OFFICE OF INSPECTION AND ENFORCEMENT
DIVISION OF QUALITY ASSURANCE, SAFEGUARDS,
AND INSPECTION PROGRAMS
PERFORMANCE APPRAISAL SECTION (PAS)

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Licensee: Toledo Edison Company
Edison Plaza
300 Madison Avenue
Toledo, Ohio 43652

Facility: Davis-Besse Nuclear Power Station

Inspection at: Toledo Edison Company Offices
Toledo, Ohio, and Davis-Besse
Nuclear Power Station

Dates of
Inspection: July 30 - August 10 and August 20-24, 1984

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Enclosure 2

INSPECTION SUMMARY

The inspection was conducted July 30 through August 10 and August 20 through 24, 1984 (Report 50-346/84-19).

Areas Inspected: A special, announced inspection was performed of the licensee's management controls over selected licensed activities. The inspection was conducted by eight NRC inspectors and involved 828 inspector-hours on site and at the corporate offices.

Results: The licensee's management controls for ten areas were reviewed and conclusions were drawn in each area based on observations presented in this report. The licensee's performance in each area was categorized in accordance with the NRC's latest guidance for evaluating licensees under the Systematic Assessment of Licensee Performance Program. For the areas inspected, the conclusions are presented as Category One, Category Two, or Category Three.

Committee Activities - Category Two
Quality Assurance - Category Two
Design Changes and Modifications - Category Two
Maintenance - Category Two
Plant Operations - Category Two
Corrective Action Systems - Category Three
Operator Training - Category Three
Non-Operator Training - Category Three
Procurement - Category Two
Radiological Controls - Category Two

Additionally, 22 potential enforcement findings were presented to the NRC Region III Office as unresolved items for followup.

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INSPECTION OBJECTIVE

The objective of the inspection was to evaluate the management control systems that had been established in support of licensed activities. The results provide input to the NRC evaluation of licensees from a national perspective.

The inspection effort covered licensed activities in selected functional areas. In each of the functional areas, the inspectors interviewed responsible personnel, observed activities, and reviewed selected records and documents to determine whether

a. the licensee had written policies, procedures, or instructions to provide management controls in the subject area

b. the policies, procedures, and instructions were adequate to ensure compliance with the regulatory and internal requirements

c. the licensee personnel who had responsibilities in the subject areas understood their responsibilities and were adequately qualified, trained, and retrained to perform their responsibilities

d. the requirements of the subject area had been implemented and appropriately documented in accordance with management policy

The specific findings in each area are presented as observations that the inspectors believe to be of sufficient importance to be considered in a subsequent evaluation of the licensee's performance. The observations were the perceived strengths and weaknesses that were used as the basis for determining the team's evaluation and categorization of each area in accordance with the following performance categories.

Category One - Reduced NRC attention may be appropriate. Licensee management attention and involvement are aggressive and oriented toward nuclear safety; licensee resources are ample and effectively used so that a high level of performance with respect to operational safety or construction is being achieved.

Category Two - NRC attention should be maintained at normal levels. Licensee management attention and involvement are evident and are concerned with nuclear safety; licensee resources are adequate and are reasonably effective so that satisfactory performance with respect to operational safety or construction is being achieved.

Category Three - Both NRC and licensee attention should be increased. Licensee management attention or involvement is acceptable and considers nuclear safety, but weaknesses are evident; licensee resources appear to be strained or not effectively used so that minimally satisfactory performance with respect to operational safety or construction is being achieved.

The performance categories defined above have been developed to meet the NRC's latest guidelines for evaluating each licensee under the Systematic Assessment of Licensee Performance (SALP) program. These categories have been published in the Federal Register.

Some observations may be potential enforcement findings. These observations, referred to as unresolved items, were discussed with the licensee and were presented to the NRC Region III Office for followup.

COMMITTEE ACTIVITIES

OBSERVATIONS

1. The Station Review Board (SRB) is the onsite review group required by Technical Specification (TS) 6.5.1. SRB guidance and responsibilities are contained in the SRB charter and the applicable sections of the TS. A new charter, effective August 15, 1984, contains provisions that were considered strengths over the previous charter. For example, detailed guidance is provided for reviewing plant operations, which includes an appendix that identifies procedures that affect the board's review.

2. Guidance in the new SRB charter on documenting SRB reviews is weak. The only item specifically identified for inclusion in the SRB minutes is dissenting opinions (charter paragraph 7.7). The charter states that documentation of all reviews shall be maintained, but it allows for fulfillment of SRB review requirements to be acknowledged by the chairman's signature on the review, approval, or recommendation form. In many cases, the only information provided in the minutes is a document control number and title with a standard statement that the item was reviewed, approved and forwarded to the Station Superintendent for his approval. This lack of information on the substance of SRB reviews is significant because the offsite review board depends, in part, on the SRB minutes for its reviews. In contrast to this weakness, the offsite review board minutes contained detailed descriptions of technical reviews, including thorough coverage of differing opinions.

3. The Company Nuclear Review Board (CNRB) is the offsite review group required by TS 6.5.2. CNRB guidance and responsibilities are contained in the CNRB charter, revision 3, dated April 10, 1981. The charter was noted to include some items that were considered strengths. For example, the charter provides guidance to the board to focus its attention on identifying root causes of problems and developing recommendations for corrective actions, and it also contains detailed guidance for establishing subcommittees and task forces.

4. The CNRB charter has a weakness due to an apparent inconsistency between TS and charter requirements regarding the review of proposed changes. TS 6.5.2.7.b requires the CNRB to review "Proposed changes to procedures, equipment or systems which involve an unreviewed safety question as defined in Section 50.59, 10 CFR." Paragraph 3.0.b of the charter states that the CNRB will review the proposed changes" to assure that the proposed changes have received the proper review and approvals." This wording has the potential for allowing the board to omit its own substantive technical review and instead rely on ensuring only that other reviews or approvals have been obtained. Interviews with board members and a review of CNRB records indicate that, contrary to the limited requirements of the charter, the board actually performs its own substantive technical reviews of proposed changes. This apparent inconsistency between the TS requirements and charter provisions also applies to TS 6.5.2.7.c (charter 3.0.c) for proposed tests or experiments and TS 6.5.2.7.d (charter 3.0.d) for proposed TS changes.

5. The CNRB membership includes several senior personnel beyond the TS requirements who have been assigned to the board because they have had extensive experience with the Davis-Besse project. Several CNRB members are from outside the nuclear mission. The SRB membership includes four personnel who have been issued NRC operator licenses for Davis-Besse. The staffing of both boards was considered a strength.

6. Controls to ensure that the SRB performs required reviews of proposed procedures were inadequate. TS 6.8.2 requires that the SRB review procedures identified in Appendix A of Regulatory Guide 1.33 before the procedures are implemented. Contrary to this requirement, some of these procedures have been implemented without being reviewed by the SRB (see Radiological Controls, Observation 9 and Maintenance, Observations 3 and 4).

7. Temporary changes to procedures were not being reviewed by the SRB in a timely manner. TS 6.8.3.c permits temporary changes to be made to safety-related procedures provided that the changes are documented, reviewed by the SRB, and approved by the Station Superintendent within 14 days of implementation. Contrary to this provision, during the period from April through June, 1984, 11 temporary changes to procedures (designated as safety-related in the licensee's procedures index) were reviewed by the SRB more than 14 days after the date of implementation. Examples of these are as follows:

   a. Temporary Modification (T-Mod) 7956 modifies SP 1104.14, Control Room HVAC System. The modification was effective on May 18, 1984. It was reviewed by the SRB on June 13, 1984.

   b. T-Mod 7992 modifies ST 5031.06, Safety Features Actuation System Overall Response Time Calculation. The modification was effective April 10, 1984. It was reviewed by the SRB on May 30, 1984.

   c. T-Mod 7868 modifies PT 5175.00, Differential Rod Worth at Power. The modification was effective March 15, 1984. It was reviewed by the SRB on April 4, 1984.

   The 11 late reviews of temporary modifications of procedures are estimated to be 8 to 10 percent of the total number of temporary procedure modifications reviewed during that period.

   The apparent failure of the SRB to review temporary changes to procedures within 14 days of their effective date was discussed with the licensee and will remain unresolved pending followup by the NRC Region III Office (346/84-19-01).

8. TS 6.5.2.7.h requires the CNRB to review "all recognized indications of an unanticipated deficiency in some aspect of design or operation of safety-related structures, systems or components." Contrary to this requirement, the CNRB had not reviewed the high pressure injection system common mode failure that occurred on January 3, 1979 (see Corrective Action, Observation 3.b(4)).

The apparent failure of the CNRB to review a recognized indication of a deficiency in the design of a safety related component has been discussed with the licensee and will remain unresolved pending followup by the NRC Region III Office (346/84-19-02).

9. Weaknesses were noted in the CNRB performance of its responsibilities for conducting audits. Board oversight participation in the audit program was either nonexistent or superficial before and during audits, and postaudit reviews appeared to be weak (see Quality Assurance Observation 4).

CONCLUSIONS

Weaknesses identified in committee activities included: limited information in minutes of onsite review groups meetings, an inconsistency between the Technical Specifications and the offsite review group charter; failure to review procedures, as required, and late review of procedure modifications by the onsite review group; failure of the offsite review group to review a design deficiency; and weak performance of audit responsibilities by the offsite review group.

Strengths were noted in some of the provisions of both the onsite and offsite review board charters, the staffing of both boards, and the records of technical reviews by the offsite review group.

This area was rated Category Two.

QUALITY ASSURANCE

OBSERVATIONS

1. All quality assurance (QA) audit personnel were qualified auditors in accordance with ANSI N45.2.23. However, on the basis of a review of personal qualification records and interviews, it was noted that the QA audit staff lacks technical training and experience in many of the functional areas they audit. This weakness was particularly acute in the audited areas of plant operations, maintenance, nuclear training, and Technical Specifications.

2. Several QA audits appeared to be technically weak and ineffective in providing an accurate assessment of the actual quality of safety-related activities and programs. Examples of QA audit weaknesses follow:

   a. Audit 1162, Nuclear Training, performed during March 1984, did not include any observations of training activities. Further, the scope of this audit in the area of the licensed operator requalification training program was particularly weak in that it did not verify compliance with the requirements of 10 CFR 55, Appendix A, Requalification Programs for Licensed Operators of Production and Utilization Facilities. For example, the following elements of the licensed operator requalification training program were not audited:

(1) The technical content of the annual requalification examination was not checked to ensure that questions were included to cover the required subject areas.

(2) The audit did not verify that the requalification lecture schedule included the subject areas identified as weaknesses on the previous requalification examination.

(3) The attendance at training lectures was not checked to ensure the presence of personnel who were required to attend on the basis of their performance on the previous year's requalification examination.

(4) The quality of the requalification training provided was not assessed.

In general, audit 1162 only verified compliance with the licensee's training procedures, without verifying if the requalification training met regulatory requirements.

b. Audit 1193, Station Operations, performed during June 1984, did not include any observations of ongoing station operations activities.

c. Audits 1157, Davis-Besse Maintenance, and 1188, Electrical/ Mechanical/Instrumentation and Controls Maintenance, did not include any observations of ongoing maintenance activities. These audits were performed during the period March-May 1984.

Paragraph 4.4 of ANSI N18.7-1972 states that formal audits shall include observations of the performance of operating and maintenance activities, and these audits shall be reviewed by the safety review committees. The routine observations of maintenance activities performed by quality control (QC) (see Observation 4) are not incorporated into audit reports and are not reviewed by the safety review committees. The QA audit program does not appear to include observations of maintenance and operations activities, as evidenced by audits 1157, 1188, and 1193. This item will remain unresolved pending followup by the NRC Region III Office (346/8419-03).

3. The QC organization was staffed by technically qualified and experienced personnel. For example, two QC inspectors had previously been licensed as reactor operators at Davis-Besse. Additionally, a review of personnel qualification records revealed that the QC staff was technically competent in areas such as instrumentation and controls, mechanical maintenance, electrical maintenance, and nondestructive testing. The experience level and technical qualifications of the QC staff was considered a strength.

4. The QC organization performs routine surveillances of on-going preventive and corrective maintenance and Technical Specification (TS) surveillance activities. A review of records indicated that approximately 30% of maintenance and surveillance activities received QC scrutiny. In addition, the QC organization makes widespread use of witness and hold points during the conduct of maintenance. The scope of QC coverage was considered a strength.

5. The QA organization performs audits required by TS 6.5.2.8 under the cognizance of the Company Nuclear Review Board (CNRB). These audits comprise approximately one-third of all the audits performed by QA.

   Interviews with QA and CNRB personnel and review of audit and CNRB records revealed an apparent lack of CNRB involvement in the audit process. For example, the CNRB does not appear to assure the quality of the QA audit checklists or the technical proficiency of the QA audit teams prior to the performance of audits, as evidenced by the weak audits described in Observation 2. In general, the CNRB performs a passive role with regard to audits, limiting their involvement to a review of audit findings at the conclusion of the audits. In view of the CNRB's TS responsibilities relative to audits performed by QA, this lack of CNRB involvement in the audit process was considered a weakness.

6. The degree of management involvement in the QA audit process was weak. Quality Assurance Instructions 4181, Audits, and ANSI N45.2.12-1977 require that management of the audited organization participate in a post-audit conference with the auditing organization. In practice, this requirement was generally met with the lowest level of management allowable. A typical example is the post-audit conference for audit 1162, Nuclear Training, performed during April 1984, which was attended by the Nuclear Training Manager but not by his supervisor, the Director of Nuclear Services.

   In the case of audit 1202, Nuclear Licensing, performed during July, 1984, there was no management representation at the post-audit conference. This apparent failure to provide adequate management representation at QA post-audit conferences was discussed with the licensee and will remain unresolved pending follow-up by the NRC Region III Office (346/84-19-04).

7. The QA organization does not appear to have adequate procedures to cover certain aspects of their activities. In particular, contrary to Appendix A of Regulatory Guide 1.33, November 1972, the QA organization had not established administrative procedures covering procedure adherence, the method for implementing temporary changes to procedures, and procedure review and approval policy. Procedures do exist that cover the above topics, but they apply only to the Davis-Besse Station organization and not to support activities such as QA, Nuclear Training, Nuclear Purchasing and Procurement, and Nuclear Facilities Engineering. This apparent failure to establish all the administrative procedures for the QA organization that are required by Regulatory Guide 1.33, November, 1972, will remain unresolved pending follow-up by the NRC Region III Office (346/84-19-05).

CONCLUSION

The quality assurance (QA) organization had a notable strength with respect to the experience and qualification levels of the quality control staff. A related strength was the degree of maintenance and surveillance activities routinely covered by the quality control organization.

Weaknesses were identified in the QA audit program. The audit checklists were weak, and the QA audit teams were often not technically trained and experienced in the areas they were auditing. QA audits did not include observations of activities, especially in the areas of maintenance and plant operations. Management involvement in the QA audit process was weak with respect to a lack of management oversight by the Company Nuclear Review Board as well as minimal management attendance at postaudit conferences.

This area was rated Category Two.

DESIGN CHANGES AND MODIFICATIONS

OBSERVATIONS

1. Facility modifications are initiated and approved for implementation through the use of facility change requests (FCR) forms. Changes to FCRs being implemented are initiated as field change notices (FCNs) and issued as FCR revisions. Nonconformance reports (NCRs) are used to report deficiencies noted during or after implementation of facility modifications. Drawing changes are controlled by drawing change notices (DCNs).

2. Station and corporate personnel interviewed were cognizant of their procedural responsibilities. Additionally, record processing for facility modifications was a strength. Numerous design change and plant modification documentation packages were reviewed. These records were complete and well organized. This was notable considering the size and complexity of these documentation packages.

3. Licensee procedures direct that written safety evaluations be conducted for only those modifications that are determined to be "nuclear safety related" as defined in AD 1845.00, Changes, Tests, and Experiments, revision 6. Therefore, modifications that constitute changes to the facility as described in the safety analysis report, but that are determined not to be "nuclear safety related," are not procedurally required to receive written safety evaluations. This appears to be contrary to the requirements of 10 CFR 50.59(b), which states in part:

> The licensee shall maintain records of changes in the facility. . . , to the extent that such changes constitute changes to the facility as described in the safety analysis report. . . . These records shall include a written safety evaluation which provides the bases for the determination that the change, test or experiment does not involve an unreviewed safety question.

This procedural weakness provides the potential for omission of required written safety evaluations. This item was discussed with the licensee and will remain unresolved pending followup by the NRC Region III Office (346/84-19-06).

4. The Final Safety Analysis Report (FSAR) was not updated in all cases to reflect design changes and modifications. For example, the FSAR was found not to reflect extensive modifications made to the pressurizer code safety relief valves and associated piping. These modifications included relocating these relief valves, removing related discharge piping to the quench tank, adding short lengths of discharge piping to each valve, capping this discharge piping with rupture disks, and adding a drain line from the discharge piping to the quench tank. The last of these modifications, FCR 82-083, was completed on July 30, 1982.

   This apparent omission of a required update to the FSAR is contrary to 10 CFR 50.71, which states that annual FSAR revisions shall be conducted to reflect the effects of changes in the facility as described in the FSAR and that these revisions shall be current as of 6 months prior to issue. This issue will remain unresolved pending followup by the NRC Region III Office (346/84-19-07).

5. The licensee had not been conducting safety evaluations as required by 10 CFR 50.59 before hanging temporary lead shielding on safety-related systems. Engineering analyses of these installations were not conducted from October 1, 1983, through May 28, 1984, although lead shielding was hung on safety-related piping on at least two occasions:

   a. On March 8, 1984, lead shielding was hung on decay heat system piping. The shielding was subsequently removed. NCR 84-0070, initiated May 30, 1984, requested engineering analysis of this installation. The analysis had not been conducted at the time of the inspection.

   b. On May 14, 1984, lead shielding was hung on decay heat system piping. This shielding was subsequently removed. At the time of the inspection an engineering analysis of this installation had not been conducted or requested.

   The failure to perform the required safety evaluations in the instances described above is considered particularly significant in that the licensee was informed of the applicability of 10 CFR 50.59 to temporary lead shielding installations by IE Information Notice 83-64, dated September 29, 1983. This document stated that lead shielding placed on safety-related systems should be analyzed for possible dynamic and static structural effects.

A Toledo Edison Company internal memorandum dated June 25, 1984, from the Nuclear Facility Engineering Director to the Station Superintendent stated that a temporary shielding request procedure should be generated. However, at the time of the inspection no such procedure or other related guidance was available.

The apparent failure to analyze the dynamic and static effects of temporary lead shielding on safety-related piping was discussed with the licensee and will remain unresolved pending followup by the NRC Region III Office (346/84-19-08).

CONCLUSIONS

The plant modification program was considered weak in that it did not require written safety evaluations for all changes to the facility as described in the FSAR. Other weaknesses noted were the failure to update the FSAR to describe plant modifications and the failure to perform safety evaluations for temporary lead shielding installed on safety-related piping systems.

The licensees efficient tracking and record-keeping system for facility change requests was considered a strength.

This area was rated Category Two.

MAINTENANCE

OBSERVATIONS

1. A review of the control of measuring and test equipment (M&TE) within the mechanical and instrument and control (I&C) maintenance groups was conducted. Personnel interviews and record reviews revealed that both groups have been calibrating M&TE without approved procedures. The mechanical maintenance group was found to be calibrating equipment such as torque wrenches and dial indicators using as guidance U.S. Government (NAVAIR) procedures which were not controlled, reviewed, or issued under the Davis-Besse procedure program. The I&C maintenance group was found to be calibrating pressure gauges, digital multimeters, digital potentiometers, digital calibrators, and digital temperature indicators without procedural guidance.

   ANSI N18.7-1972, section 5.3.6, states that procedures shall be provided for calibration of M&TE. The apparent failure to provide the necessary procedures to control the calibration of M&TE was discussed with the licensee and will remain unresolved pending followup by the NRC Region III Office (346/84-19-09).

2. Procedure IC 2100.00, Instrument Calibration and Testing Procedure, revision 11, requires that when a piece of M&TE fails calibration, a list shall be compiled of all equipment calibrated with this defective test equipment, including all surveillances and tests in which it was used. This procedure further requires that a review of this list by the I&C Engineer and Maintenance Engineer be documented and retained. Personnel interviews revealed that when a piece of M&TE failed calibration, evaluations of prior use of such equipment were conducted. There were, however, no records retained of these evaluations. Additionally, procedure IC 2100.00 did not require that this type of evaluation be conducted for lost or stolen M&TE. This is considered a weakness.

   The apparent failure to retain records of evaluations of prior use of defective M&TE as required by procedure IC 2100.00 was discussed with the licensee and will remain unresolved pending followup by the NRC Region III Office (346/84-19-10).

3. The procedures governing the control of vendor manuals were reviewed. These procedures, ENG-003, Vendor Manual Control, dated June 29, 1984, and NFED-040, Vendor Submittals, revision 0, require that the Engineering Services group review vendor manuals before their use and that these manuals must be controlled by serial number to ensure that necessary changes are made when required. These procedures were considered weak in that they did not require Station Review Board (SRB) review of vendor manuals. The lack of SRB review was of particular concern because vendor manuals were found to be substituted for procedures used to perform safety-related maintenance. The following additional items and examples were noted:

   a. A review of vendor manual control records revealed that only 32 of approximately 1,000 vendor manuals, by title, had been issued as controlled.

   b. A significant number of vendor manuals covering safety-related equipment were available in the maintenance shops. Many of these manuals were found not to be controlled.

   c. Personnel interviews and a review of plant instrumentation calibration records revealed that the vendor manual used for the calibration of LT CF3B2, Core Flooding Tank 1 Level Transmitter, on September 7, 1983, was not a controlled manual.

   d. Personnel interviews and a review of maintenance work orders revealed that the vendor manual used to perform a calibration check of FT 4522, Auxiliary Feed Water Flow Transmitter, on June 25, 1984, was not a controlled manual.

TS 6.8.1.a requires that procedures be established, implemented, and maintained as recommended in RG 1.33. RG 1.33 recommends that procedures be prepared for maintenance that can affect the performance of safety-related equipment. TS 6.8.2 further requires that all procedures implemented pursuant to TS 6.8.1.a be reviewed by the SRB and approved by the Station Superintendent. The apparent failure to provide the necessary review and control over vendor manuals used to conduct safety-related maintenance was discussed with the licensee and will remain unresolved pending followup by the NRC Region III Office (346/84-19-11).

4. The instructions provided and procedures referenced on maintenance work orders (MWOs) were found to be inadequate in some cases. One instance was found where maintenance was performed that was outside the scope of MWO instructions. The following items were noted:

   a. MWO 3-84-0826-01 did not provide adequate guidance for the repair of components identified as defective during the performance of a preventive maintenance activity. This MWO specified the replacement and repair of components "as needed" on the spent fuel cask crane. This is contrary to the guidance provided in AD 1844.00, Maintenance, which states in enclosure 5 that instructions such as "troubleshoot and repair" shall not be used.

   b. MWO 2-83-006-2, for the safety-related installation of conduit anchored in a concrete wall, was being worked during this inspection. This MWO provided no instructions or referenced procedures for the installation of the anchor bolts other than a sketch showing the details of the anchor bolt locations and their size. This is contrary to ASNI N18.7-1972 which requires that maintenance that can affect the performance of safety-related equipment be properly preplanned and performed in accordance with written procedures.

   c. MWO 1-84-1900-00, for maintenance on auxiliary feedwater flow transmitter FT 4522, provided no referenced procedure or work instructions other than manufacturers instructions. As noted in observation 3.d, the applicable vendor manual was not appropriately controlled. In addition, the flow transmitter power supply was replaced which was beyond the scope of the MWO instructions. This is contrary to the guidance provided in AD 1844.00 which states in enclosure 5 that detailed instructions shall be included on each MWO and that personnel performing the maintenance shall work within the boundaries or constraints identified on the MWO at all times.

   d. MWO 2-78-0126-18, for the installation of pipe hangers, was being worked during this inspection. This MWO specified the installation and torquing of anchor bolts in a safety-related application using maintenance instruction MI-71, Installation of Anchor Bolts, revision 3. This maintenance instruction was neither reviewed by the SRB nor approved by the Station Superintendent as required by TS 6.8.1.a.

The apparent failure of MWOs to specify adequate work instructions and procedures was discussed with the licensee and will remain unresolved pending followup by the NRC Region III Office (346/84-19-12).

5. The requirements established by the licensee to provide supervision of ongoing maintenance activities were considered a strength. Specifically, AD 1844.00, Maintenance, revision 12, paragraph 6.1.8, states that

> Shop foremen are responsible for the actual conduct of the maintenance and shall verify that work is being performed properly by regular inspections at the actual job site, review of the procedures being utilized to control the work, housekeeping at the job site, and verification of work documentation. For specific cases, the inspection may be initiated and documented with Enclosure 9, Maintenance Surveillance Report, by appropriate maintenance supervisory staff.

However, there were no Maintenance Surveillance Reports available for review. Additionally, personnel interviews revealed that maintenance foremen and other supervisory personnel actually performed a very limited amount of job site supervision. The relatively high ratio of maintenance personnel to foremen (approximately 20 to 1 for electrical, instrument and control, and mechanical maintenance groups) and the significant amount of office related job responsibilities made it difficult for foremen to conduct regular inspections of job sites.

The limited amount of in-the-field maintenance supervision and the implementation of the AD 1844.00 requirement, specified above, was considered a weakness.

6. A computer based data management system was used extensively to facilitate the control of maintenance and to track various activities such as non-conformance reports, audit finding reports, deviation reports, field change requests, TS compliance, and current plant information. This system, known as the Davis-Besse Maintenance Management System (DBMMS), appeared to be particularly impressive in the maintenance area, providing extensive information and interactive capability regarding equipment history, MWO processing, equipment data, work requests, and preventive maintenance. This aspect of the maintenance program was considered a strength.

CONCLUSIONS

Inadequate use and control of procedures and instructions was a significant weakness. Relating to this were the lack of procedures to calibrate measuring and test equipment, the inadequate control of vendor manuals, and the inadequate instructions and procedures specified on maintenance work orders. There were also weaknesses pertaining to the lack of records for the review of out-of-calibration test equipment and a lack of in-the-field maintenance supervision.

A strength was identified regarding the Davis-Besse Maintenance Management System, a computer based data management system used extensively to facilitate the control of maintenance and to track various other activities.

This area was rated Category Two.

PLANT OPERATIONS

OBSERVATIONS

1. Davis-Besse had a six-shift rotation for the operations staff. The new requirements for two licensed senior reactor operators on each shift had been met. In addition, there were approximately 10 management personnel holding current operating licenses. The attainment of six-shift rotation and strong operating experience among management was considered a strength.

2. The plant routinely operates with an excessive (25-30) number of nuisance annunciator alarms on control room panels. An effort to remove these alarms was begun in July 1984. However, at the time of the inspection there was no plan, with goals or schedules, to reduce the number of spurious alarms to a minimum. In addition, approximately one-half the alarmed annunciators were concealed by tags, making them difficult to read.

3. Shift turnover checklists were inadequate. These lists did not satisfy the guidance of NUREG-0578 in that they did not list critical plant parameters, allowable limits, and the acceptable status of essential systems. In a letter, dated January 18, 1980, the licensee committed to the NRC to include this information in the shift turnover checklists required by procedure AD 1839, Station Operations. However, this procedure requires only a stamped status summary in each operator log at the beginning of the shift. This summary does not contain the detailed information regarding critical plant parameters and limits specified by NUREG-0578 and, therefore, does not satisfy the commitment of the January 18, 1980, letter.

   The apparent failure to develop and utilize shift turnover checklists as specified by NUREG-0578 was discussed with the licensee and will remain unresolved pending followup by the NRC Region III Office (346/84-19-13).

4. The special intercom between the control room and the Shift Supervisor's office provided almost unintelligible communications. In a letter dated June 14, 1984, the NRC allowed the Assistant Shift Supervisor to leave the control room provided that this direct intercom was installed. The intercom presently in place is a wireless model that uses site 120-V power lines for transmission. This arrangement possibly induces noise in the circuit. When tested on two separate occasions by the NRC inspector, voice communications were garbled and unintelligible.

   The apparent failure to establish an effective intercom system between the control room and the Shift Supervisor's office was discussed with the licensee and will remain unresolved pending followup by the NRC Region III Office (346/84-19-14).

5. The Shift Administrative Assistant (SAA) performs administrative duties relating to plant functions and status under the direction of the Shift Supervisor. Examples of his duties are: administration of the Tagout Log and the Jumper and Lifted Lead Log, maintaining plant operating procedures in the control room and in the plant, and other functions as prescribed by the Shift Supervisor. Interviews revealed that these individuals did not have a general technical knowledge of plant systems. Additionally, no training program (other than on-the-job training) was provided for the SAA.

   The use of non-technically trained individuals as the SAA appears to be contrary to a commitment made by the licensee to the NRC in a letter, dated May 8, 1981. This letter stated that "technically trained individuals" would be assigned to each shift for administrative duties. This item will remain unresolved pending followup by the NRC Region III Office (346/84-19-15).

6. Some housekeeping deficiencies were noted in the control room.

   a. Over the 3-week period of the inspection, several instrument cabinets in the control room area had doors open or back panels removed for no apparent reason. Personnel interviews did not reveal why the panels were open.

   b. Over the 3-week period of the inspection, paper and trash were observed behind some cabinets and panels in the control room and adjacent secure area. The inspection team considered that the material represented a potential fire hazard.

7. Two operator distractions were observed.

   a. A stereo system was installed in the control room.

   b. On one occasion, during a backshift inspection, the NRC inspector observed all personnel in the control room, including the Shift Supervisor, working a crossword puzzle at the Reactor Operator's desk.

CONCLUSIONS

A strength was the fact that there were sufficient licensed operators to permit six-shift rotation with additional licenced personnel available to perform management functions.

Weaknesses were the inadequate shift turnover checklists, the unintelligible intercom system between the control room and the Shift Supervisors office, and the failure to provide technically trained Shift Administrative Assistants.

This area was rated Category Two.

CORRECTIVE ACTION SYSTEMS

OBSERVATION

1. Administrative systems used at Davis-Besse to identify and correct problems included Quality Assurance Audit Finding Reports (AFRs), Nonconformance Reports (NCRs), Supplier Deviation Reports (SDRs), Facility Change Requests (FCRs), Deviation Reports (DVRs), and Preliminary Safety Concerns (PSCs).

2. Interviews and the review of DVRs, NRC IE Inspection Reports, and AFRs revealed that extensive weaknesses were identified in the operator and non-operator training programs. Corrective actions taken to resolve these training problems were not being implemented in a timely manner and were not adequate to correct the problems (see Operator Training, Observations 1 and 2; and Non-Operator Training, Observation 1).

3. An apparent significant breakdown in the corrective action system was found. Both high pressure injection (HPI) pumps were rendered inoperable due to a frozen common recirculation line on January 3, 1979. This issue has not been satisfactorily resolved as of August 1984. The chronology of this issue is provided below.

   a. On January 3, 1979, the HPI common recirculation line froze. The resulting loss of recirculation flow constituted a common mode failure of both trains of HPI since a minimum recirculation flow is required to prevent HPI pump failure during operation against a shutoff head. This is significant at Davis-Besse because the HPI pumps have a shutoff head of approximately 1680 psig, as compared to the typical shutoff head of approximately 2900 psig for HPI pumps at other Babcock and Wilcox (B&W) designed nuclear plants. This means that in certain accident scenarios the Davis-Besse HPI pumps could be actuated at pressures significantly higher than 1680 psig causing extended operation against a shutoff head.

   b. DVR 79-012 was issued on January 3, 1979, regarding the frozen HPI recirculation line. This DVR stated that the HPI pumps were not rendered inoperable. The corrective action taken for this DVR consisted of thawing the line, increasing the thermostat temperature setting for the heat tracing installed, and building a temporary enclosure around the recirculation line. The Station Review Board (SRB) reviewed this DVR on February 6, 1979.

   c. DVR 79-048 was issued on March 12, 1979, for the stated reason of "insufficient analysis of pump operability." The corrective action taken as a result of this DVR consisted of notifying the NRC of the event of January 3, 1979; modifying the recirculation line heat tracing to provide redundant and individually controlled freeze protection; and continuing an analysis of HPI pump operability by engineering personnel. The SRB reviewed this DVR on July 22, 1980.

d. As a result of the continued analysis of HPI pump operability referred to in DVR 79-048, the licensee submitted Licensee Event Report (LER) 79-034, dated March 23, 1979. This LER reported the inoperability of both trains of HPI on January 3, 1979. The corrective action as stated in the LER was essentially the same as for DVR 79-048.

e. A supplement to LER 79-034, submitted in April 1979, provided a safety evaluation, which concluded that although the HPI pumps were rendered technically inoperable on January 3, 1979, they would have performed their intended safety function. This determination was based, in part, on information provided by the HPI pump vendor who indicated that these pumps could operate against a shutoff head for several minutes with no recirculation flow.

f. FCR 79-308, approved on February 19, 1981, provided lc erm corrective action by the installation of an additional HPI pump recirculation line. This additional recirculation line had not been added as of August 1984.

g. The licensee was notified by B&W PSC 01-81, dated March 25, 1981, of a safety concern relative to the operation of HPI pumps without adequate recirculation flow. Specifically, B&W analysis revealed that operation of HPI pumps without recirculation and against a shutoff head could cause HPI pump failure within 30 seconds. Review of PSC 01-81 by the licensee was completed on March 23, 1983.

This issue was considered to represent a breakdown of the corrective action system in that:

a. DVR 79-012, issued on January 3, 1979, failed to identify that the frozen recirculation line rendered the HPI pumps inoperable.

b. The SRB reviewed DVR 79-012 on February 6, 1979, and apparently failed to recognize the safety significance of this event. It was not until DVR 79-048 was issued on March 12, 1979, more than 2 months after the event occurred, that the safety significance of this issue was realized by the licensee.

c. The SRB did not review DVR 79-048 until July 22, 1980, over a year after it was issued.

d. Personnel interviews and review of records revealed that there was no apparent evaluation of this issue by the Company Nuclear Review Board (CNRB) (see Committee Activities, Observation 8).

e. PSC 01-81 issued by B&W on March 25, 1981, provided additional information on potential HPI pump failure, indicating that damage to an HPI pump could occur after operating against a

shutoff head for as little as 30 seconds. Personnel interviews and the review of records revealed that the apparent conflicting information provided by PSC 01-81 and the pump vendor was not reconciled. Personnel interviews additionally revealed that the licensee chose to accept the less conservative pump vendor data without technical justification. The review of this PSC was not completed until May 23, 1983, more than 2 years after it was issued. This is contrary to SERV-002, Babcock and Wilcox/Other Vendor Preliminary Safety Concerns, which requires that a PSC shall be evaluated within 30 days. The apparent failure to evaluate this PSC within the required period of time was discussed with the licensee and will remain unresolved pending followup by the NRC Region III Office (346/84-19-16).

f. FCR 79-308, for the installation of an additional HPI pump recirculation line, was prepared July 30, 1979, approved February 19, 1981, revised April 25, 1984, and had not been implemented as of August 1984, more than 5½ years after the initiating event.

g. The safety evaluation included as part of the supplement to LER 79-034 appeared to be inadequate. Specifically, a loss of coolant accident caused by a stuck open pressurizer electromatic relief valve (ERV) provided the only basis for the rate of reactor coolant system (RCS) depressurization. Based on the fact that a stuck open ERV results in a relatively rapid RCS depressurization, the safety evaluation concluded that the HPI pumps would perform their required safety function with a blocked recirculation line for any actual RCS leak. This conclusion does not appear to be justified.

4. The procedure for the timely identification, documentation, and correction of purchase order (PO) discrepancies was weak. The Nuclear Quality Assurance Manual (NQAM) and Quality Control Instruction (QCI) 3150 state that supplier deviation reports provide corrective action coverage for receipt inspection and open PO concerns. However, the discussion in the QCI and the NQAM concern the resolution of supplier-related deficiencies that are identified when the material is received. There is no discussion of the correction of PO discrepancies that were caused by the licensee. Additionally, the Quality Engineering Section had found problems with issued POs and had not identified them to the Purchasing Department for correction (see Procurement, Observation 3).

CONCLUSION

An apparent breakdown of the corrective action system was found regarding a common mode failure of the high pressure injection system. Weaknesses pertaining to this issue were

° the failure to recognize its safety significance

° the untimely review of deviation reports and vendor preliminary safety concerns

° the failure on the part of the Company Nuclear Review Board to review the design deficiency of a safety-related system

° the untimely implementation of corrective action

° an apparently inadequate safety evaluation

A weakness was also found in the mechanism to resolve purchase order discrepancies.

This area was rated Category Three.

OPERATOR TRAINING

OBSERVATIONS

1. The program for licensed and non-licensed operator training was considered adequate, but implementation was weak. The following deficiencies were noted:

   a. The staffing of the Nuclear Operator Training Department was insufficient. There were four staff positions authorized but only one was filled. This person was responsible for the entire operator training program, both initial and requalification. A second licensed operator had been temporarily assigned to training from operations in May 1984.

   b. The operations staff was in a six-shift rotation, which allowed 1 week out of every 6 to be devoted to training. Two days of each 5-day training cycle were regularly allotted for lectures. The remaining 3 days were devoted to self-study. Interviews with trainees revealed that these sessions were poorly organized and lacked direction. There were apparently no set goals for the self-study program, nor were there any examinations or other attempts to measure progress achieved during this time. Interviews with operators led the inspection team to conclude that self-study time was largely wasted.

   c. Review of training records indicated that there was a high reliance on contractors to provide lectures for operator training. Interviews revealed that these contractors frequently did not have plant-specific knowledge in the areas in which they lectured. In addition, contractors appeared to receive an inadequate amount of guidance for lecture content. On the basis of interviews with operators, the inspection team concluded that the operators were generally dissatisfied with the scope and depth of the material presented.

2. Deficiencies were found to exist in the implementation of the licensed operator requalification examinations. These deficiencies involved the control, content, and grading of the examinations. The following specific items were noted:

a. The spring 1984, and summer 1984, examinations, which took about 4 hours to complete, were given to operators on different shifts over the course of a week, allowing the possibility of compromise. In both instances, the same examination was given for the entire week. This is contrary to good security practice in the administration of examinations.

b. The degree of difficulty of the examinations was considered to be uneven. For example, the summer 1984, reactor operator (RO) examination appeared noticeably more difficult than the senior reactor operator (SRO) examination. The latter contained many true/false and multiple choice questions which contributed to making it appear easier than the RO examination that consisted primarily of essay questions.

c. There appeared to be inconsistent grading among identical examinations. The NRC inspector reviewed all the spring 1984, and summer 1984, examinations and found many grading anomalies that made the comparison of examination scores difficult. For example, partial credit for the same question was frequently given differently.

d. 10 CFR 55, Appendix A, requires that the requalification lecture series be directed at knowledge weaknesses identified in the annual RO and SRO requalification examination. A review of training records revealed that no analysis of the 1983 RO and SRO examinations had been conducted to determine the content of the 1984 requalification lecture series. An analysis of the 1984 RO and SRO examinations had been conducted, but the results had not been incorporated into the 1985 lecture series at the time of the inspection. Further, the requirement to analyze the requalification examination results had not been proceduralized, nor had the licensee established a methodology for performing the analysis and providing feedback into the lecture series. The apparent failure to base the 1984 requalification lecture series on weaknesses identified in the annual requalification examination will remain unresolved pending followup by the Region III Office (346/84-19-22).

CONCLUSIONS

Weaknesses noted included insufficient staffing, ineffective self-study, and a lack of management oversight of contractors providing training. Of particular concern were the lack of management oversight and the poor quality assurance measures directed toward the administration of senior reactor operator and reactor operation requalification examinations.

This area was rated Category Three.

NON-OPERATOR TRAINING

OBSERVATIONS

1. This section covers the training programs for the staff organizations that support plant operations. These organizations include Quality Assurance, Maintenance, Engineering, Facility Modifications, Chemistry and Health Physics, and Procurement. Their respective managers were responsible for the establishment and conduct of the training requirements, and the Nuclear Training Department (NTD) provided assistance when requested. The licensee had recently completed a diagnostic analysis of its training program that identified a number of problems. The following items, covered in this analysis, were noted by the inspection team to be weaknesses:

   a. Over the past 2 years, there have been significant shortages in the NTD staffing. There were 21 authorized professional positions in the NTD to support both operator and non-operator training requirements. Of these 21 positions, 8 were vacant, and 4 of these vancies were in the non-operator training section. Additionally, the position of Nuclear Training Manager had been occupied by five people in the past 3 years. It appeared that these staffing problems degraded non-operator training. In addition, the extent and duration of these staffing problems reflect a lack of management committment to training.

   b. Personnel interviews revealed that some of the training conducted by the NTD was not plant-specific and consequently was of little value to the students. This was associated primarily with lectures given by support contractors. On one occasion, station personnel walked out of a lecture for the stated reason of poor quality. Interviews with a broad range of personnel revealed a lack of confidence in the NTD, making station personnel reluctant to use the NTD assets to support their training.

   c. The training programs developed outside the NTD exhibited the following weaknesses:

      (1) There was an excessive reliance on required reading to implement training. Personnel interviews indicated that this technique resulted in superficial understanding of the subject material.

      (2) The training conducted did not cover all the necessary aspects of the total job requirements. For example, maintenance personnel were not trained on material handling and storage requirements for nuclear safety-related material, yet they were responsible for the care of this material from the time it was issued until it was installed. This training deficiency contributed to the weakness identified with the control of materials in the station (see Procurement, Observation 7).

2. The diagnostic analysis was the basis for a training improvement program that required the involvement of both station and NTD personnel. The program concentrated on the long-term corrective actions and neglected actions necessary to improve the existing training activities in a timely manner. Additionally, allocation of resources to accomplish long-term training improvements could further degrade the ongoing non-operator training efforts as evidenced by the following:

   a. The short-term improvement of the training program was the sole responsibility of the non-operator training section. This group, which was understaffed, was also heavily involved with the long-term effort. Consequently, the ongoing training program received very little attention.

   b. The first step for improving non-operator training was scheduled for completion in June 1986. There were no milestones established for the implementation of training improvements before this date.

   c. The NTD staff had developed an informal program for implementing improvements into the ongoing training programs. However, interviews revealed that this program was constrained by requiring: (1) no change in the scope of training, (2) less than 2 man-days effort to implement, and (3) minimal budgetary impact. No significant changes to ongoing programs have occurred as a result of this informal program.

3. The involvement of management in the training program showed several weaknesses.

   a. The lack of management involvement had been a contributing factor to the degradation of the NTD (see Observations 1.a and 4).

   b. A Training Oversight and Review Committee was established in February, 1984. The committee reported to the Vice President, Nuclear, and was chartered to monitor and provide management direction to the training program. At the time of the inspection, only two meetings had been held and no record of meeting actions was available for review.

   c. Management awareness of the amount of non-operator training was weak. Upper management estimated that 10-15% of the non-operator's time was spent in classroom training. A review of the training record documentation showed, for a sample of 15 personnel, an average of less than 4% of their time was spent in classroom training.

4. The licensee procedures on training were weak. There was no written policy guidance from upper management on the subject of training. The Nuclear Training Department Procedures (NSP/NT) attempted to provide direction, but they were limited in their scope, jurisdiction, and distribution. Some specific weaknesses were

a. There were no training procedures for the Procurement Division personnel involved with the acquisition and handling of nuclear safety-related material. These personnel were assigned to the Administrative Organization, but required training in accordance with licensee commitments to ANSI standards.

b. Procedure NSP/NT-001, Management and Organization of the Nuclear Training Programs, revision 0, only addressed the NTD responsibility to support station requirements. The procedure neglected other areas of the nuclear mission such as Quality Assurance and Nuclear Facilities Engineering Division training requirements.

c. Procedure NSP/NT-003, Management of Mission Training Offered Outside the Nuclear Training Department, revision 0, placed requirements on organizations outside the Nuclear Services Division, but was issued by the Nuclear Services Director. The procedure had no jurisdiction outside the Nuclear Services Division. Additionally, many of the organizations to be governed by this document were not on distribution for the NTD instructions.

5. The General Employee Training (GET) Program, which consisted of General Orientation Training (GOT) and Radiological Controls Training (RCT), had some specific weaknesses.

a. The GET Program was designed to keep student interest by completing workbook fill-ins during an audio visual presentation. This approach was hampered, however, by the excessive number of fill-ins which distracted students from the presentation and caused confusion.

b. The Nuclear Quality Assurance Manual and AD 1807.00, Control of Conditions Adverse to Quality, revision 9, place a high reliance on the ability of all employees to recognize and identify conditions adverse to quality. There was no coverage of this topic in the GET program.

CONCLUSION

Weaknesses identified in the area of non-operator training were the staffing shortages of the Nuclear Training Department, poor quality of training being conducted, lack of a timely improvement program, and inadequate management involvement in training. Additional weaknesses were noted with the procedures governing training and with specific aspects of the General Employee Training Program.

This area was rated Category Three.

PROCUREMENT

OBSERVATION

1. There were improvements noted in the control of purchasing and material management since the last Performance Appraisal Section (PAS) inspection, issued by NRC Management Inspection Report (50-346/80-3), dated January 21, 1981. These improvements were necessary to correct some of the significant problems identified in the 1981 PAS report. The following improvements were identified during this inspection:

   a. The Procurement Division has reorganized and located personnel on site. This provides more responsive and efficient support to the station and improves control of site material.

   b. The Facility Modification Department has implemented a program that provides a systematic method for contractor bid evaluation and more stringent control of contractors. This has improved the quality of contractor support for facility modification work.

   c. The Material Department has implemented a salvage program to reduce the excess material being stored on site. This reduces the amount of material stored at remote areas where damage and loss of control is more likely to occur.

   d. The Procurement Division has implemented a Quality Assurance Awareness Program which is tailored to identify the pertinent information from the Code of Federal Regulations, industry standards, and station procedures as they apply to divisional job requirements.

   e. The Quality Assurance Division has formed a Quality Engineering Section that is dedicated to supporting receipt inspections, audits of material handling and storage, review of procurement documents, and vendor qualification requirements. The Quality Engineering Section provides a staff of procurement experts to check the quality of these operations.

2. There were inconsistencies with the procedures governing procurement document preparation. The preparation of nuclear safety-related (NSR) purchase requisitions (PRs) and purchase orders (POs) is complex and involves many licensee organizations. The station usually initiates a request for material, the Nuclear Facility Engineering Division (NFED) prepares the material specifications for the PR, Quality Engineering (QE) reviews the PR content, and the Purchasing Department prepares the PO based on the PR. The following weaknesses were identified:

   a. There were five different procedures describing the content of a preformatted data assignment sheet used to identify procurement standards and ASME code requirements for PR preparation. This sheet permitted the coding of lengthy specifications that were stored in the Purchasing Department computer and printed out on the PO. The following procedures discuss the use of the data assignment sheet:

(1) Facility Modification Department Procedure (FMDP) 6040.02, Preparation, Approval and Issuance of Purchase Requisitions, revision 2

(2) Nuclear Facility Engineering Division Procedure (NFES) 070, Procurement, revision 0

(3) NFES 071, Purchase Requisitions for Spare and Replacement Parts, revision 0

(4) NFES 072, Purchase Requisitions for Engineered Items, revision 0

(5) Procurement Quality Assurance Instruction (PQAI) Section 2, Procurement Document Control, revision 1

Procedure FMDP 6040.02 differed from the other procedures in the content of the data assignment sheet. The data assignment sheet most often used was not identified by any procedure but was a shortened version of the sheet described in other procedures.

b. There were conflicts in the procedures describing the preparation of General Material Identification Checklists (GMIC). The GMIC is used, in conjunction with the PR and PO, to direct and document the conduct of receipt inspections. Procedures NFES 071 and 072 require the NFED to identify the receipt inspection requirements on the GMIC at the same time the material specifications are prepared for the PR. The PR and GMIC are then approved together by management and QE. However, Quality Control Instruction (QCI) 3070, Receipt Inspection, revision 10, also permits the receipt inspector to prepare a GMIC at the time of the inspection if there is not one in the procurement package. This allows bypassing the approval circuit and increases the potential for preparation of a second GMIC for the same material that differs from the original requirements developed by the NFED.

3. The procedure for preparation of a PO was weak. Procedure PQAI, section 2 provides information on the preparation of the PR but has little guidance for the completion of the PO. Specifically, there is no requirement for the review of the PO content before it is issued to the supplier. There have been instances where the issued PO was different from its corresponding PR. QE does review the PO after it is issued to the supplier. The discrepancies found in the QE review were not reported back to the Purchasing Department so that the deficient POs could be corrected. (see Corrective Actions, Observation 4).

The Nuclear Quality Assurance Manual (NQAM) states that Toledo Edison complies with ANSI N45.2.13-1976. ANSI N45.2.13-1976 requires that procurement documents be reviewed before they are transmitted to the supplier to ensure the documents are complete and contain the applicable requirements. The failure to review POs before they are issued was discussed with the licensee and will remain unresolved pending followup by the NRC Region III Office (346/84-19-17).

4. The problems discussed in Observations 2 and 3, above, pertaining to the control of the PR data assignment sheet and PO quality resulted in weaknesses in the receipt inspection program. QCI 3070 requires that the PO and the PR be used to receipt inspect received material. This assumes conformance between the PO and the PR. When discrepancies exist between the PO and PR, the QE inspectors use the PR because it was the document approved by the NFED. This practice was considered weak since the material specification information on the PR is provided by the shortened version of the data assignment sheet, which was not procedurally controlled and did not provide a complete statement of the material specifications. This increases the potential for the improper conduct of receipt inspections and the acceptance and use of improper material.

5. The Nuclear Materials Management Procedures (NMMP) were not available for use by the material handlers at their work stations in the warehouse or the remote storage areas. This was contrary to the NQAM which requires that procedures necessary to carry out a quality activity be available at the work location of the activity before commencing the work. This item was discussed with licensee management respresentatives, and they agreed to locate controlled copies of the NMMP at the warehouse loading dock area and the remote storage locations.

6. The procedures governing the procurement of NSR replacement parts did not ensure that applicable materials were purchased to either the original construction specifications or acceptable substitute specifications that were evaluated in accordance with ASME Section XI, IWA 7200. The existing guidance, in Exhibit I of both procedures NFES 071 and 072 noted, in the instructions for completing the PR, that "When a 'construction phase' specification is referenced, list in the 'description' column all modifications necessary to bring the 'construction phase' specification in line with the current operational requirements." This instruction implies that the operational phase requirements were the basis for procurement document specifications. This confusing guidance has contributed to procurement problems in at least the following two instances:

   a. Audit Finding Report (AFR) 1110-1, issued October 20, 1983, identified a problem with replacement parts associated with pressurizer code safety relief valves. A particular shipment of parts had been received and installed before it was discovered that they were procurred to the wrong ASME code year and addenda without the proper evaluation being conducted. The action taken to resolve this finding was limited to correcting the problems with this particular shipment. The programmatic issues that contributed to the problem were not addressed.

   b. Supplier Deviation Report (SDR) 84-0092 identified a problem with the material specifications for TIG welding rod ordered on May 1, 1984. The PO referenced certification to the wrong ASME code year and addenda.

The NQAM states that Toledo Edison complies with the requirements of RG 1.123. RG 1.123 invokes the requirements of ANSI 18.7-1976, section 5.2.13, for procurement of replacement parts during the operational phase of the nuclear power plant. ANSI 18.71976 requires that procedures be established to ensure that materials are purchased to specifications equivalent to the original specifications or a proper revision. The lack of procedural guidance for procurement of replacement parts to original or acceptable specifications was discussed with the licensee and will remian unresolved pending followup by the NRC Region III Office (346/84-19-18).

7. The control of NSR material by station personnel after issuance from the Material Department was weak. Procedure AD 1847.00, Station Material Control, revision 7, requires that material be issued for a specific maintenance work order (MWO) and that excess material be returned to the storeroom within 30 days after job completion. The NRC inspector sampled three parts issued to the station and the following discrepancies were identified:

   a. On June 15, 1984, an NSR pressure switch was issued for a MWO that had already been closed out. The pressure switch was found in the I&C shop office on August 23, 1984.

   b. On January 5, 1981, a NSR solenoid valve was issued without designating a specific MWO on its NSR identification tag. This valve was found in the I&C storage spaces.

   c. On February 23, 1982, a NSR limit switch was issued for a MWO that was closed out on January 11, 1982. This switch was found in the I&C storage spaces.

   The apparent failure to return excess material to the storeroom was discussed with the licensee and will remain unresolved pending review by the Region III Office. (346/84-19-19)

8. The procedures for upgrading commercial material for use in NSR systems were weak. Procedure AD 1847.00 identified the actions necessary for station personnel to initiate an upgrade request, but not for handling the upgraded material. There was also no specific guidance provided for NFED and QE evaluation and approval of the upgrade. QE stated that, in practice, material was only upgraded when it could not be procured as NSR and that the evaluation and upgrade were conducted for a specific plant location. This lack of procedural guidance contributed to the following deficiencies:

   a. The pressure switch discussed in Observation 7.a was upgraded without conducting the evaluation testing required by the NFED evaluation.

   b. The solenoid valve discussed in Observation 7.b was an upgrade but could be procured as NSR. For this reason, QE had disapproved an upgrade request for the same type of valve on May 8, 1984.

In both cases, these parts were identified for NSR use and could have been installed in an NSR system where they were not qualified.

9. A tour of the warehouse and remote storage areas identified the following discrepancies:

   a. NSR and non-NSR material were stored together for over 3 years in the warehouse staging area. This was contrary to the guidance of the NMMP, which generally prohibits the mixed storage of controlled and non-controlled items.

   b. Battery electrolyte was stored next to NSR material. This was contrary to the requirements of ANSI N45.2.2, which requires that hazardous chemicals not be stored in close proximity to important nuclear plant items.

   c. There were missing and damaged Q-Accept Tags on NSR materials in the remote storage areas. These tags were utilized to identify NSR material. In one case, a Q-Accept Tag was hung on a bin of loose conduit. In a second case, the Q-Accept Tag was hung on one piece of piping in a bin of loose pipe. This was contrary to the requirements of the NQAM, which requires identification to each part or component when physically possible to do so.

   d. There was excessive dust and dirt in the warehouse level B storage area near the loading entrance, and standing water was noted in the outside Level D storage areas. This was contrary to the requirements of ANSI N45.2.2 for cleanliness of NSR storage areas.

   These storage items were discussed with licensee management representatives who initiated actions to correct the deficiencies.

10. A weakness was noted with the practice of procuring all primary plant chemicals as non-NSR. A specific concern was the non-NSR procurement of boric acid used for reactivity control. A similar concern was identified by LER 346/83-070 which described an event that resulted in exceeding the Technical Specification limit for chloride concentration in the reactor coolant system. A contributing factor to this event was the installation of improper resin that had been procured as non-NSR.

CONCLUSIONS

Weaknesses identified in the area of procurement were the inadequate procedural guidance for the preparation of procurement documents and the upgrade of commercial material for nuclear safety-related use, the failure to comply with procedures for station material control, and the procurement of primary plant chemicals as non-nuclear safety-related materials.

A strength was noted in the improvements made since the last performance appraisal inspection.

This area was rated Category Two.

RADIOLOGICAL CONTROLS

OBSERVATIONS

1. A review of the management of the Chemistry and Health Physics (C&HP) Program indicated that the management staff functioned well. The following strengths were identified:

   a. The C&HP management staff was experienced and knowledgeable and appeared dedicated to operating an aggressive health physics program.

   b. C&HP management stayed aware of current plant operations, problems, and potential problems through daily plant contacts, representation on the Station Review Board, and attendance at the weekly maintenance planning meetings.

   c. Communications between C&HP management and staff were considered effective. C&HP management personnel were often in the chemistry and health physics area in the plant and there appeared to be frequent interchanges between management and staff. In addition, periodic meetings were held among C&HP management and available staff members.

2. Only one member of the C&HP staff appeared to have in-depth knowledge and experience in the areas of low-level waste disposal and transportation of radioactive materials. The lack of additional personnel knowledgeable in these areas was considered a weakness.

3. Refresher training for C&HP technicians has been sporadic over the past 3 years.

   a. There has been no qualified individual in the Nuclear Training Department to provide courses in chemistry and health physics. This was a weakness.

   b. In the absence of qualified individuals in the Nuclear Training Department, the C&HP Section has relied on periodic, short (1 to 2 hours) training sessions conducted by C&HP staff members, one-day courses by consultants, and required reading lists. During the period 1981 through 1983, 14 training sessions and courses were held. For the period January through July 1984, 10 such training sessions and courses were held. The recent increase in the amount of training provided was considered a strength.

4. Review of the external dose control program revealed the following:

a. External dose control has been outstanding. Over the last 6 years, the licensee has averaged about 89 man-rems per year, the lowest average of all operating PWRs and significantly below the industry average of about 560 man-rems per year for operating PWRs. The licensee attributed the low doses to (1) special cleaning efforts prior to initial plant startup to ensure that operations started with a clean plant, (2) strict adherence to chemical parameters in reactor systems, and (3) prompt cleanup of potential sources of personnel exposure. This aspect of the licensee's external dose control program was considered a strength.

b. Under procedure HP 1602.01, revision 15, External Personnel Radiation Exposure Monitoring, visitors who were at the station for only a few days and who entered the Radiation Access Control Area (RACA) were issued a visitor thermoluminescent dosimeter (TLD). The visitor TLD was reused by other visitors without having been processed unless a visitor received an exposure as indicated by a self-reading dosimeter of 20 millirems or more. A licensee representative stated that all visitors to RACA must be accompanied by a station employee and that prior to granting approval to enter RACA, C&HP management reviewed the purpose of the visit, the specific areas to be visited, and determined that exposure of visitors was unlikely. The licensee maintained records that showed the doses recorded each month for each visitor TLD, the names of visitors associated with each visitor TLD, and the exposures recorded by self-reading dosimeters for each visitor. These records indicated the following:

(1) For the period January through June 1984, there was an average of 29 visitors per month who entered RACA. The total exposure for all visitor TLDs was 70 millirems; the highest exposure for a monthly visitor TLD was 10 millirems.

(2) For calendar year 1983, the total exposure recorded for all visitor TLDs was 35 millirems; the highest exposure for a monthly visitor TLD was 15 millirems.

(3) In April 1982, one visitor TLD showed an exposure of 140 millirems. This TLD had been worn by 14 people before being read out. Self-reading dosimeter results for these individuals showed that 10 of them had recorded an estimated exposure of 0. The other four individuals who had worn this TLD had recorded estimated exposure of 3, 8, 5, and 5 millirems. The licensee was unable to explain the discrepancy between self-reading dosimeter values (total of 21 millirems) and the TLD reading of 140 millirems.

It appeared unlikely that a person wearing a visitor TLD could receive an unrecorded dose in excess of 25% of the limits in 10 CFR 20.101(a). Nevertheless, under the licensee's procedures, it was possible for a situation to occur where it was impossible to relate positive TLD readings to doses received by specific individuals. This matter was considered a weakness.

5. A review of the licensee's internal dose control program revealed the following:

   a. Procedure HP 1605.03 required whole-body counts for permanent employees before starting work at the station, annually if they had worked in RACA, following exposure to airborne radioactivity in excess of two MPC-hours per day, and on termination. For temporary employees, the procedure required whole-body counts before starting work and on termination if respiratory protective equipment had been used. A licensee representative stated that in practice annual and termination whole-body counts are performed on all permanent and temporary employees. Records maintained by the licensee indicated that whole-body counting had shown no unusual depositions of radioactive materials. The extent of the whole-body counting program was considered a strength.

   b. The Davis-Besse Radiation Protection Manual contained the company policies and practices regarding health physics activities. Section 3.4.2.2 described the bioassay programs as follows:

      > Urine bioassays for tritium will be performed at Davis-Besse quarterly and when refueling canal is full every two weeks for selected individuals who frequently enter RACA, or when known or suspected exposures to tritium occur.

   The licensee had not developed an implementing procedure to describe the bioassay program in detail, including such factors as

   - selection of program participants
   - measurement techniques and quality control criteria
   - specification of actions to be taken based on measurement results, with action points
   - interpretation of measurement results in terms of quantity present, rate of elimination, and resulting dose

   Records maintained by the licensee indicated that tritium urinalyses had been performed quarterly on selected individuals and that concentrations of tritium in urine were at acceptable levels. However, the absence of a detailed procedure was considered to be a weakness.

6. Discrepancies were found between the procedure governing fit testing of respirators and actual practices. These discrepancies were considered to be weaknesses.

   a. Procedure HP 1605.02, revision 11, Respiratory Equipment, included the following:

      6.5.1.1 Each individual being certified will be fit tested on each type of respirator available.

      6.5.1.2 The fit testing should be quantitative using the respirator fit test system . . . . The only personnel requiring quantitative fit testing should be permanently assigned Davis-Besse personnel. All other personnel may be qualitatively fit tested per NUREG-0041, Section 8.5.

      6.5.1.6 C&HP management personnel shall sign each individual's respiratory protection certification, certifying the individual as far as fit testing is concerned for all respirators for which the individual had an acceptable fit test.

   Personnel interviews revealed that quantitative fit testing of respirators had not been used for approximately 3 years. Qualitative fit testing had been performed exclusively during that period. The licensee used one model of air purifying respirator and one model of self-contained breathing apparatus (SCBA). In practice, the type of respirator used was dictated by the type of work planned and the projected airborne hazards. Personnel interviewed stated that before entering an airborne radioactivity area, individuals were fit tested qualitatively on the type of respirator selected for use.

   b. The licensee had committed to performing qualitative fit tests in accordance with NUREG-0041, section 8.5. This section requires the individual undergoing respirator fit testing to perform several simulated work activities including "running in place." The licensee's procedure on fit testing was ambiguous regarding this requirement. Section 6.5.1.2 of HP 1605.2 excluded "running in place" as a required movement during fit testing. However, the same section also referenced Attachment 3 which included the requirement for running in place. Licensee representatives stated that the procedure was in error and that fit tests did, in fact, include running in place.

   Contrary to section 6.5.1.6 of HP 1605.02, no records were maintained of the results of qualitative fit tests. Licensee representatives stated that the requirements for fit test records was meant to apply only to quantitative fit tests.

7. A review was made of the use of control charts for some laboratory counting instruments. For certain laboratory counting instruments, the licensee prepared a Statistics Control Sheet consisting of a graph of the count rate of a standard source versus time. The graphs included parallel control lines representing ±2 and 3 sigma values of a one-minute count rate for the standard source. A daily check of the instrument was made by running a one-minute count of the standard source. Results were plotted on the Statistics Control Sheet.

   Procedure RC 4528.00, revision 3, Efficiencies for Radiation Detectors, specifies actions to be taken regarding the daily checks.

   (1) If a single count falls outside the ±3 sigma boundary, rerun the count.

   (2) If the second or third count is still outside the boundary, run a new plateau.

   (3) On instruments that do not have an adjustable high voltage, tag the instrument for check-out if a count cannot be obtained that falls within the boundaries of ±3 sigma.

   The following deficiencies were identified:

   a. The Statistics Control Sheet for Instrument No. 2.7.61, an Eberline BC-4 Beta Counter, was examined. During the period April 17 through June 27, 1984, daily checks were outside the 3 sigma control line on 11 occasions. This instrument did not have an adjustable high voltage. There was no evidence that repeated daily checks were run in all cases when the count was outside the control boundary. Neither was there evidence that the instrument had been tagged for check out on these occasions. On June 29, 1984, a new efficiency check was run on the instrument. Testers interviewed stated that they do not routinely examine the Statistics Control Sheet for the beta counters before using the instrument.

   b. The Statistics Control Sheet in use during the inspection for Instrument No. 2.11.17, a liquid scintillator counter used to analyze for tritium in liquid and gaseous effluents, was prepared on the basis of the last calibration made on the instrument in September 1980. The current control chart covering 1984 was found to be incorrect as a result of an error made in calculation of the decay of the standard tritium source. After correcting for the error, it was determined that the daily instrument check was outside the -3 sigma boundary for all but 6 days since January 1, 1984. The licensee maintained that despite the statistical aberrations, tritium analyses have been sufficiently accurate. The licensee provided the results of quarterly confirmatory measurements made with Analytics, Inc. for tritium analyses. These cross-checks, as well as NRC confirmatory measurements for tritium, have been acceptable.

The apparent failure to follow procedures in the instances described above was discussed with the licensee and will remain unresolved pending followup by the NRC Region III Office (546/84-19-20).

8. Certain procedures used for analyses of liquid and gaseous effluents had not been reviewed by the Station Review Board as required by Technical Specifications. Technical Specification 6.8.1 requires that procedures recommended in Appendix A to Regulatory Guide 1.33, November 1972, be established, implemented, and maintained. Technical Specification 6.8.2 requires that these procedures and changes thereto be reviewed by the Station Review Board and approved by the Station Superintendent. Regulatory Guide 1.33, November 1972, recommends the preparation of procedures used to determine concentrations and species of radioactivity in liquids and gases prior to release, including representative sampling, validity of calibration techniques, and adequacy of analyses.

   Licensee procedures AD 1850.01, revision 13, Radioactive Liquid Release, and AD 1850.03, revision 8, Radioactive Gaseous Release, provide requirements to be met in discharging liquids and gases to unrestricted areas. These procedures and changes thereto had been reviewed by the Station Review Board and approved by the Station Superintendent. Certain other procedures covering analysis of samples to determine concentrations of radionuclides released were referenced in AD 1850.01 and AD 1850.03 and were required to be followed. These procedures included the following:

RC 4502.00	Gamma Spectral Analysis
RC 4504.00	Gross Alpha and Beta-Gamma Activity
RC 4509.00	Tritium Determination
RC 4564.00	Determination of Strontium-89 and Strontium-90
LI 4811.00	Gamma Spectroscopy System

   Although these procedures had been approved by the Station Superintendent, none of them had been reviewed by the Station Review Board.

   The apparent failure of the Station Review Board to review procedures as specified in TS 6.8.2 was discussed with the licensee and will remain unresolved pending followup by the NRC Region III Office (346/84-19-21).

CONCLUSIONS

There were significant strengths in the radiological control program as evidenced by strong and competent management and by effective control of both external and internal doses to employees.

There were also weaknesses relating to licensee procedures in the areas of

- lack of procedures (bioassay program)
- procedure content (respirator fit tests; exposure monitoring for visitors)

- review of procedures (no SRB review of procedures related to analyses of effluent samples)
- adherence to procedures (use of laboratory instrument control charts)

Finally, there were weaknesses in the program for calibration and functional check of some counting instruments.

This area was rated Category Two.

UNRESOLVED ITEMS

An unresolved item is a potential enforcement finding which requires additional followup by the NRC Regional office.

Topic	Observation Number	Subject
Committee Activities	7	Failure of the Station Review Board to review procedure modifications within 14 days of their effective date (346/84-19-01).
Committee Activities	8	Failure of the Company Nuclear Review Board to review a recognized indication of a deficiency in the design of a safety-related component (346/84-19-02).
Quality Assurance	2	Failure to include observations of maintenance and operations activities in the quality assurance audit program (346/84-19-03).
Quality Assurance	6	Failure to provide adequate management representation at quality assurance post-audit conferences (346/84-19-04).
Quality Assurance	7	Failure to establish administrative procedures covering procedure adherence, procedure changes, and procedure review and Training, Nuclear Purchasing and Procurement, and Nuclear Facilities Engineering (346/84-19-05).
Design Changes and Modifications	3	Procedural deficiency which provides the potential for omission of safety evaluations required by 10 CFR 50.59 (346/84-19-06).

Topic	Observation Number	Subject
Design Changes and Modifications	4	Failure to update the Final Safety Analysis Report (346/84-19-07).
Design Changes and Modifications	5	Failure to analyze the loading effects of placing temporary lead shielding on safety-related piping (346/84-19-08).
Maintenance	1	Failure to provide the necessary procedures to control the calibration of measuring and test equipment (346/84-19-09).
Maintenance	2	Failure to retain records of evaluations of prior use of defective measuring and test equipment (346/84-19-10).
Maintenance	3	Failure to provide the review and control over vendor manuals used to conduct safety-related maintenance (346/84-19-11).
Maintenance	4	Failure of maintenance work orders to specify adequate work instructions and procedures (346/84-19-12).
Plant Operations	3	Failure to develop and utilize shift turnover checklists as specified by NUREG 0578 (346/84-19-13).
Plant Operations	4	Failure to establish an effective intercom system between the control room and the Shift Supervisor's office as committed to the NRC (346/84-19-14).
Plant Operations	5	Failure to use technically trained individuals as the plant operations Shift Administrative Assistant as committed to the NRC (346/84-19-15).
Corrective Action Systems	3	Failure to evaluate a vendor preliminary safety concern within the required time period (346/84-19-16).
Procurement	3	Failure to review purchase orders before they are issued (346/84-19-17).
Procurement	6	Lack of procedural guidance for procurement of replacement parts to original specifications (346/84-19-18).

Topic	Observation Number	Subject
Procurement	7	Failure to return excess nuclear safety-related material to the storeroom within 30 days after job completion (346/84-19-19).
Radiological Controls	7	Failure to recalibrate radiochemistry counting equipment as procedurally required (346/84-19-20).
Radiological Controls	8	Failure to the Station Review Board to review procedures as required by Technical Specifications (346/84-19-21).
Operating Training	2	Failure to base the requalification lecture series on weaknesses identified by the annual requalification examination (346/84-19-22)

MANAGEMENT EXIT MEETING

An exit meeting was conducted on August 24, 1984, at the Davis-Besse Nuclear Power Station. The licensees' representatives are identified in Appendix A. The scope of the inspection was discussed, and the licensee was informed that the inspection would continue with further in-office data review and analysis by team members. The Team Leader discussed the issuance of an inspection report and advised that the team would draw a conclusion for each functional area inspected and rate the management controls for each area in accordance with the Systematic Assessment of Licensee Performance (SALP) Categories. The licensee was informed that a written response may be requested for any area designated as Category Three. The licensee was also informed that some of the observations could become potential enforcement findings. These would be presented to the NRC Region III Office for followup. The team members presented their observations for each area inspected and responded to questions from licensee's representatives.

APPENDIX A

PERSONS CONTACTED

The following lists the title of persons contacted during this inspection. Other technical and administrative personnel were also contacted.

Corporate Office

Chief Executive Officer
*President and Chief Operating Officer
*Nuclear Vice President
Energy Supply Vice President
Corporate Planning and Administration Vice President
Fossil Facilities Engineering and Construction Director
Transmission and Substations General Superintendent
Nuclear Projects Director
*Nuclear Safety Director
Nuclear Facility Engineering Director
*Procurement Director
*Nuclear Licensing Manager
Nuclear Reliability Manager
Purchasing Manager
Materials Manager
Engineering Services Manager
*Nuclear Systems and Analysis Engineer
Purchasing Office Administrator

Davis-Besse

*Assistant Vice President, Nuclear
Station Superintendent
Assistant Station Superintendent
*Nuclear Services Director
Quality Assurance Director
Director Nuclear Safety
*Nuclear Training Manager
*Administrative Coordinator
Facility Modification Coordinator
*Facility Engineering General Supervisor
Electrical Engineering Supervisor
Mechanical Engineering Supervisor
Instrument & Control Engineering Supervisor
Engineering Adminstration Supervisor
Design and Development Supervisor
Quality Engineering Supervisor
Operations Quality Assurance Supervisor
Material Control Supervisor
*Chemist and Health Physicist

*Attended exit meeting on August 24, 1984.

Health Physics Supervisor
Chemical and Radiochemical Supervisor
Radwaste and Decontamination Supervisor
Operations Supervisor
Operations Engineering Supervisor
Shift Technical Advisor Supervisor
Shift Technical Advisor (3)
Operations Coordinator
Shift Supervisor (3)
Assistant Shift Supervisor (2)
*Operations Engineer (2)
Reactor Operator (2)
Equipment and Auxiliary Operator (3)
*Technical Engineer
*Senior Licensing Specialist
*Maintenance Engineer
Maintenance Supervisor (3)
Maintenance Planning Supervisor (1)
Maintenance Support Engineer (4)
Maintenance Foreman (3)
Maintenance Group Leader (2)
I&C Mechanic (2)
Station Repairman
Station Machinist
Station Electrician (2)
Quality Control Inspector
Nuclear Operations Training Supervisor
Nuclear Support Training Supervisor
Qualification Instructor
Training Instructor (3)
Quality Assurance Auditors (4)
Quality Control Supervisor
Quality Control Inspectors (3)
Lead Instrument and Control Engineer
Lead Electrical Support Engineer
Nuclear Purchasing Coordinator
Analysis and Evaluation Supervisor (Nuclear Training)
Design and Development Supervisor (Nuclear Training)
Stores Foreman
Senior Engineer, Facility Modifications
Code Inspection Supervisor
Storekeeper
Operations Administrative Assistant (2)
Health Physics Specialist
Chemistry and Health Physics Foreman
Chemistry and Health Physics Technicians (6)
Nuclear Reliability Specialist
*Nuclear Safety Engineer
Nuclear Performance Engineer
Nuclear Systems and Analysis Engineer

DOCUMENTS EXAMINED

The following lists the broad categories of documents examined. Those specific documents referenced in the report are listed by title and the most recent revision, if applicable, where they first appear.

Technical Specifications (TS)
Nuclear Quality Assurance Manual (NQAM)
Station Administrative Procedures (AD)
Nuclear Practices and Procedures Manual
Station Review Board (SRB) Committee Charter
Company Nuclear Review Board (CNRB) Charter
Nuclear Facility Engineering Division Procedures
Updated Safety Analysis Report (USAR)
SRB Meeting Minutes
CNRB Meeting Minutes
Facility Change Requests
Field Change Notices
Drawing Change Notices
Intra-Company Memoranda
Quality Assurance Instructions
Quality Control Instructions
Audit Reports
Audit Finding Reports
Corrective Action Reports
Facility Change Requests
Deviation Reports
Nonconformance Reports
Vendor Preliminary Safety Concerns
Performance Enhancement Program - Interim Action List
Davis-Besse Action Required List
Nuclear Safety Report
Plant Operator Logs
Plant Abnormal Procedures (AP)
Maintenance Procedures
Maintenance Instructions
Maintenance Work Orders
Vendor Manuals
Vendor Manual Control Records
Surveillance Test Procedures
Periodic Test Procedures
Instrument Calibration Records
Nuclear Training Department Lesson Plans
Nuclear Training Department Procedures
Nuclear Materials Management Procedures
Personnel Training Records
Apprenticeship Program Standards
Vendor Audit Reports
Contractor Selection Documentation
Commercial Material Upgrade Documentation
1983 and 1984 Master Training Schedule

Procurement Request/Order Documentation Packages
Training System Development System
Radiation Protection Manual
Health Physics Procedures
Radiochemistry Procedures
Laboratory Instructions

APPENDIX B

ABBREVIATIONS

AD	Station Administrative Procedure
AFR	Audit Finding Report
ANSI	American National Standards Institute
ASME	American Society of Mechanical Engineers
B&W	Babcock and Wilcox
10 CFR	Title 10, Code of Federal Regulations
C&HP	Chemistry and Health Physics
CNRB	Company Nuclear Review Board
DBMMS	Davis Besse Maintenance Management System
C&HP	Chemistry and Health Physics
CNRB	Company Nuclear Review Board
DCN	Drawing Change Notice
DVR	Deviation Report
ERV	Electromatic Relief Valve
FCN	Facility Change Notice
FCR	Facility Change Request
FMDP	Facility Modification Department Procedure
FSAR	Final Safety Analysis Report
GET	General Employee Training
GMIC	General Material Identification Checklist
GOT	General Orientation Training
HPI	High Pressure Injection
I&C	Instrumentation and Control

LER	Licensee Event Report
M&TE	Measuring and Test Equipment
MWO	Maintenance Work Order
NAVAIR	Naval Air Systems Command
NCR	Nonconformance Report
NFED	Nuclear Facility Engineering Division
NFES	Nuclear Facility Engineering Division Procedure
NMMP	Nuclear Materials Management Procedures
NQAM	Nuclear Quality Assurance Manual
NRC	Nuclear Regulatory Commission
NTD	Nuclear Training Department
NUREG	Nuclear Regulatory Guide
NSPINT	Nuclear Training Department Procedures
NSR	Nuclear Safety Related
PAS	Performance Appraisal Section
PO	Purchase Order
PQAI	Procurement Quality Assurance Instruction
PR	Purchase Requisition
PSC	Preliminary Safety Concern
QA	Quality Assurance
QC	Quality Control
QCI	Quality Control Instruction
QE	Quality Engineering
RACA	Radiation Access Control Area

RCS	Reactor Coolant System
RCT	Radiological Controls Training
RO	Reactor Operator
RG	Regulatory Guide
SAA	Shift Administrative Assistant
SDR	Supplier Deviation Report
SRB	Station Review Board
SRO	Senior Reactor Operator
TLD	Thermoluminescent Dosimeter
T-MOD.	Temporary Modification
TS	Technical Specifications
USAR	Updated Safety Analysis Report