

**ANY CORP INC, WORLWIDE SYSTEM AUTOMATION**

**LADDER LOGIC EXAMPLES EMAIL: [INFO@USWCA.COM](mailto:INFO@USWCA.COM)**

**HORACE R. CORBIN, P. E. WCA (973) 808-0520**



AA

3 AAAAAAAAA/AAAAAAAAAAU
3
3
3
3

3PLC MINOR PLC NOT IN
3FAULT WORD 1 MNOR FAULT
3

3UAMEQAAAAAAAAA; B146/0
21: 0001A Masked Equal AAA
33Source: S: 103
33 163863
33Mask: OBFFDh3
33 OBFFDh3
33Compare: 03
33 03
33AAAAAAAAAAAAAAAAAAU

3 First scan ANALOG INPUT ANALOG INPUT ANALOG INPUT
3 of ladder 371 BTW 371 BTR Rack 3 371 BTW
3 or SFC ENABLE ENABLE Faulted CONTROL
3 step

S: 1/15 N151: 0/15 N151: 5/15 S: 7/3 UAABTWAAAAAAAAAAAAAAAAAA;
21: 0002AAAAAAAA/AAAAAAAAAAAAAAAA/AAAAAAAAAAAAAAAA/AAAAAAAAAAAAAAAA/AA
33Block Transfer Write AA(EN)A
33Mod Type: 1771-IFE3
33 12 Bit Analog InputAA(DN)
33Rack: 33
33Group: 7AA(ER)
33Module: 13
33Control Block: N151: 03
33Data File: N147: 03
33Length: 213
33Continuous: N3
33AAAAAAAAAAAAAAAAAAAAAAAAAAU

3 ANALOG INPUT ANALOG INPUT ANALOG INPUT ANALOG INPUT
3 371 BTR 371 BTW 371 BTR Rack 3 371 BTR
3 ERROR ENABLE ENABLE Faulted CONTROL
3

N151: 5/12 N151: 0/15 N151: 5/15 S: 7/3 UAABTRAAAAAAAAAAAAAAAAAA;
21: 0003AAAAAAAA/AA
33Block Transfer Read AA(EN)A
33Mod Type: 1771-IFE3
33 12 Bit Analog InputAA(DN)
33Rack: 33
33Group: 7AA(ER)
33Module: 13
33Control Block: N151: 53
33Data File: N148: 03
33Length: 123
33Continuous: N3
33AAAAAAAAAAAAAAAAAAAAAAAAAAU

AA

3  
3  
3 ANALOG INPUT  
3 371 BTR  
3 DONE

RAW ANALOG  
TANK PH

3 N151: 5/13  
21: 0004AA

UAAAMOVAAAAAAAAAA;  
A Move AAAAAAAAAAA

33 Source: N148: 43 3  
33 733 3  
33 Dest: N156: 13 3  
33 733 3  
3 AAAAAAAAAAAAAAAAAAAU 3

3 PH CONTROLLER 3

3 PV 3  
3 UAAAMOVAAAAAAAAAA;  
A Move AAAAAAAAAAA

33 Source: N148: 53 3  
33 23683 3  
33 Dest: N156: 03 3  
33 23673 3  
3 AAAAAAAAAAAAAAAAAAAU 3

3 HI SERV 3  
3 PUMP P- 4 3  
3 DISCH FLOW 3  
3 0- 2500 GPM 3  
3 FIT- 101 3

3 UAAACOPAAAAAAAAAA;  
AA[AFI]A Copy File AA

33 Source: #N148: 63 3  
33 Dest: #N140: 33 3  
33 Length: 63 3  
3 AAAAAAAAAAAAAAAAAAAU 3

3 HI SERV 3  
3 PUMP P- 4 3  
3 DISCH FLOW 3  
3 0- 2500 GPM 3  
3 FIT- 101 3

3 UAAAMOVAAAAAAAAAA;  
A Move AAAAAAAAAAA

33 Source: N148: 63 3  
33 03 3  
33 Dest: N140: 33 3  
33 03 3  
3 AAAAAAAAAAAAAAAAAAAU 3

3 HI SERV 3  
3 DISCH HDR 3  
3 PRESS 3  
3 150.0 PSI 3  
3 PIT- 102 3

3 UAAAMOVAAAAAAAAAA;  
A Move AAAAAAAAAAA

33 Source: N148: 73 3  
33 4243 3  
33 Dest: N140: 43 3  
33 4273 3  
3 AAAAAAAAAAAAAAAAAAAU 3

3 ANALOG INPUT 3  
3 360 FAULT 3  
3 DETECT TIMER 3

3 UAAATOFAAAAAAAAAA;  
A Timer Off Delay AA(EN) AAU

33 Timer: T144: 03 3  
33 Base (SEC): 1.0AA(DN) 3  
33 Preset: 53 3  
33 Accum: 03 3  
3 AAAAAAAAAAAAAAAAAAAU 3





AA

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3
3
3CORROSION
3CONTROL LINE
3PH
3
3UAAAGRTAAAAAAAAAAAA;
21: 0012A Greater Than (A>B) AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
33Source A: N140: 23
33 813
33Source B: 903
33 903
3AAAAAAAAAAAAAAAAAAU
3
3
3 LINE pH
3 HIGH-HIGH
3 ALARM DELAY
3
3 T144: 4. DN
21: 0013AAAAAAAA' AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA( )AAA
3
3
3CORROSION
3CONTROL LINE
3PH
3
3UAALESAAAAAAAAAAAA;
21: 0014A Less Than (A<B) AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
33Source A: N140: 23
33 813
33Source B: 703
33 703
3AAAAAAAAAAAAAAAAAAU
3
3
3 LINE pH
3 LOW-LOW
3 ALARM DELAY
3
3 T144: 5. DN
21: 0015AAAAAAAA' AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA( )AAA
3
3
3CORROSION
3CONTROL LINE
3PH
3
3UAAAGRTAAAAAAAAAAAA;
21: 0016A Greater Than (A>B) AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
33Source A: N140: 23
33 813
33Source B: 853
33 853
3AAAAAAAAAAAAAAAAAAU
3
3
3 LINE pH
3 HIGH
3 ALARM DELAY
3
3 T144: 6. DN
21: 0017AAAAAAAA' AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA( )AAA
3
3
3CORROSION
3CONTROL LINE
3PH
3
3UAALESAAAAAAAAAAAA;
21: 0018A Less Than (A<B) AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
33Source A: N140: 23
33 813
33Source B: 753
33 753
3AAAAAAAAAAAAAAAAAAU

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LINE pH
HIGH-HIGH
ALARM DELAY
UAAATONAAAAAAAAAAA;
Timer On Delay AA(EN) A
Timer: T144: 43
Base (SEC): 1.0AA(DN)
Preset: 53
Accum: 03
AAAAAAAAAAAAAAAAAAU
LINE pH
HIGH-HIGH
ALARM
B142/5
( ) AAA
LINE pH
LOW-LOW
ALARM DELAY
UAAATONAAAAAAAAAAA;
Timer On Delay AA(EN) A
Timer: T144: 53
Base (SEC): 1.0AA(DN)
Preset: 53
Accum: 03
AAAAAAAAAAAAAAAAAAU
LINE pH
LOW-LOW
ALARM
B142/6
( ) AAA
LINE pH
HIGH
ALARM DELAY
UAAATONAAAAAAAAAAA;
Timer On Delay AA(EN) A
Timer: T144: 63
Base (SEC): 1.0AA(DN)
Preset: 53
Accum: 03
AAAAAAAAAAAAAAAAAAU
LINE pH
HIGH
ALARM
B142/7
( ) AAA
LINE pH
LOW
ALARM DELAY
UAAATONAAAAAAAAAAA;
Timer On Delay AA(EN) A
Timer: T144: 73
Base (SEC): 1.0AA(DN)
Preset: 53
Accum: 03
AAAAAAAAAAAAAAAAAAU

```





AA

```
3
3
3 CAUSTIC PUMP 1
3 LEAD/LAG SELECT CAUSTIC PUMP 1
3 DONE LEAD/LAG SELECT
3
3 C145: 1. DN C145: 1
21: 0029AAAAAAAAAA AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA[ RES] AAAAAA
3 3 3
3 3 3
3 3 3
3 3 CAUSTIC PUMP 1 3
3 3 AUTO LIGHT 3
3 3 3
3 3 N141: 1/12 3
3 AAAAAAAAAA/AAAAAAAAU
3
3
3 CAUSTIC PUMP 1
3 LEAD/LAG SELECT CAUSTIC PUMP 1 CAUSTIC PUMP 1
3 SEL LEAD AUTO LIGHT LAG LIGHT
3
3 C145: 1. ACC/0 N141: 1/12 N141: 1/11
21: 0030AAAAAAAAA/AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA( ) AAAAAA
3
3
3 CAUSTIC PUMP 1
3 LEAD/LAG SELECT CAUSTIC PUMP 1 CAUSTIC PUMP 1
3 SEL LEAD AUTO LIGHT LEAD LIGHT
3
3 C145: 1. ACC/0 N141: 1/12 N141: 1/10
21: 0031AAAAAAAAA AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA( ) AAAAAA
3
3CORROSION CORROSION
3CONTROL PID CONTROL PID
3OUTPUT OUTPUT
3FLOW COMPENSATE FLOW COMPENSATE
3
3UAAAGRTAAAAAAAAAAA; UAAAMOVAAAAAAAAA;
21: 0032A Greater Than (A>B) AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA Move AA
33Source A: N156: 33 3Source: 40953
33 30713 3 40953
33Source B: 40953 3Dest: N156: 33
33 40953 3 30713
3AAAAAAAAAAAAAAAAAAAAU AAAAAAAAAAAAAAAAAAAU
```





DETERMINE PLC OUTPUT REQUEST OF PUMP AND CHECKS MCC THAT PUMP IS RUNNING/TRIPPED  
Ladder Report

File #21 Corrosion Proj: WATER95

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15:03:09 07/01/98

AA

```

3
3
3
3 CAUSTIC PUMP 1 CAUSTIC PUMP 1
3 OFF PB OFF LIGHT
3
3 N141: 1/2 N141: 1/14
21: 0037AAAAAAAAAAA' AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA(L) AAAAAAAAAAA
3 3 3 3
3 3 3 3
3 3 3 3
3 3 CAUSTIC PUMP 1 CAUSTIC PUMP 1
3 3 IN LOCAL 3 3 AUTO LIGHT 3
3 3 3 3
3 3 N141: 1/9 3 3 N141: 1/12
3 AAAAAAAAA' AAAAAAA' AAAAAAAAAA(U) AAAAAAA'
3 3 3 3
3 3 3 3
3 3 CAUSTIC PUMP 1 CAUSTIC PUMP 1
3 3 TRIPPED 3 3 HAND LIGHT 3
3 3 3 3
3 3 B142/1 3 3 N141: 1/13
3 AAAAAAA' AAAAAAAU AAAAAAA(U) AAAAAAA'
3 3 3 3
3 3 3 3
3 3 CAUSTIC PUMP 1 CAUSTIC PUMP 1
3 3 OFF PB 3 3
3 3 3 3
3 3 N141: 1/2 3 3 N141: 1/12
3 3 AAAAAAA(U) AAAAAAA' 3 3
3 3 3 3
3 3 CAUSTIC PUMP 1 CAUSTIC PUMP 1
3 3 TRIPPED 3 3
3 3 3 3
3 3 B142/1 3 3
3 3 AAAAAAA(U) AAAAAAAU 3 3

```

```

3
3 CAUSTIC PUMP 1 RUN CAUSTIC
3 HAND LIGHT PUMP 1
3
3 N141: 1/13 0: 033/00
21: 0038AAAAAAAAAAA' AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA( ) AAAAA
3 3 3
3 3 3
3 3 3
3 3 AUTORUN CAUSTIC PUMP 1
3 3 CAUSTIC PUMP LEAD LIGHT 3
3 3 3
3 3 B146/2 N141: 1/10
3 AAAAAAA' AAAAAAAAAAAAAAAAAAAA' AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAU
3 3 3
3 3 3
3 3 3
3 3 CAUSTIC PUMP 1 CAUSTIC PUMP 2
3 3 LAG LIGHT LEAD LIGHT 3
3 3 3
3 3 N141: 1/11 N141: 2/10 3
3 3 AAAAAAA' AAAAAAA' /AAAAAAU 3
3 3
3 3
3 3
3 3
3 3

```

```

3 First scan
3 of ladder
3 RUN CAUSTIC or SFC CAUSTIC PUMP 1 TRIP DELAY
3 PUMP 1 step
3
3 0: 033/00 S: 1/15 UATONAAAAAAAAAAA;
21: 0039AAAAAAAAAAA' AAAAAAA' /AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA Timer On Delay AA(EN) A
3 3 3 Timer: T144: 23
3 3 Base (SEC): 1.0AA(DN)
3 3 Preset: 53
3 3 Accum: 53
3 3 AAAAAAAAAAAAAAAAAAAU

```



AA

3  
3  
3 CAUSTIC INJ  
3 VALVE 1  
3 IN AUTO

CAUSTIC INJ  
VALVE 1  
IN MANUAL

21: 0058 N141: 3/10 N141: 3/11  
AAAAAAAA /AA ( )AAAA

3 CAUSTIC FEED  
3 AUTO- RUN

PUMP 1  
RUNNING  
I 11\_231\_06

CAUSTIC PUMP 1  
AUTO LIGHT

CAUSTIC INJ  
VALVE 1  
AUTO OPEN

21: 0059 B3/84 N86: 231/6 N141: 1/12 B3/81  
AAAAAAAA' AAAAAAAAAA[AFI]AAAAAA' AAA ( )AAAA

3 PUMP 2  
3 RUNNING  
3 I 11\_231\_12  
3 N86: 231/10  
AA[AFI]AAAAAA' AAAAA'

3 CAUSTIC PUMP 2  
3 AUTO LIGHT  
3 N141: 2/12  
AAAAAAAA' AAAAAAAU

3 PUMP 3  
3 RUNNING  
3 I 11\_231\_15  
3 N86: 231/13  
AA[AFI]AAAAAA' AAAAA'

3 P-2 MCC  
3 HI SERV  
3 PUMP P-2  
3 RUNNING

3 N141: 12/6  
AAAAA' AAAAAAAAAAAAAA'

3 P-3 VFD  
3 HI SERV  
3 PUMP P-3  
3 RUNNING

3 N141: 14/6  
AAAAA' AAAAAAAAAAAAAA'

3 P-1 VFD  
3 HI SERV  
3 PUMP P-1  
3 RUNNING

3 N141: 11/6  
AAAAA' AAAAAAAAAAAAAAU

3 CAUSTIC INJ CAUSTIC INJ  
3 VALVE 1 VALVE 1  
3 IN MANUAL MANUAL OPEN

OPEN  
CAUSTIC  
INJECTION  
VALVE 1

21: 0060 N141: 3/11 B3/80 O: 033/02  
AAAAAAAA' AAAAAAAAAA' AAA ( )AAAA

3 CAUSTIC INJ CAUSTIC INJ  
3 VALVE 1 VALVE 1  
3 IN AUTO AUTO OPEN

3 N141: 3/10 B3/81  
AAAAAA' AAAAAAAAAAAAA' AAAAAAU









