U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-286/84-15

Docket No. 50-286

License No. DPR-64

Licensee: Power Authority of the State of New York
10 Columbus Circle
New York, New York 10019

Facility Name: Indian Point Nuclear Generating Station Unit 3

Inspection At: Buchanan, New York

Inspection Conducted: July 9 - 13, 1984

Inspectors: T. L. Harpster, Lead Reactor Engineer — 8/6/84 date

W. Oliveira, Reactor Engineer — 3 Aug 1984 date

Approved by: A. T. Gody, Chief
Management Programs Section, EPS, DETP — 8/7/84 date

Inspection Summary:
Inspection on July 9 - 13, 1984 (Report No. 50-286/84-15)

Areas Inspected: Near-term follow-up of responses to Generic Letter 83-28. Inspection in areas of equipment classification, post-maintenance testing, and vendor interfaces.

The inspection involved 64 inspection-hours by 2 region based inspectors.

Results: No violations were identified.

REPORT DETAILS

1.0 PERSONS CONTACTED

*** M. Albright, I&C Superintendent
** B. Benderski, Nuclear Licensing Engineer
*** J. Brons, Resident Manager
W. Carano, Assistant Maintenance Superintendent
*** J. Cirilli, Quality Assurance Superintendent
R. Claar, Quality Assurance Engineer
*** M. Crogan, Manager of Finance
J. DiChiara, Maintenance Engineer
D. DiCioccio, Warehouse Manager
** L. Gwynn, Quality Control Supervisor
*** W. Hamlin, Assistant to Resident Manager
*** J. Holdan, Operations Superintendent (Acting)
* L. Kelly, Performance and Reliability Superintendent
P. Kokolakis, Director Nuclear Licensing - PWR
K. Maurikis, Director Project Engineering, Nuclear Support - PWR
*** S. Munoz, Technical Services Superintendent
J. Reagan, Assistant Purchasing Coordinator
H. Robinson, Quality Assurance Engineer
*** J. Russell, Superintendent of Power
T. Ryan, Document Control Coordinator
** J. Semarai, I&C Supervisor
*** J. Vignola, Maintenance Superintendent

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* T. Kenny, Senior Resident Inspector
** L. Rossbach, Resident Inspector

The inspectors also contacted other licensee administrative, engineering, operations, QA/QC, and technical personnel.

* denotes those present at July 9, 1984 entrance meeting
** denotes those present at July 13, 1984 exit meeting
*** denotes those present at both meetings

2.0 INSPECTION SUMMARY

2.1 BACKGROUND

The reactor trip system, as part of the reactor protection system, is fundamental to reactor safety for all nuclear power reactor designs. Transient and accident analyses are predicated on the assumption that the reactor trip system will automatically initiate reactivity control systems on demand to assure that fuel design limits are not exceeded. The design and regulatory philosophies for attaining the high reliability required

of the reactor trip system have been based primarily on the use of redundancy, periodic testing, and quality assurance.

In February 1983, the Salem Nuclear Power Station experienced 2 failures of the reactor trip system on demand. Regulatory and industry task forces were formed to determine the safety significance and generic implications of the events. Based on these findings, certain actions were required of all licensees. These actions, transmitted in Generic Letter 83-28, fell into 4 areas: (1) post-trip review, (2) equipment classification and vendor interface, (3) post-maintenance testing, and (4) reactor trip system reliability improvements.

PASNY submitted their response to Generic Letter 83-28 in letters dated November 7, 1983 and July 3, 1984. This inspection included the areas of equipment classification and vendor interface, and post-maintenance testing.

2.2 INSPECTION RESULTS

No violations were identified. As a result of the inspection, PASNY management made commitments to: (1) review the emergency procedures to ensure that all instrumentation required by the operators is included in the scope of the quality assurance program (paragraph 3.5): (2) review the Safety Analysis Report to ensure that all systems which are assumed to operate in transient and accident analyses are included in the scope of the quality assurance program (paragraph 3.5); (3) perform pre-installation testing and inspection of equipment in the warehouse, prior to its use in a Category 1 system, if the equipment was not in a preventive maintenance program (paragraph 5.4) and (4) formalize a system for preventive maintenance of equipment in the warehouse.

3.0 EQUIPMENT CLASSIFICATION

3.1 REFERENCES

FSAR, Chapter 17, "Quality Assurance Program"
FSAR, Chapter 14, "Safety Analysis"
IP3 Technical Specifications
QAP-2.1, Revision 4, "Quality Assurance Program Scope"
AP-9, Revision 3, "Work Requests"
AP-12, Revision 7, "Modifications"
AP-25.2, Revision 2, "Classifications and Evaluations"
AP-32. Revisions 2, "Reclassification of Structures, Systems, and Components"
Letters, Bayne to Eisenhut, November 7, 1983 and July 3, 1984, "Required Actions Based on Generic Implications of Salem ATWS Events"

3.2 PROGRAM REVIEW

The PASNY program for equipment classification, described by the references in section 3.1, was reviewed to determine:

- the criteria and source documents which form the bases for the scope of the quality assurance program
- the extent to which NPRDS or other industry reporting systems are used as inputs
- the extent to which corrective actions or other PASNY management information systems are used as inputs
- the assignment of responsibility for reviewing and updating the quality assurance program scope
- the frequency and sources of revision to the quality assurance program scope
- the distribution and control of the quality assurance program scope
- the training provided to station personnel and associated with the classification of equipment.

3.3 PROGRAM IMPLEMENTATION

A number of components were selected which have finite lifetimes because of wear, environment, etc. For these components:

- procurement documents, including engineering specifications were sampled for proper classification, inspection, storage and other quality requirements
- work orders, design changes, and maintenance schedules were sampled to observe proper classification, preplanning for replacement, and quality involvement
- associated documentation was sampled to observe preplanning for procurement, storage, maintenance, preventative maintenance and replacement
- associated documentation was sampled to observe interfaces between engineering and station personnel.

Various other components were reviewed for proper classification. The components selected included instrumentation required by the emergency procedures and components which are assumed to operate in transient and accident analyses in the FSAR.

3.4 QUALITY ASSURANCE INVOLVEMENT

I&C work requests and associated documents were reviewed for the reactor coolant system and the engineered safeguards systems. The records included all work requests for 1983 and 1984 for these systems. The involvement of the quality assurance organization in Category I activities is summarized below.

Reactor Coolant System

1984	13 Category I work requests 2 QA involved
1983	8 Category I work requests 0 QA involved

Engineered Safeguards System

1984	11 Category I work requests 0 QA involved
1983	28 Category I work requests 2 QA involved

3.5 FINDINGS

No violations were identified.

Two concerns with the classification of equipment were identified during the inspection. First, a review of I&C work requests indicated that equipment is not always classified consistently. The scope of the quality assurance program is defined at the systems level in QAP-2.1. Not all equipment in each of the listed systems is considered Category I or Category M. The assigned classification for equipment below the system level is dependent on the judgement of the responsible staff members (operations superintendent and checked by other managers). Examples of inconsistent classification are Work Requests 2192 and 2266. Reactor coolant system pressure recorder PR-402 is classified Category I in WR 2192 and Non-category I in 2266. The significance of improperly classifying equipment Non-category I is that the engineering and quality assurance groups may only be involved after the maintenance is completed.

A second concern is that some equipment required by the emergency procedures, and some equipment assumed to operate in the transient and accident analyses in the FSAR is not currently considered within the scope of the quality assurance program. Examples include the steam generator wide range level recorders, the hot and cold leg wide range temperature recorders, the steam dump control valves, and the turbine stop and control valves. The steam generator wide range level recorders are assumed to be available to the operator to detect steam generator tube rupture and to monitor steam generator water level following a steam line break. The hot and cold leg wide range temperature recorders are assumed to be available to the operator to maintain the proper cooldown rate and the proper relationship between system temperature and pressure for NDTT considerations. The steam dump system reduces the transient imposed on the reactor coolant system when a secondary load decrease exceeds the handling capability of the rod control system alone. The steam dump system also provides a heat sink following a turbine and

reactor trip. The turbine stop and control valves are assumed to operate to reduce the likelihood of turbine overspeed and missile generation.

These concerns were discussed with PASNY management. Subsequent to the exit meeting on July 13, 1984, the Resident Manager made commitments to: review the emergency procedures to ensure that all instrumentation required by the operators is included in the scope of the quality assurance program (prior to the end of August 1984); review the Safety Analysis Report to ensure that all systems which are assumed to operate in transient and accident analyses are included in the scope of the quality assurance program (prior to the end of January 1985). PASNY actions to resolve the above concerns will be reviewed during subsequent inspections.

4.0 POST MAINTENANCE TESTING

4.1 REFERENCES

FSAR, Chapter 17, "Quality Assurance Program"
AP-9, Revision 3, "Work Requests"
PFM-5, Revision 0, "Retest Program"

4.2 PROGRAM REVIEW

The references in section 4.1 were reviewed to determine that PASNY is implementing a post-maintenance testing program which includes the following:

- written procedures for initiating requests for post-maintenance testing
- criteria and responsibilities for review and approval of post-maintenance testing
- criteria and responsibilities for performing inspection of post-maintenance testing activities
- methods for performing functional testing following maintenance and prior to returning to service
- requirements for adequate documentation of the above reviews, approvals, inspections, and tests.

4.3 FINDINGS

No violations were identified.

5.0 VENDOR INTERFACE

5.1 References

IP-3 Quality Assurance Manual
IP-3 Quality Assurance Procedure Manual
FSAR, Chapter 17, Quality Assurance Program-Operations
Regulatory Guide 1.33, November 1972, Quality Assurance Program Requirements

Regulatory Guide 1.38, March 1973 Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Water-Cooled Nuclear Power Plants.
AP-18.1, Revision 0, "Operation of the Technical Library"
AP-18.1, Revision 1, "Control of Vendor Technical Manuals"
AP-18.2, Revision 0, "Distribution and Control of Documents"
3-MD-3, Revision 0, "Preventive Maintenance"
AP-26.1, Revision 5, "Procurement"
AP-12., Revision 7, "Modifications"
Letters Bayne to Eisenhut, November 7, 1983 and July 3, 1984 "Required actions based on generic implications of Salem ATWS Events"
Authority Report No. 84-01 of February 15, 1984

5.2 PROGRAM REVIEW

The vendor interface program described in the references listed in Section 5.1 has been reviewed to determine if IP-3 has:

- a continuing program to assure that vendor information is complete, current and controlled

- incorporated this vendor information into the documentation for procurement, receipt, inspection, test, storage and preventive maintenance during storage of safety-related equipment, components and spares

- established means to develop the procurement, receipt inspection, test, storage, and preventive action program where vendor information is lacking

- audited the vendor information and preventive action program effort.

5.3 PROGRAM IMPLEMENTATION

A tour of the main IP-3 warehouse was conducted. Over twenty Category 1 components were randomly selected and their documentation was reviewed at the warehouse. Six were selected for follow up with the department originating the request for the item, e.g., the Finance, Documents, Purchasing and Quality Assurance/Control departments. The follow-up was to assure that:

- inputs from complete, current and controlled vendor information were available and used appropriately in purchasing, receipts, storage and preventive maintenance documentation

- audits were conducted and corrective and preventive action responses were adequate.

Components selected included the following:

- motor for the component cooling water pump, 71-30-750

- motor for the fire pump, 68-62-544
- fluid cylinder block for changing pump, 01-050-554
- complete unit (pump and motor) for boric acid and transfer pump, 01-03-001
- PORV motor operator for nuclear containment application, 03-90-025
- control operator valve for nuclear containment operation, 03-90-050

5.4 FINDINGS

No violations were identified.

Three concerns were identified during the inspection. The first is that the station does not have documented (with written procedures or instructions) requirements for proper maintenance during storage. Maintenance (planned or preventive) was not scheduled nor conducted for the components sampled. Audit Report No. 84-01, February 1984, cited the warehouse for not having preventive maintenance for stored components (NCA-127). This was a repeat finding. It had been previously reported in audit report NCA-86, November 1981. The station is taking corrective action to revise AP-28 to delegate the responsibilities for developing and implementing a preventive maintenance program. Another corrective action planned is to replace the computerized Storage Action Report with a new reporting system that will include expanded preventive maintenance program status data. A third corrective action already being implemented is the addition of standard statements in procurement documents requiring vendors to provide shelf life and storage requirements for their products.

The second concern is that vendor information, such as technical manuals is not controlled. There is no assurance of complete and current vendor information to determine preventive maintenance actions for equipment. The technical library did not have the same vendor information as the departments originating the requests. AP 18.1, Revision 1, effective 30 July 1984, requires the vendor technical manuals to become controlled documentation. The Documents Department has searched and recorded all vendor technical manuals in all technical departments for control purposes. Instrument and Control (I&C) vendor technical manuals are being purged and extra copies are being removed. Purging of other departments will follow. AP-18.1, Revision 1, requires Purchasing include a statement in the procurement document that vendor technical manuals shall be submitted to the Documents Department for control and distribution.

The Quality Assurance Department will be including vendor information in their audit of the control of purchased material which is scheduled for this quarter.

The third concern is that the corrective action program was not effective. The QA audit conducted in November 1981 identified the lack of preventive maintenance for stored components. The plant has been in an extended outage and management priorities were set which deferred the development of this program. This decision, however, was not made in accordance with the management controls which required the lack of corrective action to be escalated to a higher management level.

These concerns were discussed with PASNY management. Subsequent to the exit the Resident Manager committed to perform preinstallation testing and inspection of equipment in the warehouse prior to its use in a Category I system, if the equipment had not been in a preventive maintenance program. A preventive maintenance program will be formalized prior to the end of August 1984.

6.0 MANAGEMENT MEETINGS

PASNY management was informed of the purpose and scope of the inspection at the entrance meeting on July 9, 1984. Preliminary findings of the inspection were discussed with PASNY representatives periodically during the inspection.

An exit meeting was held on July 13, 1984 at which time the findings of the inspection were presented to PASNY management. In response to the findings, PASNY management made commitments to: (1) review the emergency procedures to ensure that all instrumentation required by the operators is included in the scope of the quality assurance program; (2) review the Safety Analysis Report to ensure that all systems which are assumed to operate in transient and accident analyses are included in the scope of the quality assurance program; (3) perform pre-installation testing and inspection of equipment in the warehouse, prior to its use in a Category I system, if the equipment was not in a preventive maintenance program and (4) formalize a preventive maintenance program for equipment in the warehouse.

At no time during this inspection was written material provided to the licensee by the inspectors.