EVALUATION

of

JAMES A. FITZPATRICK NUCLEAR POWER PLANT

Power Authority of the State of New York

January 1983

SUMMARY

INTRODUCTION

The Institute of Nuclear Power Operations (INPO) conducted an evaluation of the Power Authority of the State of New York's (PASNY) James A. FitzPatrick Nuclear Power Plant during the weeks of October 4 and 11, 1982. The station is located on Lake Ontario, approximately 7 miles east of Oswego, New York. The station began commercial operation in July 1975.

PURPCSE AND SCOPE

INPO conducted an evaluation of site activities to make an overall determination of plant safety, to evaluate management systems and controls, and to identify areas needing improvement. Information was assembled from discussions, interviews, observations, and reviews of documentation.

The INPO evaluation team examined station organization and administration, operations, maintenance, technical support, training and qualification, radiological protection, and chemistry. The team also observed the actual performance of selected evolutions and surveillance testing. Corporate activities were not included in the scope of the evaluation, except as an incidental part of the station evaluation. As a basis for the evaluation, INPO used performance objectives and criteria relevant to each of the areas examined; these were applied and evaluated in light of the experience of team members, INPO's observations, and good practices within the industry.

INPO's goal is to assist member utilities in achieving the highest standards of excellence in nuclear plant operation. The recommendations in each area are based on best practices, rather than minimum acceptable standards or requirements. Accordingly, areas where improvements are recommended are not necessarily indicative of unsatisfactory performance.

DETERMINATION

Within the scope of this evaluation, the team determined that the station is being operated in a safe manner by well-qualified and experienced personnel.

The following beneficial practices and accomplishments were noted:

Management interest and attention in improving plant operation are evident.

The experience of control room operators and the effectiveness of their shift turnovers are impressive.

The availability and capacity factors since the last refueling outage have been excellent.

Improvements were recommended in a number of areas. The following are considered to be among the most important:

Increased involvement of managers and supervisors in day-to-day station activities is needed.

Continued emphasis is needed to improve plant housekeeping and material condition.

Significant improvements are needed in radiological protection practices and procedures including contamination control.

Increased management attention is needed to improve adherence to station policies and procedures.

In each of the areas evaluated, INPO has established PERFORMANCE OBJECTIVES and supporting criteria. All PERFORMANCE OBJECTIVES reviewed during the course of this evaluation are listed in APPENDIX II.

Findings and recommendations are listed under the PERFORMANCE OBJECTIVES to which they pertain. Particularly noteworthy conditions that contribute to meeting PERFORMANCE OBJECTIVES are identified as Good Practices. Other findings describe conditions that detract from meeting the PERFORMANCE OBJECTIVES. It would not be productive to list as Good Practices those things that are commonly done properly in the industry since this would be of no benefit to PASNY or to INPO's other member utilities. As a result, most of the findings highlight conditions that need improvement.

The recommendations following each finding are intended to assist the utility in ongoing efforts to improve all aspects of its nuclear programs. In addressing these findings and recommendations, the utility should, in addition to correcting or improving specific conditions, pursue underlying causes and issues.

As a part of the second and succeeding evaluations of each station, the evaluation team will follow up on responses to findings in previous reports. Findings with response actions scheduled for future completion have been carried forward in APPENDIX I to this report. In areas where additional improvements were needed, a new finding that stands on its own merit has been written. Thus, this report stands alone, and reference to previous evaluation reports should not be necessary.

The findings listed herein were presented to PASNY management at an exit meeting on October 14, 1982. Findings, recommendations, and responses were reviewed with PASNY management on December 17 and 28, 1982. Responses are considered satisfactory.

To follow the timely completion of the improvements included in the responses, INPO requests a written status by August 1, 1983. Additionally, a final update will be requested six weeks prior to the next evaluation.

The evaluation staff appreciates the cooperation received from all levels of the Power Authority of the State of New York.

POWER AUTHORITY OF THE STATE OF NEW YORK

Response Summary

The Power Authority of the State of New York (PASNY) maintains a firm commitment to the safe, reliable operation of its nuclear power plants and is supportive of INPO's assistance in meeting this commitment.

PASNY appreciates the notation of "beneficial practices" and concurs with the general improvements recommended in the determination portion of the introduction. The following actions have been taken on those recommendations:

The managers and supervisors have been directed to accomplish weekly tours and provide a written response of their findings.

A plant housekeeping program has been implemented.

The radiological program is receiving increased management attention, and actions to substantially improve performance in this area are in progress.

Meetings have been held with all station personnel discussing the issue of adherence to station policies and procedures. A procedure is being developed that clearly defines what action will be taken when it is determined that a procedure has been violated.

The individual recommendations from INPO have been addressed in the body of this report. In each case, the item was reviewed to ascertain the fundamental cause of the finding and to correct the fundamental cause.

The Power Authority will conduct periodic reviews of progress toward meeting "target" dates and keep INPO informed of these reviews.

ORGANIZATION AND ADMINISTRATION

MISSION, GOALS, AND OBJECTIVES

PERFORMANCE OBJECTIVE: Station mission, goals, and objectives should be established and progress monitored through a formal program.

Finding (OA.2-1)	**Goals and objectives have not been developed for all station departments.** Long-term goals have been published by the resident manager; however, supporting goals and objectives have not been developed by all station departments.
Recommendation	Develop goals and objectives for each department to support the published station goals.
Response	Goals and objectives for each department will be published by April 1, 1983.

MANAGEMENT ASSESSMENT

PERFORMANCE OBJECTIVE: Management should assess and monitor station activities to ensure effective performance of all aspects of nuclear plant operation.

Finding (OA.3.1-1)	**Managers and supervisors are not sufficiently involved in monitoring day-to-day station activities.** Problems exist in many areas of the station that appear to result from a lack of supervisory involvement. Specific areas include plant cleanliness and housekeeping, material condition, radiological protection and chemistry practices, and adherence to station policies and procedures.
Recommendation	Managers and supervisors should frequently inspect the plant to observe operations and plant conditions and identify deficiencies, out-of-specification conditions, and lack of procedural compliance. Follow-up methods should be utilized to ensure that corrective action is completed for identified problems.
Response	An interim program requiring weekly inspection of the plant by management personnel from each department has been implemented. This program requires a written report of observations. A more detailed zone inspection program that provides an inspection schedule for smaller areas of the plant on a periodic basis is being developed. This program will be implemented by March 1, 1983.

Finding (OA.3.1-2)

The periodic review and assessment of some important aspects of station activities are not always effective. The quality assurance (QA) program designed to assess station activities is limited in scope and does not assess the effectiveness of plant programs.

Recommendation

Implement review and assessment of the effectiveness of plant programs in addition to procedural compliance. Consider including additional areas in these assessments such as station housekeeping, plant safety tours, training programs, and procedural adherence.

Response

The recently established Quality Assurance and Reliability Department will be assigned responsibility for assessing some important aspects of station programs such as security, training, radiological, environmental, operations, maintenance, safety, and fire protection. This will supplement the audit program presently conducted by site QA. Nuclear Generation will also perform effectiveness assessments and review of some important station activities for the Executive Vice President Nuclear Generation.

Finding (OA.3.1-3)

A quality program presently applies only to safety-related equipment and systems. A graduated quality program should be applied to important activities on selected balance-of-plant (BOP) equipment that could have an impact on safety or reliability such as the condensate and feedwater systems.

Recommendation

Evaluate BOP equipment and establish a list of components determined to be important to plant safety or reliability. Establish appropriate controls for work quality, including selected inspections and tests, to ensure reliable operation of equipment.

Response

The Power Authority will evaluate BOP equipment and components to select those that are important to safety and reliability. These will be included on an approved list for use in the application of a modified (graduated) quality program. The modified program will be applied to selected important activities on a case basis by plant operations and QA personnel, consistent with available resources. This program will commence by March 1983.

OPERATIONS

CONDUCT OF OPERATIONS

PERFORMANCE OBJECTIVE: Operational activities should be conducted in a manner that achieves safe and reliable plant operation.

Finding (OP.2-1) **The administrative duties performed by the nuclear control operators (NCO) appear to be excessive and often divert operator attention from the main control boards.** A major administrative workload for the NCO is the research and preparation of tagouts.

Recommendation Review the workload of the various control room operators, and assign responsibility for tagout research and preparation to an operator who is not directly responsible for control board operation.

Response The Power Authority intends to place a second senior reactor operator on shift by June 1, 1983. This will provide one additional person on each shift to assist in relieving both the shift supervisor and nuclear operator of administrative duties. In the interim, whenever possible, the senior nuclear operator will be directed to prepare the tag-outs for the NCO's signature.

PLANT STATUS CONTROLS

PERFORMANCE OBJECTIVE: Operational personnel should be cognizant of the status of plant systems and equipment under their control, and should ensure that systems and equipment are controlled in a manner that supports safe and reliable operation.

Finding (OP.3-1) **Auxiliary operators (AO) do not always conduct comprehensive shift tours. The following problems contribute to this situation:**

a. An excessive number of contaminated areas exists.

b. An excessive number of areas with higher than normal radiation levels exists.

c. Material deficiencies such as pump seal leaks contribute to high levels of contamination in radwaste areas.

d. Not all AO positions utilize round sheets to guide their tours.

Recommendation Implement a program for minimizing contamination and radiation levels in areas where normal access is required during operator tours. Establish the use of round sheets to guide the AO tours.

Response Auxiliary operators will be required to use the Auxiliary Operator Tour Training Aid until they demonstrate adequate knowledge of the scope of their tours.

Each week a member of the operations management staff, along with an auxiliary operator, will make a detailed inspection of an area of the plant. The primary purpose of this program is to train auxiliary operators in proper methods of inspection. The intent is to show the operators what they should be concerned about, how to evaluate their observations, and to follow through once they have discovered a problem such that corrective action may be accomplished. This type of inspection will continue until the results indicate that very few long-standing problems are going unobserved by the operators. This program is consistent with another objective of ensuring that supervisory personnel are aware of plant conditions. This effort, along with the Maintenance Department program for decontamination of accessible areas of the plant, will result in reducing contamination and radiation levels in areas toured by operators.

Finding (OP.3-2) **Annunciators that have been disabled by removal of their associated cards are not effectively controlled or documented.** Currently there is no documentation on disabled annunciators.

Recommendation Establish an administrative program to control and document disabled annunciators. Consider the use of the existing Work Activity Control Procedure 10.1.3, "Placement of Jumpers/Blocks or Lifted Leads," for this purpose.

Response The currently disabled annunciators have been documented in the Jumper Log. The administrative procedures governing temporary equipment alterations will be revised by January 1, 1983 to ensure that adequate controls and documentation for disabled annunciators are established.

OPERATOR KNOWLEDGE AND PERFORMANCE

PERFORMANCE OBJECTIVE: Operator knowledge and performance should support safe and reliable plant operation.

Finding (OP.4-1)

AOs are assigned to shift positions without a formal qualification program. Instances were noted where basic system knowledge was weak.

Recommendation

Implement a formal qualification program for each AO shift position. Require completion of the applicable qualification program prior to assigning new AOs to shift positions. Currently assigned AOs should be required to obtain system checkouts for all systems that they routinely operate.

Response

An auxiliary operator qualification program will be developed by September 1, 1983 that is based upon the following principles:

a. The program will be phased to prepare an individual for the next senior position.

b. The program will include a fundamental section to be completed while the newly hired auxiliary operator is in the probationary period.

c. The program will have milestones specified to allow monitoring of progress.

d. The program will involve management review of progress.

In addition, present watchstanders will receive this training to ensure they obtain an adequate level of knowledge of equipment and responsibilities associated with their present positions.

OPERATIONS PROCEDURES AND DOCUMENTATION

PERFORMANCE OBJECTIVE: Operational procedures and documents should provide appropriate direction and should be effectively used to support safe operation of the plant.

Finding (OP.5-1)

Uncontrolled notes, portions of procedures, labels, and sketches are posted throughout the plant. A method is needed to authorize and update these operator aids.

Recommendation

Review presently posted operator aids for accuracy. Establish guidelines for the approval, posting, updating, and periodic supervisory review of all posted operator aids. The use of posted aids should be minimized.

Response An Operations Department Standing Order has been developed that specifically prohibits the use of uncontrolled procedures, notes, etc., in the operation of the plant. Further, it provides a formalized review and methods to update operator aids. This action is complete.

OPERATIONS FACILITIES AND EQUIPMENT

PERFORMANCE OBJECTIVE: Operational facilities and equipment should effectively support plant operation.

Finding (OP.6-1) **Many system components and some valves are not labeled with permanent, consistent markings.** It is recognized that most safety-related system valves are labeled.

Recommendation Implement a program for labeling selected system components and valves. Important non-safety-related equipment should be included.

Response A program has recently been initiated to label system components and valves. The program provides consistent guidelines for labeling and a priority list for accomplishment. Labeling is currently in progress and is expected to be completed by January 1985. Safety-related systems will be completed first.

Finding (OP.6-2) **Housekeeping and cleanliness need improvement in many areas of the plant.** Specific areas that require improvement include the radwaste area, crescent area, main feed pump area, auxiliary boiler room, drywell lower level, and the traveling screen area.

Recommendation Increase emphasis on housekeeping and cleanliness with particular attention to the areas listed above. Consider assigning responsibility for each area to specific personnel.

Response A formalized plant cleanup program was started November 29, 1982 that will ensure the cleanup of all plant areas on a periodic basis.

MAINTENANCE

PLANT MATERIAL CONDITION

PERFORMANCE OBJECTIVE: The material condition of the plant should be maintained to support safe and reliable plant operation.

Finding (MA.2-1)	**The material condition of the plant indicates a need for increased attention to the correction of deficiencies.** Among the deficiencies observed were numerous steam, oil, and water leaks, equipment with improper fluid levels, and inoperative equipment.
Recommendation	Increase management and supervisory involvement in upgrading the material condition of the plant. Re-emphasize the importance of correcting known deficiencies in a timely manner. Ensure that the effectiveness of deficiency correction is periodically monitored.
Response	The recent reorganization greatly improves the staffing levels for first-line supervision. The additional four supervisors (three have been hired) will allow for more attention to deficiency identification and rapid correction. Plant tours by management and supervisory personnel commenced in November 1982. The results of these tours are documented by a memorandum to the Superintendent of Power. The memorandum addresses deficiencies found, and work requests are initiated to ensure the deficiencies are corrected. This program will be formalized by March 1, 1983.

WORK CONTROL SYSTEM

PERFORMANCE OBJECTIVE: The control of work should ensure that identified maintenance actions are properly completed in a safe, timely, and efficient manner.

Finding (MA.3-1)	**The coordination of forced outage activities needs to be improved.** Departments were not well informed about outage plans or daily activities. As a result, manpower, equipment, and support resources were not always efficiently utilized.
Recommendation	Plan work activities for rapid response to unscheduled unit outage situations. Assign responsibility for this contingency planning and for coordination of scheduling efforts of the separate departments. Improve dissemination of information at outage meetings including instructions to department heads regarding outage plans.

Response

The Outage Department has established a rapid response schedule for forced outages. The schedule is flexible in that it will accommodate outages of various durations. This system will be formalized by procedure prior to startup from the next refueling outage scheduled for May 1983.

Finding (MA.3-2)

The system for maintaining the status of maintenance requests needs improvement. The maintenance request backlog list and other lists of outstanding work do not differentiate between items ready to work and those awaiting planning, retest, or administrative processing. Consequently, the plant staff is unable to accurately analyze or quantify the maintenance work backlog.

Recommendation

Establish an effective means for determining the status of outstanding maintenance requests. Responsibility for maintaining up-to-date status of outstanding maintenance requests should be assigned. Consider a periodic report of approximate manhours of incompleted work to facilitate management planning and monitoring of trends.

Response

The site is presently pursuing a new computerized maintenance management system that will allow easy tracking and quantifying of maintenance work activities. This new program is scheduled for commencement in August 1983, with full implementation by January 1, 1984.

The staffing levels for the recent reorganization allow for a greater number of planning/scheduling personnel as well as more first-line supervisors. This will improve the ability to plan, schedule, and process maintenance requests. Staffing these new positions should be complete by April 1, 1983.

PREVENTIVE MAINTENANCE

PERFORMANCE OBJECTIVE: **The preventive maintenance programs should contribute to optimum performance and reliability of plant equipment.**

Finding (MA.5-1)

The equipment lubrication program needs improvement. The following problems were noted:

a. Equipment was observed with improper oil levels.

b. Not all equipment is included in the existing lubrication program.

c. A definitive document describing the program is not available.

Recommendation Develop a procedure detailing the scope of the equipment lubrication program and individual responsibilities. Expand the program to include all equipment important to plant reliability.

Response A comprehensive program for equipment lubrication will be developed by June 1983. The program will clearly define the requirements for equipment lubrication and designate departmental responsibilities.

MAINTENANCE PROCEDURES AND DOCUMENTATION

PERFORMANCE OBJECTIVE: Maintenance procedures should provide appropriate directions for work and should be used to ensure that maintenance is performed safely and efficiently.

Finding (MA.6-1) **The reference materials and procedures used in support of maintenance activities are not, in all cases, technically accurate or updated in a timely manner.**

Recommendation Establish a system that ensures vendor manuals used in conducting maintenance of selected plant systems and components are maintained current, are given appropriate technical review, and are certified adequate for the work to be performed. A review of maintenance procedures should be conducted that includes a verification of technical data to ensure accuracy.

Response A system for ensuring vendor manuals used for maintenance activities are current will be developed by September 30, 1983. The maintenance procedures will be aggressively reviewed for verification of technical data during the ongoing biennial review. In addition, the administrative procedure that contains the requirements for maintenance procedures will be reviewed by March 1, 1983, to ensure this subject is adequately addressed.

MAINTENANCE FACILITIES AND EQUIPMENT

PERFORMANCE OBJECTIVE: Facilities and equipment should effectively support the performance of maintenance activities.

Finding (MA.8-1)

Some parts and materials in the warehouse are not stored in a manner that ensures that quality is maintained. For example, controls for limited shelf life items are not established. Motors and pumps are not scheduled for preventive maintenance.

Recommendation

Conduct an evaluation of material storage practices to ensure proper control of parts and material from the time they are received until they are issued. Emphasis should be given to periodic servicing of stored equipment, control of shelf life, and environmental protection for stored items.

Response

Additional warehouse space has been obtained and an inventory control procedure will be implemented by April 1, 1983. An evaluation will be conducted to determine if parts are being controlled properly. The emphasis will be on periodic servicing, control of shelf life, and environmental protection for stored items. This evaluation will be complete by January 15, 1984. A plan of action will be developed upon completion of the evaluation.

Finding (MA.8-2)

Facility improvements are needed in the warehouse and the instrument and control shops. Present facilities are not adequately sized for the complement of personnel and amount of material that must be accommodated. Utilization of limited shop space for break areas contributes to the lack of space available for work. Warehouse aisles are partially blocked with materials, and instrument and control shops have many unusable components on shelves and floors.

Recommendation

Provide facility improvements, including needed work space in shops and additional storage racks. Upgrade the orderliness of the shops and warehouse.

Response

Work area improvements can only be adjusted slightly within the available space constraints. Long-term improvements will be made by the construction of a temporary administration building with a lunch room/break area. This will facilitate utilizing the shop for work only and will allow an increase in the size of the instrument and control shop. This will be completed by June 1, 1983. Additional warehouse space has been obtained.

TECHNICAL SUPPORT

OPERATING EXPERIENCE REVIEW PROGRAM

PERFORMANCE OBJECTIVE: Industrywide and in-house operating experiences should be evaluated and appropriate actions undertaken to improve plant safety and reliability.

SOER STATUS

The status of Significant Operating Experience Report (SOER) recommendations is as follows:

Number of Recommendations	Action Taken
29	Satisfactory
55	Not applicable
15	Pending
42	Further review needed

The following recommendations are pending action:

SOER Number	Recommendation Number
81-13	1-15

The following recommendations need further review:

SOER Number	Recommendation Number
80-1	1,2
80-2	1,2
80-3	1,2
80-4	1,2,3,4
81-2	1,5
81-3	2
81-8	1,3
81-9	1,2a,2b,2c
81-10	1
81-15	1a,1b,1c,2a,2c,3
81-16	1,2,3
82-2	7
82-4	1,2,3,4,5,6
82-6	1,2a,2b,3,4,5

An update on the status of each recommendation listed in the "pending action" or "need further review" categories shown above is requested in the six-month follow-on response to this report. In addition, the status of each immediate action (red tab) SOER recommendation received subsequent to this evaluation should be included in the six-month follow-on response. A tabular summary, similar to that above, is requested.

Finding (TS.3-1)

Efforts to review and take action in response to industry operating experience need improvement. Review of SOERs often have not been adequate in recognizing significant aspects requiring action. Most actions resulting from SOER revisions have not been acted upon. In addition, Significant Event Reports (SERs) or the operating experience reports from other plants have received limited review.

Recommendation

Increase management emphasis on the review of industry operating experience to ensure that thorough reviews are conducted and actions are taken in a timely manner.

Response

The corrective action will be as follows:

a. Plant Standing Order No. 28 will be revised to have the responsible reviewer treat SOER recommendations on an item-by-item basis.

b. A tracking system for SOER recommendations will be implemented in Plant Standing Order No. 28, Revision 1. The format of the recommendations will be changed to ensure increased management involvement and review.

c. The scope of Plant Standing Order No. 28 will be expanded to include SERs and other NOTEPAD items in the review process.

These actions will be implemented by March 1, 1983.

Finding (TS.3-2)

Improvements are needed in the new program for the review of industry operating experience defined in Plant Standing Order No. 28. The following problems were noted:

a. The scope of the current program specifically excludes SERs from consideration and indicates that a response or action will not normally be required for other NOTEPAD information.

b. SOERs based on events which occur at pressurized water reactors are excluded from consideration.

c. The program does not provide for a periodic independent evaluation to verify that industry operating experience information is properly classified.

d. The program is not periodically reviewed for effectiveness.

Recommendation Expand the existing program to address the areas identified above.

Response The Power Authority's program to review industry operating experience will be reviewed and INPO's recommendations will be incorporated by August 1, 1983.

Finding (TS.3-3) **The program for review of internal operating experience needs improvement in the following areas:**

a. Input to the internal operating experience review program is limited to reports of events thought to be potentially reportable as a result of regulatory requirements.

b. There is no provision for an independent check of internal event reports to ensure that the significant aspects of those events are identified and appropriately acted upon.

c. No internal event reports have yet been disseminated to other utilities via NOTEPAD and the recent procedure provides no formal guidance on this issue.

Recommendation Revise the program to address the items noted above. Ensure that all plant events from which important lessons might be learned are reviewed.

Response The plant staff will review the internal operating experience program. The program will be expanded to include any event at the plant that may have a lesson to be learned. This item will be complete by April 1, 1983.

Finding (TS.3-4) **Plant participation in the Nuclear Plant Reliability Data System (NPRDS) program needs improvement.** No failure reports have been submitted to NPRDS since the third quarter of 1981, and no quarterly operating reports have been received by NPRDS since the fourth quarter of 1981.

Recommendation Resume submittal of component failure reports and quarterly plant operating reports.

Response The Power Authority will resume submittal of NPRDS reports by March 1, 1983.

PLANT MODIFICATIONS

PERFORMANCE OBJECTIVE: Plant modification programs should ensure proper review, control, implementation, and completion of plant design changes in a safe and timely manner.

Finding (TS.4-1)

The engineering design and plant modification programs need improvement in the following areas:

a. Final plant modification drawings are not revised and issued in a timely manner.

b. Many modification packages are backlogged in various stages of closeout after modification installation and testing have been completed.

It is recognized that efforts are in progress to address these problems.

Recommendation

Increased emphasis should be placed on the closeout of backlogged modifications and issuance of final plant modification drawings.

Response

Most of the modifications backlog is due to incomplete drawing updates. The Power Authority has established a method to correct this, and a long-term schedule will be published by January 1983. Progress in this area will be reviewed quarterly.

Finding (TS.4-2)

An independent technical design review of the placement of jumpers/blocks or lifted leads is not performed.

Recommendation

Revise the existing program to provide for an independent technical design review of jumpers/blocks or lifted leads prior to or promptly after installation. INPO Good Practice OP-202, "Temporary Bypass, Jumper, and Lifted Lead Control," could be of assistance in this effort.

Response

The Power Authority will provide an independent design review, during normal plant operation, prior to declaring the system operable. In addition, the independent design review will be performed on outstanding jumpers prior to startup from outages.

Finding (TS.4-3)

Lead shielding has been placed on some plant systems and equipment without an appropriate engineering review of loading effects.

Recommendation

Perform an engineering evaluation of lead shielding currently in place, and develop controls for future placement of these loads on plant piping, systems, and equipment.

Response

The following corrective actions will be taken to correct temporary lead shielding problems.

a. All lead shielding installations will be identified.

b. All lead shielding that is no longer beneficial to workers (work activities) will be removed. This will be complete by February 1, 1983.

c. An engineering review on the remaining shielding will be performed to justify allowing it to remain. This will be complete by May 1, 1983.

d. A shielding placement procedure will be developed and implemented that provides instructions for performing an engineering review and requires control of shielding placement to ensure that it is removed when no longer needed. This will be accomplished by May 1, 1983.

PLANT EFFICIENCY AND RELIABILITY MONITORING

PERFORMANCE OBJECTIVE: Performance monitoring activities should optimize plant thermal performance and reliability.

Finding (TS.6-1)

A plant performance monitoring program needs to be developed to improve overall plant thermal performance and reliability. It is recognized that an engineering supervisor in the Plant Reliability and Performance Group has been assigned the responsibility to develop such a program.

Recommendation

Develop a plant performance monitoring program. Consider including the following elements:

a. identifying specific systems, components, and data to be monitored

b. establishing the frequency of data taking, trending, and analysis

c. providing for instrument calibrations to ensure appropriate accuracy and sensitivity

d. providing for coordination with plant operations, maintenance, and other engineering groups to facilitate timely identification of adverse trends

e. providing provisions for reporting problems to appropriate management levels

Response

The corporate office will provide training on thermal performance of the plant by May 1, 1983. The shift technical advisors will monitor plant thermal performance starting August 1, 1983. Procedures will be developed in this time frame to respond to the INPO recommendations.

TRAINING AND QUALIFICATION

TRAINING ORGANIZATION AND ADMINISTRATION

PERFORMANCE OBJECTIVE: The training organization and administrative systems should ensure effective control and implementation of training activities.

Finding (TQ.1-1)

The quality and effectiveness of the operations training program is reduced by the lack of qualified instructors. Program areas affected by this situation include the following:

a. generation and revision of system descriptions, lesson plans, and handouts

b. delivery of instruction by technically and instructionally qualified personnel

c. grading of examinations and monitoring of student progress

Recommendation

Provide qualified instructors to conduct the operations training program. In addition, instructors without prior FitzPatrick operating experience should be given the opportunity to gain experience by periodic assignment to an operating shift.

Response

Action has been or will be taken as follows:

a. The departmental reorganization of September 1982 increased the number of instructor positions from seven to eighteen.

b. Seven of the eighteen positions will be assigned to operator training.

c. One incumbent instructor will receive a senior reactor operator (SRO) license in April/May of 1983.

d. A senior nuclear operator assumed the position of nuclear training specialist in December 1982 and will receive his SRO license in April/May of 1983.

e. Four new-hire instructors will begin SRO training in January 1983 and be licensed in 1984.

f. A program will be established outlining requirements for instructor qualification in accordance with INPO guidelines by July 1983.

All above mentioned personnel have prior nuclear and instructor experience.

NON-LICENSED OPERATOR TRAINING AND QUALIFICATION

PERFORMANCE OBJECTIVE: The non-licensed operator training and qualification program should develop and improve the knowledge and skills necessary to perform assigned job functions.

Finding (TQ.2-1)

Initial training to develop the knowledge and skills of newly hired auxiliary operators needs to be improved. Classroom and on-the-job training necessary to perform assigned job functions need to be identified. In addition, on-the-job training needs to be expanded to include system checkouts.

Recommendation

Identify the training required for each shift position qualification, and complete this training prior to assigning an individual to shift position. Include system checkouts appropriate to the shift position in the on-the-job training.

Response

Training, with assistance from Operations, will develop and implement qualification standards and qualification books for each operator position by September 1983. The Operations Supervisor will review the qualification status prior to assignment of auxiliary operators to shift positions.

Finding (TQ.2-2)

Continuing training for auxiliary operators needs to be expanded to include training in areas such as plant modifications, procedure changes, and in-house and industry operating experience.

Recommendation

Modify the continuing training program for auxiliary operators to provide training in the areas indicated above.

Response

Training, with assistance from Technical Services and Operations, will resolve this finding through a formalized program by September 1983. In the interim, an informal training program will be provided on the items identified above.

LICENSED OPERATOR TRAINING AND QUALIFICATION

PERFORMANCE OBJECTIVE: The licensed operator training and qualification program should develop and improve the knowledge and skills necessary to perform assigned job functions.

Finding (TQ.3-1)

A structured training program for senior reactor operator up-grade candidates has not been developed. Classroom instruction has not been provided in some areas related to position responsibilities. In addition, training objectives to be accomplished during the three-month on-the-job training phase have not been defined.

Recommendation

Provide a structured training program for senior reactor operator up-grade candidates. INPO guideline, "Control Room Operator, Senior Control Room Operator, and Shift Supervisor Qualification" (INPO 82-008), could be of assistance in this area. On-the-job training should be structured to include the following:

a. tasks to be performed, observed, simulated, or discussed

b. identification of individuals or classifications of individuals qualified and responsible for on-the-job training

c. skill and knowledge performance standards

d. identification of individuals or classifications of individuals qualified and responsible for conducting final checkouts

e. assurance that the individual has demonstrated competency in specific tasks prior to job assignments

Response

Training, with assistance from Technical Services and Operations, will formalize the training program for senior reactor operator upgrade candidates. This action will be complete by September 1983.

MAINTENANCE PERSONNEL TRAINING AND QUALIFICATION

PERFORMANCE OBJECTIVE: The maintenance personnel training and qualification program should develop and improve the knowledge and skills necessary to perform assigned job functions.

Finding (TQ.5-1)

A maintenance training program has not been fully developed. It is recognized that plans to provide training to mechanics, electricians, and instrument and control technicians are being developed.

Recommendation Complete the development and implementation of the maintenance training program. The following INPO training guidelines could be of assistance in this effort: "Guidelines for Mechanical Maintenance Personnel Qualification" (GPG-05), "Guidelines for Electrical Maintenance Personnel Qualification" (GPG-07), and "Guidelines for Instrumentation and Control Technician Qualification" (GPG-08).

Response Corrective action has been or will be taken as follows:

a. Program development began in November 1982.

b. Training, with assistance from Maintenance and Instrument & Control, will develop and implement qualification standards by January 1984.

c. Fundamental training will begin in January 1983.

TECHNICAL TRAINING FOR MANAGERS AND ENGINEERS

PERFORMANCE OBJECTIVE: The technical training program for engineers and managers should broaden overall knowledge of plant processes and equipment as a supplement to position-specific education and training.

Finding (TQ.6-1) **A technical training program for engineers and managers has not been consistently implemented.** Some engineers have not received the technical training related to their assigned job functions. Technical training requirements for management personnel have not been identified. An indoctrination and training procedure for engineers has been drafted and is in the review process.

Recommendation Implement the indoctrination and training procedure for engineers. Identify technical training requirements for management personnel and provide training as needed. INPO guideline, "Technical Development Programs for Technical Staff and Managers" (INPO 82-022), could be of assistance in this area.

Response Technical training requirements of engineering and management personnel will be identified and a program implemented using the INPO document as a guide. This item will be complete in January 1984.

Finding (TQ.6-2)

A program to develop the management and supervisory skills of station personnel has not been developed. The recent station reorganization, providing additional first-line supervisors and shifting key management personnel, increases the need for a management/supervisor development program.

Recommendation

Provide a management/supervisor development program for appropriate station personnel. Particular emphasis should be placed on supervisory skills for newly appointed first-line supervisors.

Response

A corporate policy relative to training for newly appointed first-line supervisors and key management personnel will be established with a target completion date of December 31, 1983. This policy will be implemented on a continuing basis as it is developed. Required training as specified in ANSI/ANS 3.1 has already been implemented.

RADIOLOGICAL PROTECTION

RADIOLOGICAL PROTECTION ORGANIZATION AND ADMINISTRATION

PERFORMANCE OBJECTIVE: The organization and administrative systems should ensure effective control and implementation of the radiological protection program.

Finding (RP.1-1)

Management attention is needed to ensure that there are sufficient technical personnel available to upgrade and maintain the following program areas:

a. contamination control

b. ALARA program

c. solid radioactive waste reduction

d. radiological survey program

e. control of radioactive material releases

Recommendation

Review the technical manning requirements to support upgrading and maintaining the above areas. Based on this review, provide additional technical personnel or reassign responsibilities as needed.

Response

The radiological protection organization will be adequately staffed when all the recently created positions are filled. The positions will be filled by March 1, 1983.

A radiation protection manual that will address the recommended items will be developed by June 1, 1983 and implemented by October 1, 1983.

Finding (RP.1-2)

Radiological protection problems are not always reported to management and evaluated to prevent recurrence. Examples include improper frisking, personnel skin and clothing contaminations, and violations of radiological control procedures.

Recommendation

Ensure radiological protection problems are brought to the attention of management. All personnel skin and clothing contaminations should be reported on the personnel contamination report. All violations of radiological control procedures should be reported on the radiological incident report. Trending should be conducted to assist in identifying problems so that timely corrective action can be taken.

Response Newly developed Radiological Incident Reports are now being used to accomplish the recommendations of this finding. Trending will be conducted to assist in identifying problems so that timely corrective action can be taken.

Finding (RP.1-3) **Station personnel, including supervisors, do not always adhere to radiological protection procedures.** Supervisors do not always enforce adherence to radiological protection procedures.

Recommendation Ensure that supervisors promote and enforce adherence to radiological protection procedures. Stress the need for compliance with radiological protection procedures by methods such as department meetings, training programs, posted instructions, and on-the-spot correction of errors.

Response The department superintendents met with the Superintendent of Power and discussed the new, more aggressive attitude that has been established to correct poor radiological protection practices. Radiological Incident Report critiques are being used in a meeting format to promulgate radiological protection policies.

RADIOLOGICAL PROTECTION PERSONNEL QUALIFICATION

PERFORMANCE OBJECTIVE: The radiological protection qualification program should ensure that radiological protection personnel have the knowledge and practical abilities necessary to effectively implement radiological protection practices.

Finding (RP.2-1) **The radiological protection technician training program needs to be expanded.** The present training program does not include plant systems training emphasizing radiological problems that might be encountered in plant operation and maintenance.

Recommendation Provide plant systems training for radiological protection technicians to aid them in evaluating potential radiological problems associated with specific systems during plant operation and maintenance.

Response Reactor plant systems will become a part of radiation protection personnel qualification and will be included in their training commencing in January 1983.

GENERAL EMPLOYEE TRAINING IN RADIOLOGICAL PROTECTION

PERFORMANCE OBJECTIVE: General employee training should ensure that plant personnel, contractors, and visitors have the knowledge and practical abilities necessary to effectively implement radiological protection practices associated with their work.

Finding (RP.3-1)

The general employee training (GET) program in radiological protection needs to be expanded. Employees are not required to demonstrate proficiency in donning and removing protective clothing, frisking, using step-off pads, and reading pocket ionization chambers.

Recommendation

Require each plant employee to perform a satisfactory demonstration of practical radiological protection skills during the GET program.

Response

GET lesson plans will be reviewed by March 31, 1983 to require individual demonstration of proficiency in practical radiological protection skills. Personnel will receive this training as part of their requalification training cycle. New personnel will receive this training in their initial GET.

EXTERNAL RADIATION EXPOSURE

PERFORMANCE OBJECTIVE: External radiation exposure controls should minimize personnel radiation exposure.

Finding (RP.4-1)

The station ALARA program needs improvement. Most ALARA efforts address only major outage jobs. For non-outage work, man-rem estimates are seldom performed and the ALARA reviews generally consist of the completion of a simple checklist by radiological protection technicians.

Recommendation

Implement improvements to the ALARA program that ensure meaningful pre- and post-job ALARA reviews for all jobs involving significant radiation exposure during normal plant operation as well as outages. Consider establishing a station ALARA committee consisting of representatives from the various plant departments involved in radiation work, to periodically review station ALARA goals, coordinate the plant ALARA efforts, and monitor ALARA program effectiveness.

Response

An effective ALARA program will be implemented by May 1, 1983. This program will include the INPO recommendations for this finding.

Finding (RP.4-2)

A program is needed to control the issue and use of portable radiation survey instruments. Many instruments are left at various locations throughout the plant, resulting in lost or broken instruments and periodic searches for instruments needing calibration.

Recommendation

Establish a program for the control of portable radiation survey instruments. The instruments should be issued from a central location, source checked for response prior to use, and returned to storage after use. An instrument check-out log is recommended for accountability.

Response

A procedure and a mechanism for formally issuing survey instruments will be developed. This will be completed by March 1, 1983.

INTERNAL RADIATION EXPOSURE

PERFORMANCE OBJECTIVE: Internal radiation exposure controls should minimize internal exposures.

Finding (RP.5-1)

Additional guidance is needed to ensure that proper radiological controls are provided for laundry workers during the handling of contaminated protective clothing. Laundry workers routinely collect and sort through bags of contaminated protective clothing without radiological surveys and respiratory protection. Whole-body count records of laundry workers indicate some low level internal deposition of radioactive material.

Recommendation

Review all phases of laundry operation, and improve the radiological controls as necessary. As a minimum, consider the following:

a. Use separate barrels for the collection of trash and protective clothing at the exits of contaminated areas.

b. Ensure all bags of laundry are properly surveyed by radiological protection personnel.

c. Use respiratory protective equipment during the sorting of highly contaminated laundry.

d. Require routine air samples during the laundry operation.

e. Use separate, color-coded barrels for clean laundry and contaminated laundry.

f. Review the adequacy of the ventilation system in the sorting area.

Response The INPO recommendation for the handling of laundry will be implemented by the Power Authority by February 15, 1983.

Finding (RP.5-2) **Control of internal radiation exposure and monitoring for internal deposition of radioactive material need improvement.** Specific areas needing attention include the following:

a. lack of criteria for determining when air samples should be taken

b. lack of a program to investigate the causes of positive whole-body counts in a significant number of plant personnel

c. incorrect adjustment of the whole-body counter (WBC)

d. a failed safety switch on the WBC which is designed to prevent personnel injury

Recommendation Establish criteria for determining the need for air samples during plant evolutions. Ensure that correct procedures are followed when adjusting the whole-body counter. Investigate the reasons for positive whole-body counts. Take appropriate actions to correct the cause of the indicated levels of activity. Repair the "dead man" switch on the whole-body counting chair to prevent personnel injury.

Response The requirements for air sampling are contained in the radiation protection procedures. This procedure is currently under revision. Additional criteria for air sampling will be included in the revision to this procedure. This action will be complete by May 1, 1983.

A procedure addressing internal dosimetry was recently initiated. The criterion for evaluation of whole-body count data has been expanded in this procedure. This procedure has been completed.

A memorandum that was addressed to the radiological and environmental technicians emphasized the requirement to follow established procedures. A revision to the procedure for the whole-body counter includes more precise instructions for adjustment of the whole-body counter. This revision has been issued and implemented.

The increased staff will allow more frequent inspections to ensure procedural compliance.

The safety switch issue on the WBC has been resolved.

RADIOACTIVE EFFLUENTS

PERFORMANCE OBJECTIVE: Radioactive effluent controls should minimize radioactive materials released to the environment.

Finding (RP.6-1)

There are indications that radioactive liquids and gases may have been inadvertently discharged to the environment. Some screenhouse building drains and many auxiliary boiler building drains were found contaminated. Effluent from the oily waste separator to the storm drains contained noble gases and fission products.

Recommendation

Implement a program to identify potential pathways by which radioactive material could be inadvertently discharged to the environment without monitoring. Eliminate pathways, where possible, and institute periodic monitoring in cases where elimination is not possible. Leaks resulting in radioactive discharges should be promptly repaired.

Response

An extensive review of the INPO findings in this area was accomplished. The results of numerous samples indicate no significant unmonitored release occurred. A formal program will be developed to more adequately address release pathway monitoring. The program will be implemented by February 1, 1983.

SOLID RADIOACTIVE WASTE

PERFORMANCE OBJECTIVE: Solid radioactive waste controls should minimize the volume of radioactive waste and ensure safe transportation of radioactive material.

Finding (RP.7-1)

The station does not effectively minimize the volume of solid radioactive waste generated.

a. Waste materials, such as boxes and packing material, are not effectively limited from entry into the restricted area.

b. The extensive use of cleaning agents in aerosol cans adds an unnecessary amount of noncompactible radioactive waste.

c. Waste materials are not segregated into contaminated and noncontaminated waste.

d. In some instances, tools and protective equipment are being packaged as trash.

Recommendation Increase efforts to reduce the volume of solid radioactive waste generated. Consider the above items as part of this effort.

Response A procedure to segregate contaminated material from non-contaminated material will be developed by May 1, 1983. A method to restrict non-essential material from the plant will be developed. This action will be completed by May 1, 1983.

PERSONNEL DOSIMETRY

PERFORMANCE OBJECTIVE: The personnel dosimetry program should ensure that radiation exposures are accurately determined and recorded.

Finding (RP.8-1) **Natural background radiation exposure is not subtracted from all thermoluminescent dosimeter (TLD) readings.** As a result, the plant may be reporting higher occupational radiation exposures than are actually being received.

Recommendation Place a control TLD at the gatehouse to provide an accurate measure of natural background radiation. Subtract natural background radiation exposure from all TLD readings.

Response A background TLD will be utilized at the TLD racks. The exposure to this TLD will be used as a basis to correct other TLD readings. This item will be complete by February 1, 1983.

Finding (RP.8-2) **Not all personnel dosimetry devices are stored at the gatehouse in accordance with plant procedures.** Some are stored in lockers or desks, and many are taken home. This lack of control has resulted in increased loss of dosimetry devices and the resultant loss of radiation exposure data, which necessitates frequent exposure estimates.

Recommendation Require all workers to turn in dosimetry devices at the gatehouse when leaving the plant. Hold workers accountable for repeated losses of dosimetry devices.

Response The resident manager will issue a policy statement requiring central storage of TLDs by February 1, 1983. Compliance with this policy will be checked by performing a badge inventory at random intervals commencing March 1, 1983.

RADIOACTIVE CONTAMINATION CONTROL

PERFORMANCE OBJECTIVE: Radioactive contamination controls should minimize the contamination of areas, equipment, and personnel.

Finding (RP.9-1)

Improper frisking by most station personnel, including supervisors, may result in low levels of radioactive contamination being carried from the restricted area. This problem is compounded by the lack of sensitive portal monitors.

Recommendation

Plant managers and supervisors in each department should enforce adherence to proper frisking practices and ensure that personnel are held accountable when violations are observed. Sensitive portal monitors should be used in conjunction with frisking as an added precaution to prevent low levels of radioactive contamination from being carried from the restricted area.

Response

Plant personnel who frequent the restricted area have been retrained in personnel frisking. More friskers have been provided at the exit of the restricted area.

Radiological and environmental technicians and management personnel have been instructed to observe personnel exiting the restricted area and take the necessary actions to ensure proper frisking. A high sensitivity portal monitor has been placed in service in addition to personnel friskers.

Plant managment has committed to assist the radiological and environmental services staff in addressing contamination problems in the plant. The number of access points to the clean areas from the restricted area has been reduced.

Finding (RP.9-2)

The radiological survey program needs to be expanded. Radiological surveys are not sufficiently comprehensive or frequent enough to ensure that radiological problems are identified in a timely manner. As a result, contamination has gone undetected in some areas outside the restricted area, and shoe contamination is a common occurrence within the restricted area.

Recommendation

Expand the radiological survey program to ensure that all areas of the plant, both inside and outside the restricted area, are surveyed on a more frequent basis and in such detail that loose and fixed contamination will be detected in a timely manner. Revise the current radiological survey procedures to reflect changes to the program.

Response A radiological surveillance procedure, already in draft form during the INPO audit, will be implemented by February 28, 1983. This procedure will incorporate the INPO recommendations relative to this finding.

Finding (RP.9-3) **Several conditions were noted that have the potential for spreading radioactive contamination within the restricted area.**

a. Vacuum cleaners without HEPA filters are available in contaminated areas.

b. The box compactor is routinely operated with its exhaust duct disconnected from the ventilation system.

c. Frisking stations are not available for use immediately after exiting highly contaminated areas. Workers must traverse the entire restricted area to reach a frisking station at the exit of the restricted area.

Recommendation The plant contamination control program should be evaluated and upgraded as necessary. Improvements should address the above items.

Response The plant contamination control program is actively under review. The improvements will address the examples of this finding. This item will be complete by May 1, 1983.

Finding (RP.9-4) **Additional decontamination efforts are needed to minimize the number of contaminated areas in the plant.** Although the plant established a goal in April 1982 to minimize contaminated areas, progress to date has been slow.

Recommenation Initiate a more aggressive decontamination program, particularly in areas frequented by operations and maintenance personnel. Consider establishing a permanent decontamination crew reporting to the radiological protection department. With radiological protection supervision, areas needing decontamination can be more readily identified and proper guidance pertaining to decontamination methods can be provided.

Response Increased supervisory plant tours will be required as part of the program to note and correct poor plant conditions. This item is complete.

The Maintenance Department has developed a schedule for the cleanup of all areas of the plant. This schedule has been implemented.

Decontamination training will be held for all applicable personnel during 1983 and a decontamination manual will be developed. This manual will be completed by July 1, 1983 and implemented by October 1, 1983.

CHEMISTRY

CHEMISTRY ORGANIZATION AND ADMINISTRATION

PERFORMANCE OBJECTIVE: The organization and administrative systems should ensure effective implementation and control of the chemistry program.

Finding (CY.1-1)

Radiological and environmental services technicians do not always follow approved procedures. Procedure adherence problems exist in the areas of spectrophotometric analyses and labeling of chemical standards.

Recommendation

Procedure adherence should be stressed at the technician level. Additional supervisory attention should be provided to monitor procedure adherence.

Response

Approved supervisory positions will be filled to facilitate observing work practices. This will be complete by March 1, 1983. Each first-line supervisor will review associated QA/QC programs in his area of responsibility and upgrade those programs as necessary. In the interim, radiological and environmental services technicians have been instructed to follow procedures. This item will be complete by June 1, 1983.

CHEMISTRY PERSONNEL QUALIFICATION

PERFORMANCE OBJECTIVE: The chemistry qualification program should ensure that chemistry personnel have the knowledge and practical abilities necessary to implement chemistry practices effectively.

Finding (CY.2-1)

A formal chemistry training and retraining program has not been implemented. Topics such as basic chemistry, plant-specific chemistry, plant systems, and the use of new analytical equipment are not taught to technicians.

Recommendation

Develop and implement a training and retraining program for chemistry personnel. The INPO guideline, "Chemistry Technician Qualification" (INPO 82-007), could be of assistance in this area.

Response

An instructor qualified to teach chemistry topics is expected to be hired by February 1983. Development of a chemistry training and retraining program will begin no later than April 1983 and will be implemented by October 1, 1983.

CHEMISTRY CONTROL

PERFORMANCE OBJECTIVE: Chemistry controls should ensure optimum chemistry conditions during all phases of plant operation.

Finding (CY.3-1)

The station does not have a program to control cleaning agents, decontamination agents, and solvents in order to prevent corrosive materials from entering plant systems. Numerous unapproved chemicals are in use throughout the plant.

Recommendation

Establish a program to provide effective controls for the use, storage, handling, and disposal of corrosive chemicals and materials. A list of approved cleaning agents, decontamination agents, and solvents should be established.

Response

A program will be developed that incorporates the INPO recommendations relative to this finding by September 1, 1983.

LABORATORY ACTIVITIES

PERFORMANCE OBJECTIVE: Laboratory and counting room activities should ensure accurate measuring and reporting of chemistry parameters.

Finding (CY.4-1)

The chemistry quality control program needs improvement. Quality control standards are not analyzed along with routine samples such as reactor water chloride and conductivity. Standards and reagents that have exceeded their shelf life are used.

Recommendation

Expand the chemistry quality control program to include analysis of known standards with routine samples and monitoring of shelf life for chemical reagents and standards.

Response

When staffing is completed in the chemistry/radiochemistry section of the radiological and environmental services department, the QA/QC program will be reviewed and upgraded as required. This program upgrade will specifically address the analyses of quality assurance standards in conjunction with routine laboratory analyses. These analyses will be performed on a frequency consistent with published recommendations. In addition, the upgrade of the QA/QC program will provide guidelines for the use and maintenance of laboratory chemical standards and specifically the shelf life and labeling of such standards. This item will be complete by August 31, 1983.

APPENDIX I

Summary of Outstanding Response Action from Previous Evaluation (1981)

PREVENTIVE MAINTENANCE

(INPO Procedure MA-402, Revision 2)

1. **Finding** (Criterion B)

   Some plant equipment evidences a need for preventive maintenance. Although FitzPatrick procedure 10.2 assigns specific responsibilities for the execution of the PM program, many of these requirements are not being followed.

   Recommendation

   Ensure the proper and effective implementation of the PM program.

   Response

   Safety-related equipment has been given the highest preventive maintenance priority. Assets presently limit the staff from conducting a complete preventive maintenance program. Additional personnel have been and are being hired. It is expected that a substantial increase in preventive maintenance will occur by July 1982.

   Status

   The PM program is in the process of being implemented. A full time PM supervisor has been authorized. Full implementation of the PM program will be completed by January 1984.

MAINTENANCE HISTORY

(INPO Procedure MA-405, Revision 3)

Finding (Criterion A)

Although a considerable data bank has been accumulated for maintenance history, desired information cannot be extracted readily. This situation results, in part, from the lack of a definitive procedure for maintenance history management.

Recommendation

Implement a procedure or guideline defining the purpose, method, and responsibility for a maintenance history program. The result of this action should be a maintenance history that allows information to be extracted readily for analysis in upgrading plant material conditions.

Response

A more definite program will be established. It is expected that, because of the large data bank, it will take until December 1982 to fully establish the program.

Status

Maintenance history is in the process of being placed into a computer file. The expected date for full implementation of the program is January 1984.

MAINTENANCE FACILITIES AND EQUIPMENT

(INPO Procedure MA-408, Revision 2)

1. **Finding** (Criterion A)

Several aspects of the plant facilities do not promote efficient execution of ongoing work. Plans have been initiated to alleviate this situation by constructing additional buildings. Two areas presented obvious problems:

a. Both the warehouse and storeroom evidence a need for increased space in which to properly store material.

b. Office conditions for supervisors are crowded, and space for meetings and instructional sessions is limited.

Recommendation

Efforts should continue to complete the facility expansion on a priority basis.

Response

The problem will be resolved when the new support facility is completed in 1983.

Status

A new storeroom has been added, and the old storeroom has been reorganized. Authorization for additional new storerooms and an administrative building is pending. Completion of the entire maintenance facility upgrade is expected in 1985.

TRAINING ORGANIZATION

(INPO Procedure TQ-201, Revision 0)

1. **Finding** (Criterion B)

The size of the training staff, the program scheduling, and the magnitude of instructor workload do not facilitate training program material development and modification. Instructor preparation is also inhibited by this situation.

Recommendation

The period between training programs should be sufficient to enable the development and improvement of lesson plans and visual aids. Time should be set aside on a daily basis during program execution for instructor preparation for the following day. Additionally, time should be designated by the instructor for exam correction, or the function should be delegated to other staff members.

Response

The training function will be critically examined to determine the human resources required to support necessary tasks. These resources will then be provided through a combination of purchased training services and additions to the training staff as appropriate. This will be completed by July 1982.

Status

Training positions have been increased from seven to eighteen. It is expected that all positions will be filled by March 1983.

2. **Finding** (Criterion D)

A program does not exist to develop and maintain an optimum level of instructor effectiveness.

Recommendation

Utilize the needs analysis technique to identify instructional training program content and, thereafter, provide the appropriate training.

Response

Needs of the training department are being established in instructor loading and instructor effectiveness. A program based on these surveys will be in effect by July 1982. The effectiveness of instructors will be assessed by headquarters and site training management personnel. Instructor skills will be developed and maintained by a combination of on-the-job training and off-site workshops.

Status

An instructor training program is under development. Lesson plans for phase one have been completed. Phase one is scheduled for implementation in January 1983. The remainder of the program will be completed by December 1984.

TRAINING ADMINISTRATION

(INPO Procedure TQ-202, Revision 0)

1. **Finding** (Criterion C)

Instructor performance is not evaluated to measure the accomplishment of training program objectives and overall effectiveness of training programs.

Recommendation

Instructor performance should be evaluated periodically to determine their effectiveness in meeting program objectives. Such evaluations should assess technical and instructional competence, student/instructor relationship and interaction, and post-training student performance.

Response

Criteria are under development for systematic evaluation of these attributes at the site and headquarters levels. Procedures for evaluations have been developed.

Status

Corporate Indoctrination and Training Procedure #ITP.16.0 was written to provide evaluation of instructors. Implementation of a similar program by site management will occur by April 1, 1983.

APPENDIX II

Performance Objectives Reviewed

ORGANIZATION AND ADMINISTRATION

OA.1 Station Organization and Administration

Station organization and administrative systems should ensure effective implementation and control of station activities.

OA.2 Mission, Goals, and Objectives

Station mission, goals, and objectives should be established and progress monitored through a formal program.

OA.3.1 Management Assessment

Management should assess and monitor station activities to ensure effective performance of all aspects of nuclear plant operation.

OA.3.2 Quality Programs

Quality programs should ensure the effective performance of activities important to nuclear safety.

OA.4 Personnel Planning and Qualification

Personnel programs should ensure that station positions are filled by individuals with proper job qualifications.

OA.5 Industrial Safety

Station industrial safety programs should achieve a high degree of personnel safety.

OA.6 Document Control

Document control systems should provide correct, readily accessible information to support station requirements.

OA.7 On-site Nuclear Safety Review Committee

Review of station nuclear activities by a knowledgeable interdisciplinary group should ensure achievement of a high degree of nuclear safety.

OPERATIONS

OP.1 Operations Organization and Administration

The operations organization and administrative systems should ensure effective control and implementation of department activities.

OP.2 Conduct of Operations

Operational activities should be conducted in a manner that achieves safe and reliable plant operation.

OP.3 Plant Status Controls

Operational personnel should be cognizant of the status of plant systems and equipment under their control, and should ensure that systems and equipment are controlled in a manner that supports safe and reliable operation.

OP.4 Operations Knowledge and Performance

Operator knowledge and performance should support safe and reliable plant operation.

OP.5 Operations Procedures and Documentation

Operational procedures and documents should provide appropriate direction and should be effectively used to support safe operation of the plant.

OP.6 Operations Facilities and Equipment

Operational facilities and equipment should effectively support plant operation.

MAINTENANCE

MA.1 Maintenance Organization and Administration

The maintenance organization and administrative systems should ensure effective control and implementation of department activities.

MA.2 Plant Material Condition

The material condition of the plant should be maintained to support safe and reliable plant operation.

MA.3 Work Control System

The control of work should ensure that identified maintenance actions are properly completed in a safe, timely, and efficient manner.

MA.4 Conduct of Maintenance

Maintenance should be conducted in a manner that ensures efficient and effective plant operation.

MA.5 Preventive Maintenance

The preventive maintenance programs should contribute to optimum performance and reliability of plant equipment.

MA.6 Maintenance Procedures and Documentation

Maintenance procedures should provide appropriate directions for work and should be used to ensure that maintenance is performed safely and efficiently.

MA.7 Maintenance History

The maintenance history should be used to support maintenance activities and optimize equipment performance.

MA.8 Maintenance Facilities and Equipment

Facilities and equipment should effectively support the performance of maintenance activities.

TECHNICAL SUPPORT

TS.1 Technical Support Organization and Administration

The technical support organization and administrative systems should ensure effective control and implementation of department activities.

TS.2 Surveillance Testing Program

Surveillance inspection and testing activities should provide assurance that equipment important to safe and reliable plant operation will perform within required limits.

TS.3 Operations Experience Review Program

Industrywide and in-house operating experiences should be evaluated and appropriate actions undertaken to improve plant safety and reliability.

TS.4 Plant Modifications

Plant modification programs should ensure proper review, control, implementation, and completion of plant design changes in a safe and timely manner.

TS.5 Reactor Engineering

On-site reactor engineering activities should ensure optimum nuclear reactor operation without compromising design or safety limits.

TS.6 Plant Efficiency and Reliability Monitoring

Performance monitoring activities should optimize plant thermal performance and reliability.

TS.7 Technical Support Procedures and Documentation

Technical support procedures and documents should provide appropriate direction and should be effectively used to support safe operation of the plant.

TRAINING AND QUALIFICATION

TQ.1 Training Organization and Administration

The training organization and administrative systems should ensure effective control and implementation of training activities.

TQ.2 Non-Licensed Operator Training and Qualification

The non-licensed operator training and qualification program should develop and improve the knowledge and skills necessary to perform assigned job functions.

TQ.3 Licensed Operator Training and Qualification

The licensed operator training and qualification program should develop and improve the knowledge and skills necessary to perform assigned job functions.

TQ.4 Shift Technical Advisor Training and Qualification

The shift technical advisor training program should develop and improve the knowledge and skills to perform assigned job functions.

TQ.5 Maintenance Personnel Training and Qualification

The maintenance personnel training and qualification program should develop and improve the knowledge and skills necessary to perform assigned job functions.

TQ.6 Technical Training for Managers and Engineers

The technical training program for engineers and managers should broaden overall knowledge of plant processes and equipment as a supplement to position-specific education and training.

TQ.7 General Employee Training

The general employee training program should develop a broad understanding of employee responsibilities and safe work practices.

TQ.8 Training Facilities and Equipment

The training facilities, equipment, and materials should effectively support training activities.

RADIOLOGICAL PROTECTION

RP.1 Radiological Protection Organization and Administration

The organization and administrative systems should ensure effective control and implementation of the radiological protection program.

RP.2 Radiological Protection Personnel Qualification

The radiological protection qualification program should ensure that radiological protection personnel have the knowledge and practical abilities necessary to effectively implement radiological protection practices.

RP.3 General Employee Training In Radiological Protection

General employee training should ensure that plant personnel, contractors, and visitors have the knowledge and practical abilities necessary to effectively implement radiological protection practices associated with their work.

RP.4 External Radiation Exposure

External radiation exposure controls should minimize personnel radiation exposure.

RP.5 Internal Radiation Exposure

Internal radiation exposure controls should minimize internal exposures.

RP.6 Radioactive Effluents

Radioactive effluent controls should minimize radioactive materials released to the environment.

RP.7 Solid Radioactive Waste

Solid radioactive waste controls should minimize the volume of radioactive waste and ensure safe transportation of radioactive material.

RP.8 Personnel Dosimetry

The personnel dosimetry program should ensure that radiation exposures are accurately determined and recorded.

RP.9 Radioactive Contamination Control

Radioactive contamination controls should minimize the contamination of areas, equipment, and personnel.

CHEMISTRY

CY.1 Chemistry Organization and Administration

The organization and administrative systems should ensure effective implementation and control of the chemistry program.

CY.2 Chemistry Personnel Qualification

The chemistry qualification program should ensure that chemistry personnel have the knowledge and practical abilities necessary to implement chemistry practices effectively.

CY.3 Chemistry Control

Chemistry controls should ensure optimum chemistry conditions during all phases of plant operation.

CY.4 Laboratory Activities

Laboratory and counting room activities should ensure accurate measuring and reporting of chemistry parameters.

CY.5 Chemical and Laboratory Safety

Work practices associated with chemistry activities should ensure the safety of personnel.