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SUBJECT: Responds to NRC 940805 ltr re violations noted in insp. rept
 50-530/94-16. Corrective actions: bent connecting rod &
 associated damage analyzed & determined not to have
 operability impact on EDG 3-B.

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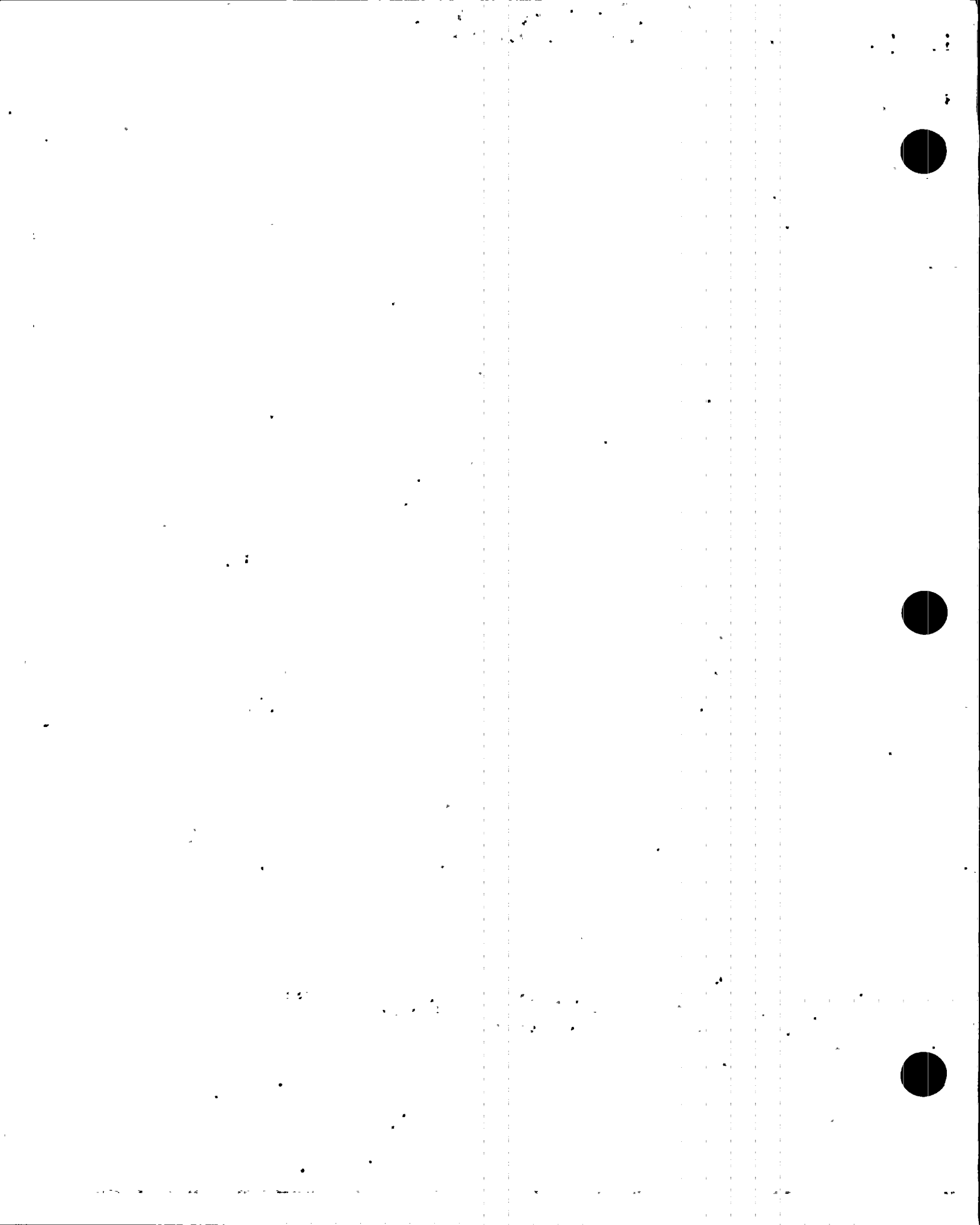
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WILLIAM L. STEWART
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NUCLEAR

102-03102-WLS/AKK/BE
September 6, 1994

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
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Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Unit 3
Docket No. STN 50-530
Reply to Notice of Violation 50-530/94-16-04
File: 94-070-026

Arizona Public Service Company (APS) has reviewed NRC Inspection Report 50-530/94-16 and the Notice of Violation (NOV), dated August 5, 1994. Pursuant to the provisions of 10 CFR 2.201, APS' response is enclosed. Enclosure 1 to this letter is a restatement of the NOV. APS' response is provided in Enclosure 2.

APS agrees with the NOV as stated and recognizes that opportunities were missed to identify the coincident damage to the EDG after the broken rocker arm. APS has determined that EDG 3-B was operable during the time frame stated in the inspection report.

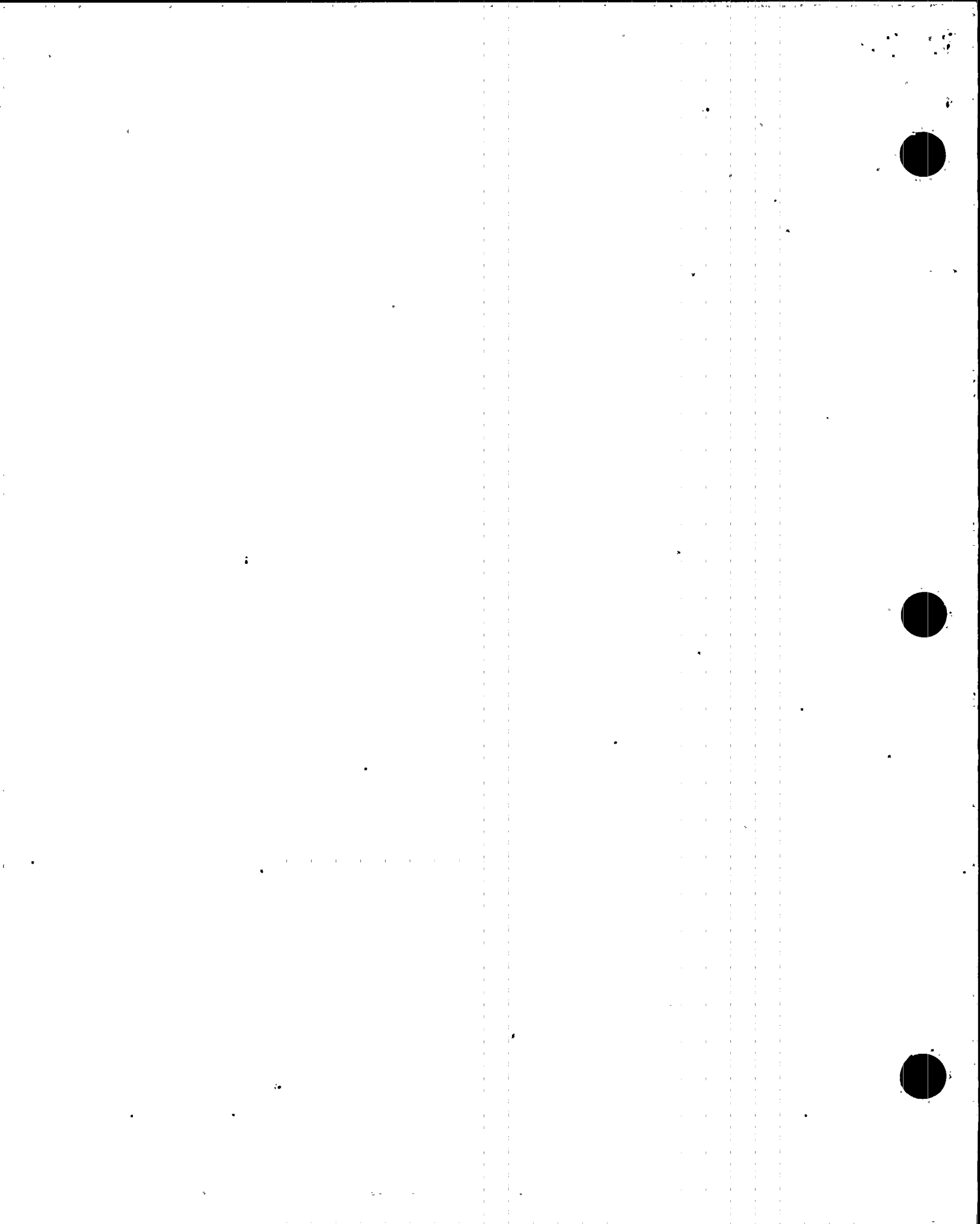
The APS investigation of this event determined that the failure to promptly identify the condition was indicative of insufficient management oversight and communication problems within and between departments. Organizational responses did not meet Senior Management's expectations. APS' expectations are to take ownership of issues, be self-critical, and be open to oversight groups. Also, management is expected to challenge assumptions, foster an environment that ensures problems are identified, communicated and corrected.

APS recognizes the importance of these issues and has taken the following actions to correct these conditions:

- Management's expectations have been communicated to Engineering personnel. Engineering is expected to follow issues for a timely closure, have a questioning attitude, ensure that appropriate reviews are performed, and escalate unresolved issues.

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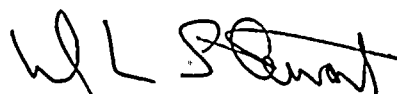
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Page 2

- The organization has established a maintenance team that is responsible for the overall performance and reliability of the EDGs. This team consists of Technicians, Engineers, Planners, and Support personnel. This team has ownership of the EDGs and will be able to influence the maintenance schedule. This will allow for more timely identification, notification, and correction of deficiencies.
- Nuclear Assurance has recognized that the PVNGS Corrective Action Program had weaknesses in preventing recurrence or obtaining timely corrective actions. An action plan has been developed to address the weaknesses identified by the Corrective Action Incident Investigation. Also, the Condition Report/Disposition Request (CRDR) Program has been revised to ensure that potentially significant issues are brought to Senior Management's attention during the Operations Director's plant status meeting held Tuesday through Friday.

With these actions, APS' ability to identify root causes and to develop and implement effective corrective actions will be strengthened.

Should you have any questions, please contact Angela K. Krainik at (602) 393-5421.

Sincerely,



WLS/AKK/BE/rv

Enclosures:

1. Restatement of Notice of Violation
2. Reply to Notice of Violation

cc: L. J. Callan
K. E. Perkins
B. E. Holian
K. E. Johnston

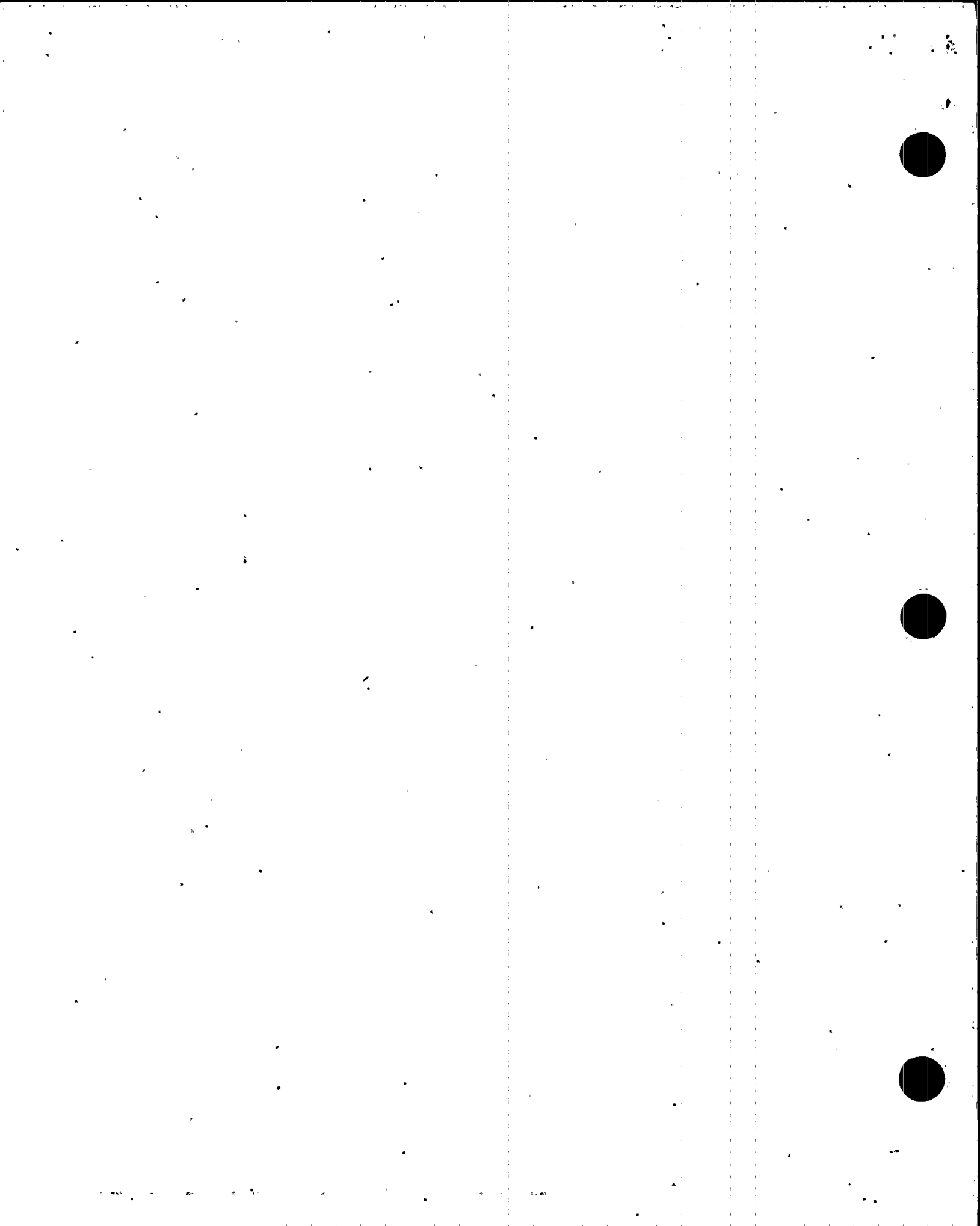
ENCLOSURE 1

RESTATEMENT OF NOTICE OF VIOLATION 50-530/94-16-04

NRC INSPECTION CONDUCTED APRIL 15 THROUGH

APRIL 22, 1994

INSPECTION REPORT NO. 50-530/94-16



Restatement of Notice of Violation 50-530/94-16-04

During an NRC inspection conducted on April 15-22, 1994, a violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," 10 CFR Part 2, Appendix C, the violation is listed below:

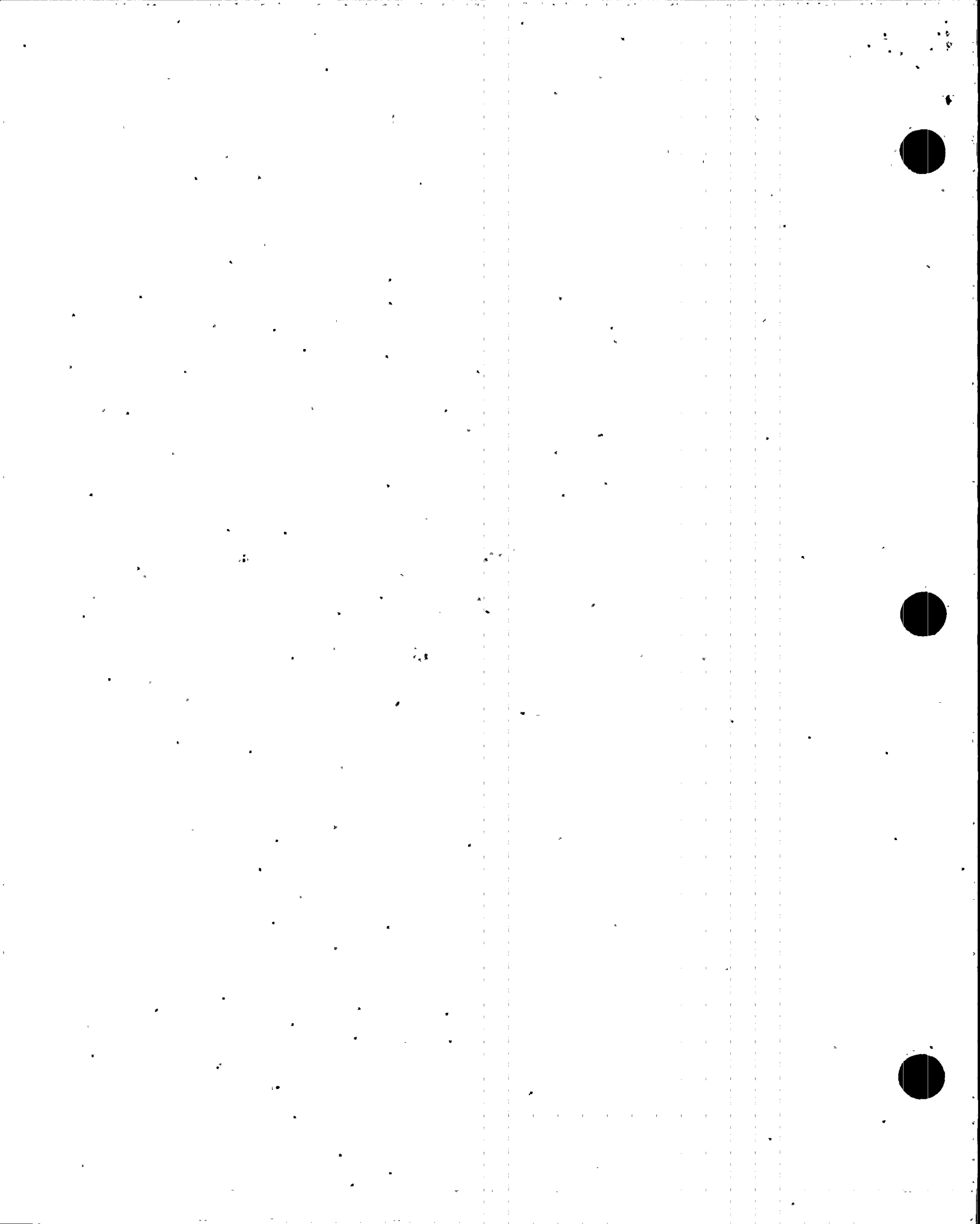
10 CFR Part 50, Appendix B, Criterion XVI, requires in part that "measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected."

Contrary to the above, as of March 23, 1994, a seized connecting rod pin and bushing and a bent connecting rod in Cylinder 6-L of Unit 3 EDG B, conditions adverse to quality, were not promptly identified or corrected following a rocker arm failure on July 28, 1993. Also, on October 20, 1993, an additional symptom of the damaged components (low peak firing pressure) was observed, but the licensee failed to adequately evaluate the condition and identify and correct the defective components.

This is a Severity Level IV violation (Supplement I).

ENCLOSURE 2

**REPLY TO NOTICE OF VIOLATION 50-530/94-16-04
NRC INSPECTION CONDUCTED APRIL 15 THROUGH
APRIL 22, 1994
INSPECTION REPORT NO. 50-530/94-16**



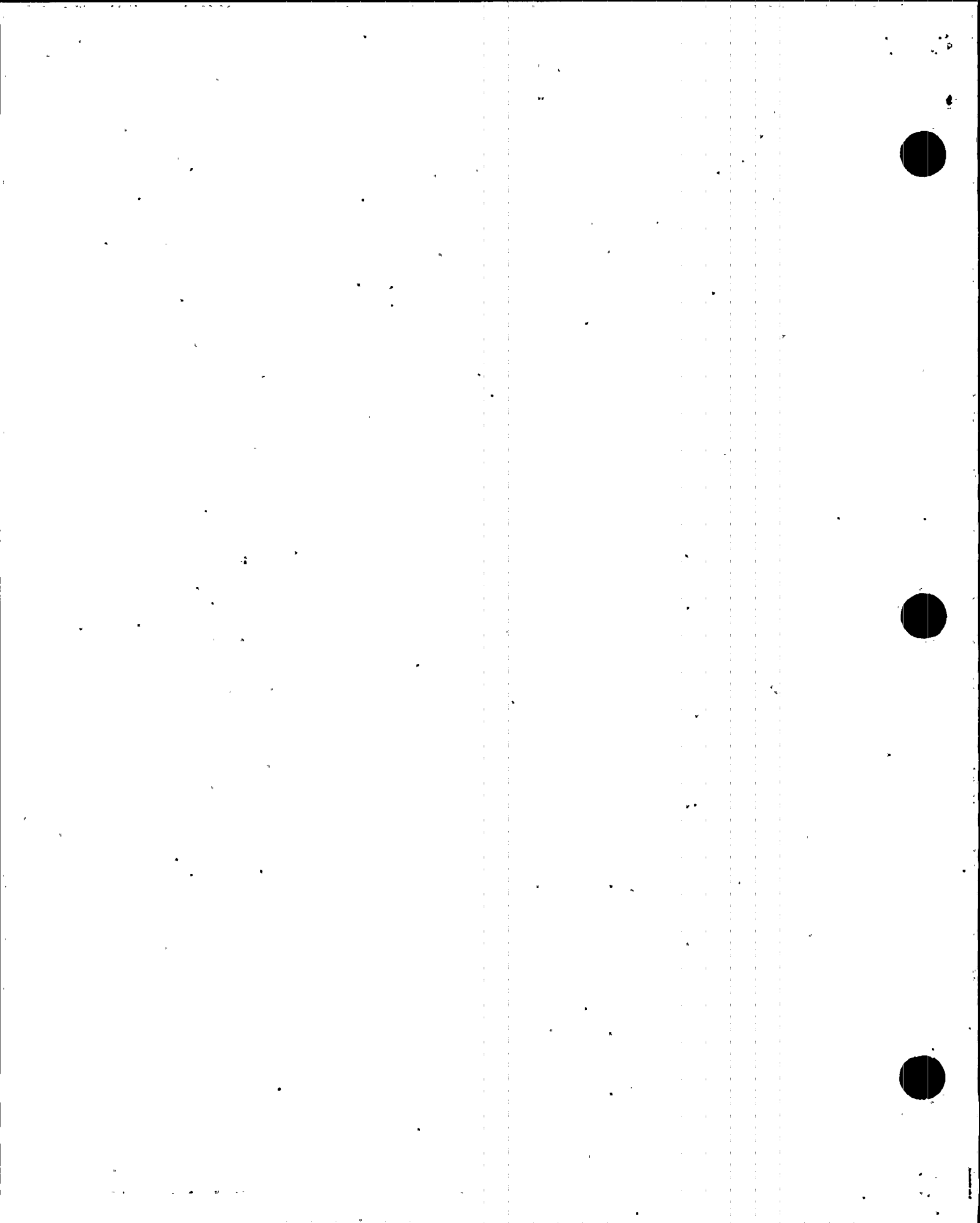
Reply to Notice of Violation 50-530/94-16-04

Reason for the Violation

On July 28, 1993, a mid-cycle engine analysis preventive maintenance task on Emergency Diesel Generator (EDG) 3-B was being performed. This analysis discovered that cylinder 6-Left (L) intake and exhaust valves were not moving. The corrective actions taken fixed the identified problem and checked for transportability to the other five EDGs.

On March 23, 1994, during inspection of EDG 3-B the connecting rod for cylinder 6-L was found to be bent about 3/8 inch, the articulated rod bushing degraded, and the top cylinder ring was stuck. The Root Cause of Failure (RCF) identified that the initiating event occurred on July 28, 1993.

The reason for the violation was failure to promptly validate assumptions used in the analysis of the lower but acceptable peak pressure for EDG 3-B identified during testing. A contributing factor was poor communication between and within organizations. This prevented clear understanding of the issues and led to missed opportunities for a more thorough evaluation and a more timely resolution.

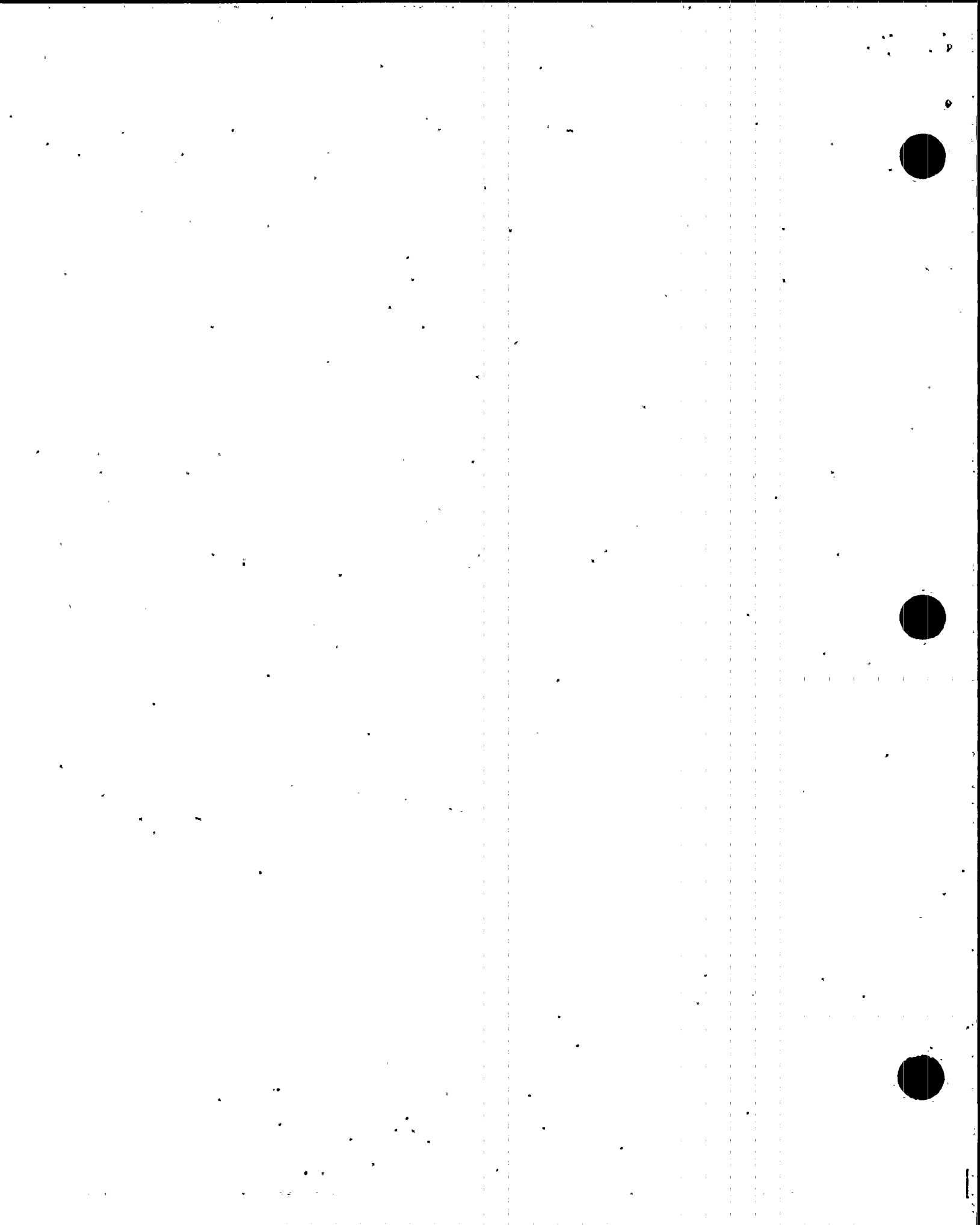


Corrective Actions Taken and Results Achieved

The bent connecting rod and associated damage was analyzed and determined not to have an operability impact on EDG 3-B. The damaged parts were replaced and on April 19, 1994, an engine analysis was performed and EDG 3-B was declared operable. An Engineering evaluation confirmed that EDG 3-B was capable of performing its safety function during the period of July 28, 1993, through March 23, 1994.

An investigation was conducted to determine the causal factors for not identifying and correcting the EDG 3-B deficiencies promptly. Several lessons were learned from the investigation:

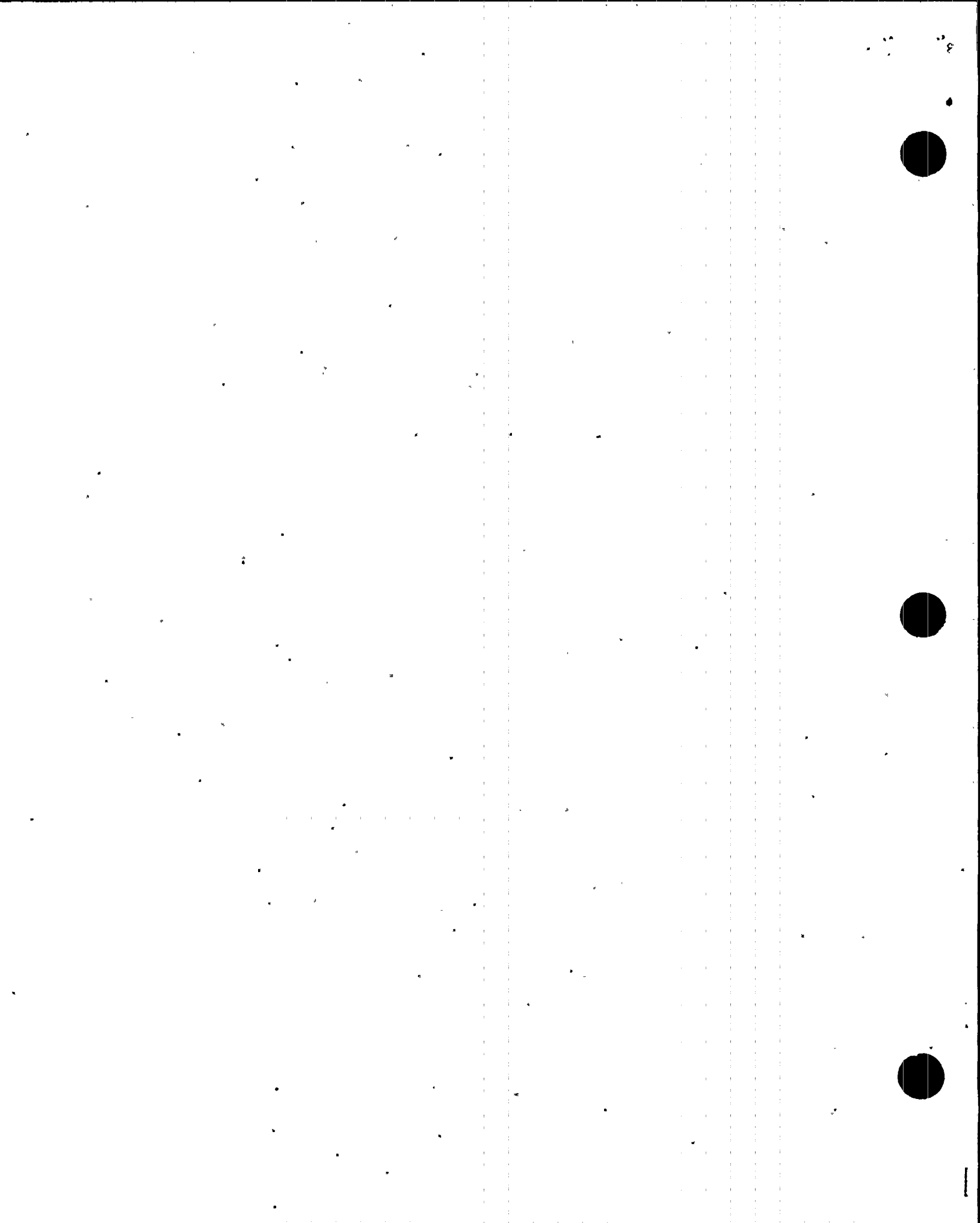
- Some of management's expectations were not clearly communicated (i.e., to challenge assumptions and follow issues to closure)
- Communication problems existed within and between organizational departments leading to poor interaction or coordination of evaluation findings
- Issues were not followed to closure in a timely manner
- A self-critical attitude did not exist at all levels which led to a less aggressive approach to the problem



The following corrective actions were taken in an effort to raise management awareness of significant issues, such that appropriate resources can be allocated to problem resolution. PVNGS has developed a Level One action list for important station issues which helps to ensure these are brought to management's attention. This action list assigns responsibility to Senior Management and tracks these issues to completion. Secondly, to ensure that issues identified through the Condition Report/Disposition Request (CRDR) process are properly categorized, Nuclear Assurance screens the CRDRs for potentially significant issues and attention to those categorized as potentially safety significant is elevated to Station Senior Management during the Operations Director's plant status meeting held Tuesday through Friday. This ensures that issues effecting the operation of the Units are handled in a timely fashion, by providing a forum for management concerns to be discussed and prioritized.

A reengineered work process was implemented in August 1994. As a result, maintenance teams were formed around systems on a site wide basis. This system team concept fosters an ownership culture and provides cross-discipline talent to review issues and provide solutions to increase the overall reliability of the EDGs.

To ensure that future opportunities are not missed, the Vice President of Nuclear Engineering and Projects communicated APS' expectations to the Engineering staff.



As a result, Engineering will consider the following when completing Evaluations/Root Cause Failures:

- The problem has been clearly identified
- Correct prioritization based on safety significance
- Follow issues to closure
- Review action plan based on new inputs
- Ensure management awareness and involvement

These expectations will help ensure that assumptions are validated and that RCFs are more accurately identified and addressed.

To ensure that pertinent data are available for EDG operability determinations, a leak-down check and engine analysis is now a required post maintenance test following cylinder head removal or rework. This post maintenance test will be performed on the affected cylinder(s) as a minimum.

The EDG 3-B broken rocker arm and bent connecting rod events were incorporated into the third quarter 1994 Industry Events for Engineering Support Staff training. The training reinforced that issues are to be followed until closure, action plans are to be reviewed based on new information, and a questioning attitude is to be maintained at all times.

To provide a basis for consistent operability determinations, procedure 40DP-9OP26, *Operability Determination*, has been developed and issued. This procedure provides guidance in determining equipment operability, documentation of the operability determination, and provides visibility of significant issues to management.

Corrective Actions That Will Be Taken To Avoid Further Violations

The EDG 3-B broken rocker arm event will be incorporated into the fourth quarter 1994 Industry Events for Maintenance Staff training. The focus of this training will stress the importance of maintaining a questioning attitude and timely resolutions of issues.

Date When Full Compliance Will Be Achieved

Full compliance was achieved on April 19, 1994, when the repairs on EDG 3-B were completed.

