ENCLOSURE 1

SALP REPORT - R. E. GINNA
50-244/93-99

I. BACKGROUND

The SALP board convened on March 23, 1995, to assess the nuclear safety performance of R.E. Ginna Nuclear Power Plant for the period September 12, 1993, to March 11, 1995. The board was convened pursuant to NRC Management Directive (MD) 8.6 (See NRC Administrative Notice 93-02). Board members were C. W. Hehl, Director, Division of Radiation Safety and Safeguards, NRC Region I; R. W. Cooper, Director, Division of Reactor Projects, NRC Region I; A. R. Blough, Deputy Director (Acting), Division of Reactor Safety, NRC Region I; and L. Marsh, Director, Project Directorate I-1, NRC Office of Nuclear Reactor Regulation. Mr. Hehl served as the board chairperson. The board developed this assessment for approval of the Regional Administrator.

The performance category ratings and the assessment functional areas used below are defined and described in NRC MD 8.6.

II. PERFORMANCE ANALYSIS - PLANT OPERATIONS

The Operations area was rated Category 2 in the previous SALP period. Performance was characterized by good management oversight of plant operations and excellent operator response to plant transients and abnormal conditions. However, weaknesses were noted in the control of system configuration, the operator requalification training program, and management response to a significant industry issue (falsification of logs).

During this SALP period, performance in the Operations area was characterized by improved management oversight of plant operations, continued excellent operator response to plant transients and evolutions, improved operator requalification training program and results, and strengthening of configuration control.

Plant and Operations management demonstrated a conservative and sound safety philosophy in operational decisions. Management aggressively investigated operational problems, such as small secondary steam leaks in containment and took conservative action to analyze and bound the problem. Another example of conservative decision making was the resolution of a potential common-mode failure by inspection of the "C" safety injection (SI) pump motor rotor following the plant shutdown to repair the "B" SI pump motor rotor. Management's low threshold for the identification of plant problems and aggressive posture in resolving them resulted in operators identifying issues in advance of their potentially impacting plant safety. For example, the questioning attitude and perseverance of an operator resulted in the discovery of a clogged sensing line for a containment pressure detector which made one logic channel inoperable. Another noteworthy example was the timely identification by operators of frazil icing at the intake structure.

Operators continued to perform well over this SALP period in response to operational events, abnormal plant conditions, and routine plant evolutions. Rigorous adherence to procedures; excellent command and control, highlighted by clear, distinct communications with verbatim repeat backs; and thorough shift turnovers and pre-job briefings with good interdepartmental communications contributed to this excellent operator performance. Noteworthy examples during the period include operator response to three plant trips, as well as to two offsite electrical distribution system transients that required prompt stabilization of the plant.

Operations involvement in the investigation and resolution of significant events was excellent. Root cause analyses and human performance evaluations were timely, thorough, and in most cases, effective in preventing recurrence of the problem. However, instances occurred early in the SALP period in which root cause evaluation and corrective action were not fully effective in resolving two weaknesses that existed during the last SALP period. Early in the SALP period, three problems with configuration control of plant systems and components occurred and weaknesses in licensed operator training continued from the last period, as evidenced by the failure of requalification examinations by one of two crews and four of seven individuals. Management attention to these problems subsequently resulted in significant improvements in program quality and implementation in these two areas.

The refueling outage that occurred during this SALP period was well managed. Excellent coordination and timely communications were established between management, the work control center, and the control room to assess and reduce shutdown risk. Daily safety assessments were performed to evaluate the availability of reactivity control systems, core cooling systems, electrical supplies, containment integrity, and reactor coolant inventory to assure plant safety was not compromised during system configuration changes, particularly during mid-loop operations.

In summary, operators continued their excellent performance responding to operational events and conducting plant evolutions. Plant and Operations management exhibited a conservative and sound safety perspective in operational decision making and improved their oversight of plant operations. Although performance weaknesses early in this SALP period in the areas of licensed operator requalification training and configuration control continued from the last SALP period, management attention succeeded in significantly improving performance in these areas by the end of the period. In general, timely and rigorous root cause evaluations and implementation of well conceived corrective actions were successful in preventing problem recurrence. Operations, in conjunction with outage management, controlled activities and managed shutdown risk effectively during the refueling outage.

The Operations area is rated Category 1.

III. PERFORMANCE ANALYSIS - MAINTENANCE

The maintenance program was rated as Category 1 in the last SALP period. The board noted strong management commitment and support, good plant material condition, use of improved technologies, firm commitment to quality assurance, effective root cause analyses, experienced staff, good procedures, and good surveillance testing. However, a number of valve problems occurred, and failures of secondary plant equipment challenged both safety systems and the operators.

In the current SALP period, many of the licensee performance strengths continued. Also, the licensee continued its noteworthy program of systematically renewing many plant systems. Challenges from secondary plant failures decreased over the course of the period. Effectiveness of root cause analyses dipped substantially during the middle of the period and later was recovered. However, there were many examples of installation problems; these were more evident in outage-related work and were caused both by work practices and by lapses in technical support.

The licensee continued its strong management support for maintenance programs. Management fostered a conservative approach to on-line maintenance. The licensee continued its aggressive long-term program for plant upgrades and safety enhancements. Very good teamwork was observed throughout the organization. Safety review committees contributed to the conservative operating philosophy and breadth of corrective actions. Root cause analysis effectiveness decreased in the middle of the SALP period. Weak root cause analyses were associated with the initial safety injection pump and service water pump problems. However, program improvements led to better analyses later in the period.

Resolution of technical issues and implementation of maintenance activities were usually good. Maintenance procedures were generally good following completion of a five-year procedure upgrade program. The licensee maintained a manageable backlog of work activities and equipment was well-maintained and labelled. Technical manuals were kept up-to-date and storage of spare equipment was improved. Although most maintenance activities were performed well, significant exceptions occurred during equipment installation or reassembly. In some cases, poor technical support or weak procedures were involved; in other cases, work practices were weak. Performance lapses were concentrated in periods of high maintenance activity, such as outages. Examples of installation problems included (1) flexible hose bend radius limits exceeded, which led to a leak in the component cooling water supply to a reactor coolant pump; (2) various problems with a safety injection pump overhaul that later necessitated a second overhaul; (3) failure to properly level a service water pump, contributing to a subsequent failure; (4) overstretching of expansion joints in the service water system causing cracks; (5) various steam leaks on components which had been opened during outages; and (6) imprecise positioning and lapses in foreign material controls during replacement of safety injection system recirculation piping. These problems indicate weakness in the maintenance department efforts to prevent and correct deficient conditions.

Excellent interface among station departments was observed in maintenance support activities. Craft personnel were generally well-trained, often with the use of mock-ups and other training aids. The use of a combination of system engineers and component engineers enhanced assessment and resolution of equipment problems and malfunctions. Efforts to downsize the maintenance department, as part of a company wide effort, were effectively managed and coordinated. Ongoing self-assessment and effective quality assurance involvement contributed to program refinements.

In summary, maintenance programs had strong management support and demonstrated many positive attributes. The plant was generally well-maintained and a program for plant upgrades and safety enhancements continued. Although maintenance activities were usually well performed, a number of significant problems were caused by faulty equipment installation or reassembly, indicating weakness in the facility staff efforts to prevent deficient conditions.

The maintenance area is rated as Category 2.

IV. PERFORMANCE ANALYSIS - ENGINEERING

In the previous SALP period, the engineering area was rated Category 1. Strong management oversight of the planning and installation of major plant modifications was evident. Communication between the corporate and site staffs was outstanding. The engineering department was effective in support of plant operations and maintenance, and engineering programs were found to be excellent.

During this SALP period, management continued to demonstrate strong oversight of engineering activities, as evidenced by excellent engineering planning and completion of a number of plant modifications. The engineering organization supported key safety initiatives in an effective, safety sensitive manner and communication between corporate and site engineering remained outstanding. Overall, engineering programs were again found to be excellent.

The licensee's engineering programs were clearly established and were found to be functioning well. Programs that were particularly noteworthy included the (1) dc fuse control program, (2) motor operated valve program, and (3) eddy current testing program. The results of these efforts were evaluated to be of high caliber and considered enhancements to safety. The impact of on-line maintenance of safety-related equipment was evaluated by the engineering department and incorporated probabilistic risk assessment insights, thereby providing a proper safety focus. The engineering department has performed a number of independent self-assessments to improve communications and assess various system-related and component-related problems. Notable among these assessments was a review of the service water and component cooling water operational performance. Corporate engineering also demonstrated a proactive approach by conducting independent evaluations of fire protection techniques and the adequacy of as-built fire protection wrap. Site engineering performed good independent self-assessments during the 1994 refueling outage that resulted in improved changes to the modification process and improved

communication between project team members. An independent quality assurance audit of the modifications performed during the 1992 and 1993 refueling outages found no programmatic weaknesses or significant findings.

Thorough and timely corrective actions were taken concerning significant technical issues such as electrical distribution system functional inspection findings. Corporate engineering resolved service water pump discharge check valve problems by incorporating an improved valve design. Support of operations and maintenance was excellent as evidenced by numerous and thorough safety evaluations, root cause determinations, and Human Performance Enhancement System evaluations. However, work instructions for re-installation of a service water system expansion bellows did not contain adequate acceptance criteria thus resulting in overstretching of the component. The configuration management information system was found to be highly useful in assuring good control of engineering documentation.

The steam generator replacement process, including installation and testing, was being thoroughly planned with expectations clearly defined. Corporate engineering efforts in converting to the improved Standard Technical Specifications were excellent. The licensee also demonstrated good engineering management oversight and planning for a new fuel reloading in 1996. Communication with the NRC throughout these efforts was excellent.

In summary, the engineering organization remained strong and demonstrated an effective safety perspective in support of plant needs. Communications between corporate and site engineering staffs were excellent. The engineering department was very effective in performing safety assessments of plant problems, including past technical problems and developing appropriate solutions. The engineering staff demonstrated excellent root cause and corrective action implementation. Engineering provided outstanding support in planning for the steam generator replacement program, conversion to standard technical specifications, and new fuel reload in 1996.

The engineering area is rated **Category 1.**

V. PERFORMANCE ANALYSIS - PLANT SUPPORT

In the previous SALP the plant support functional area was rated as Category 2. Performance in the radiological controls area was considered good. Strengths were noted in personnel exposure control during steam generator maintenance activities and quality assurance surveillance of the respiratory protection program. A weakness was noted in the development of the as-low-as reasonably-achievable (ALARA) program. Performance in the radiological effluent monitoring and effluent control programs improved, however weaknesses in the effluent monitoring program quality assurance and quality control were evident. Good exercise performance, especially in command and control and in communications, were noted in the emergency preparedness area. Excellent relationships with offsite organizations continued and the siren system underwent a major enhancement. The security program continued to be

effectively implemented. Excellent management support resulted in several significant security system upgrades. Performance in fire protection and plant housekeeping was generally good.

During the current SALP period, the licensee's radiation protection program performance improved. Several radiation control program enhancements were implemented, including a redesigned radiation control area access control point and implementation of an electronic dosimetry system. The ALARA program was expanded and permanent lead shielding was installed inside containment. Strong management support for ALARA was further evidenced by establishment of challenging personnel exposure goals during outages, conservative operational decisions, and establishment of an outage exposure reduction committee. Steady improvements had been made in the ALARA program performance, but areas for growth still existed in meeting exposure reduction challenges. Program changes made in response to the revised 10 CFR 20 reflected a good safety perspective and applicable training was of good quality. The radwaste/transportation program was effectively managed and produced good results. Radwaste minimization initiatives, including the introduction of launderable tarpaulins, cloth bags and rags, resulted in a significant reduction in solid radwaste generated. Knowledge and procedural weaknesses related to the radiation portal monitors resulted in the inadvertent removal of a contaminated component from the station.

Implementation of the radiological environmental monitoring and effluent control programs continued to be very good. Several improvements were observed in the environmental counting lab, including addition of a new gamma spectrometer, cross-training a radiation protection technician to perform environmental monitoring duties, and improved quality assurance (QA) and quality control (QC) programs. Liquid and gaseous effluent releases were well controlled and quantified. The effectiveness of the licensee's laboratory QA/QC program was demonstrated by improvements in methods for preparing duplicate and spiked samples and improved EPA cross check results. Aggressive monitoring of secondary chemistry minimized the impact of several main condenser tube leaks.

Continued good emergency preparedness (EP) program performance was noted during drills and exercises. During both EP exercises, operators generally performed their EP duties well. The exercise critique was thorough and self-critical, and identified areas for improvement. Senior site management attention and involvement in EP issues were a continuing strength. The emergency response facilities were well equipped and well maintained. However, several program implementation issues were identified that may have reflected a decline in attention to detail. These issues included, missing two quarterly growl tests of the sirens and failing to submit several emergency response plan changes to the NRC Regional Office.

The licensee continued to implement a very effective security program. Management attention and involvement continued at a high level. Installation of upgraded perimeter intrusion detection and security computer systems was completed. An effective program of self-assessments and comprehensive annual audits provided early identification and resolution of potential security problems. Control of packages and materials brought into the protected area

was a noted strength. Maintenance support for security equipment continued to be highly effective in minimizing the need for compensatory measures. The licensee continued to implement a good performance-oriented training and qualification program. A significant vulnerability in the fitness-for-duty program, regarding implementation of the random, unannounced drug and alcohol testing methodology, was appropriately addressed by the licensee. However, this vulnerability potentially contributed to a delay in identifying two security force members who tested positive for illegal drugs.

The fire protection and prevention program was effectively implemented. Firewatch personnel were well trained and knowledgeable of requirements. In general, fire program policies, procedures, drills and analyses were technically sound and properly implemented. However, a weakness was identified in the process for ensuring only qualified fire brigade members were listed on the roster. There was good fire-fighting equipment maintenance and surveillance. Control and maintenance of fire barriers was considered a program strength.

Radiological housekeeping continued to be very good. General area housekeeping continued to improve over the period.

The plant support functions effectively contributed to safe plant operations. Performance in the radiation protection area was good. While steady improvement was noted in implementation of the ALARA program, opportunities for improvement existed. Very good performance in the radiological effluent and environmental monitoring programs was noted. An effective plant chemistry program minimized the impact of several main condenser problems. There was continued good performance in the emergency preparedness area, however several attention to detail problems were identified. Security program performance continued to be a strength; however, a significant vulnerability was identified in implementation of the fitness-for-duty program. The fire protection and housekeeping programs were effectively implemented.

The plant support area is rated as **Category 2**.

ENCLOSURE 2

PLANNED NRC INSPECTIONS
April 17, 1995 to May 1, 1996

IP - NRC Inspection Procedure
TI - Temporary Instruction - Mandated Inspection
Core Inspection - NRC Inspection Program Mandatory Inspection

IP 62700	Maintenance Practices - Regional Initiative Due to maintenance performance as described in SALP 12 - to be done during Spring 1995 outage		In Progress
IP 82701	Operational Status of the Emergency Preparedness Program Regional Initiative-Due to deficiencies identified during regional inspection 50-244/94-21		04/24/95
IP 73753	Inservice Inspection - Core Inspection		05/01/95
IP 81700	Physical Security Program for Power Reactor Core Inspection	Visit 1 Visit 2	07/10/95 01/29/96
IP 37550	Engineering - Core Inspection	Visit 1 Visit 2 Visit 3	07/17/95 10/02/95 04/01/96
IP 71001	Requalification Program - Core Inspection		09/18/95
IP 82302	Review of Exercise Objectives and Scenarios for Power Reactors - Core Inspection		10/30/95
IP 82301	Evaluation of Exercises for Power Reactor Core Inspection		12/04/95
IP 83728	Maintaining Occupational Exposure ALARA Regional Initiative-Review of preparations for Steam Generator Replacement		12/11/95
IP 83750	Occupational Radiation Exposure Core Inspection	Visit 1 Visit 2	Complete 06/17/96
IP 84750	Radioactive Waste Treatment, and Effluent and Environmental Monitoring - Core Inspection		
	(1) Waste Treatment		09/18/95
	(2) Confirmatory Measurements		09/18/95
	(3) Effluents		TBD
TI 109	Motor Operated Valve Testing (GL 89-10) Program Office Initiative - Program Closeout Inspection		TBD
IP 50001	Steam Generator Replacement Inspection Regional Initiative-Due to complexity of replacement project		As required