Enclosure 1

SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE (SALP)

R. E. GINNA NUCLEAR POWER PLANT

REPORT NO. 50-244/98-99

I. BACKGROUND

The SALP Board convened on March 6, 1998, to assess the nuclear safety performance of the R. E. Ginna Nuclear Power Plant for the period August 25, 1996, through February 21, 1998. The Board was conducted pursuant to NRC Management Directive (MD) 8.6 (see NRC Administrative Letter 93-20). The Board members were: Richard V. Crlenjak (Board Chairman), Deputy Director, Division of Reactor Projects, Region I (RI); Larry E. Nicholson, Deputy Director, Division of Reactor Safety, RI; and S. Singh Bajwa, Director, Project Directorate I-1, Office of Nuclear Reactor Regulation. The Board developed this assessment for the approval of the Regional Administrator.

The performance ratings and the functional areas used below are described in NRC MD 8.6,"Systematic Assessment of Licensee Performance (SALP)."

II. PERFORMANCE ANALYSIS - OPERATIONS

Operational performance during this SALP period was normally very good, and some improvements were noted. After two maintenance outages early in the period, RG&E operated the plant very well and without a significant event over the last 15 months of the period. In that time period, no reactor trips or unplanned primary system transients were experienced, and licensed operators dealt effectively with the few challenges from equipment failures. Plant operators exhibited excellent performance in the control of the unit during power changes, and their response to equipment malfunctions and abnormal conditions was generally prompt and effective. Operator communications and interactions with other site organizations improved steadily. The operators' effectiveness in responding to plant events and communicating with other groups was especially evident in the latter part of the SALP period. This improved performance was illustrated during the concurrent repair of two high-head charging pumps and in responding to the simultaneous loss of both feedwater heater drain pumps.

While overall operator performance was very good, some lapses occurred in the area of human performance and plant configuration control, especially during outage periods. Examples included the improper operation of the safety injection pump discharge valve breakers early in the SALP period, and the inadvertent draining of reactor makeup water to the waste holdup tank, which occurred later in the SALP period. Also, a lapse in operator performance occurred during normal plant operation, when control room operators displayed an inadequate level of oversight

and attention to instrumentation, allowing a reactor coolant system (RCS) power-operated relief valve (PORV) to inadvertently open during a maintenance calibration activity. The unexpected increase in RCS pressure was not detected by the control room operators. Although this event occurred immediately after the end of the SALP period, it was an additional example of a lapse in the operators' cognizance of plant conditions and oversight of equipment status.

Operating procedures were generally of good quality and effectively used by plant operators. Some discrepancies existed, however, such as the lack of procedural controls for reactor physics testing and for plant jumpers and lifted leads. Plant operators experienced some difficulty in the use and implementation of the Improved Technical Specifications (ITS) early in the SALP period, but use and implementation was improved and became more effective later in the period.

The conduct of licensed operator requalification examinations was judged to be good. However, some minor weaknesses were noted in the administration of simulator scenarios and job performance measures. The inclusion of plant modifications and the ITS in the operator training program and the overall content of the program were deemed strengths, while Emergency Operating Procedure discrepancies and improper instructor cuing practices were noted as weaknesses.

Management oversight of plant operations showed notable improvement in areas such as the conduct of safety review committees, the sponsorship of self-assessments, the incorporation of industry information, and the continued development of the plant's corrective action program. Also, implementation of the rotating maintenance work schedule during this period included the use of risk insights, and the operators were trained late in the SALP period on the computerized system for tracking equipment out of service and the resultant increases in risk. An exception to the improvement, however, was the lack of management's timely response in recognizing and remediating operator performance connected with the inadvertent PORV opening event. Station management was proactive in ensuring that significant equipment deficiencies were aggressively pursued to assure normal and stable plant operations. The independent safety oversight function, quality assurance program audits, and the Nuclear Safety Audit and Review Board review of operational matters, were performed in a very good manner.

The Operations area is rated **Category 2.**

III. PERFORMANCE ANALYSIS - MAINTENANCE

Throughout this SALP period, maintenance remained generally effective with improvements made to ensure more reliable equipment performance. Maintenance performance was good and contributed to an extended operating run; and no forced outages or significant equipment failures occurred during the last year of the period. There were fewer cases of poor work practices compared to the previous SALP period, and routine maintenance and surveillance activities were generally well performed. Several examples of effective problem identification, good maintenance planning, and effective corrective action implementation were observed by the NRC. Examples from later in the period included effective hydrogen seal oil cooler leak diagnosis and repair, replacement of the spent fuel pool weir gate bladder, and aggressive root cause determination and corrective maintenance performed on the service water system inlet strainers. An experienced and knowledgeable maintenance staff contributed to good performance during these maintenance activities.

Good planning and implementation of the in-service inspection (ISI) and non-destructive examination (NDE) programs were noted. The procedures for acquisition, analysis, and evaluation of data for the new steam generators were state-of-the-art and led to well organized and efficient implementation of the ISI and NDE for these steam generators. Improved ISI techniques also led to the timely discovery and repair of defects in the main steam system piping.

Several process improvements that enhanced maintenance work planning and execution were implemented, improving the day-to-day interface of maintenance with other site organizations. The development and implementation of an integrated work schedule improved the overall quality and timeliness of maintenance work; this rotating 12-week system work schedule contributed to a reduction in the size and age of the maintenance backlog and permitted the expansion of on-line maintenance.

Management oversight improved over the course of the SALP period and contributed to prompt identification and resolution of equipment deficiencies. Increased management oversight and involvement also contributed to good self-assessments of the Ginna Maintenance Rule program. While management oversight resulted in improvements in the performance of maintenance, there existed areas where additional management attention was warranted. For example, although good progress was made in addressing and reducing the maintenance backlog, the overall size of that backlog remained high at the end of the SALP period. Another area for management attention was that of procedure quality and adherence.

Several instances of poor procedure adherence and ineffective administrative controls were noted. Inattention to detail and personnel errors related to procedure adherence and completion caused a number of reportable events. Examples from later in the SALP period included a high number of foreign material exclusion program deficiencies during outage work, out-of-specification emergency diesel generator (EDG) performance data being improperly accepted and documented during preventive maintenance work, and the improper documentation of safety-related replacement parts during the repair of nuclear instrumentation. At times, inadequate or deficient procedures and guidelines also prevented the performance of acceptable maintenance. The inadequate instructions for hanging equipment test tags, and providing overspeed protection for the turbine-driven auxiliary feedwater pump turbine during testing, were examples of deficient procedures. These examples were observed late in the SALP period and exemplified the types of procedural problems noted earlier in the period.

The Maintenance area is rated **Category 2.**

IV. PERFORMANCE ANALYSIS - ENGINEERING

Performance in the engineering area was generally good. Engineering demonstrated good control of the design basis as evidenced by the overall results of the NRC's Architect Engineering (AE) design inspection of the component cooling water and safety injection systems. Design analyses and calculations were of good quality. However, mixed performance was noted regarding engineering support to operations and maintenance. Also, concerns regarding some longstanding service water system items continued to challenge engineering. Although problems involving motor-operated valve (MOV) calculations were identified, engineering was taking appropriate measures to satisfactorily complete the MOV program.

With the restructured engineering organization in place for nearly the entire SALP period, engineering work was generally well controlled. For example, well coordinated work activities were noted during the 17-day main transformer maintenance outage. Some progress was made in resolving open items concerning the service water system; however, some longstanding service water open items remained and continued to challenge engineering. Examples include the updating of the Service Water System Reliability Optimization Program, including the finalization of test and cleaning frequencies for safety-related heat exchangers.

Mixed performance was noted regarding engineering support to operations and maintenance. Good engineered work products and troubleshooting efforts were observed in resolving discrepancies for two service water pump tests and restoring the accuracy of the screenhouse water level indicators. Some examples of good problem identification and root cause analysis were noted, such as the effective monitoring and corrective actions associated with main feedwater flow oscillations. Progress was also made in resolving some prior performance issues associated with the auxiliary feedwater and service water systems. However, further evaluations of

the thermal performance of safety related heat exchangers cooled by service water were needed. The vendor manual program was deficient and not maintained, which interfered with the performance of acceptable maintenance. MOV program implementation problems were identified by the NRC, such as incorrect equations used in thrust calculations and industry valve data that was incorrectly applied to certain valves.

Design analyses and calculations reviewed during the NRC AE design inspection were of good quality. A questioning attitude was demonstrated when RG&E identified and corrected a single failure vulnerability of the power operated relief valve and associated block valve DC power supply design during a probabilistic safety assessment review. While examples of design control problems were noted regarding the use of unapproved MOV calculations and the lack of formal control of data from a computer program, engineering applied the lessons learned from these problems to improve the MOV program.

Throughout the period, the licensee demonstrated good control of the Ginna design basis. An AE design team inspected the component cooling water and safety injection systems and found them capable of performing their design basis functions. Efforts by engineering to acquire and categorize design basis information were effective in making design basis documentation available to the plant staff. Operability assessments reviewed during the AE inspection were complete and well written. Some minor discrepancies were identified regarding adherence of the systems to their design and licensing basis, including the UFSAR not being updated to reflect changes in the peak clad temperature calculated to occur during a design basis accident.

The Engineering area is rated a **Category 2.**

V. PERFORMANCE ANALYSIS - PLANT SUPPORT

Overall performance in the plant support functional area continued to support safe plant operation. Improving exposure and radiological waste trends were offset, however, by problems with radiological boundary controls and some poor radiological work practices. The emergency planning and fire protection functions continued to perform well. Problems with the vehicle barrier system detracted from the otherwise good performance in plant security.

Performance in radiological controls was good as evidenced by decreasing trends in radiation exposures and personal contaminations. Efforts to reduce radioactive waste generation were successful, and training initiatives in radiological boundary control and industry events were noteworthy. Weaknesses in radiological boundary controls were identified early in the SALP cycle and improvements were hampered by human performance problems. The NRC continued to identify workers not adhering to adequate boundary controls late in the SALP period. Some deficiencies were observed in the posting of notices to, and radiological safety briefings of,

employees, and in a failure to anticipate the creation of a high radiation area. RG&E efforts to identify and correct problems in these areas contributed to some program improvements. Radiological waste processing and transportation were effectively managed and continued to exhibit a high level of performance.

Although the radiological environmental monitoring program and radiological effluent control program met regulatory requirements, weaknesses were identified in environmental monitoring, inconsistencies were identified in the UFSAR, and challenges remained in investigating suspected fuel pool leakage.

Performance in emergency planning continued to be very good. Emergency response facilities, procedures, instrumentation and supplies were maintained in a high state of readiness. During drills and exercises, simulated events were accurately diagnosed, proper mitigative actions were performed, emergency declarations and protective action recommendations were timely and accurate, and offsite agencies were promptly notified.

In security, although recent performance was very good, significant deficiencies were identified during this period. The vehicle barrier system failed to fully protect against potential uses of a land vehicle to gain unauthorized proximity to vital areas, and weaknesses existed in the fitness-for-duty monitoring program.

Performance in fire protection was generally very good as evidenced by prompt responses to fire alarms and drills, and by the appropriate preparations made to deal with a control room fire. Housekeeping conditions improved in the auxiliary building as evidenced by clear aisles and walkways, painted surfaces, and the removal of some stored materials. However, housekeeping deficiencies were observed in the containment building during the refueling outage.

The Plant Support area is rated **Category 2.**

Enclosure 2

Ginna Planned NRC Inspections

March 30, 1998 - March 30, 1999

IP-Inspection Procedure
Core-minimum NRC Inspection Program (mandatory all plants)
Core Resident Activities Not Included

INSPECTION PROCEDURE	TITLE/PROGRAM AREA	PLANNED DATES	INSPECTION COMMENTS
IP 37001	10CFR50.59 Safety Evaluation Program	2/99	Core
IP 40500	Effectiveness of Licensee Controls	2/99	Core
IP 73753	Inservice Inspection	3/99	Core
IP 81700	Physical Security Program	8/16/98	Core
IP 82701	Operational Status of the EP Program	5/99	Core
IP 83750	Occupational Radiological Exposure	7/6/98	Core
IP 83750	Occupational Radiological Exposure (Outage)	3/15/99	Core
IP 84750-1	Effluent Monitoring	9/98	Core
IP 84750-2	Environmental Monitoring	7/27/98	Core
IP 86750	Solid Radwaste Management and Transportation	11/2/98	Core
IP 93809	Safety System Engineering Inspection (SSEI)	2/99	Core