

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-461/85032(DRP)

Docket No. 50-461

License No. CPPR-137

Licensee: Illinois Power Company
500 South 27th Street
Decatur, Il 62525

Facility Name: Clinton Power Station

Inspection At: Clinton Site, Clinton, IL.

Inspection Conducted: May 29 through July 9, 1985

Inspectors: T. P. Gwynn

W. F. Christianson

P. L. Hiland

Approved By: T. P. Gwynn, Chief
Projects Section 1B

RF Wainick for
7/23/85
Date

Inspection Summary

Inspection on May 29 through July 9, 1985 (Report No. 50-461/85032(DRP))

Areas Inspected: Routine safety inspection by resident inspectors of construction and preoperational testing activities including applicant action on previous inspection findings; IE circular followup; employee concerns; allegation followup; operating staff training; independent inspection - local public document room; functional or program areas (including site surveillance tours, reactor vessel installation, and spent fuel storage racks); preoperational test program implementation verification; test witnessing - Division 1 battery capacity test; reactor vessel hot operations test observation; and site activities of interest (including management changes, Clinton Power Station design, Overinspection Program implementation, organizational changes, and NRC Construction Appraisal Team inspection). The inspection involved a total of 201 inspector-hours onsite by three resident inspectors including 11 inspector-hours onsite during off-shifts.

Results: Of the eleven areas inspected, no violations or deviations were identified. While no safety significant items were identified during the report period, one unresolved item (461/85032-02) described in Paragraph 5 requires a response from the applicant for socket weld fit up and has the potential of being a safety significant issue. (See Paragraph 5.)

DETAILS

1. Personnel Contacted

Illinois Power Company (IP)

G. Bell, Director, Construction and Procurement QA
R. Campbell, Director - Quality Systems and Audits
*W. Connell, Manager - Quality Assurance
J. Cook, Assistant Power Plant Manager, Operations
*E. Corrigan, Director - Quality Engineering and Verification
*H. Daniels, Project Manager
S. Fisher, Manager, Nuclear Support
L. Floyd, Special Projects
W. Gerstner, Executive Vice-President
D. Glenn, Director - Safeteam
K. Graf, Director - Nuclear Support
J. Greene, Manager - Startup
*D. Hall, Vice President, Nuclear
D. Hoem, Supervisor, Maintenance and Planning
M. Hurshman, General Training Development Specialist
J. Jones, Supervisor, Mechanical Maintenance
*E. Kant, Assistant Manager, NSED
S. Krushas, Compliance Analyst, Departmental Training Coordinator
*J. Loomis, Construction Manager
M. Lyon, Senior Instructor Operations
M. Maher, Supervisor, Electrical Maintenance
*J. Miller, Director - Startup Programs
H. Nodine, Supervisor, Control and Instrumentation
*J. Palchak, Supervisor - Compliance & Configuration Control Department
*J. Patten, Director - Nuclear Training Department
*J. Perry, Manager - Nuclear Program Coordination
S. Rasor, Supervisor - Construction QA
G. Reed, Assistant Supervisor, Plant Operations
S. Richey, Assistant Power Plant Manager - Maintenance
*F. Spangenberg, Director - Nuclear Licensing and Configuration
*J. Sprague, QA Specialist
L. Tucker, Director - Startup Testing
D. Wier, Electrical Lead Startup Engineer
*J. Wilson, Plant Manager
H. Victor, Manager - Nuclear Station Engineering
C. Yeazle, Assistant Supervisor Electrical

Baldwin Associates (BA)

*A. King, Project Manager

L. Osborne, Manager - Quality and Technical Services

WIPCO/Soyland Power

*J. Greenwood, Manager - Power Supply

*Denotes those attending the monthly exit meeting.

The inspectors also contacted others of the construction project and operations staffs.

2. Applicant Action On Previous Inspection Findings (92701/92702)

- a. (Closed) Open Item (461/85005-03): Verify capping of the control rod drive (CRD) water return line nozzle and conduct of demonstration tests.

The CRD return line nozzle has been capped as documented in Field Disposition Instruction (FDI) 022/20122. The inspector reviewed the applicable NIS-1 record (Section XI Owners Data Report) certified to National Board No. IL 1085 dated August 21, 1981.

The flow capability test identified as item 5-ASB by the Licensing Review Group (LRG)-II does not have to be performed (Perry SSER-3, NUREG-0887). The applicant has endorsed Item 5-ASB for the Clinton Power Station docket (reference IPC letter U-0551 dated September 23, 1982). The inspector confirmed closure of item 5-ASB for the Clinton docket with the NRR Licensing Project Manager.

- b. (Closed) Open Item (461/84032-01): Inadequate support of coiled cables. The applicant investigated the conditions noted by the NRC inspector and took corrective action as reported in Inspection Report 461/85015, Paragraph 2.b. In addition to the corrective action performed, the applicant conducted a surveillance of the Containment, Auxillary and Control Buildings for coiled cables as documented in IP surveillance report No. CY-26755. Based on the corrective action reported (461/85015), the applicant's surveillance activities, and routine tours of the plant by the resident inspector, support for coiled cables was being adequately maintained in accordance with site procedures.
- c. (Open) Noncompliance Item (461/82018-01e): Three Baldwin Associates (BA) Quality Control (QC) inspector qualification records did not contain waiver letters.

This item was reviewed and closed in Inspection Report 50-461/84002 based on completed applicant actions and applicant commitments. In particular, the applicant stated that inspectors who had been decertified and who were no longer working on the project would have their work reinspected as part of the applicant's overinspection program. Due to a recent action by the applicant, the overinspection program will not be completed in the area of safety related piping and mechanical supports. This leaves the adequacy of the applicant's corrective actions with regard to this item of noncompliance in question.

This matter was reviewed with the applicant who stated that action was being taken to assure that corrective actions were adequate, considering recent changes to the overinspection program scope.

This item is reopened pending completion of applicant actions and followup inspection by Region III.

- d. (Open) Unresolved item (461/85005-47): A former BA document reviewer was terminated by BA for falsification of education on the resume he presented as part of the basis for his employment. NRC review of the individual's certification and training records confirmed that the individual was not properly certified. BA had not taken any corrective action as a result of their findings, other than to terminate the individual. This matter remained unresolved pending NRC review of BA corrective action commitments and results under Corrective Action Request (CAR) 221.

Additional concerns related to verification of past employment history of individuals working in the BA Document Review Group (DRG) were identified in inspection report 50-461/85015. Those concerns were documented by BA in CAR 239.

As discussed in Inspection Report 50-461/85021, BA had expanded the scope of the review of the individual's past work (CAR 221) in order to comply with the requirements of MIL-STD-105D for sampling by attributes. During this report period, the inspector reviewed results of BA CAR 221. The inspector found that the sample size was selected in accordance with the MIL-STD. BA results documented in the CAR 221 record file indicated that no significant deficiencies were identified in the work performed by the individual in question. Based on the results, BA concluded that the individual's work was adequate. IP reviewed the BA CAR 221 results and concurred in BA's findings.

NRC review of the CAR 221 record package resulted in the following concerns which were discussed in detail with the applicant's representative:

- (1) Review of the individual's past work was performed by BA Document Review Group (DRG) personnel who were the individual's former co-workers. The BA supervisor responsible for the CAR 221 review was the individual's former supervisor who was responsible for the adequacy of the work performed by the individual. The inspector questioned the independence of the review that was performed by BA.

In response to this concern, the applicant's own Records Review Group (RRG) performed the review conducted by BA. The applicant reported that no deficiencies were found in the BA results.

- (2) The inspector identified numerous records discrepancies (ANSI N45.2.9-1974 requirements) in the CAR 221 record package which was reviewed in the BA Document Records Center vault. The types of deficiencies were not considered to be safety significant; however, considering these records were prepared by BA's DRG personnel (who routinely review records to ANSI N45.2.9 requirements) and reviewed by both BA quality assurance (QA) management and IP QA supervision, the inspector was concerned that these individuals did not comply with the ANSI requirements. This matter was discussed in detail with the IP Director - Nuclear Licensing and Configuration Management and the IP Director - Quality Systems and Audits.

IPQA performed a detailed review of the CAR 221 record package which resulted in the identification of additional records type deficiencies. Those deficiencies were addressed by BAQA and the CAR 221 record package was corrected. Additional training was provided to BA QA personnel by IPQA.

These actions by IP were considered adequate to resolve the inspectors concerns with regard to CAR 221. The matter related to the adequacy of work performed by the individual in question is resolved; no safety issues were identified.

The inspector discussed IP actions concerning CAR 239 and the adequacy of BA DRG personnel qualifications (background employment and educational verification) with IP management. The IP Director - Quality Systems and Audits stated that IP had conducted a thorough review of BA DRG personnel qualifications. In particular, IP reviewed 100% of the qualification records for BA DRG records reviewers hired after March 2, 1985 and 10% of the records for personnel hired prior to March 2, 1985. The review was intended to

assess the adequacy of both past and present personnel qualifications. The inspector had not reviewed IP's results at the conclusion of the inspection period.

The matter related to the adequacy of DRG personnel qualifications (CAR 239 and similar NRC questions) was still under review at the conclusion of this inspection period and remains unresolved.

- e. (Closed) Open Item (461/85005-18): Verify that the sedimentation monitoring program is implemented.

The inspector reviewed the applicant's program for monitoring the accumulation of sediment in the basin of the ultimate heat sink (UHS). This program is required in order to assure that an adequate supply of emergency cooling water is available to the Clinton Power Station in the event of a failure of the Clinton Lake dam.

The inspector reviewed Procedure NSEI CS-4, Revision 0, dated September 25, 1984, "Ultimate Heat Sink Monitoring." That procedure described the programmatic methods by which the applicant monitors UHS sedimentation. The procedure provided instructions, acceptance criteria, and actions to be taken when acceptance criteria are exceeded. The procedure appeared adequate to perform its intended function.

The inspector reviewed the most recent results provided by the applicant's contractor for UHS Monitoring (Homer L. Chastain Associates) and the applicant's record of evaluation performed on those results. This review clearly indicated that the applicant's program for UHS Sedimentation Monitoring was in place and was being implemented.

This item is closed.

- f. (Open) Open Item (461/85005-32): Verify that procedures to ensure independent verification of system lineups are completed before fuel load (TMI Item II.K.1.10).

The inspector reviewed the applicant's response to IE Bulletin 79-08, Item 8; Procedure CPS No. 1405.01, Revision 4 dated January 3, 1985, "Performance Of Operational Activities"; and Procedure CPS No. 1001.05, Revision 1 dated June 16, 1985, "Authorities And Responsibilities Of Reactor Operators For Safe Operation And Shutdown." A sample of valve lineup and electrical lineup sheets and plant surveillance and maintenance procedures were also reviewed to determine that the controls provided in the procedures reviewed would be effective. The results of this review were discussed with the Acting Assistant Power Plant Manager - Operations.

The applicant's administrative control procedures appeared adequate to provide for independent verification of system lineups. In particular, the organizational interface between operations and maintenance departments appeared to be well thought out. One item related to the notification of control room operators when operations personnel change system lineups was identified by the applicant as requiring revision to CPS No. 1405.01. The inspector will review this change when it is implemented.

The inspector identified inconsistencies and inadequacies in the valve and electrical lineup sheets used by operations personnel to provide for independent verification of system lineups. In particular, procedures CPS No. 10P 3312.01, revision 1, Residual Heat Removal (RHR) and CPS No. 3313.01S, revision 1, Low Pressure Core Spray were found to have valve and electrical lineup sheets which did not address all applicable components and which did not provide a consistent or adequate approach to independent verification of valve positions and electrical switch and breaker positions. The applicant acknowledged the inspectors comments and stated that these inadequacies were being resolved during procedure reviews conducted prior to fuel load.

This item remains open pending review of the applicant's operating procedures (under IE Manual Chapter 42450), and review of the revision to CPS No. 1405.01.

- g. (Open) Open Item (461/85005-01): Verify piping vibration, thermal expansion, and dynamic effects testing performed during the preoperational test program.

The inspector provided a copy of the applicable test procedures to Region III for review by a technical specialist. Observation of the conduct of the piping vibration, thermal expansion, and dynamic effects testing is documented in paragraph 11 below. This item remains open.

- h. (Open) Open Item (461/85005-02): Verify vibration measurement and inspection program of reactor vessel internals performed during preoperational testing program.

The inspector provided a copy of the applicable test procedure to Region III for review by a technical specialist. Observation of the conduct of the reactor vessel internals vibration test is documented in paragraph 11 below. This item remains open.

3. IE Circular Followup (92703)

- a. (Closed) IE Circular (81-13): Torque Switch Electrical Bypass Circuit for Safeguard Service Valve Motors.

The applicant sent letters to General Electric (GE) and Sargent & Lundy (S&L) to verify that the applicable drawings reflect the installation of torque switch bypasses. GE replied stating the drawings did reflect bypasses and S&L stated that all table one valves were bypassed and the 59 table two valve drawings were revised and drawings issued to depict required bypass circuits. The inspector selected three valves from table two and verified that the drawings reflected bypasses.

The circular recommended that the applicant verify that the bypasses are installed on the valves.

The inspector reviewed General Test Procedure-15, "Motor Operated Valves" which addressed Safety Related Motor Operated Valves and Non-Safety Related Motor Operated Valves. The inspector also reviewed the test results on the Motor Operated Valve Data Sheet, Data Sheet A. The data sheet specifically verifies the installation of the torque switch bypass and tests the bypass switch in the "Norm" and "Test" position.

The recommended actions have been performed and IE Circular 81-13 is closed.

- b. (Closed) IE Circular (78-19): Manual Override (Bypass) of Safety Systems Actuation Signals.

The NSSS design was reviewed by GE and the design precludes events described in circular 78-19. The design is such that any bypass or override by operator action only affects those circuits directly related to that bypass. Interlocks prevent bypassing more than one channel at a time. Annunciation, indication, and computer outputs were provided to inform the operator of bypasses and override conditions.

The balance of plant systems were also designed in accordance with requirements of IEEE 279, "Criteria for Protection Systems for Nuclear Power Generating Stations".

The design was in compliance with IEEE 279 as outlined in Sections 7.1.2, 7.3, 7.4, 7.6, and 7.7 of the FSAR for each applicable system.

The actions recommended in circular 78-19 have been completed. Circular 78-19 is closed.

4. Employee Concerns (99014) (51053C)

The resident inspectors reviewed concerns expressed by site personnel from time to time throughout the inspection period. Those concerns related to regulated activities were documented by the inspectors and submitted to Region III. Eight concerns were transmitted to the regional office during this report period to be handled as allegations.

In addition to the above, the resident inspectors reviewed three questions raised by site employees concerning activities related to the Clinton Power Station (CPS) Condition Reporting (CR) system and a nonconformance report. Those questions and the results of NRC reviews are as follows:

- a. CRs which may be reportable under 10CFR50.55(e) but were not evaluated as reportable. No specific examples were provided but the time period of January - February 1985 was specifically mentioned as the time frame in question. This question was forwarded to the resident inspectors by a site employee via the NRC Construction Appraisal Team.

The inspector selected a sample of CPS condition reports generated between January 1 and February 28, 1985. That sample consisted of all CRs evaluated by the applicant as having a severity level less than level 3 (Severity levels were defined in CPS No. 1016.01, CPS Condition Reports, as follows: Severity Level 1 - a critical condition; Severity Level 2 - a major condition; Severity Level 3 - a minor condition). A total of 14 condition reports were reviewed by the inspector. Four of the condition reports reviewed required further evaluation and discussion with the applicant, as follows:

- (1) CR 1-85-01-088 and CR 1-85-01-085 - These condition reports identified deficiencies in General Electric Design Drawings related to the CPS Division III Emergency Diesel Generator. The problem identified appeared similar to a problem reported by IP as 10CFR50.55(e) reportable (item 461/83004-EE: Document Control of Design Change Documents).

Discussion with the applicant's representative revealed that this condition was not considered to be significant to plant safety by the startup evaluator. Corrective action had not been determined for these CRs at the time of this inspection. The inspector will review the applicants corrective actions with regard to this item in a subsequent inspection. Open Item (461/85032-01).

- (2) CR 1-85-02-075 - This condition report identified deficiencies related to valve actuators with stem clamp failures caused by excessive vibration. The problem was similar to a problem identified in IE Information Notice 83-70 and reported by IP as 10CFR21 reportable (item 461/84001-PP: Anchor Darling Globe

Valves With Anti-Rotational Devices). This CR indicated that corrective actions under the original 10CFR21 report may have been inadequate.

This matter was discussed with the applicant who indicated that the startup evaluator considered this problem to be an isolated circumstance at the time of this evaluation. However, the applicant further stated that the condition identified on this CR was being investigated under a 10CFR21 investigation since similar failures had subsequently been identified. The inspector reviewed an IP memorandum Campbell to Logan dated April 15, 1985; Subject: Assignment to investigate a 10CFR21 defect: (21-85-05) Anchor Darling Globe Valves with Anti-Rotational Devices. That memorandum and a subsequent memorandum dated May 13, 1985 (Subject: Schedule for Investigation of Potential 10CFR(21-85-05) Loose Stem Collar Clamps On Motor Operated Valves) clearly identified the potential inadequacy of previous corrective actions and the fact that valves other than Anchor Darling Globe Valves may be affected. This information was sufficient to determine that IP had properly handled this deficiency.

- (3) CR 1-85-02-080 - This CR identified that a nonsafety related pipe for the generator hydrogen system which was buried in soil had experienced severe galvanic corrosion to the extent that the pipe failed during hydrostatic test. The CR questioned the adequacy of corrosion protection for safety related piping embedded in soil.

The inspector questioned the applicant concerning the status of this CR. The applicant stated that the CR had been sent to the Nuclear Station Engineering Department (NSED) in order to determine if other piping systems had been affected. The applicant stated that there was no basis for belief that safety related piping was affected; in particular, the applicant identified that both buried fire protection piping and buried shutdown service water piping had successfully passed hydrostatic tests; recent excavation of a portion of the buried fire protection piping (due to necessary replacement of an in line valve) had not disclosed any galvanic corrosion problem. The NSED evaluation will determine the need for further investigation or corrective action. This information was sufficient to determine that IP had properly handled this deficiency.

The inspector noted that, during the two month time period in question, the applicant had provided 2 10CFR50.55(e) potential reports to Region III and had instituted 3 10CFR21 investigations.

Based on the results of this review, the inspector concluded that the applicant's program for identification, evaluation, and reporting of significant deficiencies was functioning adequately.

- b. Conditions found by IPQA which were written up on construction work requests but which were not documented on a nonconformance report (NCR). The individual questioned why a NCR was not required. One specific example (Construction Work Request [CWR]) of the conditions in question was provided for the inspector's information and review; CWR No. 14740 dated June 7, 1985.

The inspector reviewed the CWR in question and found that it documented several minor workmanship deficiencies related to vendor supplied panels. The CWR attached a "QA Report" which documented the identified deficiencies.

The inspector discussed this matter with cognizant IP Startup and QA personnel. It was determined that a total of 25 "QA Reports" resulted from an "informal" surveillance activity performed by IPQA at the request of the IP Manager - Nuclear Program Coordination as a result of NRC findings at Detroit Edison Company's Fermi Unit 2. The inspector noted that the applicant's QA personnel did not follow site procedures in the conduct of this activity.

The IP Supervisor - Construction QA stated that the results of this informal surveillance activity were documented on the "QA Report" form and handed to IP Startup Supervision for evaluation and corrective action. These items were properly processed by Startup personnel under Startup Administrative Instruction (SAI) 7, "Control of Conditions Adverse To Quality." In addition, the inspector noted that the applicant had instituted programmatic measures to perform QC inspection of the panels in question and had reported the conditions identified as potentially reportable under 10CFR50.55(e) (item 461/85006-EE - Wiring and Workmanship Deficiencies in Vendor Supplied Panels). Although site procedures were not adhered to in the conduct of the "informal surveillance", the activity appeared to have been an isolated instance. The activity also appeared to have been adequate to provide positive control over activities affecting quality. The applicant was reminded of the requirements of 10CFR50, Appendix B concerning the performance of safety related activities in accordance with approved procedures.

- c. The resident inspector reviewed an employees' concern over the "Use-As-Is" disposition provided on a mechanical type NCR. The described nonconforming condition was a lack of the required 1/4" vent hole on a welded tube steel pipe support. The disposition was discussed with cognizant NRC inspectors and, based on the fact that the tube steel welds were of acceptable quality, the Use-As-Is disposition was appropriate. A followup discussion with the concerned employee was held. No further action was requested or deemed necessary by the resident inspector.

No violations or deviations were identified.

5. Review Of Allegations (99014)

(Open) Allegation (RIII-85-A-0116): The Clinton NRC Resident office was contacted by an individual concerning the interpretation of ASME Code, Section III, Figure NB-4427-1 (attached), Socket-Welding Fittings; Baldwin Associates Procedure (BAP) 2.6, Instrumentation (socket weld joints) and Nonconformance Report (NCR) No. 30480, dealing with socket weld fit up.

NCR No. 30480 described a condition whereby the instrumentation piping (a spool) was ground to a taper and the inside diameter of the socket was ground on the bottom to obtain an offset to facilitate installation with a slope without bending the piping. The NCR was dispositioned "use as is". The basis for the "use as is" was that "the ground off portion of the pipe is inside the socket. No design violation exists. The ground off portion of the socket does not violate minimum wall and the proper weld size can be obtained, no code violation exists, use as is."

NRC Review

The inspector examined the applicable ASME Code and applicant procedures to determine if the NCR was dispositioned properly. The results of the examination of the documents are as follows:

- (1) ASME Code (refer to Figure 1-A attached): The code specifies that the piping will be withdrawn approximately $1/16$ " from the socket bottom prior to welding. The code was not specific on the angularity of the piping.
- (2) BAP 2.6, Instrumentation, Section 5.6.1(e) states "for socket weld joint an approximate $1/16$ " gap shall be maintained between the end of the pipe and the bottom of the socket."

The procedure further states "the tack weld shall be made after the pipe and socket are pulled apart $1/16$," and the scribemark which should be $1/16$ " from the edge of the socket end shall be verifiable by the TS inspector." The procedure, as is the code, is not specific on angularity in pipe to socket weld fittings.

The inspector observed approximately 150 instrumentation piping installations. The piping had various angularities to eliminate the need to bend the piping for fit up. In one case, the angularity was approximately 10 degrees (Figure 1-B attached).

The inspector discussed the NCR disposition and lack of specific criteria in the fit up of socket weld fittings with the applicant. A memo dated June 18, 1985, I. A. Ganza, Project Manager, S&L, to H. R. Lane, IP-NSD, established the following engineering criteria for angularity in pipe to socket fittings:

- (1) The socket weld fittings must be in accordance with ANSI B16.11. This requires that no grinding is done on the ID of the socket.
- (2) The pipe wall thickness where the pipe extends beyond the socket must be .875T nominal or greater.
- (3) The pipe insertion must be such that approximately 1/16" end gap exists prior to welding. In all cases, the pipe end must be within the socket.
- (4) The weld must be of the full required size.

At the request of the inspector, the fitting in Figure 1-B (see attached) was radiographed and full piping engagement into the socket was verified. The inspector questioned whether piping with an angularity of 10 degrees or greater could bind within the socket and thereby induce excessive stresses on the weld resulting in cracking, a condition similar to weld cracking if the piping is fully engaged at the socket bottom when welded.

Results

Concise criteria for socket weld fit up has been established and documented by the applicant. Two items of concern remained unanswered at the conclusion of the inspection:

- (1) Will socket weld fit up with angularity approaching 10 degrees compromise the integrity of the socket weld by "bottoming out" the pipe in the socket (similar to a fully engaged socket) thereby resulting in potential cracking of the weld during the weldment cooling/solidification process? The inspector noted that the socket welds in question were generally ASME Class 3 which do not require nondestructive examination (other than a final visual inspection).
- (2) What is the source document (code or standard) which permits angularity greater than the normal tolerances of piping inserted into the socket?

These matters are unresolved pending review of the applicant's response to the above questions. The applicant agreed to provide the necessary answers. Unresolved item (461/85032-02).

6. Operating Staff Training (41301)

The inspector continued to examine the CPS operating staff training programs to confirm that the applicant was training the operating staff; that a continuing training program was in progress; and that replacement employees receive training or have experience equivalent to that required for originally selected personnel. The inspector verified that the documented training program was established and was consistent with the CPS FSAR training commitments in the following area:

Technical Department Training

The following procedures were reviewed:

- | | |
|---|---|
| (1) CPS No. 1002.01, Revision 5,
Section 8.2 | Departmental Training |
| (2) CPS No. 1301.01 | Technical Department Organization,
Responsibilities, and Minimum
Qualifications |
| (3) CPS No. 1302.02 | Technical Department Training |

The inspector examined the qualifications and training records of seven individuals assigned to the Technical Department. It appeared that the Technical Department training meets the requirements of the FSAR, Section 13.2, Training and ANSI/ANS-3.1-1978, Section 5.3.3, Training for Professional Technical Personnel.

This inspection will be continued in a subsequent report.

No violations or deviations were identified.

7. Local Public Document Room - Independent Inspection (94600)

The Senior Resident Inspector - Operations visited the NRC's Local Public Document Room (LPDR) for the Clinton Power Station. The LPDR is located in the basement of the Warner Library, 120 West Johnson Street, Clinton Illinois. The purpose of the visit was to ascertain the condition of the document collection; to familiarize the resident staff with the location of the collection and the filing system in use to assist in directing information requests to the proper location and file; and to discuss the LPDR document collection with the head librarian.

In general, the LPDR was found to be in good condition with the files reasonably maintained, retrievable, and up to date. The filing system was described in a brochure which was available for public use in the area of the collection. Postage paid cards were also available for interested members of the public to provide suggestions or comments to the PDR staff in Washington, D. C. In addition, a toll free telephone number was available by which questions and problems could be discussed with cognizant headquarters personnel. A microfiche reader and instructions on its use were provided for public inspection of records maintained on microfiche. The microfiche reader was capable of making hard copies of documents for a nominal fee.

Some minor discrepancies were noted and discussed with the head librarian and cognizant headquarters personnel. Action will be taken on those discrepancies during a routine annual visit by cognizant headquarters personnel scheduled for July 1985.

8. Functional or Program Areas Inspected

a. Site Surveillance Tours (42051C)

At periodic intervals during the report period, surveillance tours of areas of the site were performed. Those 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. In general, the storage and maintenance of safety-related material and equipment was acceptable throughout the laydown areas and the power block.

No violations or deviations were identified.

b. Reactor Vessel Installation (50053C)

During this report period, the inspector witnessed installation of the reactor vessel internal moisture separator. This installation was performed by IP Maintenance in accordance with the applicable procedure (CPS No. 8117.06, revision 2). The inspector noted that this activity was well monitored and controlled. In addition, the inspector witnessed setting of the reactor vessel head onto the vessel flange and noted an equivalent level of control over that activity.

No violations or deviations were identified.

c. Spent Fuel Storage Racks (92704)

During this report period, the inspector started a review of QA measures taken to assure correct BORAL installation in the high density spent fuel storage racks. BORAL is a neutron absorbing material used to allow high density fuel storage.

Specifically, the inspector reviewed the Brooks & Perkins, Inc. (the BORAL plate fabricator) Quality Assurance Procedure (BP-10041-QAP, Revision 4) which provides the acceptance criteria for inspection of BORAL plates. In addition, the inspector reviewed documentation packages provided by the spent fuel racks fabricator, Nuclear Energy Services (NES). No deficiencies were identified during the review of this documentation.

The inspector witnessed installation activities associated with the spent fuel storage racks. These activities were performed in accordance with Baldwin Associates (BA) traveler FH-001-(ME). Review of the traveler package in the field indicated that installation was being adequately monitored by Quality Control and that the spent fuel storage racks were being installed in accordance with the approved design. The traveler included reference to the NES installation procedure.

The inspector also witnessed portions of the "drag test" being performed by BA on each of the spent fuel channels. These tests were intended to ascertain that spent reactor fuel bundles could be stored in each storage rack location without experiencing binding which could inhibit subsequent bundle removal from the rack. No adverse conditions were noted during observation of these test activities.

At the end of the report period, this review was still in progress. The applicant provided QA documentation from the BORAL fabricator which verifies the BORAL content in each of the plates used to manufacture the spent fuel storage racks. The results of the review of this documentation will be reported in a subsequent inspection report.

No violations or deviations were identified.

9. Preoperational Test Program Implementation Verification (71302)

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

During this report period, the inspector noted a substantial increase in the level of preoperational test activity. Activities were observed related to testing of the station battery and preparations for reactor vessel hot operations (documented in another section of this report); additional tests observed being performed but not specifically inspected included tests of the condensate and condensate booster systems and troubleshooting of the shutdown service water system.

The inspector observed performance of maintenance work by IP Maintenance and inspection activities by IP QC. The work appeared to be adequately implemented and controlled. Specific activities observed included replacement of a valve operator motor on the fuel pool cooling system and placement of temporary instrumentation in the drywell cooling system.

The inspector noted a marked improvement in general cleanliness inside the drywell as preparations for Hot Operations progressed. Cleanliness overall had improved but still required daily attention in the heavy construction areas.

No significant discrepancies were identified during the conduct of these plant surveillance tours. One NCR hold tag was found to be out of position (adrift inside the drywell). That tag was turned over to an IPQC inspector for action.

No violations or deviations were identified.

10. Test Witnessing - Division 1 Battery Capacity Test (70441B/70312)

The inspector observed the conduct of preoperational test procedure PTP-DC-01, 125 VDC Subsystem 1A, steps 7.1.1 through 7.1.14 (Battery Capacity Test). The test was witnessed in order to determine that the test was conducted in accordance with the approved test procedure; to evaluate the performance of the startup test personnel conducting the test; and to independently verify the acceptability of the test results.

In particular, the inspector verified that the latest revision of the approved test procedure was available and in use; that minimum crew requirements were met; that a sample of test prerequisites were met; that a sample of required plant systems was in service; that test equipment required by the procedure and in use during the test was calibrated; and that the test procedure was adhered to during conduct of the test. Data collection and preliminary data analysis during test performance were observed to be adequate. Overall coordination and actions by the test crew appeared adequate and timely.

The inspector discussed preliminary test results with the startup test engineer. The engineer clearly demonstrated the adequacy of the preliminary test results.

The inspector reviewed data collection techniques and the legibility, traceability, and permanence of documented test data. Most data collected during the test was printed by an automatic data logger. That data was transferred to the required test data sheets by the test engineer and the data logger tape was attached to the data sheet. The record data was observed to be legible, traceable, and was recorded using black ink. No corrections were observed.

No violations or deviations were identified.

11. Reactor Vessel Hot Operations Test Observation (92719)

The inspector observed applicant actions in preparation for and performance of Reactor Vessel Hot Operations. This inspection activity began as followup inspection on two previously identified items (see Paragraph 2 above), and as followup on applicant commitments contained in their response to inspection report 50-461/81014.

The test, which began on July 3, 1985, includes heatup of the reactor vessel and connecting piping to 500 degrees F; preoperational testing of the reactor recirculation system; piping vibration, thermal growth and system expansion testing; reactor vessel internals vibration testing; and drywell ventilation system testing. Heatup of the reactor vessel was scheduled to begin on July 9 with the total test scheduled to extend over a six week period.

During this inspection period, the inspector attended daily IP coordination meetings in preparation for hot operations; observed the performance of startup, maintenance, and construction organizations in support of hot operations prerequisites; attended the first shift briefing for hot operations test personnel; and reviewed preliminary results of the first coupled runs of the reactor recirculation pumps.

The inspector independently verified selected test prerequisites were met; observed reactor vessel filling operations; observed briefings of operations control room personnel by the startup test director concerning reactor vessel water level measurement and level control; discussed reactor vessel water chemistry control with operations and startup personnel; and observed operations in the control room in support of reactor vessel hot operations.

At the conclusion of this inspection period, the applicant was preparing to commence heatup of the reactor vessel and tensioning of the reactor vessel head. The actual conduct of piping vibration, thermal growth, system expansion, and reactor vessel internals vibration testing will be reviewed further in a subsequent inspection.

No violations or deviations were identified.

12. Site Activities Of Interest

a. Management Changes (71302)

The applicant notified the inspector of the following management changes:

- (1) The new IP Director - Quality Engineering and Verification has been selected. Mr. Ed Corrigan has taken that position.
- (2) A new position; IP Director - Maintenance Services has been established. The former IP Director - Startup Testing, Mr. Larry Tucker, has assumed that position.
- (3) Mr. D. Holesinger has replaced Mr. L. Tucker as the IP Director - Startup Testing.
- (4) Mr. H. Lane, former IP Nuclear Station Engineering Department (NSED) Director - Construction and Startup Engineering has been named IP Director - Design Engineering. The position Director, Construction and Startup Engineering has been eliminated.

b. Clinton Power Station (CPS) Design (71302)

On June 14, 1985, IP announced that the CPS design was essentially complete and that no new construction turnover packages would be generated.

c. Overinspection (OI) Program Implementation (92705)

- (1) On May 31, 1985, IP notified the resident inspectors that a management decision, based on the results of the overinspection (OI) program to date, had been made to perform 100% OI of safety related mechanical and electrical equipment. Since IP is performing 100% OI, BA field verification inspections were discontinued in this area.
- (2) During conduct of the NRC CAT inspection, IP's response to a CAT question revealed that approximately 466 of 1452 accessible category I structural steel beams had been excluded from the scope of the OI program. The resident inspector asked the applicant to evaluate the criteria used to determine which beams were excluded from the scope of OI with respect to Regulatory Guide 1.29. The inspector further requested the applicant provide a complete list of category I structural steel beams which have been excluded from the OI program scope and provide justification for each exclusion. The applicant's evaluation indicated that the criteria used to determine excluded beams were valid but that the implementation of the criteria may have been inadequate. Preliminary evaluation results indicated that 381 of the 466 excluded beams may require OI under the applicants' criteria. In addition, the applicant requested that Sargent and Lundy review the total population of accessible structural steel beams to assure that all safety related structural steel beams subject to OI had been identified and evaluated. The applicant stated that a list of all accessible beams which were excluded from the OI program would be provided to the resident inspector. That activity was scheduled for completion by July 26, 1985. This is an open item (461/85032-03).
- (3) On July 2, 1985, NRC Region III responded to IP's request to terminate OI of safety related piping and mechanical supports. Based on the Region III response, IP terminated the conduct of OI of those commodities. IP stated that additional requests for termination of certain OI commodities were anticipated. Region III will review those requests as they are received.

d. Organizational Change (71302)

The IP organization has been expanded to include a maintenance and modification contractor for plant operations. The applicant signed a contract with Stone & Webster (S&W) Engineering Corporation to provide maintenance services for plant operations, maintenance, modifications, and plant startup support. The applicant stated that S&W will begin performing maintenance in support of plant startup in August 1985. Initial work packages assigned will be in support of plant staff work requests. Additional work assignments will be determined. S&W supervisors will report to the new IP Director - Maintenance Services.

e. Construction Appraisal Team (CAT) Inspection

As documented in Inspection Report 50-461/85021, the NRC Construction Appraisal Team conducted an extensive inspection of Clinton construction. The NRC resident inspectors provided support and assistance to the team, as required, throughout the inspection.

The CAT conducted an exit meeting on June 21, 1985 at the Clinton site. Preliminary results were discussed with the applicant and with Region III. The CAT report (Inspection Report 50-461/85030) will be issued in 45 to 60 days from the date of the exit meeting.

13. Unresolved Items (92701)

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. One unresolved item disclosed during this inspection is discussed in Paragraph 5.

14. Open Items (92701)

Open items are matters which have been discussed with the applicant, which will be reviewed further by the inspector, and which involve some action on the part of the NRC or applicant or both. Open items disclosed during this inspection are discussed in paragraphs 4a. and 12c.

15. Exit Meetings (30703)

The inspectors met with applicant representatives (denoted in paragraph 1) throughout the inspection and at the conclusion of the inspection on July 9, 1985. The inspectors summarized the scope and findings of the inspection activities. The applicant acknowledged the inspection findings.

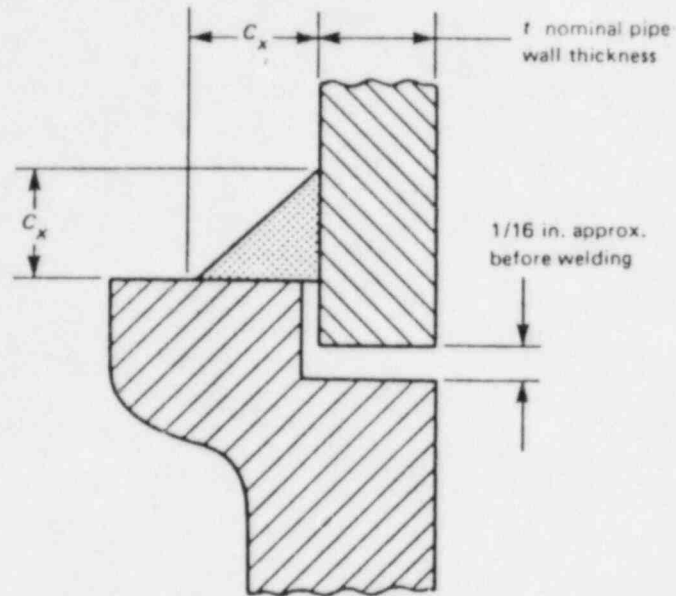
The inspectors also discussed the likely informational content of the inspection report with regard to documents or processes reviewed by the inspectors during the inspection. The applicant did not identify any such documents/processes as proprietary.

The resident inspectors attended exit meetings held between Region III and headquarters based inspectors and the applicant as follows:

<u>Inspector(s)</u>	<u>Date</u>
Muffett	June 11, 1985
Creed, Pirtle, Drouin	June 14, 1985
DuPont	June 18, 1985
Peranich et al	June 21, 1985
Lang, Morgan, King, Kramme	June 28, 1985

Attachment: Figure 1-A
and 1-B of Fig. NB-4427-1,
Fillet Weld Dimensions

A



$C_x \text{ min.} = 1.09t$ but not less than 1/8 in.

Minimum Welding Dimensions for Socket-Welding Fittings

FIG. NB-4427-1a FILLET WELD DIMENSIONS (CONT'D)

B

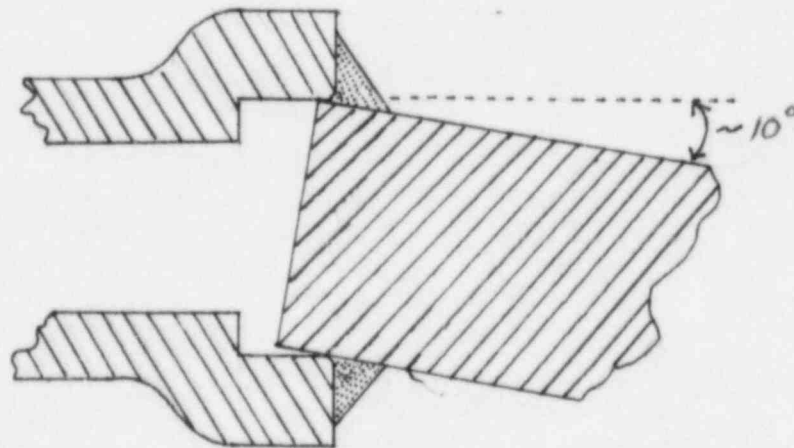


FIGURE 1b

(for Inspection Report
85032)