

#####

STEP NO : 18
LABEL :
FUNCTION : 69 (LC)
COMMENT : SIMULATE BUTTON ACTIVATE TURN OFF LOOP AFTER 5 SEC
PARAMETERS :

1)-!PULSE(DELAY(HS MAIN,5))

#####

STEP NO : 19
LABEL :
FUNCTION : 62 (GTD)
COMMENT :
PARAMETERS :

1)MSV 2) Off-Noma 3)BUTMN

#####

STEP NO : 20
LABEL : BUTMN
FUNCTION : 10 (L)
COMMENT : MAIN AUTOSTART SWITCH
PARAMETERS :

1)HS MAIN. 2)0

#####

STEP NO : 21
LABEL :
FUNCTION : 69 (LC)
COMMENT : SIMULATE BUTTON
PARAMETERS :
1)-!PULSE(DELAY(HS_NDA,5))

```
#####  
STEP NO      : 22  
LABEL :  
FUNCTION : 62 (GTD  )  
COMMENT :  
PARAMETERS :  
1)MSV 2) Off-Noma1 3)BUTNDA  
#####  
STEP NO      : 23  
LABEL : BUTNDA  
FUNCTION : 10 (L    )  
COMMENT :NDA AUTOSTART SWITCH  
PARAMETERS :  
1)HS NDA. 2)0  
#####  
STEP NO      : 24  
LABEL :  
FUNCTION : 69 (LC    )  
COMMENT :SIMULATE BUTTON  
PARAMETERS :  
1)-!PULSE(DELAY(HS MN S,5))  
#####  
STEP NO      : 25  
LABEL :  
FUNCTION : 62 (GTD  )  
COMMENT :  
PARAMETERS :  
1)MSV 2) Off-Noma1 3)BUTMNS  
#####  
STEP NO      : 26  
LABEL : BUTMNS  
FUNCTION : 10 (L    )  
COMMENT :MAIN EMERG STOP  
PARAMETERS :  
1)HS MN S. 2)0  
#####  
STEP NO      : 27  
LABEL :  
FUNCTION : 69 (LC    )  
COMMENT :SIMULATE BUTTON  
PARAMETERS :  
1)-!PULSE(DELAY(HS NDA S,5))  
#####  
STEP NO      : 28  
LABEL :  
FUNCTION : 62 (GTD  )  
COMMENT :  
PARAMETERS :  
1)MSV 2) Off-Noma1 3)BUTNDAS
```

#####

STEP NO : 29
LABEL : BUTNDAS
FUNCTION : 10 (L)
COMMENT :NDA EMERG SHUTDOWN
PARAMETERS :
1)HS NDA S. 2)0

#####

STEP NO : 30
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI VP 1A
DISCRETE (Discrete Input) # : 6
DISCRETE DESC : VP-1 STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC :OFF COLOR : WHITE
DISCRETE STATE 1 DESC :ON COLOR : WHITE

#####

STEP NO : 31
LABEL :
FUNCTION : 75 (DST)
COMMENT :VP-1 STATUS
PARAMETERS :
1)DI VP 1A. 2)0 3)0 4)0 5)YI VP 1.

#####

STEP NO : 32
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI VP 2A
DISCRETE (Discrete Input) # : 7
DISCRETE DESC : VP-2 STATUS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC :OFF COLOR : WHITE
DISCRETE STATE 1 DESC :ON COLOR : WHITE

#####

STEP NO : 33
LABEL :
FUNCTION : 75 (DST)
COMMENT :VP-2 STATUS
PARAMETERS :
1)DI_VP_2A. 2)0 3)0 4)0 5)YI_VP_2.

#####

STEP NO : 34

LABEL :

FUNCTION : 7 (DI)

COMMENT :

=====

DISCRETE TAG : XA_SWB_1

DISCRETE (Discrete Input) # : 8

DISCRETE DESC : DIST SWB

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0

DISCRETE STATE 0 DESC : OFF COLOR : BLACK

DISCRETE STATE 1 DESC : ALARM COLOR : WHITE

DI Alarm State : 1

DI Alarm Priority : Attention

DI Alarm Desc : DIST SWITCH B NORM POWER OFF

DI Alarm Mgmt Discrete :

DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 35

LABEL :

FUNCTION : 57 (DO)

COMMENT :

=====

DISCRETE TAG : DO_631

DISCRETE (Discrete Output) # : 17

DISCRETE DESC : NDA CAM ALARM RM 631

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0

DISCRETE STATE 0 DESC : ALARM COLOR : WHITE

DISCRETE STATE 1 DESC : OFF COLOR : WHITE

#####

STEP NO : 36

LABEL :

FUNCTION : 69 (LC)

COMMENT :

PARAMETERS :

1)-!RAH NDA

#####

STEP NO : 37

LABEL :

FUNCTION : 75 (DST)

COMMENT : OUTPUT TO RM 631 NDA CAM ALARM

PARAMETERS :

1)MSV 2)0 3)0 4)0 5)DO_631.

STEP NO : 38
LABEL :
FUNCTION : 0 (END)
COMMENT :

ZB_2_4.mic21_r0

MICON TYPE :RCM-D
MICON UNIT NO : 21
MICON TAG : ZB 2 4
MICON DESCRIPTION : 2736-ZB RACK 2 SLOT 4
MICON CONFIGURATION FILE : mic21_r0
POINT ALLOCATION :
VAI : 32, VDI : 32, ISW : 32, LOOPS : 12, MSD : 16,
AI : 0, AO : 0, DI : 32, DO : 32

LOOP NO : 1
LOOP TAG : MISC_M21
LOOP DESCRIPTION : MICON 21 AUX
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
EXPORT :DI 1 1B,DI FS 1,DI FS 5,DI FS 7,DI_FS_10,DI_FS_3,PDAL_1Z,RAH_NDA,

STEP NO : 1
LABEL :
FUNCTION : 7 (DI)
COMMENT :
=====

DISCRETE TAG : DI 1 1B
DISCRETE (Discrete Input) # : 1
DISCRETE DESC : EF-1-1 RUN TIMER
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC :TIMING COLOR : WHITE
DISCRETE STATE 1 DESC :TIMED COLOR : WHITE

#####

STEP NO : 2
LABEL :
FUNCTION : 6 (VD)
COMMENT :

DISCRETE TAG : XA_CSA
DISCRETE (Virtual Discrete) # : 3
DISCRETE DESC : COLD SMOKE ALARM
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0 MODIFY : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : ALARM COLOR : WHITE
DI Alarm State : 1
DI Alarm Priority : Attention
DI Alarm Desc : COLD SMOKE ALARM 2736-ZB
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 3
LABEL :
FUNCTION : 7 (DI)
COMMENT :

DISCRETE TAG : DI_CSA
DISCRETE (Discrete Input) # : 2
DISCRETE DESC : COLD SMOKE ALARM
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0 INVERT : 1
DISCRETE STATE 0 DESC : OFF COLOR : WHITE
DISCRETE STATE 1 DESC : ALARM COLOR : WHITE

#####

STEP NO : 4
LABEL :
FUNCTION : 75 (DST)
COMMENT : COLD SMOKE ALARM
PARAMETERS :
1)DI_CSA. 2)0 3)0 4)0 5)XA_CSA.

#####

STEP NO : 5
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_FS 1
DISCRETE (Discrete Input) # : 3
DISCRETE DESC : ZB FS-1 FLOW SWITCH
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : FLOW OFF COLOR : WHITE
DISCRETE STATE 1 DESC : FLOW ON COLOR : WHITE

#####

STEP NO : 6
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_FS 5
DISCRETE (Discrete Input) # : 4
DISCRETE DESC : ZB EF-1 FLOW SWITCH
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : FLOW OFF COLOR : WHITE
DISCRETE STATE 1 DESC : FLOW ON COLOR : WHITE

#####

STEP NO : 7
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_FS 7
DISCRETE (Discrete Input) # : 5
DISCRETE DESC : RF-1 FLOW SWITCH
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : FLOW OFF COLOR : WHITE
DISCRETE STATE 1 DESC : FLOW ON COLOR : WHITE

#####

STEP NO : 8

LABEL :

FUNCTION : 7 (DI)

COMMENT :

=====

DISCRETE TAG : DI FS 10

DISCRETE (Discrete Input) # : 6

DISCRETE DESC : ZB FS-5 FLOW SWITCH

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0

DISCRETE STATE 0 DESC : FLOW OFF COLOR : WHITE

DISCRETE STATE 1 DESC : FLOW ON COLOR : WHITE

#####

STEP NO : 9

LABEL :

FUNCTION : 7 (DI)

COMMENT :

=====

DISCRETE TAG : DI FS 3

DISCRETE (Discrete Input) # : 7

DISCRETE DESC : ZB SF-3 FLOW SWITCH

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0

DISCRETE STATE 0 DESC : FLOW OFF COLOR : WHITE

DISCRETE STATE 1 DESC : FLOW ON COLOR : WHITE

#####

STEP NO : 11

LABEL :

FUNCTION : 6 (VD)

COMMENT :

=====

DISCRETE TAG : PDAL 1Z

DISCRETE (Virtual Discrete) # : 1

DISCRETE DESC : GBX PRESS SWITCH

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0

DISCRETE STATE 0 DESC : OFF COLOR : BLACK

DISCRETE STATE 1 DESC : LO DP COLOR : WHITE

DI Alarm State : 1

DI Alarm Priority : Event

DI Alarm Desc : LO ZB GBX DP -- DRY AIR OFF

DI Alarm Mgmt Discrete :

DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 12

LABEL :

FUNCTION : 7 (DI)

COMMENT :

=====

DISCRETE TAG : DI_DPS_1

DISCRETE (Discrete Input) # : 8

DISCRETE DESC : GBX PRESS SWITCH

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0 INVERT : 1

DISCRETE STATE 0 DESC : OFF COLOR : WHITE

DISCRETE STATE 1 DESC : LO DP COLOR : WHITE

#####

STEP NO : 13

LABEL :

FUNCTION : 75 (DST)

COMMENT : ZB GLOVEBOX LO PRESS

PARAMETERS :

1)DI DPS 1. 2)0 3)0 4)0 5)PDAL 1Z.

#####

STEP NO : 14

LABEL :

FUNCTION : 6 (VD)

COMMENT :

=====

DISCRETE TAG : RAH NDA

DISCRETE (Virtual Discrete) # : 2

DISCRETE DESC : ZB NDA CAM

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0 MODIFY : 0

DISCRETE STATE 0 DESC : OFF COLOR : BLACK

DISCRETE STATE 1 DESC : CAM COLOR : RED

DI Alarm State : 1

DI Alarm Priority : Urgent

DI Alarm Desc : NDA CAM ALARM 2736-ZB

DI Alarm Mgmt Discrete :

DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 15
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI CAM
DISCRETE (Discrete Input) # : 10
DISCRETE DESC : ZB NDA CAM
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 1
DISCRETE STATE 0 DESC : OFF COLOR : WHITE
DISCRETE STATE 1 DESC : CAM COLOR : WHITE

#####

STEP NO : 16
LABEL :
FUNCTION : 75 (DST)
COMMENT : ZB NDA CAM ALARM

PARAMETERS :
1) DI CAM. 2) 0 3) 0 4) 0 5) RAH NDA.

#####

STEP NO : 17
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : XA EGF
DISCRETE (Discrete Input) # : 15
DISCRETE DESC : 234-5 EMERG GROUND FAULT
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 1
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : ALARM COLOR : WHITE
DI Alarm State : 1
DI Alarm Priority : Attention
DI Alarm Desc : EMERG GROUND FAULT 234-5Z
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 18
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : XA PLC 1
DISCRETE (Discrete Input) # : 16
DISCRETE DESC : PLC 2721-Z
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 1
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : ALARM COLOR : YELLOW
DI Alarm State : 1
DI Alarm Priority : Caution
DI Alarm Desc : PLC 2721-Z OFF/FAIL
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 19
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : LALL CFT
DISCRETE (Discrete Input) # : 17
DISCRETE DESC : CENT FUEL TK
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : ALARM COLOR : RED
DI Alarm State : 1
DI Alarm Priority : Urgent
DI Alarm Desc : CENT FUEL TANK LOLO LEVEL
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 20
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : LAL_CFT
DISCRETE (Discrete Input) # : 18
DISCRETE DESC : CENT FUEL TK
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : ALARM COLOR : WHITE
DI Alarm State : 1
DI Alarm Priority : Attention
DI Alarm Desc : CENT FUEL TANK 1/2 EMPTY
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 21
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : XA_EGS_1
DISCRETE (Discrete Input) # : 20
DISCRETE DESC : EGS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 1
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : ALARM COLOR : WHITE
DI Alarm State : 1
DI Alarm Priority : Attention
DI Alarm Desc : EGS 234-5Z GROUND FAULT
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 22
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : XA_EGS_2
DISCRETE (Discrete Input) # : 21
DISCRETE DESC : EGS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 1
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : ALARM COLOR : WHITE
DI Alarm State : 1
DI Alarm Priority : Attention
DI Alarm Desc : EGS NORM SOURCE GROUND FAULT
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 23
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : TAH_GEN1
DISCRETE (Discrete Input) # : 22
DISCRETE DESC : GEN 1
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : ALARM COLOR : YELLOW
DI Alarm State : 1
DI Alarm Priority : Caution
DI Alarm Desc : GEN 1 HI WATER TEMP
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 24
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : PAL_GEN1
DISCRETE (Discrete Input) # : 23
DISCRETE DESC : GEN 1
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : ALARM COLOR : YELLOW
DI Alarm State : 1
DI Alarm Priority : Caution
DI Alarm Desc : GEN 1 LO OIL PRESS
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 25
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : XA_G1 1
DISCRETE (Discrete Input) # : 24
DISCRETE DESC : GEN 1
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : ALARM COLOR : RED
DI Alarm State : 1
DI Alarm Priority : Urgent
DI Alarm Desc : GEN 1 OVERCRANK
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 26
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : SAH_GEN1
DISCRETE (Discrete Input) # : 25
DISCRETE DESC : GEN 1
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : ALARM COLOR : YELLOW
DI Alarm State : 1
DI Alarm Priority : Caution
DI Alarm Desc : GEN 1 OVERSPEED
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 27
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : YA_G1_1
DISCRETE (Discrete Input) # : 26
DISCRETE DESC : GEN 1
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 1
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : ALARM COLOR : RED
DI Alarm State : 1
DI Alarm Priority : Urgent
DI Alarm Desc : GEN 1 RUNNING
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 28

LABEL :

FUNCTION : 7 (DI)

COMMENT :

=====

DISCRETE TAG : EAL GEN1

DISCRETE (Discrete Input) # : 27

DISCRETE DESC : GEN 1

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0

DISCRETE STATE 0 DESC : OFF COLOR : BLACK

DISCRETE STATE 1 DESC : ALARM COLOR : RED

DI Alarm State : 1

DI Alarm Priority : Urgent

DI Alarm Desc : GEN 1 START BATTERY LOW

DI Alarm Mgmt Discrete :

DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 29

LABEL :

FUNCTION : 0 (END)

COMMENT :

ZB_2_5.mic22_r0

MICON TYPE :RCM-D
MICON UNIT NO : 22
MICON TAG : ZB 2 5
MICON DESCRIPTION : 2726-ZB RACK 2 SLOT 5
MICON CONFIGURATION FILE : mic22_r0
POINT ALLOCATION :
VAI : 32, VDI : 32, ISW : 32, LOOPS : 12, MSD : 16,
AI : 0, AO : 0, DI : 32, DO : 32

LOOP NO : 1
LOOP TAG : MISC_M22
LOOP DESCRIPTION : MICON 22 AUX
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
EXPORT :DI 1 2B,DI FS 2,DI FS 6,DI FS 8,DI_FS_9,DI_FS_4,DI_DPS_2,DI_PS_8,

STEP NO : 1
LABEL :
FUNCTION : 7 (DI)
COMMENT :
=====

DISCRETE TAG : DI 1 2B
DISCRETE (Discrete Input) # : 1
DISCRETE DESC : EF-1-2 RUN TIMER
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC :TIMING COLOR : WHITE
DISCRETE STATE 1 DESC :TIMED COLOR : WHITE

#####

STEP NO : 2
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : XA FAZB
DISCRETE (Virtual Discrete) # : 1
DISCRETE DESC : 2736-ZB FIRE ALARM
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : FIRE COLOR : WHITE
DI Alarm State : 1
DI Alarm Priority : Attention
DI Alarm Desc : FIRE ALARM 2736-ZB
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 3
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI FA ZB
DISCRETE (Discrete Input) # : 2
DISCRETE DESC : 2736-ZB FIRE ALARM
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 1
DISCRETE STATE 0 DESC : OFF COLOR : WHITE
DISCRETE STATE 1 DESC : FIRE COLOR : WHITE

#####

STEP NO : 4
LABEL :
FUNCTION : 75 (DST)
COMMENT : 2736-ZB FIRE ALARM
PARAMETERS :
1)DI_FA_ZB. 2)0 3)0 4)0 5)XA_FAZB.

#####

STEP NO : 5
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI FS 2
DISCRETE (Discrete Input) # : 3
DISCRETE DESC : SF-2 FLOW SWITCH
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : FLOW OFF COLOR : WHITE
DISCRETE STATE 1 DESC : FLOW ON COLOR : WHITE

#####

STEP NO : 6
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI FS 6
DISCRETE (Discrete Input) # : 4
DISCRETE DESC : EF-2 FLOW SWITCH
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : FLOW OFF COLOR : WHITE
DISCRETE STATE 1 DESC : FLOW ON COLOR : WHITE

#####

STEP NO : 7
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI FS 8
DISCRETE (Discrete Input) # : 5
DISCRETE DESC : RF-2 FLOW SWITCH
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : FLOW OFF COLOR : WHITE
DISCRETE STATE 1 DESC : FLOW ON COLOR : WHITE

#####

STEP NO : 8

LABEL :

FUNCTION : 7 (DI)

COMMENT :

=====

DISCRETE TAG : DI FS 9

DISCRETE (Discrete Input) # : 6

DISCRETE DESC : SF-6 FLOW SWITCH

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0

DISCRETE STATE 0 DESC : FLOW OFF COLOR : WHITE

DISCRETE STATE 1 DESC : FLOW ON COLOR : WHITE

#####

STEP NO : 9

LABEL :

FUNCTION : 7 (DI)

COMMENT :

=====

DISCRETE TAG : DI FS 4

DISCRETE (Discrete Input) # : 7

DISCRETE DESC : SF-4 FLOW SWITCH

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0

DISCRETE STATE 0 DESC : FLOW OFF COLOR : WHITE

DISCRETE STATE 1 DESC : FLOW ON COLOR : WHITE

#####

STEP NO : 10

LABEL :

FUNCTION : 6 (VD)

COMMENT :

=====

DISCRETE TAG : PDA_2ZB

DISCRETE (Virtual Discrete) # : 2

DISCRETE DESC : ZB EXH PLENUM

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0

DISCRETE STATE 0 DESC : OFF COLOR : BLACK

DISCRETE STATE 1 DESC : LO DP COLOR : RED

DI Alarm State : 1

DI Alarm Priority : Urgent

DI Alarm Desc : LO EXH PLENUM DP SF-1/2 OFF

DI Alarm Mgmt Discrete :

DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 11

LABEL :

FUNCTION : 7 (DI)

COMMENT :

=====

DISCRETE TAG : DI DPS 2

DISCRETE (Discrete Input) # : 8

DISCRETE DESC : EXHAUST PLENUM DP SWITCH

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0

DISCRETE STATE 0 DESC : LO DP COLOR : WHITE

DISCRETE STATE 1 DESC : NORMAL COLOR : WHITE

#####

STEP NO : 12

LABEL :

FUNCTION : 75 (DST)

COMMENT :

PARAMETERS :

1)DI DPS 2. 2)1 3)0 4)0 5)PDA 2ZB.

#####

STEP NO : 13

LABEL :

FUNCTION : 7 (DI)

COMMENT :

=====

DISCRETE TAG : DI PS 8

DISCRETE (Discrete Input) # : 10

DISCRETE DESC : NDA DP SWITCH

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0

DISCRETE STATE 0 DESC : NORMAL COLOR : WHITE

DISCRETE STATE 1 DESC : LO DP COLOR : WHITE

#####

STEP NO : 14

LABEL :

FUNCTION : 7 (DI)

COMMENT :

=====

DISCRETE TAG : YA G1 2

DISCRETE (Discrete Input) # : 15

DISCRETE DESC : GEN 1

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 1

DISCRETE STATE 0 DESC : OFF COLOR : BLACK

DISCRETE STATE 1 DESC : ALARM COLOR : RED

DI Alarm State : 1

DI Alarm Priority : Urgent

DI Alarm Desc : GEN 1 SYNCRONIZED

DI Alarm Mgmt Discrete :

DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 15

LABEL :

FUNCTION : 7 (DI)

COMMENT :

=====

DISCRETE TAG : XA G1 2

DISCRETE (Discrete Input) # : 16

DISCRETE DESC : GEN 1

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 1

DISCRETE STATE 0 DESC : OFF COLOR : BLACK

DISCRETE STATE 1 DESC : ALARM COLOR : RED

DI Alarm State : 1

DI Alarm Priority : Urgent

DI Alarm Desc : GEN 1 SYSTEM NOT READY

DI Alarm Mgmt Discrete :

DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 16
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : TAH GEN2
DISCRETE (Discrete Input) # : 17
DISCRETE DESC : GEN 2
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : ALARM COLOR : YELLOW
DI Alarm State : 1
DI Alarm Priority : Caution
DI Alarm Desc : GEN 2 HI WATER TEMP
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 17
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : PAL GEN2
DISCRETE (Discrete Input) # : 18
DISCRETE DESC : GEN 2
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : ALARM COLOR : YELLOW
DI Alarm State : 1
DI Alarm Priority : Caution
DI Alarm Desc : GEN 2 LO OIL PRESS
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 18
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : XA G2 1
DISCRETE (Discrete Input) # : 19
DISCRETE DESC : GEN 2
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : ALARM COLOR : RED
DI Alarm State : 1
DI Alarm Priority : Urgent
DI Alarm Desc : GEN 2 OVERCRANK
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 19
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : SAH GEN2
DISCRETE (Discrete Input) # : 20
DISCRETE DESC : GEN 2
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : ALARM COLOR : YELLOW
DI Alarm State : 1
DI Alarm Priority : Caution
DI Alarm Desc : FGEN 2 OVERSPEED
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 20
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : YA_G2 1
DISCRETE (Discrete Input) # : 21
DISCRETE DESC : GEN 2
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 1
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : ALARM COLOR : RED
DI Alarm State : 1
DI Alarm Priority : Urgent
DI Alarm Desc : GEN 2 RUNNING
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 21
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : EAL_GEN2
DISCRETE (Discrete Input) # : 22
DISCRETE DESC : GEN 3
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : ALARM COLOR : RED
DI Alarm State : 1
DI Alarm Priority : Urgent
DI Alarm Desc : GEN 2 START BATTERY LOW
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 22
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : YA G2 2
DISCRETE (Discrete Input) # : 23
DISCRETE DESC : GEN 2
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 1
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : ALARM COLOR : RED
DI Alarm State : 1
DI Alarm Priority : Urgent
DI Alarm Desc : GEN 2 SYNCHRONIZED
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 23
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : XA G2 2
DISCRETE (Discrete Input) # : 24
DISCRETE DESC : GEN 2
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 1
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : ALARM COLOR : RED
DI Alarm State : 1
DI Alarm Priority : Urgent
DI Alarm Desc : GEN 2 SYSTEM NOT READY
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 24
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : TAH_GEN3
DISCRETE (Discrete Input) # : 25
DISCRETE DESC : GEN 3
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : ALARM COLOR : YELLOW
DI Alarm State : 1
DI Alarm Priority : Caution
DI Alarm Desc : GEN 3 HI WATER TEMP
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 25
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : PAL_GEN3
DISCRETE (Discrete Input) # : 26
DISCRETE DESC : GEN 3
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : ALARM COLOR : YELLOW
DI Alarm State : 1
DI Alarm Priority : Caution
DI Alarm Desc : GEN 3 LO OIL PRESSURE
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 26
LABEL :
FUNCTION : 0 (END)
COMMENT :

ZB_2_6.mic23_r0

MICON TYPE :RCM-D
MICON UNIT NO : 23
MICON TAG : ZB 2 6
MICON DESCRIPTION : 2736-ZB RACK 2 SLOT 6
MICON CONFIGURATION FILE : mic23_r0
POINT ALLOCATION :
VAI : 32, VDI : 32, ISW : 32, LOOPS : 12, MSD : 16,
AI : 0, AO : 0, DI : 32, DO : 32

LOOP NO : 1
LOOP TAG : MISC_M23
LOOP DESCRIPTION : MICON 23 AUX
LOOP SCAN : 0.30 SEC
NON-PID AUXILIARY :
RATIO LO : 0.00, HI : 10.00, BIAS LO : -5.00, HI : 5.00
RATIO CURR : 0.00, BIAS CURR : 0.00
EXPORT :XA FAZN8

STEP NO : 1
LABEL :
FUNCTION : 7 (DI)
COMMENT :
=====

DISCRETE TAG : DI 1 2C
DISCRETE (Discrete Input) # : 1
DISCRETE DESC : EF-1-2 AUTO/MAN
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION :0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC :MANUAL COLOR : WHITE
DISCRETE STATE 1 DESC :AUTO COLOR : WHITE

#####

STEP NO : 2

LABEL :

FUNCTION : 6 (VD)

COMMENT :

=====

DISCRETE TAG : XA FAZN2

DISCRETE (Virtual Discrete) # : 2

DISCRETE DESC : ZN II FIRE ALARM

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0

DISCRETE STATE 0 DESC : OFF COLOR : BLACK

DISCRETE STATE 1 DESC : FIRE COLOR : WHITE

DI Alarm State : 1

DI Alarm Priority : Attention

DI Alarm Desc : ZB ZN II FIRE ALARM

DI Alarm Mgmt Discrete :

DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 3

LABEL :

FUNCTION : 7 (DI)

COMMENT :

=====

DISCRETE TAG : DI FA 2

DISCRETE (Discrete Input) # : 2

DISCRETE DESC : ZN II FIRE ALARM

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 1

DISCRETE STATE 0 DESC : OFF COLOR : WHITE

DISCRETE STATE 1 DESC : FIRE COLOR : WHITE

#####

STEP NO : 4

LABEL :

FUNCTION : 75 (DST)

COMMENT : ZONE II FIRE ALARM

PARAMETERS :

1)DI_FA_2. 2)0 3)0 4)0 5)XA_FAZN2.

#####

STEP NO : 5
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : XA FAZN8
DISCRETE (Virtual Discrete) # : 3
DISCRETE DESC : ZN 8 FIRE ALARM
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : FIRE COLOR : WHITE
DI Alarm State : 1
DI Alarm Priority : Attention
DI Alarm Desc : ZB ZONE 8 FIRE ALARM
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 6
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI FA 8
DISCRETE (Discrete Input) # : 3
DISCRETE DESC : ZN 8 FIRE ALARM
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 1
DISCRETE STATE 0 DESC : OFF COLOR : WHITE
DISCRETE STATE 1 DESC : FIRE COLOR : WHITE

#####

STEP NO : 7
LABEL :
FUNCTION : 75 (DST)
COMMENT : ZONE 8 FIRE ALARM
PARAMETERS :
1)DI_FA_8. 2)0 3)0 4)0 5)XA_FAZN8.

#####

STEP NO : 8
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : XA_FZB_B
DISCRETE (Virtual Discrete) # : 4
DISCRETE DESC : ZB_FA_BYPASS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0 MODIFY : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : BYPASSED COLOR : WHITE
DI Alarm State : 1
DI Alarm Priority : Attention
DI Alarm Desc : FIRE ALARM BYPASSED 2736-ZB
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 9
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_ZB_BY
DISCRETE (Discrete Input) # : 4
DISCRETE DESC : ZB_FA_BYPASS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0 INVERT : 1
DISCRETE STATE 0 DESC : NORM COLOR : WHITE
DISCRETE STATE 1 DESC : BYPASSED COLOR : WHITE

#####

STEP NO : 10
LABEL :
FUNCTION : 75 (DST)
COMMENT : 2736-ZB FA BYPASSED
PARAMETERS :
1)DI_ZB_BY. 2)0 3)0 4)0 5)XA_FZB_B.

#####

STEP NO : 11
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : XA_ZN8B
DISCRETE (Virtual Discrete) # : 6
DISCRETE DESC : ZN 8 BYPASS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : BYPASSED COLOR : WHITE
DI Alarm State : 1
DI Alarm Priority : Attention
DI Alarm Desc : ZB ZONE 8 FIRE ALARM BYPASSED
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 12
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_BY 8
DISCRETE (Discrete Input) # : 5
DISCRETE DESC : ZN 8 BYPASS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 1
DISCRETE STATE 0 DESC : NORM COLOR : WHITE
DISCRETE STATE 1 DESC : BYPASSED COLOR : WHITE

#####

STEP NO : 13
LABEL :
FUNCTION : 75 (DST)
COMMENT : ZONE 8 BYPASSED
PARAMETERS :
1)DI_BY_8. 2)0 3)0 4)0 5)XA_ZN8B.

#####

STEP NO : 14
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : XA ZN2B
DISCRETE (Virtual Discrete) # : 5
DISCRETE DESC : ZN II BYPASS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : BYPASSED COLOR : WHITE
DI Alarm State : 1
DI Alarm Priority : Attention
DI Alarm Desc : ZB ZONE II FIRE ALARM BYPASSED
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 15
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI BY 2
DISCRETE (Discrete Input) # : 6
DISCRETE DESC : ZN II BYPASS
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 1
DISCRETE STATE 0 DESC : NORM COLOR : WHITE
DISCRETE STATE 1 DESC : BYPASSED COLOR : WHITE

#####

STEP NO : 16
LABEL :

FUNCTION : 75 (DST)
COMMENT : ZONE II BYPASSED
PARAMETERS :

1)DI_BY_2. 2)0 3)0 4)0 5)XA_ZN2B.

#####

STEP NO : 17
LABEL :
FUNCTION : 6 (VD)
COMMENT :

=====

DISCRETE TAG : PA ZBVAC
DISCRETE (Virtual Discrete) # : 1
DISCRETE DESC : 17" VAC
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 MODIFY : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : LO VAC COLOR : RED
DI Alarm State : 1
DI Alarm Priority : Urgent
DI Alarm Desc : ZB LOSS OF 17" VACUUM
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 18
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : DI_1 2PS
DISCRETE (Discrete Input) # : 9
DISCRETE DESC : 17" VAC
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 1
DISCRETE STATE 0 DESC : OFF COLOR : WHITE
DISCRETE STATE 1 DESC : LO VAC COLOR : WHITE

#####

STEP NO : 19
LABEL :
FUNCTION : 75 (DST)
COMMENT : LOSS OF 17" VAC
PARAMETERS :
1)DI_1_2PS. 2)0 3)0 4)0 5)PA_ZBVAC.

#####

STEP NO : 20
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : XA 232Z
DISCRETE (Discrete Input) # : 10
DISCRETE DESC : 232-Z EXHAUST
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 1
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : ALARM COLOR : RED
DI Alarm State : 1
DI Alarm Priority : Urgent
DI Alarm Desc : LOSS OF 232-Z EXHAUST FAN
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 21
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : XA G3 1
DISCRETE (Discrete Input) # : 15
DISCRETE DESC : GEN 3
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : ALARM COLOR : RED
DI Alarm State : 1
DI Alarm Priority : Urgent
DI Alarm Desc : GEN 3 OVERCRANK
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 22
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : SAH GEN3
DISCRETE (Discrete Input) # : 16
DISCRETE DESC : GEN 3
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : ALARM COLOR : YELLOW
DI Alarm State : 1
DI Alarm Priority : Caution
DI Alarm Desc : GEN 3 OVERSPEED
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 23
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : YA G3 1
DISCRETE (Discrete Input) # : 17
DISCRETE DESC : GEN 3
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 1
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : ALARM COLOR : RED
DI Alarm State : 1
DI Alarm Priority : Urgent
DI Alarm Desc : GEN 3 RUNNING
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 24

LABEL :

FUNCTION : 7 (DI)

COMMENT :

=====

DISCRETE TAG : EAL_GEN3

DISCRETE (Discrete Input) # : 18

DISCRETE DESC : GEN 3

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0

DISCRETE STATE 0 DESC : OFF COLOR : BLACK

DISCRETE STATE 1 DESC : ALARM COLOR : RED

DI Alarm State : 1

DI Alarm Priority : Urgent

DI Alarm Desc : GEN 3 START BATTREY LOW

DI Alarm Mgmt Discrete :

DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 25

LABEL :

FUNCTION : 7 (DI)

COMMENT :

=====

DISCRETE TAG : YA_G3_2

DISCRETE (Discrete Input) # : 19

DISCRETE DESC : GEN 3

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 1

DISCRETE STATE 0 DESC : OFF COLOR : BLACK

DISCRETE STATE 1 DESC : ALARM COLOR : RED

DI Alarm State : 1

DI Alarm Priority : Urgent

DI Alarm Desc : GEN 3 SYNCRONIZED

DI Alarm Mgmt Discrete :

DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 26
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : XA G3 2
DISCRETE (Discrete Input) # : 20
DISCRETE DESC : GEN 3
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0 INVERT : 1
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : ALARM COLOR : RED
DI Alarm State : 1
DI Alarm Priority : Urgent
DI Alarm Desc : GEN 3 SYSTEM NOT READY
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 27
LABEL :
FUNCTION : 7 (DI)
COMMENT :

=====

DISCRETE TAG : XA NDA P
DISCRETE (Discrete Input) # : 21
DISCRETE DESC : NDA LAB
DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC
DISCRETE HIST. DEFINITION : 0 DEBOUNCE : 0 INVERT : 0
DISCRETE STATE 0 DESC : OFF COLOR : BLACK
DISCRETE STATE 1 DESC : ALARM COLOR : WHITE
DI Alarm State : 1
DI Alarm Priority : Attention
DI Alarm Desc : NDA LAB POWER SHUTDOWN
DI Alarm Mgmt Discrete :
DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 28

LABEL :

FUNCTION : 7 (DI)

COMMENT :

=====

DISCRETE TAG : XA UPS1

DISCRETE (Discrete Input) # : 22

DISCRETE DESC : UPS BUS FAILURE

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0

DISCRETE STATE 0 DESC : OFF COLOR : BLACK

DISCRETE STATE 1 DESC : ALARM COLOR : WHITE

DI Alarm State : 1

DI Alarm Priority : Attention

DI Alarm Desc : UPS BUS FAILURE

DI Alarm Mgmt Discrete :

DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 29

LABEL :

FUNCTION : 7 (DI)

COMMENT :

=====

DISCRETE TAG : XA UPS2

DISCRETE (Discrete Input) # : 23

DISCRETE DESC : UPS SYSTEM

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0

DISCRETE STATE 0 DESC : OFF COLOR : BLACK

DISCRETE STATE 1 DESC : ALARM COLOR : WHITE

DI Alarm State : 1

DI Alarm Priority : Attention

DI Alarm Desc : UPS SYSTEM OFF NORMAL

DI Alarm Mgmt Discrete :

DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 30

LABEL :

FUNCTION : 7 (DI)

COMMENT :

=====

DISCRETE TAG : XA UPS3

DISCRETE (Discrete Input) # : 24

DISCRETE DESC : UPS SYSTEM

DISCRETE SYNC SCAN : 0 SEC HIST SCAN : 0 SEC

DISCRETE HIST. DEFINITION : 0 DEBOUNCE: 0 INVERT : 0

DISCRETE STATE 0 DESC : OFF COLOR : BLACK

DISCRETE STATE 1 DESC : ALARM COLOR : WHITE

DI Alarm State : 1

DI Alarm Priority : Attention

DI Alarm Desc : UPS XFER SWITCH BYPASSED

DI Alarm Mgmt Discrete :

DI Alarm Group : 0 Alarm Mgmt : 0 Alarm Index : 0

#####

STEP NO : 31

LABEL :

FUNCTION : 0 (END)

COMMENT :

MICON PROGRAM FILES

MICON program files are created by MICON View from the configuration file listings (above). This file is the actual program that is run by the controller card. When you request a program upload from a controller card, these are the files you'll get.

These files should not be directly modified by the user. All modifications should be through the configuration file using the configure controller option on MICON View.

The programming language is a custom language developed by MICON Company. A description of this language can be found in the *U-32/RCM Function Compiler Documentation* available from MICON Company (Houston, TX 1-713-947-9470).

You will notice that, like the configuration file, the program file is organized into loops. With the exception of two loops, these are the same ones created by the user in the controller's configuration file. The two exceptions are loop " _ZERO" at the top and loop " NINETY NINE" at the bottom. These are house-keeping loops created by MICON View.

The following file listings have been edited to make them easier to read. Spaces have been put between the loops and extra long lines have been indented. Therefor, the actual file's format may look a little different.

NOTE: The DEF line under each loop name contains fields showing the tuning parameters -- for example:

CGAIN=0.50,CRESET=10.00,CRATE=0.00,M_RESET=0.00

These tuning parameters are not controlled by this document. Therefore, these numbers may be different than the ones that appear in the workstation listings. This will also be true of program files uploaded from the controllers.

mic16_r0

LOOP ZERO;

DEF :TAG=AI PE 1.,AI PE 2.,AI PE 5.,AI PE 3.,AI PE 7.,AI PE 4.;

DEF :TAG=PDRC 1.,PDRC 2.,PDRC 3.,PDRC 4.,PDRC 5.,PDRC 6.;

DEF :TAG=PERIOD=1;

END;

LOOP PDIC 1.;

DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=0.15,SPANLO=0.00,SPANHI=0.15,RATIO=0.00,
BIAS=0.00,CGAIN=1.75,CRESET=0.50,CRATE=0.00,M_RESET=0.00;

AI :TAG=AI PE 1.:CHAN=1:SPANLO=0.00:SPANHI=0.15;

LET :TAG=PDRC 1.=MSV; /*HISTORIAN*/

PID :PV=AI PE 1.:RECALL=1;

AO :TAG=AO EP 1.:CHAN=19:STEP=MSV:OPLOLM=0.00:OPHILM=100.00:OPNRLM=1000.00:OPPRLM=1000.00;

ALARM :TAG=PDIC 1.PV:TYPE=3:PRI=149793:LIMITS={?-,?-,0.01,?+,?+,?+}:DEADBAND=0.00;

END;

LOOP PDIC 2.;

DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=0.50,SPANLO=0.00,SPANHI=0.50,RATIO=0.00,
BIAS=0.00,CGAIN=2.00,CRESET=0.50,CRATE=0.00,M_RESET=0.00;

AI :TAG=AI PE 2.:CHAN=2:SPANLO=0.00:SPANHI=0.50;

LET :TAG=PDRC 2.=MSV; /*HISTORIAN*/

PID :PV=AI PE 2.:DIRECT=1:RECALL=1;

AO :TAG=AO EP 2.:CHAN=20:STEP=MSV:OPLOLM=0.00:OPHILM=100.00:OPNRLM=1000.00:OPPRLM=1000.00;

ALARM :TAG=PDIC 2.PV:TYPE=3:PRI=149793:LIMITS={?-,?-,0.05,?+,?+,?+}:DEADBAND=0.00;

END;

```
LOOP PDIC 4.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=2.00,SPANLO=0.00,SPANHI=2.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.50,CRESET=1.50,CRATE=0.00,M_RESET=0.00;
LET :TAG=-!PULSE(1);/*"0" PULSE ON STARTUP*/
GOTO :COND=MSV:TAG=JUMP;
LET :TAG=OUT=1;/*OPEN DAMPER ON STARTUP*/
LABEL :TAG=JUMP;
AI :TAG=AI PE 5.:CHAN=3:SPANLO=0.00:SPANHI=2.00;
LET :TAG=PDRC_4.=MSV;/*HISTORIAN*/
PID :PV=AI PE 5.:RECALL=1;
AO :TAG=AO_EP_4.:CHAN=21:REVERSE=1:STEP=MSV:OPLOLM=0.00:OPHILM=100.00:OPNRLM=1000.00:OPPRLM=1000.00;
ALARM :TAG=PDIC_4.PV:TYPE=3:PRI=149793:LIMITS={?-,?-,0.25,?+,?+,?+}:DEADBAND=0.00;
END;
```

```
LOOP PDIC 5.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=10.00,SPANLO=0.00,SPANHI=10.00,RATIO=0.00,
    BIAS=0.00,CGAIN=2.00,CRESET=0.75,CRATE=0.00,M_RESET=0.00;
AI :TAG=AI PE 3.:CHAN=4:SPANLO=0.00:SPANHI=10.00;
LET :TAG=PDRC_5.=MSV;/*HISTORIAN*/
PID :PV=AI PE 3.:RECALL=1;
AO :TAG=AO_EP_5.:CHAN=22:STEP=MSV:OPLOLM=0.00:OPHILM=100.00:OPNRLM=1000.00:OPPRLM=1000.00;
ALARM :TAG=PDIC_5.PV:TYPE=3:PRI=149793:LIMITS={?-,?-,1.00,?+,?+,?+}:DEADBAND=0.00;
END;
```

```
LOOP PDIC 6.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=0.50,SPANLO=0.00,SPANHI=0.50,RATIO=0.00,
    BIAS=0.00,CGAIN=2.00,CRESET=2.00,CRATE=0.00,M_RESET=0.00;
AI :TAG=AI PE 7.:CHAN=5:SPANLO=0.00:SPANHI=0.50;
LET :TAG=PDRC_6.=MSV;/*HISTORIAN*/
PID :PV=AI PE 7.:DIRECT=1:RECALL=1;
AO :TAG=AO_EP_6.:CHAN=23:STEP=MSV:OPLOLM=0.00:OPHILM=100.00:OPNRLM=1000.00:OPPRLM=1000.00;
ALARM :TAG=PDIC_6.PV:TYPE=3:PRI=149793:LIMITS={?-,?-,0.05,?+,?+,?+}:DEADBAND=0.00;
END;
```

WHC-SD-CP-CSWD-016

Volume 4

Revision 1

Page 171

```
LOOP PDIC 3.;
DEF :TAG=PERIOD=0.30,SP RATE=10000.00,SPLOLM=0.00,SPHILM=0.50,SPANLO=0.00,SPANHI=0.50,RATIO=0.00,
    BIAS=0.00,CGAIN=1.00,CRESET=0.10,CRATE=0.00,M_RESET=0.00;
AI :TAG=AI_PE_4.:CHAN=6:SPANLO=0.00:SPANHI=0.50;
LET :TAG=PDRC_3.=MSV; /*HISTORIAN*/
PID :PV=AI_PE_4.:DIRECT=1:RECALL=1;
AO :TAG=AO_EP_3.:CHAN=24:STEP=MSV:OPLOLM=0.00:OPHILM=100.00:OPNRLM=1000.00:OPPRLM=1000.00;
ALARM :TAG=PDIC_3.PV:TYPE=3:PRI=149793:LIMITS={?- ,0.10,?+,?+}:DEADBAND=0.00;
END;
```

```
LOOP NINETY NINE;
DEF :TAG=PERIOD=1;
END;
```

micl7 r0

```

LOOP ZERO;
DEF :TAG=AI CON 1.,AI SF 1A.,AI SF 2A.,AI DPY 1.,AI AC 1A.,AI AC 2A.,AI DPY 2.,AI DPY 4.,AI EF 1A.,
    AI EF 2A.,AI RF 1A.,AI RF 2A.,AI DPY 1A.,AI DPY 5.,AI 1 1A.,AI 1 2A.,AI SF 5A.,AI SF 6A.,AI VP 1A.,
    AI DPY 6.,AI CON 2.,AI SF 3A.,AI SF 4A.,AI DPY 3.,AI VP 2A.;
DEF :TAG=II 1 1.,II 1 2.,II AC 1.,II AC 2.,II CONDI.,II CONDI.,II EF 1.,II EF 2.,II RF 1.,II RF 2.,
    II SF 1.,II SF 2.,II SF 3.,II SF 4.,II SF 5.,II SF 6.,II VP 1.,PDI 1A.,PDI 2A.,PDI 3.,PDI 4A.,
    PDI 5A.,PDI 6A.,PI 1A.,II VP 2.;
DEF :TAG=PERIOD=1;
END;

```

```

LOOP MISC M17.;
DEF :TAG=PERIOD=0.30,SP RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M RESET=0.00;
AI :TAG=AI CON 1.:CHAN=1:SPANLO=0.00:SPANHI=100.00;
LET :TAG=II CONDI.=MSV; /*ZB CONDENSER 1 AMPS*/
AI :TAG=AI SF 1A.:CHAN=2:SPANLO=0.00:SPANHI=40.00;
LET :TAG=II SF 1.=MSV; /*ZB SF-1 AMPS*/
AI :TAG=AI SF 2A.:CHAN=3:SPANLO=0.00:SPANHI=40.00;
LET :TAG=II SF 2.=MSV; /*ZB SF-2 AMPS*/
AI :TAG=AI DPY 1.:CHAN=4:SPANLO=-10.00:SPANHI=10.00;
LET :TAG=PDI 1A.=MSV; /*ADM AREA BALANCE*/
AI :TAG=AI AC 1A.:CHAN=5:SPANLO=0.00:SPANHI=40.00;
LET :TAG=II AC 1.=MSV; /*AIR COMP 1 AMPS*/
AI :TAG=AI AC 2A.:CHAN=6:SPANLO=0.00:SPANHI=40.00;
LET :TAG=II AC 2.=MSV; /*AIR COMP 2 AMPS*/
AI :TAG=AI DPY 2.:CHAN=7:SPANLO=-10.00:SPANHI=10.00;
LET :TAG=PDI 2A.=MSV; /*PROCESS AREA BALANCE*/
AI :TAG=AI DPY 4.:CHAN=8:SPANLO=-10.00:SPANHI=10.00;
LET :TAG=PDI 4A.=MSV; /*GLOVEBOX BALANCE*/
AI :TAG=AI EF 1A.:CHAN=9:SPANLO=0.00:SPANHI=50.00;
LET :TAG=II EF 1.=MSV; /*EF-1 AMPS*/

```

```

AI : TAG=AI EF 2A.:CHAN=10:SPANLO=0.00:SPANHI=50.00;
LET : TAG=II EF 2.=MSV; /*EF-2 AMPS*/
AI : TAG=AI RF 1A.:CHAN=11:SPANLO=0.00:SPANHI=40.00;
LET : TAG=II RF 1.=MSV; /*RF-1 AMPS*/
AI : TAG=AI RF 2A.:CHAN=12:SPANLO=0.00:SPANHI=40.00;
LET : TAG=II RF 2.=MSV; /*RF-2 AMPS*/
AI : TAG=AI DPY1A.:CHAN=13:SPANLO=50.00:SPANHI=100.00;
LET : TAG=PI 1A.=MSV; /*INSTR AIR PRESS*/
AI : TAG=AI DPY 5.:CHAN=14:SPANLO=-10.00:SPANHI=10.00;
LET : TAG=PDI 5A.=MSV; /*EXHAUST PLENUM BALANCE*/
AI : TAG=AI I 1A.:CHAN=15:SPANLO=0.00:SPANHI=50.00;
LET : TAG=II I 1.=MSV; /*EF-1-1 AMPS*/
AI : TAG=AI I 2A.:CHAN=16:SPANLO=0.00:SPANHI=50.00;
LET : TAG=II I 2.=MSV; /*EF-1-2 AMPS*/
AI : TAG=AI SF 5A.:CHAN=17:SPANLO=0.00:SPANHI=20.00;
LET : TAG=II SF 5.=MSV; /*SF-5 AMPS*/
AI : TAG=AI SF 6A.:CHAN=18:SPANLO=0.00:SPANHI=20.00;
LET : TAG=II SF 6.=MSV; /*SF-6 AMPS*/
AI : TAG=AI VP 1A.:CHAN=19:SPANLO=0.00:SPANHI=40.00;
LET : TAG=II VP 1.=MSV; /*VAC PUMP 1 AMPS*/
AI : TAG=AI DPY 6.:CHAN=20:SPANLO=-10.00:SPANHI=10.00;
LET : TAG=PDI 6A.=MSV; /*2736-Z BALANCE*/
AI : TAG=AI CON 2.:CHAN=21:SPANLO=0.00:SPANHI=100.00;
LET : TAG=II COND2.=MSV; /*CONDENSER 2 AMPS*/
AI : TAG=AI SF 3A.:CHAN=22:SPANLO=0.00:SPANHI=20.00;
LET : TAG=II SF 3.=MSV; /*SF-3 AMPS*/
AI : TAG=AI SF 4A.:CHAN=23:SPANLO=0.00:SPANHI=20.00;
LET : TAG=II SF 4.=MSV; /*SF-4 AMPS*/
AI : TAG=AI DPY 3.:CHAN=24:SPANLO=-10.00:SPANHI=10.00;
LET : TAG=PDI 3.=MSV; /*NDA AREA BALANCE*/
AI : TAG=AI VP 2A.:CHAN=25:SPANLO=0.00:SPANHI=40.00;
LET : TAG=II VP 2.=MSV; /*VP-2 AMPS*/
END;

```


WHC-SD-CP-CSWD-016

Volume 4

Revision 1

Page 174

```
LOOP    NINETY NINE;  
ALARM :TAG=PI_1A.:REF=PI_1A.:TYPE=1:PRI=149794:LIMITS={?-,?-,55.00,?+,?+,?+}:DEADBAND=1.00;  
DEF :TAG=PERIOD=1;  
END;
```

mic18_r0

```

LOOP ZERO;
DEF :TAG=IDI_SF_1B.,IDI_SF_1A.,IDI_SF_1B.,IDI_SF_1A.,IDI_SF_1A.,IDI_SF_5B.,
    IDI_SF_5A.,IDI_SF_3B.,IDI_SF_3A.,IDI_SF_21.;
DEF :ACCESS=I:TAG=IHS_1_1.,IHS_SF_1.,IHS_SF_3.,IHS_SF_5.,IHS_SF_1.;
DEF :TAG=IRUN_1_1.,IDO_SF_1.,IDO_SF_1.,IDO_SF_1.,IDO_SF_3.,IDO_SF_1A.,IDO_SF_1.,
    IDO_EV_2.,IDO_EV_11.,IDO_EV_12.,IDO_EV_15.,IDO_EV_16.,IDO_EV_9.,IDO_EV_31.,IDO_EV_33.,IDO_EV_5.,
    IDO_EV_6.;
DEF :TAG=#YI_1_1.,#YI_SF_1.,#YI_SF_1.,#YI_SF_3.,#YI_SF_5.;
DEF :TAG=PERIOD=1;
END;

LOOP EF_1.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
DEF :TAG=ZB_2_2::IFA_EF_2_3::IHS_LL_3,ZB_2_3::IHS_MAIN,ZB_2_3::IHS_MN_S,ZB_2_4::IDI_FS_5,
    ZB_2_4::IXA_CSA,ZB_2_5::IXA_FAZB,ZB_2_6::IXA_FAZN8,ZB_2_2::IDI_EF_2A;
DEF :TAG=I+FA_EF_1.;
DI :TAG=DI_EF_1B.:CHAN=4;
DI :TAG=DI_EF_1A.:CHAN=5;
MULTI STATE DI :TAG=YI_EF_1.:DI1=DI_EF_1A.:DI2=DI_EF_1B.;
DO :TAG=D0_EF_1.:CHAN=6:DAD=0;
DO :TAG=D0_EF_11.:CHAN=22:DAD=0;
DO :TAG=D0_EF_12.:CHAN=23:DAD=0;
LET :TAG=D0_EF_11.=DI_EF_1A.;/*OPEN DM-13 ON EF-1 ON*/
LET :TAG=D0_EF_12.=DI_EF_1A.;/*OPEN DM-14 ON EF-1 ON*/
LET :TAG=XAX_CSA\XAX_FAZB\XAX_FAZN8;/*FIRE ALARM*/
LABEL :TAG=FIRE;
LET :TAG=-IPULSE(-IHS_LL_3&HHS_MAIN)&-IPULSE(HS_LL_3&(FA_EF_2;PULSE(-IDI_EF_2A)));
/*"0" PULSE ON AUTO START OR EF-2 FAIL*/
GOTO :COND=MSV:TAG=JUMPA;/*EF-1 "START" JUMP*/
LET :TAG=HS_EF_1.=1;/*START EF-1*/

```

```

LABEL :TAG=JUMPA;
LET :TAG=NOT PULSE(1);/*PREVENT FALSE START ON RESET*/
GOTO :COND=MSV:TAG=JUMPST;
LET :TAG=HS EF 1.=0;
LABEL :TAG=JUMPST;
LET :TAG=NOT PULSE(HS MN S,5);/*"0" PULSE ON MAIN STOP*/
GOTO :COND=MSV:TAG=JUMPB;/*EF-1 "STOP" JUMP*/
LET :TAG=HS EF 1.=0;/*STOP EF-1*/
LABEL :TAG=JUMPB;
LET :TAG=NOT FIRE;/*EF-1 HELD ON "STOP" IF COLD SMOKE ALARM*/
GOTO :COND=MSV:TAG=JUMPC;/*COLD SMOKE "STOP" JUMP*/
LET :TAG=HS EF 1.=0;/*HOLD EF-1 ON "STOP"*/
LABEL :TAG=JUMPC;
LATCH :TAG=DO EF 1.:LATCH=PULSE(HS EF 1,5):UNLATCH=NOT HS_EF_1|(DELAY(HS_EF_1,15)&NOT DI_FS_5&NOT HS_LL_3):
    RECALL=0;/*EF-1 CONTROL LOGIC*/
LET :TAG=DELAY(HS_EF_1,15)&NOT (DI_EF_1A&DI_FS_5);/*ALARM ON NO FLOW OR OFF WHEN HS IS ON (EXCEPT STARTUP)*/
LET :TAG=FA EF 1.=MSV;
EXPORT DI_EF_1A,FA_EF_1;
END;

LOOP EF 1 1.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
DEF :TAG=ZB 2 4::DI 1 1B;
DEF :TAG=I+FA 1 1.;
DI :TAG=DI 1 1A.:CHAN=10;
MULTI STATE DI :TAG=YI 1 1.:DI1=RUN_1_1.:DI2=DI 1 1A.;
DI :TAG=DI KFS21.:CHAN=18;
DO :TAG=DO 1 1.:CHAN=11:DAD=0;
DO :TAG=DO EV 33.:CHAN=28:DAD=0;
LET :TAG=DO EV 33.=DI 1 1B.;/*OPEN DM-28 ON EF-1-1 RUN*/
LET :TAG=NOT IXA CSA;/*HELD ON "STOP" IF COLD SMOKE ALARM*/
GOTO :COND=MSV:TAG=JUMPA;/*COLD SMOKE "STOP" JUMP*/
LET :TAG=HS_1_1.=0;/*STOP EF-1-1*/

```

```

LABEL :TAG=JUMPA;
LATCH :TAG=DO 1 1.:LATCH=PULSE(HS 1 1,5):UNLATCH=-HS 1 1;(DELAY(HS 1 1,30)&-IDI_KFS21):RECALL=0;
/*EF-1-I CONTROL LOGIC*/
LET :TAG=DELAY(HS 1 1,30)&-(IDI 1 1B&IDI_KFS21);/*ALARM ON NO FLOW OR OFF WHEN HS IS ON (EXCEPT STARTUP)*/
LET :TAG=FA 1 1.=MSV;
LET :TAG=(HS 1 1&-FA 1 1)|DI 1 1B;/*PSUEDO RUN = (HS ON AND NO FLOW ALARM) OR REAL RUN*/
LET :TAG=RUN 1 1.=MSV;
EXPORT HS 1 1,RUN 1 1,FA 1 1;
END;

LOOP RF 1.;
DEF :TAG=PERIOD=0.30,SP RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
BIAS=0.00,CGAIN=0.20,CRESET=10.00,GRATE=0.00,M RESET=0.00;
DEF :TAG=ZB 2 2::IFA RF 2,ZB 2 3::IHS LL 4,ZB 2 3::IHS_NDA,ZB 2 3::IHS_NDA_S,ZB 2 4::IDI_FS 7,
ZB 2 2::IDI_RF 2A;
DEF :TAG=I+FA RF 1.;
DI :TAG=DI RF 1B.:CHAN=7;
DI :TAG=DI RF 1A.:CHAN=8;
MULTI STATE DI :TAG=YI RF 1.:DI1=DI RF 1A.:DI2=DI RF 1B.;
DO :TAG=DO RF 1.:CHAN=9:DAD=0;
DO :TAG=DO EV 15.:CHAN=24:DAD=0;
DO :TAG=DO EV 16.:CHAN=25:DAD=0;
LET :TAG=DO EV 15.=DI RF 1A.;/*OPEN DM-17 ON RF-1 ON*/
LET :TAG=DO EV 16.=DI RF 1A.;/*OPEN DM-18 ON RF-1 ON*/
LET :TAG=XA CSA XA FAZB XA FAZN8;/*FIRE ALARM*/
LABEL :TAG=FIRE;
LET :TAG=-I PULSE(-IHS LL 4&HS_NDA)&-I PULSE(HS LL 4&(FA RF 2 I PULSE(-IDI_RF 2A)));
/*PULSE "0" ON AUTO START OR RF-2 FAIL*/
GOTO :COND=MSV:TAG=JUMPA;/*RF-1 START JUMP*/
LET :TAG=HS RF 1.=1;
LABEL :TAG=JUMPA;
LET :TAG=-I PULSE(1);/*PREVENT FALSE START ON RESET*/
GOTO :COND=MSV:TAG=JUMPST;
LET :TAG=HS RF 1.=0;

```

```

LABEL :TAG=JUMPST;
LET :TAG=-!PULSE(HS_NDA_S,5);/*PULSE "0" ON NDA STOP*/
GOTO :COND=MSV:TAG=JUMPB;/*RF-1 STOP JUMP*/
LET :TAG=HS_RF_1.=0;
LABEL :TAG=JUMPB;
LET :TAG=-!FIRE;/*HOLD ON "STOP" IF FIRE ALARM*/
GOTO :COND=MSV:TAG=JUMPC;/*RF-1 FIRE "STOP" JUMP*/
LET :TAG=HS_RF_1.=0;
LABEL :TAG=JUMPC;
LATCH :TAG=DO_RF_1.:LATCH=PULSE(HS_RF_1,5):UNLATCH=-HS_RF_1:(DELAY(HS_RF_1,15)&-IDI_FS_7&-IHS_LL_4):
RECALL=0;/*RF-1 CONTROL LOGIC*/
LET :TAG=DELAY(HS_RF_1,15)&-(IDI_RF_1A&IDI_FS_7);/*ALARM ON NO FLOW OR OFF WHEN HS IS ON (EXCEPT STARTUP)*/
LET :TAG=FA_RF_1.=MSV;
EXPORT DI_RF_1A,FA_RF_1;
END;

LOOP_SF_1.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
DEF :TAG=ZB_2_2::IFA_SF_2,ZB_2_3::IHS_LL1,ZB_2_4::IDI_FS_1,ZB_2_5::IDI_DPS_2,ZB_2_2::IDI_SF_2A;
DEF :TAG=I+2FA_SF_1.;
DI :TAG=DI_SF_1B.:CHAN=1;
DI :TAG=DI_SF_1A.:CHAN=2;
MULTI STATE DI :TAG=YI_SF_1.:DI1=DI_SF_1A.:DI2=DI_SF_1B.;
DO :TAG=DO_SF_1.:CHAN=3:DAD=0;
DO :TAG=DO_EV_1.:CHAN=20:DAD=0;
DO :TAG=DO_EV_2.:CHAN=21:DAD=0;
LET :TAG=DO_EV_1.=DI_SF_1A.;/*OPEN DM-1 ON SF-1 ON*/
LET :TAG=DO_EV_2.=DI_SF_1A.;/*OPEN DM-3 ON SF-1 ON*/
LET :TAG=XACSA|XAFZB|XAFZN8;/*FIRE ALARM*/
LABEL :TAG=FIRE;
LET :TAG=-!PULSE(-IHS_LL1&PULSE(DI_DPS_2))&-!PULSE(HS_LL1&FA_SF_2&IDI_DPS_2)&-!PULSE(HS_LL1&
PULSE(-IDI_SF_2A)&DELAY(DI_DPS_2,1));/*"0" PULSE ON EXHAUST DP_UP OR SF-2 FAIL*/
GOTO :COND=MSV:TAG=JUMPA;/*SF-1 START JUMP*/

```

```

LET :TAG=HS_SF_1.=1;
LABEL :TAG=JUMPA;
LET :TAG=-1PULSE(1);
GOTO :COND=MSV:TAG=JUMPST;
LET :TAG=HS_SF_1.=0;
LABEL :TAG=JUMPST;
LET :TAG=-1PULSE(HS_MN_S1-IDI_DPS_2,5);/*"0" PULSE ON MAIN STOP OR LO EXHAUST DP*/
GOTO :COND=MSV:TAG=JUMPB;/*STOP JUMP*/
LET :TAG=HS_SF_1.=0;
LABEL :TAG=JUMPB;
LET :TAG=-1FIRE;/*HOLD ON "STOP" IF FIRE ALARM*/
GOTO :COND=MSV:TAG=JUMPC;/*SF-1 FIRE ALARM STOP JUMP*/
LET :TAG=HS_SF_1.=0;
LABEL :TAG=JUMPC;
LATCH :TAG=DO_SF_1::LATCH=PULSE(HS_SF_1,5):UNLATCH=-HS_SF_1:(DELAY(HS_SF_1,15)&-IDI_FS_1&-IHS_LL1):
RECALL=0;/*SF-1 CONTROL LOGIC*/
LET :TAG=DELAY(HS_SF_1,15)&-(IDI_SF_1&IDI_FS_1);/*ALARM ON NO FLOW OR OFF WHEN HS IS ON (EXCEPT STARTUP)*/
LET :TAG=FA_SF_1.=MSV;
EXPORT DI_SF_1A,FA_SF_1;
END;

LOOP SF_3.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
DEF :TAG=ZB_2_2::IFA_SF_4,ZB_2_3::IHS_LL2,ZB_2_4::IDI_FS_3,ZB_2_2::IDI_SF_4A;
DEF :TAG=1+2FA_SF_3.;
DI :TAG=DI_SF_3B.:CHAN=15;
DI :TAG=DI_SF_3A.:CHAN=16;
MULTI STATE DI :TAG=YI_SF_3.:DI1=DI_SF_3A.:DI2=DI_SF_3B.;
DO :TAG=DO_SF_3.:CHAN=17:DAD=0;
DO :TAG=DO_EV_5.:CHAN=29:DAD=0;
DO :TAG=DO_EV_6.:CHAN=30:DAD=0;
LET :TAG=DO_EV_5.=DI_SF_3A.;/*OPEN DM-7 ON SF-3 ON*/
LET :TAG=DO_EV_6.=DI_SF_3A.;/*OPEN DM-8 ON SF-3 ON*/

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LET :TAG=XA CSA|XA_FAZB|XA_FAZN8; /*FIRE ALARM*/
LABEL :TAG=FIRE;
LET :TAG=(-IFA_RF_1&DI_RF_1A)|(-IFA_RF_2&DI_RF_2A); /*RETURN FAN "ON" SIGNAL*/
LABEL :TAG=RFON;
LET :TAG=-!PULSE(-IHS_LL2&PULSE(RFON))&-!PULSE(HS_LL2&FA_SF_4&RFON)&-!PULSE(HS_LL2&PULSE(-IDI_SF_4A)&
    DELAY(RFON,1)); /*"0" PULSE ON RFS ON OR SF-4 FAIL*/
GOTO :COND=MSV:TAG=JUMPA; /*SF-3 START JUMP*/
LET :TAG=HS_SF_3.=1;
LABEL :TAG=JUMPA;
LET :TAG=-!PULSE(1);
GOTO :COND=MSV:TAG=JUMPST;
LET :TAG=HS_SF_3.=0;
LABEL :TAG=JUMPST;
LET :TAG=-!PULSE(HS_NDA_S,5)&-!PULSE(-IRFON); /*"0" PULSE ON NDA STOP OR RFS OFF*/
GOTO :COND=MSV:TAG=JUMPB; /*STOP JUMP*/
LET :TAG=HS_SF_3.=0;
LABEL :TAG=JUMPB;
LET :TAG=-!FIRE; /*HOLD ON "STOP" IF FIRE ALARM*/
GOTO :COND=MSV:TAG=JUMPC; /*FIRE ALARM STOP JUMP*/
LET :TAG=HS_SF_3.=0;
LABEL :TAG=JUMPC;
LATCH :TAG=DO_SF_3.:LATCH=PULSE(HS_SF_3,5):UNLATCH=-HS_SF_3:(DELAY(HS_SF_3,15)&-IDI_FS_3&-IHS_LL2):
    RECALL=0; /*SF-3 CONTROL LOGIC*/
LET :TAG=DELAY(HS_SF_3,15)&-(IDI_SF_3A&IDI_FS_3); /*ALARM ON NO FLOW OR OFF WHEN HS IS ON (EXCEPT STARTUP)*/
LET :TAG=FA_SF_3.=MSV;
EXPORT DI_SF_3A,FA_SF_3;
END;

LOOP SF_5.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
DEF :TAG=ZB_2_4::DI_FS_10;
DEF :TAG=|+2FA_SF_5.;
DI :TAG=DI_SF_5B.:CHAN=12;

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LOOP MISC M18.:

WHC-SD-CP-CSWD-016

Volume 4

Revision 1

Page 182

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LOOP  NINETY NINE;  
DEF :TAG=PERIOD=1;  
END;
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mic19_r0

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LOOP ZERO;
DEF :TAG=IDI_SF_2B.,IDI_SF_2A.,IDI_SF_2B.,IDI_SF_2A.,IDI_SF_2A.,IDI_SF_2A.,IDI_SF_2A.,
    IDI_SF_6A.,IDI_SF_4B.,IDI_SF_4A.,IDI_SF_11.;
DEF :ACCESS=I:TAG=IHS_1_2.,IHS_SF_2.,IHS_SF_2.,IHS_SF_4.,IHS_SF_6.,IHS_SF_2.;
DEF :TAG=IRUN_1_2.,IDO_SF_2.,IDO_SF_2.,IDO_SF_2.,IDO_SF_2.,IDO_SF_2.,IDO_SF_2A.,IDO_SF_3.,
    IDO_EV_4.,IDO_EV_13.,IDO_EV_14.,IDO_EV_17.,IDO_EV_18.,IDO_EV_10.,IDO_EV_32.,IDO_EV_34.,IDO_EV_7.,
    IDO_EV_8.;
DEF :TAG=#YI_1_2.,#YI_SF_2.,#YI_SF_2.,#YI_SF_4.,#YI_SF_6.;
DEF :TAG=PERIOD=1;
END;

LOOP EF_2.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHLM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
DEF :TAG=ZB_2_1::IFA_EF_1,ZB_2_3::IHS_LL_3,ZB_2_3::IHS_MAIN,ZB_2_3::IHS_MN_S,ZB_2_5::IDI_FS_6,
    ZB_2_4::IXA_CSA,ZB_2_5::IXA_FAZB,ZB_2_6::IXA_FAZN8,ZB_2_1::IDI_EF_1A;
DEF :TAG=I+FA_EF_2.;
DI :TAG=DI_EF_2B.:CHAN=4;
DI :TAG=DI_EF_2A.:CHAN=5;
MULTI STATE DI :TAG=YI_EF_2.:DI1=DI_EF_2A.:DI2=DI_EF_2B.;
DO :TAG=DO_EF_2.:CHAN=6:DAD=0;
DO :TAG=DO_EV_13.:CHAN=22:DAD=0;
DO :TAG=DO_EV_14.:CHAN=23:DAD=0;
LET :TAG=DO_EV_13.=DI_EF_2A.;/*OPEN DM-15 ON EF-2 ON*/
LET :TAG=DO_EV_14.=DI_EF_2A.;/*OPEN DM-16 ON EF-2 ON*/
LET :TAG=XA_CSA|XA_FAZB|XA_FAZN8;/*FIRE ALARM*/
LABEL :TAG=FIRE;
LET :TAG=-I:PULSE(HS_LL_3&HS_MAIN)&-I:PULSE(-IHS_LL_3&(FA_EF_1:I:PULSE(-IDI_EF_1A)));
/*"0" PULSE ON AUTO START OR EF-1 FAIL*/
GOTO :COND=MSV:TAG=JUMPA;/*EF-2 "START" JUMP*/
LET :TAG=HS_EF_2.=1;/*START EF-2*/

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LABEL :TAG=JUMPA;
LET :TAG=-!PULSE(1);/*PREVENT FALSE START ON RESET*/
GOTO :COND=MSV:TAG=JUMPST;
LET :TAG=HS EF 2.=0;
LABEL :TAG=JUMPST;
LET :TAG=-!PULSE(HS MN S,5);/*"0" PULSE ON MAIN STOP*/
GOTO :COND=MSV:TAG=JUMPB;/*EF-2 "STOP" JUMP*/
LET :TAG=HS EF 2.=0;/*STOP EF-2*/
LABEL :TAG=JUMPB;
LET :TAG=-!FIRE;/*HELD ON "STOP" IF COLD SMOKE ALARM*/
GOTO :COND=MSV:TAG=JUMPC;/*COLD SMOKE "STOP" JUMP*/
LET :TAG=HS EF 2.=0;/*HOLD EF-2 ON "STOP"*/
LABEL :TAG=JUMPC;
LATCH :TAG=DO EF 2.:LATCH=PULSE(HS EF 2,5):UNLATCH=HS EF 2!(DELAY(HS EF 2,15)&!DI FS 6&HS LL 3):
RECALL=0;/*EF-2 CONTROL LOGIC*/
LET :TAG=DELAY(HS EF 2,15)&-(!DI EF 2A&!DI FS 6);/*ALARM ON NO FLOW OR OFF WHEN HS IS ON (EXCEPT STARTUP)*/
LET :TAG=FA EF 2.=MSV;
EXPORT DI EF 2A,FA EF 2;
END;

LOOP EF 1 2.;
DEF :TAG=PERIOD=0.30,SP RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M RESET=0.00;
DEF :TAG=ZB 2 1::!FA 1 1,ZB 2 1::!RUN 1 1,ZB 2 1::!FA SF 5,ZB 2 1::!DI SF 5A,ZB 2 5::!DI 1 2B;
DEF :TAG=|+FA 1 2.;
DI :TAG=DI 1 2A.:CHAN=10;
MULTI STATE DI :TAG=YI 1 2.:DI1=RUN 1 2.:DI2=DI 1 2A.;
DI :TAG=DI KFS11.:CHAN=18;
DO :TAG=DO 1 2.:CHAN=11:DAD=0;
DO :TAG=DO EV 34.:CHAN=28:DAD=0;
LET :TAG=DO EV 34.=DI 1 2B.;/*OPEN DM-29 OF EF-1-2 RUN*/
LET :TAG=-!PULSE(FA 1 1)|DI SF 5A;/*"0" PULSE ON EF-1-1 FAILED AND SF-5 OFF*/
GOTO :COND=MSV:TAG=JUMPA;/*EF-1-1 FAILURE JUMP*/
LET :TAG=HS 1 2.=1;/*"START" EF-1-2*/

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LABEL :TAG=JUMPA;
LET :TAG=-!PULSE(DELAY(DI_SF_5A,10))|-!RUN_1_1|FA_1_1;
/*"0" PULSE 10 SEC AFTER SF-5 START IF EF-1-1 RUNNING*/
GOTO :COND=MSV:TAG=JUMPB; /*AUTO START JUMP*/
LET :TAG=HS_1_2.=1; /*START EF-1-2*/
LABEL :TAG=JUMPB;
LET :TAG=-!XA_CSA; /*HOLD ON "STOP" IF COLD SMOKE ALARM*/
GOTO :COND=MSV:TAG=JUMPC; /*COLD SMOKE ALARM JUMP*/
LET :TAG=HS_1_2.=0; /*STOP EF-1-2*/
LABEL :TAG=JUMPC;
LATCH :TAG=DO_1_2.:LATCH=PULSE(HS_1_2):UNLATCH=-HS_1_2|(DELAY(HS_1_2,30)&-!DI_KFS11&RUN_1_1):
RECALL=0; /*EF-1-2 CONTROL LOGIC*/
LET :TAG=HS_1_2&-!PULSE(HS_1_2,30)&-(!DI_1_2B&!DI_KFS11);
/*ALARM ON NO FLOW OR OFF WHEN HS IS ON (EXCEPT STARTUP)*/
LET :TAG=FA_1_2.=MSV;
LET :TAG=(HS_1_2&-FA_1_2)|DI_1_2B; /*PSEUDO RUN = (HS ON AND NO FLOW ALRM) OR REAL RUN ON*/
LET :TAG=RUN_1_2.=MSV;
EXPORT HS_1_2,RUN_1_2,FA_1_2;
END;

LOOP RF_2.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M RESET=0.00;
DEF :TAG=ZB_2_1::!FA_RF_1,ZB_2_3::!HS_LL_4,ZB_2_3::!HS_NDA,ZB_2_3::!HS_NDA_S,ZB_2_5::!DI_FS_8,
ZB_2_1::!DI_RF_1A;
DEF :TAG=|+FA_RF_2.;
DI :TAG=DI_RF_2B.:CHAN=7;
DI :TAG=DI_RF_2A.:CHAN=8;
MULTI STATE DI :TAG=YI_RF_2.:DI1=DI_RF_2A.:DI2=DI_RF_2B.;
DO :TAG=DO_RF_2.:CHAN=9:DAD=0;
DO :TAG=DO_EV_17.:CHAN=24:DAD=0;
DO :TAG=DO_EV_18.:CHAN=25:DAD=0;
LET :TAG=DO_EV_17.=DI_RF_2A.; /*OPEN DM-19 ON RF-2 ON*/
LET :TAG=DO_EV_18.=DI_RF_2A.; /*OPEN DM-20 ON RF-2 ON*/

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LET :TAG=X_A CSA,X_A_FAZB,X_A_FAZN8; /*FIRE ALARM*/
LABEL :TAG=FIRE;
LET :TAG=-!PULSE(HS_LL_4&HS_NDA)&-!PULSE(-!HS_LL_4&(FA_RF_1!PULSE(-!DI_RF_1A))) );
/*PULSE "0" ON AUTO START OR RF-1 FAIL*/
GOTO :COND=MSV:TAG=JUMPA; /*RF-2 START JUMP*/
LET :TAG=HS_RF_2.=1;
LABEL :TAG=JUMPA;
LET :TAG=-!PULSE(1);
GOTO :COND=MSV:TAG=JUMPST;
LET :TAG=HS_RF_2.=0;
LABEL :TAG=JUMPST;
LET :TAG=-!PULSE(HS_NDA_S,5); /*PULSE "0" ON NDA STOP*/
GOTO :COND=MSV:TAG=JUMPB; /*RF-2 NDA STOP JUMP*/
LET :TAG=HS_RF_2.=0;
LABEL :TAG=JUMPB;
LET :TAG=-!FIRE; /*HOLD ON "STOP" IF FIRE ALARM*/
GOTO :COND=MSV:TAG=JUMPC; /*RF-2 FIRE ALARM STOP JUMP*/
LET :TAG=HS_RF_2.=0;
LABEL :TAG=JUMPC;
LATCH :TAG=DO_RF_2.:LATCH=PULSE(HS_RF_2,5):UNLATCH=-HS_RF_2|(DELAY(HS_RF_2,15)&-!DI_FS_8&HS_LL_4):
RECALL=0; /*RF-2 CONTROL LOGIC*/
LET :TAG=DELAY(HS_RF_2,15)&-(!DI_RF_2A&!DI_FS_8); /*ALARM ON NO FLOW OR OFF WHEN HS IS ON (EXCEPT STARTUP)*/
LET :TAG=FA_RF_2.=MSV;
EXPORT DI_RF_2A,FA_RF_2;
END;

LOOP_SF_2.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
DEF :TAG=ZB_2_1::!FA_SF_1,ZB_2_3::!HS_LL1,ZB_2_5::!DI_FS_2,ZB_2_5::!DI_DPS_2,ZB_2_1::!DI_SF_1A;
DEF :TAG=|+2FA_SF_2.;
DI :TAG=DI_SF_2B.:CHAN=1;
DI :TAG=DI_SF_2A.:CHAN=2;
MULTI_STATE_DI :TAG=YI_SF_2.:DI1=DI_SF_2A.:DI2=DI_SF_2B.;

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DO :TAG=DO_SF_2.:CHAN=3:DAD=0;
DO :TAG=DO_EV_3.:CHAN=20:DAD=0;
DO :TAG=DO_EV_4.:CHAN=21:DAD=0;
LET :TAG=DO_EV_3.=DI_SF_2A.;/*DM-5 OPEN ON SF-2 ON*/
LET :TAG=DO_EV_4.=DI_SF_2A.;/*DM-2 OPEN ON SF-2 ON*/
LET :TAG=XA_CSA|XA_FAZB|XA_FAZN8;/*FIRE ALARM*/
LABEL :TAG=FIRE;
LET :TAG=-!PULSE(HS_LL1&PULSE(DI_DPS_2))&-!PULSE(-!HS_LL1&FA_SF_1&DI_DPS_2)&-!PULSE(-!HS_LL1&
    PULSE(-!DI_SF_1A)&DELAY(DI_DPS_2,1));/*"0" PULSE ON EXHAUST DP UP OR SF-2 FAIL*/
GOTO :COND=MSV:TAG=JUMPA;/*AUTO START JUMP*/
LET :TAG=HS_SF_2.=1;
LABEL :TAG=JUMPA;
LET :TAG=-!PULSE(1);/*PREVENT FALSE START ON RESET*/
GOTO :COND=MSV:TAG=JUMPST;
LET :TAG=HS_SF_2.=0;
LABEL :TAG=JUMPST;
LET :TAG=-!PULSE(HS_MN_S|-!DI_DPS_2,5);/*"0" PULSE ON MAIN STOP OR LO EXHAUST DP*/
GOTO :COND=MSV:TAG=JUMPB;/*STOP JUMP*/
LET :TAG=HS_SF_2.=0;
LABEL :TAG=JUMPB;
LET :TAG=-!FIRE;/*HOLD ON "STOP" IF FIRE ALARM*/
GOTO :COND=MSV:TAG=JUMPC;/*FIRE ALARM STOP JUMP*/
LET :TAG=HS_SF_2.=0;
LABEL :TAG=JUMPC;
LATCH :TAG=DO_SF_2.:LATCH=PULSE(HS_SF_2,5):UNLATCH=-HS_SF_2|(DELAY(HS_SF_2,15)&-!DI_FS_2&HS_LL1):
    RECALL=0;/*SF-2 CONTROL LOGIC*/
LET :TAG=DELAY(HS_SF_2,15)&-(!DI_SF_2A&DI_FS_2);/*ALARM ON NO FLOW OR OFF WHEN HS IS ON (EXCEPT STARTUP)*/
LET :TAG=FA_SF_2.=MSV;
EXPORT DI_SF_2A,FA_SF_2;
END;

LOOP SF_4.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;

```

```

DEF :TAG=ZB 2 1::!FA_SF_3,ZB_2_3::!HS_LL2,ZB_2_5::!DI_FS_4,ZB_2_1::!DI_SF_3A;
DEF :TAG=|+2FA_SF_4.;
DI :TAG=DI_SF_4B.:CHAN=15;
DI :TAG=DI_SF_4A.:CHAN=16;
MULTI STATE DI :TAG=YI_SF_4.:DI1=DI_SF_4A.:DI2=DI_SF_4B.;
DO :TAG=DO_SF_4.:CHAN=17:DAD=0;
DO :TAG=DO_EV_7.:CHAN=29:DAD=0;
DO :TAG=DO_EV_8.:CHAN=30:DAD=0;
LET :TAG=DO_EV_7.=DI_SF_4A.;/*OPEN DM-9 ON SF-4 ON*/
LET :TAG=DO_EV_8.=DI_SF_4A.;/*OPEN DM-10 ON SF-4 ON*/
LET :TAG=XA-CSA|XA-FAZB|XA-FAZN8;/*FIRE ALARM*/
LABEL :TAG=FIRE;
LET :TAG=(-!FA_RF_1&DI_RF_1A)|(-!FA_RF_2&DI_RF_2A);/*RETURN FAN "ON" SIGNAL*/
LABEL :TAG=RFON;
LET :TAG=-!PULSE(HS_LL2&PULSE(RFON))&-!PULSE(-!HS_LL2&FA_SF_3&RFON)&-!PULSE(-!HS_LL2&PULSE(-!DI_SF_3A)&
    DELAY(RFON,1));/*"0" PULSE ON RFs ON OR SF-3 FAIL*/
GOTO :COND=MSV:TAG=JUMPA;/*SF-4 START JUMP*/
LET :TAG=HS_SF_4.=1;
LABEL :TAG=JUMPA;
LET :TAG=-!PULSE(1);/*PREVENT FALSE START ON RESET*/
GOTO :COND=MSV:TAG=JUMPST;
LET :TAG=HS_SF_4.=0;
LABEL :TAG=JUMPST;
LET :TAG=-!PULSE(HS_NDA_S,5)&-!PULSE(-!RFON);/*"0" PULSE ON NDA STOP OR RFs OFF*/
GOTO :COND=MSV:TAG=JUMPB;/*STOP JUMP*/
LET :TAG=HS_SF_4.=0;
LABEL :TAG=JUMPB;
LET :TAG=-!FIRE;/*HOLD ON STOP IF FIRE ALARM*/
GOTO :COND=MSV:TAG=JUMPC;/*FIRE ALARM STOP JUMP*/
LET :TAG=HS_SF_4.=0;
LABEL :TAG=JUMPC;
LATCH :TAG=DO_SF_4.:LATCH=PULSE(HS_SF_4,5):UNLATCH=-HS_SF_4|(DELAY(HS_SF_4,15)&-!DI_FS_4&HS_LL2):
    RECALL=0;/*SF-4 CONTROL LOGIC*/
LET :TAG=DELAY(HS_SF_4,15)&-(!DI_SF_4A&!DI_FS_4);/*ALARM ON NO FLOW OR OFF WHEN HS IS ON (EXCEPT STARTUP)*/

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```
LET :TAG=FA SF 4.=MSV;
EXPORT DI_SF_4A,FA_SF_4;
END;

LOOP SF 6.;
DEF :TAG=PERIOD=0.30,SP RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
DEF :TAG=ZB 2 5::!DI FS 9;
DEF :TAG=|+2FA SF 6.;
DI :TAG=DI_SF_6B.:CHAN=12;
DI :TAG=DI_SF_6A.:CHAN=13;
MULTI STATE DI :TAG=YI_SF_6.:DI1=DI_SF_6A.:DI2=DI_SF_6B.;
DO :TAG=DO_SF_6.:CHAN=14:DAD=0;
DO :TAG=DO_EV_10.:CHAN=26:DAD=0;
DO :TAG=DO_EV_32.:CHAN=27:DAD=0;
LET :TAG=DO_EV_10.=DI_SF_6A.;/*OPEN DM-12 ON SF-6 ON*/
LET :TAG=DO_EV_32.=DI_SF_6A.;/*OPEN DM-27 ON SF-6 ON*/
LET :TAG=-!PULSE(HS 1 2&DI 1 2B&DI KFS11);/*"0" PULSE ON EF-1-2 RUNNING*/
GOTO :COND=MSV:TAG=JUMPA;/*SF-6 START JUMP*/
LET :TAG=HS SF 6.=1;
LABEL :TAG=JUMPA;
LET :TAG=-!PULSE(FA 1 2|-RUN 1 2);/*"0" PULSE ON EF-1-2 FAIL OR OFF*/
GOTO :COND=MSV:TAG=JUMPB;/*STOP JUMP*/
LET :TAG=HS SF 6.=0;
LABEL :TAG=JUMPB;
LET :TAG=-!XA CSA;/*HOLD ON STOP IF COLD SMOKE ALARM*/
GOTO :COND=MSV:TAG=JUMPC;/*COLD SMOKE ALARM STOP JUMP*/
LET :TAG=HS SF 6.=0;
LABEL :TAG=JUMPC;
LATCH :TAG=DO_SF_6.:LATCH=PULSE(HS SF 6,5):UNLATCH=-HS SF 6:RECALL=0;/*SF-6 CONTROL LOGIC*/
LET :TAG=HS SF 6&-!PULSE(HS SF 6,15)&-(!DI_SF_6A&DI_FS_9);
/*ALARM ON NO FLOW OR OFF WHEN HS IS ON (EXCEPT STARTUP)*/
LET :TAG=FA_SF_6.=MSV;
EXPORT DI_SF_6A,FA_SF_6;
```


WHC-SD-CP-CSWD-016

Volume 4

Revision 1

Page 190

END;

LOOP MISC M19.;

DEF :TAG=PERIOD=0.30,SP RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M RESET=0.00;

DO :TAG=DO VP 2A.:CHAN=19:DAD=0;

LET :TAG=DO VP 2A.=HS_VP 2.;/*ZB VACUUM PUMP 2*/

END;

LOOP NINETY NINE;

DEF :TAG=PERIOD=1;

END;

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LOOP ZERO;

DEF :TAG=IDI 2 IPS.,IDI VP 1A.,IDI VP 2A.,IXA SWB 1.;

DEF :ACCESS=I:TAG=IHS 1.,IHS 2.,IHS 3.,IHS 4.,IHS 5.,IHS 6.,IHS_LL1.,IHS_LL2.,IHS_LL_3.,IHS_LL_4.,
IHS MAIN.,IHS_NDA.,IHS_ZA AC.,IHS MN S.,IHS_NDA S.;DEF :TAG=TYI VP 1.,TYI VP 2.,IDO CON 1.,IDO EF 3.,IDO_ZA.,IDO CON 2.,IDO 631.,IDO EV 27.,IDO EV 23.,
IDO EV 25.,IDO EV 26.,IDO EV 19.,IDO EV 20.,IDO EV 21.,IDO EV 22.,IDO EV 28.,IDO EV 29.,IDO EV 30.,
IDO EV 24.,IDO_EV24A.;

DEF :TAG=PERIOD=1;

END;

LOOP COND 1.;

DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;

DEF :TAG=ZB 2 1::IDI SF 1A,ZB 2 2::IDI_SF_2A,ZB 2 4::IXA_CSA;

DO :TAG=DO CON 1.:CHAN=I:DAD=0;

LET :TAG=-TXA CSA&(DI_SF_1A|DI_SF_2A);/*COND 1 ON WHEN SF-1 OR 2 ON IF NO COLD SMOKE ALARM*/

LET :TAG=DO_CON_1.=MSV;

END;

LOOP COND 2.;

DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;

DEF :TAG=ZB 2 1::IDI_SF_3A,ZB 2 2::IDI_SF_4A;

DO :TAG=DO CON 2.:CHAN=5:DAD=0;

LET :TAG=-TXA CSA&(DI_SF_3A|DI_SF_4A);/*COND 2 ON WHEN SF-3 OR 4 ON IF NO COLD SMOKE ALARM*/

LET :TAG=DO_CON_2.=MSV;

END;

LOOP EF 3.;

DEF :TAG=PERIOD=0.30,SP RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;

DEF :TAG=ZB 2 1::!FA_SF_1,ZB 2 2::!FA_SF_2;

DO :TAG=DO EF 3.:CHAN=2:DAD=0;

LET :TAG=(-!FA_SF_1&DI_SF_1A)|(-!FA_SF_2&DI_SF_2A);/*EF-3 ON WHEN SF-1 & SF-2 ON AND NO LOW FLOW*/

LET :TAG=DO EF 3.=MSV;

END;

LOOP EV19.;

DEF :TAG=PERIOD=0.30,SP RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;

DEF :TAG=ZB 2 4::!RAH_NDA;

DO :TAG=DO EV 19.:CHAN=22:DAD=0;

LET :TAG=-TXA_CSA&!RAH_NDA;/*RECYCLE MODE ALLOWED IF NO CAM OR COLD SMOKE ALARM*/

LET :TAG=DO EV 19.=MSV;

END;

LOOP EV20.;

DEF :TAG=PERIOD=0.30,SP RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;

DEF :TAG=ZB 2 1::!DI_RF_1A,ZB 2 2::!DI_RF_2A;

DO :TAG=DO EV 20.:CHAN=23:DAD=0;

LET :TAG=-!DI_RF_1A&!DI_RF_2A;/*AIR ON TO M2 IF RF-1 OR 2 IS ON*/

LET :TAG=DO EV 20.=MSV;

END;

```

LOOP EV21.;
DEF :TAG=PERIOD=0.30,SP RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M RESET=0.00;
DEF :TAG=ZB 2 1::IDI EF 1A,ZB 2 2::IDI EF 2A;
DO :TAG=DO EV 21::CHAN=24:DAD=0;
LET :TAG=-IDI EF 1A&-IDI EF 2A; /*M1 AIR ON IF EF-1 OR EF-2 ON*/
LET :TAG=DO EV 21.=MSV;
END;

LOOP EV22.;
DEF :TAG=PERIOD=0.30,SP RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M RESET=0.00;
DEF :TAG=ZB 2 1::IRUN 1 1,ZB 2 2::IRUN 1 2;
DO :TAG=DO EV 22::CHAN=25:DAD=0;
LET :TAG=(-IRUN 1 1&-IRUN 1 2)|XA CSA; /*M3 AIR ON IF EF-1-1 OR EF-1-2 ON AND NO COLD SMOKE ALARM*/
LET :TAG=DO EV 22.=MSV;
END;

LOOP EV23.;
DEF :TAG=PERIOD=0.30,SP RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M RESET=0.00;
DEF :TAG=ZB 2 4::IPDAL 1Z,ZB 2 5::IXA FAZB,ZB 2 6::IXA FAZN8;
DO :TAG=DO EV 23::CHAN=19:DAD=0;
LET :TAG=XA CSA|XA FAZB|XA FAZN8; /*MAKE ONE FIRE ALARM FROM THREE*/
LABEL :TAG=FIREAL;
LET :TAG=(-IFIREAL&-IPDAL 1Z)&(DI EF 1A|DI EF 2A); /*DRY AIR ON NO FIRE OR DP ALARMS AND EF-1 OR EF-2 ON*/
LET :TAG=DO EV 23.=MSV;
END;

```

```

LOOP EV24A.;
DEF :TAG=PERIOD=0.30,SP RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M RESET=0.00;
DEF :TAG=ZB 2 5::IDI PS 8;
DO :TAG=DO EV24A.:CHAN=30:DAD=0;
LET :TAG=IDI PS 8; /*EV-24A TO OVERRIDE ON LO NDA DP*/
LET :TAG=DO EV24A.=MSV;
END;

LOOP EV29.;
DEF :TAG=PERIOD=0.30,SP RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M RESET=0.00;
DEF :TAG=ZB 2 1::IDI SF 5A,ZB 2 2::IDI SF 6A;
DO :TAG=DO EV29.:CHAN=27:DAD=0;
LET :TAG=DI SF 5A|DI SF 6A; /*DAMPER CLOSED WHEN SF-5 OR 6 ARE OFF*/
LET :TAG=DO EV29.=MSV;
END;

LOOP MISC M20.;
DEF :TAG=PERIOD=0.30,SP RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M RESET=0.00;
DEF :TAG=I+2PA ZA AC.;
DI :TAG=DI 2 1PS.:CHAN=-4;
LET :TAG=PA ZA AC.=DI 2 1PS.; /*INTR AIR ALARM 2736-ZA*/
DO :TAG=DO ZA.:CHAN=3:DAD=0;
LET :TAG=DO ZA.=HS ZA AC.; /*INSTR AIR COMPR 2736-ZA*/
DO :TAG=DO EV 27.:CHAN=18:DAD=0;
LET :TAG=DO EV 27.=HS 1.; /*ADMIN AREA ZN IV AUTO/MANUAL*/
DO :TAG=DO EV 25.:CHAN=20:DAD=0;
LET :TAG=DO EV 25.=HS 4.; /*GLOVEBOX AUTO/MANUAL*/
DO :TAG=DO EV 26.:CHAN=21:DAD=0;
LET :TAG=DO EV 26.=HS 2.; /*PROCESS AREA AUTO/MANUAL*/
DO :TAG=DO EV 28.:CHAN=26:DAD=0;
LET :TAG=DO EV 28.=HS 5.; /*EXHAUST PLENUM AUTO/MANUAL*/

```

```
DO :TAG=DO EV 30.:CHAN=28:DAD=0;
LET :TAG=DO EV 30.=HS 6.;/*2736-Z AUTO/MANUAL*/
DO :TAG=DO EV 24.:CHAN=29:DAD=0;
LET :TAG=DO EV 24.=HS 3.;/*NDA AREA AUTO/MANUAL*/
LET :TAG=-!PULSE(DELAY(HS MAIN,5));/*SIMULATE BUTTON ACTIVATE TURN OFF LOOP AFTER 5 SEC*/
GOTO :COND=MSV:TAG=BUTMN;
LET :TAG=HS MAIN.=0;/*MAIN AUTOSTART SWITCH*/
LABEL :TAG=BUTMN;
LET :TAG=-!PULSE(DELAY(HS NDA,5));/*SIMULATE BUTTON*/
GOTO :COND=MSV:TAG=BUTNDA;
LET :TAG=HS NDA.=0;/*NDA AUTOSTART SWITCH*/
LABEL :TAG=BUTNDA;
LET :TAG=-!PULSE(DELAY(HS MN_S,5));/*SIMULATE BUTTON*/
GOTO :COND=MSV:TAG=BUTMNS;
LET :TAG=HS MN S.=0;/*MAIN EMERG STOP*/
LABEL :TAG=BUTMNS;
LET :TAG=-!PULSE(DELAY(HS NDA_S,5));/*SIMULATE BUTTON*/
GOTO :COND=MSV:TAG=BUTNDAS;
LET :TAG=HS NDA S.=0;/*NDA EMERG SHUTDOWN*/
LABEL :TAG=BUTNDAS;
DI :TAG=DI VP 1A.:CHAN=6;
LET :TAG=YI VP 1.=DI VP 1A.;/*VP-1 STATUS*/
DI :TAG=DI VP 2A.:CHAN=7;
LET :TAG=YI VP 2.=DI VP 2A.;/*VP-2 STATUS*/
DI :TAG=XA SWB 1.:CHAN=8:ALARM=1:PRI=3;
DO :TAG=DO 631.:CHAN=17:DAD=0;
LET :TAG=-TRAH NDA;
LET :TAG=DO 631.=MSV;/*OUTPUT TO RM 631 NDA CAM ALARM*/
EXPORT HS_LL1,HS_LL2,HS_LL_3,HS_LL_4,HS_MAIN,HS_NDA,HS_MN_S,HS_NDA_S;
END;

LOOP NINETY NINE;
DEF :TAG=PERIOD=1;
END;
```

mic21_r0

```
LOOP ZERO;
DEF :TAG=IDI 1 1B.,!DI CSA.,!DI FS 1.,!DI FS 5.,!DI FS 7.,!DI FS 10.,!DI FS 3.,!DI DPS 1.,!DI CAM.,
    !XA EGF.,!XA PLC 1.,!LALL_CFT.,!LAL_CFT.,!XA_EGS_1.,!XA_EGS_2.,!TAH_GEN1.,!PAL_GEN1.,!XA_G1_1.,
    !SAH_GEN1.,!YA_G1_1.,!EAL_GEN1.;
DEF :TAG=PERIOD=1;
END;

LOOP MISC M21.;
DEF :TAG=PERIOD=0.30,SP_RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M_RESET=0.00;
DI :TAG=DI 1 1B.:CHAN=1;
DEF :TAG=|+3XA CSA.;
DI :TAG=DI CSA.:CHAN=-2;
LET :TAG=X̄A CSA.=DI CSA.;/*COLD SMOKE ALARM*/
DI :TAG=DI FS 1.:CHAN=3;
DI :TAG=DI FS 5.:CHAN=4;
DI :TAG=DI FS 7.:CHAN=5;
DI :TAG=DI FS 10.:CHAN=6;
DI :TAG=DI FS 3.:CHAN=7;
DEF :TAG=|+4PDAL 1Z.;
DI :TAG=DI DPS 1.:CHAN=-8;
LET :TAG=PDAL 1Z.=DI DPS 1.;/*ZB GLOVEBOX LO PRESS*/
DEF :TAG=|+RAH NDA.;
DI :TAG=DI CAM.:CHAN=-10;
LET :TAG=R̄AH NDA.=DI CAM.;/*ZB NDA CAM ALARM*/
DI :TAG=X̄A EGF.:CHAN=-15:ALARM=1:PRI=3;
DI :TAG=X̄A PLC 1.:CHAN=-16:ALARM=1:PRI=2;
DI :TAG=LALL CFT.:CHAN=17:ALARM=1:PRI=1;
DI :TAG=LAL CFT.:CHAN=18:ALARM=1:PRI=3;
DI :TAG=X̄A EGS 1.:CHAN=-20:ALARM=1:PRI=3;
DI :TAG=X̄A EGS 2.:CHAN=-21:ALARM=1:PRI=3;
```

```

DI :TAG=TAH GEN1::CHAN=22:ALARM=1:PRI=2;
DI :TAG=PAL GEN1::CHAN=23:ALARM=1:PRI=2;
DI :TAG=XA GI 1::CHAN=24:ALARM=1:PRI=1;
DI :TAG=SAH GEN1::CHAN=25:ALARM=1:PRI=2;
DI :TAG=YA GI 1::CHAN=26:ALARM=1:PRI=1;
DI :TAG=EAL GEN1::CHAN=27:ALARM=1:PRI=1;
EXPORT DI_1_1B,DI FS 1,DI FS 5,DI FS 7,DI FS 10,DI FS 3,PDAL_17,RAH_NDA,XA_CSA;
END;

```

```

LOOP NINETY NINE;
DEF :TAG=PERIOD=1;
END;

```


mic22_r0

```

LOOP    ZERO:
DEF :TAG=IDI 1 2B., IDI FA ZB., IDI FS 2., IDI FS 6., IDI FS 8., IDI FS 9., IDI FS 4., IDI DPS 2., IDI PS 8.,
    IYA GI 2., IYA GI 2., ITAH GEN2., IPAL GEN2., IXA G2 1., ISAH GEN2., IYA G2 1., IEAL GEN2., IYA G2 2.,
    IXA G2 2., ITAH GEN3., IPAL GEN3.;
DEF :TAG=PERIOD=1;
END;

LOOP MISC M22.;
DEF :TAG=PERIOD=0.30, SP RATE=10000.00, SPLOLM=0.00, SPHILM=100.00, SPANLO=0.00, SPANH=100.00, RATIO=0.00,
    BIAS=0.00, CGAIN=0.20, CRESET=10.00, CRATE=0.00, M_RESET=0.00;
DI :TAG=DI 1 2B.:CHAN=1;
DEF :TAG=I+3XA FAZB.;
DI :TAG=DI FA ZB.:CHAN=-2;
LET :TAG=XA FAZB.=DI FA ZB.; /*2736-ZB FIRE ALARM*/
DI :TAG=DI FS 2.:CHAN=3;
DI :TAG=DI FS 6.:CHAN=4;
DI :TAG=DI FS 8.:CHAN=5;
DI :TAG=DI FS 9.:CHAN=6;
DI :TAG=DI FS 4.:CHAN=7;
DEF :TAG=I+PDA 2ZB.;
DI :TAG=DI DPS 2.:CHAN=8;
LET :TAG=PDA 2ZB.=DI DPS 2.;
DI :TAG=DI PS 8.:CHAN=10;
DI :TAG=VA GI 2.:CHAN=-15:ALARM=1:PRI=1;
DI :TAG=XA GI 2.:CHAN=-16:ALARM=1:PRI=1;
DI :TAG=TAH GEN2.:CHAN=17:ALARM=1:PRI=2;
DI :TAG=PAL GEN2.:CHAN=18:ALARM=1:PRI=2;
DI :TAG=XA G2 1.:CHAN=19:ALARM=1:PRI=1;
DI :TAG=SAH GEN2.:CHAN=20:ALARM=1:PRI=2;
DI :TAG=VA G2 1.:CHAN=-21:ALARM=1:PRI=1;
DI :TAG=EAL GEN2.:CHAN=22:ALARM=1:PRI=1;

```

```
DI :TAG=YA G2 2.:CHAN=-23:ALARM=1:PRI=1;
DI :TAG=XA G2 2.:CHAN=-24:ALARM=1:PRI=1;
DI :TAG=TAH GEN3.:CHAN=25:ALARM=1:PRI=2;
DI :TAG=PAL GEN3.:CHAN=26:ALARM=1:PRI=2;
EXPORT DI_I_2B,DI_FS_2,DI_FS_4,DI_FS_8,DI_PS_8,XA_FAZB;
END;
```

```
LOOP NINETY NINE;
DEF :TAG=PERIOD=1;
END;
```

WHC-SD-CP-CSWD-016

Volume 4

Revision 1

Page 199

```
DI : TAG=YA G2 2.:CHAN=-23:ALARM=1:PRI=1;
DI : TAG=XA_G2_2.:CHAN=-24:ALARM=1:PRI=1;
DI : TAG=TAH_GEN3.:CHAN=25:ALARM=1:PRI=2;
DI : TAG=PAL_GEN3.:CHAN=26:ALARM=1:PRI=2;
EXPORT DI_1_2B,DI_FS_2,DI_FS_6,DI_FS_8,DI_FS_9,DI_FS_4,DI_DPS_2,DI_PS_8,XA_FAZB;
END;
```

```
LOOP NINETY NINE;
DEF :TAG=PERIOD=1;
END;
```

mic23_r0

```

LOOP ZERO;
DEF :TAG=IDI 1 2C.,IDI FA 2.,IDI FA 8.,IDI ZB BY.,IDI BY 8.,IDI BY 2.,IDI 1 2PS.,IXA 232Z.,IXA G3 1.,
    ISAH GEN3.,IXA G3 1.,IEAL GEN3.,IXA G3 2.,IXA G3 2.,IXA NDA P.,IXA UPS1.,IXA UPS2.,IXA UPS3.;
DEF :TAG=PERIOD=1;
END;

LOOP MISC M23.;
DEF :TAG=PERIOD=0.30,SP RATE=10000.00,SPLOLM=0.00,SPHILM=100.00,SPANLO=0.00,SPANHI=100.00,RATIO=0.00,
    BIAS=0.00,CGAIN=0.20,CRESET=10.00,CRATE=0.00,M RESET=0.00;
DI :TAG=DI 1 2C.:CHAN=1;
DEF :TAG=I+3XA FAZN2.;
DI :TAG=DI FA 2.:CHAN=-2;
LET :TAG=XA FAZN2.=DI FA 2.;/*ZONE II FIRE ALARM*/
DEF :TAG=I+3XA FAZN8.;
DI :TAG=DI FA 8.:CHAN=-3;
LET :TAG=XA FAZN8.=DI FA 8.;/*ZONE 8 FIRE ALARM*/
DEF :TAG=I+3XA FZB B.;
DI :TAG=DI ZB BY.:CHAN=-4;
LET :TAG=XA FZB B.=DI ZB BY.;/*2736-ZB FA BYPASSED*/
DEF :TAG=I+3XA ZN8B.;
DI :TAG=DI BY 8.:CHAN=-5;
LET :TAG=XA ZN8B.=DI BY 8.;/*ZONE 8 BYPASSED*/
DEF :TAG=I+3XA ZN2B.;
DI :TAG=DI BY 2.:CHAN=-6;
LET :TAG=XA ZN2B.=DI BY 2.;/*ZONE II BYPASSED*/
DEF :TAG=I+PA ZBVAC.;
DI :TAG=DI 1 2PS.:CHAN=-9;
LET :TAG=PA ZBVAC.=DI 1 2PS.;/*LOSS OF 17" VAC*/
DI :TAG=XA 232Z.:CHAN=-10:ALARM=1:PRI=1;
DI :TAG=XA G3 1.:CHAN=15:ALARM=1:PRI=1;
DI :TAG=SAH GEN3.:CHAN=16:ALARM=1:PRI=2;

```

```

DI : TAG=VA G3 1.:CHAN=-17:ALARM=1:PRI=1;
DI : TAG=EAL GEN3.:CHAN=18:ALARM=1:PRI=1;
DI : TAG=VA G3 2.:CHAN=-19:ALARM=1:PRI=1;
DI : TAG=XA G3 2.:CHAN=-20:ALARM=1:PRI=1;
DI : TAG=XA_NDA P.:CHAN=21:ALARM=1:PRI=3;
DI : TAG=XA_UPSI.:CHAN=22:ALARM=1:PRI=3;
DI : TAG=XA_UPS2.:CHAN=23:ALARM=1:PRI=3;
DI : TAG=XA_UPS3.:CHAN=24:ALARM=1:PRI=3;
EXPORT XA_FAZN8;
END;

```

```

LOOP NINETY NINE;
DEF :TAG=PERIOD=1;
END;

```

APPENDIX A: MICON INPUT/OUTPUT

Analog inputs and discrete Input/Outputs can be set up in different ways. Analog inputs can be set to accept one of three types of signals: a 4-20 miliamp input with the MICON powering the loop, a 4-20 miliamp input with an external power supply, or a voltage input. Twentyfour volt discrete input/outputs can be set up as an input only, an output only, or as both an input and output. Since the hardware requirements are different for each of these setups, the controller cards have on-board jumpers for each analog input or discrete. These jumpers must be set to the desired type of analog input or discrete for the card to work properly.

Analog outputs are 4-20 miliamp internally powered only. Since they can't be changed they don't have any jumpers.

Before replacing an existing card with a new one or installing a backup card, you must make sure the jumpers in the new card are set the same as the jumpers in the old card.

The following tables show the Input/Output types for each controller card in the 243-Z cabinet. See the *RCM-32 Remote Control Module User Manual* (Vendor Information file 22068) for a description of the I/O jumper placement.

MICON Number: 16 Tag Name: ZB_1_3

Type: RCM-32C

Location: 2736-ZB Room 602 Rack Number: 1 Slot Number: 3

<u>Point</u>	<u>Tag</u>	<u>I/O Type</u>	<u>Jumper Assignment</u> ¹
1	AI_PE_1	Analog Input	4-20 mA MICON Powered
2	AI_PE_2	Analog Input	4-20 mA MICON Powered
3	AI_PE_5	Analog Input	4-20 mA MICON Powered
4	AI_PE_3	Analog Input	4-20 mA MICON Powered
5	AI_PE_7	Analog Input	4-20 mA MICON Powered
6	AI_PE_4	Analog Input	4-20 mA MICON Powered
7	Not Used	Analog Input	Voltage
8	Not Used	Analog Input	Voltage
9	Not Used	Analog Input	Voltage
10	Not Used	Analog Input	Voltage
11	Not Used	Analog Input	Voltage
12	Not Used	Analog Input	Voltage
13	Not Used	Analog Input	Voltage
14	Not Used	Analog Input	Voltage
15	Not Used	Analog Input	Voltage
16	Not Used	Analog Input	Voltage
17	Not Used	Analog Input	Voltage
18	Not Used	Analog Input	Voltage
19	Not Used	Analog Output	N/A
20	Not Used	Analog Output	N/A
21	Not Used	Analog Output	N/A
22	Not Used	Analog Output	N/A
23	Not Used	Analog Output	N/A
24	Not Used	Analog Output	N/A
25	Not Used	Analog Output	N/A
26	Not Used	Analog Output	N/A
27	Not Used	Analog Output	N/A
28	Not Used	Analog Output	N/A
29	Not Used	Analog Output	N/A
30	Not Used	Analog Output	N/A
31	Not Used	Discrete	Input & Output
32	Not Used	Discrete	Input & Output

¹See RCM-32 Remote Control Module User Manual for description of I/O jumper placement.

MICON Number: 17 Tag Name: ZB_1_4

Type: RCM-32A

Location: 2736-ZB Room 602 Rack Number: 1 Slot Number: 4

<u>Point</u>	<u>Tag</u>	<u>I/O Type</u>	<u>Jumper Assignment</u> ¹
1	AI_CON 1	Analog Input	4-20 mA External Power
2	AI_SF 1A	Analog Input	4-20 mA External Power
3	AI_SF 2A	Analog Input	4-20 mA External Power
4	AI_DPY 1	Analog Input	4-20 mA MICON Powered
5	AI_AC 1A	Analog Input	4-20 mA External Power
6	AI_AC 2A	Analog Input	4-20 mA External Power
7	AI_DPY 2	Analog Input	4-20 mA MICON Powered
8	AI_DPY 4	Analog Input	4-20 mA MICON Powered
9	AI_EF 1A	Analog Input	4-20 mA External Power
10	AI_EF 2A	Analog Input	4-20 mA External Power
11	AI_RF 1A	Analog Input	4-20 mA External Power
12	AI_RF 2A	Analog Input	4-20 mA External Power
13	AI_DPY 1A	Analog Input	4-20 mA MICON Powered
14	AI_DPY 5	Analog Input	4-20 mA MICON Powered
15	AI_I 1A	Analog Input	4-20 mA External Power
16	AI_I 2A	Analog Input	4-20 mA External Power
17	AI_SF 5A	Analog Input	4-20 mA External Power
18	AI_SF 6A	Analog Input	4-20 mA External Power
19	AI_VP 1A	Analog Input	4-20 mA External Power
20	AI_DPY 6	Analog Input	4-20 mA MICON Powered
21	AI_CON 2	Analog Input	4-20 mA External Power
22	AI_SF 3A	Analog Input	4-20 mA External Power
23	AI_SF 4A	Analog Input	4-20 mA External Power
24	AI_DPY 3	Analog Input	4-20 mA MICON Powered
25	AI_VP 2A	Analog Input	4-20 mA External Power
26	Not Used	Analog Input	Voltage
27	Not Used	Analog Output	N/A
28	Not Used	Analog Output	N/A
29	Not Used	Analog Output	N/A
30	Not Used	Analog Output	N/A
31	Not Used	Discrete	Input & Output
32	Not Used	Discrete	Input & Output

¹See RCM-32 Remote Control Module User Manual for description of I/O jumper placement.

MICON Number: 18 Tag Name: ZB_2_1 Type: RCM-32Dr

Location: 2736-ZB Room 602 Rack Number: 2 Slot Number: 1

<u>Point</u>	<u>Tag</u>	<u>I/O Type</u>	<u>Jumper Assignment</u> ¹
1	DI_SF_1B	Discrete Input	N/A
2	DI_SF_1A	Discrete Input	N/A
3	DO_SF_1	Discrete Output	N/A
4	DI_EF_1B	Discrete Input	N/A
5	DI_EF_1A	Discrete Input	N/A
6	DO_EF_1	Discrete Output	N/A
7	DI_RF_1B	Discrete Input	N/A
8	DI_RF_1A	Discrete Input	N/A
9	DO_RF_1	Discrete Output	N/A
10	DI_1_1A	Discrete Input	N/A
11	DO_1_1	Discrete Output	N/A
12	DI_SF_5B	Discrete Input	N/A
13	DI_SF_5A	Discrete Input	N/A
14	DO_SF_5	Discrete Output	N/A
15	DI_SF_3B	Discrete Input	N/A
16	DI_SF_3A	Discrete Input	N/A
17	DO_SF_3	Discrete Output	N/A
18	DI_KFS11	Discrete Input	N/A
19	DO_VP_1A	Discrete Output	N/A
20	DO_EV_1	Discrete Output	N/A
21	DO_EV_2	Discrete Output	N/A
22	DO_EV_11	Discrete Output	N/A
23	DO_EV_12	Discrete Output	N/A
24	DO_EV_15	Discrete Output	N/A
25	DO_EV_16	Discrete Output	N/A
26	DO_EV_9	Discrete Output	N/A
27	DO_EV_31	Discrete Output	N/A
28	DO_EV_33	Discrete Output	N/A
29	DO_EV_5	Discrete Output	N/A
30	DO_EV_6	Discrete Output	N/A
31	Not Used	Discrete	N/A
32	Not Used	Discrete	N/A

¹See RCM-32 Remote Control Module User Manual for description of I/O jumper placement.

MICON Number: 19 Tag Name: ZB_2_2

Type: RCM-32Dr

Location: 2736-ZB Room 602 Rack Number: 2 Slot Number: 2

<u>Point</u>	<u>Tag</u>	<u>I/O Type</u>	<u>Jumper Assignment</u> ¹
1	DI_SF_2B	Discrete Input	N/A
2	DI_SF_2A	Discrete Input	N/A
3	DO_SF_2	Discrete Output	N/A
4	DI_EF_2B	Discrete Input	N/A
5	DI_EF_2A	Discrete Input	N/A
6	DO_EF_2	Discrete Output	N/A
7	DI_RF_2B	Discrete Input	N/A
8	DI_RF_2A	Discrete Input	N/A
9	DO_RF_2	Discrete Output	N/A
10	DI_1_2A	Discrete Input	N/A
11	DO_1_2	Discrete Output	N/A
12	DI_SF_6B	Discrete Input	N/A
13	DI_SF_6A	Discrete Input	N/A
14	DO_SF_6	Discrete Output	N/A
15	DI_SF_4B	Discrete Input	N/A
16	DI_SF_4A	Discrete Input	N/A
17	DO_SF_4	Discrete Output	N/A
18	DI_KFS12	Discrete Input	N/A
19	DO_VP_2A	Discrete Output	N/A
20	DO_EV_3	Discrete Output	N/A
21	DO_EV_4	Discrete Output	N/A
22	DO_EV_13	Discrete Output	N/A
23	DO_EV_14	Discrete Output	N/A
24	DO_EV_17	Discrete Output	N/A
25	DO_EV_18	Discrete Output	N/A
26	DO_EV_10	Discrete Output	N/A
27	DO_EV_32	Discrete Output	N/A
28	DO_EV_34	Discrete Output	N/A
29	DO_EV_7	Discrete Output	N/A
30	DO_EV_8	Discrete Output	N/A
31	Not Used	Discrete	N/A
32	Not Used	Discrete	N/A

¹See RCM-32 Remote Control Module User Manual for description of I/O jumper placement.

MICON Number: 20 Tag Name: ZB_2_3

Type: RCM-32Dr

Location: 2736-ZB Room 602

Rack Number: 2

Slot Number: 3

<u>Point</u>	<u>Tag</u>	<u>I/O Type</u>	<u>Jumper Assignment</u> ¹
1	DO_CON 1	Discrete Output	N/A
2	DO_EF 3	Discrete Output	N/A
3	DO_ZA	Discrete Output	N/A
4	DI_2 1PS	Discrete Input	N/A
5	DO_CON 2	Discrete Output	N/A
6	DI_VP 1A	Discrete Input	N/A
7	DI_VP 2A	Discrete Input	N/A
8	XA_SWB 1	Discrete Input	N/A
9	Not Used	Discrete	N/A
10	Not Used	Discrete	N/A
11	Not Used	Discrete	N/A
12	Not Used	Discrete	N/A
13	Not Used	Discrete	N/A
14	Not Used	Discrete	N/A
15	Not Used	Discrete	N/A
16	Not Used	Discrete	N/A
17	DO 631	Discrete Output	N/A
18	DO_EV 27	Discrete Output	N/A
19	DO_EV 23	Discrete Output	N/A
20	DO_EV 25	Discrete Output	N/A
21	DO_EV 26	Discrete Output	N/A
22	DO_EV 19	Discrete Output	N/A
23	DO_EV 20	Discrete Output	N/A
24	DO_EV 21	Discrete Output	N/A
25	DO_EV 22	Discrete Output	N/A
26	DO_EV 28	Discrete Output	N/A
27	DO_EV 29	Discrete Output	N/A
28	DO_EV 30	Discrete Output	N/A
29	DO_EV 24	Discrete Output	N/A
30	DO_EV 24A	Discrete Output	N/A
31	Not Used	Discrete	N/A
32	Not Used	Discrete	N/A

¹See RCM-32 Remote Control Module User Manual for description of I/O jumper placement.

MICON Number: 21 Tag Name: ZB_2_4

Type: RCM-32D

Location: 2736-ZB Room 602 Rack Number: 2 Slot Number: 4

<u>Point</u>	<u>Tag</u>	<u>I/O Type</u>	<u>Jumper Assignment</u> ¹
1	DI_1_1B	Discrete Input	Input & Output
2	DI_CSA	Discrete Input	Input & Output
3	DI_FS_1	Discrete Input	Input & Output
4	DI_FS_5	Discrete Input	Input & Output
5	DI_FS_7	Discrete Input	Input & Output
6	DI_FS_10	Discrete Input	Input & Output
7	DI_FS_3	Discrete Input	Input & Output
8	DI_DPS_1	Discrete Input	Input & Output
9	Not Used	Discrete	Input & Output
10	DI_CAM	Discrete Input	Input & Output
11	Not Used	Discrete	Input & Output
12	Not Used	Discrete	Input & Output
13	Not Used	Discrete	Input & Output
14	Not Used	Discrete	Input & Output
15	XA_EGF	Discrete Input	Input & Output
16	XA_PLC_1	Discrete Input	Input & Output
17	LAL_CFT	Discrete Input	Input & Output
18	LAL_CFT	Discrete Input	Input & Output
19	Not Used	Discrete	Input & Output
20	XA_EGS_1	Discrete Input	Input & Output
21	XA_EGS_2	Discrete Input	Input & Output
22	TAH_GEN1	Discrete Input	Input & Output
23	PAL_GEN1	Discrete Input	Input & Output
24	XA_G1_1	Discrete Input	Input & Output
25	SAH_GEN1	Discrete Input	Input & Output
26	YA_G1_1	Discrete Input	Input & Output
27	EAL_GEN1	Discrete Input	Input & Output
28	Not Used	Discrete	Input & Output
29	Not Used	Discrete	Input & Output
30	Not Used	Discrete	Input & Output
31	Not Used	Discrete	Input & Output
32	Not Used	Discrete	Input & Output

¹See RCM-32 Remote Control Module User Manual for description of I/O jumper placement.

MICON Number: 22 Tag Name: ZB_2_5

Type: RCM-32D

Location: 2736-ZB Room 602 Rack Number: 2 Slot Number: 5

<u>Point</u>	<u>Tag</u>	<u>I/O Type</u>	<u>Jumper Assignment</u> ¹
1	DI 1 2B	Discrete Input	Input & Output
2	DI FA ZB	Discrete Input	Input & Output
3	DI FS 2	Discrete Input	Input & Output
4	DI FS 6	Discrete Input	Input & Output
5	DI FS 8	Discrete Input	Input & Output
6	DI FS 9	Discrete Input	Input & Output
7	DI FS 4	Discrete Input	Input & Output
8	DI DPS 2	Discrete Input	Input & Output
9	Not Used	Discrete	Input & Output
10	DI PS 8	Discrete Input	Input & Output
11	Not Used	Discrete	Input & Output
12	Not Used	Discrete	Input & Output
13	Not Used	Discrete	Input & Output
14	Not Used	Discrete	Input & Output
15	YA G1 2	Discrete Input	Input & Output
16	XA G1 2	Discrete Input	Input & Output
17	TAH GEN2	Discrete Input	Input & Output
18	PAL GEN2	Discrete Input	Input & Output
19	XA G2 1	Discrete Input	Input & Output
20	SAH G2 1	Discrete Input	Input & Output
21	YA G2 1	Discrete Input	Input & Output
22	EAL GEN2	Discrete Input	Input & Output
23	YA G2 2	Discrete Input	Input & Output
24	XA G2 2	Discrete Input	Input & Output
25	TAH GEN3	Discrete Input	Input & Output
26	PAL GEN3	Discrete Input	Input & Output
27	Not Used	Discrete	Input & Output
28	Not Used	Discrete	Input & Output
29	Not Used	Discrete	Input & Output
30	Not Used	Discrete	Input & Output
31	Not Used	Discrete	Input & Output
32	Not Used	Discrete	Input & Output

¹See RCM-32 Remote Control Module User Manual for description of I/O jumper placement.

MICON Number: 23 Tag Name: ZB_2_6

Type: RCM-32D

Location: 2736-ZB Room 602 Rack Number: 2 Slot Number: 6

<u>Point</u>	<u>Tag</u>	<u>I/O Type</u>	<u>Jumper Assignment</u> ¹
1	DI_1_2C	Discrete Input	Input & Output
2	DI_FA_2	Discrete Input	Input & Output
3	DI_FA_8	Discrete Input	Input & Output
4	DI_ZB_BY	Discrete Input	Input & Output
5	DI_BY_8	Discrete Input	Input & Output
6	DI_BY_2	Discrete Input	Input & Output
7	Not Used	Discrete	Input & Output
8	Not Used	Discrete	Input & Output
9	DI_1_2PS	Discrete Input	Input & Output
10	XA_232Z	Discrete Input	Input & Output
11	Not Used	Discrete	Input & Output
12	Not Used	Discrete	Input & Output
13	Not Used	Discrete	Input & Output
14	Not Used	Discrete	Input & Output
15	XA_G3_1	Discrete Input	Input & Output
16	SAH_GEN3	Discrete Input	Input & Output
17	YA_G3_1	Discrete Input	Input & Output
18	EAL_GEN3	Discrete Input	Input & Output
19	YA_G3_2	Discrete Input	Input & Output
20	XA_G3_2	Discrete Input	Input & Output
21	XA_NDA_P	Discrete Input	Input & Output
22	XA_UPSI	Discrete Input	Input & Output
23	XA_USP2	Discrete Input	Input & Output
24	XA_UPS3	Discrete Input	Input & Output
25	Not Used	Discrete	Input & Output
26	Not Used	Discrete	Input & Output
27	Not Used	Discrete	Input & Output
28	Not Used	Discrete	Input & Output
29	Not Used	Discrete	Input & Output
30	Not Used	Discrete	Input & Output
31	Not Used	Discrete	Input & Output
32	Not Used	Discrete	Input & Output

¹See RCM-32 Remote Control Module User Manual for description of I/O jumper placement.

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