

U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Report No. 50-354/85-05 Docket 50-354 License CPPR-120

Licensee: Public Service Electric and Gas Company

Facility: Hope Creek Generating Station

Inspection At: Hancock's Bridge, New Jersey

Conducted: January 28 - March 3, 1985

Inspectors: *A. R. Blough*
A. R. Blough, Senior Resident Inspector

3/13/85
Date

Jack Strosnider
fr. S. K. Chaudhary, Senior Resident Inspector

3/20/85
Date

Approved: *Jack Strosnider*
J. Strosnider, Chief, Project Section 1B

3/20/85
Date

Summary:

January 28 - March 3, 1985 (Report No. 50-354/85-05): A routine onsite resident inspection (74 hours) of work in progress and preoperational testing was conducted. The inspector also made tours of the site, reviewed licensee action on previous inspection findings, reviewed operational safety review group functions, and attended a startup group training session.

One violation was identified regarding control of fluid and pipe temperatures during piping system flushes (Detail 5).

DETAILS

1. Persons Contacted

Public Service Electric and Gas Company (PSE&G)

- A. Barnabei, Principal QA Engineer
- J. Cicconi, Startup Manager
- * R. Donges, QA Engineer
- J. Fisher, QC Startup Engineer
- B. Forward, Startup Engineer
- * A. E. Giardino, Manager, QA Engineering and Construction
- * R. Griffith, Principal Staff QA Engineer
- S. LaBruna, Assistant General Manager
- * M. Metcalf, Principal Startup QA Engineer
- J. A. Nichols, Technical Engineer
- J. M. Rucki, Maintenance Engineer
- R. S. Salvesen, General Manager, Hope Creek Operations

Bechtel

- J. Cox, Principal Startup Engineer - Methods/Administration
- T. Indico, Principal Startup Engineer - Testing
- C. Jaffee, Startup Engineer
- A. Meyer, Document Control Group Leader
- * G. Moulton, Project QA Engineer
- * J. Serafin, Assistant Project Field Engineer
- A. Strait, NSSS Startup Engineer
- R. Webster, Startup Director

General Electric

- E. Skeehan, Startup Manager
- G. Chu, Startup Engineer

*Present At Exit Meeting

2. Previous Inspection Item Update

(Closed) Unresolved Item (84-24-01), lack of QC involvement in post-test restoration of equipment to design configuration. The applicant revised his procedure SAP-24, Preoperational Test Procedure, Format and Instructions, to require mandatory QC witness points (MWP) for such restoration steps. The inspector reviewed a typical preoperational test procedure (PTP) PTP-KJ-1, Emergency Diesel Generators, and noted that appropriate MWPs had been included. The inspector interviewed a QA engineer, who is responsible for specifying MWPs in proposed PTPs, and found him to be knowledgeable regarding the revised SAP-24.

(Closed) Violation (80-02-01), foreign matter in piping stored in torus. This item was closed out in inspection 84-05, except regarding cleanliness of torus spray header piping. The piping could not be re-inspected because it had already been installed. On February 14, the inspector observed the initiation of flushing of the torus spray piping to verify adequate flow through the line. Also, during the flush about three-fourths of the torus catwalk was accessible. The inspector observed the spray ring, and noted that the spray connections had ample flow and none appeared clogged. The inspector had no further questions.

(Open) Construction Deficiency Report (CDR 84-00-14), induced voltage actuations of Bailey logic system. This item was also reviewed in report 84-23 and at management meeting 85-07. During this inspection the applicant began receiving, testing, and installing enhanced modules. The module checkout is performed under GTP-27, Testing of Bailey 862 Logic Module. On February 8, the inspector interviewed an IC supervisor and QC inspector regarding the recent testing of about 300 modules. On February 20, the inspector interviewed three IC technicians involved in GTP-27 testing in-progress under test packages BLC-0144 and BLC-0142. Each module can be used in high or low voltage, AC or DC applications, depending on a set of jumper pin locations. Each module is tested for all potential applications. Then its specific application (i.e., panel and location) is assigned and the jumper pins are positioned in accordance with the controlled drawing for that application. A QC inspector must check the jumper positions. The inspector observed the testing of about six modules and the jumper pin placement for three modules. No inadequacies were noted.

The CDR remains open pending completion of all modifications and testing of the logic system for adequate immunity from induced voltage effects.

3. Plant Tour

Periodically during this inspection period, the inspectors toured the plant. This walk-through inspection covered the reactor building, drywell, diesel generator enclosures, and control room. The inspectors examined completed works, works in progress, plant cleanliness and housekeeping, and general adherence to project procedures in the construction operations. The availability of supervisory and quality control personnel in the vicinity of work was also observed.

Some of the observations made by the inspectors during the tour are detailed below.

- On penetration J-34, some pipe stubs were not protected from contamination by use of caps or other coverings.
- A wooden plank was supported by penetration J-31. The plank appeared to be used as a work platform/scaffolding.

- On a three-way restraint No. H-27 on system 1-P-EE-009, it appeared that the horizontal members were not at right angle to each other.
- A lifting device (winch) was supported by the strut of 1-BC-139-1.03Q support.

The licensee was informed of the inspectors observations, and requested to provide any justifications to support the observed practices. The licensee provided the following explanations.

- The uncapped pipe stubs on penetration J-34 might have fallen off during a recent work operation adjacent to it, however, it was immediately capped after the inspectors' observation.
- The wooden plank was placed there by mistake. It had since been removed, and the craft supervision and workers had been instructed to refrain from such practices.
- The licensee provided the design drawings to substantiate that the restraint was designed to have struts as erected.
- The lifting device was removed from the support and craftsmen were instructed to refrain from this practice.

The inspectors considered the above problems as isolated incidences, and had no further questions at this time.

4. PSI Program

The inspector reviewed a sample of the fluorescent magnetic particle test records for the reactor head studs. Southwest Research Institute issued Customer Notification Forms to PSE&G for four of the ninety-two studs. Three of these studs appeared to have areas of surface corrosion and pitting. The fourth stud was recorded as having two scratch-like linear indications. PSE&G will be accepting or rejecting the studs for serviceability. The inspection included observation of the fluorescent magnetic particle test of the reactor head stud nuts and review of examination equipment, materials and records for calibrations, certification and completeness.

The inspector also observed the liquid penetrant and ultrasonic examination of a portion of recirculation Loop B Line weld No. 1-BD-28-VBA-011. Each examination was performed and recorded by technicians in accordance with PSI program approved procedures. Also, the calibration and test equipment certifications, material certifications, and examiners certifications were reviewed.

No violations were identified.

5. Test Observations

Various ECCS system flushes and the integrated recirculation system flush were ongoing during the inspection period. The inspector toured the control room and plant areas during regular and backshifts. He observed equipment and instruments and interviewed shift operators, test engineers, technicians, data-takers, and QC inspectors. Personnel involved were knowledgeable regarding test procedures and equipment status. The inspector reviewed selected test logs and data sheets. On a sampling basis he checked pump parameters against the manufacturer's operating curves. No inconsistencies were noted.

During a tour on February 14, the inspector noted the RHR spring can hangers were pinned (preventing spring movement) during system flush. The inspector discussed this with start-up group engineers, who stated that flushing is typically done with the hangers pinned. Each flush procedure includes a prerequisite to obtain a hanger adequacy statement from the constructor prior to flushing. In cases where the spring can hangers are pinned, the hanger adequacy statement will specify a maximum pipe temperature of 120°F for the flush, since the construction specification requires the spring cans to be operable above 120°F. The inspector asked how the 120°F limit was controlled relative to temperature measurement locations, frequencies, and documentation, as well as test equipment traceability. The inspector learned that the monitoring was at the discretion of the individual test engineer and was sometimes, but not always, documented in the test engineer's test log. The inspector expressed concern regarding the lack of formal controls and documentation for a constraint on a system test parameter. The inspector also questioned whether the temperature limit might have been exceeded during previous flushes, and, if so, what would be the pipe and hangers stress consequences. At an interim exit on February 15, the applicant indicated that (1) the controls would be formalized and that (2) the potential impact on previous testing would be evaluated. Also on February 15, the applicant presented QC surveillance information indicating that all current flushes were well within temperature limits. Given the 120°F limit on the piping with pinned hangers, temperature monitoring and control during flushes is an activity affecting quality of the piping system. 10 CFR 50 Appendix B Criterion V, Instructions, Procedures and Drawings, requires activities affecting quality to be prescribed by documented instructions, procedures or drawings. Criterion XI, Test Control, requires testing procedure to incorporate the acceptance limits contained in applicable design documents. Criterion XVII, Quality Assurance Records, require sufficient records to be maintained to furnish evidence of activities affecting quality. Failure to have formal, proceduralized controls over temperatures limited to a 120°F maximum during those piping system flushes is a violation. (85-05-01).

6. Safety Review Groups and Functions

At the request of NRC Region I management the inspector reviewed the applicant's safety review group status. The following documents were reviewed:

- FSAR Sections 13.4 and 13.5
- Administrative Procedure SA-AP.ZZ-004(Q), Station Operations Review Committee
- Administrative Procedure SA-AP.ZZ-001(Q), Preparation and Approval of Station Procedures

The applicant's FSAR commitment is have the following committees functioning prior to initial fuel load:

- Station Operations Review Committee (SORC)
- On-site Safety Review Group (SRG), and
- Off-site Safety Review Group (OSR).

Functions are similar to those of the Standard Technical Specifications, except in regard to the SORC review of procedures. The FSAR has provisions for some procedures that have traditionally been reviewed by SORC to be reviewed and approved instead by a department head, if the procedure is not significant to nuclear safety. Qualified reviewers will be designated and will assist the department heads. The SER endorses this procedure review concept, since it frees SORC to concentrate on safe facility operation.

The SORC is already functioning, in order to review procedures being developed for the operations phase. The other committees have not been formed. Also, the corporate guidance to the station for screening procedures for safety significance and for training of "qualified reviewers" is still under development. Consequently, SORC is currently reviewing all those procedures specified in Standard Technical Specifications, rather than allowing any department head approvals. The inspector stated that he considers this acceptable and conservative for pre-fuel load SORC activities.

The inspector compared SORC composition and quorum requirements specified in administrative procedures to FSAR commitments and found them to be in agreement. Currently, the Maintenance Manager is procedurally restricted from membership pending completion of his qualification per ANS 3.1 - 1981. Another SORC membership position, Manager of the SRG, has not yet been filled. SORC can meet the quorum requirements without these two members.

No unacceptable conditions were identified. Regarding the OSR group, the inspector informed the applicant that NRC Region I would expect this group to be formed and functioning sufficiently early to enable them to assess operational programs status prior to fuel load.

7. Code Hydrostatic Test Procedures

During this inspection period, the inspectors reviewed the code hydrostatic test procedures and preparations and witnessed the performance of the test. The details of this effort are documented in Region I Inspection Report 50-354/85-12.

8. Startup Group Training

On February 14, the inspector attended a weekly startup group training meeting to verify that effective ongoing training was being provided and that the information promulgated was consistent with preoperational test program requirements and administrative controls. No inadequacies were noted.

9. Exit Interview

The inspector met with applicant and contractor personnel periodically and at the end of the inspection report period to summarize the scope and findings of their inspection activities. At the time of the exit interview, the inspector characterized the flush temperature monitoring issue (paragraph 5) as an unresolved item. After further reviewing the applicable regulatory requirements, the inspector reclassified the item as a violation and so informed the applicant's QA Startup Engineer on March 13, 1985.

Based on the NRC Region I review of this report and discussions held with licensee representatives, it was determined that this report does not contain information subject to 10 CFR 2.790 restrictions.