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* Institute of Nuclear Power Operations
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1982 Evaluation

Kewaunee Nuclear Power Plant

Wisconsin Public Service Corporation

A051

NPO

JAN 20 1983

EVALUATION

of

KEWAUNEE NUCLEAR POWER PLANT

Wisconsin Public Service Corporation

December 1982

SUMMARY

INTRODUCTION

The Institute of Nuclear Power Operations (INPO) conducted an evaluation of Wisconsin Public Service Corporation's (WPS) Kewaunee Nuclear Power Plant during the weeks of September 13 and 20, 1982. Kewaunee is a single unit, 527 MWe (net) Westinghouse pressurized water reactor. The station is located in Carlton, Wisconsin, on Lake Michigan and began commercial operation in June 1974.

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 safely operated by qualified personnel.

The following beneficial practices and accomplishments were noted:

High personnel morale, strong corporate commitment to excellence, and extensive management involvement were apparent in all aspects of the plant.

The plant is well maintained and has an impressive performance record.

The history of low personnel exposure to radiation and the minimum amount of contaminated areas are noteworthy.

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

Training of station personnel needs to be more aggressively addressed; involvement by all department managers in this effort is needed.

Some aspects concerning radiological and contamination control practices need re-emphasis.

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 WPS 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 WPS management and management representatives of Wisconsin Power and Light Company and Madison Gas and Electric Company (co-owners) at an exit meeting on September 23, 1982. Findings, recommendations, and responses were reviewed with WPS management on November 8 through 11, 1982. Responses are considered satisfactory.

To follow the timely completion of the improvements included in the responses, INPO requests a written status by June 30, 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 WPS.

WISCONSIN PUBLIC SERVICE CORPORATION

Response Summary

Wisconsin Public Service Corporation (WPS) is dedicated to operating the Kewaunee Nuclear Power Plant in a safe, reliable, and economic manner and is pleased that INPO's review found that WPS is meeting that goal.

Despite a strong performance record, WPS acknowledges improvements can be made in several areas to help achieve even better performance records. We readily accept the recommendations in the training area, and understand the need to improve overall plant non-licensed personnel training and involve all department supervisors in aggressively pursuing these training needs. The recommendation to re-emphasize some basic radiological practices is also accepted.

The additional emphasis being placed by management in the training area will enable WPS to make great strides in the next year to upgrade the quality of Kewaunee's training, retraining, and indoctrination programs and to provide an effective means and program to maintain the existing level of competence of the plant staff.

Specific responses to recommendations are addressed in the text with target commitment dates for implementation.

Wisconsin Public Service Corporation appreciates the efforts of the INPO staff and the level of professionalism displayed during the conduct of the plant evaluation. We also would like to acknowledge the improvements made in the results-oriented evaluation program and the improved effort by INPO in the collection of "Good Practices." These practices will be very closely reviewed and will be applied to plant operations where applicable.

ORGANIZATION AND ADMINISTRATION

STATION ORGANIZATION AND ADMINISTRATION

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

Finding (OA.1-1)

Adherence to procedures needs to be improved in the Technical, Plant Services, and Operations departments. Several instances were noted where procedural steps were incorrectly performed or omitted.

Recommendation

Stress the existing corporate policy that requires adherence to procedures. During routine plant tours, managers and supervisors should monitor ongoing evolutions to observe compliance with procedures.

Response

The existing corporate policy requiring adherence to procedures will be stressed with the entire plant staff. This will be done at a staff meeting with supervisors and at safety meetings with the rest of the plant personnel by December 1982. During routine tours, supervisors will monitor ongoing evolutions to ensure compliance with procedures. This emphasis and ongoing monitoring of procedure adherence will be periodically reviewed to verify that the desired results are achieved.

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) **Shift personnel were frequently observed reading non-job-related material in the control room.**

Recommendation Reading of other than job-related material in the control room should be curtailed.

Response The above finding indicates activities that are not in accordance with existing plant administrative policies. Shift supervisors will be directed to ensure control room activities follow existing policies.

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) **Present shift turnover practices do not always result in a comprehensive shift turnover.** Shift turnover requirements need to be expanded to include several items that are appropriate for a complete turnover.

Recommendation Upgrade shift turnover practices to include the following:

a. Expand the control operator checklist to include information required to be exchanged as specified in the shift turnover Administrative Control Directive (ACD).

b. Revise the turnover ACD to use the turnover checklist for all modes of operation.

c. Require auxiliary and equipment operators to exchange appropriate shift turnover information. A turnover checklist for these watchstanders could enhance this process.

d. Consider revising the shift turnover ACD to include a walkdown of the control boards and review of logs with both oncoming and off-going control room watchstanders present.

INPO'S Good Practice OP-201, "Shift Relief and Turnover," could be of assistance in this area.

Response

The shift turnover checklist will be revised to include information specified in the shift turnover checklist ACD. The ACD will be revised to require the checklist to be completed for all modes of plant operations, and to require off-going and oncoming operators to review logs and walkdown the specific control boards applicable to the turnover being completed.

At the present time, the ACDs do not give specific requirements for the exchange of information between the equipment and auxiliary operators. The ACD will be revised to include the information to be turned over on shift relief, and the log will provide the checklist data to be discussed during turnover.

These revisions will be completed prior to the startup from the next refueling outage scheduled for March - May 1983.

MAINTENANCE

PREVENTIVE MAINTENANCE

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

Finding (MA.5-1)

The following Good Practice was noted: The scope, execution, and control of the Preventive Maintenance Program has contributed to the excellent performance and reliability of plant equipment. The strong management involvement, the scheduling technique utilizing the corporate computer, the quality of the preventive maintenance procedures, and enthusiastic support by plant personnel have contributed to the success of this program.

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
52	Satisfactory
38	Not applicable
58	Pending
2	Further review needed

The following recommendations are pending action:

SOER Number	Recommendation Number
80-4	1
81-4	3
81-5	2
81-8	1
81-9	2a
81-10	1
81-14	1
81-15	1a,b,c, 2a,b,c, 3
81-17	1, 2, 3
82-1	1, 2a,b,c,d, 3
82-4	1, 2, 3, 4, 5, 6
82-6	1, 2a,b, 3, 4, 5
82-7	1, 2, 3, 4a,b,c,d,e,f, 5
82-8	1, 2, 3, 4
82-9	1, 2, 3, 4, 5, 6, 7, 8, 9

The following recommendations need further review:

SOER Number	Recommendation Number
81-5	4
81-6	2

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)

Information in the Nuclear Plant Reliability Data System (NPRDS) data base contains inaccuracies and omissions. Additionally, submittal of failure reports to NPRDS was discontinued in 1980.

Recommendation

Continue the current review of the existing NPRDS data base for suitability, accuracy, and completeness, and submit corrections where needed. Resume timely submittal of reliability information for equipment contained in the NPRDS data base.

Response

Submittal of failure reports and the associated equipment's engineering data base, updated according to the current NPRDS scoping manual, will be initiated in January 1983. The current Kewaunee NPRDS data base review and revision, as well as submittal of pre-1983 failure/reliability information, is expected to be completed by September 1983.

Finding (TS.3-2)

Preliminary evaluation of industry event reports is not always timely. Additionally, reviews of the program effectiveness have not been conducted, and the program does not require a periodic independent evaluation of the classifications given to industry events.

Recommendation

Consider assigning the review of industry event reports to a specific individual, as is currently being done for in-house events. In addition, for both in-house and industry event review programs, establish guidelines on the length of time allowed to complete the reviews. Periodically review the effectiveness of the events program in meeting its objectives. Establish a periodic, independent evaluation of the classifications assigned to industry events.

Response

An individual has been assigned the responsibility for ensuring the timely review of industry event reports. Commencing in 1983, independent personnel will annually review the program for effectiveness, including the appropriateness of the action taken.

REACTOR ENGINEERING

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

Finding (TS.5-1)

The following Good Practice was noted: Comprehensive controls are used for station-developed computer software. These controls accomplish the following:

a. provide documentation and technical review of the content of software

b. ensure that software is verified against alternate calculations prior to being used for plant operation

c. provide security controls to prevent unauthorized changes to software

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TECHNICAL SUPPORT PROCEDURES AND DOCUMENTATION

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

Finding (TS.7-1)

Procedure control systems do not always ensure that when new procedures are issued all other affected procedures are revised as appropriate. Several Reactor Instructions (RIs) contain procedural guidance that has been superseded by other Reactor Engineering Procedures. These RIs have not been canceled or revised and are still distributed for use with the Reactor Data Book.

Recommendation

Review administrative controls for procedures and ensure that when new procedures are issued all other affected procedures are considered for revision or cancellation. Cancel or revise RIs that contain superseded information.

Response

The ACD for procedure control will be revised by January 1983 to emphasize the need for the review and identification of other affected procedures and documents when new procedures are issued. Identified documents will be canceled or revised as needed.

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)

Training objectives, policies, and personnel responsibilities have not been established; as a result, several plant training programs have not been implemented. It is recognized that a plan to increase the scope of responsibility and staff size of the training group has been approved and is now being implemented.

Recommendation

Establish the objectives, policies, and responsibilities of the training group and implement the reorganization plan. Implement those training programs that have been identified but not yet established.

Response

WPS is presently implementing a newly defined training group organization. This organization structure will have four supervisors reporting to the nuclear training supervisor. These supervisors (simulator, science curriculum, license training, and general training) will have appropriate staffing to carry out defined training programs in operator, shift technical advisor, health physics, first aid, maintenance, fire protection, indoctrination, and emergency plan training. Chemistry and health physics proficiency training along with instructor training will also be provided. These changes to the training organization will be reflected in applicable control directives.

Overall, WPS's Nuclear Training Group is committed to providing excellent, current, and state-of-the-art technical and scientific educational experiences for its staff. It is anticipated that the training organization as herein described will be in place by June 1983.

Finding (TQ.1-2)

Some health physics, chemistry, instrumentation and controls, and non-licensed operator personnel are performing job functions without prior formal qualification. This results from inadequate implementation of the on-the-job qualification programs.

Recommendation

Establish responsibilities for and ensure that all on-the-job qualification requirements are met prior to assigning plant personnel to responsible positions or functions.

Response The WPS Nuclear Training Group shall, in concert with personnel from the Plant Operations Group, review the status of current on-the-job qualification programs. On-the-job sign-off sheets will be reviewed, modified as applicable, and implemented by January 1984. In the interim, appropriate portions of existing on-the-job qualification requirements will be used. Personnel will not be assigned to perform job functions until their qualification requirements are met.

Finding (TQ.1-3) **Lessons learned from in-house and industry events are not used effectivcly as feedback to the training program.** For example, appropriate information from Kewaunee LERs is not used in operator retraining.

Recommendation Determine applicable lessons learned from in-house and industry events and use this information in conducting the plant training and retraining programs.

Response A system is currently in place by which the nuclear training staff is kept abreast of lessons learned from both in-house and industry-wide events. Greater attention will be given to incorporating these lessons learned into operator initial training and requalification programs, and to enhancing the effectiveness of the on-shift reading/training regarding these lessons learned. LERs and operating experience assessments will be reviewed and, where appropriate, incorporated into the next retraining cycle.

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) **Some non-licensed operators are not knowledgeable in areas such as plant systems, procedures, and health physics practices.** The present initial training program for non-licensed operators does not address the above areas in a comprehensive manner. Additionally, existing training is not always completed prior to assignment to independent watchstation duties. A continuing training program for equipment and auxiliary operators has not been developed.

Recommendation Assess knowledge and skill deficiencies of equipment and auxiliary operators. Expand the scope of the initial training to include these areas. Establish responsibilities to ensure this training is completed prior to operators assuming independent shift duties. Provide a continuing training program to maintain and improve non-licensed operators' knowledge and to keep operators abreast of applicable equipment and procedure changes.

Response Training guides have been developed to provide equipment and auxiliary operators appropriate initial training prior to assuming independent shift duties. The effectiveness of these training guides will be reviewed, the guides revised where necessary, and their use implemented by December 1983.

Additionally during 1983, the training and operations groups will review and evaluate the on-the-job performance of auxiliary and equipment operators. An appropriate retraining program will then be developed.

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) **The on-the-job qualification manual for liceused operators needs to be revised.** Tasks are not defined in sufficient detail to indicate what actions are required to satisfactorily complete checkouts.

Recommendation Conduct a review of the on-the-job qualification manual for licensed operator personnel and implement measures to improve the effectiveness of this program. The following elements should be included:

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

b. Specify the skill and knowledge level required for each task.

c. Identify individuals or classifications of individuals qualified and responsible for conducting on-the-job training and final checkouts.

Response In regard to the "on-the-job" qualification manual:

a. Tasks will be identified as to the method of training to be used.

b. Statements clarifying the minimum knowledge required for each task will be added to the reactor operator (RO) signature folder.

c. The identification of authorized individuals qualified and responsible for on-the-job training and final checkout of an employee will be added to the RO signature folder.

These actions will be completed by January 1984.

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 comprehensive initial training program, including a structured on-the-job qualification program, for all new mechanical, electrical, and instrumentation and controls maintenance personnel has not been implemented. Also, a continuing training program has not been established to maintain qualification and keep maintenance personnel abreast of applicable equipment and procedure changes.

Recommendation

Develop initial, on-the-job, and continuing training programs for maintenance personnel. These programs should establish the content, evaluation methods and standards, training methods, and implementation responsibilities for this training. Implement the initial and on-the-job training programs to develop the knowledge and skills necessary to perform assigned maintenance tasks. Implement the continuing training program to maintain and improve the knowledge and skill level desired and to keep maintenance personnel abreast of applicable equipment and procedure changes.

Response

The training group has developed various training guides for all maintenance groups. These guides outline the basic skills and knowledge that are necessary for maintenance personnel to work in a safe and effective manner. Signature sheets are included to document the completion of each skill/knowledge section.

During 1983, the training group, along with representatives of various maintenance groups, will review and evaluate the present program. This review will include the establishment of a continuing training program for maintenance personnel. Necessary revisions will be made and the revised program covering initial, on-the-job, and continuing training will be implemented by January 1984.

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)

Personnel do not always adhere to plant radiological protection procedures and practices when working in radiologically controlled areas. Examples include the following:

a. Practices for controlling radioactive contamination are often not followed.

b. Dose rate meters are not always used by plant personnel for entry into posted high radiation areas.

c. Personnel do not always minimize their radiation exposure while conducting routine work.

d. Extended Radiation Work Permits, intended for routine, repetitive activities, are used for some non-routine work, where radiological conditions could significantly change.

Recommendation

Plant procedures and plant policy, as defined in the Radiation Protection Manual, should be reviewed for consistency and to ensure that they accurately reflect management intentions. Emphasis should be placed on procedural adherence in plant training programs and in the supervision of plant work. Appropriate measures should be implemented to monitor procedural adherence on an ongoing basis. The specifics noted in this finding should be included in these actions.

Response

The Radiation Protection Policy Manual, which is currently being revised, will be issued in January 1983. The existing policy requiring procedural adherence along with the type of examples discussed above will be stressed with the entire plant staff. This will be done at a staff meeting with supervisors and at safety meetings with the rest of the plant personnel by December 1982. Results of this effort will be monitored and reviewed as a portion of the ongoing procedure adherence effort addressed in finding OA.1-1. Future training for all work groups will reflect the importance of procedural adherence.

EXTERNAL RADIATION EXPOSURE

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

Finding (RP.4-1)

Plant beta-gamma radiation survey meters are not checked for response to beta radiation during calibration. Although neutron survey instruments are periodically response checked to a neutron source, they do not receive a full primary calibration. These neutron survey meters are used for assigning worker neutron dose.

Recommendation

Continue with current plans to acquire beta and neutron calibration sources and implement procedures for their use in calibrating plant radiation survey meters.

Response

Plans to acquire beta sources for instrument calibrations are continuing. This acquisition has been budgeted and a purchase order will be issued by February 1983.

Use of a neutron source for on-site instrument calibrations is under study using current industry information. A neutron source will be acquired or a certifiable calibration facility will be utilized as soon as the appropriate course of action is established.

RADIOACTIVE CONTAMINATION CONTROL

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

Finding (RP.9-1)

The following Good Practice was noted: There is an effective and aggressive program for radioactive contamination survey, cleanup, and the prompt repair of contaminated system leakage. This has minimized radioactive contamination levels in the plant.

Finding (RP.9-2)

The following plant practices could result in the unnecessary spread of radioactive contamination to plant areas, equipment, and personnel:

a. Vacuum cleaners without high efficiency particulate air (HEPA) filters are used in contaminated areas.

b. Area contamination warning signs and step-off pads are not consistent within the controlled area.

c. Provisions were not made to enable workers to remove outer protective clothing and/or frisk near the work site for several jobs that had a significant potential for the spread of contamination.

Recommendation Review and revise the current practices for contamination control described in the finding, including the following:

a. Use only vacuum cleaners with HEPA filters in contaminated areas.

b. Post as contaminated only those general zones that are contaminated and establish step-off pads at the entry to these zones. Appropriately identify other localized contaminated areas, e.g., drip trays, leaky valves, and pump leakoffs.

c. For work where the spread of contamination is likely, set up control points that will allow workers to frisk and remove protective clothing which is contaminated. Guidelines for the levels or conditions at which this is done should be defined in plant procedures.

Response The following actions will be taken:

a. Use of vacuum cleaners without HEPA filters will be phased out in controlled areas as filtered vacuum cleaners are acquired. In the interim, use of non-filtered vacuum cleaners will be restricted. Implementation of HEPA filtered vacuum cleaners is targeted for the next refueling outage scheduled for March-May 1983.

b. The identification of localized contaminated areas is a continuing high priority effort. Measures will be taken to minimize general zone posting by the end of the next refueling outage.

c. It is plant policy to establish control points during the conditions described above. This policy will be emphasized and further defined. Guidelines will be established to determine when a local control point is to be used considering items such as contamination levels and work conditions. This action will be completed by the end of the next refueling outage.

CHEMISTRY

CHEMISTRY CONTROL

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

Finding (CY.3-1) **The following Good Practice was noted: An aggressive program exists to control oxygen in the feedwater system through prompt repair of conditions that would allow air in-leakage into the condensate and makeup water systems.**

LABORATORY ACTIVITIES

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

Finding (CY.4-1) **Most chemistry results are not graphed to permit trending.** Additionally, out-of-specification results are not identified on log sheets to facilitate daily review.

Recommendation Routine chemistry data should be graphed to facilitate trend review by applicable management personnel. Log sheets should be modified to include minimum and maximum allowable values for the analyses being recorded. Out-of-specification results should be identified on the logs and corrective action indicated.

Response Methods are established and parameters will be graphed/trended when specific phenomena require further investigation. Out-of-specification results will be identified on the log and data sheets. This will be implemented by April 1983. Logs and data sheets are routinely reviewed for changes by the chemistry supervisor and the technical services superintendent. Furthermore, reports are presented daily to the plant supervisory staff.

Finding (CY.4-2)

The quality control program for verification of analytical performance by chemistry technicians should include the following:

a. periodic analyses of spiked samples on key parameters for all technicians who will be required to perform the analysis

b. analyses of split radioactive samples with an off-site facility on a periodic basis to provide comparative results and ensure accuracy

c. identification of chemical and reagent expiration dates

d. assurance of the purity of the laboratory demineralized water by using a resin column for purification and measurement of the conductivity with a flow cell

Recommendation

The quality control program for performance of chemistry analyses should be reviewed and expanded as necessary. INPO's Good Practices CY-701, "Quality Control Program for Chemistry Instruments," and CY-702, "Verification of Analytical Performance," could be of assistance in this effort.

Response

The quality control program will be expanded using the INPO Good Practices as the basis for the revised program. Implementation is expected by July 1983.

Finding (CY.4-3)

Sample counting times are too short to allow adequate resolution between actual sample counts and background fluctuation when performing gamma isotopic identification of reactor coolant samples.

Recommendation

Extend the counting time with the gamma spectrometer to allow adequate resolution of the isotopes in the sample.

Response

Sample counting procedures will be re-evaluated to ensure the selection of the proper analytical method by July 1983.

CHEMICAL AND LABORATORY SAFETY

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

Finding (CY.5-1)

Storage of laboratory chemical and reagent needs improvement. Flammable chemicals are not stored in approved fireproof storage lockers, acids and bases are stored together, and large amounts of dry chemicals are stored in an open cabinet in personnel work areas.

Recommendation

Improve chemical storage conditions to correct the identified conditions.

Response

Current laboratory chemical and reagent storage practices are under active review. The findings of the review should be available by July 1983 with necessary corrective action completed by September 1983.

Finding (CY.5-2)

Improvement is needed in plant practices to ensure personnel safety when handling bulk chemicals such as hydrazine, sodium sulfite, alum, and pelyelectrolyte.

Recommendation

Personnel safety requirements for handling chemicals should include the following:

a. procedures specifying the protective clothing required when handling hazardous chemicals

b. wearing of respiratory protection (MSA orange cannister or equivalent) or monitoring the local atmosphere when handling hydrazine

Response

Bulk chemical handling practices are currently under review by plant personnel and the corporate safety committee. Safety procedures will be implemented and appropriate clothing and storage lockers will be purchased to facilitate personnel safety by September 1983.

APPENDIX 1

Summary of Outstanding Response Action from Previous Evaluation (1980)

ORGANIZATION STRUCTURE

(INPO Procedure OA-102, Revision 2)

2. **Finding** (Reference Criterion B)

Written and approved position descriptions defining authority, responsibility, and accountability are not available for every plant position. Some positions have brief job descriptions. Others have only drafts and responsibility statements for a few key positions available in the Administrative Control Directives.

Recommendation

Develop approved position descriptions in sufficient detail for objective performance evaluations; they should define authority, responsibility and accountability for every plant position.

Response

The personnel department of Wisconsin Public Service plans to have position descriptions prepared for all supervisory, union, and non-union positions by the end of 1981. The INPO recommendations and development of the Task Analysis program by INPO will be considered during the development of position descriptions.

Status

Typed drafts for all supervisory, union, and non-union position descriptions are being reviewed by plant management. Approval and issuance of these position descriptions will be completed by March 1983.

USE OF PROCEDURES

(INPO Procedure OP-304, Revision 1)

1. **Finding** (Reference Criterion C)

There is no prescribed document control mechanism for control of operating procedures being maintained at local control stations outside the control room.

Recommendation

A document control system should be established which ensures that these procedures are controlled and updated when revisions or changes are made.

Response

An ACD will be written to provide a mechanism to control procedures routinely kept in remote stations outside of the control room. This ACD will be written and implemented prior to July 1, 1981.

Status

Procedures at local control stations are being properly maintained. Issuance of an ACD has been delayed by higher priority work. The ACD will be written and implemented prior to October 1983.

2. **Finding** (Reference Criterion D)

There are no approved alarm response procedures provided for quick and appropriate operator response to abnormal alarm conditions. Such procedures have been partially developed and are used by the Control Operators to some extent. However, existing procedures are not complete or maintained current and instructions for use of these procedures are not defined.

Recommendation

The alarm response sheets should be finalized and approved and formal guidance issued to operators regarding their use.

Response

We agree that alarm response sheets would be of great value. We have not been able to complete this project due to higher priority items taking precedence. We will proceed with finalizing and issuing these alarm response sheets, but expect this to be a long-term project. This effort will be fully underway by June 1, 1981.

Status

Alarm response sheets are currently about 40 percent completed with a with total completion to be accomplished by September 1983.

OPERATIONS FACILITIES AND EQUIPMENT
(INPO Procedure OP-306, Revision 1)

Finding (Reference Criterion D)

The Gaitronics phone public address alarm system is not powered from a vital power source and therefore cannot be relied upon in some accident situations. In addition, the paging system is not understandable in some normally occupied areas of the plant.

Recommendation

A reliable power supply should be provided to the Gaitronics phone system that will allow continued operation of this system under emergency conditions when all non-vital power is not available. Also, additional speakers should be provided so that the public address system is understandable in normally occupied areas of the plant.

Response

A Design Change Request (DCR) has been initiated and is in progress. This DCR has been given a very high priority. Expected design completion is in the very near future with installation dependent on parts delivery and contractor availability.

Status

The Gaitronic phone public address alarm system has been modified to provide power from a vital power source. Modifications have been completed to provide satisfactory paging system performance in all areas except the annulus area. This DCR will be completed during the next refueling scheduled for March-May 1983.

ALARA PROGRAM
(INPO Procedure RC-502, Revision 1)

1. **Finding** (Reference Criterion A)
Although an informal ALARA program is in place, there is no written comprehensive policy statement regarding ALARA.

Recommendation
The company should develop and promulgate a written management policy for ALARA.

Response
A written program to provide for ALARA policy will be established with implementation complete by September 1, 1981.

Status
The ALARA policy procedure is undergoing draft revision and will be completed by January 1983.

2. **Finding** (Reference Criterion D)
Exposure goals are not routinely set for major jobs and performance is not evaluated against goals or against previous performance. In practice, job specific goals have been set and monitored for some types of radiological work. The plant currently possesses the two major tools necessary to implement ALARA goals and review performance against these goals:

1. The Radiation Work Permit (RWP) system and

2. A computerized exposure records management system.

Recommendation
Beginning with the next refueling outage, identify the major exposure jobs (by reviewing past data), establish manrem goals (estimates) and track each job (by RWP) to monitor performance and identify means of reducing exposures during future work.

Response
This practice is done for major exposure jobs. We will expand the current practice to all appropriate major activities and publish the results for management review of progress. The additional goal outlined in the recommendation will be addressed for consideration in the plant manpower review.

Status
Personnel exposure to radiation continues to be controlled for major exposure jobs. Expansion of this practice to include other significant exposure work, and to provide for preplanning that establishes manrem goals, evaluation of post-work results, and lessons learned to be used during future work of a similar nature will be incorporated by the next refueling outage scheduled to begin in March 1983.

RESPIRATORY PROTECTION PROGRAM
(INPO Procedure RC-511, Revision 2)

1. **Finding** (Reference Criterion A)

Written plant policies do not address the use of engineering controls, emergency use of respirators or the allowable period of use for respirators and provisions for relief from use.

Recommendation

Conduct a review of existing plant procedures against regulatory guide 8.15, NUREG 0041 and 29CFR 1910.134 and upgrade as necessary to comply with the requirements in these documents.

Response

A plant respiratory manual has been prepared which addresses the items of concern in this finding. This manual was prepared utilizing regulatory guidance, code of federal regulations, and other NRC guidance. This manual will be made an operational plant document similar to our commitments to the ALARA program.

Status

The plant respiratory manual is being revised to incorporate review comments and will be issued and implemented by January 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.