

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No.: 50-341
License No.: NPF-43

Report No.: 50-341/93020(DRS)

Licensee: Detroit Edison Company

Facility: Fermi 2 Nuclear Power Station

Location: 6450 N. Dixie Highway
Newport, MI 48166

Dates: September 16 through September 24, 1993
October 18 through November 4, 1993

Inspectors: K. Salehi, Reactor Inspector

Approved by: B. Burgess, Chief, Operational Programs Section

Revised By: V. P. Loughheed, Reactor Inspector

Revision Approval: M. A. Ring, Chief
Lead Engineers Branch
Division of Reactor Safety

EXECUTIVE SUMMARY

Enrico Fermi, Unit 2
NRC Inspection Report 50-341/93020

This inspection included a review of the quality assurance (QA) program. It was an announced inspection conducted by a regional reactor inspector.

The objective of this inspection was to examine portions of the licensee's QA program. The inspector interviewed staff, reviewed documents and made observations to accomplish this objective. This inspection focused on QA activities performed during 1989 through 1991. Two violations of NRC requirements were identified in this inspection for events that occurred in that period. One violation was for not meeting the procedural requirements and the other was for inadequate corrective actions.

The following changes were made to the report:

- The following statements from the original report were determined to be inaccurate and were removed:

In the Notice of Violation, the reference to the Enforcement Policy was corrected.

In (original) Section 3.1 "Evaluation of ANSI/ASME N510 Qualification and Certification for Testing Personnel":

- 1) The last sentence of the first paragraph reading "Based on observations of documentation, NRC determined that HEPA filter surveillance tests, conducted in 1989 and 1991, were performed under the supervision of certified inspectors." Further evaluation identified that, while certified inspectors were onsite, and had conducted on-the-job training on filter testing, the surveillance tests were not entirely performed under the supervision of certified inspectors.
- 2) The first sentence in the fourth paragraph reading "The NRC inspector evaluated test documentation and determined that the tests were technically adequate based on the presence of a certified contractor and another corporate office certified inspector" and the third sentence in the same paragraph reading "Quality Assurance management used the security log as evidence that the certified inspectors were present and monitored the three conducted tests." Following identification that the certified individuals were not in the test vicinity throughout the test, the NRC inspectors reevaluated the test results and determined that they were technically adequate based upon comparable results achieved during more recent testing. Review of written statements determined that the Quality Assurance management had not stated that the security logs confirmed certified individuals were present and monitored the tests, but rather stated that certified individuals were onsite throughout the testing period and provided oversight of the tests.
- 3) The beginning of the sixth sentence in the fourth paragraph reading "The licensee has implemented training for ANSI/ASME N510" and the third

sentence of the seventh paragraph reading "All other personnel associated with HEPA filter testing have also received N510 testing." The inspectors determined that, while the licensee had prepared a lesson plan for ANSI/ASME N510 training, no training had actually been held.

- 4) The fifth sentence of the fifth paragraph reading "An audit of the test documentation by the QA audit organization was completed on June 24, 1991." The inspectors determined that the DERs associated with the audit were written on June 24, 1991, but the audit report was not issued until July 17, 1991.

In (original) Section 3.3 "Review of DERs" the second paragraph reading "Based on review of the below DERs, the inspector determined that the selection of a DER initiator and a DER reviewer received unnecessary attention, where more emphasis should have been placed on the root cause analysis and corresponding corrective actions." Although this could be construed by the title of DER 90-0310, the conclusion is not germane to the issue.

In (original) Section 3.3b, the third sentence of the second paragraph reading "To ascertain the removal of the counterweight, the staff had to halt the operation and visually verify the removal of the counterweight." The inspectors confirmed that the licensee did not reduce power and enter the (normally nitrogen-inerted) drywell to verify that the counterweight was removed. The original licensee verification was by confirming that the removed counterweight was in the decontamination area.

In (original) Section 3.4, "Adequacy of Inspectors Knowledge Concerning Selection Criteria About Installation of Snubbers," the inspector misconstrued what was to be inspected. The issue was not that the QA inspectors needed detailed knowledge of what selection criteria were used to determine which snubbers were removed. Rather the inspector should have determined whether the QA inspectors had sufficient knowledge to verify that the work was completed in accordance with the design requirements.

In (original) Section 3.7, "Adequacy of Yellow Line Verification Requirement," the inspector reported an incorrect inspection report number and conclusion of an escalated enforcement action. Because the issues originally discussed in this report were covered in more detail in other inspections, the discussion in this report was limited to those issues actually reviewed by the inspectors.

- The report was reformatted to meet the requirements of NRC Manual Chapter 0610. Additionally, grammatical errors were corrected.
- The results of additional inspections into the issues discussed in the report were incorporated.

Based on these changes, the inspectors concluded that:

- The corrections being made herein to Inspection Report (IR) 93020 did not affect the previous technical conclusions or any previous decisions regarding equipment operability or adherence to regulatory requirements.
- Problems with the DER process continued to occur, following issuance of IR 93020. These problems included identification of issues, thoroughness of root cause determinations, and adequacy of corrective actions to prevent recurrence. During the Systematic Assessment of Licensee Performance (SALP) public meeting in March 1996, the issue of problem identification and resolution was discussed by both the NRC and the licensee.

I. Maintenance

M2 Maintenance Support of Facilities and Equipment

M2.1 Maintenance and Test Equipment (M&TE) Control (Formerly Section 3.6)

In 1991, the NRC inspector evaluated only the retrieval and storage of M&TE records from the vault. This evaluation also included review of selected records and interview with responsible individuals. The inspector concluded that there were no significant concerns or findings in this area and noted the overall control of M&TE records had been previously inspected by the NRC. NRC concerns regarding retrieval and storage of M&TE records had been addressed by the licensee. In 1995, because of continuing concerns with the M&TE program, the NRC performed a more thorough review of the entire M&TE program, as documented in IR 95008. Retrieval and storage of M&TE records were verified as part of this wider inspection and no problems were found during that portion of the inspection. The 1995 inspection identified several problems with the M&TE program, as well as a violation associated with a Quality Assurance (QA) audit of the program in 1993. The inspection report also noted that some problems identified by QA in 1991 had been corrected, such as control of leak rate test and motor-operated valve testing equipment.

M4 Maintenance Staff Knowledge and Performance

M4.1 Certification and Qualification of QA Inspectors and Auditors (Formerly part of Section 3.1)

a. Scope

The NRC inspector examined the certification and qualification requirements/ records for QA inspectors and auditors. This examination generally covered the overall certification process.

b. Observations and Findings

In 1993, the inspector determined that selective examinations of certification records for inspectors and auditors did not identify regulatory deficiencies. The

issue of QA inspector certification was again reviewed in IR 95012. As described in that report, several deficiencies with the QA inspector certification process were identified in QA audits in 1989 and 1991. Further review of the audit reports and discussion with audit personnel revealed that minimal corrective actions were taken following the 1989 audit findings. However, when the same problems were discovered during the 1991 audit, the QA auditors correctly escalated the issue and the certification process was corrected, including bringing in an outside consultant to recertify the inspectors in question. The inspectors also identified a concern with the certification and technical ability of one inspector. This was addressed in IR 96002. The qualifications and training of lead auditors were reviewed by NRC in IRs 93002, 94015, and 95002. In all cases, the auditors were found to have the appropriate training and background prior to being assigned as lead auditors for the audits reviewed.

c. Conclusions

Based upon the inspections listed above, the inspectors concluded that the QA inspectors and auditors were properly trained and certified. While problems with QA inspector certifications existed in 1989 and 1991, the licensee's QA auditors correctly escalated the finding and the licensee took appropriate corrective action solve it.

M4.2 Evaluation of ANSI/ASME N510 Qualification and Certification of Testing Personnel (Formerly Section 3.1)

a. Scope

The inspectors reviewed the qualifications and training on ANSI/ASME N510 "Testing of Nuclear Air-Cleaning Systems," for personnel testing high energy particulate (HEPA) filters.

b. Observations and Findings

Three test procedures, 43.404.001, "Division 1 Standby Gas Treatment Filter Performance Test," 43.404.002, "Division 2 Standby Gas Treatment Filter Test," and 43.413.001, "Control Room Emergency Filter Test," required certification to ANSI N45.2.6, "Qualification of Inspection, Examination and Testing Personnel for Nuclear Power Plants," for the lead person conducting the tests. Each test procedure had a signature line for verification that the lead test person was certified to the above standard.

When the three filter tests above were conducted in 1989, the lead test person signature line was signed by two individuals who were not ANSI N45.2.6 certified. This was identified during a QA Audit, 91-0143. The licensee stated that the tests were performed under the auspices of a certified contractor, as well as a certified inspector from the corporate office. However, the QA audit noted that the signature lines for the above three tests were neither initialed nor signed by either of the certified individuals. Because the test procedures specifically required ANSI N45.2.6 certification and the lead persons were not certified, the licensee's procedural requirements were not met. 10 CFR Part 50, Appendix B, Criterion V

"Instructions, Procedures, and Drawings" requires that activities affecting quality be accomplished in accordance with the documented instructions, procedures, or drawings. Failure to comply with the HEPA filter testing procedural requirements, ensuring that the lead test person was certified to ANSI N45.2.6, is a violation of Criterion V (50-341/93020-01(DRS)).

Quality Assurance management reviewed the security logs and determined that the certified inspectors were on site and in the test area during periods when the testing was being performed. The licensee also obtained a letter from the contractor describing the ANSI/ASME N510 on-the-job training conducted for the individuals. Subsequent HEPA filter tests in 1991 and 1992 were satisfactorily conducted by the same two individuals, indicating an adequate knowledge level for performing HEPA filter testing. The licensee removed qualification to ANSI N45.2.6 as a requirement for HEPA filter testing, following confirmation from the ASME code committee that qualification to ANSI N45.2.6 was not required. Therefore the corrective action to the violation was considered adequate and no response is required.

Although certification to ANSI N45.2.6 was not required, qualification to ANSI/ASME N510-1980 was necessary. Section 4.3 of ANSI/ASME N510-1980, Page C-4, stated, "Tests shall be made only by persons who have demonstrated their competence to satisfactorily make the specific tests in question, as evidenced by experience and training." The two individuals who signed off as lead test personnel for the 1989 HEPA filter tests had not received training on ANSI/ASME N510. This was also identified by the licensee's QA auditors in audit 91-0143. DER 91-0589 was generated which identified the lack of training and certification of the lead test personnel.

As part of the corrective action to DER 91-0589, the licensee developed a training course for ANSI/ASME N510. However, the licensee exempted three lead test personnel, including the two who had signed off on the 1989 tests, principally because they participated in subsequent HEPA filter testing. The inspectors also noted that, as of December 1996, the licensee had not taught the course. Furthermore, The waivers made no reference to training conducted for these individuals. According to Fermi Interfacing Procedure FIP-TQI-16-SQ Revision 2, requests for waivers "shall be supported by certified or authenticated documents such as official transcripts, verifiable certificates of completion, etc." No such documentation was identified to justify waiving the training requirement. 10 CFR Part 50 Appendix B, Criterion XVI "Corrective Action" requires that significant conditions adverse to quality are promptly and adequately corrected. Therefore, waiving the training requirement in response to the DER appeared to constitute an inadequate corrective action. This is considered a violation (50-341/93020-02(DRS)).

The licensee presented the inspectors with plant records, including a statement from the certified contractor indicating the on-the-job training performed prior to and during the 1989 testing. Based on these records, the inspectors determined that, although the three lead test personnel did not receive formal training on ANSI/ASME N510, the on-the-job training appeared to be adequate. The licensee reviewed the procedure addressing waivers and determined it to be adequate to

preclude future waivers without sufficient basis. Because the subsequent actions appeared adequate, no response to the violation was required. Subsequently, it was brought to the licensee's attention that no training was ever performed on ANSI/ASME N510, and that, despite the review and approval by the lead QA auditor, the closure package for 91-0589 was inadequate. A new DER, 94-0281, was opened to correct the deficiencies of the original package.

The NRC inspectors reviewed the issue of the test signatures to determine if there was any intent to falsify the records. To this end, the inspectors interviewed the personnel involved & the responsible QA auditors, reviewed the security logs, and evaluated the test documentation, including HEPA filter test results from subsequent years. Based on this review, the inspectors determined that the individuals and their management were aware that the individuals did not have ANSI N45.2.6 certification at the time they signed the HEPA filter test documents. However, to the best of the inspector's ability to determine, there was no intent to deceive anyone regarding performance of the test. The individuals' readily acknowledged they were not certified, the licensee's QA organization identified the discrepancy; and the line management reviewed the issue and took actions to prevent it from recurring. Therefore, the inspectors determined that the issue centered upon the licensee not reviewing the appropriate procedures prior to use to ensure that all requirements were adequately met.

c. Conclusions

NRC determined that the HEPA filter surveillance tests, conducted in 1989 and 1991, were performed adequately, although the licensee's procedural requirements were not followed. The violations issued in 1993 appropriately characterized the issues and no further corrective actions are necessary on the licensee's part.

M4.3 Adequacy of Inspectors Knowledge Concerning Selection Criteria About Installation of Snubbers (Formerly Section 3.4)

During the inspection and after review of documentation and interviews with plant personnel, the NRC inspector investigated the role of the QA inspectors in the removal of snubbers and installation of struts. The QA inspectors were tasked with verifying the proper snubbers were removed and that struts were correctly installed. During QA surveillance 92-0149, an auditor observed that the QA inspectors did not appear to understand all the acceptance criteria and yellow line requirements. The auditor requested that the engineering department provide written clarification of the yellow line requirements to ensure an adequate QA verification of the modification was performed. This clarification was provided by memo dated March 16, 1993. The inspectors verified that QA had no further problems with this modification.

M7 Quality Assurance in Maintenance Activities

M7.1 Independence of Inspections and Audits Performed During 1989 to 1996 (Formerly Section 3.2)

a. Scope

The NRC inspector interviewed onsite QA inspectors and auditors, including those no longer in QA positions. Additional QA inspectors and auditors were interviewed in 1995 and 1996.

b. Observations and Findings

During the course of the original 50-341/93020 inspection, and on several occasions since then, the inspectors were provided with various accounts regarding different personnel being intimidated not to identify safety issues. However, in all cases, the individual prevailed and the issue was appropriately raised. The inspectors pursued each example where information indicated intimidation may have occurred. The inspectors could not identify any examples that implied management was directing inspectors and auditors to suppress safety issues. During interviews, each QA inspector or auditor clearly communicated that they were able to identify and report any unsafe condition, without reprisal from management. A similar set of interviews, with identical results, were conducted as part of Inspection Report 50-341/96002. No statements were received from any of the QA inspectors or auditors that indicated licensee management directed QA to suppress a safety finding.

The NRC inspector evaluated management involvement in the close out of selective DERs generated by the Fermi staff. This evaluation did not identify any concerns alluding to management suppressing or attempting to suppress generation or processing of DERs, with the possible exception of DER 91-0310, discussed below. Further, the reviewed DERs were completed and closed within a reasonable time span. Finally, the role of management in the review of findings was evident and appropriate. While there were some indications that this might not have always been the case in the past, those individuals were no longer employed at the site and the new QA management strongly communicated to all personnel the need to ensure adequate, as well as timely, corrective actions.

The inability of the QA organization, Fermi staff, and management to identify and correct problems has been discussed in several inspection reports; however, when safety issues were raised by Fermi personnel, management appeared to respond appropriately. During the March 1996 systematic assessment of licensee performance (SALP) public meeting, Fermi management addressed the issue of failing to identify and correct problems as well as discussing actions to improve the process. Since the 1996 SALP meeting, a new QA director was brought on site to help strengthen the QA department and improve its performance. Reviews of the QA department performance, as of early 1997, indicated the new director was having a positive effect on the quality of QA findings.

c. Conclusions

The inspectors could find no examples where the QA organization, or other Fermi organizations, failed to raise a safety issue due to fear of reprisal by management.

M7.2 Review of DERs (Formerly Section 3.3)

a. Scope

The inspector reviewed two 1990 DERs during the original 50-341/93020 inspection. Additional DERs were reviewed during subsequent inspections.

b. Observations and Findings

DER 90-310 documented the failure to write a DER for a potential missed hold point. During audit 90-0125, an auditor identified that a QA inspection hold point on a weld appeared to have been missed. However the DER written on this issue focused on the fact that no DER was written rather than on the missed hold point. The inspectors determined that the originator of the weld process control sheet had evidently mistakenly entered the QA inspection hold point by the step for pre-fitup cleanliness rather than by the step for weld fitup, as was normally done. At the time the work was done, the QA inspector realized the error, and performed the necessary inspection during the fitup step, rather than as specified on the weld process sheet. The QA inspector, however, failed to document the change made to the inspection hold point. The licensee's corrective actions to the DER focused on ensuring that weld hold points were properly specified and witnessed in the future. These corrective actions were determined to be acceptable and the DER was closed in July 1990.

DER 90-324 documented a missed QA verification (yellow lining a drawing) of a valve counterweight removal. Since the yellow lining had not taken place, the QA auditor was concerned that the counterweight could not be confirmed as having been removed. The auditor also expressed concern that the inspector was pressured to sign the package due to scheduler concerns. As the counterweight was physically present outside the drywell, the licensee originally considered that to be sufficient proof of its removal. However, this was not adequately documented either in the original work package or during closure of the DER. Due to the inadequate documentation, it was questioned whether the counterweight was truly removed. The DER was closed with a confirmatory corrective action, to enter the drywell and look at the valve in question, transferred to a work request. This work request was later canceled due to the actuator being replaced with a different type.

The licensee first performed an engineering analysis to show why the actuator could not still be attached to the valve, and when that proved to be insufficient to resolve the issue, the licensee entered the drywell during a refueling outage and expended dose to take pictures of the valve from all angles to verify that the counterweight was removed. These pictures confirmed that the counterweight had been removed. A second DER (93-0549) was written to document that DER 90-0324 was closed before all corrective actions were complete.

Since 1990, the licensee has made substantial changes to the DER process both in improving the initiation process and ensuring the quality of the root cause analysis. A review of more recent DERs, as documented in Inspection Report 50-341/95011, did not identify any examples where appropriate analyses were not completed before the DER was closed. Additionally, the DER initiation and quality is routinely inspected as part of follow up on on-going issues.

c. Conclusion

The inspectors concluded that neither of the above DERs contained a safety issue, but were examples of inadequate documentation of the QA inspection activities. The inspectors further concluded that the above 1990 DERs were not representative of the 1997 DER process.

M7.3 Adequacy of Yellow Line Verification Requirement (Formerly Section 3.7)

The NRC inspector examined the effectiveness of the yellow line process. "Yellow lining" was the term used by the QA organization to provide physical proof of QA verification that an activity occurred. Subsequent to work being completed, the QA inspectors highlighted portions of a system drawing to indicate that the QA inspections of the highlighted area were completed. Several DERs (90-310, 90-324, and 93-363) were written related to the adequacy of the yellow lining process, and the issue was discussed during an 1991 management meeting. The 1993 inspection identified that the licensee was aware of, and intended to correct, this problem. The inspectors had no new concerns in this area.

II. Plant Support

F6 Fire Protection Organization and Administration

F6.1 Organization and Implementation of Fire Protection Program (Formerly Section 3.5)

The inspector reviewed various past inspection reports and examined available documents pertaining to the fire protection program, especially in regard to the reporting chain for the fire protection program. The inspectors determined that there had been some minor problems associated with the licensee's fire protection program in the mid 1980's. Both the licensee and the NRC Region III staff were aware of these issues and they were corrected. The fire protection program is subject to routine NRC inspection. The most recent fire protection inspection was conducted in June 1995. As documented in Inspection Report 95009, the fire protection program was considered to be excellent at that time. The inspectors had no concerns that the minor problems still existed.

V. Management Meetings

X1. Exit Meeting Summary

The inspector presented the original inspection results to members of licensee management at the conclusion of the inspection on September 24, 1993. An interim telephone exit was held on October 20, 1993; and a formal exit, which provided the

| results of the inspection, was held, via telephone, on November 4, 1993. The licensee
| acknowledged the findings presented.

On February 14, 1997, the inspectors discussed the revised inspection report findings with members of licensee management as denoted in Attachment B.

| The inspectors asked the licensee whether any materials examined during the inspection
| should be considered proprietary. No proprietary information was identified.

Attachments: A. Partial List of Personnel Contacted in 1993
 B. Partial List of Personnel Contacted in 1997
 C. Licensee Documents Reviewed

PARTIAL LIST OF PERSONNEL CONTACTED IN 1993

Detroit Edison Company (DECo)

- D. Gipson, Senior Vice President, Nuclear Generation
- * R. McKeon, Plant Manager
- + D. Bergmooser, Supervisor, NSSS Technical Engineering
- T. Bradish, Audits Supervisor
- J. Bragg, Group Lead, NQA Audits
- * J. Conen, Sr. Engineer, Licensing
- R. DeLong, Radiation Protection Manager
- P. Fessler, Technical Manager
- J. Flynn, Senior Attorney, Legal
- L. Goodman, Director, Nuclear Quality Assurance
- + K. Howard, Supervisor, Plant Engineering
- + E. Juarez, Nuclear Training
- + A. Kowalczyk, Director, Plant Support
- + P. Marquardt, Legal
- * W. Miller, Director, Nuclear Licensing
- R. Newkirk, Supervisor, Licensing
- J. Nolloth, Maintenance Superintendent
- * J. Nyquist, Supervisor, Safety Engineering
- J. Plona, Superintendent of Operation
- K. Sessions, Supervisor, Quality Assurance
- G. Smith, Director, Nuclear Fuels
- T. Stack, Supervisor, Nuclear Security
- * R. Szkotnicki, Supervisor, Quality Assurance
- + J. Tibai, Principle Compliance Engineer

U. S. Nuclear Regulatory Commission (NRC)

- * W. Kropp, Senior Resident Inspector, Fermi, DRP
- + K. Riemer, Resident Inspector, Fermi, DRP

Other

J. Crews, Consultant

*Denotes those in attendance at the telephone exit on November 4 and the interim exit on September 24, 1993.

+ Denotes those in attendance only during the telephone exit on November 4, 1993.

PARTIAL LIST OF PERSONNEL CONTACTED IN 1997

Licensee

R. Johnson, Supervisor of Nuclear Quality Assurance Audits
N. Peterson, Compliance Supervisor
P. Smith, Director, Nuclear Licensing

US NRC

B. Burgess, Chief, Reactor Projects Branch 6
S. DuPont, Project Engineer
G. Harris, Senior Resident Inspector
C. O'Keefe, Resident Inspector

LICENSEE DOCUMENTS REVIEWED

Audit Reports

90-0125 Evaluation and Corrective Action Program, 5/18/90
91-0143 Measuring and Test Equipment (M&TE) Program, 7/17/91
96-0104 Procedures, Manuals and Orders

Deviation Event Reports

90-0310 Failure to Issue a DER for Missed QA Hold Point, 5/10/90
90-0324 Inadequate Work Package, 5/10/90
91-0589 Training and Qualification/Certification Requirements Not Met, 6/27/91
93-0549 Documentation Required by DER 90-0324 Not Completed, 9/28/93
94-0281 Inadequate Investigation and Corrective Action for DER 91-0589, 7/1/94
96-0102 Conduct Manuals Survey - DER Procedure Format, 2/2/96

Correspondence

Memo dtd 3/16/93 J. J. Wald to R. J. Szkotnicki, "QSR 92-0149, "EDP 12120 Snubber Reduction for NSSS Piping," Phase II Evaluation - Observation Number 1"

Ltr undated (circa 9/93) J. L. Kovach, Nuclear Consulting Services, Inc., to W. E. Miller, Detroit Edison, 'Response to Question Regarding Personnel Qualification'

Miscellaneous

Security Access Records, selected dates in April and May 1991

Procedures

FIP-CA1-01 Deviation and Corrective Action Reporting, Rev 16, 10/20/94

Surveillance Reports

92-0149 EDP 12120 Snubber Reduction for NSSS Piping, Phase II Evaluation,
12/1/92
93-0147 Surveillance of Nuclear Safety and Quality Concerns Program, 12/17/93