ENCLOSURE 1

INITIAL SALP REPORT

U. S. NUCLEAR REGULATORY COMMISSION

REGION I

SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE

SALP BOARD REPORT 50-244/90-99

ROCHESTER GAS AND ELECTRIC CORPORATION

R. E. GINNA NUCLEAR POWER PLANT

ASSESSMENT PERIOD: OCTOBER 1, 1990 - JANUARY 18, 1992

TABLE OF CONTENTS

I. INTRODUCTION

The Systematic Assessment of Licensee Performance (SALP) is an integrated NRC staff effort to collect the available observations and data on a periodic basis and to evaluate licensee performance based upon this information. SALP is supplemental to normal regulatory processes used to ensure compliance with NRC rules and regulations. SALP is intended to be sufficiently diagnostic to provide a rational basis for allocating NRC resources and to provide meaningful guidance to the licensee management to promote quality and safety of plant operation.

This report is the NRC's assessment of the licensee's safety performance at the R. E. Ginna Nuclear Power Plant for the period October 1, 1990 through January 18, 1992.

A NRC SALP Board, composed of the staff members listed below, met on March 5, 1992 to review the collection of performance observations and data to assess the licensee performance in accordance with Chapter NRC-0516, "Systematic Assessment of Licensee Performance". The guidance and evaluation criteria are summarized in Section IV of this report. The Board's findings and recommendations were forwarded to the NRC Regional Administrator for approval and issuance.

Chairman:

C. Hehl, Director, Division of Reactor Projects (DRP)

Members:

W. Lanning, Deputy Director, Division of Reactor Safety (DRS)
R. Cooper, Deputy Director, Division of Radiation Safety and Safeguards (DRSS)
J. Linville, Chief, Projects Branch No. 3, DRP
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II. SUMMARY OF RESULTS

II.A Overview

RG&E management continued to be substantially involved in monitoring routine activities, supporting the development of several program initiatives, and promoting increased engineering support to site activities. These efforts have been successful in maintaining performance at the levels noted in the previous SALP with improved performance in certain areas.

The plant continued to be operated in a safety conscious manner with operators appropriately responding to plant challenges and aggressive management involvement in the resolution of operational events. However, procedure inadequacies and deficiencies in assessing the impact of certain maintenance tasks on plant operations indicate the need for continued attention-to-detail in the control of plant activities. While improvements have been made in this area, management involvement is needed to ensure plans for long term improvement are effective.

The licensee has strengthened the overall performance of the facility. Performance in the areas of Maintenance, Security and Emergency Preparedness was superior. Management's commitment to sustained high quality performance was evident through support given to program initiatives and hardware upgrades. Notwithstanding, some concerns worthy of additional management attention were identified in emergency response training and staffing depth raising questions regarding the support in that area.

Overall, a strong interface between operations and corporate engineering has expedited the resolution of operational problems and the timely implementation of comprehensive corrective actions. Although progress was made in the Engineering and Technical Support area, engineering assurance deficiencies identified in addressing Service Water System design issues indicate continued management attention is warranted.

Sound safety controls were established for the refueling outage to ensure availability of residual heat removal and electrical distribution systems. Management took a conservative approach to emergent outage issues to minimize personnel dose and contaminations.

Radiological control and quality assurance programs were conscientiously implemented with improvements being made in the areas of monitoring and self assessment. However, deficiencies were noted in REMP QA/QC programs and laboratory technician training.

II.B Facility Performance Analysis Summary

Functional Area		Rating, Trend* Last Period	Rating, Trend** This Period
1.	Plant Operations	2	2
2.	Radiological Controls	2	2
3.	Maintenance/Surveillance	2 Improving	1
4.	Emergency Preparedness	1	1, Declining
5.	Security	2 Improving	1
6.	Engineering/Technical Support	2	2
7.	Safety Assessment/Quality Verification	2	2

*June 1, 1989 to September 30, 1990
**October 1, 1990 to January 18, 1992

III. PERFORMANCE ANALYSIS

III.A Plant Operations

III.A.1 Analysis

Plant operations was rated Category 2 in the previous assessment period. Past strengths identified in this area included experienced professional operators, excellent emergency operating procedures, and strong station management involvement in daily plant activities. Weaknesses in procedure adherence and independent verification of system alignments were identified early in the assessment period; however, improvements in these areas were noted later in the period.

During this period, the licensee continued to demonstrate a strong commitment to safe and high quality operations. Senior corporate and site management were actively involved in plant activities and promptly responded to operational events. This was demonstrated by the detailed investigation conducted by senior corporate management into the causes for the temporary disabling of Engineered Safeguards instrumentation. Management developed comprehensive corrective actions in response to this event. Actions included a quarantine of suspect procedures followed by a detailed review for any similar procedural inadequacies, and modification of the procedure change process to require operational review by licensed personnel. Briefings were also conducted for each operating shift to emphasize management's expectations for operators to maintain a questioning attitude and stressing the importance of attention-to-detail and thorough review before authorizing work.

Operator professionalism, conduct of control room operations, and response to off-normal plant conditions were excellent. Immediate operator action following trips was appropriate. Plant challenges that could have resulted in a reactor trip were met on several occasions by prompt and decisive operator response.

Operators demonstrated a sound understanding of integrated plant operations by quickly identifying deficient conditions, such as feedwater flow disturbances caused by electrical interference from the diesel fire pump start circuitry. However, in one event concerning the disabling of Engineered Safeguards instrumentation, the operators performance in identifying deficient conditions was mixed. Although the shift supervisor demonstrated a questioning attitude and understanding of the plant, the control room foreman who was implementing the procedure lacked sufficient guidance and understanding to assess the impact of the use of the procedure on plant operations.

Procedure adherence and independent verification of system alignments significantly improved during the period. New administrative procedures were developed and site-wide training was effective in these areas. Operators consistently followed procedures.

Plant housekeeping continued to be excellent throughout this assessment period. During the outage, supervisors consistently ensured that loose material was expeditiously removed from job sites after work completion and that the formalized housekeeping program was implemented. In addition to personnel conscientiously keeping the shop and plant areas clean and orderly, management instituted a vigorous painting program to brighten various plant areas. These efforts resulted in significant improvements in plant appearance.

During the outage, site control of plant activities was excellent. While in reduced coolant inventory conditions, management briefed personnel on potential challenges to plant safety and deferred several activities to ensure the reactor coolant system level would not be perturbed and safety equipment availability would not be impacted.

The operator training program was satisfactory. During the initial operator licensing examination, all five senior reactor operator candidates and three reactor operator candidates passed the exams. During the requalification examination, two reactor operators and three of five senior reactor operators passed the exams. There were no crew failures. The Requalification Program was not evaluated due to the limited number of individuals (less than 12) examined. Examination materials developed by the Training Department were well developed and maintained.

The various plant departments and Training Department worked closely together. Operators were promptly trained on plant modifications such as the Advanced Digital Feedwater Control System (ADFCS) and the zebra mussel control measures. Training materials were promptly updated as a result of strong communications between plant departments and the training organization. The curriculum committee was effective in assuring that personnel were receiving pertinent subject matter with the appropriate level of detail. Involvement by the training organization in daily plant planning meetings and the use of a computerized networking system to respond to inquiries and suggestions affecting training also enhanced the timeliness of improving training material.

Inappropriate operator action on two occasions led to degraded safety system conditions. The cause of the first, involving the deenergization of vital bus 18 while performing a routine monthly emergency diesel generator load test, was not readily apparent. Management directed corporate engineering to extensively evaluate the event. The probable cause was attributed to an operator prematurely closing the generator output breaker before synchronization. Issues developed in this evaluation were thoroughly reviewed and adequately resolved by the Operations and Training Departments. The second event, which occurred during the outage, involved temporarily removing the Residual Heat Removal System from service to stop a Component Cooling Water System valve packing leak which developed during valve maintenance. In response, management initiated a human performance evaluation to identify the root cause and establish corrective actions. The cause was found to be unclear communications between the operations and maintenance

departments that resulted in the valve being electrically backseated instead of manually backseated prior to maintenance. Both events were of short duration. The licensee responded appropriately and quickly restored plant equipment to service.

Summary

Overall, the plant was operated safely as indicated by appropriate operator response to plant challenges, a reduction in the number of reactor trips, and aggressive management involvement in the resolution of operational problems. However, procedure inadequacies and deficiencies in assessing the impact of certain maintenance tasks on plant operations indicate the need for continued attention-to-detail in the control of plant activities. Excellent housekeeping was the direct result of conscientious worker practice and management support. A strong interface between the Operations Department and corporate engineering expedited the root cause analysis process and the implementation of corrective actions. Operator training reflects close interdepartmental coordination, ensuring that personnel are provided effective training on plant modifications.

III.A.2 **Performance Rating:** Category 2

III.B Radiological Controls

III.B.1 Analysis

The Radiological Controls area was rated Category 2 in the last assessment. Strengths included responses to audit and inspection findings and ALARA reviews of routine and modification work. Weaknesses were noted in staffing, supervisory oversight of field activities, quality assurance in the Radiological Environmental Monitoring Program (REMP), training, posting and updating surveys of the plant, and communications between Radiation Protection (RP) personnel. The SALP board commented that the filling of Radiological Controls vacancies and assuring the effectiveness of training programs for health physics and environmental laboratory technicians were areas for improvement.

A well defined and staffed RP organization was in place at the end of the assessment period. Complete staffing of the RP organization resulted in the correction of several weaknesses including improved posting and updating of surveys, and improved communications within the Radiation Protection Organization. During the last assessment period a decline in the quality of oversight of field work was caused by the loss of RP management personnel and a shortage of permanent RP technicians. To address this weakness, Rochester Gas and Electric (RG&E) augmented the RP Organization with the addition of a Health Physicist position and eight RP Technician positions. During this assessment period the licensee hired qualified personnel to fill these newly created positions. Several programmatic improvements resulted from the increased staffing levels, including the appointment of Lead Technicians and a Quality Improvement Specialist.

The RP Technician training program showed improvement since the last assessment period and is now considered to be a strength. An excellent training program on the radiological hazards of specific systems was initiated for new RP Technicians. An additional RG&E initiative involved incorporating the systems training lesson plans into the continuing training for all permanent RP Technicians. The training program for contractor RP technicians is also considered to be strong.

Enhanced RP training was given to decontamination technicians in an effort to improve work practices. Preliminary review of the program indicated that the decontamination technician training was effective and is considered a good program initiative.

RG&E's ALARA program continued to effectively reduce annual personnel exposures. Notwithstanding significant high exposure challenges, RG&E continued to maintain cumulative annual exposures ALARA. A strength in this area continued to be the effective use of mock-ups prior to high exposure jobs. RG&E restructured the ALARA organization with dedicated staffing. This resulted in an effective organizational structure for implementation of the ALARA program. The ALARA group was actively involved in testing new equipment, such as the insulation removal and transfer system used in radiation areas. The ALARA area is considered to be another program strength.

RG&E's program for assurance of quality is considered to be generally sound with some areas in need of improvement. An effective program was in place for tracking and assuring appropriate followup of RP program weaknesses. A weakness was noted which indicated that improvement was needed in the area of management review of procedural changes. For example, a surveillance requirement specified in the technical specifications was omitted from a ventilation testing procedure during a procedure revision. Subsequent management review of the procedure revision did not identify the omission. Similar examples were noted in controls of revisions to plant operations procedures. Another area of weakness involved the lack of sufficient technical QA review in environmental laboratory audits which is discussed below.

The resolution of technical issues from a safety standpoint by the station staff is considered to be generally effective. Management attention to reducing the number of personnel contaminations and minimizing dose was excellent. RG&E's evaluation and corrective actions for an operational event involving a leaking secondary source was also considered to very good. However, RG&E's identification and resolution of some technical issues were not performed in a timely manner. These issues included evaluating the adequacy of the certification of personnel dosimeters used during power entries, source checking of neutron survey meters and area radiation monitors, and in-place testing of HEPA filters.

RG&E's program for processing and transporting radioactive material is considered very good. The licensee implemented several initiatives in the radwaste program. The initiatives included upgrading the radwaste handling and transportation procedures, having a consultant evaluate the program and make recommendations for improvements, and completing an

extensive effort to remove all excessive radioactive material from the site. RG&E had an effective program for training individuals involved in the radwaste and transportation program. Supervisory oversight of this area was also considered very good.

During the previous assessment period weaknesses were identified in the REMP laboratory QC program and REMP laboratory technician training. These weaknesses continued. As of the last inspection, the REMP laboratory technician was not qualified to independently run the REMP laboratory and received little supervisory oversight in this position. A new individual was appointed to this position later in the assessment period. QA audits of the REMP focused on administrative rather than technical aspects of the program and, therefore, did not probe for technical weaknesses. Technical weaknesses were identified in REMP analytical procedures by the NRC but not by the licensee's QA Department.

In contrast, however, the licensee's radioactive liquid and gaseous effluent control program was effectively implemented. Well written procedures combined with an effectively trained staff resulted in good procedure adherence, and release permits met the TS requirements for sampling and analysis. The licensee's upgrading of the radiation monitoring system was noteworthy and excellent.

Summary

Staffing of the RP organization improved during the assessment period and is now considered to be appropriate. The training program showed improvement and is considered to be strong with the exception of training in the environmental monitoring area. RG&E's ALARA program continued to effectively reduce annual personnel exposures. RG&E's program for assurance of quality is considered to be generally sound with continued weakness in the REMP laboratory QA program. The resolution of technical issues from a safety standpoint by the station staff is considered to be generally effective. RG&E's program for processing and transporting radioactive material is considered very good. The licensee's radioactive liquid and gaseous effluent program was well implemented.

III.B.2 **Performance Rating:** Category 2

III.C Maintenance/Surveillance

III.C.1 Analysis

During the previous SALP, Maintenance/Surveillance was rated Category 2, Improving. The assessment determined that maintenance and surveillance activities were well planned, and capably performed. Corporate and site management actively supported a strong maintenance program. Maintenance procedure upgrading and development of a reliability centered maintenance approach were positive initiatives. Problems were noted in the area of procedural adherence; however, progress was noted later in the SALP period.

Maintenance

Overall, maintenance activities were effective in supporting the safe and reliable operation of the plant. This effectiveness was evident by a decrease in forced shutdowns and reduced challenges to plant safety systems. Corporate and site management actively monitored routine maintenance activities and strongly supported programmatic initiatives to assure high reliability of plant systems. Development of a reliability centered maintenance program has steadily progressed to improve preventive maintenance effectiveness. State-of-the-art diagnostic techniques, such as infrared thermography, were routinely used as predictive maintenance tools. The planning of daily and weekly preventive/corrective maintenance activities continues to be thorough. During the refueling outage, management effectively controlled contracted activities.

A highly trained, stable work force continued to be a major strength of the maintenance organization. Past training program weaknesses were adequately addressed. The licensee maintained a rigorous maintenance training program that incorporated a technician annual refresher program, consolidated health physics team training, and recent plant modifications. Training was enhanced through the extensive use of mock-ups, including cut-away electrical breakers, full-size steam generator lower shells, motor operated valves, and assorted valve/piping manifolds. The licensee continued to shift to a more hands-on approach to maintenance training from the traditional classroom descriptions of task performance. This training, combined with low technician turnover and adequate staffing, resulted in an effective maintenance work force.

Priority maintenance work load was well controlled and remained low. The overall backlog increased slightly as a result of scheduling more preventive maintenance tasks to support the reliability centered maintenance program. Appropriate management attention was given to the effort through increased staffing. The rework rate remained low.

The licensee made good progress in the upgrade of maintenance procedures. Recently issued upgraded maintenance procedures were comprehensive and consolidated within the body of the procedure acceptance criteria and vendor technical manual data and illustrations.

Tasks were consistently well planned, controlled, and coordinated through a formalized work control system. Work packages were well prepared by the maintenance planner, with relevant acceptance criteria identified in the governing maintenance procedure, supporting work instructions, or associated quality control procedures. Pre-job and post-job briefings by maintenance foremen were well conducted. Post maintenance testing was systematically performed. However, documentation within the work package of the as-found and as-left equipment condition was generally brief, providing limited feedback information for the maintenance analyst during subsequent review.

Procedure revisions and subsequent training proved to be effective in improving procedure adherence and independent verification of system configuration. The implementation of an inadequate corrective maintenance procedure that led to the temporary disabling of Engineering Safeguards instrumentation was an isolated event, resulting from an oversight in the pre-PORC procedural review process. Although this event was important, it did not reflect a programmatic breakdown. An extensive quarantine of suspect procedures and subsequent review identified no similar inadequacies.

The maintenance organization demonstrated an excellent capability to assess and resolve several emergent plant equipment problems. In addition to completing repairs to aging service water system components, the licensee demonstrated the ability to effectively analyze and correct emergent problems while maintaining a sound safety perspective by resolving rod control system malfunctions and promptly identifying undervoltage monitoring system circuit card design deficiencies.

The overall material condition of equipment and systems was well maintained. Age-related wear contributed to a degraded material condition for certain components in the service water system. The licensee was appropriately addressing these plant aging concerns. A Service Water System Reliability Optimization Program was established that will systematically replace aging containment air coolers, fan motor coolers, and assorted service water system valves/piping during future outages.

Surveillance

The overall surveillance program continued to be effective in verifying the operability of safety related equipment and satisfying Technical Specifications. Surveillances were performed on schedule, were adequately documented, and testing deficiencies were properly dispositioned. Test results were trended for each component tested to detect degradation. Surveillance procedures were clearly written containing precautions, acceptance criteria, and specific responsibilities of test personnel. Licensee control of surveillance testing was very good. Procedures were adhered to and expeditiously performed to minimize system unavailability. Following surveillance testing, independent verification of system realignment ensured proper equipment restoration.

Summary

In summary, maintenance activities were effective in supporting the safe and reliable operation of the plant. Steady progress was made in the maintenance procedure upgrade program and reliability centered maintenance program, with new procedures and diagnostic methods being implemented. Management continued to strongly support and closely monitor maintenance activities. Plant material condition was well maintained and equipment aging concerns were adequately being addressed. Surveillance testing was well planned and conscientiously carried out.

III.C.2 **Performance Rating:** Category 1

III.D Emergency Preparedness

III.D.1 Analysis

During the previous SALP, Emergency Preparedness (EP) was rated Category 1. There was noteworthy management involvement, good training, excellent exercise performance, and a good relationship with the State and surrounding counties.

In the November 1990 partial-participation exercise, degrading plant conditions were readily recognized by licensee personnel. Positive interactions were noted among members of the Emergency Response Organization (ERO). The NRC identified a weakness in timeliness of Protective Action Recommendations (PARs), but overall performance showed the ability to protect public health and safety. During the September 1991 full-participation exercise, degrading plant conditions were again readily recognized. Use of the plant simulator during this exercise was a positive and productive initiative to improve training realism. Licensee accident assessment during the exercise demonstrated sound technical knowledge of the plant. Emergency classifications were timely and conservative. The licensee corrected the previous exercise weakness concerning timeliness of PAR issuance. For both exercises, the licensee's post-exercise critiques were thorough. Overall, emergency exercise performance was proficient.

For the November 1990 exercise, the as-submitted scenario lacked detail in areas such as anticipated actions of ERO personnel, trending analysis of key reactor parameters, and off-site monitoring data. Corrections were made before the exercise. For the September 1991 exercise, the submitted scenario exhibited improved quality of presentation and technical content.

During this period, two plant events required emergency plan activation. Each was quickly recognized and properly classified as an Unusual Event. In response, site management demonstrated a conservative, safety-conscious approach. Effective event response was also demonstrated when a severe ice storm swept through Wayne and Monroe Counties in March 1991. Because of extensive damage to transmission lines and power distribution equipment, the counties activated their Emergency Operation Centers (EOCs). Licensee personnel manned EOC stations to coordinate power restoration. The licensee quickly determined that the siren system was to be considered unreliable because of storm damage. To compensate, local fire department and law enforcement personnel were briefed by EP personnel on Route Alert measures to be implemented in a nuclear emergency. This licensee response showed proficiency and competence in responding to a non-nuclear off-site event.

Emergency response facilities were well maintained. Administrative and emergency response procedures were generally well written. The licensee's 10 CFR 50.54(t) audit was appropriate in scope and content. Audit results were provided to state and county officials.

Corrective actions were generally prompt and effective, but findings were maintained within two separate tracking systems. During the transition to a single tracking system, some minor items were not carried over into the new system.

NRC review of the Technical Support Center (TSC) ventilation system noted an inability to tell whether the system had shifted to the accident (recirculation) mode. The licensee initiated a review to establish the best method of doing so.

The NRC found that on-shift personnel lacked the capability of performing dose assessment for a postulated steam generator tube rupture. Other licensee personnel had that capability, but they were not always promptly available, and the licensee's ability to properly classify some events was impacted. The cause appeared to involve procedure and training inadequacies. The licensee took timely action to implement an appropriate interim procedure and additional training.

The EP program, on-site and off-site, was administered by the Director, Corporate Radiation Protection. Two full-time people with technical backgrounds were assigned to maintain the emergency plan and its implementing procedures, conduct drills and exercises, ensure readiness of emergency response facilities and equipment, and interface with off-site support groups. Management participation was evident by maintenance of ERO qualifications and participation in drills and exercises. NRC contact with one county identified satisfaction with the licensee interface. However, the following weaknesses were identified: the emergency plan did not fully reflect the current program; there were several months in which the equipment inspection and the pager test logs were not documented; some discrepancy corrective actions were not reviewed; and drill/exercise records lacked formality and consistency. Overall, NRC review found good program performance, but minor weaknesses in administration and management.

EP training, except dose and core damage assessment, was the responsibility of the Training Department. However, rather than provide training in EP throughout the year, and thus enable continued familiarity with the emergency plan and its implementing procedures, essentially all EP training was completed within a two-month window prior to the September 1991 exercise. After considering the potential contribution of more frequent and regular EP training, Rochester Gas and Electric Company initiated action to revise the training cycle.

All ERO positions were filled at least three deep, but some key managers were assigned more than one ERO job. Long-term ERO staffing was therefore potentially strained. The licensee stated the intention of qualifying more individuals in ERO positions.

Course requirements necessary to satisfy each ERO position were subject to management review and approval. Lesson plans for ERO training were excellent. Reactor operators received classroom and simulator training in accident classification, off-site notification and PAR development. A noteworthy initiative was the use of mock-ups for drills and exercises.

The training program was well-defined and, except for on-shift dose projections, provided an excellent contribution to emergency preparedness effectiveness as demonstrated by the overall proficient performance during exercises, actual events, and walk-throughs.

In summary, the licensee effectively responded to actual events and to exercise scenarios. Procedural and training weaknesses were found during follow-up of on-shift inability to assess potential dose consequences, but procedures were otherwise very good and training was otherwise very effective. Considerable licensee effort was expended on the working relationship with the State and the county authorities, and effective results were indicated. NRC review identified several weaknesses in program administration and management, but the licensee's ability to protect public health and safety was maintained.

III.D.2 **Performance Rating:** Category 1, Declining

III.D.3 **Board Comments:** The board was concerned that program support had degraded resulting in the identified weaknesses.

III.E Security

III.E.1 Analysis

During the previous SALP period the licensee's performance was rated as Category 2, Improving. This was based on the licensee's implementation of an effective and sound security program and taking steps to upgrade and enhance the program. However, weaknesses in auditing, deficiency correction, and lesson plans detracted from the effectiveness of the program.

During this SALP period, the licensee exhibited a strong commitment to improve the program further. This was most notable in the significant ongoing upgrades and enhancements of systems and equipment, in particular, commencing replacement of the perimeter intrusion detection system. The licensee also completed modifications of the security access control facility that included a third new explosives detector, new hand-held metal detectors, and a redesigned search area. Other upgrades included the perimeter barrier and the assessment system, and the purchase of a new security computer system, which was being assembled at the end of this assessment period. In addition, plant and corporate security management personnel remained active in organizations involved in nuclear plant security matters. These significant commitments of capital improvements and involvement are indicative of management's interest in and support of an effective security program.

During the period, the security force was responsive to potential challenges. For example, following a lightning strike that disabled a number of high mast lights, corrective measures were rapidly initiated to ensure that site security could not be compromised. The licensee also implemented appropriate increased security measures during the Persian Gulf conflict.

Licensee oversight of the contract security force continued to be effective. Members of the security force exhibited a professional demeanor, high morale, and were knowledgeable of their duties. Staffing of the security force was consistent with program needs, as indicated by maintaining an effective security program with the minimal use of overtime. The turnover rate was significantly below national average.

The licensee's training and requalification program was well developed and effectively administered, as evidenced by a minimum of personnel errors. Security training personnel completed several instructor courses and provided feedback into the Security Officer Training Program for the enhancement of all officers. Additionally, the weaknesses in the lesson plans identified during the last SALP period were effectively corrected. The lessons learned during day-to-day program implementation were being incorporated into the formal lesson plans.

During the annual emergency preparedness exercise several scenarios that challenged the security force were incorporated, including responding to an uncontrolled discharge of a flammable material and the seizure of a nonvital area by a disgruntled employee. The drill scenarios were realistic, well developed and were conducted in a professional manner. The post-drill critiques also provided meaningful training for the security force. The exemplary performance of the security force during the drill reflected an effective training and qualification program.

The licensee improved its annual security program audit by engaging independent security consultants to evaluate overall program performance. The audit was comprehensive in scope and depth; management's corrective actions in response to the audit findings were prompt and effective. The licensee also developed and implemented a formal surveillance program during this period to monitor the day-to-day operation of the security program and force. In addition, improvements were made in the tracking of equipment deficiencies to effect more timely repairs.

The licensee's Fitness-for-Duty (FFD) program was reviewed during the assessment period. Although some minor problems were encountered during the initial implementation of the program, these were rectified promptly and the licensee was found to be responsive to the spirit and intent of the rule.

The licensee's security event reporting system and procedures were found to be well understood and consistent with the NRC regulations. No event occurred that required a one-hour report, indicating a strong and effective program. Loggable events were appropriately tracked and corrective actions were timely and effective.

Under the provisions of 10 CFR 50.54(p), the licensee submitted one revision to the Training and Qualification Plan, and one complete revision and two minor revisions to the Physical Security Plan. The revisions were technically sound and demonstrated a thorough knowledge and understanding of NRC requirements and security objectives.

Summary

The licensee continued to implement improvements in an effective and performance-oriented security program. Management attention to and support of the program were clearly evident by the significant commitment of capital improvements for upgrades and enhancements in systems, equipment and the training of personnel. The efforts expended to improve an effective program during this period are commendable and demonstrated the licensee's commitment to a high quality security program.

III.E.2 **Performance Rating: Category 1**

III.F Engineering/Technical Support

III.F.1 Analysis

In the last SALP, performance was rated Category 2 in this functional area. Improvements were noted in the corporate and site engineering interface on major modifications, timeliness of work packages, decreased major modification backlog, and safety analyses content. Competency of the engineering staff and the commitment to a large configuration management program were also noted. The last SALP also noted weaknesses in overall engineering assurance practices.

During the current assessment period, site and corporate engineering support was evident for day-to-day plant operation. Participation of corporate engineers at plant daily meetings and the effective and widespread use of a computerized network enabled corporate engineering to quickly respond to safety concerns and support the site in identifying root causes and resolving safety-related component failures. Examples of good engineering support included the evaluation and technical justification for the acceptability of an elongated steam generator manway stud, resolving the cause of a vital bus deenergization during a surveillance test, and the well prepared root cause analyses of the recent "A" service water pump motor failure. Other good examples were the comprehensive root cause analysis of a failed pipe hanger supporting moisture separator reheater drain lines, the identification of a circuit card design deficiency in the Anticipated Transient Without Scram (ATWS) Mitigating System Actuation Circuit, and resolution of the cause of electrical interference in the feedwater control system.

Reviews of recently completed modification packages showed they were well planned and exhibited good safety perspectives and responsiveness to site needs. The advanced digital feedwater control system effort displayed excellent engineering planning, effective communications throughout the organization, strong engineering and continuous management oversight. In performing extensive instrument upgrading for the feedwater system, engineering initiative was evident in the development of predesigned tubing and instrument supports and the development of the generic spacing of varied tubing sizes. Other significant

modifications that were thoroughly prepared and effectively performed were the seismic upgrading of the diesel generator air start system, replacement of pressurizer insulation, installation of chlorination equipment in the service water system, and upgrading of the radiation monitoring system. Coordination of the steam generator tube sample removal to study fouling also showed good engineering.

The engineering evaluation, which led to expansion of the erosion/corrosion (E/C) program and the inclusion of small bore piping into the program, following the rupture of a turbine casing drain line reflected a commitment to personnel safety. Effectiveness of the E/C program continued to be demonstrated as shown in the replacement of two and the repair of five components during the 1991 outage.

Outage planning and the control of modifications during outages continued to be a licensee strength. Engineering played a major role in this success by thorough advance planning and continual attentiveness throughout the project completion. Engineering support was notable in the unplanned replacement of the service water discharge valves and piping elbows for both component cooling water heat exchangers.

The engineering department actively responded to the prior SALP concern regarding overall engineering assurance by developing a comprehensive engineering process upgrade program dedicated to improving engineering performance. An objective engineering self assessment pointing to many areas in need of improvement followed by an independent contracted study formed the basis of the program. The program has management approval, but its implementation began late in the assessment period and its effectiveness could not yet be evaluated.

Improvements in the design modification process and quality of root cause, corrective actions, and calculations were noted during NRC review of the electrical distribution system. However, the NRC review of the service water system performed late in the assessment period identified a number of concerns related to engineering support. These concerns included instances of inappropriate engineering review and use of non-controlled calculations, instances where prior testing was not compared to current system configuration, incomplete testing verification of current system configuration, and discrepancies in the Updated Final Safety Analysis system description. Because the service water issues were identified late in the assessment period, their evaluation is presently in process. These findings point to weaknesses in engineering support of service water issues.

The piping and instrument drawing upgrade, completed the past assessment period, was further enhanced by a new drawing change request methodology and tracking system that has made the drawing change process more effective. An extensive in-house structural arrangement drawing upgrade and reformatting was just completed and provided accurate portrayals of existing plant equipment. The relatively unchanged engineering work request backlog is appropriately reviewed and prioritized. Paperwork closeout delays are being addressed.

The engineering approach to design bases document (DBD) reconstitution was underway. Preliminary work on three pilot DBDs led to a massive electronic indexing of all Ginna licensing documents, attachments, and calculations. The electronic indexing of all prior Ginna licensing data, combined with the capability to recall information was a creditable engineering accomplishment. There is active participation with the Westinghouse owners group effort that has three systems nearing completion. The configuration management program commitment is to complete system and topical DBDs by the end of 1994.

Engineering participation in licensing matters continued to be strong and engineering keeps abreast of current and anticipated actions and resolution of issues from a safety perspective. High quality submittals with good engineering bases enabled recapture of construction time and extended the operating license. High quality finite element analyses and seismic modeling facilitated the containment structure verification that the existing pre-stress continues to meet original design requirements. Submittals of post accident response instrumentation safety evaluation issues and responses to the probabilistic risk assessment generic letter were timely and demonstrated competent engineering. Overall, engineering support of licensing has been excellent.

Recent additions of qualified and experienced engineering personnel were beneficial as evidenced by the work done in-house on probability risk assessment, the comprehensive equipment Q-list, and the widespread availability and use of electronic databases. The technical competence of engineering personnel noted in prior SALPs continues to be a licensee strength, and effective support of day to day plant problems has contributed to continued high plant availability.

In summary, engineering during this assessment period was effective in support of plant operations, evaluation of problems, and determination of root causes. Modifications were well planned and implemented and exhibited good initiatives and safety perspectives. Engineering support was also strong when unplanned equipment replacement was needed. Support of licensing has been excellent. Management dedicated considerable resources to improve engineering performance and recent staff additions benefitted the organization. The results of major inspections were mixed with strengths observed in the engineering support of electrical distribution system and weaknesses in the engineering support of the service water system. Continued drawing upgrades reflected good engineering; and, DBD efforts were underway.

III.F.2 **Performance Rating:** Category 2

III.G Safety Assessment/Quality Verification

III.G.1 Analysis

During the previous SALP, Safety Assessment/Quality Verification was rated Category 2. Programmatic improvements in administrative controls and engineering depth were made within the Quality Performance organization. Quality assurance was more effectively used as a management tool. Self-assessment concerns needed to be tracked to completion.

During the current SALP period, management support and participation in licensing matters continued to be strong and the licensee continued to keep abreast of all current and anticipated actions that could impact plant operations. The licensee continued to make changes to plant programs, adjust corporate and plant organizational structure, and align corporate management to better focus on problem areas identified in previous SALP periods. New engineering and professional staff were added to augment the corporate and plant organization. The goals and commitment to safety were promulgated by senior corporate officers. Management and plant personnel demonstrated the ability to be constructively self-critical of their programs.

Several proposed amendments to the facility operating license were of high quality. These proposed amendments indicated a safety conscious attitude and resulted in timely issuance. Examples included the extension to the Ginna operating license to recapture the construction period, a reformat of technical specifications, and an addition to technical specification requirements.

The licensee's resolution of generic issues was good. Recent revisions to the Ginna Inservice Inspection (ISI) and Inservice Pump and Valve Testing (IST) Programs demonstrated a thorough understanding of codes and regulations. The licensee's resolution of issues contained in NRC Generic Letters, Bulletins and Information Notices were timely and reflected effective prioritization of work.

Several voluntary safety-related improvements demonstrated a safety conscious attitude. Two sources of preferred power through two independent station transformers from the offsite transmission network were completed. Human factor improvements in the control room were implemented during the refueling outage.

10 CFR 50.59 safety reviews were technically sound, thorough and well documented. The annual 10 CFR 50.59 reports were timely and complete. A major modification, which was indicative of the licensee's thorough safety reviews, was the installation of an Advanced Digital Feedwater Control System (ADFCS). The licensee's safety evaluation supporting this modification was particularly detailed and addressed the potential challenges to the Reactor Protection System by component failures in the original analog feedwater control system.

The Nuclear Safety Audit and Review Board (NSARB) effectively provided an oversight role by periodically reviewing the activities of the Plant Operations Review Committee (PORC), reviewing plant events and evaluating the adequacy of the QA program. During this SALP period, NSARB effectiveness has been enhanced by including an independent consultant and a representative from another utility as board members.

In general, the PORC provided strong decisive control for assuring that quality procedures and safety reviews were developed. During meetings, priorities were established, discussions were candid and thorough, and final committee approval was consistently based on satisfactory resolution of pertinent safety issues. One significant event, however, occurred as a result of an inadequate review of a maintenance procedure. This inadequate review resulted in the inadvertent disabling of the safeguard logic instrumentation. Subsequently, stronger controls revising plant procedures were implemented.

The Licensee Event Reports (LERs), which were submitted by the licensee, were well written and submitted in a timely manner. All LERs issued gave appropriate attention to discussion of root causes, safety significance of events, and corrective actions.

The licensee has initiated several enhancements to the corrective action process. These changes included improved guidance in the corrective action procedures, development of a formalized root cause analysis process and implementation of a computerized corrective action tracking system.

In general, the licensee's identification of deficiencies, corrective actions and root cause determinations were effective. Notable examples included the circuit card design deficiencies for the Undervoltage Monitoring/Protection System and the ATWS Mitigation System Actuation Circuitry. In contrast, quality assurance deficiencies were identified in the control of engineering processes with regard to the Service Water System design and operation. Additionally, the identified weaknesses in the REMP QA/QC programs during the last SALP period continued into this period. These deficiencies indicate that continued management attention in quality assurance is warranted.

Management's use of the Quality Performance Department enhanced plant performance. During quarterly QA/QC subcommittee meetings, which were attended by senior corporate and site management, the results of audits, the findings of the quality assurance surveillances, and details surrounding recent plant experiences were critically discussed. A general indication of plant performance was provided to management based on the number of initiated audit finding corrective action reports, field change requests, maintenance work requests, nonconformance reports, and corrective action reports.

Summary

Senior management was actively involved in technical issues which ensured a high quality of licensee support performance. Management at all levels was closely involved in the operation and maintenance of the plant. Operational decisions were made on the basis of safety implications. 10 CFR 50.59 safety reviews were detailed and thoroughly documented. The Nuclear Safety Audit and Review Board provided an effective oversight role of the plant activities and the PORC. Although PORC was generally effective in their reviews, procedure revisions and safety evaluations, an inadequate procedure review resulted in the disabling of safeguards logic instrumentation. The Quality Performance Department refined its assessment method which resulted in an improvement in effectiveness. Quality assurance weaknesses in controlling engineering processes and in the REMP indicate the need for continued management attention.

III.G.2 Performance Rating: Category 2

IV. SALP EVALUATION CRITERIA

Licensee performance is assessed in selected functional areas, depending on whether the facility is in a construction or operational phase. Functional areas normally represent areas significant to nuclear safety and the environment. Some functional areas may not be assessed because of little or no licensee activities or lack of meaningful observations in that area. Special areas may be added to highlight significant observations.

The following evaluation criteria were used, as applicable, to assess each functional area:

1. Assurance of quality, including management involvement and control.

2. Approach to the identification and resolution of technical issues from a safety standpoint.

3. Enforcement history.

4. Operational and construction events (including response to, analysis of, reporting of, and corrective actions for).

5. Staffing (including management).

6. Effectiveness of training and qualification programs.

The performance categories used when rating licensee performance are defined as follows:

Category 1. Licensee management attention to and involvement in nuclear safety or safeguards activities resulted in a superior level of performance. NRC will consider reduced levels of inspection effort.

Category 2. Licensee management attention to and involvement in nuclear safety or safeguards activities resulted in a good level of performance. NRC will consider maintaining normal levels of inspection effort.

Category 3. Licensee management attention to and involvement in nuclear safety or safeguards activities resulted in an acceptable level of performance; however, because of the NRC's concern that a decrease in performance may approach or reach an unacceptable level, NRC will consider increased levels of inspection effort.

Category N. Insufficient information exists to support an assessment of licensee performance. These cases would include instances in which a rating could not be developed because of insufficient licensee activity or insufficient NRC inspection.

The SALP Board may assess a performance trend, if appropriate. The trends are:

Improving: Licensee performance was determined to be improving during the assessment period.

Declining: Licensee performance was determined to be declining during the assessment period and the licensee had not taken meaningful steps to address this pattern.

Trends are normally assigned when one is definitely discernable and a continuation of the trend may result in a change in performance during the next assessment period.