



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION III  
801 WARRENVILLE ROAD  
LISLE, ILLINOIS 60532-4351

June 9, 1997

Mr. John G. Cook  
Senior Vice President  
Clinton Power Station  
Illinois Power Company  
Mail Code V-275  
P. O. Box 678  
Clinton, IL 61727

Dear Mr. Cook:

I am writing to document recent conversations between members of our respective staffs regarding safety related circuit breaker and suppression pool emergency core cooling (ECCS) suction strainer operability.

During an engineering and technical support inspection earlier this year, NRC inspectors identified that safety related 480, 4160, and 6900 volt safety related breakers had not been maintained in an appropriate manner (Inspection Report No. 50-461-97003). Further, a number of the circuit breakers failed to operate properly in service or while being tested thereby questioning the breakers' operability and reliability until they can be appropriately refurbished. Based on our findings, your engineering staff developed a test and inspection program to provide reasonable assurance that, prior to being fully refurbished, the breakers would perform their intended function. Our review of your program generated a number of questions which were verbally presented to your staff on May 22, 1997; enclosure "A" to this letter documents those questions.

In April of this year, NRC inspectors identified material conditions (i.e., signs, placards, etc.) and degraded coatings in Clinton's containment and raised a concern over their impact on suppression pool ECCS suction strainer operability. Your staff evaluated the material condition and initiated actions to remove the material and improve control over such items in the future. The degraded coatings' issue remains to be resolved. Following discussions during restart panel meetings on May 15 and 28, 1997, a conference call between members of our staffs was held on June 3, 1997, to discuss the current status. On June 4, 1997, followup discussions addressed the need for Illinois Power (IP) to provide reasonable assurance that all containment and drywell coating is appropriately qualified. During the calls the NRC stated that if the containment coatings could not be qualified, IP must provide reasonable assurance that the ECCS suction strainers will remain operable, i.e., will not clog, following a design basis event. During those calls, our staffs discussed some possible options (refer to enclosure "B") available to IP to address the degraded coatings.

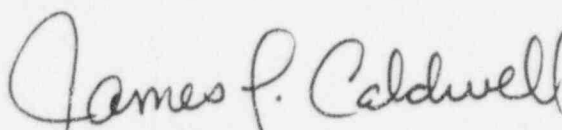
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It is our understanding that IP will document its basis for reasonable assurance that safety related circuit breakers and suppression pool ECCS suction strainers are operable and will perform their intended functions. The documentation, including responses to specific questions, will be provided to NRC prior to unit restart and in sufficient time to allow an appropriate review.

If you have any questions pertaining to these issues, please contact Geoffrey Wright or Chris Miller at (630) 829-9601 or 829-9627 respectively.

Sincerely,



James L. Caldwell  
Deputy Regional Administrator

Docket No. 50-461

Enclosures: As Stated

cc w/encl:

W. D. Romberg, Assistant  
Vice President  
P. Yocum, Plant Manager  
Clinton Power Station  
R. Phares, Manager-Nuclear Assessment  
J. Sirois, Director - Licensing  
Nathan Schloss, Economist  
Office of the Attorney General  
G. Stramback, Regulatory Licensing  
Services Project Manager  
General Electric Company  
Chairman, DeWitt County Board  
State Liaison Officer  
Chairman, Illinois Commerce Commission

J. G. Cook

-2-

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/s/James L. Caldwell  
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Project Manager, NRR w/encl  
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NAME	Wright: <i>ep</i>		Miller <i>for</i>		Pickett <i>via TEL</i>		Bing		Caldwell
DATE	06/6/97		06/6/97		06/6/97		06/6/97		06/6/97

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## Enclosure A

### Questions Pertaining to the Breaker Testing Program

- I. A number of breakers in your program have been listed as Critical Non-safety breakers, what is their impact on safety system operability?
- II. By not refurbishing any of the 4160 volt breakers, what affect does that have on reasonable assurance?
- III. Construct an equipment history/failure history for the breakers.
- IV. You have specified an acceptance criteria of 100ms for the low voltage tests. What is the basis for that criteria?
- V. Specific questions:
  - A. ABB 480V Breakers
    1. What type of post refurbishment testing was performed?
    2. Wiring errors on breakers returned from ABB were identified. Miswiring of the CTs can cause the breaker to trip prematurely. What have you done in this area?
    3. When the breakers were refurbished, were the trip units replaced with solid state units, i.e., was the breakers' design changed from the original design?
    4. How and on what time schedule do you plan on refurbishing the remaining 480V ABB safety related breakers?
  - B. General Electric 4160 Volt Breakers
    1. Exactly how many of these breakers are going to be tested and inspected?
    2. Check list questions:
      - a. Items 9-12: What is the basis for the  $> 1$  ohm criteria?
      - b. Item 46: What is basis for 1000V test rather than a higher voltage?
      - c. Item 47: What was the amperage for the ductor used?
      - d. Was a hypotential test considered?

C. Westinghouse 4160 Volt Breakers

1. You indicated during a restart panel meeting that Illinois Power is going to purchase breakers from another utility as replacements for some of Clinton's breakers. Are the breakers being purchased as safety related breakers? If not, how are they being dedicated?
2. What is the schedule for refurbishment of the remaining breakers?
3. Given relative similar history on GE and Westinghouse breakers, why is there such a difference between the GE and Westinghouse inspection check lists?
4. Check list questions:
  - a. What does item 12 mean?
  - b. Page 4 - clarify items 6 & 7 regarding criteria for inspecting other breakers.
  - c. Items 1a and 2a: Are these tests conducted at 90 & 70 volts?
  - d. Item 6: Same question as item 2a for GE.
  - e. Were meggar/ductor tests considered?

D. Westinghouse 6.9kV Breakers:

What criteria/check list was used to inspect and test DVP breakers?

## Enclosure B

The staff is concerned about the integrity of the containment coatings at the Clinton Power Station during post-accident conditions. While paint has been observed to be blistered and peeling at multiple locations within both the drywell and containment, the staff is particularly concerned with areas above the 828 foot elevation on the refueling floor. It is our understanding that a significant amount of post-construction touch-up painting has been performed in this region and that an excessive amount of degradation has been associated with these repairs. Illinois Power needs to provide justification that either the containment coatings are qualified for the post-accident environment or that the ECCS pump suction strainers in the suppression pool will not become clogged due to debris and LOCA-generated paint chips.

Due to the observed degradation of the coatings and the apparent deficiencies in the surface preparation for touch-up paint repairs, it may be difficult to ensure that all the current coatings are qualified for the LOCA environment. Assuming that the existing containment coatings cannot be qualified, reasonable assurance must be provided that the ECCS sump suction strainers will remain operable, i.e., will not clog, during the post-accident phase. Several options for providing this assurance were discussed:

1) Perform multiple adhesion pull tests

Implement a program utilizing adhesion pull test and provide the basis for the number and location of such tests. It would be expected that multiple adhesion pull tests would need to be performed and that they would need to include construction touch-up areas, areas adjacent to observed degradation, and original liner plate coatings. Tests would be expected in the drywell area and the areas above and below the 828 foot refueling floor in the containment.

2) Calculations

Calculations using the BWR Utility Resolution Guidance (URG) methodology as opposed to the methodology described in the USAR. The URG provides a transport methodology which more appropriately characterizes the anticipated phenomena following a LOCA and includes the results of BWROG and NRC research into debris transport and behavior in the suppression pool. The amount of coatings assumed to detach from the containment liner during the LOCA must be justified. During our initial phone call, Clinton staff indicated that approximately 1500 sq ft of coating was visibly degraded. Because of the uncertainties associated with all the post construction repaired areas, NRC would expect the analysis to consider all post-construction touch-up areas as well as all areas currently observed to be degraded (both drywell and containment areas).

3) Coating Removal and Test Approach

This approach combines removal of known and suspected degraded coatings in those areas where the coatings would be transported to the suppression pool with an adhesion pull test program. By removing the suspect coatings and testing the remaining coating, reasonable assurance would be provided that the suppression pool strainers will remain operable over the next operating cycle. This approach must include an assessment for those areas left without coating covering the period between unit restart and appropriate re-coating.