U-600331
L37
1A.120

DMB

ILLINOIS POWER COMPANY

CLINTON POWER STATION, P.O. BOX 678, CLINTON, ILLINOIS 61727

November 27, 1985

Docket No. 50-461

Mr. Charles E. Norelius
Director
Division of Reactor Projects
Region III
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Subject: Illinois Power Company Overinspection Program for Structural Steel

Reference: Letter, C. E. Norelius to Illinois Power Company (ATTN: W. C. Gerstner), of September 9, 1985

Dear Mr. Norelius:

This letter responds to your request in the referenced letter for information regarding the overinspection of structural steel beams and clarification of Illinois Power (IP) commitments regarding the Overinspection Program.

The referenced letter identifies two items which require a response from IP.

NRC ITEM 1

"For approximately 350 beams identified as secondary with no overinspection required, IP must provide the methodology by which future modifications will be controlled such that beams not subject to overinspection will be inspected prior to performance of the modification, or justify why inspection at that point in time is not required."

IP RESPONSE TO ITEM 1

There are 1101 structural steel members classified as secondary based on construction status as of July 1, 1985. Of these, 761 have been reinspected under the Overinspection Program. This is because both primary and secondary members were reinspected in the early stages of the Overinspection Program prior to categorizing members as either primary or secondary.

8512050012 851127
PDR ADOCK 05000461
Q PDR

IE01
1/1

NOV 29 1985

Of the secondary members inspected, no safety significant conditions have been identified to date. Based on this, IP does not believe further reinspection of the secondary members is warranted. Should completion of the engineering evaluation by S&L identify any condition in the secondary members which would be safety significant had it been identified on a primary member, IP will take the following action. In the event that safety-related attachments are added in the future, IP will reinspect the affected members to verify structural integrity prior to making any modification. In addition, the members will be evaluated for the additional attachment loads under the Load Monitoring Program, which contains a data base of the structural and loading details (i.e., member properties, connection capacities and attachment loads). The purpose of this program is to track loads and modifications to structural members and to evaluate the resulting member stresses. This will provide documentation and control for adding attachments or modifications to the structural steel in the future. Identification and tracking of secondary members will be accomplished using the Load Monitoring Program.

NRC ITEM 2

"For the additional list of steel structures given to the SRI and not subject to overinspection, perform overinspection or submit justification to Region III for termination of overinspection of that commodity."

IP RESPONSE TO NRC ITEM 2

The scope of structural steel which IP has included in the Overinspection Program was in response to deficiencies identified in the erection of containment building mainframing members. These deficiencies resulted in Stop Work Action number 19 and, subsequently, the inclusion of structural steel in the Overinspection Program.

The deficiencies which resulted in work stoppage for structural steel did not encompass other steel structures, such as those referred to by the NRC, and IP has not included these in the Overinspection Program for structural steel. Although excluded from structural steel overinspection, many of these items have been evaluated under other programs. These are described in Attachment 1 to this letter.

In summary, the Overinspection Program scope was developed based on the deficiencies identified in structural steel erection. IP does not believe that the scope of the deficiencies identified in structural steel erection or the results of the reinspections conducted to date justify an increase in the scope of the program.

Sincerely yours,

D. P. Hall
Vice President

JEK/jsp

cc: Director, Office of I&E, USNRC, Washington, D.C. 20555
B. L. Siegel, NRC Clinton Licensing Project Manager
NRC Resident Office
Illinois Department of Nuclear Safety
Mark Jason, Assistant Attorney General, State of Illinois

ATTACHMENT 1

IP EVALUATIONS OF STEEL STRUCTURES
OTHER THAN STRUCTURAL STEEL

1) Masonry Wall Support Columns

Masonry wall support columns were evaluated under several different programs. In addition to the individual programs, a collective assessment was made to ensure that no interacting effects were overlooked. The collective assessment was performed under the Slotted Connection study, which evaluated the effect of restricted sliding in the support column sliding connections. The Slotted Connection study will ensure that the column, weld and bolt stresses are within allowable design limits for the as-built condition. The other programs encompassed in the study included:

i) Rockwell Welds - 63% reduction in weld strengths - 10CFR50.55(e)-83-06

ii) Masonry Wall Design - external support columns were added - IEB-80-11

iii) Masonry Wall Fire Resistance - heavier masonry blocks were used - 10CFR50.55(e)-85-03

iv) Attachments to Masonry Walls - As-built Load Verification Program

Based on the cumulative effects study, it was found that the as-built configuration of the walls meets structural design requirements and that the Rockwell welds were typically the controlling factor in the design.

2) Gas Control Boundary Support Steel

The Containment Gas Control Boundary is a secondary containment which is a very low pressure barrier supported directly off of the containment structure. As a result, the Gas Control Boundary support steel members are not considered to be main framing members. Additionally, the Gas Control Boundary is designed as a Seismic Category I structure with significant inherent conservatisms resulting in a substantial margin of safety. The design is such that the stresses remain within design allowables for a postulated seismic

event. Functionally, the design of the Gas Control Boundary permits plastic yielding. Hence, with the proven design margin, and considering the functionality requirements, a reinspection of the Gas Control Boundary is not warranted. It is noted though that the Gas Control Boundary support steel shopwelds were also evaluated under 10CFR50.55(e)-83-06. This evaluation determined that the shopweld capacities were reduced by less than 20% of their theoretical capacity. The evaluation went on to demonstrate that since the stress levels were lower than the derated allowable stresses, the shopwelds were adequate. It is also noted that first line inspection nonconformance reports issued against the gas control boundary have been evaluated, and the conditions reported are not safety significant.

For the field welds, a review of the weld strength capacities was performed. The lowest design margin found was 36% for the case of a safe shutdown earthquake load. Based on this margin and the fact that the framing is not primary steel, the Gas Control Boundary Support Steel is excluded from the Overinspection Program.

3) Drywell Liner Plates

The original inspection of the work included a refined inspection using magnetic particle testing and radiography examinations.

4) Reactor Shield Wall Liner Plates

The original inspection of the work included a refined inspection using magnetic particle testing and radiography examinations. In addition, the brackets on the liner plates which support structural steel, have been examined using radiography.

5) Trolley Beams

Only a few of the cranes supported by trolley beams are safety-related. However, both the safety-related and the non-safety-related cranes, hoists and associated trolley beams will comply with the applicable ANSI Standards (i.e., ANSI B30.2, B30.4, B30.11 and B30.16). Specifically, the cranes and hoists will be certified through either vendor certification or load tests and operational tests. Those cranes which are in Category I buildings will be seismically qualified. In addition, for cranes encompassed by NUREG 0612, a heavy loads analysis has been performed. Also, a walkdown of each crane and hoist has been performed to confirm that this equipment is installed per vendor specification.

6) Mechanical Gallery Platforms

The gallery work was furnished and erected under the same specifications as the structural steel, K-2947 and K-2948. The specifications identify the differences in fabrication and erection requirements between structural steel and gallery work. Therefore, IP does not consider gallery work to be structural steel and did not include this work in the scope of the Overinspection Program. Gallery work includes miscellaneous small grating platforms, stairs, pipe handrails, ladders, etc. which are of minor importance and are provided primarily for personnel access.

Additionally, the gallery platforms are seismically qualified and installed as safety-related. This ensures that the design stresses remain within design allowables even in the event of a postulated seismic event. However, functionally, it is only required that the platforms remain standing allowing for minor deflections so that no safety-related equipment is impacted. With a proven design margin, and considering the functionality requirement, a reinspection of the gallery is not warranted.

A 10CFR50.55(e) investigation (No. 55-84-22) was performed to confirm that the gallery platforms have been installed in accordance with the requirements for Category I structures. A complete review was performed of the safety-related gallery platforms. This review confirmed that the platforms were properly constructed and the inspections were fully documented. The review found that three Category I platforms and three ladder platforms were installed as non-safety. These platforms were evaluated and it was found that even if the conditions found had gone uncorrected, the gallery platforms would not have adversely affected the safety of operations of Clinton Power Station (CPS).

7) Standby Gas Treatment (SGTS) Vent Stack Supports

The SGTS vent stack and its supports were included in the large bore piping and mechanical supports Overinspection Program.