

Indian Point 3  
Nuclear Power Plant  
P.O. Box 215  
Buchanan, New York 10511  
914 736.8001



Joseph E. Russell  
Resident Manager

October 21, 1991  
IP3-NRC-91-062

Mr. Marvin W. Hodges  
Director Division of Reactor Safety  
Region 1  
U.S. Nuclear Regulatory Commission  
475 Allendale Road  
King of Prussia, PA 19406

Re: NRC Inspection Report No. 50-286/91-80

Dear Mr. Hodges:

Attached is the Authority's activity schedule related to the unresolved issues addressed in NRC Inspection Report 50-286/91-80. The Authority is expanding its ongoing program for electrical distribution systems analyses to address all items listed in the attachment to this letter.

Should you or your staff have any questions regarding this matter, contact M. Peckham at 914-736-8041.

Very truly yours,

A handwritten signature in black ink, appearing to read 'J. E. Russell', written over the typed name.

Joseph E. Russell  
Resident Manager  
Indian Point 3 Nuclear Power Plant

bjr/rj  
attachment

9110290265 911021  
PDR ADOCK 05000286  
D PDR

*JER*

cc: U.S. Nuclear Regulatory Commission (original)  
Attn: Document Control Desk  
Mail Station P1-137  
Washington, D.C. 20555

INPO Records Center  
Suite 1500  
1100 Circle 75 Parkway  
Atlanta, Georgia 30339

IP3 Resident Inspector  
Indian Point 3  
U.S. Nuclear Regulatory Commission  
P.O. Box 337  
Buchanan, New York 10511

Schedule for Resolution of Inspection Findings identified in  
NRC Inspection Report 50-286/91-80

1. Item 91-80-01: Loading of EDS Buses

**Action:** The 125 V DC system loading calculations have been completed and reviewed. The calculations show that the batteries, chargers, panels, and cables can supply the maximum loads.

**Completion Date:** Complete

**Action:** The 120 V AC sizing calculations, including the 120 V AC load study, will be issued in October 1991. Preliminary results indicate that load values are within the equipment ratings. To continue to eliminate overly conservative values from the load study, the Authority will obtain nameplate data from normally energized equipment made accessible during the next refueling outage.

**Completion Dates:** Issue sizing calculations and load study - October 31, 1991  
Obtain nameplate data - May 31, 1992  
Revise sizing calculations and load study - July 30, 1992

**Action:** Calculations are being performed to determine the loading on 480V buses 2A, 3A, 5A, and 6A for post-accident switchover to recirculation with offsite power available.

**Completion Date:** November 30, 1991

2. Item 91-80-02: Inadequate Corrective Action

This item was addressed in the Authority's letter dated September 26, 1991 (IP3-91-056).

3. Item 91-80-03: Cable Impedance

**Action:** The IP3 Degraded Grid Voltage Studies were revised, including adjusting cable impedance values with the required temperature correction factor. The studies are in the review and approval cycle. The review is being integrated into the overall electrical distribution system analysis.

**Completion Date:** The studies will be approved by February, 1992

4. Item 91-80-04: DC Voltage Drop Calculation

**Action:** The 125 V DC voltage drop calculations were completed.

**Completion Date:** Complete

5. Item 91-80-05: Minimum Voltage

**Action:** The Authority calculated the voltage drop between the batteries and inverters, assuming end of battery life and minimum temperatures. The voltages at the inverters are well above 105 V (the lowest inverter input voltage calculated was approximately 108 V). The Nuclear Engineering and Design section will control changes to the DC system to ensure that the minimum voltage available to the inverters is greater than or equal to 105 V DC.

**Completion Date:** Complete

6. Item 91-80-06: 125 VDC/120 VAC Availability

**Action:** The Authority will evaluate the present classification of the chargers and analyze the need to reclassify them.

**Completion Date:** August 30, 1992

7. Item 91-80-07: 120 VAC Voltage Drop Calculation

**Action:** The Authority will obtain nameplate data from normally energized 120 VAC equipment when made accessible during the cycle 8/9 refueling outage. The 120 V AC voltage drop calculations will be completed subsequent to obtaining the nameplate data.

**Completion Date:** June 30, 1992

8. Item 91-80-08: AC Fault Analysis

The re-evaluation of 480 V buses during diesel testing identified the need for the following actions:

**Action:** For the 480 volt safety-related switchgear, the Authority will provide a reanalysis justifying acceptability of the current arrangement or modify the system, possibly by insulating the lugs to which the load cables are connected, to make it impossible for any single failure to cause the three-phase bolted fault.

**Completion Date:** End of the cycle 8/9 refueling outage currently scheduled to end on May 22, 1992.

**Action:** The Authority is evaluating other fault scenarios and will evaluate whether or not it is necessary to increase (by modification) the 480 volt breakers short circuit current ratings.

**Completion Date:** The evaluation will be completed by the end of 1991.

9. Item 91-80-09: Inadequate Design Control

This item was addressed in the Authority's letter dated September 26, 1991 (IP3-91-056).

10. Item 91-80-10: EDG Transient Loading

**Action:** Perform analysis of potential overlap of the EDG load sequencing timers.

**Completion Date:** The analysis will be completed by March 1, 1992. Any changes deemed necessary will be performed during ongoing maintenance activities.

**Action:** A diesel refueling test procedure will be revised to include recording of voltage, frequency, current, and fuel rack position and performed during the next refueling outage.

**Completion Date:** End of the cycle 8/9 refueling outage

**Action:** The Authority will evaluate EDG starting and loading sequences based on data received from the above testing, and system simulations.

**Completion Date:** The evaluation will be completed by October 31, 1992.

11. Item 91-80-11: EDG Static Loading

**Action:** The Authority obtained, from GE Canada/Alco, minimum and maximum design temperatures for the following parameters: jacket water, lube oil, and engine air. Derating factors for operation outside these ranges were not provided. The Authority is evaluating this information against plant operating requirements.

**Completion Date:** The evaluation will be complete by February 28, 1992.

12. Item 91-80-12: AC & DC Systems Coordination

**Action:** Existing DC system short circuit calculations (prepared in 1991) will be used to develop a new DC coordination study. The new DC coordination study will supersede the coordination portion of the Impell study of 1984 and the Systems Operation Department coordination study of 1987.

**Completion Date:** May 7, 1992

**Action:** Preliminary computerized AC system short circuit calculations have been performed. Once finalized, these calculations will be used to perform an AC system coordination study.

**Completion Date:** July 6, 1992

**Action:** The 120 V AC system coordination study will be reevaluated (and revised as necessary) following obtaining nameplate data during the Spring 1992 refueling outage.

**Completion Date:** June 30, 1992

13. Item 91-80-13: Failed Fuse Detection

**Action:** The Authority will review the fuse monitoring of Motor Control Center circuits, and identify any circuits that would benefit from additional monitoring.

**Completion Date:** March 15, 1992

14. Item 91-80-14: Penetration Heat Load Calculations

**Action:** The Authority attempted to obtain capability and damage curves for the electrical penetrations from the penetration designers and supplier (Westinghouse and Crouse Hinds). Westinghouse responded that they have no data for the penetrations, and neither does the manufacturer (Crouse Hinds). The Authority will determine a course of action for generating penetration data.

**Completion Date:** Course of action determined by January 31, 1992.

15. Item 91-80-15: Redundant Bus Independence

Review of the safety-related bus tie breakers identified the need for the following actions:

**Action:** The Authority will preclude the inadvertent closure of the 480 V bus tie breakers, and is evaluating the best method for accomplishing this.

**Completion Date:** Evaluation will be completed by November 30, 1991.

**Action:** The Authority is evaluating the effects of inadvertent closure of a 125 V DC tie breaker.

**Completion Date:** March 1, 1992

16. Item 91-80-16: EDG Storage Tank Level

**Action:** A calculation is in progress to determine the required setpoints for the EDG fuel oil storage tank level switches. Once the calculation is finished, level switch settings will be revised as necessary.

**Completion Date:** The calculation will be completed by November 1, 1991. Recalibrations will be performed during ongoing maintenance activities.

17. Item 91-80-17: Fuse Control

**Action:** The Authority will enhance the control of fuses at IP3 to include fuse information and programmatic procedures required to ensure adequate circuit coordination and protection.

**Completion Date:**The scope of the enhanced program will be defined by February 28, 1992. The program will be phased in as each element of the program is developed. The Authority expects that implementation of the total program will not be complete for at least one year following the definition of the program scope.