

November 7, 2001

MEMORANDUM TO: Stuart Reiter  
Chief Information Officer  
**/RA/**  
FROM: Michael L. Springer, Director  
Office of Administration  
SUBJECT: UNINTERRUPTABLE POWER FOR NRC DATA CENTERS

This responds to your memorandum of October 11, 2001, above subject, which discussed on-going problems with the uninterruptable power supply units (UPS) that serve the OWFN and TWFN Data Centers.

Specifically, you mentioned that off-site power outages, the most recent being August 23, 2001, resulted in a number of servers in the TWFN Data Center, including STARFIRE (CFO1), going offline and that the cause was failure of the UPS. This is not accurate. In fact, since the major overhaul in February 2001, the UPS unit in TWFN has performed very effectively. Investigation by my staff of the power supply in the Data Center revealed that CFO1 and a few other servers were fed through a bypassed UPS. This UPS was taken offline by the Data Center staff and was reported to my staff as a nonessential source of protection to the Data Center. In fact, we were assured as recently as January 2001 that this unit was not feeding any equipment and, therefore, was not included in our February overhaul. Since this discovery, my staff was able to identify electrical service in the Data Center that was protected by the overhauled UPS, and on October 16, 2001, the Data Center staff relocated the CFO1 to the protected side of the Data Center.

Regarding the OWFN Data Center, my staff is taking steps to avoid recurrence of the September 24, 2001, outage. An earlier power fluctuation burned the power supply module to the control processor of the OWFN UPS before September 24, 2001, and rendered the unit inoperable. Although all UPSs are regularly maintained, there was no immediate warning on the status of the system to alert us about the problem that was discovered during an inspection. The UPS unit was repaired on October 19, 2001, and protection to the OWFN Data Center restored. Since then, we have pursued acquisition of an early warning system to provide us with continuous system status monitoring. We plan to install this new monitoring device by February 1, 2002, in the 24-hour manned area of the Data Center to avoid similar situations in the future.

I agree with you that both Data Centers require properly protected power supplies. However, it is equally important to identify and manage these power supplies more effectively. It is also essential for all power receptacles to be verified for protection before they are used for sensitive equipment. Furthermore, to maintain the level of protection the Data Center desires, it might be necessary to provide redundant UPSs in certain locations. We need to accurately identify these needs to ensure sufficient protection.

Responses to your specific questions follows:

1. The recent repair to the OWFN UPS and the relocation of CFO1 to a protected circuit in the TWFN Data Center provided a short-term solution to the immediate power supply problems. With respect to the long-term solution, we have reconsidered our TWFN UPS replacement schedule, planned for Fiscal Year 2004, and now plan to replace the unit by the end of the third quarter of this fiscal year subject to the availability of funds. We will coordinate this effort with your staff to ensure that we meet the needs of the TWFN Data Center. To start this project, we need a detailed and accurate list of equipment (currently in use or planned) and their respective power requirements. Also, we will need a relative priority placed on the various systems to determine their criticality and whether redundancy is needed. The OWFN UPS will remain on schedule for replacement in Fiscal Year 2004.
2. We are currently exceeding the manufacturer's maintenance schedule by providing quarterly maintenance (the manufacturer recommends semi-annual). We have met with our Operation and Maintenance contractor and reviewed the specific maintenance tasks required for each unit.
3. We will install a remote monitoring system for the OWFN and TWFN UPS.
4. It is the responsibility of ADM to maintain the UPS units that service the Data Centers. The Data Center staff will be responsible for responding to the remote monitoring systems. During the day, if the Data Center staff notices a problem, they should send a FIXIT to document the problem and call the Facilities Branch on 415-7310. After hours they should notify the Central Alarm Station, 415-2000, who will notify an NVT mechanic on-call. In addition to our responsibility to maintain the UPS units, my staff is also responsible for managing the overall electrical distribution for the White Flint Complex. In this regard, I am concerned that my staff and our Operation and Maintenance contractor do not have access into the Data Centers. In particular, in an emergency, we need to have immediate access into the Centers. Please have an appropriate staff person contact Lou Fisher who will supply a list of names to be added to the access list.

It is our intent to resolve the power issues and protection of the Data Center as quickly and as effectively as possible. We have taken necessary steps to address these issues, and we will continue to work on this issue with your staff. It is important for your office to provide the information requested so that we can develop the best approach to this problem.

Bahman Rowhani, Facilities Management Branch, will continue to serve as my point-of-contact for the UPS replacement project. Your staff should furnish the requested information to him. Mr. Rowhani can be reached on 415-6467 (e-mail:BAR1).

cc: J. L. Funches, CFO  
P. G. Norry, DEDM

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