

EVALUATION OF THE FORT CALHOUN
NUCLEAR STATION RADIATION
PROTECTION ENHANCEMENT PROGRAM

A REPORT SUBMITTED BY:

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1.0 EXECUTIVE SUMMARY

Quadrex Environmental Company was contracted by the Omaha Public Power District (OPPD) to evaluate the status of the Fort Calhoun Nuclear Station Radiation Protection Enhancement Program. Dr. Wilson C. McArthur and Mr. B. George Kniazewycz performed the evaluation during the period of September 18 to September 29, 1989.

Three primary goals for the evaluation were determined as follows:

1. Evaluate the general attitude of the Radiation Protection Department as related to the Radiation Protection Enhancement Program.
2. Evaluate the Radiation Protection Department commitments that encompass the enhancement program and determine if the results and/or direction taken are adequate and meet or exceed industry practices/standards.

In addition to these commitments, three audits were conducted over the past two years that have resulted in 374 items identified (findings, concerns, and recommendations). These audits were performed by Stone and Webster, Chemston, and Hydro-Nuclear Services. These items were reviewed as a part of the evaluation.

3. Evaluate the effectiveness of the Radiation Protection Enhancement Program to meet its assigned mission and recommend changes or additions that would contribute to the enhancement program and support the concept of meeting or exceeding industry practices/standards.

The Radiation Protection Enhancement Program was initiated in the fall of 1988 with a commitment to review the status of the enhancement program twelve months later. This report is designed to satisfy this commitment.

ATTITUDE

The attitude evaluation consisted of eleven (11) questions with six (6) questions receiving a numerical rating from 1 to 10 (1 being low and 10 as excellent) and five questions requiring a verbal response. Overall, the responses were positive in that the nineteen (19) people interviewed reported a better than average nuclear program at FCS and a better than average attitude toward the success of the Radiation Protection Enhancement Program. The verbal response questions were directed toward identifying what specific tasks should be accomplished to further enhance the program. Most of the verbal responses centered around five areas: 1) record keeping should be a high priority, 2) Panasonic TLD System operation, 3) data-base management system operation (PRISM), 4) phasing in new procedures, and 5) implementation of new Access Control Plan.

COMMITMENTS

The commitments that serve as the basic Enhancement Program are well under full control by the Radiation Protection Department with milestones being met. Of the 131 items on the November 10, 1989 Commitment Tracking System List, practically all were in one of the following categories:

- o Closed
- o Superseded, or
- o Date targeted for completion with high confidence of completion on schedule

The evaluation team researched each of the 131 commitment items from both a reported status by the responsible FCS person and a confirmation of the status by observation of the corrective action (e.g., item #49 - Whole Body Counting Program - Please implement a program to perform random whole body counting of personnel performing work in radiologically uncontrolled areas. The evaluation team reviewed the prepared response, the effected procedure and change, the fact that ten percent of those using respirators are whole body counted, and compared this practice with the rest of the industry. The resolution for Item #49 is adequate, meets industry practices and will be closed shortly by licensing.) Each of the 131 commitments were evaluated in this manner.

Similarly, the 374 item audit "punch-list" was evaluated and items were categorized as one of the following:

- o Closed by reference to corrective action taken,
- o Closed as non-applicable at FCS with reason,
- o Covered by Commitment Tracking System, and
- o Considered to be opinion of auditor and not a necessary requirement for FCS

The Enhancement Program, as defined by the Commitment Tracking System, is considered by the evaluation team to provide the resources for an effective Radiation Protection Program. The additional 374 item-list is considered to be a good "check-source" as qualified individuals have provided their input via audits of the FCS Radiation Protection Program.

The corrective actions taken for increased staffing, selection of personnel, the Respiratory Protection Program and the Instrumentation Program, deserve recognition. The staff has almost doubled, providing infusion of new personnel and adequate time for training. Staffing is substantially above previous levels and reflects OPPD's commitment to

enhancing the radiation protection function. All of the three supervisory positions are filled by personnel new to OPPD. While this may cause some short-term adjustment problems, the overall impact is considered positive as new skills and experience are brought to the FCS program. Discussion with these new individuals reveals technical competence, a professional attitude and support of the programmatic changes at OPPD. It is expected that these individuals will raise the program to a pro-active and effective level commensurate with the goals of the department, plant, and OPPD. The major challenge of the human resource element of the program will be to execute these interfaces during a hectic 1990. This has been discussed with the line supervision and their support is evident. Goals and objectives for 1990 are being considered at this time (October 1989).

Radwaste facilities appear adequate, especially with the upcoming completion of the Radwaste Building. Attention to detail of the turnover and start up are necessary to ensure that the facility is readily integrated into the plans for 1990 and beyond.

Organizational interfaces including Training, Operations, Chemistry, Maintenance and others need to be formalized and strengthened. This should occur as the new supervisory personnel complete their assimilation into FCS.

EFFECTIVENESS

The enhancement program is considered by the evaluation team to be effective in the development of an efficient and well organized Radiation Protection Program. One can look at the last few months of operation and see that the following factors demonstrate the transition to a quality program:

- o Lack of enforcement action in the Radiation Protection Program.

- o Performance indicators are on target and/or moving in a positive direction, and
- o Overall morale is good with acceptance of personnel to meet upcoming challenges.

Regarding recommendations to enhance the Program, consideration should be given to:

- 1) Implementing the Planned Access Control Modifications
- 2) Developing the Data Base Management program for use throughout the Radiation Protection Department
- 3) Closely evaluating a Radiation Litigation (Litigation Avoidance) Program
- 4) Providing Root-Cause-Analysis training for coordinators and supervisors
- 5) Implementing an ALARA Awareness training program for engineering, maintenance, I&C, operations, etc.
- 6) Paying close attention to the division of responsibilities for the Supervisor Radiation Protection and the Corporate support efforts.
- 7) Developing a computerized Radwaste Management Program for waste processing, storage, transportation and disposal.

One must keep in mind that a major effort has been made to arrive at this point in the enhancement of the Radiation Protection Program. The Plan had to be developed first - that has been accomplished. The basic elements of the program have been up-graded, as follows:

- o Procedures implemented September 1, 1989,
- o New organization with a full complement of personnel,
- o Resources, i.e., equipment, space and facilities, are either in place or completion date has been set, and
- o Milestone dates are being met.

One might say that all the "ingredients" are in place - new staff members, revised procedures, new facilities, and resources. Therefore, the program will require some time to develop the working relationships and to "fine-tune" the program. This should be a positive time with a goal of approximately one year to complete an excellent Radiation Protection Program. There is a potential for a SALP 1 rating for the Radiation Protection Program at the end of this evaluation period, however, one should not be dismayed if a SALP 2 is given. If progress continues, one would expect a definite SALP 1 rating during the next evaluation period.

The program, in summary, is evaluated to be effective when compared to industry practices/standards. The challenge is taking these elements and integrating the human elements into it. The establishment of definitive goals and objectives in 1990, coupled with aggressive management support, are expected to result in the continuation of a successful and effective R.P. program.

2.0 INTRODUCTION

The Quadrex Environmental Company (QEC) was contracted by the Omaha Public Power District (OPPD) via contract No. S048828 dated August 30, 1989 to perform an independent assessment of the Fort Calhoun Station (FCS) Radiation Protection Enhancement Program.

Dr. Wilson C. McArthur was selected as the evaluation team leader due to his many years of experience in the nuclear industry and based upon his expertise in performing evaluations of this nature. Dr. McArthur was assisted by Mr. B. George Kniazewycz, an expert in the packaging, handling, transportation and burial of radioactive waste. The resumes of Dr. McArthur and Mr. Kniazewycz are included as Appendix 1.

The SALP report for Fort Calhoun Station for the period October 1, 1986 to April 30, 1988 reported weaknesses in Radiological Controls grading the performance as a 3. The previous SALP report, from March 1, 1985 to September 30, 1986 graded the Radiological Controls Program at a level 2. Specific concerns in the October 1, 1986 to April 30, 1988 SALP report were:

- Lack of proper management oversight
- Violations identified during this period resulted in two penalties being assessed based on three Severity Level III violations with corrective action not considered effective.
- Procedures were identified as fragmented and difficult to follow and personnel were not familiar with them.
- Staff size was considered adequate but not sufficient to include training/retraining.
- The Radwaste program was considered well defined and only had received two deficiencies identified by the licensee's quality assurance department.

The NRC recommended that the improvement program should be finalized with major milestones identified and completion dates established.

The SALP report covering the period of May 1, 1988 through April 30, 1989 indicated an overall improvement in the management and operation of FCS. Radiological Controls were upgraded from a 3 to a 2. The NRC stated that FCS should continue on-going efforts and complete the implementation of the radiological protection enhancement program. During the enforcement conference a discussion of an event concerning individuals entering a high radiation area (VHRA) without proper dosimetry took place.

Several independent audits/evaluations were performed over the last few years that pointed to definite weaknesses in the RP Program when compared to industry standards. These audits are in addition to those audits and assessments performed by the Nuclear Regulatory Commission (NRC) and the Institute of Nuclear Power Operations (INPO) respectively.

In addition to interim audits by OPPD, the following audits/evaluations were conducted:

1. Chemston
2. Stone and Webster
3. Hydro Nuclear

As a result of the NRC, INPO, internal OPPD and the three independent audits/evaluations, an FCS Enhancement Program evolved. One of the tasks in the Enhancement Program, which was initiated in late 1988, was to use an independent firm to evaluate the progress of the FCS Enhancement Program after one (1) year. That is the primary purpose of this report.

To accomplish the identified primary purpose, QEC and OPPD personnel agreed to the following goals for the FCS Enhancement Program evaluation:

1. Evaluate the general attitude of the Radiation Protection Enhancement Program.
2. Evaluate the Radiation Protection Department commitments that encompass the Enhancement Program and determine if the results and/or direction are adequate and meet or exceed industry practices/standards.

3. Evaluate the effectiveness of the Radiation Protection Enhancement Program to meet its assigned mission and recommend changes, or additions, that would contribute to the Enhancement Program and support the concept of meeting or exceeding industry practices/standards.

Consistent with these goals, the evaluation contains the following sections:

<u>Section</u>	<u>Title</u>
1	Executive Summary
2	Introduction
3	Radiation Protection Enhancement Program Evaluation
4	Summary

Appendices

Appendix 1	Resumes
Appendix 2	Persons Contacted During Evaluation
Appendix 3	References

3.0 Radiation Protection Enhancement Program Evaluations

The FCS Radiation Protection Enhancement Program evaluation was performed during the period of September 18, 1989 through September 29, 1989.

The evaluation consisted of several steps consisting primarily of:

1. Interview of RP personnel,
2. Review of previous audits by the NRC, evaluations performed by INPO and audits/evaluations performed by Chemston, Stone and Webster, Hydro Nuclear and OPPD
3. Independent review of the following documents:
 - FCS Radiation Protection Plan
 - OPPD Nuclear Policy Manual
 - RP Procedures
4. Walk-through and observation of radiological work practices
5. Comparison of FCS RP program elements to INPO criteria and good practices as observed in the industry.

One must keep in mind that the purpose of this evaluation was to determine the "status" of the FCS RP Enhancement Program not to perform a detailed audit resulting in findings, concerns and corrective actions. With this purpose identified, the evaluation centered around two documents:

1. Commitment Tracking System List consisting of 131 tasks identified as the "Enhancement Program".
2. Radiation Protection Enhancement Program Action Plan which contains 374 action items as "gleaned" from the following sources:
 - Nuclear Regulatory Commission
 - Institute of Nuclear Power Operation

- Stone and Webster Engineering Company
- OPPD
- Chemston
- Hydro-Nuclear Services

The Commitment Tracking System List was considered the main working document for the Enhancement Program. Therefore, major emphasis was placed on evaluating the status of these tasks. The second document was considered to be a good "check-source" in which well qualified individuals have provided their input via audits/evaluations of the FCS Radiation Protection Program. Most of the independent audits/evaluations were provided early on. The Hydro-Nuclear Services audit, however, is more recent and systematic in its approach. The 374 action item list contains all of these findings, concerns and/or recommendations. Some of these items are redundant. However, to be thorough, all items are addressed.

As described in Section 2, the three primary goals for the evaluation are centered around the words:

- Attitude
- Commitments, and
- Effectiveness.

The evaluation proceeded using these principle concepts.

ATTITUDE

The goal was to "evaluate the general attitude of the Radiation Protection Department as related to the Enhancement Program." Nineteen people responded to the eleven questions that are shown in the questionnaire in Table 2-1. Six of the questions required a numerical answer with a response between one and ten, with one being the lowest evaluation and ten being the highest evaluation. The remaining five questions are used to highlight concerns and accomplishments. It is recognized by the evaluation team that this is a very subjective analysis, however, our experience has

shown that the referred questions do give a measure of overall attitude and can determine a trend that may prove detrimental to the program if unchecked. In most interview cases, the individual being questioned was in a controlled and comfortable situation with the further instruction that the information was to be used as a "rough" measurement and that individual responses would not be passed on to others.

As one can see from Figure 2-1, the overall response was better than average. These questions have been used at other nuclear power plants with a much greater overall negative response than seen at FCS. Individually, there were only a few measurements below five in response to the six questions. There was certainly a good general attitude that the RP Enhancement Program would result in a better RP program.

The five verbal response questions provided information that appeared consistent, relative to general concerns or attitudes toward what the RP department personnel considered priority items and/or areas that should receive attention.

The items that provided the greatest response were:

- o Concern for the radiation exposure record-keeping process. Most of those that stated a concern were aware that efforts are being made to clear the active records and then to resolve the inactive records. Present schedule shows active records completed this year and in-active records requiring a full year thereafter. Litigation probability was stated as the prime concern.
- o Need to formalize Data-Base-Management use throughout the RP department. For example, current radwaste shipping manifests are prepared by hand.
- o Many questioned the need for a Corporate Radiation Protection Support group with one operating nuclear plant.
- o Access control needs to be improved.

- o The general attitude is that present plant management (Peterson) will listen to problems - this creates a good cooperative attitude
- o There is a perceived culture difference between those that have been at FCS for five-plus years and the more recently hired personnel.
- o Performance Indicators appear to be showing that there is better control of the plant now.
- o New procedures, in general, are good. Opinion ranges from "full of bugs" to "a few bugs need to be worked out".

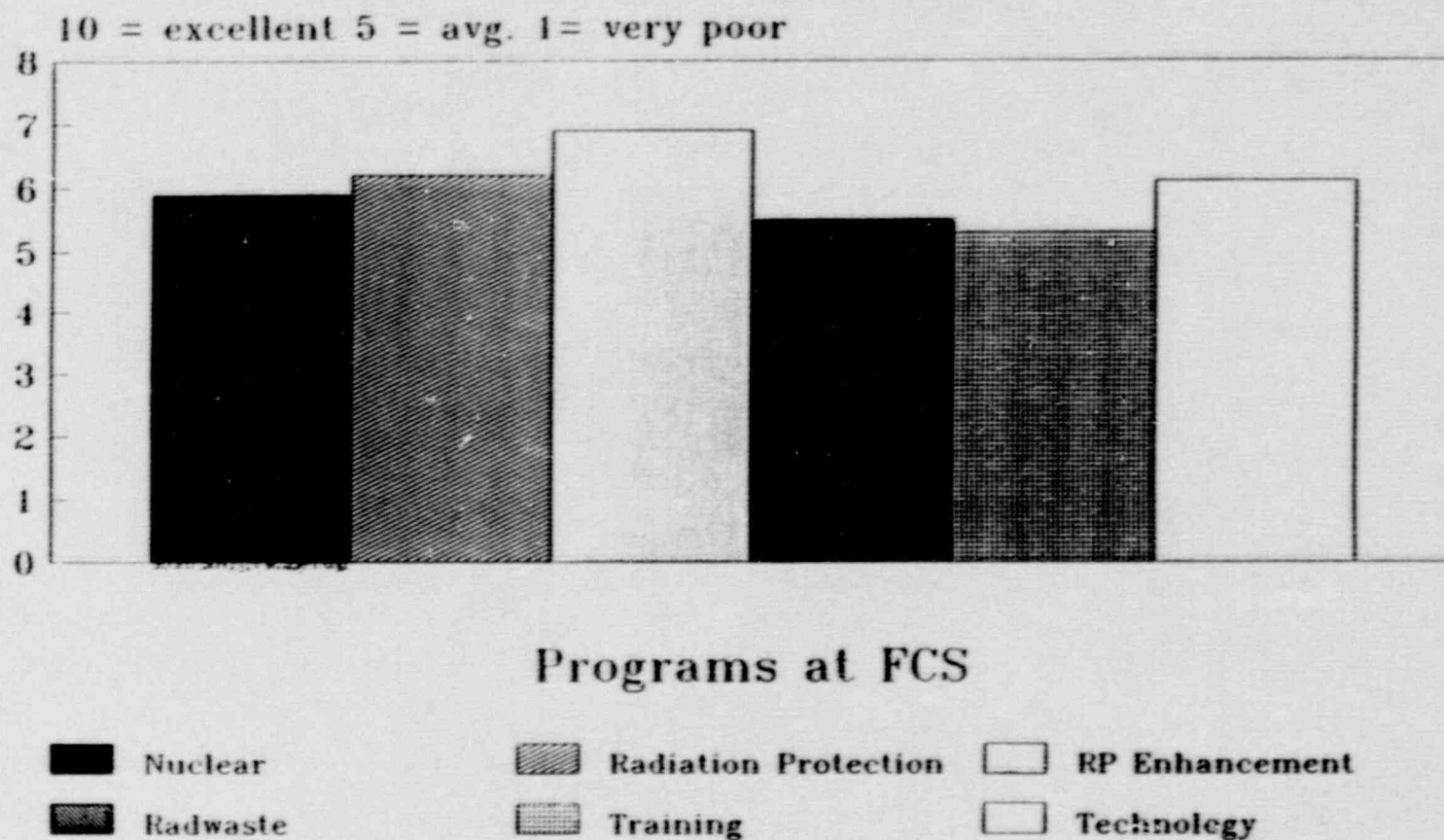
TABLE 2-1

RADIATION PROTECTION DEPARTMENT QUESTIONNAIRE

1. Based on your knowledge of the industry, other power plants, vendors, etc., how would you evaluate the nuclear program at FCS?
2. Based on your knowledge of other RP programs in the industry, how does the FCS RP program compare in overall quality?
3. Does the completion and full implementation of the RP enhancement program give the vision of a more effective or efficient RP program?
4. Based on your knowledge of the industry, how does the FCS radwaste program measure-up?
5. How would you rate the training that you have received at FCS?
6. Based upon your knowledge of RP technology, how does the FCS RP equipment, resources and facilities measure-up from the viewpoint of meeting state-of-the-art and/or industry standards?
7. What would you consider to be the three highest priority items to be accomplished in the RP program?
8. What would you consider to be the three highest priority items to be accomplished in the FCS radwaste program?
9. What would you consider the strengths of the FCS RP program to be?
10. What would you consider the strengths of the FCS radwaste program to be?
11. What one thing would you do to improve the RP program if you had the resources and the management support to do so?

FIGURE 2-1

FCS ATTITUDE SURVEY



Commitments

The Commitment Tracking System List was the resource used to take a "snap-shot" view of the RP Enhancement Program. Each of the 131 tasks were reviewed as to current status and then a member of the evaluation team observed the results of the response where feasible. For example, item #49, Whole Body Counting Program, the evaluation team reviewed the prepared response, the revised procedures and the commitment to Whole Body Count ten (10) per cent of those using respirators. The evaluation team observed the fact that ten percent of those using respirators were receiving whole body counts. This practice is consistent with good industry practices and will be closed shortly by licensing. The evaluation team addressed each of the 131 tasks in a similar manner. Table 3-1 provides a brief review of the status for each of the 131 tasks that make up the Commitment Tracking System List. Of the 131 tasks, the following status has been determined:

- 103 are closed
 - 11 are under review by licensing for closure
 - 8 have been superseded
 - 9 are open tasks
- 131 total

Each of the open tasks has been addressed, assigned and are scheduled for completion.

Table 3-2 addresses the additional 374 item list. These items were categorized as one of the following:

<u>Category</u>	<u>Definition</u>
1	Closed by reference to corrective action taken
2	Closed as non-applicable to FCS with reason
3	Covered by Commitment Tracking System
4	Considered to be opinion of auditor and not a necessary requirement for FCS.

The majority of these items have either been fully resolved or were integrated into the Commitment Tracking System. As previously stated this list serves as a good "check-source" to make sure that concerns have been addressed.

Since the initiation of the Enhancement Program, the RP staff has doubled in size and has selected three experienced supervisors that report to the Supervisor-Radiation Protection. While this may cause some short term adjustments, the overall impact of the recently hired and experienced supervisors is a positive addition as new skills and expertise are brought to the FCS program. Discussions with these recently hired supervisors reveals technical competence, a professional attitude and full support of the programmatic changes at FCS. With their capabilities, it is expected that they will have a positive impact and revise the program to a pro-active and effective level commensurate with the goals of the department, plant, and OPPD. The major challenge of the human resource element of the program will be to effectively integrate these new supervisory styles during an expected hectic 1990. This integration process has been discussed with the newly hired line supervision and their support is evident. Since this is the appropriate time to review and develop goals for 1990, this goal development process should be an excellent way to bring the supervisors into a common-focus-organized team plan.

Radwaste facilities appear adequate, especially with the upcoming completion of the Radwaste Building. Attention to detail of the turnover and start-up are necessary to ensure that the facility is readily integrated into the plans for 1990 and beyond.

The evaluation revealed that the recommendations/commitments relating to radwaste have been met by the combination of additional personnel; new organization arrangements; new, revised and upgraded programs and implementing procedures; new facilities under development; and enhanced management support.

With the new RP organization in place, interfaces with training, operation, chemistry, maintenance, I&C, and others need to be formalized and strengthened. This should occur as the new supervisory personnel complete their assimilation into FCS.

EFFECTIVENESS

The measurement of effectiveness of a program is subjective and depends strongly on the experience of the evaluators and their expertise to assess status with a short "snapshot" view of the program. With this in mind, the evaluation team depended upon several factors in evaluating program effectiveness. These factors are:

1. Attitude - How do the incumbents feel about the program? Do they believe that they are part of a good and improving program?
2. Industry Practices/Standards - Based upon previous audits and evaluations performed by the evaluation team, a set of industry practices/standards have been developed. These are based upon NRC requirements, INPO standards, good practices and experience, and comparing strong and weak RP programs in the industry.
3. "Track Record" - How well has the program performed over the most recent span of time?
4. Commitments to Enhance the Program - Are the set of commitments conducive to improving the program?
5. Management Support - Again, a subjective measure. However, based upon experience, certain factors become important.

ATTITUDE

FCS RP personnel exhibit a better than average attitude as measured in the brief attitude evaluation described in Table 2-1. Perhaps as important was

the attitude "felt" by the evaluators during the two-week on-site survey. There was an "air" of commitment to improving the RP program. The Supervisor-Radiation Protection has a track record in the industry for performing well and exhibiting good people management. Similar attitudes were observed in the outlook of the three supervisors. Therefore, attitude was considered a positive attribute of the Enhancement Program.

INDUSTRY PRACTICES/STANDARDS

Although not required for the evaluation, audit-check documents were used that reference NRC regulations, INPO documents, good practices, etc. These documents are normally used for a detailed audit of an RP program. The purpose for using these documents was to validate the program against industry practices/standards.

Overall, the FCS RP program meets good industry practices/standards as now described with some items scheduled for implementation shortly.

TRACK RECORD

As referenced in Section 2, the FCS RP has recently climbed from a SALP 3 to a SALP 2. The RP Enhancement Program was initiated in the fall of 1988. These two factors plus the selection of an experienced Supervisor-Radiation Protection and key supervisors that report to this position indicate a commitment to RP program improvement.

If one looks at the last few months of operation, several factors begin to demonstrate the transition to a quality program:

- o Lack of enforcement action in the RP program.
- o Performance indicators are demonstrating improvement.
- o Overall morale is good with acceptance of personnel to meet upcoming challenges.

A good, positive track-record is developing.

COMMITMENTS TO ENHANCE THE PROGRAM

It is the decision of the evaluation team that the RP Enhancement Program is conducive to improving the RP program. That is, the Enhancement Program can bring the RP program to a point -- a point at which the program must operate with all the "new things" for a period of time to work out potential problems. For example:

1. New procedures were just implemented - September 1, 1989.
2. New key personnel have recently filled lead positions.
3. Resources i.e. equipment, space and facilities, are either in place or a completion date has been set.
4. Milestone dates are being met.

All the factors above, when put together, "define" an RP program that should be at or above industry standards. However, the program will require some time to develop the relationships and to "fine-tune" the program. This is a positive position to be in and a period of one (1) year should lead to a program of excellence in RP. The FCS RP Department is meeting milestone dates.

MANAGEMENT SUPPORT

The RP program is properly focused and with management's continued support, should reach the goal of a SALP 1 evaluation shortly.

One of the goals of the evaluation was to recommend those items that, in the opinion of the evaluation team, would further enhance the RP program. In this mode, the following considerations are offered:

1. Implementing the planned Access Control Modifications - traffic levels are too high in outage situations and adds to the confusion and pressure of these important functions.
2. Developing the Data-Base-Management program for use throughout the RP Department - the use of computer software is not always the best way. However, in some instances, where large numbers of records, statistics and tracking/trending are involved, much time and accuracy can be gained.
3. Closely evaluate a Radiation Litigation (Litigation Avoidance) Program - The current record up-date is proceeding in the right direction. The completion of inactive records is important. The importance doesn't center so much around a completion date as it does an active effort to bring the records up-to-date. In the nuclear industry there is a concern that utilities be prepared to handle such litigation by management concern for oversight and audits of programs and activities. The position should be that "we have done everything reasonably possible within the present technology to protect our employees, contractors and the public from harmful effects of the plant's environment."
4. Provide Root-Cause-Analysis training for coordinators and supervisors - there are some excellent training programs available in this area. Not the highly analytical approaches but the down-to-earth "how do we find the specific reasons for the problem and correct this problem for good?"
5. Implement an ALARA awareness training program for engineering, maintenance, I&C, operations, etc. This is already under consideration by FCS management.

6. Pay close attention to the division of responsibilities for the Supervisor-Radiation Protection and the Corporate Support efforts - as un-professional as it may seem, some one-unit utilities have had much difficulty with this problem. However, success has been accomplished with professionals and a clear-cut division of responsibilities.
7. Develop a computerized Radwaste Management Program for waste processing, storage, transportation and disposal - the cost of burial for low-level waste and the potential for violations in transportation, once this waste leaves the hands of the utility and is controlled by others, dictates that extreme care be taken. There are many inexpensive programs on the market and a good programmer working with a knowledgeable radwaste expert can develop a software program post-haste.

The Radwaste Management Program including the Process Control Program, Waste Minimization Program and Contamination Control Program have been developed and implemented through a large number of new and/or revised procedures. Both the programs and procedures require a period of "tweaking" to ensure their operability and pertinence to the practices at FCS. This is on-going and should continue for a period of three to six months. Several observations are made for FCS consideration as follows:

- a. The Process Control Program (PCP) should be examined to ensure "mixed wastes" are adequately addressed.
- b. The PCP presented in RW-200 should be examined for consistency with RW-AD-100 and other "programmatic" procedures and programs which directly or indirectly interface.
- c. It is suggested that all process parameters, sampling characteristics, plant design features, etc., relating to the PCP be examined and documented somewhere to minimize future questions or concerns relating

to factors such as representative sampling, scaling factors, PCP process boundaries and conditions, waste characteristics, etc. The PCP is programmatic in nature and should be relatively independent of vendor services or changes in hardware since it addresses FCS' efforts to control waste treatment processes.

- d. The list of references in Section 6 of RW-AD-100 is of limited use since I.E. bulletins, industry practices, etc., are issued on an infrequent but continuous basis and should be reviewed against the FCS programs and procedures when received. If procedures such as RW-AD-100 are revised every time a new bulletin or notice is issued, the administrative problem can be substantial with negligible benefit. Similarly, listing references of particular revisions of a procedure, manual or regulation also adds substantial administrative problems in attempting to revise procedures on a continuous basis. For example, changes to Department of Transportation rules or State disposal licenses are quite common.

The handling of hazardous waste on-site should be closely examined to ensure the interface with Radwaste is appropriate at FCS. This applies to storage, handling and transportation. The shipping of hazardous waste and radioactive wastes by two organizations may cause many problems for FCS. The value of a single, highly-trained organization dealing with radwaste mixed waste and hazardous waste should be evaluated.

The substantial paperwork requirements for radwaste classification, inventory, storage and shipping make computerization and automation a very important part of an effective radwaste program. The automation of FCS procedures and practices dealing with these waste management activities should be given serious consideration and a high priority.

The handling, analysis and disposal of very low-level radioactive materials and wastes ("Below Regulatory Concern" - BRC), should receive substantial attention in FCS radwaste activities during the next year. This is important in ensuring the new radwaste facility is fully utilized to support FCS needs in the 1990s in areas such as waste segregation, storage, etc.

As with any complex program, the success of the RP program can only be determined when compared to clearly established goals and objectives. These are needed for 1990 and should be specified at all organizational levels.

4.0 SUMMARY

One must keep in mind that a major effort has been made to arrive at this point in the enhancement of the Radiation Protection Program. The Plan had to be developed first - that has been accomplished. The basic elements of the program have been up-graded, as follows:

- Procedures implemented September 1, 1989.
- New organization with a full complement of personnel.
- Resources, i.e., equipment, space and facilities, are either in place or completion date has been set.
- The Commitment Tracking System Concerns and Responses are approximately 85% closed.
- Milestone dates are being met.

One might say that all the "ingredients" are in place - new staff members, revised procedures, new facilities, and resources. Therefore, the program will require some time to develop the working relationships and to "fine-tune" the program. This should be a positive time with a goal of approximately one year to complete and excellent Radiation Protection Program. There is a potential for a SALP 1 rating for the Radiation Protection Program at the end of this evaluation period, however, one should not be dismayed if a SALP 2 is given. If progress continues, one would expect a SALP 1 rating during the evaluation period.

The program, in summary, is evaluated to be effective when compared to industry standards. The challenge is taking these elements and integrating the human elements into it. The establishment of definitive goals and objectives coupled with aggressive management support, are expected to result in a successful and effective Radiation Protection Program.

APPENDIX 1

RESUMES

Dr. Wilson C. McArthur
Mr. B. George Kniazewycz

QUADREX ENVIRONMENTAL COMPANY

Wilson C. McArthur

MANAGER, DECONTAMINATION AND DECOMMISSIONING

Experience Highlights

- o Directed and performed consulting in the areas of management and team development, training, radwaste, radiation protection, and performed audits and evaluations for utilities. Developed and improved new technological concepts such as Boric Acid Reclamation, High Integrity Containers, and Robotics.
- o Has recently directed several major field projects in decontamination and decommissioning.
- o Directed the efforts of a leading radwaste service and equipment company.
- o Principal Project Engineer for a Pressurized Water Reactor, directed the interface with the engineering and construction organizations. Provided original design for PWR radwaste system and backfit design for BWR radwaste system.
- o Held the lead position in directing the technological direction and business development efforts of the Texas Nuclear Corporation after the company was purchased by the Nuclear Chicago Corporation.
- o Responsible for organizing Quality Circles and Independent Review Teams (IRT).
- o Has served as President of the state/local sections of the American Nuclear Society and Health Physics Society.
- o Published and presented over fifty technical papers and reports in the fields of radiation protection instrumentation, waste management, computer applications, organization and management, and quality circles.
- o Developed technology exchange programs in the Far East and Europe.

Professional Experience

1987 - Present

Quadrex Environmental Company, Gainesville, Florida.
Manager, Decontamination and Decommissioning.
Responsible for the technical and project management efforts of QEC in the areas of management development, training, radiation protection, radioactive and hazardous waste management. Field services projects include decontamination of a tritium contaminated facility, decommissioning of an incinerator and decontamination of a DOE extruder facility.

1982 - 1987

KLM Engineering, Incorporated, Walnut Creek, California. Principal. Responsible for developing, maintaining and assuring the quality of work. Responsible for radwaste, radiation protection consultation and new business development. Specific areas of expertise were management and organization review, training, radiation protection, ALARA,

radioactive and toxic chemical waste processing, storage, packaging, shipment, and burial. Experienced in engineering services, specifically decontamination and decommissioning technology, transportation and field processing of waste. Was involved in the development of Robotics, High Integrity Containers, and Membrane Technology (Boric Acid Reclamation).

Assisted several utility organizations at nuclear power plants in developing a positive management style. This process consisted of an audit of existing programs and corrective action through procedural changes, development of management processes, and improved training programs. Devoted a considerable amount of time and effort to working with health physics organizations and Plant Superintendents in both BWR's and PWR's during the startup and operational phases, helping them develop a full understanding of their individual roles, as well as the relationship of health physics to the rest of the plant.

1978 - 1982

EDS Nuclear (now Impell) and TERA Corporation
Division Manager for both Impell and TERA. Successfully managed a consulting group primarily concerned with solving the industry's day-to-day problems in health physics and handling of wastes, both radioactive and toxic-chemical. The effort resulted in a number of conceptual designs for the backfit of radioactive waste processing systems. Expertise in ALARA methodology was developed in the process of creating several completed dose reduction (ALARA) programs and in the performance of plant ALARA and radiation protection audits. Developed a technology exchange program in Japan, Republic of China, and Italy.

1977 - 1978

Hittman Nuclear and Development Corporation
Vice President and General Manager. Directed a field services organization that packages and transports radioactive waste (fuel cycle and non-fuel cycle) to burial grounds. Responsibilities also included the design of low-level radioactive waste containers and the development of waste processing equipment. Directly responsible for decontamination decommissioning, and unusual radwaste problem projects. Experience includes responsibility for the design, manufacturing, and installation of radwaste solidification systems, both cement and polymer.

1971 - 1977

Carolina Power & Light
Was Principal Project Engineer for the Shearon Harris Nuclear Power Plant. Functions included design, construction interface, and the management of 75 engineering personnel. Prior to the position, was

responsible for Radwaste Retrofit Designs at H.B. Robinson 2, Brunswick 1 and 2, and Shearon Harris, and innovative direction in Health Physics programs at all CP&L plants.

1967 - 1969

Nuclear Chicago Corporation/ Texas Nuclear
Experience includes the design and fabrication of radiation monitoring equipment and low-energy particle accelerators. Both nuclear power plants and high-energy physics laboratories are a part of this design experience. Involved in original research for the development of the Thermally Stimulated Emission of Exo-electrons (TSEE) dosimetric concept.

Education

- o Ph.D., Radiological Physics, Purdue University, 1970
- o M.S., Radiation Physics, University of North Carolina, 1965
- o B.S., Physics, East Carolina University, 1963

Professional Affiliations, Registration, Licenses, Societies, and Awards

- o Nuclear Engineer, State of California Registration #1717
- o Certified Hazards Control Manager - Masters Level Registration #1337
- o American Nuclear Society, Past President of North Carolina Section
- o Chairman, Edison Electric Institute, Steam Generator Safety Valve Committee
- o Member of several AIF Committees
- o Who's Who in Technology, 1981 - present
- o Who's Who in the West, 1980 - present

Selected Presentations and Publications

- o "Characterization of the North Carolina State University Research Reactor for Radiological Experimentation," Masters Thesis, University of North Carolina, 1965.
- o "The Dosimetric Properties of Lithium Fluoride using Thermally Stimulated Emission of Exo-Electrons," Doctoral Thesis, Purdue University, 1971.
- o Ziemer, P. L., McArthur, W. C., McManaman, V. L. and Smith, G. O., "Characteristics of Selected Phosphors for Stimulated Exo-Electron Emission", RISO Report 249, Danish AEC, Riso, Roskilde, 1972.
- o "Proposed 10CFR50 Appendix 1 A Developing Ratchet," Health Physics Society Annual Meeting, 1974.
- o "A Radwaste System Philosophy and Design for the 1990's," Health Physics Society Annual Meeting, 1974.
- o "RUBY - A Dynamic Radioactivity Model," Health Physics Society Annual Meeting, 1974.
- o "Design Methods for Reducing In-Plant Exposure," Health Physics Annual Meeting, 1974.
- o "Reduction of In-Plant Personnel Exposure - Operating Experience as a Design Feedback," 1975.
- o "Responsibility Begins at 21 or ?," Health Physics Annual Meeting, 1975.

- o "Is Your Exposure as Low as Practicable?," Power Engineering, August 1975.
- o "A Nuclear Power Plant Radiation Monitoring System," Health Physics, Pergamon Press, September, 1975.
- o "Radiation Monitoring Systems: Current Status and Future Prospects," invited Keynote Speaker, 1977 IEEE Annual Meeting, San Francisco, California.
- o "Health Physics Problems Associated with the Dismantling and Decontamination of the Illinois Institute of Technology Research Institute (IITRI) Reactor," Health Physics Annual Meeting, 1978
- o "Light Water Reactor Waste Management System Emphasis Upon Volume Reduction (by Membrane Technology) and Economics," Topical conference on Reactor Operating Experience, Arlington, Texas, August 1979
- o "The Status of Low-Level Radioactive Waste Disposal How to Plan a Disaster," Mid-Year Health Physics Society Symposium on Low-Level Waste Management, 1979.
- o "ALARA From Working Level to Management," Health Physics Society Annual Meeting, Seattle, Washington, July, 1980.
- o "Volume Reduction - Its Impact on Ionizing Radiation Exposure of Power Plant Personnel," Health Physics Annual Meeting, Seattle, Washington, July, 1980.
- o "A Computer-Based ALARA Cost Benefit Analysis for Operating Plants," American Nuclear Society Power Division Topical Meeting, Columbia, South Carolina, March 28-31, 1982.
- o "Data Requirements for Meaningful Long-Term Epidemiology Study of the Commercial Nuclear Power Industry," 16th Health Physics Society Mid-Year Topical Symposium, Albuquerque, New Mexico, January 9-13, 1983.
- o "The Role of 'Quality Circles' in Nuclear Power Plant Operation," Health Physics Society Annual Meeting, Baltimore, Maryland, June, 1983.
- o "Application of Microcomputers in Strengthening On-Site Health Physics at Nuclear Power Plants," Health Physics Society Annual Meeting, Baltimore, Maryland, June, 1983.
- o "Laboratory Requirements and Procedures for Compliance with the Requirements of 10CFR61," Health Physics Society Annual Meeting, Baltimore, Maryland, June, 1983.
- o "Pre-Operational Nuclear Power Plant Radiation Protection Programs," Health Physics Society Annual Meeting, Baltimore, Maryland, June, 1983.
- o "ALARA: Working Level to Management - An Update," Radiation Protection Management, Vol. 1, No. 2, January 1984, pp. 15-24.
- o "You Get What You Pay For - Applications of Computers in Health Physics Programs at Nuclear Power Plants," Health Physics Society Annual Meeting, New Orleans, Louisiana, June, 1984.
- o "Litigation Management - A Practical Approach," Health Physics Society Annual Meeting, Chicago, Illinois, May 26-31, 1985.
- o "Quality Circles in Nuclear Plant Operations," Invited Paper - ASQC Energy Division, San Francisco, California, April 10, 1985.
- o "High Integrity Containers," Waste Management '86 Symposium, Tucson, Arizona, March, 1986.
- o "The Implementation of Remote Technology for Decontamination Activities," 19th Annual Mid-Year Health Physics Society Symposium, Knoxville, Tennessee, February, 1986.

- o "Impact of 10CFR20 Changes on Radiological Controls," Invited paper at the 1988 IEEE Symposium on Nuclear Power Systems, November 10-12, 1988.

RESUME

B. GEORGE KNIAZEWYCZ

Mr. Kniazewycz has nearly 20 years of experience in the hazardous and radioactive waste management area and is a recognized expert in the design of radwaste, waste water, volume reduction, and solidification systems. He has extensive experience in operational health physics, radiation monitoring, and operational support systems for nuclear power plants. Mr. Kniazewycz is responsible for KLM's radwaste and hazardous waste management, decontamination, decommissioning, remediation and computer-related activities for nuclear fuel cycle, non-fuel cycle and hazardous waste facilities. His recent work has involved the development of hazardous waste processing facilities for energetic and hazardous wastes, introduction of mobile robotics into nuclear power plant environments, and development of utility radwaste processing programs from the corporate level through actual plant radwaste organization. He has been responsible for the design, specification, and purchase of radwaste system components for the Breeder Reactor and various LWRs, and has published numerous articles on radiation protection, radwaste management and computer and robotic applications in nuclear plants. Recent R&D activities have involved development of High Integrity Containment Systems, an innovative application for gas permeable membranes for LWR gaseous waste processing and development and commercialization of KLM's Boric Acid Reclamation System. Mr. Kniazewycz is currently directing development programs for robotic applications in hazardous environments, membrane technology based process systems, development of nuclear and medical waste versions of KLM's proprietary High Integrity Containment Systems.

Besides these developmental activities, Mr. Kniazewycz has directed various decontamination, decommissioning and remediation projects which have utilized various developed technologies, practices and procedures. These include the use of mobile robotics to survey highly radioactive and inaccessible spill areas, disposal of chemotherapeutic waste and remediation of a major hospital's chemical laboratories, and D&D planning including all radiological planning for a \$15 million BWR radwaste refurbishment and upgrade. Other studies and projects include the permitting of an mobile infrared incinerator in Southern California and project planning and related engineering studies to develop a multi-incinerator hazardous waste treatment site.

Prior to this, as Manager of Technology Assessment for a large engineering services firm, Mr. Kniazewycz developed plans and programs for computer-aided design (CAD) and engineering (CAE) activities as well as other computer-based services. When with a large consulting firm, he was responsible for all consulting services relating to ALARA and health physics programs, decommissioning, radwaste and water treatment, security, reliability and maintainability analysis, and operating nuclear plant support. This included the development, installation and startup of the industry's technically most sophisticated nuclear security system for a twin unit BWR. Mr. Kniazewycz has performed numerous studies of nuclear and hazardous waste activities involving spent fuel, high-level waste, TRU waste, low-level fuel cycle and non-fuel cycle waste streams, and has performed numerous radwaste, chemistry and health physics audits of operating LWRs. Mr. Kniazewycz's A/E experience includes responsibility for the design, specification, and purchase of the various radwaste system components which comprise the Clinch River Breeder Reactor Plant radwaste system. This included a redefinition of the potential waste streams and initiation of system design changes to incorporate appropriate state-of-the-art technology. He provided guidance relative to the cost-benefit design of ALARA for in-plant radiation exposure.

Mr. Kniazewycz has extensive utility experience with a major southeast utility. This includes positions as test coordinator for periodic tests (including waste processing systems, CVCS, and

miscellaneous systems during a PWR refueling), and work on a twin-unit BWR startup test review and system modifications relating to radwaste. Other engineering experience included preparation of specifications for volume reduction, solidification, and other miscellaneous radwaste systems. Mr. Kniazewycz was also responsible for the conceptualization of a computerized digital radiation monitoring system presently utilized throughout the nuclear industry. He established the utility's ALARA design guide and program, which became the basis for a large A/E's ALARA design of a four-unit FWR and other nuclear plants.

Mr. Kniazewycz revised an LWR radwaste design to include use of reverse osmosis for floor drain treatment and laundry waste processing, expanded liquid radwaste treatment to include additional evaporators and fluid bed dryer technology to produce a "free-flowing radwaste solid" for solidification, and expanded the scope of water inventory analysis and control by providing a data-logging computer coupled with an interactive control board interfaced to the computerized radiation monitoring system. As lead radwaste engineer for all nuclear projects, he continued similar work and set design criteria for a new three-unit PWR. He prepared specifications and procured a new solidification system, waste evaporator, ultrasonic resin cleaner, and retrofit backflushable filters.

Education

B.E., Chemical Engineering, Vanderbilt University, Nashville, Tennessee, 1969

M.S., Nuclear Engineering, University of Tennessee, Knoxville, Tennessee, 1971

Professional Affiliations, Registration and Licenses, Societies and Awards

Professional Engineer, State of North Carolina
Registration No. 6962

Chemical Engineer, State of Louisiana
Registration No. 19792

Nuclear Engineer, State of California
Registration No. 1959

AEC Traineeship, 1970-1971

AIChE, ASME, Health Physics Society, AITE, IEEE, SME, ANS, and NSPE

Working Committee - ANS N33.3 Hydrogen Control in Primary Containment, 1973-1974

Working Committee - Atomic Industrial Forum, 1986-87

AIChE, National Speakers Bureau Tour participant 1976-1977

Member, Chemical Engineer Product Research Panel 1975-1978

ASME Radwaste System Committee Member, Utilities Subcommittee, 1976-present

Utilities/Manufacturers Robotic Users Group 1986-Present

National Society of Professional Engineers - Legislative Government Affairs Committee - Policy Issue Expert

Who's Who in Technology, 1981 - present

Who's Who in the West, 1980 - present

Selected Presentations and Publications

"Design Methods for Reducing In-Plant Exposure," Health Physics Annual Meeting, 1974.

"RUBY - A Dynamic Radioactivity Model," Health Physics Society Annual Meeting, 1974.

"Proposed 10CFR50 Appendix I A Developing Ratchet?," Health Physics Society Annual Meeting, 1974.

"A Radwaste System Philosophy and Design for the 1990's," Health Physics Society Annual Meeting, 1974.

"The Treatment of Radwaste by Reverse Osmosis - Conception to Operation," invited ASME paper, No. 77 PWR-27, September, 1975.

"Is Your Exposure as Low as Practicable?," Power Engineering, August, 1975.

"A Nuclear Power Plant Radiation Monitoring System," Health Physics, Pergamon Press, September, 1975.

"Reduction of In-Plant Personnel Exposure - Operating Experience as a Design Feedback," 1975.

"Responsibility Begins at 21 or ?," Health Physics Annual Meeting, 1975.

"The Role of Volume Reduction Processes in LWR Radwaste Treatment," ASME paper 76-WA/NE-5, December 5, 1976.

"Reduction and Control of Nuclear Power Plant Internal Wastes," presented NCSE-76, Engineering in a Changing World," November, 1976.

"The Environmental Hazards of Radioactive Waste Disposal," AIChE National Speakers Tour, November, 1976.

"Volume Reduction - A New Technology for the '80's," Reactor Radwaste Management Workshop, January, 1977, New Orleans, Louisiana.

"Is the Steel Drum the Answer?," Symposium: Management of Low-Level Radioactive Waste, May 23-27, 1977, Atlanta, Georgia.

"An Integrated Health Physics Program for Nuclear Power Plant Application, 22nd Annual Health Physics Society Meeting, Atlanta, Georgia, July 5-8, 1977.

"Radiation Monitoring Systems: Current Status and Future Prospects," invited Keynote speaker, 1977 IEEE Annual Meeting, San Francisco, California.

- "Design and Operating Considerations for Commercial LWR Volume Reduction Systems," ANS, August, 1977.
- "Production of Solidified High-Level Wastes--A Cost Comparison of Solidification Processes," UCRL 13740, August, 1977.
- "Economic Considerations for LWR Radioactive Waste Management Systems," paper and lecture, ASME Radioactive Waste Management Course, September, 1977, Chicago, Illinois.
- "An Analysis of Capital and Operating Costs Associated with High-Level Waste Solidification Processes," UCR 80064, 1978.
- "Radioactive Waste Management Study: Review of Waste Projection Models," NUREG/CE-0032, July, 1978.
- "Solidified High-Level Radioactive Waste Technology: A Review of the Available Information Data Base for the Generic Environmental Impact Statement for Radioactive Waste Management," 1978.
- "LWR Radioactive Waste Management System, An Overview with Emphasis Upon Material Science," Material Performance, Volume 18, No. 11, pp. 39-45, November, 1979.
- "Characteristics of Defense High-Level Waste," NUREG/CR-0685, May 1979.
- "Light Water Reactor Waste Management System Emphasis Upon Volume Reduction (by Membrane Technology) and Economics," Topical Conference on Reactor Operating Experience, Arlington, Texas, August, 1979.
- "Spent Fuel Data Base: Commercial Light Water Reactors," UCRL 15186, 1979.
- "LWR Radioactive Waste Management System, An Overview with Emphasis Upon Material Science," Material Performance, Volume 18, No. 11, pp. 39-45, November, 1979.
- "Security: From Regulations to Operations - A Case History," invited paper, 1979 Winter ANS Meeting, November 11-15, 1979.
- "Inventory and Sources of Transuranic Solid Waste," UCRL 15239, March, 1980, Revision 1.
- "Transuranic Contaminated Waste Functional Definition and Implementation," UCRL 15229, March, 1980.
- "Transuranic Contaminated Waste Container Characterization and Data Base," UCRL Report, April, 1980.
- "ALARA From Working Level to Management," Health Physics Society Annual Meeting, Seattle, Washington, July, 1980.
- "Volume Reduction - Its Impact on Ionizing Radiation Exposure of Power Plant Personnel," Health Physics Annual Meeting, Seattle, Washington, July, 1980.
- "Transuranic Contaminated Waste Form Characterization and Data Base," Volumes 1-3, UCRL Report, July, 1980.

- "Current Status of Volume Reduction Technology," invited paper at the Deep South Chapter of the Health Physics Society Seminar, August 8-9, 1980.
- "Volume Reduction Techniques in Low-Level Radioactive Waste Management," Volume 1-3, NUREG Report, in preparation (1980).
- "The Role of 'Quality Circles' in Nuclear Power Plant Operation," Health Physics Society Annual Meeting, Baltimore, Maryland, June 1983.
- "Application of Microcomputers in Strengthening On-Site Health Physics at Nuclear Power Plants," Health Physics Society Annual Meeting, Baltimore, Maryland, June 1983.
- "Laboratory Requirements and Procedures for Compliance with the Requirements of 10CFR61," Health Physics Society Annual Meeting, Baltimore, Maryland, June 1983.
- "Pre-Operational Nuclear Plant Radiation Protection Programs," Health Physics Society Annual Meeting, Baltimore, Maryland, June 1983.
- "ALARA: Working Level to Management--An Update," Health Physics Society Annual Meeting, Baltimore, Maryland, June 1983.
- "Review of Operating LWR Experience with Membrane Technology," Waste Management '83 Symposium, Tucson, Arizona, 1983.
- "The Economic Impact of Regional Waste Disposal on Advanced Volume Reduction Technologies," Waste Management '83 Symposium, Tucson, Arizona, 1983.
- "Data Requirements for Meaningful Long-Term Epidemiology Study of the Commercial Nuclear Power Industry," 16th Major Topical Symposium, Health Physics Society, Albuquerque, New Mexico, 1983.
- "ALARA: Working Level to Management An Update," Radiation Protection Management, Vol. 1, No. 2, January 1984, pp. 15-24.
- "Lessons Learned from HP Computer Systems Startups and Audits," Proceedings of the 17th Midyear Topical Symposium of the Health Physics Society, Pasco, Washington, February 5-9, 1984.
- "Long- and Short- Term Radwaste System Changes at the South Texas Project," Waste Management '84 Symposium, Tucson, Arizona, March 1984.
- "Development and Fabrication of a Prototype Fiberglass Container for DOT Type A Radioactive Waste," DOE/ER/80104-7, April 1984.
- "Assessment of Economic Implications of 10CFR61 on the South Texas Project," Waste Management '84 Symposium, Tucson, Arizona, March 1984.
- "Development and Fabrication of a Prototype Fiberglass Container for DOT Type A Radioactive Waste," DOE/ER/80104-7, April 1984.
- "You Get What You Pay For--Applications of Computers in Health Physics Programs at Nuclear Power Plants," Health Physics Society Annual Meeting, New Orleans, Louisiana, June 1984.

- "Operational Radiation Protection Programs: The Management Perspective," Health Physics Society Annual Meeting, New Orleans, Louisiana, June 1984.
- "Nine Mile Point Unit 1 Radwaste Modifications--Health Physics Planning," (with T. L. Irving, NMPC), Health Physics Society Annual Meeting, New Orleans, Louisiana, June 1984.
- "Nine Mile Point Unit 1 Radwaste Retrofit Project Detailed Project Analysis," (with T. L. Irving and C. A. Gerber, NMPC), American Nuclear Society Annual Meeting, New Orleans, Louisiana, June 1984.
- "Management Style and Organization Health in a Radiation Protection Program," Radiation Protection Management, October 1984, pp. 67-74.
- "Development of a PWR Waste Boric Acid Reclamation System - A Volume Reduction Technology," DOE/ER/80145-01, June 1985.
- "Integrated Wastewater Treatment Purification System Development," Report BMO-TR-85-41, June 1985.
- "The Implementation of Remote Technology for Decontamination Activities," 19th Annual Midyear Health Physics Society Symposium, Knoxville, February 1986.
- "High Integrity Containers," Waste Management '86 Symposium, Tucson, March 1986.
- "Boric Acid Reclamation System (BARS)," Waste Management '86 Symposium, Tucson, March 1986.
- "A Remote Technologies Application Program at Nine Mile Point," Waste Management '86 Symposium, Tucson, March 1986.
- "Surveyor™ at Nine Mile Point," 31st Annual Meeting of Health Physics Society, Pittsburgh, July 1986.
- "The Surveyor™ Mobile Surveillance System," Radiation Protection Management, Vol. 3, No. 4, July 1986, pp. 71-72.
- "Application of Robotic and Remotely Operated Technology to Hazardous Waste Site Operations and Clean-up," Haztech International Exhibition and Conference, Denver, August 1986.
- "The Implication of Remote Technology for Decontamination Activities - An Update," 1st Regional Conference of ANS, Pittsburgh, September 1986.
- "Experience with the Surveyor™ Mobile Robot in Radioactive Work Environments," The American Nuclear Society 1986 Winter Meeting, Washington, November 1986.
- "Experience of the Surveyor™ Mobile Robot at Nine Mile Point," Waste Management Symposium, Tucson, Arizona, March 1987.
- "Surveyor™ Mobile Surveillance System for Hazardous Environments," Remote Systems and Robotics in Hostile Environments, Pasco, Washington, March 1987.
- "KLM's Boric Acid Reclamation System (BARS) - An Update," Waste Management Symposium, Tucson, Arizona, March 1987.

"Robotic Based Laboratory Automation System for Rocket Propellant Pot Life Measurement," The Pittsburgh Conference and Exposition, Atlantic City, March 1987.

"The Surveyor™ Mobile Surveillance System at Nine Mile Point," Radiation Protection Management, Vol. 4, July/August 1987, pp. 59-66.

"KLM's Optimized BARS for Silica and Waste Removal," 48th Annual Meeting International Water Conference, Pittsburg, November 1987.

"Investigation of the Potential of Bipolar Membrane to Recover Ion Exchange Regeneration Chemical Waste", California Department of Health Services, December 1987

Development of Robotics Application in a Solid Propellant Mixing Laboratory, AFAL-TR-88-028, Air Force Astronautics Laboratory, June 1988

Development of a Disposable Chemotherapeutic Waste Processing System, HQ AFESC/RDVS, Tyndell AFB, FL, November 1989

APPENDIX 2

**PERSONS CONTACTED
DURING EVALUATION**

Persons Contacted During Evaluation

- | | |
|-------------------------|--|
| 1. Mr. Gary Peterson | Plant Manager |
| 2. Mr. John P. Bobba | Supervisor - Radiation Protection |
| 3. Mr. Dave Lovett | Supervisor-Radiation Protection
Operations |
| 4. Mr. Richard Sexton | Supervisor-Radiological Health and
Engineering |
| 5. Mr. Preston Swafford | Supervisor-Radioactive Waste
Operations |
| 6. Ms. Margaret Welch | Radiological Health Coordinator |
| 7. Mr. Ken Steele | Radiological Health Coordinator |
| 8. Mr. Randal Cords | Health Physicist |
| 9. Mr. A.G. Christensen | Radiological Operations Coordinator |
| 10. Mr. Al Rilau | Radwaste Operations Coordinator |
| 11. Ms. Marilyn Hawes | Chemistry Specialist |
| 12. Mr. Craig Crawford | Respiratory Protection Coordinator |
| 13. Mr. Joe Mattice | RWP Surveillance & ALARA
Coordinator |
| 14. Mr. Ed Parsons | Acting Supervisor - Radiological
Health and Engineering |
| 15. Mr. Chuck Anderson | Acting Radiological Instrumentation
& Equipment Coordinator |

16. Mr. Mac McGrath	Acting Radiological Operations Coordinator
17. Mr. Randy Holmgren	Senior Radiation Protection Technician
18. Mr. Ed Gundal	Contamination Control Coordinator
19. Mr. Mark Breuf	Acting Radwaste Operation Coordinator
20. Mr. Steve Gebers	Supervisor-Radiological Services (Corporate)
21. Mr. Scott Dixon	Senior Radiation Protection Technician
22. Ms. Londa Haskell	Radiological Engineering Coordinator

APPENDIX 3

REFERENCES

1. Systematic Assessment of License Performance (SALP)
 - NRC letter dated November 14, 1988 to OPPD covering the period October 1, 1986 through April 30, 1988.
 - NRC letter dated June 2, 1989 to OPPD covering the period May 1, 1988 through April 30, 1989.
2. OPPD Functional Position Descriptions
3. INPO Evaluation of Fort Calhoun, April 1989

INPO Evaluation of Fort Calhoun, April 1988

INPO Evaluation of Fort Calhoun, November 1986
4. "Fort Calhoun Nuclear Power Station Health Physics Program Assessment" Chemston Technology, Inc., May 2, 1988
5. Omaha Public Power District Radiation Protection Program Assessment, July 11, 1988 to July 22, 1988 Hydro Nuclear Services, Inc.
6. Fort Calhoun Nuclear Station, "Radiation Protection Enhancement Program Action Plan", Hydro Nuclear Services
7. Radiological Waste Minimization Policy, OPPD Nuclear Policy Manual, March 31, 1989
8. Policy for Maintaining Exposures to Radiation and Radioactive Material at Fort Calhoun Station as Low as Reasonably Achievable, OPPD Nuclear Policy Manual, March 31, 1989

9. Respiratory Protection Policy, OPPD Nuclear Policy Manual, March 31, 1989
10. Nuclear Operations Division Goals and 1989 Objectives, March 23, 1989
11. ALARA Radiation Exposure Program, Section 11.3, Revision 2, Quality Assurance Plan
12. Occupational Radiation Exposure ALARA (As Low As Reasonably Achievable), Number 9.03, OPPD Supervisor manual, August 1, 1984
13. Response to NRC Inspection Report 50-285/88-05
14. Project Implementation Plan (PR-11) for Occupational Radiation Exposure Management System (OREM), August 25, 1989
15. Complete set of Newly Revised RP procedures
16. OPPD Plan to Respond to Stone and Webster Independent Nuclear Appraisal Recommendations, August 1988
17. Omaha Public Power District, Nuclear Operations Division, Policy/Procedure No. G-1 "Radiation Protection Program Coordinating Group Charter" July, 1988
18. Fort Calhoun Station Unit No. 1, Operating Manual, Administrative Procedures, Standing Order No. G-5, "Fort Calhoun Station Plant Review Committee (PRC)" December, 1988
19. Fort Calhoun Station, Technical Specifications Section 5.5.2 "Safety Audit and Review Committee"
20. Fort Calhoun Station Unit No. 1, Operating Manual Administrative Procedures, Standing Order No. R-4 "Station Incident Reports" November, 1988

21. Fort Calhoun Station Unit No. 1, Operating Manual Administrative Procedures, Standing Order No. R-11 "Notification of Significant Events" January 1989
22. Omaha Public Power District, Nuclear Operations Division, Quality Procedure NOD-QP-12, "Reporting of Defects and Non Compliance to the Nuclear Regulatory Commission" August, 1988
23. Fort Calhoun Station Unit No. 1, Operating Manual Administrative Procedures, Standing Order No. R-3 "Reportable Occurrences" March, 1987
24. Omaha Public Power District, Nuclear Operations Division, Quality Procedure NOD--QP-18, "Management Investigative Safety Team (MIST)" August, 1988
25. Omaha Public Power District, "Quality Assurance Plan for Fort Calhoun Station" August, 1988
26. Omaha Public Power District, Nuclear Operations Division, Quality Procedure, NOD-QP-8, "Nuclear Network System"

COMMITMENT TRACKING SYSTEM LIST

OMAHA PUBLIC POWER DISTRICT COMMITMENT TRACKING SYSTEM

CONCERNS AND RESPONSES

ITEM #	CONCERN #	SUBJECT	TASK	RESPONSE
1	CID840412	RESPIRATORS	REVIEW AVAILABLE EQUIPMENT AND OTHER ALTERNATIVES TO PROVIDE BODY COOLING FOR WARM ENVIRONMENT	CLOSED. EVALUATION CONDUCTED IN FALL OF '88. ICE VESTS AND COOLING MACHINES AVAILABLE FOR USE VIA P.O. 8039053. EQUIPMENT RECEIVED 12/4/88 AND REVIEWED BY THE EVALUATION TEAM AND FOUND TO BE SATISFACTORY.
2	CID850492	RADIOLOGICAL REVIEW: RECOMMENDATION #4	REVIEW RECOMMENDATION IN 30ER REGARDING PERIODIC REVIEWS OF RADIOLOGICAL DEFICIENCIES	CLOSED. PROCEDURES FOR REVIEW ARE FOUND IN RP902, RP903, AND RP904. PROCEDURES REVIEWED BY THE EVALUATION TEAM.
3	CID850601	EXCESSIVE PERSONNEL RADIATION EXPOSURES	DEVELOP IMPROVED METHODOLOGY, RADIATION PROTECTION ENHANCEMENT PROGRAM	CLOSED. SUPERSEDED BY #2 ABOVE.
4	CID860650	ALARA MAN REM FIGURE	COMPLETE A BIENNIAL REVIEW ON MAN REM FIGURE USED IN ALARA COST ANALYSES	CLOSED. BOTH RADIATION PROTECTION MANUAL AND RP303 PROVIDE REQUIREMENT FOR THIS REVIEW. MEMO FC-C-630-88 DOCUMENTED THE BIENNIAL REVIEW OF \$3000/MAN REM. CURRENTLY, RP-303 UTILIZES \$10,000/MAN REM. TO BE EVALUATED DURING BIENNIAL REVIEW OF PROCEDURES
5	CID860683	RADIATION DETECTION	FOLLOW THRU ON PROCEDURE AND IMPLEMENTATION OF STATE OF THE ART EQUIPMENT TO EFFICIENTLY DETECT RADIOACTIVITY	CLOSED. FCS WILL NOT PURSUE RELEASE OF SLIGHTLY CONTAMINATED MATERIAL DUE TO POLITICAL UNCERTAINTY. SEE FC-RP-232-89, DATED 5/3/89 (BOBBA TO FISICARD). NOTE: A BRC POLICY, PERFORMED BY EPRI/MUMARK HAS BEEN PRESENTED TO NRC. BEST ESTIMATES SHOW 10 MONTHS-2 YEARS FOR FINAL REGULATION.
6	CID860684	RAD LEVEL	ESTABLISH A "DEMINIMUS" LEVEL OF RADIOACTIVITY ALLOWABLE TO DISPOSE CONTAMINATED MATERIAL	CLOSED. CURRENTLY, DEMINIMUS LEVELS HAVE NOT BEEN ESTABLISHED. UTILITIES CAN SUBMIT AN EXEMPTION UNDER 10CFR20.302 WITH REASONABLE DEGREE OF SUCCESS BASED ON PREVIOUS SUBMITTALS.
7	CID860813	ALARA MAN-REM FIGURE	COMPLETE A BIENNIAL REVIEW ON \$3000/MAN-REM FIGURE USED IN ALL ALARA COST BENEFIT ANALYSES TO DETERMINE IF IT IS ACCEPTABLE	OPEN. REFERENCE CID86065 BOTH RADIATION PROTECTION MANUAL AND RP-303 PROVIDE FOR A BIENNIAL REVIEW OF \$3000/MAN-REM FIGURE. RESPONSE DUE 11/15/89.
8	CID870466	PASS CAPABILITY: 86 INPO EVALUATION; FINDING EP. 4-1	EVALUATE "PASS" PROCEDURES FOR RADIOLOGICAL HEALTH CONSIDERATIONS	CLOSED. 01-SL-2 OPERATING INSTRUCTIONS REVIEWED BY JOE MATTICE

DPAWA PUBLIC POWER DISTRICT COMMITMENT TRACKING SYSTEM

CONCERNS AND RESPONSES

ITEM #	CONCERN #	SUBJECT	TASK	RESPONSE
				11/30/88 FOR H.P. CONSIDERATIONS. REVIEW WAS DETAILED AND SUFFICIENT.
9	CID8870654	RAD PROTECTION	REVIEW AND UPDATE EXISTING PROCEDURES TO RADIATION PROTECTION MANUAL AND VERIFY SIGN TO VERY HIGH RAD AREAS ARE POSTED	CLOSED. PROCEDURES INCLUDE ADEQUATE REQUIREMENTS. RP-204 CONTAINS VHAIA CONTROLS.
10	CID881460	RESPIRATOR MAINTENANCE	IMPLEMENT IMPROVED MAINTENANCE AND REPAIR PROCEDURES FOR RESPIRATORS AS STATED	CLOSED. COMPLETE NEW SET OF RESPIRATOR PROTECTION PROCEDURES ISSUED 9/1/89. PROCEDURES REVIEWED BY EVALUATION TEAM AND FOUND TO BE DETAILED AND SUFFICIENT. SEE FC-RP-311-89 FOR CLOSURE MEMO.
11	CID881461	RESPIRATORY PROTECTION	CONSOLIDATE & IMPROVE INVENTORY & ISSUANCE PROCEDURES & CONTROLS CONCERNING RESPIRATORY PROTECTION	CLOSED. PROGRAM INCLUDED IN NEW PROCEDURES. SEE FC-RP-309-89 DATED 7/13/89 FOR CLOSURE MEMO. QUANTITY AND QUALITY OF INSTRUMENTS REVIEWED AND COMPARED TO OTHER PWR'S AND FOUND TO BE SATISFACTORY.
12	CID881462	CORRELATION	PROVIDE BETTER CORRELATION BETWEEN DIFFERENT ASPECTS OF THE RESPIRATORY PROTECTION PROGRAM AS STATED	CLOSED. CONCERN IS ADDRESSED ADEQUATELY IN NEW PROCEDURES. SEE FC-RP-347-89 DATED 8/2/89. THE RESPIRATORY PROTECTION PROGRAM PROCEDURES HAVE BEEN REVIEWED BY PRC.
13	CID881463	RESPIRATOR EVALUATIONS	EVALUATE RESPIRATORS PER REG. GUIDE 8.15 & NUREG-0041 TO DETERMINE EFFECTIVENESS AGAINST CHEMICALS, RADIOIODINE, ETC.	CLOSED. FCS HAS NIOSH CERTIFIED RESPIRATORS AND CANNISTERS. EVALUATION TEAM REVIEWED REGULATORY GUIDE 8.15 AND NUREG-0041 REQUIREMENTS AGAINST THE FCS PROGRAM AND DETERMINED THE PROGRAM WAS SATISFACTORY. SEE FC-RP-302-89, DATED 7/5/89.
14	CID881467	FRISKER STATION	UPGRADE THE FRISKER STATIONS AS STATED IN IER 88-05 RESPONSE	CLOSED. FRISKER STATIONS ARE LOCATED ON ALL FLOORS AS OPPOSED TO ONE LOCATION PREVIOUSLY. FRISKER STATIONS WERE OBSERVED POSTED WITH PROPER INSTRUCTIONS FOR FRISKING. SEE FC-C-308-88 DATED 8/16/88.
15	CID881473	MATERIALS	DETERMINE SPECIFICALLY WHICH ANTICONTAMINATION MATERIALS HAVE QUALITY AND AVAILABILITY PROBLEMS	CLOSED. NUMBER AND QUANTITY OF ANTI-C'S, LAB COATS, RESPIRATORS, ETC., WERE REVIEWED AND NEEDS FOR OUTAGES REVIEWED 8/3/88. EVALUATION TEAM REVIEWED THE NEEDS AND FOUND RESPONSE TO BE SATISFACTORY.
16	CID881475	RAD AREA LOCK	IMPLEMENT KEY CONTROL PROGRAM TO	CLOSED. RESPONSE CONTAINED IN S.O.

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CONCERNS AND RESPONSES

ITEM #	CONCERN #	SUBJECT	TASK	RESPONSE
			CONTROL LOCKS IN RCA DOORS OUTSIDE OF CONTAINMENT	G-26, PLANT KEYS, AND RP204, RADIOLOGICAL AREA CONTROLS. DURING EVALUATION THERE WAS A REVISION TO PROCEDURE IN PRC TO ALLOW AN H.P. TECH WITH APPROPRIATE EQUIPMENT TO TRANSIT THE AREA. APPROPRIATE ATTENTION AND RESPONSES TO THIS CONCERN.
17	CID881477	RP PROGRAM DATE	ESTABLISH COMPLETION DATES FOR RESPIRATORY PROTECTION PROGRAM AS STATED IN IER 88-05 RESPONSE	CLOSED. RESPIRATORY PROTECTION PROGRAM COMPLETELY REVISED AND UPGRADED TO MEET INDUSTRY STANDARDS.
18	CID881478	CLOTHING	DEVELOP MINIMUM ACCEPTABLE STANDARDS FOR ITEMS OF PROTECTIVE CLOTHING WHICH WILL BE INCORPORATED IN PURCHASING SPEC.	UNDER LICENSING REVIEW TO CLOSE. 4/10/89 MEMO FROM GUNDAI TO BOBBA PROVIDED NECESSARY MINIMUM STANDARDS FOR PROTECTIVE CLOTHING. EVALUATION TEAM REVIEWED RESPONSE AGAINST INDUSTRY STANDARDS AND FOUND STANDARDS SATISFACTORY.
19	CID881575	RPM PROCEDURE	DEVELOP AND ISSUE THE RADIATION PROTECTION MANUAL IMPLEMENTING PROCEDURE	CLOSED. RADIATION PROTECTION MANUAL REVISED AND ISSUED AND WILL BE REVIEWED PERIODICALLY. MANUAL REVIEWED AND FOUND TO MEET INDUSTRY STANDARDS.
20	CID881579	RADIO MATERIALS	RESPOND TO VIOLATION REGARDING INDIVIDUAL PASSING THRU & ALARM THE RADIATION PORTAL MONITOR BUT FAILED TO CONTACT TECH.	CLOSED. S.O. G-27 ISSUED 4/29/88. ON 4/12/88 NRC WITNESSED SEVERAL INDIVIDUALS PASSING AN ALARM WITHOUT CONTACTING AN H.P. A COMPUTER PRINT-OUT WAS USED TO LOCATE AND INTERVIEW THE PERSONNEL. A CLOSE-BY OUT-OF-SERVICE MONITOR WAS APPARENTLY FALSE ALARMING. CORRECTIVE ACTION IS SATISFACTORY.
21	CID881696	VHRA KEY	IMPLEMENT KEY CONTROL PROGRAM FOR LOCKSETS ON VHRA AND BARRIERS OUTSIDE CONTAINMENT	CLOSED. GROUP ORDER 89-RP-01, CONTROL OF VHRA KEYS, AND MEMO FROM BOBBA TO ALL RP PERSONNEL DATED 2/15/89 SATISFACTORILY CLOSES THIS TASK. THIS ITEM RECEIVES ON-GOING REVIEW BY MANAGEMENT.
22	CID881727	ANSI CREDIT	CHANGE S.O. G-53 REGARDING COMPANY'S UNDERSTANDING OF ANSI CREDIT FOR ELT'S	CLOSED. A TWO FOR ONE ANSI CREDIT, WHICH IS CONSISTENT WITH THE INDUSTRY, HAS BEEN INITIATED.
23	CID881729	ISOLATION OF VERY HIGH RADIATION AREAS	PROVIDE COMPLETION DATE FOR ISOLATING VHRA AT BACK OF RAIL CAR LOADING AREA	CLOSED. THIS AREA WAS OBSERVED TO BE PROPERLY ROPED-OFF AND PLACARDED.

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ITEM #	CONCERN #	SUBJECT	TASK	RESPONSE
24	CID881741	POSTINGS	REVISE PROCEDURE HP-P TO PROVIDE MINIMUM STANDARDS FOR POSTINGS AND SUPPORT OF POSTING FOR SURFACE CONTAMINATION AREAS	CLOSED. POSTING FOR SUPPORT OF STANDARDS FOR CONTROL OF SURFACE CONTAMINATION WAS OBSERVED BY EVALUATION TEAM AND FOUND TO BE SATISFACTORY.
25	CID881745	SHIFT TURNOVER	DEVELOP AND IMPLEMENT FORMALIZED HP SHIFT TURNOVER SYSTEM	CLOSED. REVIEWED FC-C-343-88, DATED 8/26/88, CHRISTENSEN TO BOBBA AND HP SHIFT LOGS (FC-1109). SHIFT TURN-OVER SYSTEM MEETS INDUSTRY STANDARDS.
26	CID881747	RESPIRATORY PROTECTION	TAKE ANY APPROPRIATE ACTION REGARDING TECHNICAL REVIEW OF RESPIRATORY PROTECTION PROGRAM BY INDEPENDENT CONSULTANT	CLOSED. RESPIRATORY PROTECTION PROGRAM HAS BEEN COMPLETELY REVISED. PROGRAM AND PROCEDURES REVIEWED BY EVALUATION TEAM AND FOUND TO MEET INDUSTRY STANDARDS.
27	CID881749	RADIATION PROTECTION MANUAL - SECTION 1	REVIEW AND REVISE SECTION 1 OF RADIATION PROTECTION MANUAL TO DEFINE CLASSIFICATIONS RESPONSIBILITY	CLOSED. SECTION 2.0, ORGANIZATION AND STAFFING, OF NEW RPP DEFINES CLASSIFICATION RESPONSIBILITIES. DEFINITIONS ARE SATISFACTORY FOR RPP AND ARE FURTHER AMPLIFIED BY JOB DESCRIPTIONS FOR EACH POSITION.
28	CID881760	CHEMISTRY AND RADIATION PROTECTION LESSONS	VERIFY CRP LESSON PLAN WAS REVIEWED BY APRIL 15, 1988	CLOSED. TRAINING PROGRAM RECEIVED INPO ACCREDITATION AND IS REVIEWED PERIODICALLY BY SUPERVISOR-RADIATION PROTECTION OR HIS STAFF. MATERIALS USED FOR GET AND RP TRAINING WERE REVIEWED AND FOUND SATISFACTORY BY EVALUATION TEAM.
29	CID881761	RESPIRATORY; 3M 8805/13	REVIEW LACK OF COMPREHENSIVE AND ORGANIZED RESPIRATORY PROTECTION PROGRAM AS STATED	CLOSED. RESPIRATORY PROTECTION PROGRAM REVISED AND GREATLY IMPROVED. PROGRAM MEETS INDUSTRY STANDARDS.
30	CID881771	RP CHART	DEFINE ACTUAL WORKING ORGANIZATION AND POSITION DESCRIPTION IN THE TECH SPECS FOR RADIATION PROTECTION TECHNICIAN	CLOSED. REVIEWED RP-AD-100, ORGANIZATION AND STAFFING, AND ALL POSITION DESCRIPTIONS. EVALUATION TEAM FOUND DESCRIPTIONS WERE CLEAR AND CONCISE AND MEET INDUSTRY STANDARDS.
31	CID881772	CONTAMINATION LIMIT	COMPLETE AND IMPLEMENT LONG TERM ACTION PLAN DEALING WITH CONTAMINATION LIMITS INTO UPGRADED RP MANUAL	SHOULD BE CLOSED. CONTAMINATION LIMITS ARE DEFINED BY NEW PROCEDURES. PROGRAM WAS REVIEWED AND OBSERVED BY EVALUATION TEAM AND FOUND TO MEET INDUSTRY STANDARDS.

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CONCERNS AND RESPONSES

ITEM #	CONCERN #	SUBJECT	TASK	RESPONSE
32	CID881773	RP PROCEDURE	ENSURE RADIATION PROTECTION PROCEDURES ARE ORGANIZED AND COMPREHENSIVE	CLOSED. ALL RP PROCEDURES HAVE BEEN REVISED AND ISSUED 9/1/89. A CURSORY REVIEW OF PROCEDURES, WITH DETAILED REVIEW OF SPECIFIC PROCEDURES, LEADS EVALUATION TEAM TO THE CONCLUSION THAT PROCEDURES ARE WELL WRITTEN AND WILL REQUIRE A NORMAL AMOUNT OF TIME TO WORK OUT PROBLEMS. PROCEDURES ARE ORGANIZED AND COMPREHENSIVE.
33	CID881774	RESPIRATOR USAGE	VERIFY WRITTEN POLICY STATEMENT FOR RESPIRATOR USAGE HAS BEEN IMPLEMENTED	CLOSED. A RESPIRATORY PROTECTION POLICY HAS BEEN ISSUED BY W.L. JONES, DATED 3/31/89. POLICY IS CONSISTENT WITH GOOD INDUSTRY PRACTICES.
34	CID882225	AIR SAMPLING METHODS	PLEASE DEVELOP AND PROCEDURALIZE GUIDANCE FOR AIR SAMPLING METHODS AND FREQUENCY. PLEASE DOCUMENT AND SUBMIT A COPY TO LICENSING	CLOSED. EVALUATION TEAM REVIEWED AIR SAMPLING INSTRUMENTATION PROCEDURES, RP203 (AIR SAMPLING COLLECTION AND ANALYSIS) AND THE RADIATION PROTECTION PLAN. PROGRAM MEETS INDUSTRY STANDARDS.
35	CID882228	RADIATION AND CONTAMINATION SURVEYS	PLEASE DEVELOP AND PROCEDURALIZE DETAILED GUIDANCE FOR THE FREQUENCY AND TYPE OF RADIATION AND CONTAMINATION SURVEYS TO BE TAKEN DURING RADIO. WORK	CLOSED. REVIEWED RP201, RP202, AND RP204 AND OBSERVED OPERATIONS. PROGRAM IS SATISFACTORY AND MEETS INDUSTRY STANDARDS.
36	CID882229	SURVEY DATA DOCUMENTATION	PLEASE DEVELOP PROCEDURALIZED METHODS FOR DOCUMENTING SURVEY DATA OBTAINED AS STATED. PLEASE DOCUMENT YOUR ACTIONS AND SUBMIT A COPY TO LICENSING	CLOSED. RP202, RADIOLOGICAL SURVEY, PROVIDES METHODOLOGY FOR DOCUMENTING SURVEY DATA. METHOD IS SATISFACTORY AND MEETS INDUSTRY STANDARDS.
37	CID882230	RADIOLOGICAL PROCEDURE FOR SURVEYING NEW FUEL BUNDLES	ISSUE A RADIOLOGICAL PROCEDURE FOR SURVEYING OF NEW FUEL BUNDLES	CLOSED. PROCEDURES FOR SURVEYING NEW FUEL BUNDLES IS CONTAINED IN RP202 AND IS SATISFACTORY. SEE SECTION 7.4.8.
38	CID882233	DISSEMINATING RADIOLOGICAL CONDITIONS	PLEASE DEVELOP AND PROCEDURALIZE METHODS FOR PREPARING AND DISSEMINATING RADIOLOGICAL CONDITIONS TO SUPERVISION	CLOSED. RP204 RESPONDS TO THE NEED FOR PREPARING AND DISSEMINATING RADIOLOGICAL CONDITIONS TO SUPERVISION.
39	CID882234	RADIATION PROTECTION MANUAL REWRITE	REWRITE RADIATION PROTECTION MANUAL AND RADIOLOGICAL PROCEDURES IN OTHER SECTIONS OF THE OPERATING MANUAL	CLOSED. REVISED RADIATION PROTECTION PLAN ISSUED 7/26/89 AND ALL RP PROCEDURES REVISED AND ISSUED 9/1/89.

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ITEM #	CONCERN #	SUBJECT	TASK	RESPONSE
40	CID882237	CONTAMINATION	PLEASE PROVIDE A REVISION TO THE 1987 OPPD REPORTING OF SKIN AND CLOTHING CONTAMINATIONS TO INPO	CLOSED. REVISION PROVIDED FOR LETTER DATED 8/26/88 FOR K.J. MORRIS TO P.W. BEARD (INPO). REPORTING METHODOLOGY IS CONSISTENT WITH INDUSTRY AND INPO STANDARDS.
41	CID882239	CONTAMINATION PROCEDURES	PLEASE COMPLETE THE PROCEDURE CHANGES REGARDING THE REPORTING OF PERSONNEL CONTAMINATION INCIDENTS AS STATED	CLOSED. INITIAL RESPONSE WAS HP-18 (VII-9-18), PERSONNEL DECONTAMINATION, REV. 7, 10/89. HOWEVER, RP207 AND RP903 NOW INCORPORATE A COMPLETE RESPONSE.
42	CID882241	ACCUMULATED EXPOSURES	PLEASE PERFORM A REVIEW OF 1988 DOSES AGAINST 100 CM2 AND ADJUST ACCUMULATED EXPOSURES ACCORDINGLY	CLOSED. MR. BILAU PERFORMED EVALUATION FOR PERIOD 10/87 TO 3/88 (5 SKIN AND 25 CLOTHING CONTAMINATIONS). LETTER SENT TO INPO.
43	CID882243	WHOLE BODY COUNTS	PLEASE REVISE TRACKING AND TRENDING THRESHOLD FOR POSITIVE WHOLE BODY COUNTS TO MATCH INDUSTRY PRACTICE	CLOSED. REVIEWED IN-VIVO AND IN-VITRO BIOASSAY PROCEDURES, RP650, RPM, INSTRUMENTATION PROCEDURES AND DISCUSSED WITH DOSIMETRY PERSONNEL. THE NEW ACCUSCAN WBC WILL BE IN OPERATION BY END OF YEAR AND WILL PROVIDE A WIDER RANGE FOR DIAGNOSTICS. PROGRAM MEETS INDUSTRY STANDARDS.
44	CID882245	PC DRESSING PRACTICES	PLEASE DEVELOP AND PROCEDURALIZE STANDARDIZED PROTECTIVE CLOTHING DRESSING AND UNDRESSING PRACTICES	CLOSED. RESPONSE INCLUDES RP201, (ATTACHMENT 1), RP204 SECTION 7.7.11 AND RP904 FOR LISTED MINIMUM PROTECTIVE CLOTHING AND DRESSING AND UN-DRESSING CRITERIA.
45	CID882247	RADIOLOGICAL PRACTICES RECOMMENDATIONS	PLEASE RECOMMEND A METHOD FOR ASSURING SUPERVISORY ACCOUNTABILITY OF THEIR WORKERS' RADIOLOGICAL PRACTICES TO THE ALARA COMMITTEE	CLOSED. TOPIC COVERED IN 8/26/88 ALARA COMMITTEE MEETING. RP903, RADIOLOGICAL OCCURRENCES REPORTING AND TRENDING, PROVIDES METHODOLOGY.
46	CID882249	RADIOLOGICAL PRACTICES POLICY	PLEASE DEVELOP AND IMPLEMENT A FINAL POLICY FOR ASSURING SUPERVISORY ACCOUNTABILITY OF THEIR WORKERS' RADIOLOGICAL PRACTICES	CLOSED. REVIEWED RP904, SECTION 2.2. SATISFACTORY RESPONSE FOR ASSURING SUPERVISORY ACCOUNTABILITY OF WORKERS' RADIOLOGICAL PRACTICES.
47	CID882250	PERFORMANCE STANDARDS	COMPLETE PROGRAM REGARDING PERFORMANCE STANDARDS DEVELOPED IN THE REWRITE OF RAD PROTECTION MANUAL, PROCEDURES FOR MEASURING ACHIEVEMENT PERFORMANCE	CLOSED. PERFORMANCE INDICATORS ARE DESCRIBED IN RPP, SECTION 11.8 AND ARE VISUALLY DISPLAYED FOR GENERAL INFORMATION. THESE INDICATORS ARE REVIEWED BY MANAGEMENT AND ARE

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				TAKEN SERIOUSLY. STANDARDS SET MEET GOOD PRACTICES IN THE INDUSTRY.
48	CID882252	AIR SAMPLES EQUIPMENT	COMPLETE THE PROCEDURALIZATION OF AIR SAMPLES REPRESENTING BREATHING ZONES TAKEN WHEN RESPIRATORS ARE WORN AND THE ACQUISITION OF EQUIPMENT TO SUPPORT	CLOSED. REVIEWED AIR SAMPLING PROCEDURE AND OBSERVED RESPIRATORY PROGRAM AND EQUIPMENT. PROCEDURES ADEQUATELY COVER BREATHING ZONES.
49	CID882254	WHOLE BODY COUNTING PROGRAM	PLEASE IMPLEMENT A PROGRAM TO PERFORM RANDOM WHOLE BODY COUNTING OF PERSONNEL PERFORMING WORK IN RADIOLOGICALLY CONTROLLED AREAS	CLOSED. REVIEWED STANDING ORDER 89-11-RP, RP-AD-J00, AND MEMO FC-RS-422-89 (9/26/89) BOBBA TO CHASE. OBSERVED THAT 10% OF THOSE WEARING RESPIRATORS ARE WBC'ED.
50	CID882257	TLD SYSTEM RANGE	DEFINE TLD DOSIMETRY SYSTEM AND THE RANGE OF EXPECTED RADIATIONS AND ENERGIES IN THE PLANT SO ANY DEVIATIONS CAN BE IDENTIFIED AND ADDRESSED	CLOSED. ENERGY STUDY COMPLETED AND TLD SYSTEM ON-SITE.
51	CID882259	TLD PROCESSOR	PLEASE PURCHASE AND IMPLEMENT A NEW TLD PROCESSOR CAPABLE OF PROVIDING TLDs OF APPROPRIATE ENERGY RESPONSE AS STATED	OPEN. WILL BE CLOSED WITH FULL OPERATION OF PANASONIC TLD SYSTEM. PANASONIC TLD SYSTEM IS ON-SITE, NMLAP REVIEW COMPLETE AND IS AWAITING CERTIFICATION. WILL BE FULLY OPERATIONAL BY END OF YEAR.
52	CID882262	PC DRESSING SIGNS	PLEASE HAVE SIGNS IN PLACE PROVIDING REMINDERS OF PROPER DRESSING AND UNDRESSING OF PROTECTIVE CLOTHING POSTED IN APPROPRIATE AREAS	CLOSED. EVALUATION TEAM OBSERVED SIGNS THAT PROVIDE REMINDERS OF PROPER DRESSING AND UNDRESSING OF PROTECTIVE CLOTHING. PROGRAM MEETS INDUSTRY STANDARDS.
53	CID882265	WORKER GUIDANCE - CONTAMINATION	PLEASE DEVELOP, PROCEDURALIZE AND DISSEMINATE SPECIFIC WORKER GUIDANCE RELATED TO SPREAD OF CONTAMINATION AND SELF CONTAMINATION AS STATED	CLOSED. PROCEDURES, TRAINING, AND AWARENESS (VIA SIGNS) HAVE BEEN IMPLEMENTED.
54	CID882266	CONTAMINATION FRISKING	PLEASE CHANGE PROCEDURES TO ADDRESS CONTAMINATION FRISKING ON EXIT FROM A CONTAMINATION AREA	CLOSED. FRISKING HAS BEEN ADDRESSED BY PROCEDURE, INFORMATION SIGNS, AND TRAINING. FRISKING WAS OBSERVED BY EVALUATION TEAM AND WAS SATISFACTORY.
55	CID882269	PROTECTIVE CLOTHING IN CONTROLLED AREAS	PLEASE CHANGE PROCEDURES TO PROHIBIT USE OF PROTECTIVE CLOTHING IN THE CLEAN CONTROLLED AREA EXCEPT AS PERMITTED BY	CLOSED. COVERED BY RMP PROCEDURE. CONSISTENT WITH INDUSTRY STANDARDS.

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ITEM #	CONCERN #	SUBJECT	TASK	RESPONSE
			RADIATION WORK PERMIT	
56	CID882273	HEPA FILTER PROCEDURES	PLEASE PROCEDURALIZE CONTROL OF HEPA VACUUM CLEANERS AND PORTABLE HEPA AIR FILTER AND REQUIRE LOCKING LOCK, AND CONTROL OF UNITS BY HEALTH PHYSICS TEC	CLOSED. REVIEWED RW700, 701, 702, 705, 706, AND 800. PROCEDURES ARE CONSISTENT WITH INDUSTRY STANDARDS.
57	CID882274	RP WORK PRACTICES	PROCEDURALIZE PROPER RADIATION PROTECTION WORK PRACTICES AS STATED	CLOSED. INFO CONCERNING REGARDING RADIATION PROTECTION WORK PRACTICES HAVE BEEN INCORPORATED INTO NEWLY REVISED AND APPROVED PROCEDURES. PROCEDURES ADDRESS GOOD WORK PRACTICES AND MEET INDUSTRY STANDARDS.
58	CID882276	CONTAMINATED MATERIAL PROCEDURES	PLEASE DEVELOP PROCEDURES REGARDING SEALING AND TRANSFER OF POTENTIALLY CONTAMINATED MATERIAL FROM CONTAMINATED WORK AREAS	CLOSED. RW300, 501, 503, 505, 506, AND 507 REVIEWED FOR ADEQUACY AND CONSISTENCY. PROGRAM FOR TRANSFER OF POTENTIALLY CONTAMINATED MATERIALS FROM CONTAMINATED WORK AREAS MEETS INDUSTRY STANDARDS.
59	CID882278	TEMPORARY CURBS	PLEASE INSTALL TEMPORARY CURBS AS APPROPRIATE AROUND AREAS AS STATED. PLEASE DOCUMENT YOUR ACTIONS AND SUBMIT A COPY TO LICENSING	CLOSED. IN 7/88, WATER WAS DETECTED FLOWING FROM A CONTAMINATED AREA TO A CLEAN AREA. THE WATER WAS COMING FROM A MASK WASHER. PERMANENT PIPING REPAIRS WERE MADE AND THE NEED FOR CURBS WAS EVALUATED. SEE FC-C-664-88 (DATED 12/13/88 BILAU TO BOBBA).
60	CID882281	MONITORING CLEANING DEVICES	PLEASE IMPLEMENT A PROGRAM FOR MONITORING CLEANING DEVICES SUCH AS MASSELINE CLOTHS CONTAMINATION AS STATED. DOCUMENT AND SUBMIT A COPY TO LICENSING	CLOSED. NEW PROCEDURE, RADIATION AND CONTAMINATION SURVEYS, IMPLEMENT A PROGRAM FOR MONITORING CLEANING DEVICES.
61	CID882300	PERSONNEL PROTECTIVE EQUIPMENT PERIODIC EVALUATIONS	EVALUATE A METHOD FOR SURVEILLANCE OF PERSONNEL PROTECTIVE EQUIPMENT NECESSARY FOR RESPONDING TO RADIOLOGICAL EMERGENCIES	CLOSED. REVIEW BY NRC INDICATED SOME POOR RP PRACTICES AND AVAILABILITY OF ONE STEAM SUIT FOR MAINTENANCE. LETTER FROM OPD TO NRC DATED 8/24/88 STATED ADDITIONAL EQUIPMENT PURCHASES AND RESPONSE TO RP PRACTICES. RESPONSE IS SUFFICIENT.
62	CID882431	ENGINEERING CONTROLS	PROCEDURALIZE THE USE OF ADDITIONAL ENGINEERING CONTROLS TO REDUCE RELIANCE ON RESPIRATORS AS STATED	CLOSED. REVISED RESPIRATORY PROTECTION PROCEDURES AND EXPERIENCE OF THE SUPERVISOR - RADIATION PROTECTION HAVE LED TO A RESPIRATORY PROTECTION

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63	CID882491	RADIATION PROTECTION GOALS	ESTABLISH GOALS AND OBJECTIVES FOR RADIATION PROTECTION GROUP FOR 1989 IMPLEMENTATION	PROGRAM THAT MEETS INDUSTRY STANDARDS. CLOSED. GROUP ORDER 89-07-RP, OBJECTIVES AND GOALS, AND MEMO NO. FC-RP-153-89 DATED 3/16/89 (BOBBA TO ALL RP PERSONNEL) AND PRESENT 1989 GOALS WERE REVIEWED. ATTENTION IS PAID TO ADDRESSING GOALS ON REGULAR BASIS. DURING EVALUATION, A REQUEST FOR MANAGEMENT'S GOALS AND OBJECTIVES WERE SOLICITED BY SUPERVISOR-RADIATION PROTECTION IN ORDER TO PREPARE FOR 1990. GOALS AND OBJECTIVES AND PERFORMANCE INDICATORS ARE CONSISTENT WITH GOOD INDUSTRY PRACTICES.
64	CID882494	RADIATION PROTECTION GOAL PROGRAM	IMPLEMENT THE RADIATION PROTECTION GROUP GOALS AND OBJECTIVES AS STATED	CLOSED. 1989 GOALS AND OBJECTIVES HAVE BEEN IMPLEMENTED AND ARE TRACKED. PERFORMANCE INDICATORS HAVE BEEN DEVELOPED AND ARE TRACKED.
65	CID882498	RADIATION PROTECTION PERFORMANCE INDICATORS	TRANSFORM THE GOAL AND OBJECTIVES ESTABLISHED FOR RP INTO PERFORMANCE INDICATORS AND MONITOR THE EFFECTIVENESS OF THE RP GROUP AND ITS PERSONNEL	CLOSED. PERFORMANCE INDICATORS ARE BEING TRACKED. ALL RP PERSONNEL AND OTHERS ARE MADE AWARE OF THIS PERFORMANCE. DATA WILL BE USED FOR EVALUATION OF RP PROGRAM AT END OF 1989. PREPARATION OF 1990 GOALS AND OBJECTIVES WILL BE PREPARED AFTER RECEIVING MANAGEMENT INPUT.
66	CID882501	RADIATION PROTECTION PERFORMANCE INDICATORS	IMPLEMENT GOALS, OBJECTIVES, PERFORMANCE INDICATORS AND PLANS SERVE AS THE BASIS FOR INDIVIDUAL AS WELL AS GROUP PERFORMANCE EVALUATIONS	CLOSED. PERSONNEL EVALUATIONS AND POSITION DESCRIPTIONS BOTH INCORPORATE THE INDIVIDUAL'S "PART" IN MEETING GOALS AND OBJECTIVES. GOALS AND OBJECTIVES ARE TAKEN ONE STEP FURTHER FROM THE SUPERVISOR TO THE TO THE INDIVIDUALS.
67	CID882521	RADIATION PROTECTION PERFORMANCE HISTORY	PRESENT A YEARLY REVIEW OF PAST YEARS PERFORMANCE TO PLANT MANAGEMENT AND DISCUSS GOALS, OBJECTIVES AND PERFORMANCE FROM PAST AND FUTURE PERSPECTIVES	OPEN. THE PRESENTATION OF THE YEARS' PAST PERFORMANCE WILL BE DEVELOPED AT THE END OF PERFORMANCE PERIOD. THIS DELAY WAS APPROVED TO PROVIDE ADEQUATE TIME TO TRACK THE FIRST YEARS' GOALS AND OBJECTIVES. REPORT DUE 3/1/90.
68	CID882522	RADIATION PROTECTION MANUAL UPGRADE	UPGRADE RADIATION PROTECTION IMPLEMENTING PROCEDURES AND RADIATION PROTECTION AS STATED	UNDER LICENSING REVIEW TO CLOSE.
69	CID882550	TECHNICAL ADEQUACY	REVIEW/REVISE PROCEDURE SCOPE,	CLOSED. MEMO FC-RP-143-89 (BOBBA TO

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			METHODOLOGY, REQUIREMENTS, PRECAUTIONS, LIMITATIONS AND ACCEPTANCE CRITERIA FOR TECHNICAL ADEQUACY	FISICARD) AND THE RADIATION PROTECTION MANUAL (SECTION 10) FOR PROCEDURES WERE REVIEWED. 5.0. 6-73, PROCEDURE WRITERS GUIDE, PROVIDES THE METHODOLOGY FOR LIMITATIONS AND ACCEPTANCE CRITERIA FOR TECHNICAL ADEQUACY.
70	CID882551	TECHNICAL ADEQUACY	VERIFY PROCEDURES WILL BE VALIDATED BY APPROPRIATE LINE SUPERVISIONS TO DEVELOP TRAINING REQUIREMENTS	CLOSED. REVIEWED 5.0. 6-73 FOR TRAINING INVOLVEMENT. REVIEWED TRAINING PROCEDURE FOR INCORPORATING CHANGES. PROCESS APPEARS SATISFACTORY.
71	CID882553	BIENNIAL REVIEW OF PROCEDURES	PLEASE INCORPORATE ON GOING MAINTENANCE OF THE PROCEDURES INTO THE BIENNIAL OF PROCEDURES AS STATED	CLOSED. THE BIENNIAL REVIEW REQUIREMENT OF PROCEDURES IS INCLUDED IN STANDING ORDER 6-36. ALL RP PROCEDURES WERE REVISED AND BECAME EFFECTIVE 9/1/89. A SCHEDULE FOR REVIEW TO BE DEVELOPED BY THE SUPERVISOR-RADIATION PROTECTION
72	CID882554	REVISION PROCESS TRACKING SYSTEM	COMPLETE THE SHORT TERM ACTION PLAN FOR A PROCEDURE TRACKING SYSTEM TO MONITOR THE REVISION PROCESS	CLOSED. PROCESS WAS IMPLEMENTED BY HYDRO-NUCLEAR DURING RP PROCEDURE REVISION PROGRAM. PROCEDURES HAVE BEEN ISSUED.
73	CID882773	RADIATION PROTECTION AUDIT	HAVE CHEMSTON REPEAT AND UPDATE THE AUDIT TO ASSURE THAT ONGOING EFFECTIVENESS IN THE PROGRAM WAS CONTINUING	SUPERSEDED. OTHERS WERE INVOLVED IN AUDITS AND DEVELOPMENT OF CORRECTIVE ACTION FOR RP PROGRAM.
74	CID882851	BIMONTHLY UPDATE III	SUBMIT A BIMONTHLY UPDATE OF THE RADIATION PROTECTION ACTION ITEMS	CLOSED. MS. LONDA HASKELL TRACKS THE OUTSTANDING COMMITMENTS FOR THE RP SECTION. CLOSE COORDINATION IS MAINTAINED WITH LICENSING IN THIS MATTER. THE RP SECTION HAS CONTROL OF DATES AND MILESTONES FOR THIS EFFORT.
75	CID883172	MLAP-DOSIMETRY QNSITE ASSESSMENT FORM	RESOLVE THE DEFICIENCIES IDENTIFIED IN THE TLD PROGRAM AUDIT AS STATED	CLOSED. THIS WAS AN OPOD CORPORATE AUDIT. RESPONSE TO THE CONCERNS WERE PROVIDED 8/23/89. MEMO FC-RP-373-89.
76	CID883204	CONTINUOUS HP COVERAGE	RESPOND TO (POTENTIAL) VIOLATION REGARDING LACK OF CONTINUOUS HP COVERAGE FOR ENTRY INTO A VHRA	SUPERSEDED. TO BE COVERED BY CID-890163/01.
77	CID883207	RADIATION HOT SPOT VERIFICATION PROCEDURE REVISION	ISSUE REVISION OF PROCEDURE VII-9-25 TO INCLUDE INSTRUCTIONS ON HOW TO POST HOT SPOTS	CLOSED. VOLUME VII NO LONGER EXISTS. THE ALARA SECTION HAS EVALUATED THE PLANT FOR HOT SPOTS AND IS DEVELOP-

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ITEM #	CONCERN #	SUBJECT	TASK	RESPONSE
				ING A PROGRAM TO REDUCE THE NUMBER OF HOT SPOTS. POSTING OF HOT SPOTS IS COVERED BY NEW PROCEDURES.
78	CID883228	OUTAGE ASSISTANCE VISIT RECOMMENDATIONS	REVIEW RECOMMENDATIONS, SECTION H, REGARDING INTERNAL EXPOSURE CONTROL FOR POSSIBLE ACTIONS & DESCRIBE PLAN OF ACTION	OPEN. RESPONSE DUE 12/31/89.
79	CID883247	RESPIRATORY PROTECTION EQUIPMENT (RPE) INSPECTION	REVIEW OBSERVATION REGARDING PERSONNEL NOT INSPECTING THE CONDITION OF RESPIRATORY PROTECTION EQUIPMENT (RPE) AT POINT OF ISSUE	CLOSED. INSPECTION WAS PREVENTED BY TYPE OF BAGS USED FOR STORAGE. USE OF CLEAR PLASTIC SEALED BAGS ALLOWS FOR VISUAL INSPECTION OF RESPIRATORS.
80	CID883249	BIMONTHLY UPDATE IV	SUBMIT A BIMONTHLY UPDATE OF THE RADIATION PROTECTION ACTION ITEMS	CLOSED. SEE ITEM NO. 73.
81	CID883264	SDER 85-3 RECOMMENDATION NO. 5	COMPLETE ACTIONS FOR SDER 85-3 RECOMMENDATION NO. 5 REGARDING EXCESSIVE PERSONNEL RADIATION DOSE	CLOSED. REVIEWED FC-RP-008-89, DATED 1/3/89 (MATTICE TO BOBBA) WHICH RESPONDED TO SDER 85-03, EXCESSIVE PERSONNEL RADIATION EXPOSURE. MOST OF THIS INFORMATION DID NOT APPLY TO FCS.
82	CID883272	RADIATION IMPROVEMENT PROGRAM ASSESSMENT (SALP)	PROVIDE AN ASSESSMENT AND AUDIT FUNCTION TO ENSURE PROPER IMPLEMENTATION AND EFFECTIVENESS OF THE RIP AS IT IS PHASED IN DURING NEXT 12 MONTHS	CLOSED. QUADREX IS PROVIDING 12 MONTH REVIEW OF THE RP ENHANCEMENT PROGRAM.
83	CID883282	RADIATION PROTECTION STAFFING (SALP)	COMPLETE STAFFING FOR THE RADIATION PROTECTION ORGANIZATION AS STATED	CLOSED. RADIATION PROTECTION SECTION HAS A COMPLETE STAFF COMPLEMENT AS THE FINAL POSITION, RADWASTE SUPERVISOR, WAS FILLED DURING THIS EVALUATION.
84	CID883283	RADIATION PROTECTION LONG TERM IMPROVEMENTS (SALP)	COMPLETE LONG TERM PROGRAM IMPROVEMENTS BY SEPT. 1, 1988 AS STATED	CLOSED. 1. STAFFING COMPLETED. 2. PROCEDURES REVISED. 3. EQUIPMENT/ RESOURCES ORDERED AND IN PREPARATION FOR OPERATION. 4. RECORDS ARE BEING UPDATED.
85	CID883426	RADIOLOGICAL PROTECTION ASSISTANCE VISIT RECOMMENDATIONS	REVIEW RECOMMENDATIONS FOR POSSIBLE ACTIONS AND PROVIDE DOCUMENTATION DESCRIBING PLAN OF ACTION	CLOSED. THIS SHOULD NOT BE TRACKED AS AN ACTION ITEM AS TASKS ARE INCLUDED AS PART OF ENHANCEMENT PROGRAM. SEE INFO-88-0228.
86	CID883429	EXPOSURE RECORDS REVIEW	COMPLETE REVIEW AND UPGRADING OF EXPOSURE RECORDS FOR	CLOSED. REVIEWED STATUS OF ACTIVE AND INACTIVE RECORDS AND MEMO FC-

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ITEM #	CONCERN #	SUBJECT	TASK	RESPONSE
			INDIVIDUALS AS REQUIRED	RP-342-89 (BOBBA AND PETERSON TO FISICARO). CURRENT STATUS AS FOLLOWS: 1. ACTIVE RECORDS - TO BE COMPLETED BY 12/15/89, 2. INACTIVE RECORDS - SCHEDULED FOR COMPLETION BY 9/30/90. WITH PRESENT MANPOWER, THIS LEVEL OF EFFORT IS OBTAINABLE.
87	CID883460	CLARIFICATION OF STATION REPORTING PROCEDURES	ASSURE FIELD IDENTIFICATION BY HP PERSONNEL OF A 10CFR20.402(B) REPORTABLE INCIDENT WITH PROCEDURAL AND TRAINING INITIATIVES OF RIP PROGRAM	CLOSED. RP903, RADIOLOGICAL OCCURRENCES REPORTING AND TRENDING - ATTACHMENT 1 - REPORTABLE EVENTS PROVIDES ONE-HOUR, FOUR-HOUR, TWENTY-FOUR HOUR AND 30 DAY NOTIFICATION REQUIREMENTS.
88	CID883464	PING MONITOR ALARMS	PROVIDE A SPECIFIC ACTION PLAN TO ADDRESS PING MONITORS FALSELY ALARMING AS STATED TO NRC INSPECTORS	CLOSED. THE PING IS FOR "INDICATION" PURPOSES - RP IS THEN TO VERIFY CONDITION. AN ACCEPTABLE ACTION PLAN HAS BEEN DEVELOPED PER FC-RP-165-89 DATED 3/23/89, BOBBA TO FISICARO.
89	CID883472	SHIPMENT OF CONTAMINATED EQUIPMENT BETWEEN NUCLEAR POWER STATIONS	REVIEW SUBJECT NOTICE FOR APPLICABILITY TO FCS	CLOSED. REVIEWED MEMO FC-RP-196-89 DATED 4/12/89 (BILAU TO BOBBA) REGARDING NRC INFORMATION BULLETIN 88-101 SHIPMENT OF CONTAMINATED EQUIPMENT BETWEEN NUCLEAR POWER STATIONS. PROCEDURES AT FCS ARE ADEQUATE IN THIS REGARD.
90	CID883483	LIFETIME RADIATION EXPOSURE REVIEW	REVIEW INPO'S POSITION ON MINIMIZING PERSONNEL LIFETIME RADIATION EXPOSURE	CLOSED. RP-AD-600, DOSIMETRY PROGRAM, AND RP601, EXTERNAL DOSIMETRY PROGRAM, ADDRESS MINIMIZING LIFETIME RADIATION EXPOSURE ADEQUATELY.
91	CID883993	NRC INSPECTOR'S CONCERNS REGARDING FUEL BUNDLES	REVIEW INSPECTOR'S CONCERNS REGARDING SURVEYING NEW FUEL BUNDLES	CLOSED. CONCERN WAS FOR TECHNICIAN USING A LIST TO REVIEW BY AND NOT BY PROCEDURE. SURVEYING OF NEW FUEL BUNDLES WILL BE DONE BY PROCEDURE.
92	CID890085	POTENTIAL VIOLATION REGARDING INACCURATE INFORMATION - IER 89-04 EXIT MEETING	RESPOND TO POTENTIAL VIOLATION REGARDING SUBMITTAL OF INACCURATE INFORMATION REGARDING EXIT WHOLE BODY COUNTS	CLOSED. THERE HAS BEEN DIFFICULTY, AS EXPERIENCED BY OTHER SITES, WITH GETTING SOME EXITING PERSONNEL TO OBTAIN THE REQUIRED EXIT WBC. PRESENTLY, A LETTER IS SENT TO THE INDIVIDUAL'S MOST RECENT ADDRESS OR COMPANY REQUESTING THAT A WBC BE DONE AT FCS OR AT ANOTHER SITE. CONSIDERATIONS SHOULD BE GIVEN TO A MORE AGGRESSIVE METHOD, I.E., 1. REQUIRE A PENALTY BE PAID BY CONTRACTOR FOR

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ITEM #	CONCERN #	SUBJECT	TASK	RESPONSE
				THOSE NOT GETTING AN EXIT WBC OR, 2. INDICATE THAT THE INDIVIDUAL MAY NOT BE WELCOME AT FCS UNLESS EXIT WBC IS COMPLETED.
93	CID890086	FAILURE TO ADHERE TO PROCEDURE FOR CONTROL OF VERY HIGH RADIATION AREAS - IER 89-04 EXIT MEETING	RESPOND TO POTENTIAL VIOLATION REGARDING FAILURE TO ADHERE TO PROCEDURES FOR THE CONTROL OF VHRA	SUPERSEDED BY CID-890163/01.
94	CID890095	PERSONNEL RADIOLOGICAL WORK PRACTICES	MONITOR STATION PERSONNEL RADIOLOGICAL WORK PRACTICES FOR THE EFFECTIVENESS OF CORRECTIVE ACTIONS	SUPERSEDED BY CID-890221.
95	CID890097	IMPROPER WORK PRACTICES BY HEALTH PHYSICS	INCREASE THE USE OF ON THE SPOT COACHING AND CORRECTION OF IMPROPER WORK PRACTICES BY HEALTH PHYSICS TECHNICIANS AND SUPERVISORY PERSONNEL	SUPERSEDED BY CID-890221.
96	CID890160	PROCEDURAL GUIDANCE FOR FLASHING LIGHTS IN HIGH RADIATION AREAS	PROVIDE PROCEDURALIZED GUIDANCE AND LIMITATIONS FOR IMPLEMENTATION OF THE PROVISIONS OF TECH SPECS 5.11.2	CLOSED. SEE RPM 3.2.2.2. REFERENCE FC-RP-225-89, 5/8/89.
97	CID890162	PERSONNEL QUARTERLY EXPOSURE - OPEN ITEM 8904/3	REVIEW INSPECTOR'S REMARKS REGARDING VERIFICATION OF PERSONNEL QUARTERLY EXPOSURE - NRC FORM 4 WHEN RECEIVED	OPEN. WILL BE CLOSED WHEN RECORDS ARE UP-TO-DATE. PROJECT FOR THE REVIEW OF ACTIVE FILES IS ON SCHEDULE. IN-ACT: FILES WILL FOLLOW WITH A PROJECTED COMPLETION DATE OF 9/90.
98	CID890163	RADIATION PROTECTION PROCEDURES - VIOLATION 8904-01	RESPOND TO VIOLATION REGARDING FAILURE TO COMPLY WITH RP PROCEDURES (CRAFTSMEN ENTERED INTO HIGH RADIATION AREA).	SUPERSEDED BY CID-890518.
99	CID890164	FAILURE TO PERFORM WHOLE BODY COUNTS ON TERMINATING WORKERS - VIOLATION 8904-04	RESPOND TO VIOLATION REGARDING FAILURE TO PERFORM WHOLE BODY COUNTS ON TERMINATING WORKERS PER RP-1	SUPERSEDED BY CID-890518.
100	CID890165	WHOLE BODY COUNT INACCURATE INFORMATION - VIOLATION 8904-02	RESPOND TO VIOLATION REGARDING SUBMITTING INACCURATE INFORMATION TO THE NRC IN REFERENCE TO TERMINATING PERSONNEL NOT RECEIVING WHOLE BODY COUNTS	SUPERSEDED BY CID-890518.
101	CID890224	POTENTIAL MIXED WASTES	DETERMINE THE POTENTIAL MIXED WASTES TO MAKE TIMELY	CLOSED. MIXED WASTES AT FCS HAVE BEEN IDENTIFIED IN MEMO FC-RP-149-89

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ITEM #	CONCERN #	SUBJECT	TASK	RESPONSE
			NOTIFICATION/PERMIT APPLICATION TO THE DEC FOR MIXED WASTE ACTIVITIES	DATED 4/12/89 (BILAU TO BOBBA). THE WASTES WERE OBSERVED AND PROPERLY PACKAGED AND STORED. AT THIS TIME THERE IS NO WAY TO DISPOSE OF MIXED WASTES AND THEY MUST BE STORED.
102	CID890273	REDUCING THE NUMBER OF HIGH RADIATION AREAS	COMPLETE THE EVALUATION TO REDUCE THE NUMBER OF HIGH RADIATION AREAS	CLOSED. MEMO FROM BOBBA TO GATES, FC-607-89, ADDRESSES IMPLEMENTATION OF A HOT-SPOT REMOVAL PROGRAM. APPROXIMATELY 40 HOT-SPOTS HAVE BEEN IDENTIFIED AND EFFORTS TO ELIMINATE OR REDUCE THESE HOT-SPOTS IS IN PROCESS.
103	CID890501	POTENTIAL PROBLEMS WITH WORN OR DISTORTED HOSE CLAMPS ON SELF CONTAINED BREATHING APPARATUS	REVIEW SUBJECT NOTICE FOR APPLICABILITY TO THE FCS	CLOSED. THIS ITEM IS CONCERNED WITH NRC BULLETIN 89-47, POTENTIAL PROBLEMS WITH WORN OR DISTORTED HOSE CLAMPS OR SELF-CONTAINED BREATHING APPARATUS. AT FCS, MANUFACTURERS' RECOMMENDATIONS FOR INSPECTION ARE BEING FOLLOWED (SEE RPS07). FC-RP-285-89, DATED 6/12/89 (BOBBA TO LICENSING) PROVIDES INFORMATION AS TO THE CURRENT EVALUATION PERFORMED.
104	CID890503	INCIDENT REPORT (IR) 880537 REGARDING REISSUING MP-RCC-1	REISSUE MP-RCC-1 AS A RADWASTE PROCEDURE, DEVELOP & IMPLEMENT A REACTOR CAVITY CLEANING PROCEDURE, RW-515, AS STATED	OPEN. PROCEDURE IS WRITTEN AND WILL GO TO PRC BEFORE JANUARY, 1990.
105	CID890518	IER 89-04 VIOLATIONS REGARDING RADIOLOGICAL WORK PRACTICES	RESPOND TO IER 89-04 VIOLATIONS REGARDING RADIOLOGICAL PRACTICES AS STATED	CLOSED. PROCEDURE TO ALLOW TRANSIT THROUGH A VHRA BY QUALIFIED RP TECH WITH APPROPRIATE MONITORING EQUIPMENT WAS UP FOR PRC REVIEW AND APPROVAL DURING EVALUATION. PROCEDURAL CHANGE WOULD LEAD TO RESOLUTION OF THIS ITEM.
106	CID890580	TRANSIT THROUGH A VERY HIGH RADIATION AREA - IER 89-04 RESPONSE	REVISE PROCEDURAL REQUIREMENT TO ALLOW TRANSIT THROUGH A VHRA, BY QUALIFIED RAD PROTECTION TECH, WITH APPROPRIATE MONITORING EQUIPMENT, WITHOUT SECOND PERSON	UNDER LICENSING REVIEW TO CLOSE. RP-204 IS REVISED.
107	CID890581	RADIATION PROTECTION ENHANCEMENT PROGRAM COMPLETION - IER 89-04 RESPONSE	COMPLETE THE RADIATION PROTECTION ENHANCEMENT PROGRAM BY 9/30/89	CLOSED. THE RP ENHANCEMENT PROGRAM MILESTONES ARE BEING MET AND ARE UNDER CONTROL BY THE RP SECTION.
108	CID890723	RADIOLOGICAL OCCURRENCES	DEVELOP A RADIOLOGICAL OCCURRENCES	CLOSED. RP903, RADIOLOGICAL

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ITEM #	CONCERN #	SUBJECT	TASK	RESPONSE
		REPORT (ROR) - FINDING RP.9-1	REPORT (ROR) SYSTEM TO BRIDGE GAP BETWEEN THE WORKER PRACTICES PROGRAM AND STATION INCIDENT REPORT SYSTEM AS STATED	OCCURRENCES REPORTING AND TRENDING, WAS ISSUED 9/1/89. PROCEDURE AND ITS IMPLEMENTATION WILL COMPLETE THE TASK.
109	CID890724	INFORMATION POSTERS - FINDING RP.9-1	POST INFORMATION POSTERS, COVERING VARIOUS RADIATION PROBLEM AREAS SUCH AS UNMONITORED SYSTEM BREACHES, IN VARIOUS LOCATIONS WITHIN THE RCA	CLOSED. SEVERAL OF THESE POSTERS WERE OBSERVED IN THE PLANT WORK RCA. A PLAN TO DEVELOP A SCHEDULE FOR INFORMATION POSTERS IS BEING EVALUATED.
110	CID890726	PERSONNEL CONTAMINATION REPORT - FINDING RP.9-1	VERIFY A NEW RECORDS MANAGEMENT SYSTEM WAS EVALUATED FOR IMPLEMENTATION REGARDING INSUFFICIENT DOCUMENTATION OF PERSONNEL CONTAMINATION REPORTS	CLOSED. THE EVALUATION TEAM REVIEWED A STUDY OF A RECORDS MANAGEMENT SYSTEM THAT COULD ASSIST IN THE EVALUATION AND DOCUMENTATION OF PERSONNEL CONTAMINATION REPORTS. A RECORDS MANAGEMENT SYSTEM IS NEEDED FOR THE RP SECTION IN ORDER TO MAINTAIN THE RECORDS AND DOCUMENTS AND PERFORM CERTAIN ANALYSES.
111	CID890726	PERSONNEL CONTAMINATION REPORT - FINDING RP.9-1	IMPLEMENT PROCEDURES TO REQUIRE REVIEW OF PERSONNEL CONTAMINATION REPORTS BY SUPERVISOR-RAD, PROTECTION OPS AND ASSIGNMENT TO RAD. ENGINEER FOR ROOT CAUSE	CLOSED. RP903, RADIOLOGICAL OCCURRENCES REPORTING AND TRENDING, WILL SATISFY THIS TASK.
112	CID890726	PERSONNEL CONTAMINATION REPORT - FINDING RP.9-1	PURCHASE A NEW RECORDS MANAGEMENT SYSTEM FOR IMPLEMENTATION REGARDING INSUFFICIENT DOCUMENTATION OF PERSONNEL CONTAMINATION REPORTS.	CLOSED. SEE ITEM NO. 109.
113	CID890728	WHOLE BODY CONTAMINATION MONITORS - FINDING RP.9-1	IMPLEMENT REVISED PROCEDURES TO INCORPORATE THE MONITOR MODIFICATIONS INTO THE CALIBRATION PROGRAM AS STATED	UNDER LICENSING REVIEW TO CLOSE. NEW PROCEDURES WILL BE IMPLEMENTED FOR THE UPGRADE PENDING INSTALLATION.
114	CID890728	WHOLE BODY CONTAMINATION MONITORS - FINDING RP.9-1	PURCHASE UPGRADE PACKAGES THAT WILL ENHANCE THE SENSITIVITY OF THE WHOLE BODY CONTAMINATION MONITORS AS STATED	UNDER LICENSING REVIEW TO CLOSE. THE UPGRADE PACKAGES FOR THE PERSONNEL CONTAMINATION MONITORS (PCM-1) HAVE BEEN PURCHASED AND ARE SCHEDULED FOR INSTALLATION.
115	CID890729	PORTABLE NEUTRON DOSE RATE METERS - FINDING RP.6-1	ADD TWO NEUTRON DOSE RATE METERS AT THE SITE AS STATED	CLOSED. NEUTRON DOSE RATE METERS HAVE BEEN ORDERED.
116	CID890731	TELESCOPING BETA GAMMA DOSE RATE INSTRUMENTS - FINDING RP.6-1	ADD 10 TELESCOPING BETA GAMMA DOSE RATE INSTRUMENTS AS STATED	CLOSED. 10 TELESCOPING BETA/GAMMA DOSE RATE INSTRUMENTS HAVE BEEN ORDERED.
117	CID890731	TELESCOPING BETA GAMMA DOSE	PROCURE 10 ADDITIONAL TELESCOPING	UNDER LICENSING REVIEW TO CLOSE.

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ITEM #	CONCERN #	SUBJECT	TASK	RESPONSE
		RATE INSTRUMENTS - FINDING RP.6-1	DOSE RATE INSTRUMENTS IN 1990	10 ADDITIONAL TELESCOPING DOSE RATE INSTRUMENTS HAVE BEEN BUDGETED FOR 1990.
118	CID890732	DEDICATED CREW TO REPAIR AND CALIBRATE PORTABLE RADIATION MONITORING EQUIPMENT - FINDING RP.6-1	VERIFY A DEDICATED CREW TO REPAIR AND CALIBRATE PORTABLE RADIATION MONITORING EQUIPMENT WAS FORMED AND ASSIGNED	CLOSED. RP HAS RESPONSIBILITY FOR REPAIR AND CALIBRATION OF PORTABLE SURVEY METERS. PRESENTLY TWO DEDICATED CONTRACTORS ARE PERFORMING THIS SERVICE. IT IS OBVIOUS THAT AVAILABILITY OF INSTRUMENTS HAS IMPROVED.
119	CID890736	PORTABLE RADIATION MONITORING EQUIPMENT PROCEDURES - FINDING RP.6-1	VERIFY A REFURBISHING AND VERIFICATION OF OPRD'S RADIOLOGICAL INSTRUMENT CALIBRATION SOURCE WAS COMPLETED	CLOSED. GAMMA SOURCE USED TO CALIBRATE PORTABLE RADIATION MONITORING EQUIPMENT HAS BEEN REFURBISHED AND REVERIFIED BY THE MANUFACTURER.
120	CID890736	PORTABLE RADIATION MONITORING EQUIPMENT PROCEDURES - FINDING RP.6-1	IMPLEMENT PROCEDURES FOR CALIBRATION AND REPAIR OF PORTABLE RADIATION MONITORING EQUIPMENT	CLOSED. PROCEDURES ISSUED 9/1/89.
121	CID890736	PORTABLE RADIATION MONITORING EQUIPMENT PROCEDURES - FINDING RP.6-1	IMPLEMENT PROCEDURAL REQUIREMENTS SPECIFYING COMMON INDUSTRY PRACTICES FOR INSTRUMENT CALIBRATION AND CALIBRATION SOURCE VERIFICATION FREQUENCIES	CLOSED. RP-402, "CALIBRATION AND TEST REQUIREMENTS FOR RADIATION PROTECTION EQUIPMENT," ISSUED 9/1/89 ADEQUATELY ADDRESSED COMMON INDUSTRY PRACTICES FOR INSTRUMENT CALIBRATION AND SOURCE REVERIFICATION FREQUENCIES.
122	CID890738	HOT SPOT REDUCTION PROGRAM - FINDING RP.4-1	HAVE THE HOT SPOT REDUCTION PROGRAM OPERATIONAL BY OCTOBER 1989	OPEN PENDING LICENSING REVIEW TO CLOSE. PROGRAM IS OPERATIONAL. THE ALARA GROUP HAS LOCATED APPROXIMATELY 46 HOT-SPOTS AND IS PRESENTLY ADDRESSING THE METHODOLOGY TO ELIMINATE OR REDUCE THE LEVELS FROM THE HOT-SPOTS. LICENSING WILL SUBMIT TO INPO.
123	CID890739	FORMALIZED PROGRAM EFFECTIVENESS REPORTING SYSTEM - FINDING RP.1-1	IMPLEMENT A FORMALIZED PROGRAM EFFECTIVENESS REPORTING SYSTEM TO PROVIDE MANAGEMENT WITH CONCISE INFORMATION FOR RADIATION PROTECTION PROGRAM	CLOSED. RP901, RADIATION PROTECTION PROGRAM EFFECTIVENESS REPORT, WAS ISSUED 9/1/89. PROGRAM WILL SATISFY REQUIREMENT OF PROVIDING MANAGEMENT WITH CONCISE INFORMATION REGARDING RP PROGRAM.
124	CID890739	FORMALIZED PROGRAM EFFECTIVENESS REPORTING SYSTEM - FINDING RP.1-1	UPGRADE PROCEDURES TO PROVIDE BETTER GUIDANCE TO THE RADIATION PROTECTION TECHNICIANS ON MONITORING REQUIREMENTS FOR RADIOLOGICAL WORK	CLOSED. ALL RP PROCEDURES HAVE BEEN REVISED AND ISSUED ON 9/1/89. RP TECHNICIANS REVIEWED PROCEDURES PRIOR TO THEM BEING FINALIZED.
125	CID890739	FORMALIZED PROGRAM EFFECTIVENESS REPORTING	HAVE OPERATIONAL A RWP SURVEILLANCE PROGRAM TO FURTHER	CLOSED. RP308 HAS BEEN ISSUED.

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CONCERNS AND RESPONSES

	CONCERN #	SUBJECT	TASK	RESPONSE
		SYSTEM - FINDING RP.1-1	ENHANCE PERFORMANCE IN THIS AREA BY FORMAL EVALUATION OF RADIOLOGICAL JOB FUNCTIONS AND WORK	
126	CID890751	INPO OUTAGE MANAGEMENT ASSISTANCE VISITS RECOMMENDATIONS	REVIEW INPO'S SIGNIFICANT RECOMMENDATIONS AND STRENGTHS FROM OUTAGE MANAGEMENT ASSISTANCE VISITS FOR APPLICABILITY TO FCS.	OPEN.
127	CID890752	POTENTIAL WEAKNESS IN RADIOLOGICAL CONTROL PRACTICES	ADDRESS POTENTIAL WEAKNESSES IN RADIOLOGICAL CONTROL PRACTICES OBSERVED DURING THE 1989 ANNUAL EXERCISE	UNDER LICENSING REVIEW TO CLOSE. RP HAS PROVIDED INPUT TO LICENSING IN RESPONSE TO CONCERNS IDENTIFIED AT SUMMER ANNUAL DRILL.
128	CID890766	STORAGE AREA RECOMMENDATION	REVIEW INSPECTOR'S RECOMMENDATIONS REGARDING STORAGE AREAS HAVING BAGS PILED IN A MANNER THAT INTERFERED WITH PLANT OPERATIONS	UNDER LICENSING REVIEW TO CLOSE.
129	CID890794	POTENTIAL EXTREMITY OVER-EXPOSURE DURING STEAM GENERATION CLOSEOUT INSPECTION - NUCLEAR NETWORK	REVIEW INPO SER FOR APPLICABILITY TO FCS	OPEN.
130	CID890912	RADIOACTIVE MATERIAL SHIPPING	REVIEW FEDERAL REGISTER REGARDING 10CFR49 PARTS 171, 172, AND 173 REGARDING SHIPPING OF RADIOACTIVE MATERIALS	UNDER LICENSING REVIEW TO CLOSE.
131	CID890912	RADIOACTIVE MATERIAL SHIPPING	REVISE RW-219 BY INCORPORATING NEW CRITERIA FOR "REPORTABLE QUANTITIES" AND ALL SHIPMENTS AFFECTED BY CHANGE MUST BE HALTED	OPEN. ISSUED 11/9/89. CHANGED PROCEDURE SENT TO LICENSING.

RADIATION PROTECTION ENHANCEMENT PROGRAM ACTION PLAN

ACTION ITEMS

FORT CALHOUN STATION
RADIATION PROTECTION ENHANCEMENT PROGRAM
Most Category 1 - Organization and Staffing

NOTE: the response categorizes each item (1, 2, 3, or 4) as defined in the Commitments portion of section 3.0.

Item Number 1

Reorganize Radiation Protection, Radioactive Waste and Chemistry.
(RIP 0, HNS 1-1, NRC 285/8803-07)

Response Number 1

The RP Organization was reorganized and is presently in place at a full staffing level. Chemistry is not currently assigned to the RP organization. 3

Item Number 2

Improve selection, training and qualification of personnel.
(RIP 0, HNS 1-2)

Response Number 2

Job descriptions have been written, training program has been INPO certified and qualified personnel have filled the new positions. 1

Item Number 3

Improve interfaces between corporate and station dosimetry.
(RIP 0, HNS 1-3)

Response Number 3

There exists only station dosimetry in the new organization. 3

Item Number 4

Clearly define the responsibilities of the Radiation Protection and I&C groups in regards to the acquisition and maintenance of portable health physics instrumentation.
(RIP 0, HNS 1-4)

Response Number 4

The RP Section performs calibration and repair of survey instruments in the new organization. In-line and process instrumentation is serviced by I&C.
1 & 3

Item Number 5

Investigate pathways for improving communications between the radiation protection group and other plant groups such as maintenance.
(RIP 0, HNS 1-5)

Response Number 5

The policy of the Supervisor-Radiation Protection was reviewed; good effort initiated on all Coordinator levels; the new Radwaste Supervisor is pursuing these enhanced communications. 1

Item Number 6

Combine Special Services, Respiratory Protection, and ALARA function into one group called Radiological Health and Engineering.
(RIP 0, HNS 1-6)

Response Number 6

Radiological Health and Engineering Group formed in new organization. 1

Item Number 7

Increase the staffing of professional and supervisory personnel by three professional health physicists in the Radiological Health and Engineering group.
(RIP 0, HNS 1-7)

Response Number 7

Additional professionals have been selected and hired to fill the complete organization chart requirements. 1

Item Number 8

Establish a foreman position for radiological operations and a foreman for surveillance and instrumentation in the Radiation Operations group.
(RIP 0, HNS 1-8)

Response Number 8

4

Item Number 9

Keep contractor technicians to a minimum and fill authorized complement of OPPD technicians. Develop a staffing plan to achieve this objective.
(RIP 0, HNS 1-9)

Response Number 9

Staffing has been completed. Contractor technicians fill needed positions and are used for outages. Efforts to minimize use of contractor technicians is in place. 1

Item Number 10

Increase staffing of the corporate group, Radiological and Environmental Monitoring Services, to provide additional expertise for support of plant radiation and protection and chemistry programs.
(RIP 0, HNS 1-10)

Response Number 10

Corporate group is under development with charter to be completed in mid-1990. 1 and 4

Item Number 11

Add three professional specialties to the Radioactive Waste group - one health physicist for overall packaging and shipping program support, and two radwaste engineers for Dry Active Waste, Process Control Program, and operational technical support.
(RIP 0, HNS 1-11)

Response Number 11

New RW organization addresses the needs for additional professional support. Radiological Engineering positions established to address this issue. 1 and 4

Item Number 12

Re-evaluate the supervisory and technician staffing levels, structure, and responsibilities within the radiation protection organization.
(RIP 1, Chemston II-7)

Response Number 12

New RP organization addresses this item. 1

Item Number 13

Change the existing Technician assignment to allow all technicians to be a part of the shift rotation.
(RIP 2, Chemston II-7)

Response Number 13

As technicians complete shift technician training, they will be considered for shift rotation. As of this date, two technicians assigned to other groups within the RP department are completing the shift technician training. 4

Item Number 14

Provide a full time clerk to the dosimetry group.
(RIP 3, Chemston II-8)

Response Number 14

Additional staff has been added to dosimetry in new organization. 1

Item Number 15

Radiological protection standards must be integrated into the operation and maintenance of the station by all personnel.
(RIP 7, OPPD 16)

Response Number 15

Initiation of new procedures, organization with a position management style and resources will set the stage for "setting the example" for the development of practices/standards to a satisfactory level. 1

Item Number 16

Identify areas where radiation protection support resources become strained or overloaded. Provide additional resources or evaluate the load distribution among the present resources.
(RIP 13, OPPD 2)

Response Number 16

Several audits have been completed that address this concern. Primarily, the Hydro-Nuclear Audit addressed this concern and corrective action has been taken with added staff and resources. 1 & 2

Item Number 17

Identify present resources strengths and weaknesses. Correct weaknesses. Develop three year program to prevent problem recurrence.
(RIP 15, OPPD 3)

Response Number 17

Again, audits and evaluations have identified strengths and weaknesses. Corrective action has been made thru the enhancement program with a target for completion of approximately one year. 1 & 2

Item Number 18

Add additional depth to organization structure such that there is a supervisor of health physics between the CRP supervisor and the plant health physicist.
(RIP 15, OPPD 3)

Response Number 18

New organization includes Supervisor-Radiation Protection (RPM), with three disciplines reporting to the position. Chemistry is a separate function.
1 & 2

Item Number 19

Review current position descriptions and include scope and limits of authority for each position.
(RIP 16, OPPD 3)

Response Number 19

Position description has been reviewed with scope and limit of authority defined. 1

Item Number 20

Identify all responsible positions within the organization and provide written, approved descriptions of those positions so that all supporting groups clearly understand the roles and purposes of the position.
(RIP 17, OPPD 4)

Response Number 20

Has been accomplished with RPM, new organization and position descriptions. 1

Item Number 21

Publish an organizational chart of functional positions in the Radiation Protection Manual.
(RIP 18, OPPD 4)

Response Number 21

Accomplished with new organization in RPP. 1

Item Number 22

Clearly define corporate radiological protection responsibilities, organizational structures and interface/authority with the station radiological protection management.
(RIP 19, OPPD 116)

Response Number 22

This task is scheduled for completion in mid-1990. 1

Item Number 23

Develop one corporate staff that handles long term projects and is a resource to the plant, but not responsible for supporting daily operation directly.
(RIP 20, OPPD 116)

Response Number 23

Scheduled for completion in mid-1990. 1

Item Number 24

One corporate radiological protections staff should be developed to address technical issues related to radioactive waste, health physics, ALARA, internal and external dosimetry, and respiratory protection policies.
(RIP 21, OPPD 118)

Response Number 24

Specific areas have been discussed with the Supervisor, Radiation Protection. Scheduled for completion in mid-1990. 1

Item Number 25

Establish a corporate staff that handles long term projects and is a resource to the plant, but not responsible for supporting daily operation directly.
(RIP 22, OPPD 118)

Response Number 25

Scheduled for completion mid-1990. 1

Item Number 26

Determine by talking to plant health physics people what areas in the health physics area the corporate group could help with.
(RIP 25, OPPD 121)

Response Number 26

Has been reviewed with Supervisor Radiation Protection. 1

Item Number 27

Evaluate the structure of the corporate support group for radiation protection.
(RIP 26, OPPD 121)

Response Number 27

Scheduled for mid-1990. 1 & 3

Item Number 28

Place the responsibility of RPM at the level of supervisor health physics in order that the RPM can provide direction on a timely basis without the weight of responsibility for the station chemistry.
(RIP 27, OPPD 3)

Response Number 28

Completed with new organization. 1

Item Number 29

Develop a corporate radiation protection staff with resources to fully evaluate radiological trends, recommend effective corrective actions and provide senior management comprehensive summary analysis of all major radiation protection activities.

(RIP 28, OPPD 123)

Response Number 29

Scheduled for completion mid-1990. 1 & 3

Item Number 30

Add dosimetry records clerk to the staff. Use junior type technicians to supplement this activity during outages. The constant turnover of people and low level of staffing results in loss of time in processing the workers.

(RIP 64, Chemston IV-5)

Response Number 30

Dosimetry staff has been supplemented. Additional contractor staff has been assigned to bring active and inactive records up-to-date. 1

Item Number 31

OPPD should consider assigning health physics workers to six shifts in order to improve communication with other groups.

(RIP 231, SWEC 4.9.4)

Response Number 31

Presently six shifts are implemented. 1 and 4

Item Number 32

Functional job descriptions should be developed before the new organization is implemented.

(RIP 233, SWEC 3.2.2)

Response Number 32

Completed and approved job descriptions have been developed for all positions. 1

Item Number 33

OPPD needs to increase staffing.

(RIP 237, SWEC 3.5.3)

Response Number 33

Staffing has been expanded and appears adequate for the present program. 3

FORT CALHOUN STATION
RADIATION PROTECTION ENHANCEMENT PROGRAM
Most Category 2 - Surveillance

Item Number 34

Provide management overview assistance for reviewing routine survey matters and RWPs and for overseeing coverage of work in progress.
(RIP 0, HNS 2-1)

Response Number 34

Included in new procedure. 1

Item Number 35

Rewrite routine survey program, including implementing procedures.
(RIP 0, HNS 2-2, NRC 285/8805-08)

Response Number 35

Survey program has been rewritten and reviewed by evaluation team. 1

Item Number 36

Identify a method for adding and deleting areas from the routes on a temporary or permanent basis.
(RIP 0, HNS 2-3)

Response Number 36

Methodology has been developed by procedure 1

Item Number 37

Develop detailed guidance on the writing of RWPs.
(RIP 0, HNS 2-4)

Response Number 37

New RWP procedure provides detailed guidance. 1

Item Number 38

Develop a short training program on the writing of RWPs.
(RIP 0, 2-5)

Response Number 38

Training has been provided. 1

Item Number 39

Do not allow phrases such as directed by HP to be entered into the requirement section of the RWP.
(RIP 0, HNS 2-7)

Response Number 39

New procedures and directions have eliminated such phrases. 1

Item Number 40

Enter more detailed survey information onto the RWP.
(RIP 0, HNS 2-8)

Response Number 40

Completed. New RWP procedure. 1

Item Number 41

Develop a mechanism by which routine and periodic surveillance data are reviewed to identify trends and possible additional action and incorporate into procedures.
(RIP 0, HNS 2-9)

Response Number 41

Completed. New procedure. 1

Item Number 42

Amend the RWP approval process so that the more routine RWPs are approved at a for man or supervisory level and RWPs with higher man-rem commitment or greater radiological hazard are referenced to the Supervisor-Radiation Protection.
(RIP 0, HNS 2-10)

Response Number 42

RWP procedure has been rewritten and incorporates the new approval process.
1

Item Number 43

Provide instrumentation training for the technicians highlighting such areas as uses and limitations for each instrument.
(RIP 0, HNS 2-10)

Response Number 43

Some training has been initiated. Additional training is scheduled. 1

Item Number 44

Develop procedural guidance on correcting for source size.
(RIP 0, HNS 2-12)

Response Number 44

Procedures have been rewritten to incorporate correcting for source size. 1

Item Number 45

Develop operational procedures for each instrument in use.
(RIP 0, HNS 2-13)

Response Number 45

Completed. New procedures. 1

Item Number 46

Develop a procedure defining and describing surveys to be made when providing job coverage.
(RIP 0, HNS 2-14)

Response Number 46

Completed. New procedures. 1

Item Number 47

Change the RWP system to make it more meaningful by establishing the exposure criteria and requirements on the RWP.
(RIP 09, Chemston VIII-7)

Response Number 47

Completed. New Procedures. 1

Item Number 48

Provide more standardization in radiological protection requirements and work practices.
(RIP 72, OPPD 30)

Response Number 48

See new procedure RP 904, Radiological Work Practices Program. 1, 3

Item Number 49

Develop a Hot Particle Program.
(RIP 73, Chemston VIII-8)

Response Number 49

Hot particle program has been written, reviewed by PRC and implemented. 1

Item Number 50

Consider the following recommendations when revising the controls for entry to Very High Radiation Areas. (Short and long term)
(RIP 74, Chemston VIII-8)

Response Number 50

Addressed individually below.

Item Number 51

Old hot spot stickers should be removed and hot spots should be identified with a more readily replaceable posting label.
(RIP 77, OPPD 32)

Response Number 51

Completed and observed by evaluation team. 1

Item Number 52

Provide specific guidance regarding frequency and duration of intermittent job coverage by radiation protection personnel.
(RIP 78, OPPD 33)

Response Number 52

In new procedures. 1

Item Number 53

Procedures will be changed to prohibit the use of protective clothing in clean controlled area except as permitted by Radiation Work Permit.
9RIP 93, INPO 88 page 19)

Response Number 53

In new RWP procedures. 1

Item Number 54

For the workers, establish personnel and tool decontamination criteria in cpm and not dpm.
(RIP 96, Chemston V-5)

Response Number 54

In new procedures. 1

Item Number 55

consider elimination of lab coats or restricting use to bench-top contamination operations.
(RIP 94, Chemston V-6)

Response Number 55

4

Item Number 56

Initiate standard method for setting up and maintaining contaminated area control points for HP technicians so the personnel can be instructed in the standard method of disposal into plainly labeled receptacles.
(RIP 101, OPPD 73)

Response Number 56

Radwaste procedures have been revised to improve contamination control. 1

Item Number 57

RE-evaluate containment entries until the results of the tritium air sampling analysis are known.
(RIP 114, Chemston VI-3)

Response Number 57

Recommendation followed. 1

Item Number 58

Restrict the use of plastic suits for tritium protective practices.
(RIP 116, Chemston VI-4)

Response Number 58

Completed. 1, 3

Item Number 59

Revise and consolidate the documents relating to the air sampling program so there is a set of operational instructions for collecting an air sample, a set of operational instructions for analyzing an air sample and a set of action levels.

Response Number 59

Completed. 1, 3

Item Number 60

Eliminate the use of the CAMs for quantifying airborne activity levels. In addition, limit the sampling line length and change to a material where particulate deposition is less likely.
(RIP 125, Chemston VII-3)

Response Number 60

New procedure. 1

Item Number 61

Re-evaluate the containment air sampling entry program. Consider the use of air sampling for long (greater than 0.5 hours) entries and the need to determine the tritium concentrations prior to entry.
(RIP 127, Chemston VII-3)

Response Number 61

New procedure. 1

Item Number 62

Establish an air sampling quality control program that includes review/analysis of data, determination of existing equipment/materials, and effectiveness and trending analysis of alpha and high energy beta contaminants.
(RIP 128, Chemston VII-4)

Response Number 62

New procedure. 1

Item Number 63

A method for rapid field assessment of air samples should be developed. This method should allow for qualitative assessment of particulate air filters and radioiodine cartridges.
(RIP 129, Chemston VII-4)

Response Number 63

New procedure. 1

Item Number 64

Set limiting parameters for flow rate drop on air samples so instead of always averaging the start and end flow rates, the technician is directed whenever large drops occur to either take a new sample or use the end flow rate to calculate the activity.
(RIP 130, Chemston VII-4)

Response Number 64

New procedure. 1

Item Number 65

Develop a written policy statement in accordance with NUREG 0041 requirements.

(RIP 131, Chemston IX-4)

Response Number 65

Completed. 1

Item Number 66

Detailed guidance will be developed and proceduralized for air sampling methods and frequency by October 1991.

(RIP 148, INPO 88 page 13)

Response Number 66

Completed with new procedures. 1

Item Number 67

Detailed guidance will be developed and proceduralized for the frequency and type of radiation and contamination surveys to be taken during radiological work by October 1991.

(RIP 149, INPO 88 page 13)

Response Number 67

Completed with new procedures. 1

Item Number 68

Signs providing reminders of proper protective clothing dressout will be posted at primary dressout areas. Signs providing reminders of proper undressing procedures will be posted at primary undressing areas.

(RIP 154, INPO page 19)

Response Number 68

Completed and observed. 1

Item Number 69

Specific worker guidance related to self contamination such as wiping sweat and touching glasses will be developed, proceduralized and disseminated by September 1988.

(RIP 155, INPO 88 page 19)

Response Number 69

New procedure. 1

Item Number 70

Guidance on worker contamination of areas outside contamination zones will be provided as in RP. 9-1b.
(RIP 156, INPO 88 page 19)

Response Number 70

New procedure. 1

Item Number 71

Procedures will be changed to address frisking upon exiting from contamination areas.
(RIP 157, INPO 88 page 19)

Response Number 71

Procedures have been changed. 1

Item Number 72

Establish written procedures for use of step-off pads and removal of anti-contamination clothing to support this criterion and post at exit boundaries of contaminated areas.

Response Number 72

New procedure. 1

Item Number 73

Use whole body friskers when exiting the RCA.
(RIP 180, Chemston X-17)

Response Number 73

Completed and observed. 1

Item Number 74

All 1987 skin and clothing contamination reports will be reviewed against INPO reporting criteria. A revision to the 1987 OPPD reporting of skin and clothing contaminations will be sent to INPO by August 1988.
(RIP 210, INPO 88 page 13)

Response Number 74

1987 contamination reports were reviewed against INPO criteria. Revision has been provided to INPO. 1 & 3

Item Number 75

Increase management and supervisory monitoring of radiological work in progress to identify and make on-the-spot corrections of improper work practices.

(RIP 210, INPO 88 page 33)

Response Number 75

Completed and observed 1 & 3

Item Number 76

Strengthen radiological survey requirements to ensure that surveys accurately assess the radiological conditions encountered by workers prior to and during radioactive work.

Response Number 76

Completed by new procedures. 1

Item Number 77

Increase monitoring of radiological work in progress to identify and correct improper worker practices.

Response Number 77

Completed and observed. 1

Item Number 78

Personnel contamination monitoring equipment should be placed to allow personnel to survey themselves when exiting contaminated areas.

(RIP 222, INPO 86 page 40)

Response Number 78

Completed and observed. 1

FORT CALHOUN STATION
RADIATION PROTECTION ENHANCEMENT PROGRAM
Mort Category 3 - Personnel Selection, Training and Qualification

Item Number 79

Establish managerial and technical training programs for first time supervisors.

(RIP 0, HNS 3-1)

Response Number 79

Full training program is being evaluated. Training programs will be established. 1

Item Number 80

Insure personnel selected for positions are fully qualified.

(RIP 0, HNS 3-2)

Response Number 80

New organization, new staff, new position descriptions ensure this. 1, 3

Item Number 81

Establish required management training course for the Supervisor - Radiation Protection.

(RIP 0, HNS 3-3)

Response Number 81

Training has been established. Some courses have been completed with a satisfactory schedule for additional training. 1

Item Number 82

Establish entry level tests for technicians and technical persons to assess their capabilities for the radiation protection field.

(RIP 0, HNS 3-4)

Response Number 82

True for contractor technicians. Do not yet have for "in-house" people. 1

Item Number 83

Establish testing process to determine which personnel from the technician and technical fields are most suitable for management training and management positions.

(RIP 0, HNS 3-5)

Response Number 83

Some effort has been made in this area. However, training is looking further at this. 1

Item Number 84

Develop specialized training for personnel in areas such as dosimetry processing, radwaste, and respiratory protection.
(RIP 0, HNS 3-6)

Response Number 84

This activity is on-going for all areas; personnel have attended several courses and seminars. 1

Item Number 85

Develop and implement a formal review process that requires approval by the Supervisor-Radiation Protection for all training lesson plans and materials to radiation protection.
(RIP 32, Chemston III-3)

Response Number 85

Supervisor-Radiation Protection reviews training material and periodically monitors courses. Formal review process is not in place. 1

Item Number 86

Develop a system for incorporating both plant and industry experience into the training material.
(RIP 33, Chemston III-4)

Response Number 86

RP personnel have attended EPRI annual seminar for RW experience; this should continue. Industry practices/events are included in technician training and requalification training. 1

Item Number 87

Consider the establishment of an ALARA training course for engineers and supervisors.
(RIP 35, Chemston III-4)

Response Number 87

This topic is under review. 1

Item Number 88

Add a training shift to the radiation protection complement and include supervision in some of this training.
(RIP 36, Chemston III-4)

Response Number 88

Presently there are six shifts. Extensive training is taking place at all levels. 1 & 4

Item Number 89

Develop a formal self-monitoring program.
(RIP 371 Chemston III-4)

Response Number 89

Not developed at this time. 1, 4

Item Number 90

Develop a training lesson for non-radiation protection managers and supervisors on fulfilling their responsibilities in radiological areas.
(RIP 38, OPPD 6)

Response Number 90

Training department is reviewing appropriate lesson plans for non-radiation workers. Present GET also addresses these issues. 1

Item Number 91

Continue aggressive approach to training health physics people to reduce contractor usage and establish an in-house staff that will further program effectiveness.
(RIP 40, OPPD 16)

Response Number 91

Close attention is paid to this as contractors are used only in areas for which expertise has not been fully developed in house. 1

Item Number 92

Determine specialized tasks that are not covered within the existing curriculum.
(RIP 41, OPPD 19)

Response Number 92

On-going process. Training program under development to better address RPT and RPTT needs. 1

Item Number 93

Complete lesson plan review so that technical training can start.

Response Number 93

Closed. Training has been reviewed and is an on-going process. 1

Item Number 94

Evaluate what resources and man-power will be required to meet the 1987 INPO Guidelines for training.
(RIP 43, OPPD 19)

Response Number 94

Training has received INPO certification and manpower needs have been evaluated. 1

Item Number 95

Determine how frequently continuing training can be supported by the techs and senior people and still support day to day operations.
(RIP 44, OPPD 20)

Response Number 95

New organization provides staff that can support continuing training needs.
1

Item Number 96

Continue technician training. Include system training.
(RIP 45, OPPD 22)

Response Number 96

Training of technicians is continuing. Systems training has been incorporated into technician training. 1

Item Number 97

Ensure that all technicians have signed off training sheets and train senior technicians.
(RIP 46, OPPD 23)

Response Number 97

Program in place. 1

Item Number 98

Establish a detailed program for requalification and specify frequency of required requalification for specific tasks.
(RIP 47, OPPD 23)

Response Number 98

Completed 1

Item Number 99

Designate, within the radiation protection group, a single point of contact (CME) to provide radiation protection changes as input to training department.
(RIP 49, OPPD 28)

Response Number 99

Completed 1

Item Number 100

Budget item requests for attendance at professional meetings, conferences, and workshops, (i.e., HPS, EEI, EPRI, and INPO) need high priority in order to reap the benefits of District membership in these organizations.
(RIP 52, OPPD 47)

Response Number 100

RP budget includes meeting attendance at appropriate professional groups. RP has attended EPRI and other meetings as needed to maintain technical awareness. 1

Item Number 101

Health Physics continuing training must be addressed for personnel assigned long term to the Radwaste group.
(RIP 53, OPPD 81)

Response Number 101

This is being reviewed by Supervisor-Radiation Protection. Training department is developing new technician training program for RPTs and RPTTs. 1 & 4

Item Number 102

Changes to the procedures will be factored into the health physics technician Training Program Master Plan.
(RIP 57, INPO 88 page 13)

Response Number 102

Training is aware and new procedures are being reviewed for incorporation into training. This a a major project. 1

Item Number 103

Consider changing the TLD technician annual requalification program such that various operational situations are presented and must be resolved. (RIP 207, OPPD 99)

Response Number 103

This item is under review. 1

Item Number 104

Additional attention needs to be given succession planning for key employees. (RIP 228, SWEC sec. 3.6.2)

Response Number 104

Succession planning is in progress. 1 & 4

Item Number 105

OPPD must develop programs to improve the skills of management and supervisory personnel. (RIP 238, SWEC sec. 3.6.3)

Response Number 105

Management training is in progress, coordinated by Organization and Development group located downtown. 1

FORT CALHOUN STATION
RADIATION PROTECTION ENHANCEMENT PROGRAM
Mort Category 4 - Radioactive Waste Management

Item Number 106

In preparation for the outage, draft a strong policy statement emphasizing the need to control the generation of radioactive waste.
(RIP 0, NHS 4-1)

Response Number 106

This is resolved in the OPPD Nuclear Policy Manual and Standing Order G-63.
1

Item Number 107

Identify and develop the missing elements of the PCP in addition to those elements which require revision.
(RIP 0, HNS 4-3)

Response Number 107

Procedure RW-200 addresses the PCP; a review reveals that the PCP has been substantially revised; additional review and "tweaking" is desirable and is currently underway; the issue of mixed waste and hazardous waste needs further attention. 1

Item Number 108

Define a schedule for PCP Program development and implementation.
(RIP 0, HNS 4-3)

Response Number 108

This was addressed in the overall efforts to date and the 9/1/89 issuing of new RW procedures. 1

Item Number 109

Perform an in-depth QA/QC audit of the Process Control Program to be used as a baseline for program improvement.

Response Number 109

The program has been improved. 1 & 4

Item Number 110

Revise the Process Control Program based upon revisions made to the overall Radioactive Waste Management Program.
(RIP 0, HNS 4-6)

Response Number 110

This has been done with issuance of RW-AD-100 and RW-200. 1

Item Number 111

Submit the revised Process Control Program to the NRC for review and approval.

(RIP 0, HNS 4-6)

Response Number 111

The PCP will require submittal with the next Semi-annual Report after 9/1/89. 1

Item Number 112

Restrict waste shipments to burial site until PCP has been revised and implemented.

(RIP 0, HNS 4-7)

Response Number 112

Shipments were restricted and PCP is revised and implemented. 1

Item Number 113

Relocate the contaminated oil stored in a trailer located in the back lot to an environmentally safe area.

(RIP 0, HNS 4-8)

Response Number 113

Storage and handling of the contaminated oil will be re-examined in conjunction with an overall evaluation of low-level contaminated wastes. 1

Item Number 114

Evaluate requirements for enclosures to protect materials stored outside.

(RIP 0, HNS 4-9)

Response Number 114

This is addressed with new RW program and procedures; hazardous waste storage requires closer scrutiny. 1

Item Number 115

Stop hand frisking trash using current techniques.

(RIP 0, HNS 4-12)

Response Number 115

New procedures are implemented. 1

Item Number 116

Start-up the automated waste sorting table.
(RIP 0, HNS 4-11)

Response Number 116

Don't have an automated waste sorting table. Need a sort and release program first. 1

Item Number 117

Develop a stringent policy for control of material going into the controlled area to be implemented prior to the outage.
(RIP 0, HNS 4-12)

Response Number 117

New program and procedures are implemented by Contamination Control Coordinator. 1

Item Number 118

Develop a poster campaign for waste reduction.
(RIP 0, HNS 4-13)

Response Number 118

Contamination Control Coordinator is initiating development of this poster campaign. 1 & 4

Item Number 119

Develop procedures for use of the waste sorting table.
(RIP 0, HNS 4-15)

Response Number 119

Procedures have been developed. 1

Item Number 120

Develop procedures for control of material going into the RCA.
(RIP 0, HNS 4-16)

Response Number 120

New procedures developed. 1

Item Number 121

Develop a corporate policy defining Radioactive Waste Management responsibilities and authority.
(RIP 0, HNS 4-17)

Response Number 121

Addressed in RW-AD-100 and FCS Radiation Protection Manual. 1

Item Number 122

Review, qualify and document the waste classification program.
(RIP 0, HNS 4-18)

Response Number 122

New procedures developed. 1

Item Number 123

Initiate a program for the development and implementation of a Radioactive Waste Management and tracking program.
(RIP 0, HNS 4-19)

Response Number 123

A revised program with implementing procedures is in place; however, a need continues to have a computerized system to assist in waste classification, paperwork development and tracking. 1

Item Number 124

Involve QA/QC in a more formal way in the inspection and review of processes and data.
(RIP 0, HNS 4-20)

Response Number 124

This is included in the new procedure. 1

Item Number 125

Review and revise procedures to provide uniformity and continuity.
(RIP 0, HNS 4-21)

Response Number 125

This is resolved in the new procedure. 1

Item Number 126

Review the use of methods and equipment for handling radioactive waste for inclusion of ALARA techniques.
(RIP 0, HNS 4-23)

Response Number 126

ALARA review was included in the recent procedure development process. 1

Item Number 127

Develop an overall plant Radioactive Waste Minimization Program.
(RIP 0, HNS 4-24)

Response Number 127

This is addressed by RW-500 and supplemented by efforts by the Contamination Control Coordinator. OPPD has "Radiological Waste Minimization Policy", dated March 31, 1989, issued by W.C. Jones in the OPPD Nuclear Policy Manual. 1

Item Number 128

Develop a training module for GRT and GET addressing Radioactive Waste Minimization.
(RIP 0, HNS 4-25)

Response Number 128

The current training modules will be reviewed by the Contamination Control Coordinator to ensure the FCS program is adequately addressed. 1

Item Number 129

Develop a program for limiting clean material entering controlled areas.
(RIP 0, HNS 4-26)

Response Number 129

Included in RW-505 and efforts of the Contamination Control Coordinator. 1

Item Number 130

Increase awareness in other training programs - maintenance, chemistry, etc. - of the need to reduce the quantity of radioactive material.

Response Number 130

This is an on-going activity and is part of the Contamination Control Coordinator's plans for further implementation of the waste minimization program. 1

Item Number 131

Move all decon operations under radwaste.
(RIP 0, HNS 4-28)

Response Number 131

Completed 1

Item Number 132

Develop release criteria for clean waste.
(RIP 0, HNS 4-30)

Response Number 132

This effort is temporarily suspended pending review of OPPD's plans and approach toward release criteria, BRC and waste minimization. 1

Item Number 133

Develop a long term program for processing DAW.
(RIP 0, HNS 4-30)

Response Number 133

The Radwaste Supervisor is planning a review of the overall program relating to waste minimization, ERC, release criteria as well as DAW and other waste disposal practices. Earlier plans appear appropriate for consideration during this effort. 1

Item Number 134

Review and provide input to the training department for assuring that current and proposed changes are covered in the Radioactive Waste training program.
(RIP 0, HNS 4-31)

Response Number 134

This is adequately covered by the program and procedures. 1

Item Number 135

Provide specialized training and periodic retraining in DOT, NRC, Burial Site and station requirements for radioactive waste personnel.
(RIP 0, HNS 4-32)

Response Number 135

Such training has been provided in the past and expected in the future. 1

Item Number 136

Review and revise all radioactive waste procedures.
(RIP 0, HNS 4-33)

Response Number 136

Completed September, 1989. 1

Item Number 137

Quality control personnel should attend training and workshop as offered on site to stay current on applicable regulations for preparation and shipment of radioactive materials.

(RIP 54, OPPD 82)

Response Number 137

FCS radwaste procedures provide QC points as appropriate; QC should attend RW training as appropriate. 1

Item Number 138

General instructions need to be provided by OPPD to the contract driver transporting radioactive materials to handle various incidents.

(RIP 55, OPPD page 83)

Response Number 138

FCS radwaste and transportation procedures have been revised to reflect industry practices and regulatory requirements. 1

Item Number 139

Complete the operation and calibration procedure for the tool monitor and trash sorter.

(RIP 99, Chemston page V-6)

Response Number 139

Appropriate procedures have been prepared. 1

Item Number 140

A clean trash barrel should be set up at every step-off pad where personnel may place objects or protective clothing they believe is potentially clean.

(RIP 100, OPPD page 73)

Response Number 140

This has been partially implemented but is being suspended pending review of release criteria, etc. 1

Item Number 141

Standing Order G-63 needs to be modified to give the Radwaste Coordinator responsibility for determining which materials can be taken into radiologically controlled areas.

(RIP 102, OPPD 75)

Response Number 141

This order appears redundant to RW-AD-100 and implementing procedures. 1 & 4

Item Number 142

In addition, during outages a material control watch should be posted at the auxiliary building entrance by the locker-rooms with specific guidelines (provide by Radwaste Coordinator).
(RIP 103, OPPD page 75)

Response Number 142

This practice is currently being implemented by the Contamination Control Coordinator. 1

Item Number 143

Develop a program for total station involvement in the control of all elements of radioactive waste generation.
(RIP 104, OPPD page 75)

Response Number 143

This is being fully implemented at present. 1

Item Number 144

Launderable protective clothing, such as booties need to be investigated.
(RIP 105, OPPD page 76)

Response Number 144

This has been investigated by the radwaste organization. 1

Item Number 145

Work with EPRI on BRC petition.
(RIP 106, OPPD page 77)

Response Number 145

The Radwaste Supervisor will monitor BRC activities. 1 & 4

Item Number 146

Completion of Radwaste Processing Facility (1990) will provide dedicated room to properly sort/segregate.
(RIP 107, OPPD page 77)

Response Number 146

The Radwaste Processing Facility will be carefully evaluated to ensure the facility is fully utilized. 1

Item Number 147

Pursue a program/limit for the release of low-level trash.
(RIP 108, OPPD page 78)

Response Number 147

This will be considered as part of the overall program evaluation of release criteria, BRC, etc., which will be under control of the Radwaste Supervisor. 1

Item Number 148

Supercompaction will be evaluated as an alternative option as work on a release limit progresses.
(RIP 109, OPPD page 78)

Response Number 148

This will be considered as part of the overall program evaluation of release criteria, BRC, etc., which will be under control of the Radwaste Supervisor. 1 & 4

Item Number 149

Determine an alternate method of verifying scaling factors for filters and DAW.
(RIP 110, OPPD page 84)

Response Number 149

The current plans for the scaling factor have been revised. 1

Item Number 150

Analyze resin shipments on an individual basis because of the infrequency of the shipment.
(RIP 111, OPPD page 84)

Response Number 150

This item is not necessary if the overall scaling factors are consistent with industry practices. 1 & 4

Item Number 151

Investigate a plan to verify scaling factors.
(RIP 112, OPPD page 84)

Response Number 151

Current plans and procedures provide this capability. 1

Item Number 152

Revise procedure for determining isotopic fractions in liquid waste.
(RIP 113, OPPD 84)

Response Number 152

Procedures have been revised as appropriate. 1

Item Number 153

Change the entrance TLD issue forms to ask if the individual has worked in a uranium or fuel processing type facility and refer all yes answers to supervision for follow-up.
(RIP 117, Chemston page VI-4)

Response Number 153

Completed 1

Item Number 154

A program for monitoring cleaning devices such as mops and cloths for contamination will be developed, proceduralized and implemented by April 1989. Documentation methods for these surveys will be included.
(RIP 161, INPO 88 page 21)

Response Number 154

This is handled by Procedure RW-503. The need for formal documentation is questionable. 1, 3, & 4

Item Number 155

A standard method for posting, taping, controlling, and receiving waste should be proceduralized so that such areas are uniform in operation and appearance as well as boundaries clearly defined.
(RIP 171, OPPD page 105)

Response Number 155

Current radwaste procedures appear to adequately address this recommendation. 1

Item Number 156

Complete a review of unrestricted release of all materials in order to determine whether different materials or all materials should have identical release limits.
(RIP 172, OPPD page 107)

Response Number 156

This will be addressed by plans of the Radwaste Supervisor. 1

Item Number 157

Continue to improve cavity decontamination.
(RIP 176, OPPD page 16)

Response Number 157

The Contamination Control Coordinator is evaluating several alternatives including robotics and other new techniques. 1

Item Number 158

Continue to investigate the most effective methods to decontaminate sources such as the SWIRT and spent fuel area now that the fuel integrity has been improved.

(RIP 177, OPPD page 16)

Response Number 158

Several alternative are being investigated including recently developed robotic filtration systems. 1

Item Number 159

Develop an acceptable sorting/segregation program with sophisticated sorting equipment to release low-level trash.

(RIP 194, OPPD page 77)

Response Number 159

The Radwaste Supervisor will be evaluating the overall program. 2

Item Number 160

Get sorting table operational.

(RIP 195, OPPD page 77)

Response Number 160

Procedures have been developed. 1

Item Number 161

Investigate sorting/segregation programs at other utilities and develop a program at Fort Calhoun which would be acceptable to the NRC.

(RIP 196, OPPD page 77)

Response Number 161

The Radwaste Supervisor will review overall industry practices as part of his program evaluation. 1

Item Number 162

The radwaste processing facility (expected completion 1990) will provide the needed space to properly decon and store waste prior to shipment.

(RIP 225, OPPD page 79)

Response Number 162

This will be included in the overall plans for 1990 activities relating to the Radwaste Processing Facility. 1

FORT CALHOUN STATION
RADIATION PROTECTION ENHANCEMENT PROGRAM
Mort Category 5 - General Employee Training

Item Number 163

Perform an internal audit after the revised GET program is complete to assure the continued presentation of training necessary to meet the criteria.

(RIP 48, OPPD 26)

Response Number 163

The Supervisor-Radiation Protection or a member of the staff audits GET on an annual basis (resulting in 4 audits per year). 1

Item Number 164

A program of continuing training must be implemented in order for general employees to perform at the expected level in regard to radiation protection requirement.

(RIP 50, OPPD 28)

Response Number 164

Annual GET review is provided. 1

Item Number 165

Training in GET would need to be implemented to give guidance on what is potentially clean and stress that objects are not necessarily radwaste just because it is brought into the radiologically controlled area.

(RIP 56, OPPD 73)

Response Number 165

The training module has been upgraded and will be re-evaluated by the Contamination Control Coordinator to ensure adequacy. 1

Item Number 166

Incorporate procedure developed for item 174 into GET training.

(RIP 175, OPPD 111)

Response Number 166

Complete 1

Item Number 167

Emphasize to workers the importance of adhering to radiological protection requirements.

(RIP 211, INPO 86 page 33)

Response Number 167

GET, annual update, supervisors and continued surveillance by KP emphasizes RP requirements. ROR is issued in cases where neglect or lack of attention to details is present. 1

FORT CALHOUN
RADIATION PROTECTION ENHANCEMENT PROGRAM
Most Category 6 - ALARA

Item Number 168

Clearly define the ALARA policy in a central document, either the Radiation Protection Manual or an ALARA Manual.
(RIP 0, HNS 6-1, NRC 285/8805-P11)

Response Number 168

ALARA policy statement has been issued. 1

Item Number 169

Further develop the program and implementing procedures.
(RIP 0, HNS 6-2)

Response Number 169

ALARA procedures completed September, 1989 and comprehensive. 1

Item Number 170

Perform a detailed walkdown of the plant to determine cost-benefit for removal and/or shielding of hot spots.
(RIP 0, HNS 6-3)

Response Number 170

ALARA section has performed the initial phase of identification. Engineering review is in process. 1

Item Number 171

Consider use of cameras for surveillance of high radiation area monitoring during high exposure jobs such as steam generator testing and repair.
(RIP 0, HNS 6-7)

Response Number 171

Concept is being reviewed by ALARA section. 4

Item Number 172

Establish ALARA goals based on projected plant operations and maintenance for the year.
(RIP 0, HNS 6-8)

Response Number 172

ALARA goals are in the process of development by the various sections with operations and maintenance in mind. 1

Item Number 173

Establish and present an ALARA training program tailored to the various support groups such as engineering, plant supervision, and the ALARA technicians.

(RIP 0, HNS 6-9)

Response Number 173

ALARA awareness training program is presently under review. 1

Item Number 174

Change the ALARA committee composition so there are a smaller number of members, a higher level of organization participation and a reduction in scope so that the committee only performs program effectiveness assessments.

(RIP 67, Chemston page VIII-6)

Response Number 174

ALARA committee has been re-evaluated and changed. 1

Item Number 175

ALARA efforts need to be more proactive with greater effort on analyzing high dose/dose rate jobs to determine effective dose reduction techniques.

(RIP 68, Chemston page VIII-7)

Response Number 175

New procedures and ALARA program does proactively consider high dose/dose rate jobs. 1

Item Number 176

Change the ALARA review system so it addresses the goals of ALARA which is maintaining exposures as low as reasonably achievable.

(RIP 70, Chemston page VIII-7)

Response Number 176

New procedures address and include ALARA goals. 1

Item Number 177

A review of high dose/dose rate tasks should be performed and either a radiological control procedure developed for the task or the radiological controls integrated into the work procedure.

(RIP 71, Chemston page VIII-8)

Response Number 177

New procedure satisfies requirement. 1

Item Number 178

Broader participation of craft workers is needed in ALARA information meetings.
(RIP 75)

Response Number 178

ALARA section is seeking methods to involve craft workers to a higher degree. ALARA suggestion program has been initiated. 1

Item Number 179

The ALARA Committee should review and study more aggressive programs which seek to limit lifetime exposure of long term station employees as a goal for 1988.
(RIP 79, OPPD page 38)

Response Number 179

Covered by procedure. 1

Item Number 180

Identify the standard parameters for which collective exposure goals should be formulated in both outage and non-outage years.
(RIP 81, OPPD page 40)

Response Number 180

Parameters have been identified. 1

Item Number 181

Establish a formal exposure goals program to administer and monitor against established goals with appropriate accountability.
(RIP 82, OPPD page 41)

Response Number 181

Covered by procedures RP-304, RP-AD-300, and the RPP. 1

Item Number 182

Develop a program which identifies positions or personnel to fulfill the role of project manager with the responsibility and authority to satisfy the stated goal (criteria).
(RIP 83, OPPD page 42)

Response Number 182

In process. 1

Item Number 183

Implement the required actions of INPO criteria 4a. Then provide a program to break down station work requirements by department or work group.
(RIP 84, OPPD page 44)

Response Number 183

In process. 1

Item Number 184

Identify the standard parameters or work requirements for each department against which collective exposure goals can be formulated in both outage and non-outage years.
(RIP 85, OPPD page 44)

Response Number 184

Standard parameters have been identified. 1

Item Number 185

Assign personnel identified in required actions for INPO criteria 4b to monitor actual collective exposure for the department or work group so that timely corrective action is taken to achieve the goal.
(RIP 86, OPPD page 44)

Response Number 185

In process. 1

Item Number 186

All work requirements used to formulate the initial goals must be identified so that subsequent work requirements that impact on the goals can be evaluated and adjusted as necessary.
(RIP 88, OPPD page 45)

Response Number 186

Will follow initial effort. 1

Item Number 187

Temporary or permanent curbs and dams will be installed as appropriate around areas where contaminated water could contaminate nearby clean controlled areas or areas of much lower contamination. Temporary curbs will be installed by December 1988.
(RIP 160, INPO 88 page 21)

Response Number 187

Completed 1, 3

Item Number 188

Improve participation in the ALARA program.
(RIP 215, INPO 86 page 37)

Response Number 188

Efforts are being made to improve participation in the ALARA program. 1

Item Number 189

Place a high priority on ALARA recommendations that can result in significant dose reductions.
(RIP 216, INPO 86 page 37)

Response Number 189

Reorganized ALARA Committee and created an Executive ALARA Committee. 1

Item Number 190

Consider developing incentives to encourage participation by workers.
(RIP 217, INPO 86 page 37)

Response Number 190

Not fully implemented, however, being considered by FCS management. 1, 4

Item Number 191

Encourage work group participation in establishing challenging but achievable goals based on projected annual work requirements.
(RIP 218, INPO 86 page 37)

Response Number 191

RP-304, "Radiological Goals Program," has been implemented. The ALARA Committee is responsible for reviewing and recommending goals and improvement plans and for tracking progress against the goals.. 1

Item Number 192

Identify and correct leakage from radioactive systems in a timely manner.
(RIP 219, INPO 86 page 39)

Response Number 192

Radwaste procedure RW-508 addresses this item. 1

Item Number 193

Provide containment devices on radioactive leaks to limit the spread of contamination until corrective maintenance is completed.
(RIP 220, INPO 86 page 39)

Response Number 193

RV contamination control personnel perform this function. Procedures are in place. 1

FORT CALHOUN
RADIATION PROTECTION ENHANCEMENT PROGRAM
Mort Category 7 - External Exposure Control

Item Number 194

Develop procedures for dosimetry issuance, dosimetry records, routine and termination dose reports, dose assessments, lost/damaged dosimeters, and TLD/Pencil discrepancies.

Response Number 194

By new procedures. 1

Item Number 195

Develop job descriptions and qualifications for the dosimetry office staff.
(RIP 0, HNS 7-2)

Response Number 195

All positions have a completed job description. 1

Item Number 196

Develop controls that allow only qualified personnel to issue dosimetry in accordance with specific procedures.
(RIP 0, HNS 7-3)

Response Number 196

Controls are in place. 1

Item Number 197

Develop specific guidance for calculating and recording extremity exposures.
(RIP 0, HNS 7-4)

Response Number 197

New procedures. 1

Item Number 198

Develop definition and enforcement of proper locations and methods for wearing personnel TLDs and pencil dosimeters.
(RIP 0, HNS 7-5)

Response Number 198

New procedures. 1

Item Number 199

Develop a low background storage area for all in-use TLD and pencil dosimeters.

(RIP 0, HNS 7-6)

Response Number 199

Low background area selected. 1

Item Number 200

Develop a method of controlling all personnel that have had an exposure limit imposed by the plant or by the individual (Reg. Guide 8.13)

(RIP 0, HNS 7-7)

Response Number 200

The current administrative dose control procedures and manual access control system provide adequate control. This control will be enhanced with the implementation of a computerized access control system which is under consideration. 1

Item Number 201

Add a senior technical health physicist that has experience in running a dosimetry office and is capable of detailed dose calculations and evaluations.

(RIP 0, HNS 7-9)

Response Number 201

Complete with new organization. 1

Item Number 202

Purchase a new dosimetry system that is capable of monitoring all types of radiation present at Fort Calhoun, and consists of various types of holders (e.g. ring and wrist).

(RIP 0, HNS 7-10, NRC 8830/01)

Response Number 202

Panasonic system has been purchased, NAVIAP certification is in process. 1

Item Number 203

Move the dosimetry office from corporate to the site where it can receive the technical support necessary and where it can be integrated into the total dosimetry system.

(RIP 0, HNS 7-11)

Response Number 203

Moves completed. 1 & 3

Item Number 204

Move the dosimetry calibration source to a scatter free environment where proper security can be enforced.
(RIP 0, HNS 7-12)

Response Number 204

A new dosimetry calibration source for the Panasonic TLD System has been purchased and placed into service. 1, 3

Item Number 205

Determine the beta and neutron spectra at Fort Calhoun and provide the proper correction factors to the dosimetry office.
(RIP 0, HNS 7-13)

Response Number 205

Plans are to measure the spectra during the next year. 1

Item Number 206

Improve the TLD calibration jig and purchase a new beta calibration source.
(RIP 0, HNS 7-14)

Response Number 206

Complete 1

Item Number 207

Develop procedural guidance on the evaluation of dosimetry data to establish exposure trends and enhance the recognition of resulting implications.
(RIP 0, HNS 7-15)

Response Number 207

By new procedure. 1

Item Number 208

Improve procedural controls on receiving increasing levels of exposure.
(RIP 0, HNS 7-16)

Response Number 208

By new procedure. 1

Item Number 209

Provide off-site dosimetry training for the corporate dosimetry technician at one of the numerous training programs offered by vendors or by the major universities.

(RIP 0, HNS 7-17)

Response Number 209

The corporate group is no longer responsible for the dosimetry program. Radiation processing of Panasonic TLDs have attended vendor training. 1

Item Number 210

Improve the existing guidance in RPM 2.10 by developing a specific procedure for evaluating lost badges, exposure without badges, off scale dosimeters and significant discrepancies between TLDs and DRDs.

(RIP 58, Chemston Page IV-4)

Response Number 210

New procedure. 1

Item Number 211

Change the TLD vs DRD comparison categories to reduce the number of categories from three to two. Also add a provision for evaluating a dose assignment for personnel with minimal TLD reading but large DRD readings.

(RIP 59, Chemston Page IV-4)

Response Number 211

Complete. 1

Item Number 212

Proceduralize the documentation of changes in raw dosimetry readouts at the Corporate TLD processing center.

(RIP 60, Chemston Page IV-4)

Response Number 212

Dosimetry moved to site. Procedures have been issued. 1

Item Number 213

Develop a criteria and a protocol for determining changes in neutron spectra and calibration factors.

(RIP 61, Chemston Page IV-5)

Response Number 213

FCS plans to measure the neutron spectrum at a future date. 1

Item Number 214

Evaluate the existing Xe-133 skin dose equation and determine the adequacy of the model. the recent January 1988 article in RPH magazine may be used as a reference.

(RIP 62, Chemston Page IV-5)

Response Number 214

Model evaluated and is adequate. Other models also available. 1

Item Number 215

Consider the use of a mechanical system such as notes or markers affixed to TLD badges to aid in determining terminated workers.

(RIP 65, Chemston Page IV-6)

Response Number 215

Methodology is being evaluated. 1

Item Number 216

A review of 198 doses determined against 100 sq cm instead of 1 sq cm will be performed by September 1, 1988.

(RIP 89, INPO 88 Page 13)

Response Number 216

Complete. 1 & 3

Item Number 217

The TLD dosimetry system and the range of expected radiations and energies in the plant will be clearly defined so that any deviations can be identified and addressed.

(RIP 91, INPO 88, Page 17)

Response Number 217

Under evaluation with new TLD system. 1

Item Number 218

A new TLD processor capable of providing TLDs of appropriate energy response, radiation differentiations and formats such as finger rings will be purchased and implemented or contracted in 1989.

(RIP 92, INPO 88 Page 17)

Response Number 218

On schedule. 1

Item Number 219

Develop a more consistent set of limits and include action criteria.
(RIP 94, Chemston Page V-6)

Response Number 219

New procedure. 1

Item Number 220

Change the skin dose calculation action levels so that the level is in terms of cpm and time on the skin is considered when performing the dose calculation.
(RIP 98, Chemston Page V-6)

Response Number 220

New procedure. 1

Item Number 221

Improve station check out system for all personnel that are terminating their assignment employment, or visit at the station, to ensure that these individuals notify HP in order that all requirements for WBC and exposure reporting can be completed.
(RIP 169, OPPD Page 57)

Response Number 221

All in-coming personnel are required to sign a sheet explaining the procedure for terminating their employment (i.e.: exit whole body count, return dosimetry, etc.) 1

Item Number 222

Change the background check plot program so it only records isotopic activities greater than MARL.
(RIP 184, Chemston Page A16)

Response Number 222

Completed. 1

Item Number 223

Implement improved algorithms which have been developed and tested for evaluation of TLD data and are ready for implementation.
(RIP 197, OPPD Page 86)

Response Number 223

In process with new TLD system. 1

Item Number 224

Begin algorithm development and testing for the mixed gamma/neutron category of exposure.
(RIP 198, OPPD Page 86)

Response Number 224

Neutron spectra needs to be measured. This is being evaluated and scheduled for 1990. 1

Item Number 225

Study/evaluate possible upgrade to new TLD reading equipment.
(RIP 199, OPPD Page 87)

Response Number 225

New system selected. 1, 2

Item Number 226

Establish an OPPD action level lower than ANSI N13.11-1083 acceptance criteria limit for the monthly QA testing.
(RIP 200, OPPD Page 87)

Response Number 226

Will be accomplished with new system. 1

Item Number 227

Decrease the acceptance criteria for calibration and calibration checks of the TLD reading equipment.
(RIP 201, OPPD Page 87)

Response Number 227

New procedures. 1

Item Number 228

Record glow curves (plot of heating temperature versus light emitted by the TLD element) for documentation of individual TLD element performance.
(RIP 202, OPPD Page 87)

Response Number 228

New procedures with new system. 1

Item Number 229

Strengthen procedural requirements for the position of dosimetry devices during radiological work.
(RIP 203, OPPD Page 88)

Response Number 229

Incorporated in new procedures. 1

Item Number 230

Investigate improvements to radiation monitoring of the hands. Various TLD products that can be worn on a finger are available in the industry.
(RIP 204, OPPD page 89)

Response Number 230

Extremity monitoring is addressed in procedures and finger rings will be provided by an off-site vendor. Consideration is being given to acquiring on-site capability. 1

Item Number 231

Evaluate the need to move the TLD processing activity to the site.
(RIP 205, OPPD Page 91)

Response Number 231

Move has been completed to the site. 1 & 4

Item Number 232

Develop guidance for actions to be taken when PIC - TLD discrepancies are significant, and what degree of difference is significant.
(RIP 206, OPPD Page 94)

Response Number 232

Completed with new procedures. 1

FORT CALHOUN STATION
RADIATION PROTECTION ENHANCEMENT PROGRAM
Mort Category 8 - Facilities and Equipment

Item Number 233

Rewrite all instrument operating procedures.
(RIP 0, HNS 8-1)

Response Number 233

New procedures issued 9/1/89. 1 & 3

Item Number 234

Review and rewrite calibration procedures.
(RIP 0, HNS 8-2)

Response Number 234

New procedures issued 9/1/89. 1 & 3

Item Number 235

Develop accountability procedures.
(RIP 0, HNS 8-3)

Response Number 235

New procedures issued 9/1/89. 1

Item Number 236

Develop a memorandum of understanding between I&C and health physics regarding the responsibilities of each group.
(RIP 0, HNS 8-4)

Response Number 236

RP now calibrates and repairs survey instruments. I&C calibrates and repairs in-line process monitors and area radiation monitors. 1

Item Number 237

Evaluate the instrument inventory and develop and improvements plan.
(RIP 0, HNS 8-5)

Response Number 237

Inventory completed. Improvement plan is under evaluation. 1

Item Number 238

Place friskers at strategic locations throughout the plant.
(RIP 0, HNS 8-6)

Response Number 238

Observed on all levels with instruction for frisking. 1

Item Number 239

Provide health physics technicians with a training course in instrument theory and operation.
(RIP 0, HNS 8-7)

Response Number 239

Training has been evaluated and will incorporate this need into the RP tech training program. 1

Item Number 240

Develop proper beta calibration techniques and assign proper correction factors.
(RIP 0, HNS 8-8)

Response Number 240

Completed with new procedures. 1

Item Number 241

Jointly share instrument calibration program between I&C and health physics.
(RIP 0, HNS 8-9)

Response Number 241

See item 236. 1, 4

Item Number 242

Add a senior engineer familiar with instrumentation to the group to take responsibility for developing an instrument program.

Response Number 242

Senior engineer has been added. 1

Item Number 243

Designate an instrument storage area and assign responsibility to the radiation protection group.
(RIP 0, HNS 8-11)

Response Number 243

Storage area has been assigned and responsibility assigned. 1

Item Number 244

Establish a dosimetry office outside of the gate and combine the whole body counting operation, the dosimetry office currently located downtown, and the records program.
(RIP 0, HNS 8-12)

Response Number 244

Completed. 1

Item Number 245

Clean up the personnel decon area and restrict access to authorized personnel.
(RIP 0, HNS 8-13)

Response Number 245

Complete. 1

Item Number 246

Delay the purchase of the new automated dosimetry system pending a more thorough evaluation.
(RIP 0, HNS 8-14)

Response Number 246

System has been evaluated and purchased. 1

Item Number 247

Perform a thorough review of the construction plans for the new radiation protection facilities and integrate with existing facilities for maximum use and function.
(RIP 0, HNS 8-15)

Response Number 247

Reviewed new "layout" and found the space allocations acceptable. 1

Item Number 248

Ensure procedures are developed in a timely manner for new instrumentation.
(RIP 179, Chemston X-17)

Response Number 248

Procedures issued 9/1/89. 1

Item Number 249

Change procedure CP-HP-22-12: Determining function check point. Change posted source activities from the single one minute activity values to the average of ten five minute source peak activities.
(RIP 187, Chemston A16)

Response Number 249

New procedure. 1

Item Number 250

Provide an uninterruptable power source and operate the whole body counter off the power.
(RIP 189, Chemston A17)

Response Number 250

New AccuScan unit will have uninterruptable power source. 1

Item Number 251

A program is suggested which reduces the time an instrument is out of service for calibration and keeps more calibrated instruments available for field use.
(RIP 190, OPPD 66)

Response Number 251

Recent responsibility change has improved availability of instruments. Additional instruments have been budgeted. 1

Item Number 252

A minimum number of available instruments should be specified by type of instrument and reported and tracked as a performance indicator.
(RIP 191, OPPD 66)

Response Number 252

New procedure. 1

Item Number 253

Upgrade equipment environmental conditions to appropriate levels, particularly for counting room equipment.
(RIP 192, OPFD 68)

Response Number 253

Under evaluation. Some improvements have been made. 1

Item Number 254

Consolidate the equipment QC program during the revision of the Radiation Protection Manual.
(RIP 193, OPFD 69)

Response Number 254

Complete. 1

FORT CALHOUN
RADIATION PROTECTION ENHANCEMENT PROGRAM
Most Category 9 - External Exposure Control

Item Number 255

Develop a urinalysis program to meet the recommendations of industry standards.

(RIP 0, HNS 9-1)

Response Number 255

Complete. 1

Item Number 256

Develop a complete set of procedures that address, as a minimum, the requirements and recommendations of ANSI N343, INPO 85-010, and ANSI 13.14.

(RIP 0, HNS 9-2)

Response Number 256

Complete. 1

Item Number 257

Develop procedures for the records program. 1

(RIP 0, HNS 9-3)

Response Number 257

Complete. 1

Item Number 258

Change the training programs and the operating mode to ensure only qualified personnel are working in the dosimetry office.

(RIP 0, HNS 9-4)

Response Number 258

Dosimetry personnel are trained. 1

Item Number 259

Carefully control access to the personnel exposure files and allow only qualified personnel to enter or retrieve data.

(RIP 0, HNS 9-5)

Response Number 259

Access control to files and enter or retrieval of data are controlled. 1

Item Number 260

Develop a qualifications and training program for personnel in internal dosimetry.

(RIP 0, HNS 9-6)

Response Number 260

In process with planned training programs. 1

Item Number 261

Establish a system for controlling samples taken for bioassays.

(RIP 0, HNS 9-7)

Response Number 261

Protocol has been developed. 1

Item Number 262

Evaluate suitable backup facilities for whole body counting.

(RIP 0, HNS 9-8)

Response Number 262

AccuScan will be operational shortly. 1

Item Number 263

Establish good dose records keeping system.

(RIP 0, HNS 9-9)

Response Number 263

Established Radiological Health group with records expertise. Active records are presently being updated (completion 12/89). Inactive updates will follow. 1 & 3

Item Number 264

Improve capabilities for internal dose calculations.

(RIP 0, HNS 9-10)

Response Number 264

The establishment of the Radiological Health and Engineering group provides the improved capability for internal dose calculations. 1

Item Number 265

Develop an exposure and contamination review policy.

(RIP 0, HNS 9-11)

Response Number 265

New Procedures. 1

Item Number 266

Improve administrative dose control procedures.
(RIP 0, HNS 9-12)

Response Number 266

New Procedures. 1

Item Number 267

Establish a quality control and assurance program for internal dosimetry.
(RIP 0, HNS 9-13)

Response Number 267

New Procedures. 1

Item Number 268

Integrate accepted and INPO recommended industry standards into the program.
(RIP 0, HNS 9-14)

Response Number 268

Complete. New Procedures. 1

Item Number 269

Develop minimum qualifications for the whole body counter operator and include as a part of the job description.
(RIP 0, HNS 9-15)

Response Number 269

A specific performance evaluation checklist (PEC) for the operation of the whole body counter has been developed and is used to qualify operators. 1

Item Number 270

The tracking and trending threshold for positive whole body counts will be revised to match industry practice by September 1, 1988.
(RIP 90, INPO 88 Page 13)

Response Number 270

Complete. 1

Item Number 271

Provide urinalysis for personnel entering containment at power routinely.
(RIP 115, Chemston Page VI-4)

Response Number 271

New Procedure. 1

Item Number 272

Review the whole body count evaluation procedure to provide action level criteria based upon MPC-hrs and not MPBB or MPOB.
(RIP 120, Chemston Page VI-5)

Response Number 272

Complete. 1

Item Number 273

Provide a format and instructions for investigating intakes in excess of 40 MPC-hrs. This can be done by revising an already existing incident evaluation procedure.
(RIP 123, Chemston Page VI-5)

Response Number 273

Complete. 1

Item Number 274

A program to perform random whole body counting of personnel performing work in radiologically controlled areas will be implemented by September 1, 1988.
(RIP 152, INPO 88 Page 16)

Response Number 274

Complete and observed. Every tenth person using a respirator is WBC'ed. 1 & 3

Item Number 275

Evaluate and upgrade of the whole body counting system to incorporate high resolution Ge-Li detectors which would effectively lower the threshold of detectable activity.
(RIP 162, OPPD Page 52)

Response Number 275

New AccuScan WBC has been purchased and is scheduled for operation by the end of the year. 1

Item Number 276

Evaluate a program for in-vitro methods of bioassay in order to monitor for internal deposition of radionuclides that cannot be detected using whole body counting equipment, such as tritium.
(RIP 163, OPPD Page 54)

Response Number 276

Evaluation is complete. 1

Item Number 277

Install a gain stabilizer on the Fastscan.
(RIP 181, Chemston Page A12)

Response Number 277

The FASTSCAN has been moved to a more controlled environment (Training Center) making the gain stabilizer unnecessary. 1

Item Number 278

Revise procedure HP-1.
(RIP 182, Chemston Page A12)

Response Number 278

Procedure issued 9/1/89. 1

Item Number 279

Purchase and operate a second whole body counter system, preferably a scanning, germanium detector system. 1 & 4
(RIP 183, Chemston Page A14)

Response Number 279

New system purchased and scheduled for operation by end of year. 1

Item Number 280

Make changes to the Calibration Check Plot and the background check plot program on the Fastscan Whole Body counter. 1
(RIP 185, Chemston Page A16)

Response Number 280

Complete. 1

Item Number 281

Make the QC source with more activity or count it longer to achieve the minimum 10,000 net counts for the three reference photopeaks recommended in ASTM and ANSI standards.
(RIP 186, Chemston Page A16)

Response Number 281

Complete. 1

Item Number 282

Check using the mixed isotopic source in the lower G.I. position of the phantom. Modify the library and calibration entries to QC in the same way it is done for the thyroid sensitivity check.
(RIP 188, Chemston Page A17)

Response Number 282

Complete. 1

Item Number 283

Consider relocating or rearranging whole-body-friskers to ensure that, once personnel are determined to be uncontaminated, they do not traverse potentially contaminated areas of the radiologically controlled area prior to exiting.
(RIP 223, INPO 86 Page 40)

Response Number 283

Evaluated and changes made. 1

Item Number 284

Evaluate an upgrade to the whole body counting system to incorporate high resolution Ge-Li detectors.
(RIP 224, OPPD Page 59)

Response Number 284

New system purchased. 1

Response Number 372

New organization is addressing this concern.

Item Number 373

Additional efforts must be taken to improve communications between the different groups.
(RIP 235, SWEC sect 3.3.2)

Response Number 373

Supervisor Radiation Protection and the three recently hired supervisors have improvement of communications as a top priority. 1

Item Number 374

OPPD needs improvement in root cause analysis beyond that envisioned in Project 1991.
(RIP 236, SWEC Sect 3.4.1)

Response Number 374

This evaluation recommended that root-cause-analysis training be given to coordinators and supervisors. 4

FORT CALHOUN
RADIATION PROTECTION ENHANCEMENT PROGRAM
Mort Category 10 - Procedures

Item Number 285

Rewrite the Radiation Protection Manual using NUREG 0761 and INPO 88-010 for guidance.
(RIP 0, HNS 10-1)

Response Number 285

The RPM was split into the RP Plan and RP Procedures. 1

Item Number 286

Remove procedural steps from the Radiation Protection Manual and state in implementing procedures.
(RIP 0, HNS 10-2, NRC 285/8805-08)

Response Number 286

Procedural steps have been removed. 1 & 4

Item Number 287

Procedures which contain actions which groups other than the radiation protection group are responsible for performing should not be written as radiation protection procedures but rather as standing orders.
(RIP 0, HNS 10-3)

Response Number 287

Standing orders have been and will continue to be issued as required. 1

Item Number 288

Implementing procedures should be rewritten in a consistent format which agrees with ANSI N18.7. See memo.
(RIP 0, HNS 10-4)

Response Number 288

New procedures meet ANSI requirements. 1

Item Number 289

A job task analysis should be performed for the tasks performed by the radiation protection group as an aid in writing the new procedures.
(RIP 0, HNS 10-4)

Response Number 289

New procedures issued 9/1/89. A period of time will be required to "de-bug" the procedures. 1 & 4

Item Number 290

Verify new procedures by field test prior to implementation.
(RIP 0, HNS 10-6)

Response Number 290

Verification and validation was completed for all new procedures. 1

Item Number 291

Develop instrument use procedures.
(RIP 0, HNS 10-7)

Response Number 291

New instrument use procedures developed. 1

Item Number 292

Develop procedures describing routine survey basis and implementation.
(RIP 0, HNS 10-8)

Response Number 292

Included in newly revised survey procedure. 1

Item Number 293

Develop procedures for respirator control, return and maintenance.
(RIP 0, HNS 10-9)

Response Number 293

Completed with procedure revisions issued 9/1/89. 1

Item Number 294

Divide procedures into two groups; those required by RegGuide 1.33 and needing PRC approval, and those procedures which may be approved by the department head.
(RIP 0, HNS 10-10)

Response Number 294

Item Number 295

Create a section in the Radiation Protection Manual that delineates the responsibilities for radiation protection of all groups within OPPD. State specific areas of authority.
(RIP 4, Chemston Page II-8)

Response Number 295

Included in revised RPP (7/89). 1

Item Number 296

Reduce or eliminate the number of Radiation Protection instructions issued as standing orders, policies, or memos.
(RIP 5, Chemston Page II-9)

Response Number 296

Some standing orders are considered advisable. Most functions have been proceduralized. 2

Item Number 297

Revise the radiation protection plan and procedure system so the plan is a guidance document on what the program is to accomplish and the procedures explain how the program elements are accomplished.
(RIP 6, Chemston Page II-9)

Response Number 297

Accomplished with revised RPP (7/89) and revised procedure (9/1/89). 1

Item Number 298

Eliminate the use of ambiguous phrases in written radiation documents.
(RIP 8, Chemston Page II-9)

Response Number 298

Procedure preparation guide helps eliminate ambiguous phrases. 1

Item Number 299

Make forms and changes to the forms part of the radiation protection procedures.
(RIP 9, Chemston II-9)

Response Number 299

New procedures include revised and consistent forms. 1

Item Number 300

The Radiological Protection Manual and radiological procedures in other sections of the Operations Manual will be written by October 1991.

Response Number 300

RPP revised and issued 7/89, procedures revised and issued 9/1/89. Reference response number 285. 1

Item Number 301

As performance standards are developed in the rewrite of the Radiation Protection Manual procedures for measuring the achievement of the performance standards will be concurrently developed.
(RIP 31, INPO 83 Page 13)

Response Number 301

Performance standards and measurement are included in RPP. 1

Item Number 302

Health physics procedures and policies are under review by outside consultants with the objective being to upgrade or totally rewrite the Radiation Protection Manual in order to separate and clarify policies and procedures.
(RIP 39, OPPD Page 12, NRC 285/8805-08)

Response Number 302

RPP revised 7/89. 1

Item Number 303

Provide procedural and RWP guidance on re-zeroing and stay times for high dose jobs.
(RIP 63, Chemston Page IV-5)

Response Number 303

Included in new procedures. 1

Item Number 304

A review of radiation protection procedures and increased emphasis on compliance with these procedures has been initiated.
(RIP 76, OPPD Page 31)

Response Number 304

Procedures revised and issued 9/1/89. Management has emphasized the following of procedure. 1

Item Number 305

Incorporate into the maintenance procedures that valves removed from the secondary side of the plant be surveyed by an HP technician.
(RIP 95, Chemston Page V-5)

Response Number 305

Item under evaluation. 1 & 3

Item Number 306

Complete a major revision of the Radiation Protection Manual which will provide a clear plan supported by coordinated procedures.
(RIP 166, OPPD Page 55)

Response Number 306

Revised RPP issued July, 1989, followed by revised procedures issued 9/1/89. 1 & 3

Item Number 307

Assure that the future rewrite of the Radiation Protection Manual and procedures will provide a clearer description of the radioactive contamination controls program.
(RIP 170, OPPD Page 101, NRC 285/8805-12)

Response Number 307

This has been incorporated. 1

Item Number 308

Revise and consolidate the instrumentation procedures so there is a clear set of operational and calibration instructions that are unique to each instrument.
(RIP 178, Chemston Page X-17)

Response Number 308

All instruments have upgraded procedures as of 9/1/89. 1 & 3

Item Number 309

The upgrade of the Radiation Protection procedures should be given a high priority by OPPD.
(RIP 232, SWEC Sect. 4.9.4, NRC 285/8805-08)

Response Number 309

Upgrade completed 9/1/89. 1 & 3

FORT CALHOUN
RADIATION PROTECTION ENHANCEMENT PROGRAM
Most Category 11 - Respiratory Protection Program

Item Number 310

Do not take protection factors until missing program elements have been developed.

(RIP 0, HNS 11-1, NRC 285/8805-13)

Response Number 310

Comply. 1

Item Number 311

Determine MPC-hours for all entries using respiratory protection equipment in accordance with 10CFR20.103.

(RIP 0, HNS 11-2)

Response Number 311

Comply. 1

Item Number 312

Bring a qualified individual on site to oversee the development of the elements of an acceptable program.

(RIP 0, HNS 11-3, NRC 285/8805-13)

Response Number 312

Complete (Respiratory Protection Coordinator). 1

Item Number 313

Develop procedures governing maintenance of the various types of equipment.

(RIP 0, HNS 11-4, NRC 285/8805-13)

Response Number 313

Procedures have been issued. 1

Item Number 314

Develop and implement a program to verify the effectiveness of respiratory protection controls.

(RIP 0, HNS 11-5, NRC 285/8805-13)

Response Number 314

Included in new procedures. 1

Item Number 315

Present and document training to persons maintaining respiratory protection equipment.
(RIP 0, HNS 11-6)

Response Number 315

Training program has been scheduled and will be documented. 1

Item Number 316

Develop an issue system.
(RIP 0, HNS 11-7, NRC 285/8805-13)

Response Number 316

New procedures include issue system. 1

Item Number 317

Apply for NRC approval to use the radio-iodine sorbent canisters.
(RIP 118, Chemston Page VI-4)

Response Number 317

The initial evaluation concluded that the requirements necessary to meet NRC approval of radio-iodine sorbent canisters are very restrictive and not cost effective. The canisters are available and will be used when applicable with no protection factors applied. 1

Item Number 318

Evaluate and develop engineering and operational changes to reduce the quality of unfiltered air from leaving the spent fuel pool work area and reaching adjacent work areas.
(RIP 119, Chemston Page VI-5)

Response Number 318

Evaluation in process. 1

Item Number 319

Change the requirement for wearing respiratory protection at 20,000 dpm/100 sq cm to a higher value.
(RIP 121, Chemston Page VI-5, NRC 285/8805-12)

Response Number 319

Has been accomplished. 1

Item Number 320

Change the system of accumulating MPC-hrs so it can be done promptly; use of the new computerized exposure tracking system is one suggested method.

(RIP 122, Chemston VI-5)

Response Number 320

New respiratory program and procedures include changes. 1

Item Number 321

Reintroduce the use of lapel samplers.

(RIP 126, Chemston Page VII-3)

Response Number 321

4

Item Number 322

Develop an organizational matrix and responsibilities for the respiratory protection program. Try to limit the number of individuals/groups who have direct responsibility for implementing the program.

(RIP 132, Chemston Page IX-4)

Response Number 322

New organization corrects the previous problem and provides specific responsibility. 1

Item Number 323

Evaluate the existing station gas system to ensure the supply connections are not compatible with respirator air supply equipment.

(RIP 133, Chemston Page IX-5)

Response Number 323

Evaluation completed. 1

Item Number 324

Evaluate the station service air system to determine if the potential for contamination of the air system exists and, if it does, implement the appropriate measures to prevent occurrence. See IE Notice 79-08 and 85-06 for additional details.

(RIP 134, Chemston Page IX-5)

Response Number 324

Has been evaluated and corrective action taken. 1

Item Number 325

Change the locations of the air sampling for the breathing air system within the RCA. Select the locations randomly and include sampling for radioactive contaminants.

(RIP 135, Chemston Page IX-5)

Response Number 325

Locations have been evaluated and some changes made. 1

Item Number 326

Unique or different hose connector fittings should be applied to all station compressed air outlets so that hoses cannot be inadvertently connected to the wrong system.

(RIP 136, OPPD Page 50)

Response Number 326

Completed. 1

Item Number 327

Develop procedural instruction on respirator selection for the HP technician.

(RIP 137, Chemston Page LX-5, NRC 285/8805-13)

Response Number 327

New respiratory protection procedures contain the necessary guidance. 1

Item Number 328

Develop formal training and experience requirements for personnel performing program implementation function.

(RIP 138, Chemston Page IX-5)

Response Number 328

Requirements have been incorporated. 1

Item Number 329

Move the respirator cleaning facility to an enclosed, ventilated area and reconfigure the process flow so the high level contamination work is furthest from the exit.

(RIP 139, Chemston Page IX-5)

Response Number 329

Facilities have been upgraded and meet industry good practices. 1

Item Number 330

Review the issue system so a positive control system is implemented.
(RIP 140, Chemston Page IX-5)

Response Number 330

Positive control system has been implemented. 1

Item Number 331

Maintain an inventory/code number for each respirator so a maintenance history can be maintained for each respirator.
(RIP 141, Chemston Page IX-6, NRC 285/8805-13)

Response Number 331

Requirement is a part of new procedure. 1

Item Number 332

Change the respirator cleaning procedure to include instructions for retrieval, prewash monitoring, washing, sanitizing, drying, and surveys. Eliminate any other procedure providing these instructions. Add a limit for fixed contamination.
(RIP 142, Chemston Page IX-6, NRC 285/8805-13)

Response Number 332

These changes have been included in new respiratory protection procedures. 1

Item Number 333

Clarify the qualification criteria and process for obtaining approval to wear a respirator. Include designating who has approval authority, and the methods to be used in notifying the wearer and wearer's supervisor when requalification is required.
(RIP 143, Chemston Page IX-6, NRC 285/8805-13)

Response Number 333

Included in new respiratory protection procedures. 1

Item Number 334

Evaluate the usefulness of applying to the NRC for approval of twelve (12) PF credit for sorbent canisters (See Farley write-up as an example).
(RIP 144, Chemston Page IX-6)

Response Number 334

Has been evaluated. See response to #317. 1

Item Number 335

Develop a separate training course for respiratory protection qualification. Include in the training the NUREG 0041 guidelines. (RIP 145, Chemston Page IX-6, NRC 285/8805-13)

Response Number 335

GET level III. Is included as a separate training course and includes NUREG-0041 guidelines. 1

Item Number 336

Do not perform initial fit testing until medical approval to wear a respirator has been obtained. (RIP 146, Chemston IX-6)

Response Number 336

Requirement has been included. 1

Item Number 337

Expedite development of an operating procedure for the mask/fitter testing unit. Ensure that each mask is tested annually for leakage (preferably the month before a refueling outage). (RIP 147, Chemston IX-7)

Response Number 337

Completed as a part of new procedures. 1

Item Number 338

Air samples will be taken that represent the breathing zone of each worker whenever respirators are worn. The proceduralization of this approach and the acquisition of equipment to support it will be accomplished by June 1, 1989. (RIP 151, INPO 88 Page 16)

Response Number 338

New procedures were issued 9/1/89. 1

Item Number 339

A reevaluation of the level of smearable surface contamination on floors and equipment above which respirators must be worn was performed and station procedures changed from a value of 20,000 dpm/100 sq cm to a higher level. (RIP 153, INPO 88 Page 16)

Response Number 339

RP-501 "Description and Selection of Respiratory Protection Equipment". 1

Item Number 340

Develop a clear and well organized respiratory protection program with procedures that address and implement all requirements of the regulatory guidance (NUREG-0041) and this criteria.
(RIP 164, OPPD 54)

Response Number 340

Completed with new respiratory protection plan, procedures and personnel. 1

Item Number 341

Define responsibility for respiratory protection program implementation at a level in the organization that provides close supervision of the application of respiratory protection in field activities.
(RIP 165, OPPD 54)

Response Number 341

New organization defines responsibility at a significant reporting level. 1

Item Number 342

The respiratory protection program should be described in separate distinct sections of both plan and procedures.
(RIP 167, OPPD 55)

Response Number 342

The RPP, procedures and standing orders provide acceptable distinct sections. 1 & 4

Item Number 343

The program element for use of self-contained breathing apparatus (SCBA) must be upgraded to industry standard, especially in the testing, maintenance, training qualification, and approval process.
(RIP 168, OPPD 55)

Response Number 343

Completed with new procedures and equipment. 1

FORT CALHOUN STATION
RADIATION PROTECTION ENHANCEMENT PROGRAM
Hort Category 12 - Radioactive Materials Control

Item Number 345

Review and revise existing radioactive material (byproduct) procedures for uniformity and continuity.
(RIP 0, HNS 12-1)

Response Number 345

The radwaste procedures have been revised and upgraded.

Item Number 346

Establish a database for the control and accountability of byproduct source material.
(RIP 0, HNS 12-2)

Response Number 346

The selection of a database management system will assist in accountability of byproduct source material. 1 & 4

Item Number 347

Control of HEPA vacuum cleaners and portable HEPA air filters will be proceduralized and will require locking and control of units by technicians.
(RIP 158, INPO 88 page 20)

Response Number 347

The various plant vacuum cleaners and HEPA filter operations have been formally proceduralized.

Item Number 348

Procedures will be developed for sealing and transfer of potentially contaminated material from contaminated work areas.
(RIP 159, INPO 88 page 21)

Response Number 348

This has been included in the revised procedures.

FORT CALHOUN STATION
RADIATION PROTECTION ENHANCEMENT PROGRAM
Most Category 13 - Management Overview

Item Number 349

Establish realistic goals for the radiation protection program based on planned work activities to bring the program up to acceptable industry standards.

(RIP 0, HNS 13-1)

Response Number 349

1989 goals were a first step. The 1990 goals will be based upon experience and will be monitored closely by management. 1

Item Number 350

Expand the goal setting process to facilitate the improvement program.
(RIP 0, HNS 13-2)

Response Number 350

The 1990 goals will include those major tasks in the improvement program. 1

Item Number 351

Expand goals and performance indicators beyond the basic INPO guidance.
(RIP 0, HNS 13-3)

Response Number 351

Goals and performance indicators include INPO guidance and go further to meet the needs of FCS. 1

Item Number 352

Establish an environment conducive to creating personnel motivation.
(RIP 0, HNS 13-4)

Response Number 352

The enhancement program is designed to provide an RP program that one can feel a part of. This program is establishing the "roots" for a positive environment. 1

Item Number 353

Create programs for developing the potential of personnel.
(RIP 0, HNS 13-5)

Response Number 353

This need is recognized and management is reviewing best methods to develop personnel. 1

Item Number 354

Develop and implement a health physics deficiency reporting and tracking program.

(RIP 0, HNS 13-6, NRC 285/8805-09)

Response Number 354

ROE procedure issued 9/1/89 satisfies this item. 1

Item Number 355

Develop and implement training for audit personnel.

(RIP 0, HNS 13-7, NRC 285/8805-09)

Response Number 355

Training of audit personnel is scheduled. 1

Item Number 356

Develop an open items system and checklists to ensure routine activities and periodic record/field work reviews are performed by radiation protection supervision.

(RIP 10, Chemston II-10)

Response Number 356

Commitment Tracking System List satisfies current need for upgrading RP program. A database management system has been evaluated and will provide further tracking methods. 1 & 3

Item Number 357

Determine OPPD's commitments to the NRC and establish a computerized database and corresponding procedures to allow the commitments to be listed in the reference section.

(RIP 11, Chemston Page II-10)

Response Number 357

Commitment Tracking System List satisfies this requirement. 1

Item Number 358

Implement a program or worker evaluation in radiation controlled areas to identify improper application of defined procedural requirements and provide prompt corrective actions.

(RIP 12, OPPD Page 29)

Response Number 358

Program is in place to evaluate on-the-spot problems or procedure violations. The new ROR procedure is the reporting process for violations. 1

Item Number 359

Track and identify trends in radiation protection incidents with root cause determination.
(RIP 23, OPPD Page 120)

Response Number 359

New procedure tracks incidents and provides trending methodology. 1

Item Number 360

Corporate radiation protections staff should be utilized to provide more intimate trending of radiation protection parameters that otherwise left unaddressed can lead to violations and inspector concerns.
(RIP 24, OPPD Page 120)

Response Number 360

Corporate staff will finalize plans by mid-1990. 1

Item Number 361

Methods for preparing and disseminating radiological conditions to supervision will be developed and proceduralized by December 1991.
(RIP 29, INPO 88 Page 13)

Response Number 361

Performance indicators and information regarding daily radiological conditions are reported to management. Methodology for proceduralized reporting is under evaluation. 1

Item Number 362

An audit plan for QA or some other internal assessment group should be developed that ensures monitoring the effectiveness of training in radiological activities.
(RIP 34, Chenston Page III-4, NRC 285/8805-09)

Response Number 362

Corporate RP support will complete a plan by mid-1990. 1

Item Number 363

Implementation of a strict retraining policy for individuals violating the proper procedure for work in a radiation controlled area.
(RIP 51, OPPD Page 29)

Response Number 363

See ROR procedure. 1

Item Number 364

Modify Standing Order G-50's scope to require individual sections/departments to develop their own exposure goals.
(RIP 66, Chemston Page VIII-6)

Response number 364

This is in process currently. 1

Item Number 365

Define parameters that need to be identified against which radiation exposure goals can be better formulated and monitored.
(RIP 80, OPPD Page 40)

Response Number 365

Parameters have been identified in RPP. 1

Item Number 366

The reporting of personnel contamination incidents will be improved by changing the reporting form and supporting guidance to require information needed for investigation and analysis.
(RIP 150, INPO 88 Page 13)

Response Number 366

See new ROR procedure. 1

Item Number 367

Increase management and supervisory monitoring of radiological work in progress to identify and make on-the-spot corrections of improper work practices.
(RIP 212, INP 86 Page 33, NRC 285/8805-09)

Response Number 367

On-the-spot evaluations and immediate corrective actions is in progress under the ALARA groups. 1

Item Number 368

Improve the implementation of the radiological deficiency reporting system by documenting, trending, and analyzing all noted radiological deficiencies. Use the results of the trends and analyses to identify root causes of radiological problems.

(RIP 214, INFO 86 Page 36, NRC 285/8805-09)

Response Number 368

See ROR procedure. 1

Item Number 369

Tack the RPPCG with the responsibility for providing corrective action for RP problems identified through the incident report program.

(RIP 226, OPPD Page 122)

Response Number 369

See ROR procedure. 1 & 4

Item Number 370

Management must closely monitor the performance of the health physics group.

(RIP 229, SWEC Sect 4.9.4)

Response Number 370

The RP Enhancement Program and the selection of key supervisory personnel are indicative of management overview of RP. Performance indicators are provided to management. 1

Item Number 371

The C/RP Supervisor should be responsible for determining the root cause of poor performance in radiation protection practices and determining the appropriate corrective action.

(RIP 230, SWEC Sect 4.9.4)

Response Number 371

The Supervisor-Radiation Protection has this responsibility with the aid of the ROR procedure. 1

Item Number 372

Problems are not being resolved in a timely manner due to the lack of effective planning specifically in setting of priorities, the integration of the schedule, and the depth of the planning process.

(RIP 234, SWEC Sect 3.4.2)

Response Number 372

New organization is addressing this concern.

Item Number 373

Additional efforts must be taken to improve communications between the different groups.

(RIP 235, SWEC sect 3.3.2)

Response Number 373

Supervisor Radiation Protection and the three recently hired supervisors have improvement of communications as a top priority. 1

Item Number 374

OPPD needs improvement in root cause analysis beyond that envisioned in Project 1991.

(RIP 236, SWEC Sect 3.4.1)

Response Number 374

This evaluation recommended that root-cause-analysis training be given to coordinators and supervisors.4