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U-602763
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June 19, 1997

Mr. A. Bill Beach
Regional Administrator
U.S. Nuclear Regulatory Commission
Region III
801 Warrenville Road
Lisle, Illinois 60532-4351

Subject: Update of Corrective Actions to Resolve Main Control Room Neon Light Socket Failures

Dear Mr. Beach:

This letter is being submitted to provide an update regarding the actions Illinois Power (IP) has taken to resolve the neon light socket failures in the main control room at Clinton Power Station (CPS) as previously addressed in IP letter U-602759 dated June 10, 1997.

Subsequent to our June 10, 1997 letter, IP has taken several steps to ensure the effectiveness of our corrective actions in response to the identified failures. As indicated in the June 10 letter, IP is replacing all indicating light sockets that were reworked with the inappropriate solder flux beginning in December 1996. Test results from the sample of originally reworked lamp sockets provided to an off-site laboratory revealed that the socket wiring exhibited "wicking" of the solder flux up under the insulation for lengths of up to four and a half inches. This condition could potentially exist for all the lights originally reworked. Therefore, to ensure no detrimental effects from any residual flux remaining on the reworked components, approximately one foot of wire is being cut from the existing wire leads to each light socket, and new lengths of wire are being spliced onto those leads in order to complete the new socket connections. In addition, the sockets are receiving resistance checks prior to and after installation. To facilitate proper installation, CPS maintenance procedure 8492.04, "Non Routine Terminations and Splices," has been revised to provide clearer guidance on the proper method of soldering lugs to the bottom of the neon light sockets. Further qualification requirements have been established and specific training has been given for the electrical maintenance and control and instrumentation technicians performing the work.

It should be noted that during the ongoing socket replacement and reconnection work, a discrepancy was noted with one of the neon light socket connections. One of the wire leads was found to be loose and could be easily pulled out of the termination at

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the socket connection. The condition was investigated and was traced to a particular technician. Appropriate corrective actions have been taken, including rechecking of all of the connections completed by the particular individual, and incorporating a double verification of the soldering quality for completing all of the socket connections.

Actions are also being taken to identify and prevent further inappropriate use of solder flux. An investigation of where inappropriate solder flux may have been used on other plant components is proceeding. IP will provide the results of that investigation by separate letter when sufficient information is available.

As an immediate action for preventing use of the solder flux that was applied to the neon light sockets, caution statements have been added to the documentation that technicians use to identify proper usage of consumable materials, stating that this particular flux is not to be used in electrical applications. Also, the flux is no longer qualified as "General Plant Use" but rather as "General Plant Limited." "General Plant Use" means the product can be used anywhere, with no restrictions, whereas "General Plant Limited" restricts the use to certain applications. The procurement engineering team at CPS is performing an audit of material classifications to ensure that CPS has no other consumable materials that could be used in the wrong application. Additionally, the Quality Assurance department at CPS is performing an audit on the use of consumable materials.

The preceding actions are only part of IP's commitment to resolve this problem. Performance Improvement International has been contacted to assist the CPS Independent Analysis Group in the investigation of the human performance aspect of this issue. These combined groups will be looking into the potential breakdown in programmatic and organizational controls. Corrective actions may be expanded or revised based on the findings of these ongoing investigations.

The control room lamp socket repair work is being performed with scheduled system outages to restore operability of the affected systems and components in a timely fashion. When more information becomes available, we will update your staff resident inspectors. Please contact me for any additional concerns or questions you may have.

Sincerely yours,

Wayne D. Romberg
Assistant Vice President

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