1982 Evaluation

Nine Mile Point Nuclear Station Unit One

Niagara Mohawk Power Corporation

INPO

EVALUATION

of

NINE MILE POINT NUCLEAR STATION - UNIT ONE

Niagara Mohawk Power Corporation

February 1983

SUMMARY

INTRODUCTION

The Institute of Nuclear Power Operations (INPO) conducted an evaluation of Niagara Mohawk Power Corporation's (NMPC) Nine Mile Point Nuclear Station during the weeks of November 8 and 15, 1982. The station is located on the southeast shore of Lake Ontario, approximately seven miles east of Oswego, New York. Unit One began commercial operation in December 1969. Unit Two is under construction.

PURPOSE 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 plant is being operated in a safe manner by qualified personnel.

The following beneficial practices and accomplishments were noted:

A strong management commitment to improved training programs is evident.

The general cleanliness of the station is excellent.

Corporate interest and attention is apparent in the commitment to the improved training facilities and radiation waste processing and storage facilities.

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

Improvements are needed in management tracking and status systems in areas such as maintenance work requests, material history, and surveillance programs.

Increased emphasis is needed in the close-out of completed modification packages and in the timely updating of plant drawings.

The control and storage of chemicals should be upgraded.

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 NMPC 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 NMPC management at an exit meeting on November 19, 1982. Findings, recommendations, and responses were reviewed with NMPC management on January 27, 1983. Responses are considered satisfactory.

To follow the timely completion of the improvements included in the responses, INPO requests a written status by August 31, 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 Niagara Mohawk Power Corporation.

NIAGARA MOHAWK POWER CORPORATION

Response Summary

Niagara Mohawk fully endorses the INPO goal of achieving the highest standards of excellence in all phases of nuclear power station operation. Each of the performance objectives against which INPO evaluated Nine Mile Point and the INPO findings have been carefully reviewed. As indicated by our responses, we firmly endorse these objectives.

We are pleased to note that INPO recognized a strong management commitment to improved training programs and expanded training facilities. This is a major effort toward achieving excellence. Also, we are particularly pleased with INPO finding RP.4-1 concerning the effective ALARA program for the reactor recirculation systems replacement project. Extensive effort has been expended during 1982 toward improving the administrative procedures and implementation of programs for personnel qualification, the management of maintenance and modification operations, and the chemistry and radiation protection activity. We believe our responses indicate that substantial progress toward maintaining excellence in these areas may be expected during 1983.

We have indicated positive action in each of our responses along with a projected time table for completion. Station management is committed to the production of and adherence to improved procedures for assuring achievement of all goals essential to superior operation. The company and each individual associated with the management of Nine Mile Point are committed toward maintaining a continued high level of excellence in safety, reliability, and performance.

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)	Station goals and objectives have not been established. The corporate strategic plan is a good basis for such a program; however, this plan has not been used to develop station goals and objectives and a supporting plan of action.
Recommendation	Establish station goals and objectives. Extend the goals and objectives to include individual departments that report to the general superintendent, and include, at each level, action plans to achieve those goals. Monitor progress toward achieving goals periodically during the year.
Response	The major goal of Nine Mile Point Unit 1 is the timely return to service. All departments will develop goals and objectives to support the Niagara Mohawk Power Corporation's Strategies Program that is now under development. It is anticipated that they will be developed by October 1983.

MANAGEMENT ASSESSMENT AND QUALITY PROGRAMS

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

Finding (OA.3-1)	Effective programs have not been implemented for the periodic review and assessment of some important aspects of station activities. The existing quality assurance/quality control (QA/QC) programs, used to assess these activities, are limited in scope and do not assess the effectiveness of programs and procedures. It is recognized that plans are being formulated to expand the scope of existing assessment programs.
Recommendation	Expand the scope of existing QA/QC assessments to address effectiveness of station programs in achieving the desired results.

Response

The Quality Assurance Department is committed to the extension of the Nuclear QA Surveillance Program for Nine Mile Point Unit 1. Operations, radiation protection, and water chemistry are typical of additional targeted areas of opportunity for QA/QC surveillance/audits.

The effectiveness of site programs will be assessed in addition to the current practice of primarily monitoring compliance. The target date for implementation of the expanded QA/QC assessments is December 1983.

DOCUMENT CONTROL

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

Finding (OA.6-1)

Many procedures are not periodically reviewed and revised as required by site administrative procedures. Although a system identifying those procedures due for review and revision exists, positive controls have not been established to ensure compliance with review and revision requirements.

Recommendation

Enforce the current program for ensuring that procedures are periodically reviewed and revised as necessary. Take action to prevent the use of procedures that are not current.

Response

This program has been implemented by all departments except the Radiation Protection and Chemistry Department. Complete implementation for that department is expected by December 1983.

OPERATIONS

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)	Entry level auxiliary operators (AOB) are initially assigned to perform shift activities without receiving formal guidance concerning their responsibilities and duties.
Recommendation	Provide formal guidance that describes the operator's responsibilities and duties for plant tours. Consider developing a round sheet or similar mechanism that addresses areas such as the following: a. inspection of operating equipment and power boards b. inspection for fire and safety hazards c. identification of deficiencies and appropriate follow-up action d. reporting requirements
Response	Formal guidance describing operator responsibilities and duties during the performance of plant tours will be developed. Because of manpower requirements for the present outage, this guidance will be provided by December 1983.

Finding (OP.3-2)	The status of components under the control of a blue equipment markup (test and maintenance tag) is not effectively maintained. Component position is not routinely updated after a blue markup is posted, and the protective position of some components is designated "as is" in the blue markup log.
Recommendation	Develop a mechanism that will ensure operators remain cognizant of the position of components under the control of a blue equipment markup. Require that the protective position of components be accurately specified.
Response	The items noted in the finding are a violation of markup rules and will be corrected by providing formal training on the markup rules to all operations and maintenance personnel by March 1983.

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)	Operators experience difficulty in locating the proper alarm response procedure for some main control board annunciators. Currently, the operator must identify the alarm coordinates, determine its associated system, refer to a master system index, and then page through the system procedure to locate the proper response procedure.
Recommendation	Simplify the process of locating specific alarm response procedures. Consider developing a system that will allow operators to locate the procedures directly from the alarm annunciator coordinates.
Response	A means to simplify the identification of alarming annunciators will be implemented by December 1983.

OPERATIONS FACILITIES AND EQUIPMENT

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

Finding (OP.6-1)	The following Good Practice was noted: A comprehensive program has been established to maintain the material condition of important plant systems and components during prolonged outages. Elements of the program include placing steam and feedwater systems in lay-up and manually rotating equipment on a periodic scheduled basis.

MAINTENANCE

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 system for maintaining the status of maintenance work requests needs improvement. The present tracking system is not kept current and does not provide management with information such as the current status of work requests or work backlog.
Recommendation	Establish an effective means for determining the current status of work requests. Consider a periodic report of approximate man-hours of outstanding corrective maintenance to aid in management planning and monitoring of work load trends.
Response	A method of maintaining a single, working, up-to-date Work Request Planning Log that will provide the current status of work requests will be reviewed by April 1983 and implemented by June 1983.

Finding (MA.3-2)	Effective job planning and coordination is not always performed prior to assignment of the job to a work crew. This results in ineffective use of manpower.
Recommendation	Develop a job planning and coordination method to provide better job information and guidance prior to assignment to a working crew.
Response	A daily 3:00 p.m. meeting held with plant department supervision has been implemented to coordinate and plan the next day's work. In addition, a review of job planning and coordination at other nuclear plant facilities will be completed by August 1983. Additional actions resulting from this review, which should include additional staffing within the Maintenance Department (i.e., maintenance coordinator), are planned to be implemented by December 1983.

PREVENTIVE MAINTENANCE

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

Finding (MA.5-1)

The preventive maintenance (PM) program for mechanical and electrical equipment needs improvement. Specific problem areas include the following:

a. The scope of the existing program does not cover some important equipment related to plant safety and reliability.

b. The tracking method does not provide the status of PM task completion.

c. A periodic review of the program has not been established.

Recommendation

Determine the additional mechanical and electrical equipment that should be covered in the PM program because of their importance to plant safety and reliability. Establish a tracking system, and periodically review the PM program to evaluate its effectiveness and the need for adjustments.

Response

A general review of plant equipment pertaining to the PM program has been completed. Additional reliability- and safety-related mechanical and electrical equipment already has been incorporated into the PM program. A PM schedule will be developed by March 1983. A method of reviewing and tracking the PM program will be developed by July 1983.

Finding (MA.5-2)

The following Good Practice was noted: The conduct of "Weekly Instrument Rounds" by instrument and control technicians contributes to reliable plant operation. Instrument stations, pneumatic controllers, pressure regulators, and most instrument control valves are checked for abnormal conditions on a weekly basis.

MAINTENANCE HISTORY

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

Finding (MA.7-1)	Maintenance history is not effectively utilized to support maintenance activities. Maintenance history is not readily accessible to maintenance personnel and does not contain sufficient detail to allow for a meaningful evaluation of equipment performance.
Recommendation	Provide ready access to the computerized maintenance history system, and expand the history records to provide sufficient detail for meaningful evaluation of equipment performance.
Response	If a mechanic or electrician is to utilize a maintenance history as a resource, the history file must be readily available, contain sufficient detail and information, and be easily accessible. A method to incorporate all of the above conditions will be provided by August 1983. Implementing action, which most likely will include additional staffing, will be completed by January 1984.

TECHNICAL SUPPORT

SURVEILLANCE TESTING PROGRAMS

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

Finding (TS.2-1)	The computerized surveillance tracking system is not effectively used to coordinate and track timely completion of scheduled technical specification and preventive maintenance activities. It is recognized that station personnel are working to make the software program function as desired.
Recommendation	Correct the software program as necessary to make the computerized surveillance tracking system work properly and provide more effective coordination and tracking of activities.
Response	A functional specification will be written by a joint group from technical support and computer personnel to identify the needs and activities of the surveillance tracking system so that a new software program can be written to cover this area. Until this new program is implemented, corrections to the present program will be handled expeditiously to make it effective. The new computer program is expected to be in use by January 1984.

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
60	Satisfactory
78	Not applicable
12	Pending

The following recommendations are pending action:

SOER Number	Recommendation Number
81-2	1
81-3	3
81-15	1a, 1b, 1c, 2c, 3
81-16	1, 2, 3
82-2	6
82-5	3

An update on the status of each recommendation listed in the "pending action" category 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.

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) Modification requests are not adequately tracked to ensure timely design, implementation, and closeout. The status of a number of modifications cannot be readily determined by reviewing either the Engineering Project Report or the Station Modification Listing.

Recommendation Improve the level of detail of modification status updates. Common terminology should be employed in the Engineering Project Report and the Station Modification Listing. Consideration should be given to combining the Engineering Project Report and the Station Modification Listing into a single, comprehensive report that is updated by both the station and the project engineering group.

Response To improve control of all modification requests between the plant and the Engineering Department, a person within Engineering has been designated as the liaison through whom all modification requests from the plant modification coordinator will go. It is his responsibility to see that these requests are prioritized and acted upon. In addition, a project status report has been developed that indicates each modification, priority number, project engineer, plant contact, project report, functional specifications, safety evaluation, SORC approval, drawing status, Engineering Department responsibility, and material status. This project status report is updated, as information becomes available, by both the plant

and the Engineering Department. This report is then used as a reporting tool at the monthly meetings attended by both engineering and plant representatives.

Finding (TS.4-2)

Completed modifications are not always closed out in a timely manner. The assembly of all required documentation and the final review of completed modifications are excessively delayed.

Recommendation

Close out the existing backlog of completed modifications. Consider revising APN-9, "Procedure for Station Permanent and Temporary Modifications and Replacements," to clearly define the close-out process, including the assignment of specific responsibilities.

Response

The plant modification coordinator is presently working on closing out the existing backlog of completed modifications. An extensive effort is being made to accomplish this task with an additional four men having been temporarily assigned to assist the modification coordinator.

APN-9 was revised in December 1982. Included in the revision is a more defined close-out form for processing all required documents necessary for the modification file. This form is to be completed and all documents accounted for by the modification coordinator or the plant engineer solely responsible for the respective modification. An additional change to APN-9 will detail procedures for implementation of modifications to ensure adequate documentation of component and system quality. This change to APN-9 will be implemented by April 1983.

Finding (TS.4-3)

Improvements are needed in the current drawing revision program. Specific problems include the following:

a. Final drawings are not issued from the corporate office in a timely manner following completion of modifications. A backlog of pending revisions exists dating back to 1978.

b. Issued drawings are not consistently annotated to denote whether they are construction drawings or final drawings.

c. Drawing revision blocks denote major order numbers, rather than modification numbers or drawing change request numbers.

d. Corporate drawing transmittals do not consistently reference associated modification and drawing change request numbers.

e. Some drawings have been revised and reissued as revision zero under the old drawing number.

f. The current drawing file contains only the most recent final and construction drawings; however, additional construction drawings are applicable in some cases.

Recommendation Upgrade the drawing revision program to provide for timely and accurate revision of plant drawings. The specific problems noted above should be addressed.

Response A joint site and corporate engineering study will be undertaken to adequately address the slow turnaround of marked-up drawings after modifications have been implemented within the plant and to address the other specific problems noted in the finding. This study will be completed by March 1983.

TRAINING AND QUALIFICATION

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)	Administration of the three-month on-shift training program for reactor operator candidates needs to be improved. The administrative practices in use do not ensure that specific equipment and system operating skills are demonstrated by the candidates.
Recommendation	Establish administrative requirements for candidates to perform and document the specific tasks identified in the existing training manual.
Response	Administrative requirements for reactor operator candidates to perform and document specific tasks will be established for the next scheduled training class in June 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)	Structured training in plant-specific systems and equipment needs to be implemented for all permanently assigned maintenance personnel. It is recognized that a formal training program has been developed; however, no commitment has been made to schedule personnel to attend the training due to the expected long-term outage.
Recommendation	Schedule maintenance personnel for training during the long-term outage as time and conditions permit.
Response	Maintenance training will be accomplished during the long-term outage as time and conditions allow. The existing formal training will be implemented at the completion of the outage.

Finding (TQ.5-2)

A structured on-the-job training program for maintenance personnel is needed. The present training program neither defines overall training objectives nor identifies knowledge and skills that should be demonstrated as part of the qualification process.

Recommendation

Review the on-the-job training program for maintenance personnel and implement measures to improve the effectiveness of the program. The following elements should be included:

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

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

c. skill and knowledge required for each identified task to be performed, observed, simulated, or discussed

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

e. assurance that the individual has demonstrated competency in specified tasks prior to job assignment

INPO Good Practice TQ-501, "Development and Implementation of On-The-Job Training Programs," could be of assistance in this effort.

Response

An on-the-job training program for maintenance personnel is being developed and will be implemented by December 1983. The on-the-job training program will be described in the administrative procedure for training mechanical and electrical maintenance personnel. The five elements mentioned in the recommendation will be addressed in the program.

RADIOLOGICAL PROTECTION

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)	A formal on-the-job chemistry/radiation protection technician training program has not been developed. It is recognized that the development of the formal on-the-job qualification training program is awaiting completion of a technician task analysis.
Recommendation	Complete and implement the formal on-the-job qualification training program for chemistry/radiation protection technicians.
Response	As stated in the finding, the technician task analysis is in progress. After completion of the task analysis, union and management representatives will finalize the formal split in radiation protection and chemistry technician duties. At that time, on-the-job training programs will be established for both areas to supplement the existing formal classroom program initiated in April 1982. It is expected that on-the-job training programs will be initiated in both areas by September 1983.

Finding (RP.2-2)	A continuing training program for chemistry/radiation protection technicians is needed.
Recommendation	Develop and implement a program to provide continuing training for chemistry/radiation protection technicians. This program should include training in basic technical subjects, plant procedural changes, appropriate industry operating experience, and weaknesses identified in the plant chemistry/radiation protection program.
Response	A continuing training program will be developed and implemented upon completion of the initial training program. This program will be described in the administrative procedure for training chemistry and radiation protection technicians and is expected to be developed by December 1983. In the interim, significant procedural and operational information will be provided to technicians via routine communications.

EXTERNAL RADIATION EXPOSURE

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

Finding (RP.4-1)

The following Good Practice was noted: Extensive ALARA considerations were given to the safe-end/recirculation piping job inside the drywell including the following:

a. remote audiovisual coverage of most work inside the drywell

b. full-scale mock-up training for personnel performing work

c. chemical cleaning of recirculation pipes and components prior to removal

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Finding (RP.4-2)

The portable radiation survey instrument calibration program needs improvement. Specific problem areas noted are as follows:

a. Acceptance criteria for instrument calibration noted on the calibration record sheets are too high.

b. Some high range instruments are only calibrated on the lower end of the highest scale.

Recommendation

Revise the existing calibration program to address the areas discussed above. "Radiation Protection Instrumentation Test and Calibration," ANSI-N323, should be used for guidance.

Response

The portable radiation survey instrument calibration program review was initiated on December 27, 1982. Preliminary review indicates that previous calibrations easily meet the recommended acceptance criteria (± 10 percent of value). ANSI-N323 acceptance criteria will therefore be used as guidance in place of manufacturer's recommendations. Improved acceptance criteria and higher dose rate calibrations will be incorporated into the procedure revisions, taking advantage of the recently acquired high level calibration capability. Procedural revisions are scheduled to be completed by March 1983.

INTERNAL RADIATION EXPOSURE

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

Finding (RP.5-1)	The policy for eating, smoking, and chewing is not always observed in the restricted area. Candy wrappers, cigarette butts, chewing tobacco, and gum were observed inside the restricted area.
Recommendation	Enforce the existing policy concerning eating, drinking, smoking, and chewing by personnel inside the restricted area. Emphasize adherence to these policies by methods such as department meetings, general employee training, posted instructions, and on-the-spot correction.
Response	To further enforce the existing policy concerning eating, smoking, and drinking in the restricted area, departmental meetings will be held to augment the general employee training and posted instructions. These meetings will reiterate and clarify the policy related to this subject. These meetings will be completed by March 1983. In addition, supervisors and radiation protection personnel will continue to enforce adherence to this policy.

PERSONNEL DOSIMETRY

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

Finding (RP.8-1)	A quality control program for thermoluminescent dosimeters (TLD) has not been established. It is recognized that TLDs are not currently used for legal exposure records.
Recommendation	Develop a quality control program for TLDs. Include acceptance criteria for comparisons between film badges and TLDs or pocket ionization chambers (PICs). This program should also outline corrective actions to be taken if the criteria are not met.
Response	The primary dosimetry data source is film. TLDs are used as a backup mechanism. A quality control program specifically designed for TLDs is being developed. Specific acceptance criteria for comparisons between film badge and TLD results with response and/or corrective actions to be pursued have been addressed in implementing procedures. Further criteria and action levels have been established that

specifically address the TLD system. This TLD quality control program will be fully implemented by December 1983. Meanwhile, the quality control program already in place for film, in conjunction with regular film-to-TLD comparisons, represents a quality check for TLDs.

RADIOACTIVE CONTAMINATION CONTROL

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

Finding (RP.9-1)	Personnel monitoring for contamination needs improvement. In most cases, personnel use improper frisking techniques when exiting posted contaminated areas and the restricted area. Examples include frisking too fast and holding the probe too far from the body.
Recommendation	Evaluate the current plant practice of performing a whole-body frisk in twenty seconds. Emphasize adherence by plant personnel to proper frisking techniques by such methods as general employee training, posted instructions, and on-the-spot correction.
Response	The whole-body frisking policy will be evaluated to verify its accuracy and acceptability. This evaluation will be completed by June 1983. In addition, adherence by plant personnel to proper frisking techniques will be emphasized during general employee training and retraining.

Finding (RP.9-2)	Records of skin and clothing contamination are not routinely analyzed to identify underlying causes of problem areas, to monitor trends, or to implement corrective action to reduce contamination incidents.
Recommendation	Review skin and clothing contamination incidents periodically to identify underlying causes and corrective actions. Develop administrative guidelines that establish criteria and instructions for reviewing skin and clothing contaminations.

Response

Draft procedure RP-5, "Methodology of Radiation and Radioactive Contamination Control," is currently under review. In addition to providing specific contamination control instructions, this procedure will also provide a means of documenting incidents of poor radiological practice including skin and clothing contamination. Administrative guidelines contained within this procedure will also establish criteria and instructions for the review of skin and clothing contamination as well as the identification of individuals who are repeat offenders. This procedure is scheduled to be implemented by March 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)	Chemistry technicians do not always adhere to chemistry analytical procedures. Technicians were observed omitting or changing procedural steps such that results could be adversely affected.
Recommendation	Stress the management commitment to chemistry procedure adherence to technicians. Increase monitoring of analyses by laboratory supervisors to ensure adherence with analytical procedures.
Response	During January 1983, meetings were held with all technicians to stress the importance of procedure adherence. In addition to increased attention by laboratory foremen, the assistant chemistry and radiation protection supervisor has been assigned the task of routinely monitoring chemistry technician performance.

CHEMISTRY CONTROL

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

Finding (CY.3-1)	Cleaning agents and solvents are not controlled to prevent entry into plant systems. Several uncontrolled and potentially harmful cleaning agents or solvents were noted throughout the plant.
Recommendation	Establish a program to provide controls for the use, transfer, and disposal of cleaning agents and solvents. A list of approved cleaning agents and solvents should be developed.
Response	An administrative procedure is currently under development to provide controls for the use, transfer, and disposal of cleaning agents and solvents, including a list of approved cleaning agents and solvents. This procedure is scheduled to be completed prior to unit startup.

LABORATORY ACTIVITIES

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

Finding (CY.4-1)

The quality control (QC) program for the chemistry laboratory needs to be improved to ensure that analyses are performed with the required degree of accuracy. Areas needing improvement include the following:

a. use of spiked samples to test the performance of analysts

b. shelf-life control of reagents, standards, and chemicals

c. establishment of a preventive maintenance program for laboratory equipment

Recommendation

Establish a chemistry QC program with emphasis on the following:

a. Require chemistry technicians to analyze spiked samples according to a predetermined schedule.

b. Establish a program to control and monitor the shelf life of reagents, standards, and chemicals.

c. Develop a preventive maintenance program for laboratory instruments using equipment technical manuals as a guide.

Response

Radiation protection and chemistry duties are being separated to increase the depth of training in each area. The initial QC program addressing the items noted in the finding will be developed and incorporated into the on-the-job training program scheduled to be initiated in September 1983. In the meantime, improved QC is being implemented via increased supervisory attention.

Finding (CY.4-2)

Cleanliness of the chemistry laboratory needs improvement. Laboratory countertops and storage shelves are cluttered and dirty.

Recommendation

Emphasize to technicians the importance of keeping the chemistry laboratory clean. Take the necessary corrective action to maintain laboratory cleanliness.

Response — The importance of laboratory cleanliness was stressed with all technicians in meetings held during January 1983. In addition, laboratory foremen and the assistant chemistry and radiation protection supervisor will routinely monitor the cleanliness of the laboratory.

CHEMICAL AND LABORATORY SAFETY

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

Finding (CY.5-1) — Several potentially hazardous conditions exist in the chemistry laboratory and chemical storeroom. Examples include the following:

a. Acids and bases are stored together.

b. Perchloric acid is stored with organics.

c. Open perchloric acid bottles are not stored in ventilated hoods.

Recommendation — Store acids and bases separately in cabinets designed for corrosive chemicals. Consider discontinuing the use of perchloric acid.

Response — This finding was immediately responded to during the evaluation. Acids and bases were separated; perchloric acid and organics were separated; the open perchloric acid bottles were capped; and all chemicals were properly stored. In addition, the continued use of perchloric acid will be evaluated by December 1983.

APPENDIX I

Summary of Outstanding Response Action from Previous Evaluation (1981)

OPERATIONS FACILITIES AND EQUIPMENT

Finding (OP.2-3) Some plant valves and equipment are not labeled with clear, permanent, and distinguishable markings.

Recommendation Revise the equipment labeling program as necessary and take action to mark valves and equipment with permanent, easily read labels.

Response Originally, all valves in the station shown on piping and instrumentation diagrams were labeled with metal tags. However, there are many new valves (mostly fire protection) that need labeling. An audit of current valve labels will be made, and metal tag labels will be installed wherever required. Equipment will also be labeled to permit easy identification. Labeling will be completed outside high radiation areas by the end of 1982. Labeling inside high radiation areas will be completed by the end of the next refueling outage.

Status The program to review and update all operating procedures, diagrams, and valve line-ups was initiated in May 1982. Included in this review is a local inspection of valves to ensure that they are properly tagged and identified. The completion of this program has been delayed due to an unscheduled outage. Approximately 25 percent of the procedures have been reviewed and revised. The valve tagging and identification program is about 90 percent complete. This program should be complete by December 1983.

PLANT EFFICIENCY AND RELIABILITY

Finding (TS.2-1) Current efforts to monitor, analyze, and improve plant thermal efficiency need improvement. Reactor engineering technicians collect and trend several computer log parameters relevant to thermal performance, but many of the computer output parameters are unreliable. Analysis results are therefore of questionable value.

Recommendation Return the thermal performance monitoring programs to service. Use monitoring results to identify adverse performance or trends and to develop appropriate corrective actions.

Response We are now in the process of grooming the thermal performance computer programs and expect to complete that by January 1, 1982. The site technical support group is responsible for analyzing performance parameters and recommending appropriate corrective actions to plant management. Routine analysis of performance will begin as soon as reliable data is available.

Status — The completion of the monitoring programs has been delayed due to an unscheduled outage. The thermal performance software is being modified and the system is expected to be in operation for the plant startup in October 1983.

RADIOACTIVE CONTAMINATION CONTROL

Finding (RC.9-2) — Personnel contamination monitoring equipment has not been placed at all exits from contaminated areas. Use of such monitoring equipment reduces the potential for the spread of contamination.

Recommendation — Establish monitoring stations at the exits from known contaminated areas where practicable.

Response — The need for three additional permanent monitoring stations has been identified. These installations, including any necessary shielding, will be completed before the next refueling outage in 1983. Other locations where temporary or permanent monitoring stations may be appropriate will be identified on a continuing basis.

Status — The additional permanent monitoring stations have been delayed due to an unscheduled outage and should be established by December 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.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.