

U. S. NUCLEAR REGULATORY COMMISSION
REGION I

Inspection Report 50-244/94-09

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Facility: R. E. Ginna Nuclear Power Plant
Rochester Gas and Electric Corporation (RG&E)

Inspection: May 2-6, 1994

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6/1/94
Date

INSPECTION SCOPE

This inspection report documents a safety inspection

EXECUTIVE SUMMARY

Overall, the licensee's implementation of the corrective action program was effective. Management input and involvement in the corrective action processes were excellent, typically resulting in good action to prevent recurrence and thorough event analysis. The licensee used root cause analyses and human performance evaluations system (HPES) reviews frequently and effectively. The Corrective Action Task Force, which was established in 1990, was a good initiative, to examine the corrective action program for possible improvements.

Some weaknesses, however, were noted in the corrective action processes. On several occasions, the resolution of a deficiency was not documented, or the documentation could not be traced from the initiating document. The lack of a procedure which integrated the corrective action process resulted in an inconsistent application of corrective action processes. An initiative to reduce the threshold for identifying and resolving discrepancies was positive; however, the lowering of this threshold has been informally communicated.

The licensee's corrective action program trending provided a good overall perspective on program effectiveness; however, the trending individual corrective action processes may not provide an accurate assessment, because a given deficiency may be entered into the corrective action system through a number of different processes.

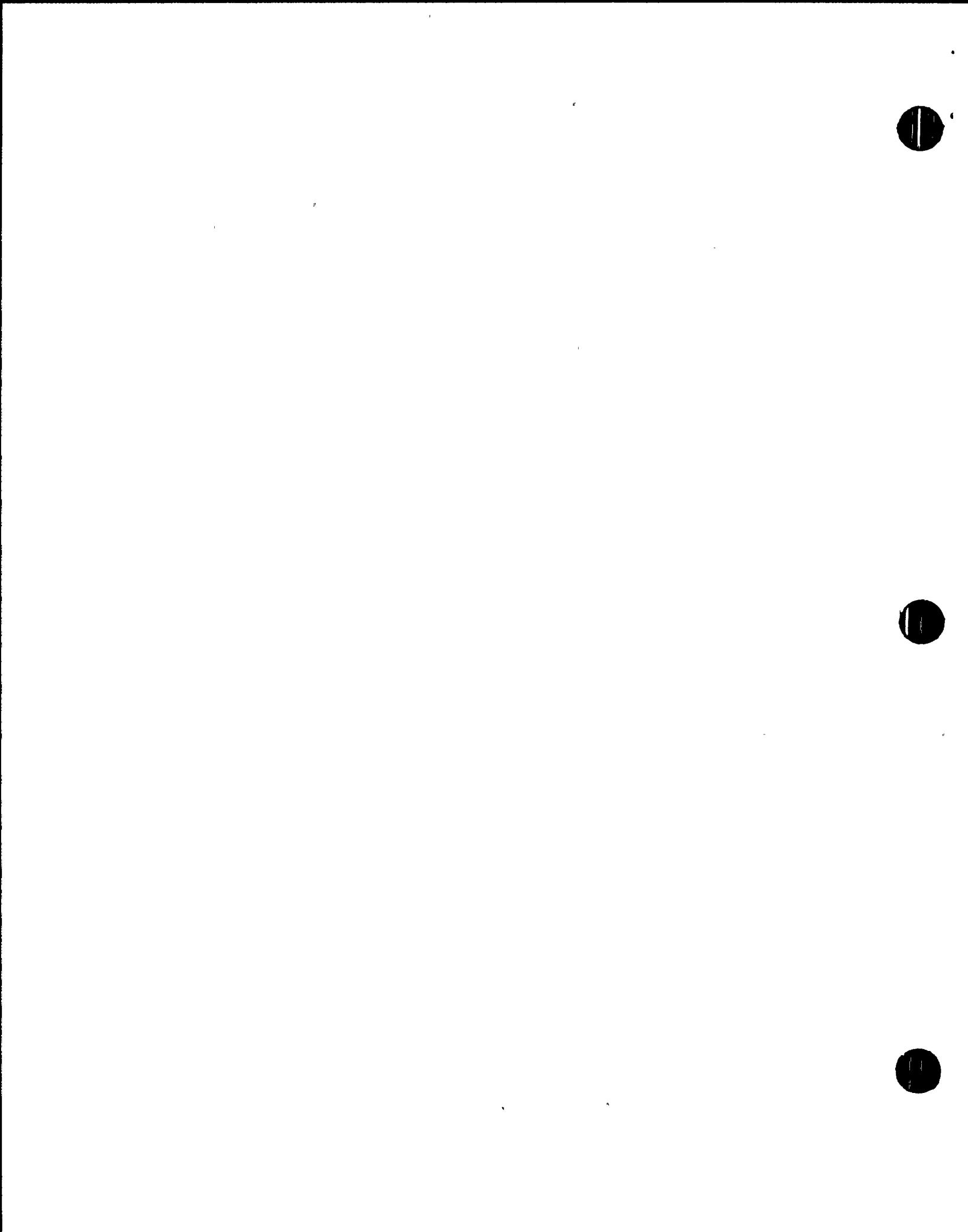


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DETAILS

1.0 PURPOSE AND SCOPE

The purpose of this inspection was to assess the effectiveness of the licensee's corrective action program. In developing this assessment, the inspectors examined program organization and administration, problem resolution, management involvement, self-assessment, problem trending and root cause determination. The inspection concentrated on performance by evaluating the effectiveness and implementation of the corrective action processes in the areas of quality assurance, operations, maintenance, and operational assessment.

2.0 CORRECTIVE ACTION PROGRAM

The corrective action program at Ginna was a composite of more than 30 individual corrective action processes. These processes were established and implemented by procedures that were developed by the cognizant departments. At the time of the inspection, there was no formalized procedure or directive that established the overall corrective action system; the existing corrective action processes were individually developed to satisfy the needs of the cognizant departments. As such, there was not a single process for entering deficiencies into the corrective action system, and there were numerous processes through which deficiencies may progress to final corrective action.

To make an assessment of effectiveness, several of the major corrective action processes were selected and reviewed. These processes are discussed individually below.

- **Ginna Station Event Report, A-25.1 (Operations)**

This procedure is used to document events. It is primarily used by the operations department to document significant events such as reactor trips, power reductions, and potential technical specification violations. Some guidance is provided concerning what events do not require reporting under A-25.1, but the procedure does not define or describe what events should be reported. The decision to use A-25.1 is based primarily on the shift supervisor's judgement or management recommendation. All events documented by A-25.1 are reviewed by the Plant Operations Review Committee (PORC).

- **Nonconformance Reports (NCRs), A-1502 (Quality Assurance)**

This procedure is used to document material deficiencies, in which materials, parts, or components do not conform to specific technical requirements. NCRs are primarily used by the Quality Assurance (QA) department. Applicability requirements for items requiring NCRs are explicitly delineated in A-1502.

- **Identified Deficiency Reports (IDRs), A-1606 (Quality Assurance)**

This procedure is used to document known or suspected conditions adverse to quality (CAQ) that are a deficiency or deviation. A CAQ is defined in section 16 (Corrective Action) of the Ginna Station Quality Assurance Manual as, "a condition which compromises confidence that a structure, system, or component will perform satisfactorily in service." IDRs are primarily used by the QA department.

- **Work Request/Trouble Report (WR/TR) Initiation, A-1603.1 (Maintenance)**

This procedure is used to report equipment malfunctions or failures, describe problems or symptoms, request maintenance support, implement suggestions or track equipment related activities. A work request is used for preplanned work or work that does not impact plant systems, whereas a trouble report is used to identify deficiencies. WR/TRs are used by all departments.

- **Corrective Action Report (CAR), A-1601 (Operational Assessment)**

This procedure is used to document significant conditions adverse to quality (SCAQ). A SCAQ is defined in section 16 of the Ginna Station Quality Assurance Manual as a CAQ which, "if uncorrected, could affect the health and safety of the public, seriously affect ability to operate the plant in a safe manner, represents a serious breakdown in activity controls, or will require a major effort to restore capability to perform specified functions."

Additionally, two programs that provide in-depth evaluation of human performance factors and/or material failure are the Human Performance Evaluation System (HPES) and Root Cause Analysis (A-1601.2). These enhanced evaluations may be a part of corrective action generated by any of the above programs, as deemed appropriate by management.

3.0 RESOLUTION OF IDENTIFIED DEFICIENCIES

The inspector reviewed the resolution of several identified deficiencies to assess the licensee's implementation of the corrective action processes. The licensee addressed significant events and deficiencies well. Management input and involvement in the corrective action processes were excellent. Less significant deficiencies were resolved appropriately. The inspectors identified no outstanding significant deficiencies that had not been appropriately addressed.

Significant events and deficiencies received an appropriate level of management attention. The licensee conducted thorough reviews, covering pertinent and peripheral issues. The inspectors noted an effective use of multiple corrective action processes. For example, in response to a reactor trip during reactor startup, several corrective actions processes were

initiated, including an A-25.1 event report, post trip review (A-25.4), HPES report, corrective action report, and licensee event report. The resulting actions were effective in correcting the deficiency and preventing recurrence.

Management input and involvement in the corrective action processes were excellent. The PORC conducted good reviews of deficiencies reported through A-25.1 event reports. Management received periodic reports of corrective action performance and open items. Management initiated self-assessments, such as the Corrective Action Task Force, and supported efforts to reduce the threshold for deficiency identification. These efforts resulted in increased reporting of deficiencies and effective use of HPES.

4.0 DOCUMENTATION

The inspectors noted that documentation of corrective action processes, in many cases, was weak. On several occasions; the resolution of a deficiency was not documented, or the documentation could not be traced from the initiating document. Consequently, reliance on the licensee staff's recollections was required to determine how pertinent issues had been resolved. In some cases, the staff's memory of the event was vague, but generally, the issues appeared to have been appropriately addressed. In light of the fact that the inspector reviewed items less than six months old, the recollection of deficiency resolution for items greater than six months becomes suspect. Subsequent trending of information would be less effective.

Examples of weak documentation are listed below:

- A deficiency was noted concerning a missing spacer between a cell in the "B" Class 1E 125 volt battery and the battery rack. Based on interviews, the inspector determined that corrective actions were taken to ensure that the missing spacer did not affect the seismic qualification or operability of the battery, and the spacer was replaced. The spacer was suspected to have been removed during a battery discharge test; however, no information existed to address potential concerns regarding quality processes that ensure equipment configuration is maintained. No documentation existed in any corrective action process on the missing spacer, the replacement of the spacer, or the quality process which ensured that the battery configuration was maintained.
- Event Report No. 94-040 documented failure of the "B" emergency diesel generator (EDG) to trip during post maintenance testing on March 25, 1994. The report documented a failed solenoid and a misadjusted manual trip lever, both of which were operated but failed to trip the EDG. Although the issue concerning the failed solenoid was well documented through Work Order No. 19401259 and Technical Staff Request No. 94-059, resolution of the misadjusted manual trip lever was not found in any of the corrective action documentation. Subsequent discussions with the licensee indicated that the probable cause of failure of the manual lever was inappropriate operation.

- Event Report No. 94-032, dated March 12, 1994, concerned a wiring discrepancy in the Class 1E 480 volt Bus 14 Undervoltage Control Cabinet. The issue was addressed through NCR Nos. 94-026 and 94-031, which identified engineering errors in the subject work package, as well as errors that had occurred during the performance of work. However, the licensee did not provide any documentation addressing corrective action for the work group errors.
- Event Report No. 94-020 concerned a sharp increase in bearing temperature identified during operation of the turbine driven auxiliary feedwater pump. The corrective action documentation left the cause of the temperature increase as unknown; however, no further information or update was indicated by the corrective action process document. Based on interviews, subsequent testing was done to ensure that the bearing temperature stabilized within the vendor's specifications. Additionally, the bearing was replaced during the refueling outage, which started shortly after this problem had been identified. However, the inspector was concern that, although the new temperature met operability guidelines, previous testing performed to support Station Blackout considerations might have been invalidated. No documentation was identified which showed that this aspect had been considered.

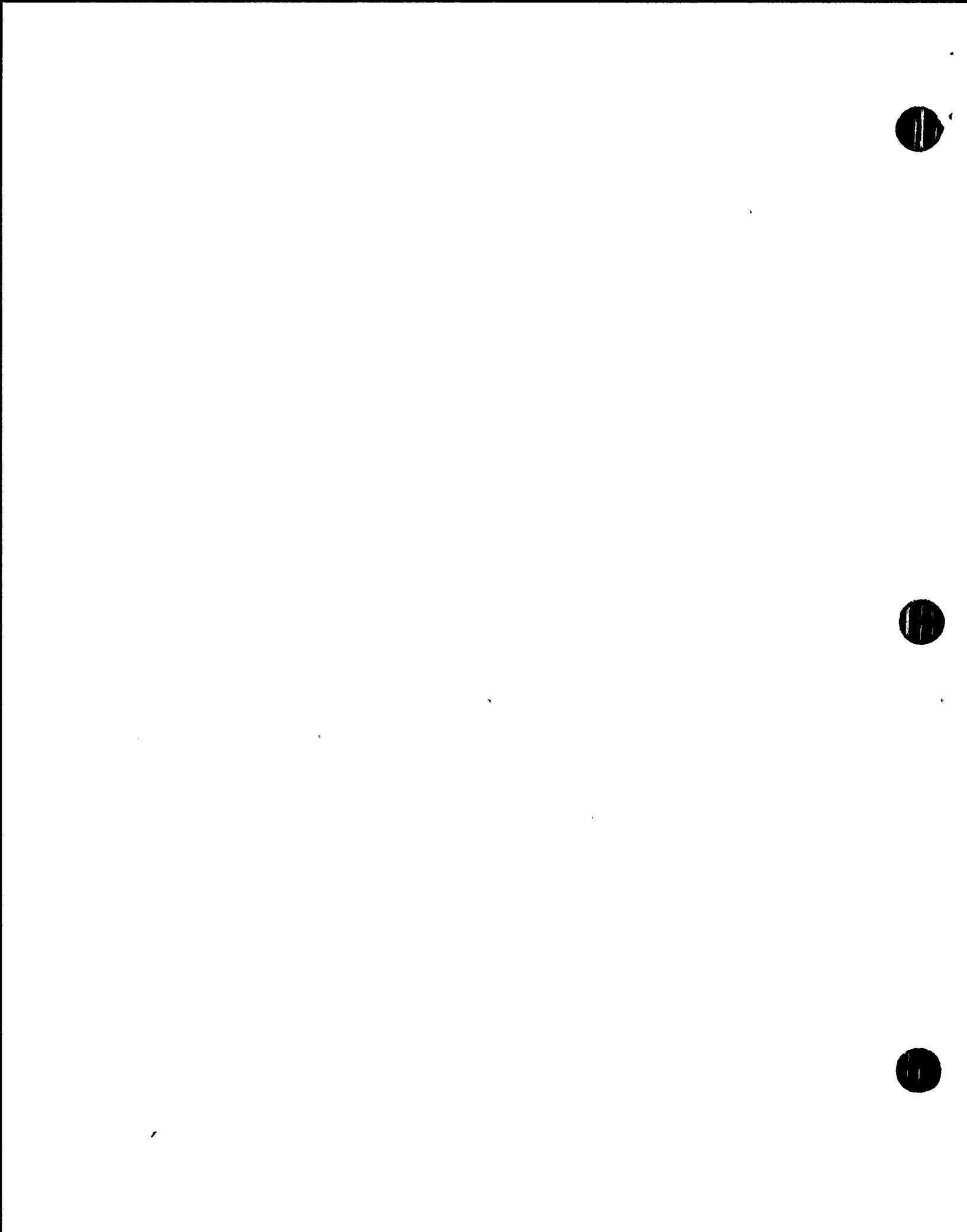
5.0 ROOT CAUSE DETERMINATION

The inspectors reviewed several root cause analyses, human performance evaluation system reports, and post-trip reviews. The inspectors concluded that, overall, the reviews performed through these processes were thorough. The inspectors noted extensive use of root cause analysis in association with maintenance activities. HPES reviews were used appropriately to address performance problems.

Although root cause determination was generally effective, some shortfalls were noted in corrective actions for maintenance items of apparently low significance (that is, items that did not appear to warrant conduct of a formal root cause determination). Some items were noted where the corrective action process addressed the specific condition as they were presented on entry into the system, but did not pursue correction of the root cause. For example, the inspector observed that a maintenance identification tag on a primary plant valve identified the insulation on the valve as needing to be replaced due to contamination; a posted insulation replacement form indicated that this work would soon be performed. However, the cause of the contamination, packing leakage, had not been identified during work package preparation and had not been addressed by any corrective action process.

6.0 QA AUDITS AND OPERATIONS PERFORMANCE ASSESSMENT

The inspectors reviewed operations performance assessments and the quality assurance audit on corrective actions, covering a period of approximately one year. Overall, these self assessments were effective. Good coordination and communications were noted between operational assessment and quality assurance to avoid redundant effort and better focus the



audit on suspected areas of weaknesses. The operations assessment group was thorough in assuring that the causes for events were accurately captured; however, this effort relied significantly on individual staff performance and good communication since documentation of the causes was weak.

7.0 TRENDING

The inspectors reviewed the corrective action performance indicators report for January-February 1994. Items trended in this report were: Audit Finding Corrective Action Reports (AFCARs) - number initiated per audit hour and number overdue open; Corrective Action Reports - number initiated and number open; Identified Deficiency Reports - number open; Maintenance Work Requests - number open; and, Nonconformance Reports - number initiated and number open more than 30 days.

The inspectors found that the information was clearly presented. Weighting factors have been assigned for AFCARs and NCRs in an effort to normalize the number of reports generated with respect to significance of the individual findings. Graphs were used to illustrate a two-year history of data, a trend line across the period, and deviations from the average in multiples of the standard deviation value (sigma). A written summary of each indicator provided interpretation and recommended actions.

The inspectors considered that the licensee's corrective action program trending provided a good overall perspective on program effectiveness. However, the inspectors considered that trending individual corrective action processes may not provide an accurate assessment, because a given deficiency may be entered into the corrective action system through a number of different processes. A deficiency identified by the operations department may, for example, be corrected through the maintenance work request process, whereas the same deficiency, identified by the QA department, may be corrected as an AFCAR. The use of weighting factors to normalize trending is a good initiative, however, it does not reveal trends across process boundaries.

The inspectors considered that trending of lower significance events was not utilizing some available information. With multiple, division-specific corrective action processes in place, the Ginna corrective action program is well suited to trending such events. For example, the inspectors noted two IDRs and one quality assurance observation report (QAOR) that related to maintenance on motor operated valves; however, this trend apparently had not been identified by the licensee. Low-level trending could provide more rapid recognition and correction of such possible weak areas. Such trending would also provide a measure of effectiveness of the corrective actions generated by individual reports.

The licensee acknowledged the limitations of the existing corrective action system trending program and has dedicated resources to increase program effectiveness. Additionally, an initiative to improve trending of lower-significance events was under development.



8.0 MANAGEMENT EXPECTATION/PROCEDURAL GUIDANCE

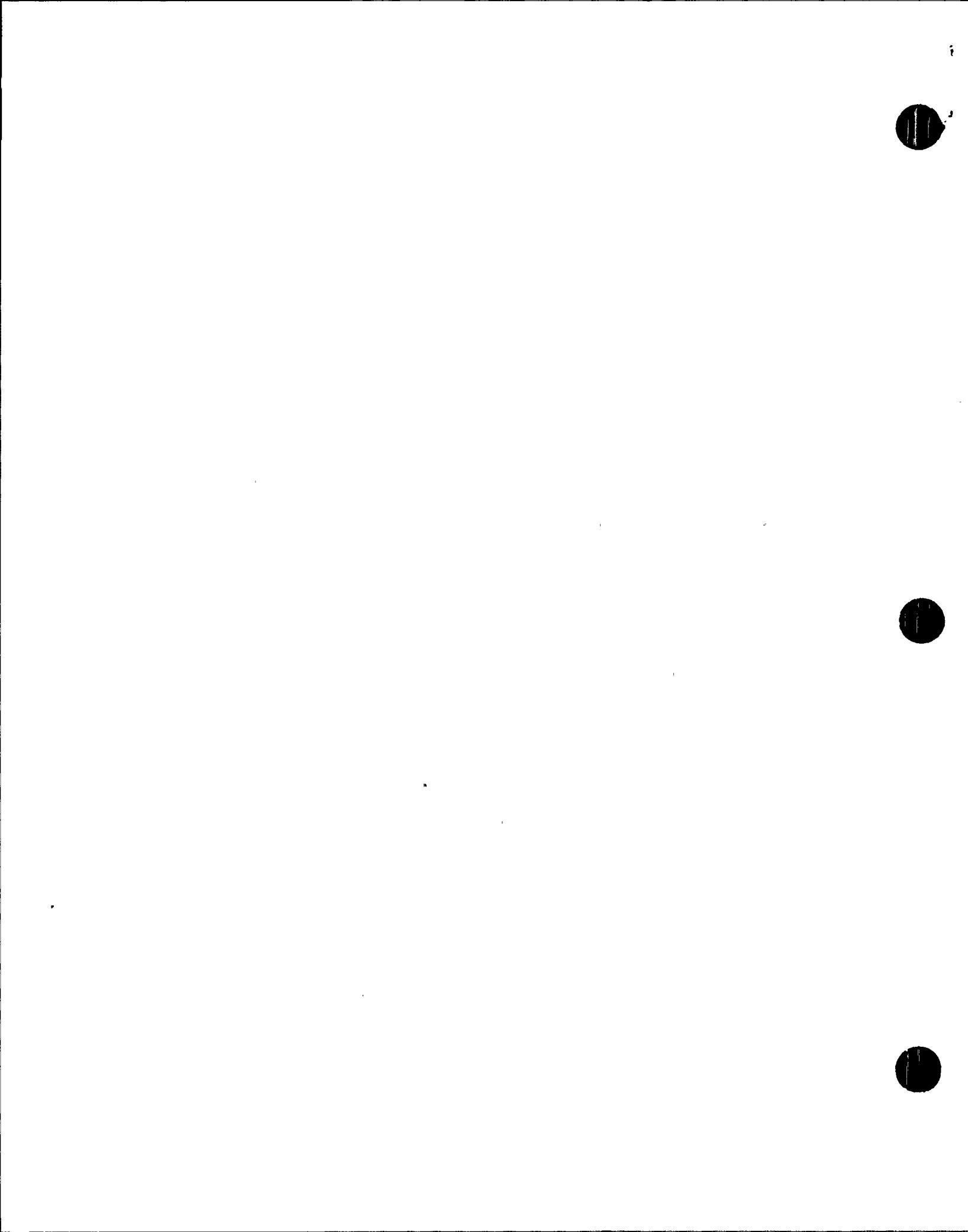
During the review of procedures, the inspectors observed two instances where procedural guidance did not fully reflect management expectations. The first concerned the lack of a procedure which integrated the corrective action process to assure consistent application of corrective action processes. The second concerned the management initiative to reduce the threshold for identification and resolution of deficiencies, which was not reflected by procedures.

Although the licensee has cataloged over 30 corrective action processes, no procedure exists for integrating the processes. As a result, an identified deficiency may be introduced into one of several corrective action processes. This may affect the degree to which management expectations are met, because the level of effort to resolve problems, as well as the area and level of management involvement, vary among the corrective action processes. For example, an event concerning the unexplained actuation of several control room alarms occurred twice. In one case, an operator documented the deficiency in Event Report No. 93-128; in the other, an operator identified the deficiency in maintenance work request No. 93-01613. However, the plant operations review committee (PORC) reviews event reports and not maintenance work order requests.

The inspectors noted that procedural guidance for implementing some corrective action procedures, particularly the A-25.1 procedure, was at a significantly higher threshold than was being used in practice. Licensee management stated that this approach was intentional, to avoid what could be viewed as a violation of their own procedure by not initiating corrective action for a condition for which action was required by the procedure. Rather than attempting to address all contingencies by procedural guidance, the licensee considered reliance on shift supervisor's experience, along with management oversight and guidance, to be the preferred method of properly thresholding initiation of events into the corrective action program via the A-25.1 procedure. From a review of events documented by A-25.1 over the past six months, the inspectors concluded that this management philosophy has achieved an appropriate reportability threshold. However, the inspectors considered that the implementing procedure could more closely conform to what is management's actual expectation for event reportability.

9.0 MANAGEMENT ASSESSMENT AND INITIATIVES

In 1990, RG&E recognized that the corrective action program should be examined for possible improvements. As a result, the Corrective Action Task Force was established to improve the process of identifying, classifying, analyzing, and resolving problems. One of the significant undertakings of this task force was to examine the possibility of entirely restructuring the corrective action program into a single input format. After considerable study, it was concluded that improvements through modification of the existing programs was preferable to completely restructuring the program. Other contributions of this task force have been to develop a corrective action flow chart and development of a draft corrective



action program implementing directive. The Corrective Action Task Force was still active as of the time of this inspection. The inspectors concluded that the Corrective Action Task Force was a good initiative.

Licensee management has been supportive of corrective action program improvement through reorganization of key personnel. In June, 1993, the Superintendent of Ginna Production was temporarily assigned as Department Director, Quality Performance. While supporting another corporate initiative, this also served to a fresh perspective to the quality performance organization, as well as to broaden the experience of management personnel in the area of corrective action programs. More recently, the Quality Performance Department Senior Analyst was reassigned to work full time at Ginna Station, in the area of corrective action trending.

10.0 EXIT MEETING

Licensee management was informed of the purpose and scope of this inspection at the entrance meeting on May 2, 1994. The findings of the inspection were discussed with licensee representatives during the course of the inspection and were presented to licensee management at an exit meeting on May 6, 1994. Overall, the inspectors concluded that the corrective action program was effective and adequately addressed most issues.

