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Nuclear Power Plant
P.O. Box 215
Buchanan, New York 10511
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**New York Power Authority**

William A. Josiger
Resident Manager

March 1, 1993
IP3-NRC-93-024

License No. 50-286
Docket No. DPR-64

Mr. Curtis J. Cowgill, Chief
Reactor Projects Branch No. 1
U.S. Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA 19406

**Subject: Status of EDSFI Action Items (from Inspection Report No. 50-286/91-80)**

Dear Mr. Cowgill:

Attached is a revised activity schedule regarding the unresolved issues addressed in NRC Inspection Report 50-286/91-80. The Authority's initial schedule was provided by letter dated October 21, 1991, and updated by our letter dated July 20, 1992. Several of the action items previously identified have been rescheduled as noted in the attachment. The rescheduling is due mainly to emergent work or expanded scope resulting from our analysis (such as the 480 volt bus loading, DC system coordination, the need to design modifications and revise emergency procedures, and resolution of containment electrical penetrations pressurizer heater circuits). The status of all of the unresolved issues is provided for completeness.

In addition, the Authority is providing the status of a related issue concerning the potential overload of the 480 volt vital buses identified in LER 91-012-00. An approach has been developed to address load management requirements. Operational, implementation, schedular, and cost/benefit issues are being assessed at this time. The Authority expects these evaluations to be completed by July 16, 1993. It should be noted that the final solution to this issue will at least minimize load management features but not necessarily eliminate them.

Should you or your staff have any questions concerning this matter, please contact Mr. J. Perrotta at 914-736-8041.

Very truly yours,

William A. Josiger
Resident Manager
Indian Point 3 Nuclear Power Plant

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Attachment

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

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

Revised Schedule for Completion of Action Items Based on
NRC Inspection Report 50-286/91-80

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

**Action:** Complete and review the 125 V DC system loading calculations.

**Completion Date:** Complete. See letter IP3-91-062, dated October 21, 1991

**Action:** The 120 V AC sizing calculations, including the 120 V AC load study, will be issued. 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.

**Revised Completion Date:** Nameplate data obtained during the 1992 refueling outage will be incorporated into the load study by March 8, 1993. The final sizing calculations and load study will be completed by June 30, 1993. The original calculations used connected loads only. The final calculations will use operating loads based on actual operating conditions.

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

**Completion Date:** Complete.

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

**Action:** Strengthen the process for prompt resolution of deficiencies. Corrective actions for this item was addressed in the Authority's NOV response letter dated September 26, 1991 (IP3-91-056).

**Completion Date:** Completed. See letter IP3-91-056, dated September 26, 1991 where it states three general managers were appointed, increased frequency of station reports, and escalation of delinquent items to upper management have been accomplished. A controlled model, in the form of a calculations, was developed to assess bus loads. Cited deficiencies have been resolved and the administrative procedure on deficiency tags have been revised.

3. Item 91-80-03: Cable Impedance

**Action:** Revise the IP3 Degraded Grid Voltage studies were revised, based on newly calculated cable impedance values with the required temperature correction factor.

**Completion Date:** Complete. The results of these studies will be integrated into the overall electrical distribution system voltage analyses. The revision of the electrical distribution system voltage analysis is being prioritized and scheduled.

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

**Action:** Complete the 125 V DC voltage drop calculations.

**Completion Date:** Complete. See letter IP3-91-062, dated October 21, 1991

5. Item 91-80-05: Minimum Voltage

**Action:** Calculate the voltage drop between the batteries and the 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. See letter IP3-91-062, dated October 21, 1991

6. Item 91-80-06: 125 V DC/ 120 V AC Availability

**Action:** Evaluate the present classification of chargers 31 through 34 and analyze the need to reclassify them.

**Completion Date:** Completed evaluation. The Authority has analyzed the present classification of the battery chargers and verified their seismic adequacy using SQUG methodology. Seismic adequacy of these chargers will be maintained in accordance with SQUG methodology.

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

**Action:** Obtain nameplate data from normally energized 120 V AC equipment when made accessible during the cycle 8/9 refueling outage and perform the 120 V AC voltage drop calculations subsequent to obtaining the nameplate data.

**Revised Completion Date:** Voltage drop calculations will be performed after the completion and review of the 120 V AC load study.(Inspection Item 91-80-01). The completion date is currently scheduled for September 30, 1993. This item's schedule has been changed mainly as a result of the schedule change for item 91-80-01.

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

As a result of reevaluation of the 480 V buses during diesel testing the following tasks were identified:

**Action:** Perform a reanalysis for the 480 volt safety-related switchgear, justifying the 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:** Complete.

**Action:** Re-evaluate the results of the short circuit study and determine whether it is necessary to modify the 480 volt breakers for higher short circuit current ratings.

**Revised Completion Date:** A breaker capacity study is scheduled to be completed by June 30, 1993. Delay resulted from obtaining field data and implementation of load management schemes.

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

**Action:** No remaining action since immediate corrective action to address the violation was completed as noted in the Authority NOV response letter IP3-91-056, dated September 26, 1991.

**Completion Date:** Complete. This item was addressed in the Authority's letter dated September 26, 1991 (IP3-91-056) which stated that as a result of safety related batteries being replaced with larger ones without verifying that the fault current did not exceed the interrupting rating of the existing DC circuit breakers a violation of 10CFR50, Appendix B, criterion III resulted. Subsequently, testing of the circuit breakers in May 1991 proved that the breaker design provides adequate protection. Design control procedures were revised and implemented as part of the design control program, and is expected to prevent a similar occurrence.

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

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

**Completion Date:** Complete.

**Action:** Revise a diesel refueling test procedure to include recording of voltage, frequency, current, and fuel rack position, and perform the test using the revised procedure during the next refueling outage.

**Completion Date:** Complete.

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

**Revised Completion Date:** The test data recorded proved inconclusive. The system simulation program is expected to be complete by the end of March 1993. The evaluation will be completed by September 30, 1993.

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

**Action:** Confirm that the installed condition for the EDG corresponds to the design conditions. Since the actual rating of a diesel generator is dependent upon its installed condition, e.g. air supply temperature, lubrication, and jacket water temperature, its ability to carry the identified steady state loads requires confirmation because of a concern regarding the accuracy of the EDG nameplate rating.

**Completion Date:** Complete. The following information, which was obtained from GE Canada/Alco, was evaluated against plant operating requirements: 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).

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

**Action:** A new DC coordination study using the existing DC system short circuit calculations prepared in 1991 was developed. The resulting new DC coordination study supersedes the coordination portion of the Impell study of 1984 and the Systems Operations Department coordination study of 1987.

**Completion Date:** Complete.

**Action:** Perform an AC system coordination study upon finalization of the computerized AC system short circuit calculations.

**Revised Completion Date:** The 480 V AC system coordination study is scheduled for completion by April 30, 1993.

**Action:** Re-evaluate (and revise as necessary) the 120 V AC system coordination study after obtaining nameplate data.

**Revised Completion Date:** The AC system coordination study is scheduled to be completed by May 31, 1993.

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

**Action:** The fuse monitoring of Motor Control Center circuits was reviewed.

**Completion Date:** Complete. The Authority performed a study that reviewed the fuse monitoring of safety related 480 V MCC circuits and other circuits sufficiently important to plant operation to warrant fuse monitoring to identify any circuits that would benefit from additional monitoring. The Authority is initiating modifications for those circuits identified with installation scheduled for the 9/10th outage in 1994.

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

**Action:** Determine a course of action for generating penetration data and evaluate the adequacy of protection for the plant electrical distribution system regarding containment electrical penetrations.

**Revised Completion Date:** The penetration heat load calculations were approved by NYPA January 5, 1993. Evaluation studies resulted in identification of two issues; MCC 38 feeder and pressurizer heater circuits. The MCC feeder issue was resolved with a modification and the pressurizer heater circuit issue is being resolved with a modification. The adequacy of electrical penetration protection and the issue concerning pressurizer heater circuits are scheduled to be complete by June 30, 1993, which is the original schedule date for the pressurizer heater issue.

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

The following actions were identified as a result of a review of the safety-related bus tie breakers:

**Action:** Evaluate and implement the best method to preclude the inadvertent closure of the 480 V bus tie breakers.

**Completion Date:** Complete.

**Action:** Evaluate the effects of inadvertent closure of a 125 V DC tie breaker.

**Completion Date:** Completed evaluation. As a result of the evaluation the Authority intends to change the configuration for reliability.

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

**Action:** A calculation to determine the required setpoints for the EDG fuel oil storage tank level switches was performed.

**Completion Date:** Completed calculation. Setpoints have been revised to reflect the calculation and periodic calibration procedures have been updated.

17. Item 91-80-17: Fuse Control

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

**Revised Completion Date:** Fuse control guidelines (including a fuse list, and instructions for the use of the list) will be issued March 31, 1993. When the fuse control guidelines are issued procedures will be in place to maintain the list. This item was rescheduled due mainly to emergent work issues, such as the 480 V bus loading, DC system coordination, the need to design modifications and revise emergency procedures.