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ABSTRACT (Limit to 1400 spaces, i.e, approximately fifteen single-space typewritten lines) (16.

At 1320 hours on February 14, 1989 Reactor Vessel Low Water Level 3 Switch LS-2821-NO388 was found with its setpoint out-of-tolerance in excess of its Limiting Condition for Operation. This discovery was made during the routine performance of a surveillance while Unit 2 was operating at 18% of rated power.

LS-2821-N0388 functions to confirm a low level in the reactor vessel and provide a permissive for operation of Division II Automatic Depressurization System. The as found suppoint was low enough that this permissive would not have occurred had reactor water level dropped. Redundant systems would have served to mitigate a low level event.

Static-O-Ring (SOR) differential pressure instruments which exceed their Reject Limits are rejected from further service and replaced. The switch replacement and calibration of the new switch were completed at 0720 hours on February 15, 1989. The rejected instrument will be sent to its manufacturer, SOR Inc., for disassembly and examination to determine the cause of its setpoint drift. The level switch which precipitated this event will be replaced by an analog trip system during the third refueling of Unit 2, currently scheduled to begin in the first quarter of 1990.

This event is voluntarily reported to the Nuclear Regulatory Commission in compliance with the requirements of Inspection Enforcement Bulletin 86-02 (IEB 86-02).

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PLANT AND SYSTEM IDENTIFICATION

General Electric - Boiling Water Reactor

Energy Industry Identification System (EIIS) codes are identified in the text as [XX].

A. CONDITION PRIOR TO EVENT

Unit(s): 2	Event	Date:	2/14/89	-	Event Time:	1320 Ho	urs
Reactor Mode(s):	1	Mode	(s) Name:	Run	Power	Level(s):	18%

B. DESCRIPTION OF EVENT

Reactor vessel (NB) [AD] Low Water Level 3 Switch LS-2B21-NO38B was found with its setpoint out-of-tolerance in excess of its Limiting Condition for Operation. This discovery was made at 1320 hours on February 14, 1969 during the routine performance of LaSalle Instrument Surveillance LIS-NB-206, "Unit 2 Reactor Vessel Low Water Level Confirmed Automatic Depressurization System (ADS) [SB] Permissive Calibration." Unit 2 was operating at 18% of rated power at the time.

The "As Found" setpoint for LS-2821-N0388 was 109.0 inches of water column ("WC), corresponding to -20.2 inches of indicated reactor water level ("RWL). The desired setpoint (at atmospheric pressure) of this switch is 19.40 "RWL (58.9 "WC) with a tolerance of +/- 0.71 "RWL (+/- 0.50 "WC), Action Limits of +/- 3.96 "RWL (+/- 2.80 "WC), and Rejected Limits of +/- 4.10 "RWL (+/- 2.90 "WC). This makes the lower Reject Limit >/= 15.30 "RWL, so the "As Found" setpoint exceeded the Reject Limit by 35.5 "RWL. The Technical Specification Limiting Condition for Operation is >/= 11.00 "RWL (</= 64.84 "WC) with a Nominal Trip Setpoint of 12.50 "RWL (63.78 "WC). The information in this paragraph is graphically displayed in Figure 1.

LS-2821-N0388 functions to confirm a low level in the reactor vessel and allow operation of Division II of ADS. The variable leg instrument tap for this switch is at -10.5 "RWL while the as found setpoint was -20.2 "RWL, which is below the variable leg tap. In the event of a loss of reactor coolant, LS-2821-N0388 would not be able to detect any change in reactor water level below -10.5 "RWL and would not have provided a low level ADS permissive confirmation.

The replacement and calibration of the new switch were completed at 0720 hours on February 15, 1989. The rejected instrumment will be sent to its manufacturer, SOR Inc., for disassembly and examination to determine the cause of its setpoint drift.

This event is voluntarily reported to the Nuclear Regulatory Commission in compliance with the requirements of Inspection Enforcement Bulletin 86-02 (IEB 86-02) because it involves a degradation in the performance of a Static-O-Ring (SOR) differential pressure switch. The plant remained stable throughout this event. Personnel error did not influence the cause or severity of this event. The actions taken by plant personnel in response to this event were timely and appropriate.

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C. APPARENT CAUSE OF EVENT

This event was apparently caused by setpoint drift.

The exact mechanism that caused the setpoint drift in this case is not known. The instrument which drifted will be sent to its manufacturer, SOR Inc., for disassembly and examination to determine why it drifted. This Licensee Event Report will be supplemented when the results of this inspection are received by Commonwealth Edison.

D. SAFETY ANALYSIS OF EVENT

Division II ADS would not have functioned, however, Division I ADS would have operated (Division I ADS permissive switch 2821-NO38A was calibrated on February 15, 1989 and found to be within tolerance) as well as High Pressure Core Spray (HPCS) [BG] and Reactor Core Isolation Cooling (RCIC) [BN]. Either Division of ADS could have been manually initiated as well. Due to these redundant systems a low level/high pressure event would have been mitigated.

E. CORRECTIVE ACTIONS

As required by Commonwealth Edison's SOR Long Term Action Plan, SOR differential pressure switches which drift beyond their reject limits are considered technically inoperable. Accordingly LS-2B21-N038B was declared inoperable at 1320 hours on February 14, 1989.

The inoperability of this switch rendered the trip system of ADS Division II inoperable. Technical Specifications 3.3.3 requires the ADS trip systems to be operable in Plant Conditions 1, 2 and 3. Action Statement C of this specification requires that an inoperable ADS trip system must be restored to operability within seven days, provided the other ADS trip system, HPCS and RCIC remain operable.

The Commonwealth Edison SOR Long Term Action Plan requires that SOR instruments which exceed their Reject Limits be rejected from further service and replaced. Work Request L87391 was written to replace the rejected instrument with another identical instrument which had been certified for use at LaSalle. The switch replacement and calibration of the new switch were completed at 0720 hours on February 15, 1989 and ADS Division II was declared operable, within the seven days allowed by Technical Specification 3.3.3.

The rejected instrumment will be sent to its manufacturer, SOR Inc., for disassembly and examination to determine the cause of its setpoint drift. This Licensee Event Report will be supplemented when the results of that inspection are received by Commonwealth Edison. Action Item Record AIR 374-200-89-01001 will track the inspection and supplement.

Modifications are planned to remove all SOR reactor vessel level switches at LaSalle and replace them with analog trip units. The analog trip units were chosen partly because of their setpoint stability and they are expected to improve the performance of the Reactor Vessel Water Level Sensing System. The level switch which precipitated this report will be replaced under modification MO1-2-87-085 during the third refueling of Unit 2, currently scheduled to begin in the first quarter of 1990.

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F. PREVIOUS EVENTS

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LER Number	Title
374/86-007-00	Excessive Static-O-Ring Pressure Switch Drift
374/86-011-01	Failure of 12.5" DP Level Switch to Respond to Low Level
374/86-019-01	Reactor Vessel Low Level Confirmed ADS Permissive Switch Out of Tolerance Due to Setpoint Drift
373/87-010-01	Automatic Depressurization System Low Level Confirmed Switch Setpoint Found Out of Tolerance Due to Setpoint Drift
374/87-011-01	Residual Heat Removal Pump Minimum Flow Bypass Differential Pressure Switch Found Out of Tolerance Due to Setpoint Drift
373/88-628-01	Setpoint Drift of Reactor Vessel Low Water Level Switch
373/88-029-01	Setpoint Drift of Low Level Confirmed Automatic Depressurization System Permissive Switch
374/88-005-01	High Pressure Core Spray Minimum Flow Bypass Flow Switch Out of Tolerance Due to Setpoint Drift
374/88-013-01	Low Pressure Core Spray Minimum Flow Bypass Differential Switch Found Above Reject- tion Limit
374/88-015-01	Residual Heat Removal Pump Minimum Flow Bypass Differential Pressure Switch Found Out of Tolerance Due to Setpoint Drift
373/89-003-00	Setpoint Drift of Reactor Vessel Low Water Level Switch

G. COMPONENT FAILURE DATA

Manufacturer	Nomenclature	Model Number	MFG Part Number
SOR Inc.	Differential Pressure Switch	103-AS-6212-MX-C1A- JJTTX6	NA

NOTE: The rejected switch was serial number 85-1-2401. The replacement switch is serial number 88-10-4047.



Figure 1: Static O-Ring Setpoint Information



Commonwealth Edison LaSalle County Nuclear Station Rural Route #1, Box 220 Marseilles, Illinois 61341 Telephone 815/357-6761

March 15, 1989

Director of Nuclear Reactor Regulation U.S. Nuclear Regulatory Commission Mail Station P1-137 Washington, D.C. 20555

Dear Sir:

Licensee Event Report #89-006-00, Docket #050-374 is being submitted to your office in accordance with NRC I.E. Bulletin 86-02, "Static-O-Ring Differential Pressure Switches.".

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G. J. Diederich Station Manager LaSalle County Station

GJD/NWJ/kg

Enclosure

xc: Nuclear Licensing Administrator NRC Resident Inspector NRC Region III Administrator INPO - Records Center