

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-461/84-11

Docket No. 50-461

License No. CPPR-137

Licensee: Illinois Power Company  
500 South 27th Street  
Decatur, IL 62626

Facility Name: Clinton Power Station, Unit 1

Inspection At: Clinton Site, Clinton, IL

Inspection Conducted:

Inspectors: H. H. Livermore  
Senior Resident, Construction

W. F. Christianson  
Senior Resident, Operations

Approved By: *RC Knop*  
R. C. Knop, Chief  
Reactor Projects Section IC

*7-3-84*  
Date

Inspection Summary

Inspection on April 1, 1984 through June 11, 1984 (Report No. 50-461/84-11(DPRP))

Areas Inspected: Routine safety inspection by resident inspectors of construction and pre-operational testing activities including licensee action on previous inspection findings, allegations, material and laydown areas, program control, welding, and response to commitments. The inspection involved a total of 458 inspector-hours onsite by two NRC inspectors, including 46 inspector-hours onsite during off-shifts.

Results: No items of noncompliance or deviation were identified.

## DETAILS

### 1. Persons Contacted

#### Illinois Power Company (IP)

- \*W. Gerstner, Executive Vice President
- \*W. Connell, Manager, QA
- \*J. Sprague, QA Specialist
- \*R. Campbell, Supervisor, Programs and Procedures
- \*D. Hall, Vice President
- \*J. Loomis, Construction Manager
- M. D. Hassebrock, Director Quality and Surveillance
- T. F. Plunkett, Plant Manager
- D. Daniels, Site Project Manager
- G. E. Weller, Supervisor Licensing Administrator
- J. H. Greene, Assistant Power Plant Manager
- J. Woten, Supervisor Compliance Configuration Control
- J. G. Cook, Assistant Power Plant Manager
- D. S. Self, Director Nuclear Support
- L. C. Floyd, Supervisor Quality Systems

#### Baldwin Associates (BA)

- \*A. King, Jr., Project Manager
- P. Bryant, Assistant Manager, Quality and Technical Services
- C. Anderson, Manager, Quality Assurance
- \*L. Osborne, Manager, Quality and Technical Services

\*Denotes those attending at least one exit meeting.

### 2. Action on Previous Inspection Findings

- a. (Closed) Open Item 461/82-20-06(DPRP): Overzealous grinding during preservice weld joint preparation caused some pipe minimum wall thickness violations. Wall thickness was verified by use of a digital ultrasonic device. The document used to perform the test was the manufacturer's instruction and not a site-use specific controlled procedure.

Controlled procedure BTSI-012 was issued to provide specific guidance in the use of the digital ultrasonic device to determine pipe wall thickness. The inspector reviewed the procedure and found its content and directives adequate. Completion of appropriate training and procedure release was finalized on December 28, 1982. Licensee action is adequate and this Open Item is closed.

- b. (Closed) Open Item 461/82-20-04(DPRP): The marking of socket welds for fit-up inspection to assure the approximate 1/16" gap, required by ASME Code, Section III, is somewhat questionable. The practice observed was to apply and utilize a mark 1/16" back from the pipe and fitting intersection.

Once fit-up is completed and the joint welded the mark would be covered. A two mark practice was being utilized during installation of some plant systems but was not clearly stated in procedure BTS-405.

As requested, a response to this open item was provided to the NRC in Illinois Power Company letter U-10030 dated February 18, 1983 Procedure BTS-405, Procurement Specification for Visual Inspection of Weldments, requires inspection of fit-up but does not prescribe any verification of the 1/16" gap after welding. ASME Code, Section III does not require verification of the gap after welding is complete; therefore, such verification is not a project requirement. The 1/16" gap will continue to be verified at fit-up.

The Inspector notes that there are inspection records to verify that all fit up gaps are within specification. There have been no site problems that would indicate that a change in procedure would be necessary. As stated by the licensee, the present method of fit-up verification meets Code requirements. This Open Item is considered closed.

- c. (Closed) Noncompliance 461/82-19-02(DPRP): The subcontractor, H. Robertson, was performing a pressure test of the Containment Gas Control Boundary structure without a procedure approved by the principal Contractor, Baldwin Associates or the Licensee, Illinois Power.

The inspector notes that immediate corrective action was taken by Baldwin Associates through the initiation of Stop Work Action #021 issued to H. H. Robertson (Baldwin Associates subcontractor). A written plan for lifting the Stop Work Action and conducting the subject test, including review and approval of the test procedure by Baldwin Associates Quality Assurance, was developed. This plan, approved by Baldwin Associates and Illinois Power Quality Assurance, was successfully executed prior to returning to work. The plan included individual oral training, by their supervisors, for those persons responsible for conducting the test, documented training sessions for those persons involved with the on-site tests, and a pretest meeting to review procedures and scope of work. The licensee's investigation of this item identified one of the root causes of this condition to be that project personnel were being driven by schedule and production. To alleviate this, letters were sent to all Baldwin Associates subcontractors emphasizing their responsibility in adhering to Quality Assurance Program requirements. Additionally, an approved method was developed and implemented to schedule and control subcontractor's work. The method was incorporation of subcontractor schedules into a 90 day rolling schedule, including appropriate interfaces and quality input to ensure quality resources were available. Documented training, with an approved lesson plan, was conducted in the use of approved procedures, instructions, and drawings as prescribed by regulations and the Quality Assurance Program. Training was given to appropriate quality, construction, and start-up personnel and was completed on November 16, 1982. Long term plans, including periodic retraining,

for subcontractor personnel were developed by the Baldwin Associates Training Department. Those plans specifically include the aforementioned requirements. The Illinois Power Quality Assurance held individual counseling with the Illinois Power Quality Assurance personnel involved with the test, which was to be performed by H. H. Robertson, to emphasize their responsibility for ensuring that proper work processes are followed at Clinton Power Station. The Illinois Power Vice President, responsible for Quality Assurance, held a meeting with Illinois Power Quality Assurance supervisors to reiterate management's support of the Quality Assurance Department. This discussion was conducted to ensure that Quality Assurance supervision fully understood their responsibilities and authority to stop work at Clinton Power Station. Finally, in order to strengthen the Baldwin Associates Subcontractors Department, a new department manager was obtained.

The inspector notes that the licensee's corrective action and program enhancements are acceptable. This nonconformance is considered closed.

### 3. Review of Allegations

During this reporting period, the Sr. Resident Inspector-Construction (SRI-C) reviewed the following allegations:

- a. A traceability Recovery Program to remove angle clips from electrical tray and analyze them for material content was performed the weekend of March 12, 1983. An allegation was presented stating that the effort was not performed according to a formalized procedure; and that the work was performed in violation of the QC hold tag procedure. The SRI-C discussed the concerns with the alleged(s). Since their concerns had not gone above their first line supervisory level, it was suggested that a meeting with the BA QA Manager would be appropriate if the fear of reprisal was not present. The alleged(s) met with the QA Manager and all concerns were resolved. The SRI has determined that the allegations were adequately addressed and dispositioned by Baldwin Associates Letter BAQC-CA-211 dated March 18, 1983. The SRI-C met with the alleged(s) on April 12, 1983, at which time they expressed that corrective action by their management was satisfactory. The allegation is considered closed (#45B).

No noncompliances or deviations were identified.

- b. An alleged stated that Sargent & Lundy Specification K2999, Form 1790, relative to protective coatings on the back sides of embedments was not being implemented. Investigation by the SRI-C revealed that NCR 7683 had been written addressing the subject and was in the disposition process at the time of the allegation. Sargent and Lundy Designers deleted the requirement that the back or buried side of embed plates be painted or coated. (Design Spec, K2999, ECN 3493). NCR 7683 engineering disposition states that over a 40 year period, under maximum environmental conditions, only a maximum of 5% material reduction would take place, which would be acceptable. Structural

strength is not affected. Licensee action was satisfactory. The allegation is considered closed (#55).

No noncompliances or deviations were identified.

- c. An anonymous allegation was received questioning the wisdom of replacing the manager of Field Verification Inspection for Baldwin Associates. The allegation went on to pose a possible question of conflict of interest with the promotion of the Manager of Quality Control to that of Manager of Quality Assurance, in that, he would now oversee or be in charge of Field Verification -- a reinspection of that work he previously inspected (managed).

Interviews by the SRI-C with the Manager of Quality and Technical Services (Baldwin Associates) revealed that the replacement of the manager of Field Verification Inspection was purely a personnel matter, one of utilization of personnel for peak performance. No other facts could be found to suggest otherwise. The promotion of the manager of QC to manager of QA was due to superior performance and was for the sole purpose of project improvement. The SRI-C could find no examples of conflict of interest. In both cases, the person involved was in a top management position and had nothing to do with actual line inspection. Both inspection programs (QC and Field Verification) were separate, and with their own check sheets; if anything, the Field Verification inspection is more rigorous than that of QC, therefore, ruling out any possible conflict of interest. The inspector considers the allegation unfounded. The allegation is closed (#57).

No noncompliances or deviations were identified.

- d. An anonymous telecon was received stating that a Mr. "A", QC Engineer, was not trained in Concrete Expansion Anchors (CEA). This telecon was received during the time of the Stop Work Recovery on anchor bolts. During this period a complete craft and QC retaining effort was being implemented in order to go back to work. Region III Inspection Report 84-04 detailed an SRI-C review of the training. The craft and QC retraining was a massive effort by Baldwin Associates and was performed by prioritizing craft and first line QC inspectors and retraining them first. Mr. "A", a QC Engineer at that time, was not a first line inspector but worked in an office reviewing documents and procedures. He was therefore prioritized to be trained at the end of the training program. It was determined that Mr. "A"'s training in CEAs was not a prerequisite to lifting the Stop Work. It was determined by the SRI-C that Mr. "A" was, in fact, very knowledgeable and conversant in the discipline of concrete expansion anchors, having written and reviewed procedures in that discipline. The inspector verified that Mr. "A" did later attend and successfully complete the CEA training on March 8, 1984. This allegation is considered closed (#70).

No noncompliances or deviations were identified.

- e. An allegation was received by the NRC that Clinton's management had hired an outside organization to conduct investigations. This outside organization during an investigation, repeatedly asked what the employee had told the NRC. The employee felt intimidated by this action.

During the NRC's review of this matter, the following was determined:

- (1) The licensee has terminated the outside organization's contract due to the problems experienced.
- (2) The licensee stated that it was their policy to allow full access to the NRC without any fear of retribution.

Subsequent to the discussion, the licensee has taken the following steps to make that policy more known at the site:

- (1) Letters were written dated April 2, 1984 by the Vice President and Executive Vice President, Illinois Power to all site personnel and key management personnel reiterating the right of employees to talk to the NRC without fear of intimidation.
- (2) Illinois Power Company Corporate Nuclear Procedure dated March 29, 1984, notes that managers and supervisors must ensure that nothing is done to restrict employee's individual communication with the NRC.

The SRI-C notes that while the allegation was substantiated, the licensee had taken and is continuing to take steps to minimize further problems. No items of noncompliance were identified. This allegation is considered closed (#68).

4. IE Bulletins, Circulars, 50.55e's and Open Items

- a. The inspector examined the licensee's status and action relative to the Inspection and Enforcement Bulletins (IEB) listed below. The examination included review of the licensee's response to each action and verification that action was as stated in the response. Region III action relative to these bulletins is considered closed.

b. Licensee Action on IE Bulletins

IEB 79-27 "Loss of Non-Class -- IE Instrumentation and Control (Closed) Power System Bus During Operation". This bulletin is addressed in the Clinton SSER 2, Section 7.4, Safe Shutdown Systems.

The applicant has identified each ac and dc safety and nonsafety bus supplying power to instrument and controls. The effect of loss of power to all loads connected to the buses was examined by the applicant to determine whether cold shutdown could be achieved using normal shutdown procedures. Redundant components and subsystems relied on to achieve a cold shutdown condition were reviewed to

ensure that they were not affected (i.e., are available to perform their shutdown functions). The results of the applicant's evaluation indicate that loss of power to any bus will not prevent the plant from achieving a cold shutdown condition. Five instances were identified where a loss of a particular instrumentation power bus would necessitate reliance on emergency procedures to achieve cold shutdown. The applicant has committed to install loss of voltage alarms that will annunciate in the control room for these five instances.

Based on the applicant's response to this issue, the NRC staff concluded this item is satisfactorily resolved. The applicant will verify that these alarms will be installed prior to plant operations.

Illinois Power letter U-0621, March 23, 1983, to NRC committed the applicant to installation of the loss of voltage alarms for the five instances.

The inspector examined the formalized processing of this commitment and the status of the relay installation. This item is listed as Item #28 on the "Clinton Main Control Room Schedule Action List". A matrix and schedule has been established that includes interfaces, event start, NSSS changes, material delivery, construction and start-up need date.

No noncompliances or deviations were identified.

IEB-83-08 "Electrical Circuit Breakers With An Undervoltage Trip  
(Closed) Feature in Use in Safety-Related Application Other Than  
The Reactor Trip System.

The applicant concluded there are no Westinghouse DB or DS, or General Electric AK-2 circuit breakers in use in safety systems at Clinton Power Station.

The electrical system uses a similar type 480V circuit breaker in safety systems, a K-Line type breaker manufactured by Brown Boveri Electric Company (BBE). There are 49 breakers used in safety systems at CPS and none of the breakers have undervoltage trip attachments (UVTA).

Non safety systems have both BBE's K-Line breakers and one General Electric AK-F breaker in use which are similar 480V air circuit breakers. None of these breakers have UVTAs.

CPS has two breakers which are tripped on low voltage, 6.9 KV and 4.16 KV breakers from Westinghouse and General Electric. These breakers are tripped by undervoltage relays and a trip coil from an independent DC source as recommended in the bulletin.

The applicant reviewed IEB-83-01, IEB-83-04, IEB-79-09, IEN-83-50 and IEN-83-76 for applicability to this bulletin.

The applicant responded to Region III on the subject bulletin with a negative declaration on the use of the specified breakers in letter U-0703, March 22, 1984, D. P. Hall to J. G. Keppler.

No noncompliances or deviations were identified.

Thirty-two IE bulletin items, including supplements, remain open.

d. Licensee Action on Circulars

Sixteen circulars remain open.

5. Functional or Program Areas Inspected (Operations)

a. Suppression Pool Cleanup and Flushing

The inspector observed the conduct of Flush Test Procedure, FTP-SF/SM-01, "Suppression Pool Cleanup and Transfer". The suppression pool was cleaned, filled to a level of 9'1", the suppression pool cleanup pumps started and the system flushed back to the suppression pool. The water is being cycled through a demineralizer to maintain class "B" water in the pool. This is one of the first NSSS systems turned over to the Startup Group for testing.

No noncompliances or deviations were identified.

b. Emergency Response Capability Implementation Plan (ERCIP)

The inspector attended weekly meetings as an observer on the progress of the ERCIP. Activities are summarized below.

(1) Emergency Operating Procedures (EOPs)

The procedure Generation Package has been submitted to NRC to fulfill an ERCIP milestone commitment. NRC has not yet assigned a technical reviewer of CPS procedure submittals.

An integrated schedule for the construction and startup testing of the Emergency Procedure Guideline (EPG) and Regulatory Guide 1.97 instrumentation is being reviewed.

(2) Safety Parameter Display System (SPDS)

A schedule for the SPDS design, software development, installation, and operator training are in the approval cycle.

(3) Control Room Design Review (CRDR)

The CRDR is scheduled to start in July 1984.



(4) Emergency Response Facilities (ERFs)

The construction of the facility is progressing and appears to support the tentative delivery of the simulator in September 1984.

(5) Emergency Planning

Corporate Nuclear Procedure (CNP) 4.03, "Emergency Preparedness", has been rewritten and a proposal for the location of the Joint Public Information Center is being submitted. Emergency Plan Implementing Procedures (EIPs) are being revised and lesson plans for emergency preparedness training are being developed. A Headquarters Nuclear Emergency Response Plans and procedures are being developed, and the CPS Emergency Plan is in the annual review process.

c. Plant Staffing

The status of staffing for each of the areas in Plant Staff is as follows:

	<u>% of Authorized Positions Filled</u>
Radiation Protection	66%
Chemistry	74%
Maintenance	83%
Technical	85%
Compliance and Configuration Control	92%
Radwaste	92%
Operations	8%

The Startup Group consists of the following personnel:

IPC Startup Employees	69
Contractors:	
Test Engineers	52
C & I Technicians	27
Technical Specialists	17
Schedulers	<u>11</u>
Total Employees	176

d. Plant Systems Turnover Status

The system turnover status as of May 31, 1984, is as follows:

% under IP jurisdiction	52%
% under BA jurisdiction	48%

e. Safety Review of Organization and Training

During the report period the licensee's organization and training was reviewed against Amendment #29 to the Final Safety Analysis Report for Chapter 13.

This review is in its preliminary stages and will continue during ensuing months. No items of noncompliance were identified.

6. Functional or Program Areas Inspected (Construction)

a. Site Surveillance Tours

At periodic intervals during the report period, surveillance tours of site areas were performed. The surveillances were intended to assess: cleanliness of the site; storage and maintenance conditions of equipment and material being used in site construction; potential for fire or other hazards which might have a deleterious effect on personnel or equipment; and to witness construction activities in progress.

No noncompliances or deviations were identified.

b. Program Control

At periodic intervals, the resident inspector reviewed nonconformance reports (NCRs), S&L Specification Revisions, Baldwin (BA) Surveillances, Audit Reports, Project Procedure Revisions, Trend Analysis, Surveillance Reports, Audits, and plant problems identified by Corrective Action Requests (CARs), and other means of identifying problems. Numerous informal comments were discussed with IP and BA. The resident inspector attended several status and/or problem discussion meetings with IP and BA.

No noncompliances or deviations were identified.

c. Structural and Hanger Welding Activities

The inspector performed numerous surveillances of in process structural welding operations. Electrical hanger and HVAC hanger stick (SMAW) welding was observed in the Control (825, 800); Aux (781), Fuel, and Containment buildings. Welding operations observed were fit-up and welding of structural steel imbeds, beams, hanger struts and associated chips. For the welding examined, one or more of the following activities were observed. Protection of nearby electrical cable was satisfactory. Electrode control and handling was satisfactory. The welding areas were free of contaminants. The welders were certified for the thickness and the process specified. Technique and weld results were satisfactory.

No noncompliances or deviations were identified.

d. Safety Related Piping Review

The inspector performed surveillances in the Power block and in the laydown areas of safety related piping. Outside storage was acceptable - piping was capped in the Power Block were numerous and random. Installed piping in the Main Steam areas and the Diesel Generator cubicles was protected and stored satisfactorily. The licensee was in conformance with his record keeping and inspection requirements (SMIR).

e. Structural Steel Review

The inspector performed surveillances of structural steel and support in the Power Block. Fastening systems such as concrete wedge anchors and structural bolted connections were randomly reviewed throughout the work area. Concrete anchors were of the the specified and of the proper length and in correct locations. Bolted connections reviewed in Containment, were of the type specified (A325 or A490). Drawing records were satisfactory.

f. Mechanical, Electrical Safety Related Components

The inspector performed numerous surveillances of electrical and mechanical components throughout the Power Block. HPCS Electrical Rocks and Inverter Racks in the 781 Control Building were reviewed for proper storage, maintenance, and protection. Mechanical rocks in the Diesel Generator cubicles and hydraulic control units (HCU) in Containment 762 level were reviewed for proper maintenance and protection. All areas were satisfactory. Protection and cleanliness of all equipment was in accordance with established procedures.

7. Meetings, Site Visits and Items of Interest

- a. The NRC Systematic Appraisal of Licensee Performance (SALP) was presented to Illinois Power in a public meeting on May 31, 1984. Details are recorded in 461/84-03 report.
- b. Byron Siegel, NRC, has been assigned as full-time CPS Licensing Project Manager.

8. Exit Meetings

The inspectors met with IP representatives (noted in Paragraph 1) throughout the inspection period and summarized the scope and findings of inspections performed.

The inspectors attended the following NRC regional inspector exit meetings:

- R. Love on April 13, 1984
- W. Key on May 18, 1984
- D. Keating on May 25, 1984