DmB

April 11, 1985

Docket No. 50-461

Illinois Power Company
ATTN: Mr. W. C. Gerstner
Executive Vice President
500 South 27th Street
Decatur, Il 62525

References:
1. Illinois Power Company letter U-0827, D. P. Hall to J. G. Keppler dated 3/29/85.
2. Illinois Power Company letter U-0828, D. P. Hall to J. G. Keppler dated 3/29/85.
3. Illinois Power Company Results of Quality Programs for Construction of Clinton Power Station; Chapter V and Appendix D.

Gentlemen:

Thank you for your letters (identified as references 1 and 2 above), informing us of the steps you are about to take, steps you propose to take, and of the results you have achieved to date under your Overinspection Program.

In reference 1, you state that Illinois Power Company is in the process of making changes to the procedures for the Overinspection Program which will be implemented during April 1985. Our initial review of this information has raised several questions and comments concerning the changes you plan to make and their relationship to the Overinspection Program Plan. Those questions are forwarded as enclosure 1.

Illinois Power Company should not implement the proposed changes to the Overinspection Program procedures identified in reference 1 until Region III has completed its review of this matter.

In reference 2, you have provided information requested by Region III in a meeting held between our respective staffs on October 25, 1984 in Glen Ellyn, Illinois (Re: Inspection Report 50-461/84-37). In addition, you requested that Region III review and concur in your proposal to remove safety related piping and mechanical supports from the Overinspection Program. Our review of this request and of the data provided in references 2 and 3 has also raised additional questions. Region III requires additional information as identified in enclosure 2 in order to conclude its review of this matter.

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Region III has also developed several questions and comments concerning reference 3 which should be addressed by Illinois Power Company prior to any future proposal by Illinois Power to terminate Overinspection of additional commodities. Those questions and comments are forwarded in enclosure 3.

You should be prepared to discuss Illinois Power's response to questions and comments in enclosures 1 and 2 at the meeting to be held on April 22, 1985, in Region III.

Your cooperation with us is appreciated. Should you have any questions concerning this letter or the enclosures, please contact Mr. T. P. Gwynn of my staff.

Sincerely,

Original signed by
James G. Keppler

James G. Keppler
Regional Administrator

Enclosures:
1. Questions Regarding Changes To The Overinspection Program Procedures
2. Questions And Comments Regarding Proposed Changes To The Overinspection Program Plan
3. Additional Questions And Comments Concerning The IP Quality Programs Results Report

cc w/encls:
DMB/Document Control Desk (RIDS)
Resident Inspector, RIII
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RIII	RIII	RIII	RIII	RIII	RIII
RFW	RFW for				
Warnick/rl	Norelius	Spessard	Benson	Davis	Keppler
4/10/85		4/10/85		4/10	4/10/85

ENCLOSURE 1

QUESTIONS AND COMMENTS REGARDING CHANGES TO THE

OVERINSPECTION PROGRAM PROCEDURES

Questions and comments below are in reference to to the following:

1. Illinois Power (IP) letter U-0827, D. P. Hall to J. G. Keppler dated March 29, 1985.

A. Under the heading " Rejectable Lots ", IP states:

1. The results of rejectable lots will be evaluated by IPOI or BAFV, as appropriate, to identify which specific types of items or inspection attributes are responsible for the rejection of the lot. IPOI or BAFV will then evaluate the nonconformances in these types of items and inspection attributes to determine whether further reinspections of these types of items or inspection attributes should be conducted regardless of the results of the evaluations conducted below in (2).

2. Nonconformances identified in rejectable lots will be evaluated by IP NSED (in conjunction with S&L) to determine the safety significance of the nonconformances. Based upon this evaluation, IPOI or BAFV, as appropriate, and NSED will determine what, if any, further reinspection should be performed or corrective actions should be taken based upon the significance of and/or frequency of the nonconformances.

The following questions and comments are related to the above statements:

a. Question - Where in the Overinspection Program Plan, which was previously reviewed and concurred in by Region III, does the plan delegate the authority and responsibility to IPOI to evaluate the results of rejectable lots?

b. Question - What level of authority and technical qualifications must be held by individuals performing evaluations discussed in 1) and 2) above?

c. Question - What level of authority and technical qualifications must be held by individuals determining what, if any, further reinspections should be performed or corrective actions taken as discussed in 1) and 2) above?

d. Question - What level of management review will be afforded to these activities?

e. Question - What, if any, quality assurance actions will be employed by IP to assure the proper implementation of this program change?

f. Question - What specific criteria will be used by BAFV, IPOI, and NSED (in conjunction with S&L) in performing the evaluations in 1) and 2) above?

g. Comment - Recent correspondence (IP letter U-10233, D. P. Hall to J. G. Keppler dated January 5, 1985) from IP indicated that all NCRs generated by the IPOI program will be dispositioned and evaluated by the architect engineer (S&L). Reference 1 seems to contradict letter U-10233. In addition, IPQA recently identified in Audit Report Q38-85-02 that NSED did not have an ANSI N45.2.11 design/design review program.

Question - Considering the comments above, should NSED be delegated the authority and responsibility for engineering disposition and evaluation of OI NCRs?

B. Comment - Provide copies of the procedure changes and details of programmatic actions to Region III prior to their implementation.

ENCLOSURE 2

QUESTIONS AND COMMENTS REGARDING PROPOSED CHANGES TO THE

OVERINSPECTION PROGRAM PLAN

Questions and comments below are in reference to the following:

2. Illinois Power (IP) letter U-0828, D. P. Hall to J. G. Keppler dated March 29, 1985.

3. Results of Quality Programs for Construction of Clinton Power Station, Chapter V and Appendix D.

A. DATA PRESENTATION

The data presented by IP in the reference documents did not provide a sufficient basis for Region III to concur in IP's conclusions regarding the OI program results for piping and mechanical supports. The following comments are applicable to the data presented.

1. Comment - One of the objectives of the Overinspection (OI) Program is to prove that the structures, systems, and components (SSCs) at the Clinton Power Station (CPS) are properly installed in order to assure safety of operation. The data presented in references 2 and 3 concerning piping and mechanical supports are defined in terms of attributes which are sub-elements of plant SSCs. Plant SSCs are composed of varying quantities of these attributes, depending upon commodity and degree of complexity. In addition, some of these attributes do not necessarily act independently in achieving the safety function of the SSCs to which they apply (ie, some attributes of a pipe support, if found to be simultaneously nonconforming on a common support, would have a greater impact on the integrity of that support when taken together than when considered separately).

   Provide OI program results for piping and mechanical supports (including confidence factors) in terms of plant SSCs rather than SSC sub-elements.

2. Comment - Reference 2, attachment 2, provides IP's response to open item 461/84-37-01. That response is data in terms of percent complete and number of attributes inspected for safety related piping and mechanical supports.

   Provide more detailed information concerning piping and mechanical supports which forms the basis for the data provided (e.g., total linear feet of safety related large bore piping and the number of feet actually inspected; total number of safety related pipe supports and the number actually inspected, etc.).

3. Comment - The data presented in references 2 and 3 related to piping and mechanical supports are presented quantitatively with only limited qualitative information. This presentation does not provide a meaningful basis for an independent reviewer to judge the actual significance of OI findings.

   Provide additional qualitative data related to piping and mechanical supports which was the basis for statements contained in references 2 and 3 regarding the significance of OI findings (e.g., refer to the Byron report provided to IP at the meeting in Region III last October 25; Exhibit C-2, page 8 of 15, Table CE-9). The response should consider all applicable attributes inspected.

4. Comment - The data presented in references 2 and 3 related to piping and mechanical supports does not provide sufficient relevant information (e.g., numbers of SSCs inspected, numbers of inspections performed, and OI findings broken down by discipline, by building and elevation, and by old vs new work).

   Quantify OI results for piping and mechanical supports in terms of numbers of SSCs inspected, and numbers of inspections performed broken down by discipline, by building and elevation, and by old vs new work.

B. Termination Criteria

The basic philosophical approach to OI termination criteria presented by IP in reference 2 appears to be reasonable to Region III. Those criteria are directly related to Confidence (Criteria A), Conformance (Criterion B), and Defense In Depth (Criterion C). However, the specific criteria applied by IP require additional justification. The following questions and comments are applicable to the OI termination criteria.

1. Comment - Ten thousand attributes inspected does not appear to be a consistent criterion which can be meaningfully applied to different plant SSCs. For example, a simple beam installation may consist of 150 sub-elements (attributes) while a complex beam installation may consist of 800 or more attributes. Thus the 10,000 attributes criterion may be satisfied by inspecting as few as 13 complex beam installations or 67 simple beam installations. Neither number of installations appears to be an adequate basis for obtaining reasonable assurance in the total population of safety related beam installations at CPS. This comment is equally applicable to piping and mechanical supports.

   Quantify the minimum number of mechanical supports and the minimum number of feet of large and small bore pipe which would have to be inspected in order to achieve the 10,000 attributes criterion. Is that number an adequate basis for obtaining reasonable assurance in the total population of similar plant SSCs? Provide the technical basis for your determination.

2. a. Comment - Five percent of the items (SSCs) inspected may be a reasonable basis for extrapolating confidence in the total population of similar SSCs installed, provided that:

   (1) The total population of similar SSCs is sufficiently large, or;

   (2) An adequate level of confidence can be established with smaller total populations of similar SSCs on some other basis.

   (3) Provided the 5% sample is a random sample of old work (pre-July 1982).

   The basis for any determination regarding small populations of similar SSCs must be clearly established.

   b. Question - Can IP demonstrate that required confidence levels will be achieved using the 5% criterion even when small total populations of SSCs are inspected under the OI program?

3. a. Comment - Because of the dependent nature of certain sub-elements (attributes) of plant SSCs, the actual confidence achieved in terms of the ability of an individual SSC to perform its intended safety function has not been clearly established. For example, a pipe support may be composed of a concrete foundation, a base plate, anchor bolts, nuts, several structural shapes arranged in a defined geometry , interconnecting welds, connecting rods, U bolts, clamps, etc.. These individual parts of the support have attributes defined by IPOI. IP has demonstrated a high degree of confidence in the conformance of these individual attributes. However, the support must act as a unit in order to perform its safety function.

   b. Question - Can IP demonstrate a high degree of confidence in piping and mechanical supports when the individual attributes are arranged as a unit (or item), considering the dependency of certain attributes, using the data obtained to date under the OI program? Provide the detailed analytical results.

4. Question - Considering the response to item 3 above, is the Conformance criterion sufficient when applied to piping and mechanical supports without restriction?

5. a. Comment - Criterion C (related to defense in depth) appears to be a valid criterion, subject to the veracity of the engineering evaluations performed (see comment C.1).

b. Question - Can IP demonstrate that this criterion is met for piping and mechanical supports when the engineering evaluations performed for safety significance conform to the stated premises (refer to comment C.1. for premises)?

C. ENGINEERING EVALUATION

Engineering evaluations performed and documented in the reference documents were reviewed by Region III in order to determine if they presented an adequate basis for the actions requested by IP. The following questions and comments are applicable to engineering evaluations.

1. a. Comment - In the engineering evaluations documented in reference 2, attachment 2, third page last paragraph, and in reference 3, Chapter V, paragraph C.2.b.2)(f) and (j), IP takes credit for future activities, the scope, depth, and quality of which may be undefined. For example, the reference 2 paragraph states in part:

> Installation nonconformances on pipe supports involved loose or incomplete hardware installation, incorrect adjustment of supports, lack of clearance or interference, and construction tolerance non-conformances. Each nonconforming condition was evaluated to determine if the nonconformance was of a type that would be specifically examined in subsequent preoperational testing. ... Consequently, these nonconformances were not significant **because they would not have been left unidentified and uncorrected if the Overinspection Program had not been performed** (emphasis added).

This methodology for evaluating construction deficiencies is not in accordance with 10CFR50.55(e), and does not appear to be consistent with a premise stated in reference 2, attachment 2, first page, last paragraph, as follows:

> Although S&L evaluated each nonconformance identified by the Overinspection Program to determine whether it was safety significant, it should be emphasized that most of the non-conforming items have been reworked in accordance with applicable design drawings and specifications and the remainder have been determined to be acceptable as they are. Consequently, the evaluations below were performed to determine the safety significance of the nonconformances **assuming they had been left uncorrected** (emphasis added).

In addition, this methodology appears to depart from a stated premise in reference 3, Chapter V, paragraph C.2.a., as follows:

> For purposes of this report, a safety significant nonconformance is defined as a nonconformance which, **were it to have remained unidentified by the Overinspection Program** (emphasis added), could have resulted in the loss of capability of a structure, system, or component to perform its intended safety function.

Reference 3 adopts the above premise by reference.

b. Question - Does IP intend that engineering evaluations of OI findings conform to the requirements of 10CFR50.55(e) and the above premises? If so, what are the results of IP's evaluations of OI findings concerning piping and mechanical supports when performed in accordance with the stated requirements and premises?

2. a. Comment - Reference 3, Chapter 5, pgs. V-9 through V-10, states:

> For cases in which one NCR documented nonconformances on different items or in which one item contained nonconforming attributes of differing natures (e.g., loose bolt and arc strike), separate evaluations of the impact of the nonconforming attributes on each item were conducted to ensure that all possible adverse impacts were addressed.

This statement seems to imply that multiple nonconforming conditions identified on a single item were treated separately.

b. Question - If this is what was intended by the statement above, can IP justify the methodology used in light of the dependent nature of certain attributes (as discussed in A.1. and B.3. above)?

3. Comment - Reference 3, Chapter 5, paragraph C.2.b.2)(c), Arc Strikes, does not differentiate between superficial and severe arc strikes. A severe arc strike may reduce piping wall thickness substantially and/or include a localized crack, usually at the bottom of the pit created by the strike.

Provide both qualitative and quantitative analytical results from the engineering evaluations performed on arc strikes identified on piping and mechanical supports.

4. Comment - Reference 3, Chapter 5, paragraph C.2.b.2)(d) provides the engineering evaluation of missing or incorrect identification markings. That evaluation does not appear to consider the potential impact of missing or incorrect identification on the correct performance of operating activities (operations, maintenance, and surveillance).

   In addition, there is no indication as to the type of criteria applied by S&L in evaluation of missing or incorrect material markings. This is of particular importance in view of the substance of IP's 10CFR50.55(e) reports 55-84-02 and 55-84-18.

   Provide the following additional information related to engineering evaluations performed on missing or incorrect identification markings:

   (1) The results of evaluations performed related to the impact of missing or incorrect component identification markings (related to piping and mechanical support components) on the correct performance of operating activities.

   (2) The criteria used by S&L in dispositioning nonconformance reports dealing with missing or incorrect material identification markings on piping and mechanical supports.

5. a. Comment - S&L form 350-A (seismic) states that the actual design attachment of equipment to a structure must be simulated in mounting the equipment for a test.

   b. Question - Has IP considered the impact of OI findings on the results of seismic testing and analyses performed? What are your results?

   c. Question - Has IP quantified the impact of engineering analyses performed under the overinspection program in terms of reduction in safety margin on piping and mechanical supports? What are your results?

ENCLOSURE 3

ADDITIONAL QUESTIONS AND COMMENTS CONCERNING THE IP QUALITY PROGRAMS

RESULTS REPORT

Questions and comments below are in reference to the following:

3. Results of Quality Programs for Construction of Clinton Power Station, Chapter V and Appendix D.

A. Comment - IP should provide answers to the applicable questions contained in enclosure 2 for commodities other than piping and mechanical supports. Provide justification for those questions determined to be not applicable.

B. 1. Comment - Reference 3, Chapter V, page V-24 at the top of the page; IP states that based on IP's experience with the Overinspection Program, it is IP's opinion that the BA inspectors have applied the (AWS) inspection criteria even more conservatively than the IP inspectors, which has resulted in a lower conformance rate for field verification inspections than for departure inspections.

2. Question - What data has IP evaluated to confirm its opinion and to assure that all inspections were conservative?

C. Comment - Reference 3, Chapter V, page V-24 at the bottom of the page; IP concludes that performance of 100% overinspections in accessible structural steel will assure that the quality of [all] structural steel is acceptable.

Provide the engineering basis for this extrapolation to inaccessible structural steel.

D. 1. Comment - Reference 3, Chapter V, page V-27 at the second paragraph; IP has identified a declining trend in the quality of electrical equipment installations and electrical cable installations through the OI program.

2. Question - What steps have been taken to correct the trend in the first line quality control inspections for new electrical work?

E. Comment - Reference 3, Chapter V, Tables V-4 and V-6; there are several inconsistencies and typographical errors in these tables which have not been corrected by IP. For example, the title of Table V-4 is "NONCONFORMANCE RATES BY TYPE OF COMMODITY" whereas the data presented is in terms of conformance rates, similar to table V-6 which has the correct title. Other examples are the lines beginning with "Cable Trays" and "Instrumentation" which contain typographical/clerical errors.