U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-461/84-19

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: June 12, 1984 through August 24, 1984

Inspector: W. F. Christianson
Senior Resident, Operations

Approved By: R. C. Knop, Chief
Reactor Projects Section 1C

9-14-84
Date

Inspection Summary

Inspection on June 12, 1984 through August 24, 1984 (Report No. 50-461/84-19(DRP))
Areas Inspected: Routine safety inspection by resident inspector of construction and pre-operational testing activities including licensee action on IE bulletins and circulars, emergency response capability implementation plan, site surveillance tours, program control, allegations, plant staffing, meetings, site visits, and items of interest. The inspection involved a total of 168 inspector-hours onsite by one NRC inspector, including 20 inspector-hours onsite during off-shifts.
Results: No items of noncompliance or deviation were identified.

DETAILS

1. Persons Contacted

Illinois Power Company (IP)

*R. Campbell, Supervisor, Programs and Procedures
*W. Connell, Manager, QA
L. C. Floyd, Supervisor Quality Systems
*W. Gerstner, Executive Vice President
J. H. Greene, Assistant Power Plant Manager
*D. Hall, Vice President
*J. Loomis, Construction Manager
T. F. Plunkett, Plant Manager
*J. Sprague, QA Specialist
G. E. Weller, Supervisor Licensing Administrator

Baldwin Associates (BA)

C. Anderson, Manager, Quality Assurance
*A. King, Jr., Project Manager
*L. Osborne, Manager, Quality and Technical Services

The inspector also contacted other licensee and contractor personnel.

*Denotes those attending at least one exit meeting.

2. Licensee Action on IE Bulletins and Circulars

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.

a. IEB 79-18 (open) "Audibility Problems Encountered on Evacuation of Personnel From High-Noise Areas"

Startup Preoperational Test Procedure PTP-CQ-0 will be used to test the Plant Public Address System (PA). All station alarms will be broadcast over the PA system to assure alarms will be audible.

PTP-CQ-01 specifically addresses all PA System speakers. Section 7.2.5.1 is stated as follows: "At each location (only areas normally accessible to personnel) observe that the test message can be heard loud and clear. Pay particular attention to areas that will have a high background noise level during operation. Any areas where the speaker can not be heard loud and clear should be described in the remarks section on Data Sheet "B"."

Section 7.2.5.1.4 states "Make entry on Data Sheet B to verify that each area listed in the PA can be heard loud and clear."

If the acceptance criteria of PTP-CQ-01 cannot be met, a resolution will be implemented on a case-by-case basis to correct the situation.

Condition Report 1-84-06-008, dated 6-14-84, was initiated to ensure PTP-CQ-01 addresses the actions in this bulletin.

This item will be reviewed further during a subsequent inspection.

b. IEB 79-20 (closed) "Packaging, Transport and Burial of Low-Level Radio actives"

The applicant does not presently generate low-level radioactive waste. The whole subject of how the Clinton Power Station (CPS) will handle low level radioactive waste is currently being reviewed by both the Nuclear Station Engineering Department (NSED) and the CPS Plant Staff.

The CPS Radwaste Department's Level II Schedules indicate that the necessary procedures and agreements for packaging, transport, and burial of low level waste should be completed in the fourth quarter of 1985, prior to fuel loading tentatively scheduled for January 1986. As part of the applicant's effort, IEB 79-20 will be reviewed and incorporated, as appropriate, into the various plant procedures.

CPS Condition Report No. 1-84-06-009 has been initiated to ensure the eight bulletin action items are evaluated for impact and document the activities that address the action items.

c. IEB 79-23 (Open) "Potential Failure of Emergency Diesel Generator Field Exciter Transformer"

Inspection Report 50-461/81-01 addresses the Excitation Power Transformers (EPT) used at CPS. Letter L-08-79 (10-13) O, G. E. Wuller to J. G. Keppler, dated October 31, 1979, also states that the diesel generator EPTs will be operated with a floating primary neutral and item (1) of the IEB is not applicable.

In response to item (2), the IP preoperational test program is committed to demonstrate full-load-carrying capability of the diesel generators and a 24 hour test of the generators.

The preoperational test is tentatively scheduled for January 1985.

This item will be reviewed during a subsequent inspection.

d. IEB 79-26 (closed) "Boron Loss from BWR Control Blades"

IP letter to G.E., G-0483, C. C. Wheeler to F. Weinzmimer, dated June 30, 1980, requested G.E. to tell IP what course of actions G.E. has taken to preclude loss, as described in the bulletin, of boron from the CPS control rods. Based on the G.E. response, IP issued a recommended course of action to be pursued as a result of IEB 79-26, Rev. 1. The updated status of the recommended course of action is as follows (item number corresponds to the item numbers in IEB 79-26):

Recommendation 1: Utilize the process computer to keep track of individual control blade exposures (G.E. Service Information Letter (SIL) #157 explains how to convert exposure to percent B^{10} depletion).

Status: The process computer will keep track of control blade exposures.

Recommendation 2: Develop a computer program which will manipulate data provided by the SIMULATE computer code to predict control blade exposures at the end of the next cycle to ensure that no control blade will exceed the 34% B^{10} local depletion.

Status: Plant Procedure CPS 2211.01 complies with the requirement of predicting control rod exposures.

Recommendation 3: Utilize SIMULATE computer code to perform shutdown margin tests.

Status: CPS Technical Specification 3/4.1.1 requires that shutdown margin tests be performed at each refueling outage. This satisfies recommendation 3.

Required assistance to the CPS technical staff will be provided by GE or NSED.

Recommendation 4: IP should monitor developments in other power plants on destructive examinations of exposed control blades. IP should at some future time determine the feasibility of performing some type of optical examinations rather than destructive examinations.

Status: No action required at this time.

Recommendation 5: Since CPS is not an operating plant, no response to this IEB is required.

Status: No formal reply was issued.

e. IEB 80-06 (open) "Engineered Safety Feature (ESF) Reset Controls"

As was done for operating reactors through IEB 80-06, the NRC staff asked the applicant to review all safety-related equipment to determine whether or not, upon reset of an ESF actuation signal, this equipment remains in the emergency mode. The applicant's response and the NRC staff positions are documented in the Clinton SSER Supplement 2, Section 7.3.3.7, Engineered Safety Features Systems.

The applicant performed two reviews in this area, one for NSSS safety-related equipment and the other for balance of plant (BOP) safety-related equipment.

The NSSS has several valves that the applicant has committed to modify control circuitry to meet the action required by the bulletin.

In the review of BOP systems, the applicant has identified several systems containing valves that revert to their normal operating condition upon a LOCA signal reset. The applicant has committed to modify the control circuitry for the majority of these valves (32 total) so they will not revert to the normal operating (nonsafety) mode upon a LOCA reset. For the remaining valves (14 total), the applicant has demonstrated that there is no impact on plant safety if these valves automatically change back to their normal operating position on a LOCA reset. The NRC staff concluded the applicant has adequately resolved this concern.

When the design changes committed to by the applicant for both the NSSS and BOP system valves described above have been completed, the applicant will be required to submit the final design (schematic) drawings for NRC staff review. These changes will be implemented before plant operation.

IP has issued a CPS Condition Report, No. 1-84-06-010, to ensure the bulletin action items are evaluated for impact and document the activities that address the action items.

This item will be reviewed during a subsequent inspection.

f. IEB 80-07 (closed) "BWR Jet Pump Assembly Failure"

The Jet Pump assemblies will be examined as part of the ISI program on a ten year cycle. The inspection of the assemblies will be based on a Southwest Research Institute (SWRI) procedure, SWRI-NDT-900-2, "Visual Examination of Nuclear Reactor Internals by Direct or Remote Viewing".

IP initiated CPS Condition Report, No. 1-84-06-020, to ensure that the bulletin concerns are addressed and to document the results.

g. IEB 80-16 (closed) "Potential Misapplication of Rosemount Inc. Models 1151 and 1152 Pressure Transmitters with Either "A" or "D" Output Codes"

The Rosemount Model 1151 and 1152 transmitters, which are the subject of both IEB 80-16 and IEC 80-16, are being replaced by Model 1153 transmitters for all safety related applications in a harsh environment. Eleven of the original 1152 transmitters used in a plant mild environment will be modified with replacement amplifier boards.

IPC responded to IEB 80-16 in letter U-0173, G. E. Wuller to J. G. Keppler, dated August 23, 1980. IPC stated the problem with the transmitter would be resolved by replacing existing circuit boards with new amplifier boards. Later it was determined that the Rosemount 1152 transmitters could not be qualified to IEEE Standard 323-1974 due to problems with traceability. Letter SLMI-9461, Sargent and Lundy to IPC, dated April 13, 1983, recommended replacement of the 1152 transmitters with 1153 Series "B" transmitters that meet the CPS qualification requirements.

Amplifier boards for the 1152 and 1153 transmitters are not interchangeable.

The inspector verified the 1153 transmitter installation at several random installations. Completion of the replacement transmitters is tentatively scheduled for August 1984.

h. IEB 80-17 (closed) "Failure of 76 of 185 Control Rods to Fully Insert During a Scram at a BWR"

The applicant has committed to modify the scram discharge system to meet the criteria enumerated in the NRC generic study, "BWR Scram Discharge System Safety Evaluation", dated December 1, 1980. (Safety Evaluation Report, CPS, Section 4.6).

Letter U-0343, G. E. Wuller, IP Licensing, to J. R. Miller, NRR, dated December 3, 1981, committed IP to the LRG-11 Position Papers on the bulletin issues and will be incorporated into the CPS design.

The Nuclear Station Engineering Department (NSED), Mechanical Section, provided confirmation that the scram discharge modifications have been implemented at CPS. The design as committed to in the LRG position paper to NRC, U-0343 dated 12-03-81 as indicated in the FSAR, Sections 4.6 and 7.2, has been incorporated in the related design documents.

The ATWS portion of this bulletin has been acted upon. IP has initiated design changes to incorporate the requirements set forth in SECY-83-293. "Amendment to 10 CFR 50 Related ATWS Events."

The design of a Recirculation Pump Trip System and an alternate Rod Insertion system is developed and will be released shortly.

The CPS Technical Specifications and associated surveillance procedures implement surveillance criterion listed in LRG-11 Position Papers. Surveillance procedures not yet fully developed are being tracked by the Technical Specification tracking system.

i. IEB 83-05 (closed) "ASME Nuclear Code Pumps and Spare Parts Manufactured By the Hayward Tyler Pump Company"

The applicant reviewed his list of technically adequate suppliers and Hayward-Tyler was not on the list.

CPS does not have any ASME Nuclear Code Pumps manufactured by Hayward-Tyler nor are there plans to purchase spare parts from them. CPS has added the Hayward

Tyler Pump Company to the "Vendor Evaluation List". A notation has been added which states that a "Post Installation" test will be required for acceptance of any spare parts for either Hayward Tyler Pumps or Babcock Wilcox (B&W).

(Hayward Tyler purchased the B&W Pump business including spare parts in 1977).

j. IEC 80-16 (closed) "Operational Deficiencies in Rosemount Model 510 DV Trip Units and Model 1152 Pressure Transmitters"

IEB 80-16 and IEC 80-16 address the same subject. Refer to IEB 80-16 for closure information.

3. Functional or Program Areas Inspected

a. Emergency Response Capability Implementation Plan (ERCIP)

(1) Emergency Operating Procedures (EOPs)

All EOPs have been written with one exception. The CPS Facility Review Group has approved the Emergency Procedure Guideline for EOPs.

(2) Safety Parameter Display System (SPDS)

The Verification and Validation Program for SPDS is approximately 1 1/2 months behind schedule. GE and IP/NSED personnel met and an action plan was developed to complete the Verification and Validation review.

SPDS Software design preparation by GE is two months behind schedule. A recovery plan has been agreed upon by IP and GE to support the SPDS Software schedule.

(3) Emergency Response Facilities (ERFs)

A recovery schedule has been drafted by Baldwin Associates (BA) to support the scheduled completion of construction for the Technical Support Center and the Operations Support Center by February 1985. The activities are approximately three (3) months behind schedule. The Emergency Operations Facility is undergoing Startup Testing.

(4) Control Room Design Review (CRDR)

Vendor has received technical material from IPC and has started preparation of the CRDR Program Plan and procedures. An integrated CRDR schedule has been drafted.

(5) Emergency Planning (EP)

Work on the CPS Emergency Plan Implementing Procedures is nearing completion to support submittal with the CPS Emergency Plan (Rev. 3) to the NRC to closeout the outstanding Confirmatory Issue #18 on Emergency Planning.

b. 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.

c. 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. Informal comments were discussed with IP and BA.

No noncompliances or deviations were identified.

d. Allegations

The inspector on separate occasions met with six (6) individuals expressing concerns on intimidation/harassment. Discussions between the individuals, Region personnel, and the Department of Labor indicated the concerns were labor/management concerns and not related to quality or safety. The individuals stated they did not have safety issue concerns, programmatic or hardware. The individuals were given guidance by the Department of Labor.

4. Plant Staffing

The status of staffing for each of the areas in Plant Staff as of August 31, 1984, is as follows:

	% of Authorized Positions Filled
Radiation Protection	73%
Chemistry	89%
Maintenance	96%
Technical	81%
Compliance and Configuration Control	100%
Radwaste	83%
Operations	96%

The Startup Group consists of the following personnel:

IPC Startup Employees	83
Contractors	58
Test Engineers	27
Technical Specialists	28
Schedulers	12
Total Employees	208

Plant Systems Turnover Status

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

% under IP jurisdiction	57.3
% under BA jurisdiction	42.7

5. Meetings, Site Visits and Items of Interest

Plant construction is 86.9% complete.

T. F. Plunkett, Plant Manager, has terminated employment with IPC. J. G. Cook, Assistant Plant Manager, is acting Plant Manager. IPC is actively soliciting an experienced replacement.

As a result of the Regional Administrator's concerns on graffiti, the applicant instituted a program to eradicate graffiti. Substantial objectionable graffiti has been removed from the plant during the past several months.

6. Exit Meetings

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

The inspector attended a regional inspector exit meeting on July 27, 1984, with the following attendees:

T. Vandel
J. Malloy
D. Keating
D. Jones
J. Jacobson