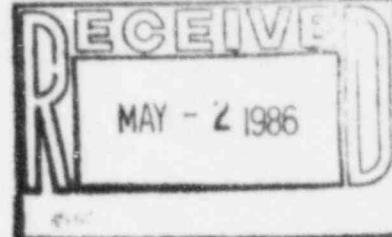




LOUISIANA
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MIDDLE SOUTH
UTILITIES SYSTEM

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May 1, 1986

W3P86-0066

A4.05

QA

Mr. Robert D. Martin
Regional Administrator, Region IV
U.S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 1000
Arlington, TX 76011

Subject: Waterford 3 SES
Docket No. 50-382
License No. NPF-38
NRC Report 85-30 - SALP BOARD REPORT

Reference: NRC letter dated 3/20/86 (Docket: 50-382/85-30), R.D. Martin
to R.S. Leddick (LP&L).

Dear Mr. Martin:

Attached is the Louisiana Power & Light Company response to the Systematic Assessment of Licensee Performance (SALP) Board Report for Waterford 3 which was transmitted by the referenced letter.

If you have any questions on our response, please contact K.W. Cook,
Nuclear Support & Licensing Manager at (504) 595-2805, or myself.

Very truly yours,

G.W. Muench
Director of Nuclear Operations

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PDR ADOCK 05000382
G PDR

GWM:GEW:ssf

cc: NRC, Director, Office of I&E
C.W. Knighton, NRC-NRR
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"AN EQUAL OPPORTUNITY EMPLOYER"

86-443

LP&L RESPONSE TO SALP BOARD REPORT

Performance Functional Area -

A. PREOPERATIONAL/STARTUP TESTING

NRC Recommended Licensee Actions:

Licensee management is encouraged to apply the same attention to detail during future facility operation including post-outage testing.

Response:

The Waterford 3 staff will continue to apply a high level of attention to detail during future facility operation including post-outage testing.

Performance Functional Area -

B. PLANT OPERATIONSNRC Recommended Licensee Actions:

An aggressive reactor trip reduction program, including human factors evaluations and root causes determination, should be instituted to reduce the reactor trip frequency toward the industry average. This program should include an in-depth review of the events by experienced operators from outside the plant operations department.

Licensee management must revise the overall trend related to staffing which should help reduce the number of reportable events. Additionally, support of the completion of the program to upgrade the control room annunciator system should continue. Licensee management should initiate a preplanned program to eliminate the RAB airborne radioactivity problem. Also, licensee management should use the formulation and review of the Technical Specification (TS) for the broad range toxic gas detection system required by License Condition 2.C.4 as an opportunity to review the progress being made toward reliable monitoring systems associated with the control room ventilation system.

RESPONSES TO SPECIFIC RECOMMENDATIONSB-1 Recommendation

"An aggressive trip reduction program, including human factors evaluations and root causes determination, should be instituted to reduce the reactor trip frequency toward the industry average. This program should include an in-depth review of the events by experienced operators from outside the plant operations department."

B-1 Response:

The SALP report addresses 22 reactor trips from power in 1985. Some of these trips resulted from random failures, human error and other occurrences that would not be unexpected during the startup phase of a nuclear power plant. The majority of the period encompassed the power ascension phase of the first cycle of operation. Commercial operation commenced on September 24, 1985, by which time the frequency of feedwater-related trips (9 of the 22 trips) had been significantly reduced. In 1986, no feedwater-related trips have been experienced to date.

Plant management has given much attention to reduce reactor trips. In this regard, the following measures have been taken or are now in progress:

1. The Waterford 3 Operations Superintendent is a member of the Combustion Engineering Owner's Group Subcommittee on Reactor Trip Reduction. Recommendations resulting from root cause analyses and other subcommittee efforts are evaluated by management for implementation at Waterford 3. Some of these recommendations include:

B. PLANT OPERATIONS - B-1 Response (continued)

- a. Enhancements for the Steam Generator Feed Pump vibration instrument/trip and suction pressure trip.
- b. Enhancement for Control Drive Mechanism System (Automatic CEDM Timing Module Installation).
- c. Revising Core Protection Calculator penalty factors associated with Control Element Assembly drops and with raising the Axial Shape Index trip to 20% Reactor Power.
- d. Review the root cause determination processes employed at other Combustion Engineering plants.

Items a and b above have already been implemented. Item c is planned for future implementation. Item d is now in the first stages of implementation.

- 2. A Maintenance Department Directive was issued in February, 1985, to provide guidance in minimizing inadvertent Engineered Safety Feature Actuation System actuations and plant trips. This directive addressed maintenance practices designed to prevent inadvertent trips. Since issuance of that directive, no trips have occurred that can be directly attributed to maintenance practices.
- 3. In response to the reactor trips that were associated with the Feed & Condensate System, the following corrective actions resulted from the post trip reviews and analyses:
 - a. OP-10-001, General Plant Operations, was revised to enhance procedural trip prevention measures (e.g., to address manual control of Steam Generator water level at low power levels). This has helped reduce trips caused by operator error associated with the difficulty of manual control at low power levels.
 - b. The following Steam Generator Feedwater Pump modifications were implemented:
 - (1) Gage boards were installed to enhance monitoring and tuning of the turbine governors.
 - (2) The turbine governors were overhauled.
 - (3) The high vibration trip was removed (alarm retained).
 - (4) An orifice was installed in the Condensate Pump recirculation piping.
 - (5) A time delay was added to the low pump suction pressure trip.

B. PLANT OPERATIONS - B-1 Response (continued)

- c. The Condensate Polisher and/or its operation were modified as follows:
 - (1) The operating procedure was revised to reduce the potential for system transients and operator error.
 - (2) Major polisher operations are now supervised by an Operations Supervisor.
- d. Steam Bypass Control Valves are stroked on a frequent basis to verify operability.

In addition to the above post-trip corrective actions, the following trip prevention measures were taken to reduce the potential for postulated trips related to operation of the Condensate and Feedwater Systems:

- a. December, 1984 to Summer, 1985 Outage
 - (1) In recognition of the potential for a trip on high condenser level, the turbine drain tank level was raised.
 - (2) Installed a 4-20 mamp to 10-50 mamp converter to improve the compatibility of the Feedwater Control System output signal to the input required by the Feedwater Pump Turbine control system.
 - (3) Realigned feedwater pumps to drive turbines and installed alignment keys on the pumps to avoid misalignment which could cause coupling or bearing distress. Doweled the base of the pumps to reduce pump movement.
 - (4) Installed dedicated centrifuge to maintain the feedwater pump turbine oil dry and clean.
 - (5) Improved Operations management and monitoring of Condensate Polisher operations, including administrative controls on polisher vessel isolation. Actions have been initiated to provide control room indication of key Condensate Polisher parameters.
 - (6) Analyzed system operation for the hotwells and water boxes resulting in improved system alignments (e.g. with respect to isolated portions of the condenser and the associated potential for feedwater pump trip) and improved management controls to minimize system manipulations.

B. PLANT OPERATIONS - B-1 Response (continued)

- (7) As a continuing action, programs are in place to trend feed pump vibration signature analysis data, and to implement corrective actions for adverse trends.

b. Summer, 1985 Outage

- (1) Installed a governor/control gage board to provide for operational monitoring, trouble shooting and analysis for the system.
- (2) A Westinghouse expert was retained to disassemble and tune the governor and install new hoses.
- (3) Drained, cleaned, and refilled the oil system; and oil and steam leaks were corrected.
- (4) Implemented a modification to the oil system to rectify a pump seal vacuum problem.
- (5) Disassembled, inspected, and repaired, as needed, the low and high pressure turbine stop valves and one governor valve.

c. September, 1985 to the Present

A detailed operational review of the Feedwater Heater Drain System was conducted to evaluate system performance and take appropriate corrective action. Station designs have been implemented to address items such as:

- (1) Heater Drain Pump Discharge Valve trim changeout
- (2) Trim changeout for No. 4 to No. 5 Heater Normal Drain Valves
- (3) Level Switch changes for No. 1 and No. 2 Heaters
- (4) Addition of an orifice to the vent lines for the No. 6 Heater
- (5) The Reactor Power Cutback System was successfully tested prior to the March 1986 outage. Automatic operation of this system should prevent trips associated with the loss of one Steam Generator Feedwater Pump at high power levels.

The following is a numerical summary of the Feed and Condensate work packages issued and completed in 1985 and 1986:

<u>System</u>	<u>1985</u>	<u>1986</u>	<u>Total</u>
Feedwater	177	45	222
Condensate	138	50	188

B. PLANT OPERATIONS - B-1 Response (continued)

These figures are indicative of the level of effort applied to eliminate problems and to enhance the subject system's reliability.

Future plans to enhance secondary system operation and to prevent postulated trips include:

- a. Investigating possibility of bypassing high Steam Generator level trip at low power levels.
- b. Installing Steam Generator Feed Pump electronic governors.
- c. Installing Condensate Polisher controls and instrumentation in the Control Room.
4. In 1986, two trips have occurred to date, both resulting from dropped Control Element Assemblies (CEA). The following corrective actions have been implemented or will be implemented in the near future to reduce the potential for future CEA and software related trips.
 - a. Installed 91 ACTM cards, a Combustion Engineering enhancement that reduces the potential for trips resulting from Control Element Drive Mechanism and power supply problems.
 - b. Conduct periodic Control Element Drive Mechanism tests at low power levels to eliminate large CEA sub-group deviation penalty factors and therefore reduce trip potential.
 - c. Implementation of better controls for Axial Shape Index.
 - d. Core Operating Limit Supervisory System Technical Specification changes to:
 - (1) Eliminate restrictive Axial Shape Index controls.
 - (2) Minimize excessive Control Element Assembly movements at power.
 - (3) Minimize unnecessary operator distractions in the Control Room.

Future plans to enhance system operation include a software revision to allow Control Element Assembly drops without inducing reactor trips.

5. Additional plant improvements to reduce trip potential are planned. Examples include:
 - a. Core Protection Calculator improvements

B. PLANT OPERATIONS - B-1 Response (continued)

- (1) Elimination of low power trips that result from high ASI values below 20% power.
 - (2) Elimination or delays of trips resulting from dropped Control Element Assemblies.
- b. Main Steam Isolation Valve Design changes to improve reliability.
6. Additional managerial controls and procedural changes will be considered for implementation to reduce trip potential. An Operations Advisory Group, which consists of members of the Operations Department, has been formed. This group functions to advise plant management on the need for enhancements and changes. A typical task being addressed by this group is the review of plant surveillances and procedures to identify those steps that are worthy of a two-man-rule (two personnel simultaneously performing and witnessing specified tasks). Such identified higher risk surveillances will be performed in a reader-for-worker mode similar to that used in Japanese plants.
7. The plant uses a Potential Reportable Event system which, in part, provides a mechanism for performing a review and root cause analysis of plant trips and transients. Licensee Event Reports (LER's) are one of the products of this system. LER's will be enhanced to include more detail and a specific root cause analysis. LER generation efforts will also be expanded to incorporate more operationally-oriented inputs from members of the Waterford 3 organization outside of the plant Operations, Maintenance, and Technical Support Groups (e.g., Site Quality, Quality Assurance and ISEG/Operations Assessment).
8. The Plant Manager maintains a Reliability and Health Physics Improvement List (established June 17, 1985) which is generated by members of the plant organization and is reviewed for disposition on a monthly basis. This list gives visibility to important plant problems and proposed enhancements that affect plant reliability. Those problems and enhancements related to trip prevention consequently receive appropriate management attention.
9. Waterford 3 has established a 1986 goal of a maximum of seven automatic reactor trips. This goal requires a marked reduction in trip frequency over 1985 performance.
10. Waterford 3 has taken positive measures as described below to maintain steady staffing levels in the Operations Department. This should help build and retain a plant-specific experience base which will assist in reducing personnel errors and, therefore, complement other trip reduction endeavors.

B-2 Recommendation:

"Licensee management must reverse the overall trend related to staffing which should help reduce the number of reportable events."

B-2 Response:

Waterford 3 management has taken positive steps to improve Operations personnel retention and maintain a full complement of operators:

1. Five temporary additional operator positions have been created. These positions have been filled with individuals who will undergo training and be used to supplement the existing staff. This will provide a reserve of Operations personnel to help nullify the effects of attrition.
2. An incentive pay program for plant operators has been initiated.
3. An operator license bonus program has been established.
4. Operator pay scales are reviewed frequently to ensure that they compare favorably with the industry average.
5. An Operations Advisory Group has been established to provide a vehicle for the operators to make recommendations to plant management. This encourages operators to voice their opinions and make recommendations on concerns that need management attention and/or operator input.

It should be noted that the last operator resignation occurred on December 20, 1985, which is indicative that the above efforts are having a positive affect on retention.

B-3 Recommendation:

"Additionally, support of the completion of the program to upgrade Control Room annunciator system should continue."

B-3 Response:

An effort to upgrade the Control Room Annunciator System has been in effect since early 1985. Direct upper management attention has been applied to reduce the total number of invalid annunciations and to clear those that are valid. From April, 1985 to March, 1986 a maximum of 186 annunciators had been identified as problems. By the end of the March 1986 Outage, 138 of the 186 had been cleared. Management attention in this endeavor continues.

B-4 Recommendation:

"Licensee management should initiate a preplanned program to eliminate the RAB airborne radioactivity problem."

B-4 Response:

Waterford 3 Plant management has and will continue to place emphasis on resolving the RAB airborne radioactivity problem. The following items typify the efforts and results that have been accomplished to date:

1. A management task force has been established to identify and initiate actions to eliminate sources of airborne activity within the plant as well as reduce releases to the environment. The task force consists of representatives from the Operations, Health Physics and Engineering Departments. In particular, attention has been given to improving our capability to properly remove fission gases from plant systems and, when appropriate, hold them for decay. Valves within the Gaseous Waste Management System have been reworked on several occasions and future modifications to the system are planned. The Flash Tank has been placed into service to reduce noble gases within the Boron Management System components. Recent changes to our NPDES permit have permitted us to reduce use of the Boric Acid Concentrators, which has been contributing to the gas problem.
2. Health Physics and Operations personnel have worked together to localize airborne radioactivity areas. This facilitates invoking access controls to minimize personnel exposure and also focuses source identification efforts to specific plant locations. Five specific plant areas have been identified:
 1. A pipe chase under the Charging Pumps in the Reactor Auxiliary Building
 2. The Charging Pump Rooms
 3. The Boric Acid Makeup Tank Rooms (primarily room A)
 4. The Volume Control Tank Room and a peripheral passageway
 5. The Flash Tank Room

We have observed that the number of personnel temporarily contaminated by short-lived gaseous decay products has dropped significantly in recent months.

3. 1. Operations and Health Physics Departments are working together in an attempt to correlate increases in airborne activity levels with specific plant evolutions. Regular operations shift meetings which include on-shift Health Physics personnel are making individuals more aware of plant evolutions.

B. PLANT OPERATIONS - B-4 Response (continued)

4. The Operations Superintendent has placed increased emphasis on operator professionalism and attention to detail when conducting plant operations. Shift Supervisors and Control Room Supervisors have been instructed to monitor operator activities more closely and provide more on the spot guidance as to attention to detail. Additionally, Operations has addressed specific systems which require supervisory review and approval prior to manipulation of the system. This guidance has resulted in the elimination of airborne radioactivity sources evolving from poor operations practices or deficient procedures.
5. The Plant Manager maintains a Reliability and Health Physics Improvement List (established June 17, 1985) which is generated by members of the plant organization and is reviewed for disposition on a monthly basis. This list is used in part to give visibility to important plant problems and proposed enhancements relevant to health physics concerns. Such matters consequently receive appropriate management attention.

It is worthy to note that the problem as described above is essentially one of high concentrations of short-lived airborne radioactivity and not a case of excessive personnel contamination and exposure from long-lived radioactivity. The remedial actions as delineated in items 1 through 5 above have resulted in some success. Increased emphasis has been placed on resolving the problems and on expedient completion of associated corrective action.

B-5 Recommendation:

"Also, licensee management should use the formulation and review of the Technical Specification (TS) for the Broad Range Toxic Gas Detection System required by License Condition 2.C.4 as an opportunity to review the progress being made toward reliable monitoring systems associated with the Control Room Ventilation System."

B-5 Response:

The Waterford 3 Plant Staff has vigorously pursued a multitude of options in an attempt to tune and maintain the current monitoring systems associated with Control Room ventilation. Attention is being applied to enhance the operability and reliability of the existing design in parallel with an investigation to identify a more reliable design. The Waterford 3 Project Engineering Organization is now heading up a review of Technical Specifications and design configuration as well as maintenance and calibration practices in an effort to resolve this problem.

Performance Functional Area -

C. SURVEILLANCENRC Recommended Licensee Actions:

Licensee management should continue improvements in this area, especially in the area of communications between different disciplines. The licensee should develop an integrated and more descriptive action statement tracking system. The combining of the equipment out of service log and the tracking of action statements would make the task of tracking TS related problems easier for the control room operator.

Response:

The equipment out of service system was established early in 1985 to specifically identify the time and date that equipment was removed from service, declared inoperable and subsequently returned to service. It is used in conjunction with the operator shift-turnover process to track the status of TS-related equipment and associated action statements. The governing procedure for equipment out of service will be revised. The SALP recommendation will be factored into that revision, as applicable, to ensure that an effective action statement tracking system is employed. Also, the pending procedure revision along with existing interface requirements specified in corrective maintenance and surveillance control procedures will improve overall inter-discipline communications.

With respect to non-routine surveillances such as those required for changing plant modes, Waterford 3 uses a surveillance tracking system combined with general operating procedures to ensure that such surveillances are performed. This approach is also integrated with planning and scheduling techniques to identify non-routine surveillances in the schedules used to perform normal plant startups and shutdowns. The tracking system normally used is the Maintenance Planning and Scheduling System (MPSS) which is a computer-based system utilized by most plant departments. However, in some cases a mode change checklist is used in addition to the mechanisms addressed above. This technique is currently used by the Operations Department. A similar approach will be developed by the Chemistry Department in response to recent problems encountered in that regard. They, like Operations, are susceptible to such problems because of the nature of the surveillances.

Performance Functional Area -

D. MAINTENANCENRC Recommended Licensee Actions:

The licensee should continue their increased management attention to resolve the weaknesses identified in this area. Those areas which should be of particular concern are:

- (1) Improving the interface with outside organizations to ensure spare parts are properly procured, vendor information is properly incorporated in the procedures and information from the architect engineer (AE) is used when making changes to or replacing plant equipment.
- (2) Upgrading the M&TE program to provide for timely calibration of potentially radioactively contaminated equipment.
- (3) Ensuring effective programmatic guidance is in place for maintenance of equipment environmental qualification.

OVERALL REPLYRecommendation:

"The licensee should continue their increased management attention to resolve weaknesses identified in this area."

Response:

To summarize and supplement previously submitted responses to the violations and LER's addressed in the SALP report, the following are typical Waterford 3 enhancements designed to improve the quality and documentation of plant maintenance activities:

1. A Station Information Management System (SIMS) is being developed for implementation in 1987. It is a computer-enhanced system used for the identification, planning and tracking of maintenance work items. It integrates equipment data bases, quality requirements, maintenance history, repetitive task/corrective maintenance tracking, NPRDS reporting, etc. into one comprehensive system.
2. The number of permanent maintenance engineer positions has been increased to a level of six and a Lead Planner position has been established. At present three of the maintenance engineer positions and the Lead Planner position are filled. This improvement in staffing has improved the quality of maintenance work and associated documentation.
3. UNT-5-002, Condition Identification and Work Authorization, has been revised to enhance maintenance work controls and to make the procedure more user-friendly.

D. MAINTENANCE - Overall Reply (continued)

4. A Maintenance Trending procedure has been implemented. This procedure provides a methodology for trending component/equipment reliability so that corrective actions can be applied to rectify and eliminate repetitive maintenance problems and component failures.
5. A Maintenance Department Directive was issued in February, 1985, to provide guidance in minimizing inadvertent Safety Feature Actuation System actuations and plant trips. Since issuance of that directive no plant trips and only one Engineered Safety Feature Actuation have occurred that can be directly attributed to errors by maintenance personnel.
6. Improved plant procedures on preventive maintenance, corrective maintenance, temporary alterations and processing of replacement parts and materials have been issued and implemented.
7. Increased emphasis on root cause analysis, as described in the response to the performance functional area B, Plant Operations, will allow management to better focus on and resolve maintenance-related problems.
8. Plant management has striven to improve maintenance work planning techniques over the past two years. Many enhancements have been implemented. Work in this area is continuing in parallel with the SIMS project discussed in item 1 above.
9. Maintenance procedures and interface procedures under the cognizance of other Waterford 3 departments have been extensively utilized and revised as necessary, since issuance of the operating license. Improved interfaces have resulted. Particularly noteworthy are the enhancements made in the following maintenance interfaces:
 - a. Technical Manuals and other vendor documents
 - b. Parts and materials, including consumables
 - c. Design conformance
 - d. Trending
 - e. Environmental Qualifications
 - f. Engineering and Quality Control
 - g. Training

D. MAINTENANCE (continued)**RESPONSES TO SPECIFIC RECOMMENDATIONS****D-1 Recommendation:**

"Those areas ... of particular concern are: (1) Improving the interface with outside organizations to ensure spare parts are properly procured, vendor information is properly incorporated in procedures and information from the architect engineer (AE) is used when making changes to or replacing plant equipment."

D-1 Response:

Waterford 3 has implemented procedures to review, validate and control vendor technical information and to incorporate that information into plant procedures and tracking systems, where applicable. Special emphasis has been placed on reviewing vendor technical manuals for safety-related equipment and for incorporating preventive maintenance and equipment qualification requirements into maintenance procedures, task cards and other implementing documents. Exceptions have been technically evaluated, justified and documented.

- (1) During the period of November through December 1985, the Material Requirements and Control Department was issued controlled copies of the Architect Engineers Design Specifications, to be used for the procurement of spare/replacement parts.

Material Requirements and Controls was also issued controlled copies of the Q-List, EQQ-List, and MEQ-List to be used for determination of Quality Classification and Requirements for procurement of spare/ replacement parts.

Procedure UNT-8-001, Revision 12, Processing of Procurement Documents, requires Engineering input in those cases where the previous technical/quality requirements of the original item cannot be determined. Additionally an Engineering evaluation is required for procurement of commercial grade items for use in a Safety-Related application and changes or exceptions to the technical requirements of the procurement documents. Copies of the changes/exceptions and Engineering evaluations are forwarded to the applicable Maintenance discipline.

Interface with vendors is common in the procurement process especially when there is a question as to the equivalency of parts quoted with part number changes and the proper method of specifying materials and requirements. When part number changes are found to not affect the item; drawings and other plant documents are updated via the Station Modification process.

D. MAINTENANCE - D-1 Response (continued)

- (2) Forms of interface which occur with outside organization to ensure that spare parts are properly procured include:
- a. A copy of each Discrepancy Notice (DN) is transmitted to the responsible vendor's Quality Assurance Manager with a cover letter identifying the problem and requesting that they review the DN and take appropriate action to ensure the discrepancy does not occur on future shipments.
 - b. LP&L expeditors make periodic visits to facilities of major vendors to identify and, if possible, resolve any problems at that time.
 - c. Acknowledgement copies of quality related purchase orders and revisions are sent to vendors. Receipt of acknowledged copy is tracked and expedited if not received in 30 days.
 - d. The Vendor Technical Information Program (VTIP) procedures have been revised to better coordinate and enhance the review of vendor information. This should help ensure that the latest information on vendor spare parts is included as applicable in the appropriate documents.
 - e. In the design change procedure, specifications are treated as design documents, and as such are updated in the as-building process when the change affects the specification. This should ensure that specifications are maintained as-built.
 - f. Safety related specification revisions are being reviewed for changes made from revision to revision for EQ and seismic information. Approximately 30% of the safety related specifications are under review for other technical changes incorporated since the issuance of the purchase order. The results of this review will indicate the need to review the rest of the specifications.

D. MAINTENANCE**D-2 Recommendation:**

"Those areas ... of particular concern are: (2) Upgrading the M&TE program to provide for timely calibration of potentially radioactively contaminated equipment."

D-2 Response:

Measures have been taken to accommodate timely calibration of potentially radioactively contaminated equipment. Such equipment is handled in one of the following ways:

1. It is calibrated in the permanent Radiation Controlled Area (RCA) by transporting calibration equipment into the RCA.
2. It is decontaminated and removed from the RCA for calibration. If it cannot be decontaminated, then special radiation controls are established to allow calibration outside the RCA. This is accomplished by either,
 - a. Transferring the equipment to a calibration facility that is equipped to handle contaminated equipment, or
 - b. If calibrated on site, temporary controls (and possibly a RCA) are established.
3. It is deleted from the M&TE Program and either disposed of or placed in long term storage.

Also, to the extent feasible, a set of standards for use in calibrations within the RCA will be procured. Test equipment will be modified, when possible, to prevent internal contamination.

D. MAINTENANCE**D-3 Recommendation:**

"Those areas ... of particular concern are: ... (3) Ensuring effective programmatic guidance is in place for maintenance of equipment environmental qualification."

D-3 Response:

Waterford 3 has incorporated effective guidance in administrative procedures which delineates engineering and maintenance responsibilities for maintenance of equipment qualifications. Specific electrical qualification maintenance requirements have been extracted from qualification documents and Vendor Technical Manuals and incorporated into maintenance procedures and practices. This project, which was initiated in early 1985, is essentially complete. Extraction and incorporation of mechanical qualification requirements is currently in progress with an estimated completion date of September 1, 1986. In the interim, qualifications are maintained by direct transposition from qualification documents into specific work packages, where applicable. This is accomplished via work planning techniques which utilize the Waterford 3 EQ List to identify those components that are qualified.

Performance Functional Area -**E. QUALITY PROGRAMS AND ADMINISTRATIVE CONTROLS AFFECTING QUALITY****NRC Recommended Licensee Actions:**

The licensee management needs to work toward:

- (1) A timely resolution of the NRC concerns regarding procurement control.
- (2) Involving the QA organization and other independent organizational elements, such as the Independent Safety Evaluation Group (ISEG), in problem areas. Representative attendance at NRC exit interviews would enhance their involvement.
- (3) Devote the necessary resources to eliminate the SMP backlog.
- (4) Bring in the necessary resources from LP&L and Middle South Utilities to help resolve the plant computer problems.

Response:

- (1) Procurement Control - LP&L has and continues to apply management attention and qualified manpower resources to assure receipt of acceptable material, parts, and components for use at Waterford 3. As a result of these efforts, LP&L has significantly strengthened its procurement process through the issuance of NOP-006, "Nuclear Operations Procurement" (Jan. 1986); Specification 600, "Standard Quality Requirements (Feb. 1986); and UNT-8-001, Rev. 12, "Processing of Procurement Documents" (Feb. 1986).
- (2) QA Involvement - QA issued 23 reports in addition to the required audits during the evaluation period. In summary, they are - 5 monitoring activities, 3 evaluations, 6 unscheduled audits, and 9 activity audits. These activities were performed to review and assess subjects of special interest to management including problem areas and areas of concern. Operations QA has an ongoing activity audit process for observing performance of various activities. Ten activity audits have been performed between January 1, and March 31, 1986.

In addition, the QA organization has been (is) actively involved in support of ongoing activities such as:

- Validating responses to NRC Inspections upon Licensing request
- Participating as drill team members in emergency preparedness activities
- Providing assistance to Site Quality for CIWA reviews
- Undergoing training as Shift Advisors - Two QA individuals completed the training
- Support of Plant Operations for procedure and administrative work

E. QUALITY PROGRAMS AND ADMINISTRATIVE CONTROLS AFFECTING QUALITYResponse (continued)

- Evaluating training activities in support of INPO accreditation.

Additionally, Quality Assurance attends the Plan-of-the-Day meetings on a regular basis. QA attended 19 of 30 NRC exit meetings during the period of the SALP Report. The organization does not generally attend exits involving topics of a sensitive nature such as NRC investigations into allegations or security investigations.

ISEG Involvement - ISEG has been involved in problem areas and issued eight reports during the evaluation period. In summary, they are: 5 reports of Phase III Testing problems and 3 reports of special interest areas. Four additional reports have been issued since January 1, 1986.

ISEG can become involved in any area identified as a problem or concern through its own determination or at the request of management (e.g., Safety Review Committee, Senior Vice President, Engineering and Nuclear Safety Manager, Plant Manager). ISEG has prepared reports on subjects requested for review by management in the past and will continue to do so.

ISEG has not historically attended NRC exit meetings. With verbal notification by the NRC Resident Inspector, ISEG will send a representative to those exit meetings where problem areas will be identified by the NRC. This will enhance ISEG's ability to investigate and provide recommendations to plant management.

- (3) Station Modifications - LP&L has put forth a concerted effort to improve the closeout of station modification packages. As of April 11, 1986, 45% (678 of 1511) of all station modifications had been closed.

Also, changes to three procedures are being implemented that streamline the review process by decentralizing closure activities. The action engineer is now responsible for closeout processing which includes review/signoff of each implementing CIWA prior to Shift Supervisor/Control Room Supervisor removing the clearance. This change enhances the program by preventing premature operation of plant equipment affected by the modification. Another enhancement related to the procedure changes was the provision for partial closure of station modifications with multiple CIWAs.

- (4) Plant Monitoring Computer - Since the end of the appraisal period several tasks have been completed which will improve the reliability of the Plant Monitoring Computer (PMC). Among them are the following: correcting three separate errors in CPU #1 and #2 which were causing system failures, correcting an error in the way the system actuates annunciation and decreasing the time

E. QUALITY PROGRAMS AND ADMINISTRATIVE CONTROLS AFFECTING QUALITYResponse (continued)

it takes to restart a failed system by 50%. Numerous other tasks are also underway to improve overall system reliability.

The plant Computer Engineering section has been augmented by a Middle South employee on a full time basis and by LP&L Engineering Services Staff on numerous special problems. LP&L continues to retain several contract personnel assigned to the plant Computer Engineering section and their function is to enhance the performance of the plant computer system.

Performance Functional Area -

F. FIRE PROTECTION

NRC Recommended Licensee Actions:

Licensee management should be directed toward:

- (1) Installation of the fire protection equipment required by license conditions.
- (2) Resolution of fire barrier problems including implementation of a program to maintain fire barriers functional.

Response:

- (1) Waterford 3 has complied and will continue to comply with license conditions concerning the installation of fire protection equipment. Required equipment will be installed or modified as appropriate in accordance with license commitment dates.
- (2) Since the issuance of the low power license, Waterford 3 has satisfactorily completed the Technical Specification (TS) surveillance on fire barrier penetration seals. The results of this surveillance, along with the results of previous walkdowns, demonstrates both the integrity of the currently installed penetration seals and the adequacy of the administrative controls associated with penetration seal installation.

The impairments that have been identified were identified for non TS seals and have been and will continue to be resolved on a case by case basis.

Performance Functional Area -

G. RADIOLOGICAL CONTROLSNRC Recommended Licensee Actions:

Management attention is needed in order to correct the numerous gaseous and liquid leaks that have resulted in excessive contamination of workers and plant areas. The training and qualification program for radwaste operators should be improved for the purpose of reducing the number of operator errors associated with operating the various radwaste systems.

Response:

Waterford 3 Management has applied significant resources in an attempt to correct gaseous and liquid leaks that have the potential for resulting in contamination of workers and plant areas. Some of the resultant corrective action is delineated in the response to the performance functional area B, Plant Operations, of the SALP report. Further delineation is as outlined below:

1. System outages in recent months have resulted in reworking over 100 identified valve leaks. In addition, the Plant Manager has given specific direction to increase emphasis in this regard by developing a comprehensive list of leak sources and by scheduling and implementing repair work on a component availability basis. Emphasis is to be on primary leaks as opposed to secondary leaks. An example of this emphasis is the fact that such work was considered important enough to be allowed on the critical path during our March outage. It will always be necessary to weigh the risks and license requirements of equipment outages against the need to meet our contamination goals while in power operation. Waterford 3 management is prepared to discuss any such concerns of NRC inspectors at the time of any future occurrence.
2. Station Modifications have been identified to address many of the design problems having impact on the spread of contamination. Of 35 station modifications identified, 22 have been essentially completed to date and the remaining 13 have been prioritized. Typical examples are:
 - a. Valves within the Gaseous Waste Management System will be replaced with the new valves with improved seat leakage characteristics.
 - b. Gas Surge Tank safety valve will be modified and the pressure set point was increased.
 - c. The addition of ventilation has proven beneficial to prevent localized buildup of airborne activity.

G. RADIOLOGICAL CONTROLS - Response (continued)

- d. Rerouted plumbing vent from the Vent Gas Collection Header to the RAB - HVAC System.
 - e. Changed threaded connections to welded connections on Primary Sample Panel. Also, sample panel ventilation has been improved.
 - f. RAB floor drains will be rerouted downstream of Waste Tank Strainer to prevent backup of drains.
3. When valves are repacked, graphoil-type packing is now being used instead of the original vendor-supplied packing. This packing is proving to be more effective in minimizing valve leakage and should have an extended life in comparison to the old styles of packing.
4. Maintenance personnel have received additional training on valve packing techniques to reduce the number of valve leaks by employing good maintenance practices.
5. Waterford 3 takes exception to the SALP report use of "excessive" when referring to personnel contaminations. INPO data indicates that skin and clothing contaminations for 1985 were slightly greater than 300 per plant. Waterford 3 experienced 53 skin contaminations in 1985. Although clothing contaminations were not documented until late in the year, it is estimated that there were 20 to 25 clothing contaminations for 1985.

The total skin and clothing contamination for 1985 is therefore approximately 75 which is far below the INPO average (industry performance). Approximately 75 contaminations is also well below the INPO Best Quartile level of 125 skin and clothing contaminations per year. It should be noted, however, that INPO data does not reflect contaminations resulting from short-lived daughter products of noble gases; i.e., such contaminations are not reported as personnel contaminations. The 75 Waterford 3 contaminations also do not include the results of noble gas daughter product contaminations. While we are concerned with skin contaminations, we consider the term "excessive" to not accurately describe the Waterford 3 situation.

6. Waterford 3 averaged 9000 sq. ft. of area surface contamination in 1985. A preliminary study on contamination reduction following our March outage has been generated and the Plant Manager has established specific direction in this regard. A contamination reduction task force has been established to:
- a. Walkdown the plant to identify leaks that have not been previously identified.
 - b. Verify that leaks that have been repaired are not still leaking.

G. RADIOLOGICAL CONTROLS - Response (continued)

- c. Perform minor maintenance on existing leaks that can be readily fixed.
 - d. Remove boric acid buildup on the exterior of repaired valves to provide for prompt identification of new leaks.
 - e. Contain leaks on valves where practicable.
 - f. Decontaminate areas when practicable.
 - g. Accurate determination of contaminated areas (total sq. ft.) has been and will continue to be trended. These calculations are compared to plant goals in this regard and to current industry standards and performances.
 - h. An assessment of Radwaste System Training is being conducted by plant groups and departments. The results will be factored into appropriate (Nuclear Auxiliary Operator) training programs.
7. As stated in the response to the performance functional area B, Plant Operations, of the SALP report, increased emphasis has been placed on:
- a. Operations - Health Physics interfaces to enhance leak reduction.
 - b. Correlation with plant evolutions to determine the sources of contamination.
 - c. Increased operator attention to detail and more supervisory involvement in evolutions that may effect the spread of contamination.
8. The Plant Manager's Health Physics Reliability Improvement List has been an effective tool in giving attention to contamination-related problems.
9. The SALP report implies that Waterford 3 uses increased staffing levels and overtime to address contamination problems. This is not the case. Health Physics staffing/overtime statistics during 1985, as summarized below, are indicative of work load demands and are not reflective of contamination problems:
- 1. Contract technicians varied from a low of 11 to a high of 22.
 - 2. The 1985 average for contract technicians was 16.
 - 3. Total Health Physics staffing has varied from a low of 28 to a high of 41 personnel.

G. RADIOLOGICAL CONTROLS - Response (continued)

4. The average overtime worked by LP&L technicians for 1985 was 800 hours which represents a 40% overtime rate.

The amount of overtime is higher than desirable on a continuous basis but not inconsistent with similar statistics for other plants of Waterford 3 vintage and with that worked by some other Waterford 3 personnel during the busy time of plant startup. NRC requirements for limiting overtime have been met. In a November 1985 round of manpower authorizations, at the request of Plant Management, the Health Physics Department was granted a larger relative manpower increase than any other department in Nuclear Operations. This should help reduce overtime while still keeping staffing levels consistent with or less than comparable plants.

Performance Functional Area -

H. EMERGENCY PREPAREDNESSNRC Recommended Licensee Actions:

The level of management attention to the implementation of the emergency preparedness program should be increased to ensure proper response to NRC - identified items. Emphasis should be given to addressing the NRC Notice of Violation and deficiencies. The licensee should evaluate the emergency preparedness retraining program as to scope and depth.

Response:

LP&L maintains, and will continue to maintain in the future, a high degree of management attention to the implementation of the emergency preparedness program. Additional emphasis will be placed on NRC - identified items and deficiencies and particular attention to any notice of violation. LP&L has completed an extensive review of the 1985 requalification training lesson plans to incorporate improvements based on INPO comments, NRC comments/concerns and drill/exercise identified areas of weakness.

Performance Functional Area -

I. TRAINING AND QUALIFICATION EFFECTIVENESSNRC Recommended Licensee Actions:

- A. The licensee should closely monitor his program to assess completion of all actions necessary to obtain INPO accreditation by December 1986.
- B. Furthermore, the licensee should evaluate PREs, LERs, CIWAs, quality notices, and other problem identification documents to measure and increase training effectiveness.
- C. Continued LP&L management attention needs to be directed toward timely completion of the plant specific simulator.

Responses:A. INPO Accreditation

Waterford 3 intends to satisfy its NUMARC commitments with respect to accreditation by August, 1986. This will support a December 1986 actual accreditation date subject to INPO's ability to support that schedule.

B. Training Effectiveness

A review of LER's and most other problem identifying documents is routinely performed by the Training Department. This is one of the mechanisms within a Systematic Approach to Training to improve program effectiveness.

In addition, the SALP report addresses "... the high failure rate on the October 16, 1985, RO/SRO examination ..." as an indication that "... the training conducted is not always effective." Waterford 3 feels that the training program is more effective than these results indicate and that the factors discussed below had major impact on the outcome of the October 16, 1985 exam:

1. The results of the Operator Examinations are dependent upon many factors. Two significant changes have taken place in the examination arena since the examination administered in June 1984. The change having the greatest impact is in the examination review process. Facility Training Staff is now not allowed to review or comment on the examination until all students have finished. Because of the associated time constraints and increase in test difficulty, this places an additional burden on both the students and Training Staff. In previous examinations, this review was conducted during the examination; terminology could be made plant specific; and questions could be rephrased to more clearly solicit the desired responses. The October 1985 examinations included a

I. TRAINING AND QUALIFICATION EFFECTIVENESS - Responses (continued)

number of questions which were either vague or unintentionally misleading. These questions may have been clarified under the old process. The new review process does not afford the NRC an opportunity to easily clarify the Utility Staff comments in a timely fashion. Even though review and comments are now limited to only the Answer Key, fifty-seven (57) comments were submitted on the two (2) October 1985 exams, of which fifty (50) were accepted by the NRC.

2. The other major difference between the October group and previous groups is the added emphasis on Performance Based Training by the Utilities. We have discussed our concerns that training techniques may not be proceeding down the same path together. Region IV's interest in pursuing this is well appreciated.
3. Another aspect of performance based training utilized by Waterford 3 is the continuing evaluation of candidates by the Operations Training Staff. These evaluations are checked by an independent contractor near the end of the Training Program. The top three students identified by the Operations Training Staff and the independent evaluator subsequently failed the exam. Credibility can be given to the state of preparation of the Trainees when it is noted that no one failed the Oral Examination. It is possible that oral examinations naturally tend to be more performance based and more in tune with current candidate preparation.

Waterford 3 is taking positive steps to improve candidate performance on the next examination, including:

1. By July 1986, an operator examination bank will be forwarded to the NRC.
2. NRC Region IV has indicated that the Region will sponsor a series of seminars on performance based training. This should enhance the abilities of both the NRC Staff and Region IV utilities to communicate on the topic of performance based training. It should therefore improve the performance of Waterford 3 on future operator examinations.

Waterford 3 was granted a retest of seven of the October 1985 candidates. Six of the seven passed the examination. NRC assistance in this regard is appreciated.

C. Plant Simulator

LP&L has and will continue to apply management attention toward the timely completion of the plant specific simulator. Difficulties are being experienced with the contractor but are being addressed quickly and in detail.

Performance Functional Area -

J. SECURITY AND SAFEGUARDS

NRC Recommended Licensee Actions:

Care must be taken to ensure that the quality of the selection and training techniques for the replacement of security personnel continues at the high level employed to begin the program.

Response:

Waterford 3 management fully intends to apply, as a minimum, the same level of quality in the selection and training of replacement security personnel as that used in the initial phases of the Security Program.

Performance Functional Area -

K. LICENSING ACTIVITIESNRC Recommended Licensee Action:

Licensee management should continue to be highly involved in licensing activities. They should concentrate on those items suggested for improvement in Attachment 1.

Response:

It has always been LP&L's goal to achieve sound communications and good working relationships both internally and externally in order to be consistently responsive in meeting the established schedules and goals of good practice for licensing activities.

Since operational events tend to be complex in nature, collating information requires continual interfacing between Licensing and Plant Staff to ensure that the information provided is as accurate as possible and responds to the questions asked. Although somewhat time consuming, this extra effort instills confidence in the information being provided.

NRC interface responsibilities are controlled by LP&L Executive Directives (ED's) and Nuclear Operations Administrative Procedures (NOAP's) to ensure that the information which is transmitted to the NRC is organized, timely and accurate. While it may appear that LP&L does not always expeditiously provide certain information regarding operational events, LP&L does not wish to release such information prematurely. It must be understood that much detailed operational event information is not immediately known, or may be speculative in nature and must be verified before being released.

LP&L management involvement in licensing activities has been beneficial in development of good interfaces between the Plant Staff and Licensing and will continue to support a cooperative effort to respond to NRC questions/concerns.