



14685 WEST 105TH STREET, LENEXA, KANSAS 66215-2003

o 913-888-2630 | d 913-956-3160 | f 913-312-3582

sorinc.com

December 21, 2017

Attn: Document Control Desk  
US Nuclear Regulatory Commission  
Washington, DC 20555-0001

Reference: NUCLEAR REGULATORY COMMISSION INSPECTION REPORT OF SOR INC. NO. 99900824/2017-201, AND NOTICE OF NONCONFORMANCE, dated December 1, 2017

Subject: Reply to a Notice of Nonconformance 99900824/2017-201-02

SOR Inc. is providing the enclosed response to the Notice of Nonconformance 99900824/2017-201-02. Details regarding the corrective actions and their targeted completion date are provided in the attachment to this letter.

If you should have any questions please contact me at (913) 956-3160 or by email: [mdirks@sorinc.com](mailto:mdirks@sorinc.com).

Sincerely,  
SOR Inc.

Melanie Dirks  
Director of Quality

Enclosure

c: Terry Jackson	US NRC
Aaron Armstrong	US NRC
Mike Waters	SOR
Bert Benton	SOR
Mike Bequette	SOR

## Response to Nonconformance 99900824/2017-201-02:

### Reason for Noncompliance

The qualification of the 141 series switches consists of Nutherm Qualification Report SOR-9534R which qualifies by test, six unique models and the SOR analysis which qualifies by analysis the different variations of the models not tested in the Nutherm report.

The switch for Exelon (LaSalle) referenced in NRC Nonconformance 99900824/2017-201-02 is a non-standard model which was not originally addressed in the SOR analysis. The Exelon model is similar to a standard model except that it has O-ring seals in place of U-cups on the force transmitters.

The Nutherm report states that the O-ring version that was tested was qualified to half levels for radiation, cycle aging, and qualified life.

The LaSalle applications do not require full qualification for radiation and cycle life. The half levels specified in the Nutherm report (15 Mrad and 15,000 cycles) are sufficient.

The qualified life for the tested O-ring model is reported to be half levels (10 years at 120 degrees F). However, SOR can demonstrate by combination of test and analysis that the O-ring version is suitable for 20 years at 120 degrees F which matches the qualification of the U-cup version.

### Corrective Steps Taken and Results Achieved

SOR issued Corrective Action Report (CAR) 975 on October 20, 2017 to formally document the investigation and actions to be taken. SOR contacted LaSalle to re-confirm LaSalle's qualification requirements on December 8, 2017 for the 141 switches. SOR concluded the investigation and determined that NON 99900824/2017-201-02 is not a reportable deviation.

### Extent of Condition Review

Exelon LaSalle is the only customer to purchase the O-ring version of the Differential Pressure Switch. There were six sales orders with model string 141N6-WX47-MX-C1A-JJTNQ for a total of 12 switches.

### Corrective Steps to Avoid Noncompliances

Test report 9058-112 will be revised to include the lower qualification levels for the O-ring version and add the justification for the 20 year qualified life.

### Corrective Action Completion Date

The test report 9058-112 is in process with the required changes, targeting publication by the end of January 2018.