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February 27, 1996

**United States Nuclear Regulatory Commission**  
**Attention: Document Control Desk**  
**Washington, D.C. 20555**

**Subject:** LaSalle County Station, Units 1 and 2  
Supplemental Response to Electrical Distribution System  
Functional Inspection (EDSFI) Reports 50-373/91019 and 50-  
374/91019  
Deviation 373/91019-05D and 374/91019-05D on Degraded  
Voltage Setpoint Methodology  
Deviation 373/91019-05D and 374/91019-06 on 4160 Volt  
Degraded Voltage  
Request for Schedule Extension  
NRC Docket Nos. 50-373 and 50-374

- References:**
1. T. J. Kovach letter to USNRC dated January 16, 1992, transmitting response to NRC Inspection Reports 50-373/91019 and 50-374/91019 regarding the Electrical Distribution System Functional Inspection (EDSFI) EDSFI report.
  2. T. J. Kovach letter to USNRC dated April 30, 1992, transmitting supplemental response to the subject unresolved item.
  3. T. O. Martin (USNRC) letter to L.O. DelGeorge dated March 12, 1993, transmitting Inspection Report Nos. 50-373/93002 and 50-374/93002.
  4. M. B. Depuydt (CECo) letter dated June 22, 1993, to T.E. Murley (USNRC) transmitting supplemental response to the subject unresolved item.
  5. G. G. Benes (ComEd) letter dated January 27, 1994, to T.E. Murley (USNRC) transmitting supplemental response to the subject unresolved item.

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In reference 5 LaSalle County Station provided a description and status of the degraded voltage modifications that were required to resolve the subject EDSFI Unresolved Item. In this letter LaSalle County Station also committed to complete the 120 VAC distribution circuit modifications on each unit prior to startup following the respective seventh refueling outage and to complete the remaining 480 VAC equipment modifications on each unit during the respective sixth refueling outage.

In addition, LaSalle County Station committed in reference 1 to complete the corrective actions required to resolve the deviation on the degraded voltage setpoint methodology per the same schedule as the degraded voltage modifications. As indicated in our original response, the "permanent" degraded voltage setpoint can not be implemented until the degraded voltage "hardware" modifications are implemented.

The purpose of this letter is to:

1. Revise the commitment date for completion of the Unit 1 distribution circuit modifications to the same commitment date as the Unit 2 distribution circuit modifications, and clarify the list of 120 VAC distribution circuits with voltage concerns.
2. Provide a status of the degraded voltage modifications for the 480 VAC equipment.
3. Revise each unit's commitment date for completing the degraded voltage setpoint change to the first refueling outage following the approval of the Technical Specification amendment for revising the trip setpoint and allowable value.

The status of the degraded voltage design changes and the justification for the schedule changes are provided in the following attachments:

1. Attachment A summarizes the scope of work, status, and schedule of the 120 VAC distribution circuit modifications. In summary, the modifications for both Units 1 and 2 are scheduled to be completed during or prior to the Unit 2 seventh refueling outage.
2. Attachment B provides the status of the 480 VAC equipment modifications. In the previous correspondence (ref. 5) LaSalle County Station reported that all degraded voltage modifications required for the motor control circuits and 480 VAC equipment had been completed except for two (2) 480 VAC equipment changes. As noted in this attachment, the remaining modifications were completed on schedule.
3. Attachment C contains the justification for revising the schedule of the degraded voltage setpoint change as indicated above. The schedule requires revision because the final change to the degraded voltage trip setting at the 4160 volt level requires further analysis of the final plant configuration with the planned modifications, and a Technical Specification change is required prior to implementation. Although the degraded voltage setpoint will not be

implemented in a timeframe commensurate with the original commitment, modifications to plant equipment to ensure adequate voltage to safety equipment under degraded voltage conditions will be completed by the end of the Unit 2 seventh refueling outage. In addition, the final degraded voltage setpoint has been preliminary determined to be approximately the same value as the current compensatory setpoint for the degraded voltage relays.

Please direct any questions you may have concerning this matter to this office.

Respectfully,



R. E. Querio  
Site Vice President  
LaSalle County Station

Enclosure

cc: H. J. Miller, NRC Region III Administrator  
P. G. Brochman, NRC Senior Resident Inspector - LaSalle  
C. Matthews, IDNS Resident Inspector - LaSalle  
F. Niziolek, IDNS Senior Reactor Analyst  
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D. L. Farrar, Nuclear Regulatory Services Manager

## ATTACHMENT A

Supplemental Response To Inspection Report  
50-373/91019; 50-374/91019  
Unresolved Item 373/91019-06; 374/91019-06  
120 VAC Distribution Circuit Modifications

### Description of Modifications

The corrective actions that have been initiated for the 120 VAC distribution circuits with inadequate voltage at the degraded voltage setpoint consist of one or more of the following plant changes:

1. Tap changes of the associated 480-120/208V distribution transformers to increase the voltage on the secondary side.
2. Increase in the size of the power supply cable to decrease the voltage drop between the bus and load.
3. Addition of voltage regulating transformers to the circuits.

The 120 VAC distribution circuits which require modification are identified below:

#### Unit 1:

1. MCC 135X-1, ckt #5 - Post Accident Primary Containment Monitoring
2. MCC 135X-3, ckt #15 - Leak Detection
3. MCC 136X-1, ckt #5 - Post Accident Primary Containment Monitoring
4. MCC 136X-1, ckt #19 - SBTG Flow Control Damper 1VG002
5. MCC 136X-1, ckt #36 - Control Room HVAC
6. MCC 136X-2, ckt #5 - Process Radiation
7. MCC 136X-2, ckt #17 - Switchgear Heat Removal
8. MCC 136X-2, ckt #25 - Nuclear Boiler Process Instrumentation
9. MCC 136X-2, ckt #29 - Post Accident Containment Monitoring\*
10. MCC 136X-2, ckt #30 - Post Accident Containment Monitoring\*
11. MCC 136X-3, ckt #7 - Leak Detection

#### Unit 2:

1. MCC 235X-1, ckt #5 - Post Accident Containment Monitoring\*
2. MCC 235X-2, ckt #18 - Containment Monitoring

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120 VAC Distribution Circuit Modifications

3. MCC 235X-3, ckt #15 - Leak Detection
4. MCC 236X-1, ckt #5 - Post Accident Primary Containment Monitoring
5. MCC 236X-1, ckt #13 - SBTG Flow Control Damper 2VG002
6. MCC 236X-1, ckt #36 - Control Room HVAC
7. MCC 236X-2, ckt #9 - Post Accident Containment Monitoring\*
8. MCC 236X-2, ckt #32 - Containment Monitoring
9. MCC 236X-3, ckt #19 - Leak Detection

The four circuits marked with an asterisk, "\*", were added since the previous correspondence (ref. 5). These circuits were not included in reference 5 because the original analysis determined that the malfunction of the components with insufficient voltage in these circuits would only result in the loss of an alarm or monitoring function; components which perform a safety related function were calculated to have adequate terminal voltages. While this analysis is still accurate, it was determined that the alarm or monitoring function performed by these circuits is required by Reg. Guide 1.97.

In addition, one circuit - MCC 235Y-1, ckt. #16, RH Service Water Cubicle Vent Dampers - was removed because a detailed review concluded that the components in this circuit fail safe. Therefore, the components in this circuit are not required to operate following the Design Basis Accident (DBA).

The 120 VAC distribution circuits listed above were determined to have adequate voltage to perform their safety-related function following an accident under the compensatory measures taken by the station in response to the degraded voltage issue. These compensatory measures are described in detail in reference 1.

### Status of Modifications

The design drawings for all the 120 VAC distribution circuit modifications have been issued, the design packages for the modifications scheduled to be installed during the present Unit 1 refueling outage have been approved, and the voltage regulating transformers have been delivered to the station. The seismic qualification of these transformers has also been completed. However, the environmental qualification of this equipment is incomplete because an essential component failed during the simulated design basis accident test. Additional testing of this component is being performed by the vendor to resolve this problem, and this testing is scheduled to be completed by April, 1996.



## ATTACHMENT A

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Unresolved Item 373/91019-06; 374/91019-06  
120 VAC Distribution Circuit Modifications

### Justification For Schedule Change

The design changes for the circuits of both units are scheduled to be implemented prior to startup following the Unit 2 seventh refueling outage which is currently planned for fall, 1996.

The commitment date for completing the Unit 2 design changes remains unchanged, but the date for completing the Unit 1 design changes is being revised from the end of the Unit 1 seventh refueling outage to the end of the Unit 2 seventh refueling outage. However, seven (7) of the Unit 1 circuits listed above are scheduled to be modified during the seventh refueling outage on Unit 1. The remaining four design changes (Unit 1 items 1, 3, 5, and 6 above) are currently scheduled to be installed in the period following the refueling outage.

Until these corrective actions are completed, the compensatory measures that were taken for the degraded voltage issue will remain in effect. Thus, extending the schedule for completing the Unit 1 design changes will not decrease reliability or safety of the facility.

## ATTACHMENT B

Supplemental Response To Inspection Report  
50-373/91019; 50-374/91019  
Unresolved Item 373/91019-06; 374/91019-06  
Status of 480 VAC Equipment Modifications

As indicated in reference 5, the degraded voltage concerns for the 480 VAC equipment (motors, heaters, battery chargers, etc.), except for the motor operated valves (MOV), were resolved by initiating modifications to revise the 4160/480V transformer taps for the ESF Divisions 1 and 2 unit substations on both units to boost the secondary voltage by approximately 2.5%. These modifications were completed according to the committed schedule (reference 5). No tap changes are required for the ESF Division 3 transformers, and no other design changes are required.

The modifications that were required to resolve MOV voltage concerns have been completed and are identified under the GL 89-10 program.

## ATTACHMENT C

Supplemental Response To Inspection Report  
50-373/91019; 50-374/91019

Deviation 373/91019-05D and 374/91019-05D  
Lack of Degraded Voltage Setpoint Methodology

### Background:

During the 1991 LaSalle Electrical Distribution System Functional Inspection (EDSFI), compensatory actions were taken to ensure adequate motor starting and running voltages, and adequate voltage for the 120 Vac contactors to pick up, during a degraded voltage condition. These compensatory actions included a revised setpoint for the degraded voltage relays.

### Summary:

Preliminary setpoint calculations which address all known instrument errors have been completed and indicate that the required lower analytical limit is 3814V. The calibration setpoint was calculated to be approximately 3875V. These setpoint calculations are based on the installation of new, more accurate, undervoltage relays in the degraded voltage circuits in order to decrease the total instrument error and improve the reliability of these circuits. The undervoltage relays on both units have been replaced.

In accordance with compensatory actions taken for the degraded voltage issue, the degraded voltage relays are currently calibrated to trip at 3885V. Upon completion of the corrective actions required to close Unresolved Item 373/91019-06 and 374/91019-06, the setpoint for these relays will be revised as allowed by the setpoint calculations.

In reference 1 LaSalle County Station indicated that the schedule for finalizing the setpoint calculations and revising the degraded voltage setpoint is the same schedule that was provided for resolving this Unresolved Item. Since the setpoint change can not be implemented until the degraded voltage trip setpoint and allowable value specified in the Technical Specifications are revised, LaSalle County Station is revising this commitment to the first refueling outage following the approval of the Technical Specification amendment for revising the degraded voltage trip setpoint and allowable values. LaSalle County Station will need to update the voltage analysis depending on the performance of the voltage regulating transformer during the environmental qualification testing. LaSalle plans to complete this analysis and submit the Technical Specification amendment by the end of first quarter 1997.

As indicated above, the final degraded voltage setpoint is not expected to be greater than the existing calibration setpoint, and the 120 VAC distribution circuit design changes described in Attachment A will be implemented prior to end of the Unit 2 seventh refueling outage.

Until these corrective actions are completed, the compensatory measures will remain in effect, and completion of these actions will allow this Deviation to be closed.