Commonwealth Edison Company
Dresden Generating Station
6500 North Dresden Road
Morris, IL 60450
Tel 815-942-2920

ComEd

January 26, 1998

JMHLTR: #98-0011

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555

Subject: Dresden Nuclear Power Station Units 1, 2 and 3
Reply to a Notice of Violation; Inspection Report 50-10/237/249/97024.
NRC Docket Numbers 50-10, 50-237, and 50-249

Reference: (a) J. Grant letter to J. S Perry, dated December 19, 1997, transmitting NRC Inspection Report 50-249/97024 and Notice of Violation

(b) J. M Heffley (JMHLTR # 98-002) letter to Document Control Desk dated January 9, 1998.

The purpose of this letter is to provide ComEd's reply to the Notice of Violation transmitted by reference (a). The violations resulted from the failure to enter a Limiting Condition For Operation (LCO) required by Technical Specification Section 3.4.A.1.b. when the Standby Liquid Control Systems (SBLC) for Unit 3 were inoperable because of low temperature in the pump suction piping.

Your letter noted two instances of operators failing to complete all actions required by the annunciator procedures. A violation was not issued because corrective actions for violations noted in Inspection Report 97019 were not complete. Dresden Station's response to Inspection Report 97019, reference (b), described specific corrective actions for the events described in the report. However, the Score Card Program has been adopted by the Operations Department. This is a global program to monitor and reinforce behaviors which promote event free operation.

Your letter also noted that the work instructions that caused the Unit 2 feedwater transient were inadequate and in violation of NRC requirements. A violation was not issued in this case because corrective actions to a similar violation noted in Inspection Report 97019 were expected to encompass that violation. Reference (b) did not address corrective actions for this event, nor has the root cause report for the transient been approved at this time. The Dresden Senior Resident Inspector will be informed of the corrective actions when the final root cause report is approved. This is scheduled to be completed by February 27, 1998.



IE01

The attachment contains the following commitments:

1. Revise SBLC System Annunciator Procedure DAN 902 (3) -5 G-6 to clarify the actions with regards to Technical Specifications and the necessity to assess actual suction temperatures. This annunciator procedure requires the operator to confirm local temperature readings with a hand held instrument. (NTS 2371009702401B due 2/16/98)

2. Provide training to the Operations and appropriate System Engineering personnel detailing this event and corrective actions, including conservative decision making when faced with conflicting information. (NTS 2371009702401C due 7/10/98)

3. Update applicable training documents to clarify function of the switches to correct the knowledge deficiency regarding SBLC local suction temperature indications. (NTS 2371009702401D due 4/1/98)

4. Operations will evaluate the timeline of this event with regards to entry and exit of Technical Specification 3.4.A.1.b and implement corrective actions if necessary. (NTS 2371009702401A due 3/6/98)

5. Revise Post Maintenance Testing instructions by work analysts to define plainly which circuit is energized when heat trace circuits are tested. This will help to identify deficiencies should they occur during maintenance. (NTS 2491809701101, due 3/6/98)

6. Revise work instructions used by work planners on heat trace circuits to define clearly the actual work to be performed. (NTS 2491809701102, due 3/6/98)

7. Evaluate whether performance of periodic surveillance of heat trace operation is necessary. (NTS 2371009702401E due 3/6/98)

8. Revise applicable Dresden Operating Procedures to incorporate specific technical information regarding SBLC suction switches and alarms. (NTS 2371009702401F due 2/16/98)

9. Evaluate the name tag for the suction piping temperature indicator. (NTS 2371009702401G, due 3/06/98)

10. Shift Managers will review the NOV response with their crews. (Complete)

Mr. Mark A Ring, NRC Region III, granted a requested seven day extension to the response date on January 16, 1998 in conversation with G. A. Abrell (ComEd Dresden Station). The extension was needed to ensure that corrective actions addressed all aspects of the event as described in the report.

This response contains no proprietary or safeguards information. If there are any questions concerning this letter, please refer them to Mr. Frank Spangenberg, Dresden Station Regulatory Assurance Manager, at (815) 942-2920 extension 3800.

Sincerely,

Preston Swafford for

J. M. Heffley
Site Vice President
Dresden Station

Attachment

cc: A. Bill Beach, Regional Administrator, Region III
M. Ring, Branch Chief, Division of Reactor Projects, Region III
J. F. Stang, Project Manager, NRR (Unit 2/3)
K. Riemer, Senior Resident Inspector, Dresden
Office of Nuclear Facility Safety - IDNS

**ATTACHMENT**
**RESPONSE TO NOTICE OF VIOLATION**
**NRC INSPECTION REPORT**
**50-10/237249/97024**
**97024-01**

## VIOLATION:

Dresden TS 3.4.A.1.b stated that with both standby liquid control subsystems inoperable, at least one must be restored to operable status within 8 hours or be in at least hot shutdown within the next 12 hours.

Contrary to the above, between October 27, 1997, at 0609 hours and October 28, 1997, at 1615 hours, both standby liquid control subsystems were inoperable and the plant was not brought to at least a hot shutdown condition.

## REASON FOR THE VIOLATION;

On October 27, 1997, at 0609, an alarm was received in the Main Control Room indicating a potential low temperature condition on Unit 3 Standby Liquid Control (SBLC) piping. Upon receipt of the alarm, (at a setpoint of 78 degrees F), an Equipment Attendant (EA) was dispatched to check local conditions to validate the alarm through usage of multiple indications. Local indication for SBLC suction piping temperature was found to read 90 degrees F. This local indication for temperature was in close proximity to the temperature switches which caused the alarm in the control room. Plant labeling confirmed this indicator was the temperature for the SBLC pump suction and is the only installed local temperature indicator for SBLC suction piping. Training lesson plans also identify the gauge as the suction piping temperature indicator. The Annunciator procedure directs the operator to determine the source of the alarm from local temperature indicators which was performed. The SBLC suction piping is shrouded with insulation, which resulted in limited availability for additional temperature measurement.

There is a generic knowledge deficiency of the design that incorrectly assumed that this local indication was a valid indication of suction piping temperatures. In retrospect, the switches located further down the suction piping are more representative of actual conditions. These factors along with the relative simplicity of the local indication were the inputs by which the operating team used to conclude that SBLC was operable.

Based on this conflicting evidence, a work package was created for the Instrument Maintenance Department (IMD) to troubleshoot the 3 temperature switches which input into the Control Room alarm circuit to resolve the conflict between the Control Room alarm and local indication.

Reference (a) noted that the operators did not believe the alarm indications and did not enter the SBLC LCO. It was not apparent at the time that Dresden should enter TS 3.4.A.1.b because the SBLC suction line local temperature indicated 90 degree F. which was in full compliance with TS 3.4.A.1.b. Further review that revealed that training is required to correct a knowledge deficiency and lessons learned from this event. The scope of the training will include the actual configuration and function of the SBLC suction piping instrumentation, heat trace, and associated alarms.

On October 28, IMD found no problems with the calibration of the SBLC temperature switches. At approximately 1430, the IMD technician took surface readings on the system piping with a pyrometer and found the temperature to be approximately 80 degrees F. Technical Specification 4.4.A.1.c requires the SBLC pump suction piping to be greater than or equal to 83 degrees F for SBLC to be considered operable.

At 1530 on October 28, an Operations Supervisor (OS) verified with a pyrometer that the surface temperature on the suction piping to the SBLC pumps was 80 degrees F. The local temperature indication, TI 3-1160, still read 90 degrees F. The SBLC system was declared inoperable per TS 3.4.A.1.b which stated that with both standby liquid control subsystems inoperable, at least one must be restored to operable status within 8 hours or be in at least hot shutdown within the next 12 hours.

IMD and a Component Engineer began to troubleshoot the three heat trace circuits and found two of the three heat trace circuits were not energized. The controller settings were adjusted, and both heat trace circuits energized to raise the suction line temperature to 84 degrees F.

IMD continued to monitor the system temperature locally. At 1700 on October 28, a SBLC High Temp alarm was received in the Control Room. The high alarm cleared at 1800, IMD continued troubleshooting of the heat trace circuits. The SBLC LCO was exited at 1820. DOS 1100-01, SBLC System Pump Test, was performed as a conservative measure to verify no precipitation of chemical in the suction piping had occurred. Further investigation revealed a heat trace wiring discrepancy between the plant and the wiring diagram.

At 0930 on October 31, 1997, the SBLC suction piping temperature was found to be below 83 degrees F by an operator on his normal rounds. When the piping was confirmed to be below the Technical Specification minimum temperature, Dresden entered the LCO and remained in TS 3.4.A.1.b until 1220 when temperature was restored to normal. The operator failed to promptly notify supervision when an out of tolerance reading was

found. This is considered an individual performance issue and has been addressed using normal station policies.

Contributing to this event was the fact that Dresden did not implement setpoint changes to the SBLC suction line temperature soon after the upgraded Tech Specs went into effect during January 1997. The setpoint change to raise the alarm setting from 78 to 87 degrees F was scheduled to be implemented in November 1997. This allowed the warning of suction piping low temperature alarm to be below the Tech Spec minimum temperature of 83 degrees. Dresden incorrectly assumed that local monitoring of pump suction temperatures would prevent dropping below 83 degrees F. The incorrect wiring of the heat trace circuit also had a direct impact for this failure.

Compliance with Technical Specifications will now be assured by maintaining the suction piping temperatures above the alarm setpoints as monitored by temperature switches 1149 and 1165 in addition to the local indication. These temperature switches are calibrated using DIS 1100-05, Preventive Maintenance And Calibration Of Standby Liquid Control Temperature Switches, which is done on a 18 month periodicity.

**CORRECTIVE STEPS TAKEN AND RESULTS ACHIEVED:**

Once it was discovered that TS 4.4.A.1.c was not met, Dresden immediately declared SBLC inoperable and entered TS 3.4.A.1.b. Other actions included :

1. Troubleshooting the heat trace circuits began to determine the reason SBLC temperature was below 83 degrees F. A Component Engineer discovered a wiring discrepancy between the plant and the wiring diagram. Two of the three heat trace circuits had their controller circuits crossed.

2. The heat trace controller setting was increased to heat suction temperature above 83 degrees F. This raised the SBLC suction piping temperature to allow exiting the LCO.

3. The SBLC suction piping temperatures were monitored by a surface pyrometer to maintain temperature above the required TS limit of 83 degrees F. This interim measure was used to prevent entry into another LCO.

4. The Unit 3 heat trace controller circuits wiring discrepancies were corrected to match plant prints. This allowed the heat trace system to function as designed. Unit 2 SBLC heat trace controllers circuits were verified to be wired correctly per the plant prints. This was done to verify there was not a generic problem with SBLC heat tracing.

5. Setpoints for SBLC low suction temperature alarm switches for both unit 2 and 3 were raised to provide more margin to the Technical Specification limits for SBLC suction temperature. (87 degrees ± 4)

- Previous work packages were reviewed, but it was unclear when the wiring discrepancy occurred.

**CORRECTIVE STEPS TAKEN TO PREVENT FURTHER VIOLATION:**

1. Revise SBLC System Annunciator Procedure DAN 902 (3) -5 G-6 to clarify the actions with regards to Technical Specifications and the necessity to assess actual suction temperatures. This annunciator procedure requires the operator to confirm local temperature readings with a hand held instrument. (NTS 2371009702401B due 2/16/98)

2. Provide training to the Operations and appropriate system engineering personnel detailing this event and corrective actions, including conservative decision making when faced with conflicting information. (NTS 2371009702401C due 7/10/98)

3. Update applicable training documents to clarify function of the switches to correct the knowledge deficiency regarding SBLC local suction temperature indications. (NTS 2371009702401D due 4/1/98)

4. Operations will evaluate the timeline of this event with regards to entry and exit of Technical Specification 3.4.A.1.b and implement corrective actions if necessary. (NTS 2371009702401A due 3/6/98)

5. Revise Post Maintenance Testing instructions by work analysts to define plainly which circuit is energized when heat trace circuits are tested. This will help to identify deficiencies should they occur during maintenance. (NTS 2491809701101, due 3/6/98)

6. Revise work instructions used by work planners on heat trace circuits to define clearly the actual work to be performed. (NTS 2491809701102, due 3/6/98)

7. Evaluate whether performance of periodic surveillance of heat trace operation is necessary. (NTS 2371009702401E due 3/6/98)

8. Revise applicable Dresden Operating Procedures to incorporate specific technical information regarding SBLC suction switches and alarms. (NTS 2371009702401F due 2/16/98)

9. Evaluate the name tag for the suction piping temperature indicator. (NTS 2371009702401G, due 3/06/98)

10. Shift Managers will review the NOV response with their crews. (Complete)

**DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED:**

Dresden achieved full compliance at 1220 hours on October 31, 1997 when the suction piping temperature was raised above 83°F. All corrective actions will be completed by July 10, 1998.