|                       | ٩               | •))                 |                   | INS             | SPECT         |        |                  | RM                  |                  | Page        | 1 of 1             |          |
|-----------------------|-----------------|---------------------|-------------------|-----------------|---------------|--------|------------------|---------------------|------------------|-------------|--------------------|----------|
| Win                   | nipèg           | SNC • LAVALIN       | AUT               | <b>FOMATION</b> | – COI         | NTR    | OL C             | ONDUCTORS           |                  | ID:         |                    |          |
| ect                   | Facility        | :                   |                   |                 | Project Name: |        |                  |                     |                  |             |                    |          |
| Project               | Area :          |                     |                   |                 |               |        | nity:            |                     |                  |             |                    |          |
|                       |                 |                     |                   |                 |               |        |                  |                     |                  |             |                    |          |
| nit                   | Source          | :                   |                   |                 |               | Des    | t.:              |                     |                  |             |                    |          |
| ondi<br>ta            |                 |                     |                   |                 |               |        |                  |                     |                  |             |                    |          |
| Cable/Conduit<br>Data | Installa        | tion: ∐ Ca<br>☐ Str | ble Tray<br>apped | Direct B        | uried         |        | _ EMT<br>_ Rigio | l L<br>d Steel [    | ] Alum.<br>] PVC |             |                    |          |
| Cat                   | No. of          | Conductors:         |                   | Size:           |               | А      | WG -             | Туре:               |                  | Rated Vo    | oltage:            | V        |
| L                     |                 |                     |                   |                 |               |        |                  |                     |                  |             |                    |          |
| _ 5                   | Cable I         | dentification Tag I | nstalled:         | ] Yes 🛛 No      | 1 🗆           | N/A    | Enclo            | sure Entry Accepta  | able:            |             | □ Y                | ′es 🗌 No |
| Visual<br>Inspection  | Wire ta         | gs installed:       |                   | ] Yes 🗌 No      |               |        | Cond             | uit / Cable Support | ed Appi          | opriately:  | □ Y                | ′es 🗌 No |
| v<br>Insp             | Comme           | ents:               |                   |                 |               |        |                  |                     |                  |             |                    |          |
|                       |                 |                     |                   |                 |               |        |                  |                     |                  |             |                    |          |
|                       | Test<br>Voltage | . V                 | Ambient Ter       | nperature:      | c             |        |                  | tors not under test | grounde          | ed for each | <sup>າ</sup> 🗌 Yes | No 🗌 No  |
|                       | #               | J.<br>ID            | MΩ                | . #             |               | ID     | ding:            | MΩ                  | #                |             | D                  | MΩ       |
|                       | 1               |                     |                   | . "             |               |        |                  |                     | 37               | •           | 0                  | 11122    |
|                       | 2               |                     |                   | 20              |               |        |                  |                     | 38               |             |                    |          |
|                       | 3               |                     |                   | 21              |               |        |                  |                     | 39               |             |                    |          |
|                       | 4               |                     |                   | 22              |               |        |                  |                     | 40               |             |                    |          |
|                       | 5               |                     |                   | 23              |               |        |                  |                     | 41               |             |                    |          |
|                       | 6               |                     |                   | 24              |               |        |                  |                     | 42               |             |                    |          |
|                       | 7               |                     |                   | 25              |               |        |                  |                     | 43               |             |                    |          |
| est                   | 8               |                     |                   | 26              |               |        |                  |                     | 44               |             |                    |          |
| Resistance Test       | 9               |                     |                   | 27              |               |        |                  |                     | 45               |             |                    |          |
| tan                   | 10              |                     |                   | 28              |               |        |                  |                     | 46               |             |                    |          |
| esis                  | 11              |                     |                   | 29              |               |        |                  |                     | 47               |             |                    |          |
| <b>_</b>              | 12              |                     |                   | 30              |               |        |                  |                     | 48               |             |                    |          |
| latic                 | 13              |                     |                   | 31              |               |        |                  |                     | 49               |             |                    |          |
| Insulatio             | 14              |                     |                   | 32              |               |        |                  |                     | 50               |             |                    |          |
| -                     | 15              |                     |                   | 33              |               |        |                  |                     | 51               |             |                    |          |
|                       | 16              |                     |                   | 34              |               |        |                  |                     | 52               |             |                    |          |
|                       | 17              |                     |                   | 35              |               |        |                  |                     | 53               |             |                    |          |
|                       | 18              |                     | C Toot Valta      | 36              | tod oobl      |        |                  | for apples rated a  | 54               |             |                    |          |
|                       | 1.<br>2.        | Utilize a single    | form for each     | ĥ cable / condu | uit.          | 85, 00 |                  | for cables rated <  | = 300 v.         |             |                    |          |
|                       | 3.<br>4.        |                     |                   |                 |               | t und  | er test          | must be grounded    | durina           | each test   |                    |          |
|                       | 5.              | Each reading r      | nust not be le    | ess than 22 M   | Ω or sign     | ificar | ntly less        | s than comparable   | conduc           | tors.       |                    |          |
|                       | Comme           | ents:               |                   |                 |               |        |                  |                     |                  |             |                    |          |
|                       | Test S          | ummary: 🗌 T         | est Passed        | 🗌 Test Fai      | led           |        |                  |                     |                  |             |                    |          |
|                       | 1               | Commonweak          |                   | Nema            |               |        | 1.               | Ciamotree           |                  |             | Data ta            |          |
| 1                     |                 | Company             |                   | Name            |               |        |                  | Signature           |                  |             | Date (yyy          | y/mm/dd) |

|              | Company | Name | Signature | Date (yyyy/mm/dd) |
|--------------|---------|------|-----------|-------------------|
| Performed By |         |      |           |                   |
| Checked By   |         |      |           |                   |

Form F-A-CONTROL Rev 00, Created by SNC-Lavalin Inc. L:\40ENG\Clients\City of Winnipeg\Forms\Instrumentation\F-A-CONTROL.doc

|                            | <u> </u>      | •))  |   |  | SPECT  |                     |                         |                |                          | Page    | 1 of 2                        |                          |
|----------------------------|---------------|--|---|--|--|---------------------|-------------------------|----------------|--------------------------|---------|-------------------------------|--------------------------|
| Win                        | nipèg         | SNC · LAVALIN  | AUT   | – TWI  | STE  | D SHI               | ELDED P                 | AIRS           | Cable                    | ID:     |                               |                          |
| ect                        | Facility:     |  |   |  |  | Project Name:       |                         |                |                          |         |                               |                          |
| Project                    | Area          | ι:   |   |  | Bid Opp  | oortuni             | ity:                    |                |                          |         |                               |                          |
|                            |               |  |   |  |  | 1                   |                         |                |                          |         |                               |                          |
| luit                       | Sou           | rce:   |   |  |  | Dest                | t.:                     |                |                          |         |                               |                          |
| Cable/Conduit<br>Data      | Insta         |  | le<br>Cable Tray<br>Strapped                          | Direct B   | Suried   |                     | Conduit<br>EMT<br>Rigio |                | ☐ Alum.<br>☐ PVC         |         | Other:                        |                          |
| Са                         | No.           | of Pairs:  |   | Size:  |  | A١                  | WG 1                    | Гуре:          |                          | Ratec   | d Voltage:                    | V                        |
|                            | Cabl          | e Identification Tag   | g Installed:  | ]Yes 🗌 No  |  | N/A                 | Enclo                   | sure Entry Ac  | ceptable:                |         |                               | es 🗌 No                  |
| Visual<br>spectio          | Wire          | tags installed:  | <u> </u>  | ]Yes 🗌 No  |  |                     | Cond                    | uit / Cable Su | poorted App              | opriate | ely: 🗆 Ye                     | es 🗌 No                  |
| Visual<br>Inspection       |               | iments:  |   |  |  |                     | 00114                   |                |                          | opnato  |                               |                          |
|                            | 0011          |  |   |  |  |                     |                         |                |                          |         |                               |                          |
|                            | Test<br>Volta | V  | Ambient Te  | mperature:   | C All conductors not under test grounde reading: |                     |                         |                | ed for each Yes No       |         |                               |                          |
|                            | Pr            | ID   | Cond. 1 (+)<br>to Gnd<br>(MΩ)                         | Cond. 2 (-)<br>to Gnd<br>(MΩ)  | G  | eld to<br>nd<br>IΩ) | Pr                      | ID             | Cond. 1<br>to Gn<br>(ΜΩ) | d       | Cond. 2 (-)<br>to Gnd<br>(MΩ) | Shield to<br>Gnd<br>(MΩ) |
|                            | 1             |  |   |  |  |                     | 13                      |                |                          |         |                               |                          |
|                            | 2             |  |   |  |  |                     | 14                      |                |                          |         |                               |                          |
|                            | 3             |  |   |  |  |                     | 15                      |                |                          |         |                               |                          |
| est                        | 4<br>5        |  |   |  |  |                     | 16<br>17                |                |                          |         |                               |                          |
| Insulation Resistance Test | 6             |  |   |  |  |                     | 18                      |                |                          |         |                               |                          |
| stan                       | 7             |  |   |  |  |                     | 19                      |                |                          |         |                               |                          |
| Resi                       | 8             |  |   |  |  |                     | 20                      |                |                          |         |                               |                          |
| ion                        | 9             |  |   |  |  |                     | 21                      |                |                          |         |                               |                          |
| ulat                       | 10            |  |   |  |  |                     | 22                      |                |                          |         |                               |                          |
| lns                        | 11            |  |   |  |  |                     | 23                      |                |                          |         |                               |                          |
|                            | 12            |  |   |  |  |                     | 24                      |                |                          |         |                               |                          |
|                            |               | <ol> <li>Utilize a sing</li> <li>Disconnect b</li> <li>Test each co</li> </ol> | le form for eac<br>ooth ends of wi<br>onductor to gro | nge for 600V ra<br>ch cable / cond<br>ring prior to tes<br>und. All condu<br>ess than 22 M | uit.<br>sts.<br>ictors ar                        | nd shie             | elds no                 | t under test n | nust be grour            | nded du | uring each test.              |                          |
|                            | Com           | iments:  |   |  |  | _                   |                         |                |                          |         |                               |                          |
|                            | Test          | Summary:   | Test Passed   | 🗌 Test Fai   | led  |                     |                         |                |                          |         |                               |                          |

| )<br>O   | •))                 |
|----------|---------------------|
| Winnipèg | <b>SNC</b> ·LAVALIN |

#### INSPECTION FORM AUTOMATION – TWISTED SHIELDED PAIRS

Page 2 of 2

ID:

| Pr | ID               | Cond. 1 (+) to<br>Cond. 2 (-) (mΩ) | Cond. 1 (+) to<br>Shield<br>(mΩ) | Pr      | ID              | Cond. 1 (+) to<br>Cond. 2 (-)<br>(mΩ) | Cond. 1 (+) to<br>Shield<br>(mΩ) |
|----|------------------|------------------------------------|----------------------------------|---------|-----------------|---------------------------------------|----------------------------------|
| 1  |                  |                                    |                                  | 13      |                 |                                       |                                  |
| 2  |                  |                                    |                                  | 14      |                 |                                       |                                  |
| 3  |                  |                                    |                                  | 15      |                 |                                       |                                  |
| 4  |                  |                                    |                                  | 16      |                 |                                       |                                  |
| 5  |                  |                                    |                                  | 17      |                 |                                       |                                  |
| 6  |                  |                                    |                                  | 18      |                 |                                       |                                  |
| 7  |                  |                                    |                                  | 19      |                 |                                       |                                  |
| 8  |                  |                                    |                                  | 20      |                 |                                       |                                  |
| 9  |                  |                                    |                                  | 21      |                 |                                       |                                  |
| 10 |                  |                                    |                                  | 22      |                 |                                       |                                  |
| 11 |                  |                                    |                                  | 23      |                 |                                       |                                  |
| 12 |                  |                                    |                                  | 24      |                 |                                       |                                  |
|    | 1. Record resist | ance from one end for ea           | ach connection sho               | wn, whi | ch shall be mad | le at the other end of the            | e cable.                         |

Test Summary: Test Passed Test Failed

|              | Company | Name | Signature | Date (yyyy/mm/dd) |
|--------------|---------|------|-----------|-------------------|
| Performed By |         |      |           |                   |
| Checked By   |         |      |           |                   |

| Q        |  |
|----------|--|
| Winnipeg |  |

# INSTRUMENTATION SWITCH CHECKLIST

| Project   |                  |  |  |  |  |
|-----------|------------------|--|--|--|--|
| Facility: | Project Name:    |  |  |  |  |
| Area :    | Bid Opportunity: |  |  |  |  |

| Instrument    |              |                |  |  |  |  |  |
|---------------|--------------|----------------|--|--|--|--|--|
| Tag:          | Description: |                |  |  |  |  |  |
| Manufacturer: | Model:       | Serial Number: |  |  |  |  |  |

|     | Inspection Chee                                      | cklist   |               |
|-----|--|----------|---------------|
| No. | Item to be Inspected                                 | Comments | Pass<br>(P/F) |
| 1.  | Instrument type and class per P&ID and specification |          |               |
| 2.  | Instrument tag(s) installed and correct              |          |               |
| 3.  | Installation of sensor complete and correct          |          |               |
| 4.  | Block and drain valves                               |          |               |
| 5.  | Pneumatic / hydraulic tubing leak tested             |          |               |
| 6.  | Heat tracing / insulation / instrument housing       |          |               |
| 7.  | Wiring correct                                       |          |               |
| 8.  | Drawings marked up as-built                          |          |               |
| 9.  | HMI Graphic symbol and tag correct                   |          |               |

| State Checklist  |           |           |       |            |       |               |  |  |
|------------------|-----------|-----------|-------|------------|-------|---------------|--|--|
| State State Desc | PLC Input | Local HMI | SCADA | Alarm      |       | Pass<br>(P/F) |  |  |
| 0                |           |           |       | 🗌 On 🔲 Off | □ N/A |               |  |  |
| 1                |           |           |       | 🗌 On 🔲 Off |       |               |  |  |

|            | Calibration                          |                                    |                        |                      |               |  |  |  |  |
|------------|--------------------------------------|------------------------------------|------------------------|----------------------|---------------|--|--|--|--|
| Transition | Setpoint Trip Point<br>(incl. units) | Actual Trip Point<br>(incl. units) | Setpoint<br>Time Delay | Actual<br>Time Delay | Pass<br>(P/F) |  |  |  |  |
| 0 → 1      |                                      |                                    |                        |                      |               |  |  |  |  |
| 1 → 0      |                                      |                                    |                        |                      |               |  |  |  |  |

|              | Company | Name | Signature | Date (yyyy/mm/dd) |
|--------------|---------|------|-----------|-------------------|
| Tested By    |         |      |           |                   |
| Witnessed By |         |      |           |                   |

### INSTRUMENTATION TRANSMITTER LOOP CHECKLIST

| Project   |                  |  |  |
|-----------|------------------|--|--|
| Facility: | Project Name:    |  |  |
| Area :    | Bid Opportunity: |  |  |

| Instrument (Sensor / Element) |              |                |  |
|-------------------------------|--------------|----------------|--|
| Tag:                          | Description: |                |  |
| Manufacturer:                 | Model:       | Serial Number: |  |

|               | Transmitter           |                    |                  |        |   |                |
|---------------|-----------------------|--------------------|------------------|--------|---|----------------|
| Tag:          |                       |                    | Description:     |        |   |                |
| Manufacturer: |                       |                    | Model:           |        |   | Serial Number: |
| Units:        |                       |                    | Design<br>Range: |        | - |                |
| Output        | ☐ 4-20 mA<br>☐ 0-10 V | ☐ Modb<br>☐ Etheri |                  | Other: |   |                |

|     | Inspection Checklist                                 |          |               |  |  |  |
|-----|--|----------|---------------|--|--|--|
| No. | Item to be Inspected                                 | Comments | Pass<br>(P/F) |  |  |  |
| 1.  | Instrument type and class per P&ID and specification |          |               |  |  |  |
| 2.  | Instrument tag(s) installed and correct              |          |               |  |  |  |
| 3.  | Installation of sensor complete and correct          |          |               |  |  |  |
| 4.  | Block and drain valves                               |          |               |  |  |  |
| 5.  | Pneumatic / hydraulic tubing leak tested             |          |               |  |  |  |
| 6.  | Heat tracing / insulation / instrument housing       |          |               |  |  |  |
| 7.  | Impulse lines pressure tested                        |          |               |  |  |  |
| 8.  | Wiring correct                                       |          |               |  |  |  |
| 9.  | Drawings marked up as-built                          |          |               |  |  |  |
| 10. | HMI Graphic symbol, tag and units correct            |          |               |  |  |  |



|                 | Signal Validation   |              |              |           |               |  |
|-----------------|---------------------|--------------|--------------|-----------|---------------|--|
| Input<br>Signal | Location            | Design Value | Actual Value | Error (%) | Pass<br>(P/F) |  |
|                 | Transmitter Display |              |              |           |               |  |
|                 | Transmitter Output  |              |              |           |               |  |
|                 | Process Display     |              |              |           |               |  |
|                 | PLC                 |              |              |           |               |  |
|                 | НМІ                 |              |              |           |               |  |
|                 | Transmitter Display |              |              |           |               |  |
|                 | Transmitter Output  |              |              |           |               |  |
|                 | Process Display     |              |              |           |               |  |
|                 | PLC                 |              |              |           |               |  |
|                 | НМІ                 |              |              |           |               |  |
|                 | Transmitter Display |              |              |           |               |  |
|                 | Transmitter Output  |              |              |           |               |  |
|                 | Process Display     |              |              |           |               |  |
|                 | PLC                 |              |              |           |               |  |
|                 | НМІ                 |              |              |           |               |  |

Notes:

Attach factory calbration forms for all instruments where provided and/or specified. Provide instrument parameters for each parameter changed from the factory default.

1. 2.

|              | Company | Name | Signature | Date (yyyy/mm/dd) |
|--------------|---------|------|-----------|-------------------|
| Tested By    |         |      |           |                   |
| Witnessed By |         |      |           |                   |

| ٢        |  |
|----------|--|
| Winnipeg |  |

#### MODULATING CONTROL DEVICE CHECKLIST

| Project   |                  |  |  |
|-----------|------------------|--|--|
| Facility: | Project Name:    |  |  |
| Area :    | Bid Opportunity: |  |  |

| Control Device |              |                |  |  |
|----------------|--------------|----------------|--|--|
| Tag:           | Description: |                |  |  |
| Manufacturer:  | Model:       | Serial Number: |  |  |

|     | Inspection Checklist                               |          |               |  |  |  |
|-----|--|----------|---------------|--|--|--|
| No. | Item to be Inspected                               | Comments | Pass<br>(P/F) |  |  |  |
| 1.  | Actuator type and class per P&ID and specification |          |               |  |  |  |
| 2.  | Instrument tag(s) installed and correct            |          |               |  |  |  |
| 3.  | Installation of actuator complete and correct      |          |               |  |  |  |
| 4.  | Wiring correct                                     |          |               |  |  |  |
| 5.  | Drawings marked up as-built                        |          |               |  |  |  |
| 6.  | HMI graphic symbol, tag and units correct          |          |               |  |  |  |

|                | Control Validation |              |              |           |               |  |  |
|----------------|--------------------|--------------|--------------|-----------|---------------|--|--|
| Control Output | Location           | Design Value | Actual Value | Error (%) | Pass<br>(P/F) |  |  |
| 0%             | PLC Output         |              |              |           |               |  |  |
| 0%             | Field Device       |              |              |           |               |  |  |
| 50%            | PLC Output         |              |              |           |               |  |  |
| 50%            | Field Device       |              |              |           |               |  |  |
| 100%           | PLC Output         |              |              |           |               |  |  |
| 100%           | Field Device       |              |              |           |               |  |  |

Notes: 1.

Attach factory calbration forms for all instruments where provided and/or specified. Provide instrument parameters for each parameter changed from the factory default.

2.

| Company      |  | Name | Signature | Date (yyyy/mm/dd) |
|--------------|--|------|-----------|-------------------|
| Tested By    |  |      |           |                   |
| Witnessed By |  |      |           |                   |

| ۲        |   |
|----------|---|
| Winnipeg | , |

### PID CONTROLLER CHECKLIST

| Project   |                  |  |  |  |  |
|-----------|------------------|--|--|--|--|
| Facility: | Project Name:    |  |  |  |  |
| Area :    | Bid Opportunity: |  |  |  |  |

Controller Loop

Tag:

Description:

|     | Test Checkli                               | st       |               |
|-----|--|----------|---------------|
| No. | Item to be Inspected                       | Comments | Pass<br>(P/F) |
| 1.  | Startup Test                               |          |               |
| 2.  | Input signal positive bump test            |          |               |
| 3.  | Input signal negative bump test            |          |               |
| 4.  | Bumpless auto-manual control transition    |          |               |
| 4.  | Manual output capability                   |          |               |
| 5.  | Bumpless manual-auto control transition    |          |               |
| 6.  | HMI graphic symbols, tag and units correct |          |               |
| 7.  | HMI equipment faceplate correct            |          |               |

| Final PID Tuning Values |    |     |  |  |  |  |
|-------------------------|----|-----|--|--|--|--|
| Ρ:                      | 1: | D : |  |  |  |  |

Notes:

1. Attach printouts of trends for varous tests, with final PID tuning values.

|              | Company | Name | Signature | Date (yyyy/mm/dd) |
|--------------|---------|------|-----------|-------------------|
| Tested By    |         |      |           |                   |
| Witnessed By |         |      |           |                   |

| Q        |
|----------|
| Winnipeg |

| Project   |                  |  |  |  |  |
|-----------|------------------|--|--|--|--|
| Facility: | Project Name:    |  |  |  |  |
| Area :    | Bid Opportunity: |  |  |  |  |

|         | PLC          |  |  |  |  |  |  |
|---------|--------------|--|--|--|--|--|--|
| PLC ID: | Description: |  |  |  |  |  |  |
| Rack:   | Slot:        |  |  |  |  |  |  |

| Pt | Tag | Description | State | State Desc. | PLC<br>Input | Local<br>HMI | SCADA      | Alarm      |               | Pass<br>(P/F) |
|----|-----|-------------|-------|-------------|--------------|--------------|------------|------------|---------------|---------------|
|    |     |             | 0     |             |              |              |            | 🗌 On 🔲 Off | - 🗌 N/A       |               |
|    |     |             | 1     |             |              |              |            | 🗌 On 🔲 Off | - [] N/A      |               |
|    |     |             | 0     |             |              |              |            | 🗌 On 🔲 Off |               |               |
|    |     |             | 1     |             |              |              |            | 🗌 On 🔲 Off | - □ N/A       |               |
|    |     |             | 0     |             |              |              |            | 🗌 On 🔲 Off |               |               |
|    |     |             | 1     |             |              |              |            | 🗌 On 🔲 Off | - □ N/A       |               |
|    |     |             | 0     |             |              |              |            | 🗌 On 🔲 Off |               |               |
|    |     | 1           |       |             |              |              | 🗌 On 🔲 Off | - □ N/A    |               |               |
|    |     |             | 0     |             |              |              |            | 🗌 On 🔲 Off | - □ N/A       |               |
|    |     |             | 1     |             |              |              |            | 🗌 On 🔲 Off | - [] N/A      |               |
|    |     |             | 0     |             |              |              |            | 🗌 On 🔲 Off | - 🗌 N/A       |               |
|    |     | 1           |       |             |              |              | 🗌 On 🔲 Off | - 🗌 N/A    |               |               |
|    |     |             | 0     |             |              |              |            | 🗌 On 🔲 Off |               |               |
|    |     |             | 1     |             |              |              |            | 🗌 On 🔲 Off | · □ N/A       |               |
|    |     |             | 0     |             |              |              |            | 🗌 On 🔲 Off |               |               |
|    |     |             | 1     |             |              |              |            | 🗌 On 🔲 Off | - □ N/A       |               |
|    |     |             | 0     |             |              |              |            | 🗌 On 🔲 Off | - 🗆 N/A       |               |
|    |     |             | 1     |             |              |              |            | 🗌 On 🔲 Off | - [] N/A      |               |
|    |     |             | 0     |             |              |              |            | 🗌 On 🔲 Off | - □ N/A       |               |
|    |     |             | 1     |             |              |              |            | 🗌 On 🔲 Off | . П N/А       |               |
|    |     |             | 0     |             |              |              |            | 🗌 On 🔲 Off |               |               |
|    |     |             | 1     |             |              |              |            | 🗌 On 🔲 Off | - 🗌 N/A       |               |
|    |     |             | 0     |             |              |              |            | 🗌 On 🔲 Off | - □ N/A       |               |
|    |     |             | 1     |             |              |              |            | 🗌 On 🔲 Off | - <u></u> П/А |               |

Form F-PLC-DI-CHECKLIST Rev 00, Created by SNC-Lavalin Inc. L:\40ENG\Clients\City of Winnipeg\Forms\Instrumentation\F-PLC-DI-CHECKLIST.doc

| Image: WinnipegImage: SNC·LAVALINPLC DISCRETE INPUT CHECKLIST | Page | 2 of 2 |
|---|------|--------|
|---|------|--------|

|  |  |   | 0 |  |            | 🗌 On 🔲 Off | - 🗌 N/A |  |
|--|--|---|---|--|------------|------------|---------|--|
|  |  | 1 |   |  | 🗌 On 🔲 Off |            |         |  |
|  |  |   | 0 |  |            | 🗌 On 🔲 Off |         |  |
|  |  | 1 |   |  | 🗌 On 🔲 Off | □ N/A      |         |  |
|  |  |   | 0 |  |            | 🗌 On 🔲 Off | - 🗆 N/A |  |
|  |  | 1 |   |  | 🗌 On 🔲 Off |            |         |  |
|  |  |   | 0 |  |            | 🗌 On 🔲 Off | - 🗌 N/A |  |
|  |  | 1 |   |  | 🗌 On 🔲 Off |            |         |  |

|              | Company | Name | Signature | Date (yyyy/mm/dd) |
|--------------|---------|------|-----------|-------------------|
| Tested By    |         |      |           |                   |
| Witnessed By |         |      |           |                   |

| Q        |  |
|----------|--|
| Winnipeg |  |

## PLC DISCRETE OUTPUT CHECKLIST

| Project   |                  |  |  |  |
|-----------|------------------|--|--|--|
| Facility: | Project Name:    |  |  |  |
| Area :    | Bid Opportunity: |  |  |  |

| PLC     |              |  |  |  |  |
|---------|--------------|--|--|--|--|
| PLC ID: | Description: |  |  |  |  |
| Rack:   | Slot:        |  |  |  |  |

| Pt | Тад | Description | State | State Desc. | PLC Output | Field Device | Pass<br>(P/F) |
|----|-----|-------------|-------|-------------|------------|--------------|---------------|
|    |     |             | 0     |             |            |              |               |
|    |     |             | 1     |             |            |              |               |
|    |     |             | 0     |             |            |              |               |
|    |     |             | 1     |             |            |              |               |
|    |     |             | 0     |             |            |              |               |
|    |     |             | 1     |             |            |              |               |
|    |     |             | 0     |             |            |              |               |
|    |     |             | 1     |             |            |              |               |
|    |     |             | 0     |             |            |              |               |
|    |     |             | 1     |             |            |              |               |
|    |     |             | 0     |             |            |              |               |
|    |     |             | 1     |             |            |              |               |
|    |     |             | 0     |             |            |              |               |
|    |     |             | 1     |             |            |              |               |
|    |     |             | 0     |             |            |              |               |
|    |     |             | 1     |             |            |              |               |
|    |     |             | 0     |             |            |              |               |
|    |     |             | 1     |             |            |              |               |
|    |     |             | 0     |             |            |              |               |
|    |     |             | 1     |             |            |              |               |
|    |     |             | 0     |             |            |              |               |
|    |     |             | 1     |             |            |              |               |
|    |     |             | 0     |             |            |              |               |
|    |     |             | 1     |             |            |              |               |

| Winnipeg SNC·LAVALIN |  | ))<br>LAVALIN | PLC DISCRETE OUTPUT CHECKLIST |  | Page 2 of | 2 |  |
|----------------------|--|---------------|-------------------------------|--|-----------|---|--|
|                      |  |               | 0                             |  |           |   |  |
|                      |  |               | 1                             |  |           |   |  |
|                      |  |               | 0                             |  |           |   |  |
|                      |  |               | 1                             |  |           |   |  |
|                      |  |               | 0                             |  |           |   |  |
|                      |  |               | 1                             |  |           |   |  |
|                      |  |               | 0                             |  |           |   |  |
|                      |  |               | 1                             |  |           |   |  |

|              | Company | Name | Signature | Date (yyyy/mm/dd) |
|--------------|---------|------|-----------|-------------------|
| Tested By    |         |      |           |                   |
| Witnessed By |         |      |           |                   |