U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-293/87-47

Docket No. 50-293

License No. DPR-35

Licensee: Boston Edison Company M/C Nuclear
800 Boylston Street
Boston, Massachusetts 02199

Facility Name: Pilgrim Nulcear Power Station

Inspection At: Plymouth and Braintree, Massachusetts

Inspection Conducted: October 5-9, 1987

Inspectors: _____ 12/15/87
G. Napuda, Senior Reactor Engineer date

_____ 12/15/87
FOR. Rebelowski, Senior Reactor Engineer date

_____ 12-15-87
J. Golla Reactor Engineer date

Accompanied by: J. Swoboda, Institute of Atomic Energy,
People's Republic of Poland (IAEA) - Observer

Approved by: _____ 12/17/87
N. Blumberg, Chief, Operational Programs Section, OB, DRS date

Inspection Summary: Routine announced inspection on October 5-9, 1987 (Report No. 50-293/87-47)

Areas Inspected: Hydrogen Water Chemistry Modification, Procurement, Material Management, and QA/QC interfaces with Procurement and Local Leak Rate Testing.

Results: No violations or deviations were identified.

DETAILS

1. Persons Contacted

Boston Edison Company

M. Akhtar, Modification manager
*T. Beneduci, Training Supervisor
*S. Bibo, Audit Group Leader-Quality Assurance Department (QAD)
F. Clifford, I&C Supervisor
*B. Dunn, Compliance Engineer
F. Famulari, Quality Control Group Leader-QAD
A. Felix, Performance Analysis Engineer
*P. Hamilton, Compliance Group Leader
J. Larsen, Hydrogen Water Chemistry (HWC) Program Manager-General Electric (GE)
*P. Manderino, STA/Senior Test Engineer
*J. Mattia, Surveillance Group Leader-QAD
G. Nelson, GE Manager
K. Oberly, HWC Site Project Manager-GE
D. O'Leary, I&C Supervisor
D. Peyvan, Test Engineer-Quadrex Corporation
*J. Purkis, Senior Systems Specialist
*K. Roberts, Nuclear Operations Manager
J. Sheldon, HWC Production Manager-GE
*R. Sherry, Chief Maintenance Engineer
*C. Stephenson, Senior Compliance Engineer
*B. Tucker, HWC Project Manager

US Nuclear Regulatory Commission

*J. Lyash, Resident Inspector

*Attended the exit meeting on October 9, 1987.

Discussions and interviews were held with other licensee administrative, technical, operations, quality verification and support personnel.

2.0 Hydrogen Water Chemistry System Modification

2.1 Background

The licensee's response to the Intergranular Stress Corrosion Cracking (IGSCC) identified during 1984 in the reactor coolant system piping was to institute a number of programs to mitigate further IGSCC. One of programs was to introduce a change to the water chemistry program that would reduce the Electrolytic Chemical Potential (ECP) of the reactor coolant water by injecting hydrogen into the feedwater system to reduce the dissolved oxygen concentration and maintain a high purity in the reactor coolant thus reducing the susceptibility

of reactor piping and materials to IGSCC. This hydrogen injection system process is designated as the Hydrogen Water Chemistry System. Two sources of Hydrogen and Oxygen are available on site, a passive system utilizing bottled storage facilities for both hydrogen/oxygen and an electrolytical process to produce hydrogen and oxygen.

2.2 Electrolytical Generation of Hydrogen/Oxygen Gases

The Hydrogen Water Chemistry (HWC) system consists of a number of components including:

- Electrolytic Process - Batteries of cells where the disassociation of water occurs and is purified, washed and leaves as a low pressure gas.

- Hydrogen Compressor Module (HCM) which takes the low pressure hydrogen and compresses it to a greater pressure than the suction pressure of main feed pumps. (500 psig)

- Hydrogen Injection/Vent Module (HI/VM) monitors hydrogen flow paths.

- Offgas Oxygen Injection Module - divides the purified oxygen into two flow paths that inject into offgas and condensate piping.

2.2.1 Inspectors Observations/Comments

a. The inspector expressed concern in that the operator will add KOH (Electrolyte) to each cell until the fixed percentage is reached. In order to perform this task, the operator must stand on a platform and place his hand above a live D.C. bus bar to connect and disconnect fill hose. The licensee believes that no hazard exists due to the low voltage involved.

b. The present electrolyis procedure does not address recommended protective clothing. The licensee stated that fill procedures will include required protection clothing. (Shields, gloves, boots, aprons, etc.)

c. The required ventilation/heating supplied to the Electrolytic facility (must be maintained above 40°F) is not insulated. The licensee believes that no insulation will be needed, due to a short piping run.

d. System catalytic purifiers are not installed but will be put into the system after preoperational testing.

e. During the inspection of the Hydrogen Injection/Vent Module, it was observed that certain piping was bent (instrument tubing) due to the limited support on this line. The licensee stated that a review of instrument hangers would be made and any deficiencies would be corrected.

Additional Discussion

The observations included a review of the hydrogen detectors, alarms, purge gas system electrolyte level controls, lighting protection base foundation, hydrogen and oxygen delivery systems; no deficiencies were identified.

Main Control Module

The heart of system control is the Nuclear Measurement Analysis and Control (NUMAC) main control module which includes a computer that interfaces with all system components and provides the following functions.

a. Provide control signals to open and close valves.

b. Provide control signals to operate HWC components.

c. Provide control signal to demand hydrogen generation as a function of feedwater flow.

d. Display valves positions.

e. Display messages indicating HWC status and prompt the operator on required actions.

f. Display operator options.

g. Permanently display select variables on the screen, while others will appear on demand. All such variables are signals from sensors located at various places in the plant.

h. Provide contacts to operate plant alarms.

i. Record and display select variables. Recording is limited to memory capability, however, this data can be made available to a host computer.

j. In order to maintain offgas O_2 within limits, provide an adjustable ramp rate that will control hydrogen demand.

k. Provide two types of automatic system shutdown (ASD):

(1) Type 1 ASD: A controlled shutdown that will have the proper time delays and ramp rates to maintain offgas O_2 within limits.

(2) Type 2 ASD: Emergency shutdown which shuts down the HWC system at a rapid rate.

Observation

This display and computer is located on the back panel in the control room. Inspection of the unit revealed that protective rubber sleeves around input cables were not properly secured. The licensee stated that during preoperation testing, wiring will receive a red line check and operational testing at which time final inspection of wiring will be performed.

Summary

The inspection of components noted acceptable workmanship in all areas. Minor discrepancies were satisfactorily addressed.

2.3 Plant Design Change Review for HWC References:

- Documents listed in Attachment 1 used by licensee for Hydrogen Water Chemistry design changes.
- ANSI N18.7-1976, Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants.
- BECo Quality Control Manual - Chapter 3 (Design Control), Chapter 10 (Test Control-ANSI.N45 2.11 1974 Section 3.2).

Design Change Control Implementation

The licensee procedures have established the following:

- Methods for initiating a design or modification change.
- A design change request control form that requires documentation of completion of required reviews, evaluations and approvals prior to acceptance of changes for operations.

- Methods for a review of modification that address unreviewed safety questions.

The HWC Project was identified by the organization responsible for performing design work. Status of the project is maintained by the Project Manager whose responsibilities include conduct of safety evaluations, procedure approvals and overall coordination of activities.

The licensee inspection and review of Plant Design Changes that addressed the HWC Project were well documented and addressed numerous safety evaluations that considered all known hazards. The inspector found no discrepancies in his review of the referenced design changes. Specific observation/inspection of protective walls and components were conducted and no discrepancies were identified that would cause HWCS operation that could threaten plant or personnel safety.

2.4 Crack Arrest Verification System

The Crack Arrest Verification (CAV) System is an on-line system which exposes pre-cracked fracture mechanics test specimens, made of similar material as the BWR structural and primary water systems, to primary coolant. The CAV system measures the crack growth which occurs and characterizes the chemical and electrochemical properties of the specimens' environment.

Observations at the locations of the components that constitute the CAV system were conducted.

2.5 Hydrogen Water Chemistry Control Training

The following instructional Modules have been developed to familiarize the plant operators, mechanical and electrical maintenance technicians with the HWC systems.

- Crack Arrest Verification - Mechanical Maintenance
- Hydrogen Injection System - Electrical Maintenance
- Electrolytes Hydrogen Injector - Senior Reactor Operator (SRO)
- Extended Test System - SRO

The lesson plans cover classroom training, tours of components and instruction on new procedures. A review of operator/maintenance training in the above areas will be completed at a subsequent inspection as this phase of training has not yet been completed.

2.6 Testing on site

The components that make up the HWC system have been assembled as a unit by various onsite pipe fabrications and electrical cabling. The initial testing of piping was performed during construction of the system. The following volumetric tests were reviewed.

TP 87-121, Demineralized Water Supply to Gas Generator.

TP 87-156, H_2 process line-gas generator to Purge Module.

TP 87-157, Test of Oxygen Process Line

TP 87-158, Inert Gas Line and H_2 vents.

TP 87-160-1, HCM Return to Main Condenser.

All tests met acceptance criteria of design test pressures, hold times, lineups and maintenance of cleanliness.

The licensee has an operational test program under the modification management group that has been scheduled for completion during startup of the reactor. The program addresses the calibration and operating performance of the components as a complete system.

The inspector observed the calibration of one gauge at the new water chemistry sampling sink in the reactor building.

2.7 Quality Assurance

During the initial design changes necessary to tie existing and new systems together, the construction, preoperational testing and operations were monitored by various licensee quality assurance groups. The inspector, during the review of new shielding walls noted that various concrete pours, seven day and 30 day concrete core strength were monitored by the quality assurance groups. The licensee has established hold points during preoperational testing. The inspector did not identify any discrepancies in testing overview by quality assurance.

2.8 Summary of Findings

The inspection of the Hydrogen water chemistry program verified the following.

- Plant Design Changes identified where necessary and addressed all identified safety issues.

- Drawings were being revised to reflect as built condition.

- Preoperational Testing was in the early status of performance. Identified testing was properly documented.

- Operation Procedures have been generated.

- Management has involved multi-discipline design groups in its review of the HWC system and this is indicated by excellent reviews and documentation of the modification activities.

- The components satisfy long term licensee needs in the quality of materials and in manufacture.

- Radiological hazards have been addressed in the Operation Procedures.

- A training program has been established and written procedures have been generated.

- The areas of increased levels of radiation and methods of water sampling are to be addressed in a subsequent inspection that will verify the licensee previous surveys of expected radiation levels.

No violations were identified.

3.0 Procurement

The procurement program was reviewed to determine its technical adequacy and if it was properly implemented. Interviews were conducted with key personnel and procurement documents were reviewed to determine if (1) document preparation was in accordance with administrative control, (2) appropriate reviews and approvals were accomplished and (3) technical and quality requirements were met. The manner in which commercial grade (i.e., off the shelf) items were purchased was assessed particularly to assure that evaluations for suitability of application were done; supporting documentation justified safety related use; and, acceptance criteria verified critical attributes and or characteristics.

3.1 Purchase Order Process

a. A group of material management and procurement personnel have recently been assigned to onsite locations in an effort to improve the quality and timeliness of the procurement process. Nuclear Engineering Department (NED) personnel have also been recently assigned onsite to improve and expedite the technical aspects of procurement. To complete the enhancement of the human factors aspect of purchases, especially those originated onsite, Quality Engineering Group (QEG) personnel have been assigned to the site.

b. Purchase Orders (PO) are initiated by onsite plant personnel and as a general rule such items are replacement and or spare parts. Purchases associated with modifications are initiated by engineering personnel responsible for the design change work. A requisition is the first step in the procurement process and it receives a technical and quality requirements review. Procurement personnel then transcribe the requisition into a computer as a PO and this is electronically transmitted offsite where the PO is issued after final administrative approval. Copies of the PO are forwarded to the station Quality Assurance Department (QAD) receipt inspectors who are located in the onsite warehouse. After the item(s) arrive and are accepted by QAD inspectors, documents associated with the PO are gathered into a package(s) and forwarded to the records department for microfilming and computer data storage.

3.2 Technical Review of Purchase Orders

The POs (listed in Attachment 1) associated with the items selected during a tour of the warehouse (see Paragraph 3) were reviewed to verify that appropriate requirements had been incorporated, approved vendors were used and onsite actions were adequate.

Nuclear Engineering Department (NED) procedures (see Attachment 1) describe the engineering input and review process for POs and include those measures necessary to purchase commercial grade items for safety related use. The engineering evaluation and or actions necessary to justify use of commercial grade items for safety related application are documented on a Commercial Quality Item record. A Material Receipt Inspection Requirements (MRIR) form, preoperational/post installation testing and or other actions necessary to assure the items suitability are included in the CQI. A conditional release is assigned to the item should any verification action take place after it is issued from the warehouse. This ensures followup by Quality Control or other QAD personnel to assure those requirements are met.

The following aspects of the engineering procurement process were adequately implemented and considered technically appropriate for the items sampled.

-- Inclusion of 10 CFR 21 into PO 11284 for cable and PO 25092 for solenoid valves
-- An engineering study (ESR 86-436) and safety evaluation for PO STR016779 for motor operators
-- Shelf life requirements listed in PO 25092 for solenoid Valves (the assembled items contained non metallic O-Rings)
-- Shelf life and service life calculations and a requirement for test reports in PO STR017579 for cylinder gaskets (commercial grade)
-- The use of a Material Receiving Inspection Report (No. 87-9370) for the examination and acceptance of a Salt Water Service Water Pump into warehouse stock that had been rebuilt by onsite maintenance personnel.

No violations were identified.

3.3 QA/QC Involvement and Vendor Control

The Quality Engineering Group (QEG) of the Quality Assurance Department (QAD) is responsible for the evaluation and approval of vendors. Approved vendors are listed on an Approved Supplier List (ASL) that is controlled and distributed by the QEG. This group reviews requisitions prior to their transcription into Purchase Orders (PO) and the issued POs are compared to the requisitions during receipt inspection and also on a sampling basis during routine audits.

A file is maintained for each vendor and contains the results of quality manual reviews, surveys, audits, surveillances, annual evaluations, receipt inspection results, onsite and offsite corrective action documents and other pertinent records on the vendor's performance. The ASL indicates the commodities that the vendor may supply, the next audit date, previous date of the annual evaluation and any conditions placed on procurements from the vendor. The vendor files contain records that justify the manner in which purchases can be executed with each supplier.

The vendors who supplied the items sampled during the warehouse tour were approved for the particular type of product, listed on the ASL and their respective files contained appropriate records. The files of two additional vendors, who supplied commercial grade items, were reviewed and contained records of those actions necessary to justify use of those suppliers.

The warehouse supervisor pointed out that a new type of high rack was being added to the existing storage capacity. Ceiling paddle fans had been added to aid air circulation. Temperature balance was very good.

A computerized data base is used for inventory control and initiating stock purchases. Shelf life and maintenance information is also in computer data bases. Proper location, Purchase Order (PO) numbers, specific care required, storage conditions and other aspects of material management were verified for the sampled items. The revision of the licensee to exempt several motors from periodic shaft rotation was verified by an independent calculation.

General warehouse conditions and item specific requirements were implemented in accordance with established procedures (see Attachment 1). The procedures were found to be consistent with regulatory requirements and licensee commitments.

In an effort to better support procurement actions initiated at the station, the QEG has two members assigned temporarily to the site. It was noted that these individuals interface quite closely with their procurement and material management counterparts. It was evident that the procurement process has improved under the new arrangements. The interfaces between the QEG onsite engineers and Nuclear Engineering Department (NED) personnel recently assigned to the site were not reviewed in depth but it appears that this arrangement has influenced the apparent improvements in the procurement process.

No violations were identified.

4.0 Local Leak Rate Testing (LLRT)

The purpose of the inspection in this area was to ascertain that LLRT is being administered adequately, and conducted in compliance with the regulations stipulated by 10 CFR 50 Appendix J. Local Leak Rate Testing was witnessed to evaluate the performance of LLRT personnel conducting the testing. Procedures were reviewed for their technical adequacy to perform the intended activities. Other LLRT record keeping and related documentation was reviewed to determine the adequacy of overall administrative control of the LLRT program.

4.1 Testing Witnessing

The inspector witnessed the performance of test activities to verify that:

- Approved test procedures were available and in use.
- The procedures were adequately detailed to assure satisfactory performance.
- Parts and materials were properly identified.
- Qualified test equipment and tools were used.

The inspector witnessed portions of the following LLRTs: Drywell Equipment Hatch Seal, Post Accident Sampling System (PASS) Valves SV-5065-77 and SV-5065-78. The inspector verified by inspection that the PASS lineup was in an effective test configuration and that the test personnel followed the LLRT procedure. The tests were successful, the equipment hatch and PASS valves passed their acceptance criteria and the test personnel were observed to be knowledgeable of their duties.

No violations were identified.

4.2 Test Instrumentation

Calibration records for the LLRT instruments used to perform the tests described in Section 4.1 were reviewed by the inspector. Also reviewed were calibration records for the standards used to test the LLRT instruments. Test Records indicated that the standards were calibrated within frequency and were traceable to the National Bureau of Standards (NBS).

No violations were identified.

4.3 Administrative Control

The inspector reviewed documentation relevant to the overall administrative control of the Local Leak Rate Test program. Information which documented the status of the following activities and criteria were reviewed: Recording of test results; determination of maximum pathway leakage; LLRT equipment calibration test acceptance criteria; and, maintenance request, summary and control forms. The information reviewed was found to be current and adequate to provide proper administrative control of the LLRT program.

No violations were identified.

4.4 Test Results

Local Leak Rate Testing was in progress at the time of the inspection, therefore a final local leak rate total was not available.

The inspector determined that the licensee is calculating the maximum pathway leakage for test results to be applied in the determination of the total local leak rate, and the minimum pathway leakage is determined for penetration leakage that will be added onto the integrated total of the upcoming containment integrated leak rate test (CILRT). This will be done to assess the "As Found" containment leak rate. These are the accepted methods of determining penetration leakages. Local leak rate test results will be reviewed during a future inspection prior to startup.

No violations were identified.

4.5 Personnel Training And Qualifications

The qualifications and training of test personnel were discussed with a licensee representative. In addition the inspector evaluated the performance of test personnel during the test witnessing and reviewed relevant training records.

The inspector determined that the test personnel were qualified under a licensee training program for test personnel which is geared specifically toward qualifying individuals at different levels to either assist or supervise the conduct of local and integrated leak rate testing. Individuals interviewed by the inspector were knowledgeable of their responsibilities and technical aspects of leak testing.

No violations were identified.

4.6 LLRT Failure of Torus Main Exhaust Valves

The inspector discussed the status of LLRT results with the licensee. The licensee informed the inspector that the penetration incorporating the torus main exhaust valves AO-5042A and AO-5042B (8" Butterfly valves) showed a high leakage. Total penetration leakage was measured on September 21, 1987 to be 156.2 Standard Liters per Minute (SLM). This amount of leakage alone is greater than that allowed by plant technical specifications for total leakage through all containment isolation valves, that is .6La or 126.2 SLM.

The inspector discussed with the licensee efforts to identify the root cause of the LLRT failure and effect repairs. The licensee indicated they were currently investigating the problem and had two possible root causes identified. One possible root cause being a newly installed containment modification which resulted in a length of piping being welded onto the piping between the two torus main exhaust valves. This length of piping was intended to become part of

the direct torus vent line (DTVL) system which is now capped. The supposition is that the capped length of piping although supported by pipe hangers, has resulted in a torque at each torus main exhaust bypass valve 5041A, B which promoted the leakage.

The other possible root cause for the leakage may be attributed to resin from the condensate demineralizer resin regeneration system migrating to and coating on the inside seating surfaces of the torus main exhaust valves AO-5042A, B. The resin was suspected and discovered on the inside of these valves by the licensee upon removal of the valves for maintenance. A path for resin from the condensate demineralizer resin regeneration system to the torus main exhaust system exists because both systems communicate with the standby gas treatment system. The resin was suspected to be there because the problem with resin coating in other areas of the plant has existed before. The licensee indicated that a filter was installed in the resin regeneration system prior to the last operating cycle which has been effective in stopping the spread of resin and that the resin which coated the inside of the torus main exhaust valves was residual. The inspector raised the concern that this may happen again after startup of the plant and once again deter good seating of the valves. The licensee acknowledged the inspector's concern and stated that investigation into the problem is ongoing and that a resolution will be effected before plant startup. The licensees progress toward resolving this safety concern will be tracked by the NRC as unresolved Item No. 87-47-01.

4.7 QA/QC Coverage of LLRT

The inspector discussed coverage of Local Leak Rate testing with a QC representative and reviewed selected Quality Control inspection reports. It was determined that QA and QC have been providing continuous coverage of selected Local Leak Rate Testing throughout the outage.

Based on the above review and observations, it is concluded that QA/QC coverage of LLRT activities is adequate. No violations or deviations were identified.

5.0 Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. An unresolved item is discussed in paragraph 4.6.

6.0 Management Meetings

Licensee management was informed of the scope and purpose of the inspection at the entrance meeting on October 5, 1987. The findings of the inspection were discussed with licensee representatives during the course of the inspection and presented to licensee management at the October 9, 1987 exit meeting (see Paragraph 1 for attendees).

The inspectors provided no written material to the licensee during the inspection. Licensee management requested the opportunity to review the issued report of this inspection so as to assure that it contains no proprietary information prior to its release to the Public Document Rooms.

ATTACHMENT 1

PURCHASE ORDERS (PO) REVIEWED

PO 11284, Cable (Material Receiving Inspection Report (MRIR) 860450)

PO CR31507, Motor Operators (MRIR 87-7464)

PO 25092, Solenoid Valves (MRIR 85-211)

PO STRO 17579, Cylinder Gasket Set for Emergency Diesels (MRIR 87-0018)

PROCEDURES REVIEWED

Local Leak Rate Testing

Procedure No. 8.7.1.3, Local Leak Rate Test Program, Revision 13

Procedure No. 8.7.1.5, Local Leak Rate Testing of Primary Containment Penetrations and Isolation Valves, Revision 29

Master Surveillance Tracking Schedule (Contains LLRT Status Information)

Nuclear Organization Procedures (NOP)

83A16, 10CFR21 - Reporting of Defects of Noncompliance, dated 09/19/85

NOP84A8, Control of Commercial Quality Items, dated 11/04/85

NOP8304, Housekeeping, dated 01/15/86

Nuclear Engineering Department Procedures (NED)

NED 3.02, Preparation, Review, Verification, Approval and Revision of Design Documents for Permanent Plant Design Changes, Revision 3

NED 3.10, Bid Evaluation, Revision 1

NED 4.01, Procurement of Items and/or Services, Revision 12

NED 4.02, Specifying and Reviewing Supplier Engineering and Quality Verification Documentation, Revision 4

NED 4.05, Evaluation of Commercial Quality Items and Specification of Procurement Requirements, Revision 0

NED 15.02, Supplier Nonconformance Reports, Revision 1

Quality Assurance Department Procedures (QAD)

QAD 4.01, Review of Preliminary Procurement Documents Prepared by BECo, Revision 12

QAD 4.04, Review and Approval of Deviations Forms Purchase Order/Contract(s), Revision 4

QAD 4.06, Procurement of Items and Services, Revision 4

QAD 7.01, Receipt Inspection, Revision 7

QAD 7.03, Supplier Procedure Review, Revision 0

QAD 7.04, Evaluation of Suppliers, Revision 4

QAD 7.05, Preparation and Issuance of the BECo QA Approved Supplier List, Revision 1

QAD 7.06, Supplier History File, Revision 2

QAD 7.07, Survey of Suppliers, Revision 1

QAD 7.08, Review and Approval of Supplier QA Program, Revision 1

QAD 7.09, Acceptance of Items and Services, Revision 2

QAD 7.10, Audit of Suppliers, Revision 1

QAD 10.01, Conduct and Reporting of Source Inspections, Revision 7

QAD 16.08, Supplier Finding Reporting and Follow Program, Revision 2

Plant Design Changes (PDCs) Reviewed

PDC No. 85-57B, Conceptual Design - Design and installation of Electrolytic Hydrogen Water Chemistry System (HWCS) and associated modular and piping and injection.

PDC No. 85-57A, Hydrogen Gas Generator Building - Non Q.

PDC No. 86-10A, Gaseous Hydrogen Storage Facility - Non Q.

PDC No. 86-10A, Gaseous Hydrogen Storage Facility - Non Q.

PDC No. 86-10C, Drilling of "Q" structure and Walls for equipment mounting and penetrations. (Safety Related)

PDC No. 86-100, Oxygen Piping Change (Non-Q).

PDC No. 86-11A, Crack Arrest Verification System. (CAVS) (Safety related. Q partial Floor Mounting only).

PDC No. 86-11B, Continuation of 86-11A or tie-ins on interfacing system (Mounting of units safety related).

PDC No. 86-80A, Installation and Removal of Electrochemical Potential Testing Probe (SR).

PDC No. 86-80B, Reactor Intunala H.W.C. Monitoring System (SR).

PDC No. 83-42, Condensate Feedwater/Reactor Water Sampling and Analysis Improvements (SR).

Safety Evaluations Reviewed

Safety Evaluation	System	PDC
1967	Electrolytic Bldg.	85-57A
1967	Electrolytic INJ.	85-57B
1944	ETS H_2 Foundation	86-10 A
1986	ETS H_2 Underground Piping	86-10 B
1965	ETS Injection SYS	86-10C
2017	ETS O_2 Foundation	86-10D
1931	CAVS	86-11A
1950	CAVS TIE-INS	86-11B
2140	Incore Probe Instal.	86-80 A
2139	Incore Probe Sys.	86-80 B
2004	Condensate/Feedwater Reactor Water Sampling and Analysis	83-84

Test Procedures

TP 87-121, Demineralized Water Supply to Gas Generator

TP 87-160-1, HCM Return to Main Condenser

TP 87-156, H_2 Process Line Gas Generator to Purge Module

TP 87-157, Oxygen Process Line

TP 87-158, Inert Gas Line and H_2 Vents

Four (4) Boston Edison Quality Control Inspection Reports Covering Local Leak Rate Tests

VENDOR REFERENCE MANUALS

Graham Manufacturing Company, Inc. - Hydrogen Compressor Module - LOI-205-85066.

Stuart - Electrolytic Hydrogen Plant-The Electrolytic Corporation.

Specification for Heating and Ventilation of the Pilgrim Electrolytic Gas Generation Facility.

Maintenance Manual - Air Handling Equipment.

TRAINING INSTRUCTIONAL MODULES

I&C Technicians - Crack Arrest Verification (CAV)

I&C Maintenance - Hydrogen Injection System (HIS)

Mechanical Maintenance (HIS)

Mechanical Maintenance (CAV)

Electrical Maintenance (HIS)

Senior Reactor Operator Hot License - Electrolytic Hydrogen Inspection (EHI)

Senior Reactor Operator Hot License - Extended Test System (ETS)

Training Program for Test Personnel, Certification

OUTSTANDING ITEMS FILE SINGLE DOCKET ENTRY FORM

REPORT HOURS

1. Operations		7. Outages	
2. Rad-Con		8. Training	1
3. Maintenance		9. Licensing	
4. Surveillance	31	10. QA	1
5. Emerg. Prep.		11. Other	
6. Sec/Safegrds.		12. Fire Protection/ Housekeeping	

Docket No. 50-219/81

Originator GOLLA

Reviewing Supervisor

Item Number 87-47-01

Type UNR

SALP Area SURVEILLANCE

Area LRT

Action Due Date 01-09-88 (MM DD YY)

Updt/Closout Rpt/

Date O/M/Clsd 10-09-87 (MM DD YY)

Originator/Modifier GOLLA

Resp Sec C

Descriptive Title

RESIDENT COATING THE INSIDE SURFACES OF THE TORUS MAIN EXHAUST VALVES

Item Number

Type

SALP Area

Area

Action Due Date (MM DD YY)

Updt/Closout Rpt/

Date O/M/Clsd (MM DD YY)

Originator/Modifier

Resp Sec

Descriptive Title

Item Number

Type

SALP Area

Area

Action Due Date (MM DD YY)

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Date O/M/Clsd (MM DD YY)

Originator/Modifier

Resp Sec

Descriptive Title

Region I Form 6
(January 1987)