INDEPENDENT MANAGEMENT ASSESSMENT

OF THE

TOLEDO EDISON DAVIS-BESSE

QUALITY ASSURANCE PROGRAM

BY

CER CORPORATION
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PREPARED BY:

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OCTOBER 4, 1985

CER

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Mr. J. Williams, Jr.
Senior Vice President, Nuclear
Davis-Besse Nuclear Power Station
Toledo Edison Co.
300 Madison Avenue - Mail Stop 3080
Toledo, OH 43652

Subject: INDEPENDENT ASSESSMENT OF THE DAVIS-BESSE QUALITY ASSURANCE PROGRAM

Dear Mr. Williams:

Submitted herewith is the report of the Independent Assessment of the Davis-Besse Quality Assurance Program that was conducted per your request.

This report constitutes our Executive Summary as well as a detailed description of the comments generated within the scope and objectives of the assessment, with specific recommendations for a course of action.

The assessment team will discuss the report and answer specific questions that you may have. Our current plans are to meet with you the week of October 7, 1985.

Thank you for the opportunity to perform this assessment, and sincerely hope it is beneficial to the achievement of your goals for the Davis-Besse Nuclear Mission.

Very truly yours,

Lorren Ramsett

Lorren Ramsett
QA Consultant

LR:kgh

cc: Terry Kishbaugh

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Table of Contents

SECTION I

EXECUTIVE SUMMARY

I. EXECUTIVE SUMMARY

A. INTRODUCTION

This report provides the results of the assessment conducted on the Davis-Besse Quality Assurance Program. The assessment was conducted by Lorren Ramsett and Terry Kishbaugh and consisted of approximately 5 man-weeks of effort. The scope of the assessment consisted a review of the NQAM Volume I and II, selected division procedures, a review of selected records, NRC, SALP, and management assessment documents, and interviews with those individuals identified in III, B of this report. The purpose of the assessment was to make an evaluation as to the strengths and weaknessess of the QA Division relative to the QA programs and procedures. It included the organization personnel, management methods, interfaces with other organizational elements as they pertain to the effectiveness of the QA program and its implementation on the proactive vs. reactive mode of operation. Although a review was made of selected documents and activities, this evaluation should not be construed as an audit.

B. SUMMARY OF FINDINGS AND RECOMMENDATIONS

This Section provides a summary of the comments generated by the assessment team and associated recommendations. The details of comments and recommendations are documented in Section II of this report. The same number system is used for both this section and Section II, in order to provide easy correlation between the Executive Summary, and the detailed comments and recommendations.

1. QUALITY ASSURANCE PROGRAM DOCUMENT

The present structure of the QA program constitutes a combination of a ASME Manual and Operations QA Manual (Vol I) structured to the 18 criteria of 10CFR50, Appendix B, and ASME III, NCA-4000. This Manual is supplemented by NQAM (Vol II)

QA Manual which provides supplemental QA requirements and policy in a functional format but does not give clear direction as to the QA program requirement for the functions identified. It is recommended that the QA program be restructured to provide a (1) ASME Manual (2) Nuclear Operations QA Manual structured in a functional manner to the requirements of N45.2 and ANS18.7 which is "user oriented" by an operational facility. (See II.1)

2. QUALITY ASSURANCE ORGANIZATION

The Quality Assurance organization needs to be upgraded relative to experience levels and expertise for nuclear operations. Additional Quality Engineering skills and functions should be added to the organization. The present organization allows dispersed and redundant functions within the various QA department, such as auditing, surveillance, procedure preparation, etc. It is recommended that the Division be reorganized per the recommended organization that is found in II.2 of the report. The primary advantages of the proposed organization are to separate the Quality Verification (Audit Department), Administration (Quality Systems Department) and the Doing (Quality Engineering Department) functions. The Quality Engineering function would be strengthened by adding a QE Manager who would have sections designated for Quality Engineering, Operations QC and Code Inspection. (For specifics on additional Quality Engineering functions, see II-15).

This restructure would also permit the QA Director to devote more time for management functions since it would relieve him of more in line functions.

3. ANALYSIS OF PEER PERCEPTIONS

It is generally perceived that additional emphasis needs to be directed towards an "aggressive philosophy" within the QA Division. Leading indicators of potential problem areas may be derived by audits,

trending, MWO history, reports, attending meetings and maintaining an inquisitive attitude. By acting on leading indicators and problem perceptions a proactive vs. reactive posture may be instituted. It is recommended that the QA Director institute indoctrination with the QA personnel to instill a more aggressive attitude.

4. EFFECTIVENESS OF THE QA AUDIT SYSTEM

The present QA audit system is rigidly defined and is not "forward-thinking" and adaptable to changing situations. The report emphasizes four recommendations which should provide an improved audit system: (1) the structure of the audit system, (2) assignment of QA auditors, (3) enhanced QA surveillance program, and (4) corrective measures for the audit system whenever QA deficiencies are identified by external organizations.

5. DEFICIENCY DOCUMENTATION

The assessment team concluded that an excessive number of different deficiency document types exist at Davis-Besse. It is recommended that these deficiency documents be limited to: (1) Nonconformance Report (NCR), (2) Corrective Action Report (CAR), (3) Management Corrective Action Report (MCAR), (4) Audit Finding Report (AFR), and (5) Supplier Deviation Report (SDR).

6. TRENDING OF DEFICIENCY DOCUMENTS

It is recommended that the trending program be enhanced to incorporate "cause" and "deficiency" codes which are applicable to both hardware and software deficiencies. These trend codes should be applied uniformly to all deficiency documents as identified in item 5 above. The trending program should have the capability to sort the trend codes by organization, plant systems, activities, etc., such that the trend data will help isolate the problem root cause.

7. EQUIPMENT QUALIFICATION

Resolution of the EQ issues identified in this report should receive immediate management attention by Toledo Edison. The major problem areas appear to be (1) preventive maintenance program does not include the EQ maintenance requirements and replacement intervals (for those items with less than 40-year qualified lives); (2) the EQ files do not provide adequate evidence of qualification; (3) the design control, procurement control, storage and warehousing, installation control, and maintenance and testing control do not adequately address the unique requirements for EQ; and (4) there is a general lack of knowledge within the Nuclear Mission regarding requirements, systems, methods, etc. for maintaining EQ-related equipment in a qualified state throughout its intended life.

8. COMMERCIAL GRADE ITEMS

Commercial grade procurement is an industry-wide problem, and is not unique to Davis-Besse. The report recommends that Toledo Edison specifically address the issue of commercial grade equipment in the policies, program documents, and procedures of the Nuclear Mission. Issues such as 10CFR21 applicability, relationship to the Q-Codes, "dedication" of commercial grade items, etc. should be addressed.

9. GRADED QUALITY ASSURANCE (Q1, Q2, Q3)

Toledo Edison has established a new type of graded quality assurance program, using the basic categories of Q1, Q2, Q3, non-Q, and "A". The former system was Q, F, A, and non-Q. The transition from the old system to the new system does not appear to have been well planned or developed. The report discusses inconsistencies in procedures and implementation.

10. IMPLEMENTING PROCEDURES

The current work task for the formulation of the Nuclear Mission Policy and Organization Manual and the preparation of interdivisional Nuclear Mission Procedures should alleviate the current problem of excessive, redundant, and inconsistant procedures. It is a recommendation by the assessment team that the mission procedures should: (1) contain flow charts whenever possible to assist in procedure preparation and training, (2) provide a time period between the procedure issue date and effective date to allow time for training, (3) provide a formal method for requesting a procedural change, (4) have a system for controlling forms. The QA Division should prepare additional procedures in areas as identified in II-10 of this report.

11. QA ON THE SRB

It was a concern of the assessment team that QA representation was not provided on the Station Review Board. However, during the assessment period the Plant Manager took action to have the Technical Specification changes to include QA on the SRB.

12. TRAINING

It is recommended that a further evaluation be conducted relative to the role of the Training Division in support of Engineering and QA Divisional training. Formal training to QA programs and Mission procedures should be conducted. Also, formal training should be given on special subjects such as Equipment Qualification Program, Methodology for the Identification of Safety-related Systems and Components (Q-list), Fire Protection, etc. Excessive use of "required reading" has been used in lieu of classroom training.

13. INPO EVALUATIONS

The report discusses the apparent deficiencies in the handling of INPO evaluation findings, and that the INPO findings should be treated in a manner similar to NRC Inspection Reports, and QA Audit Findings. Tracking, trending, follow-up, and close-out verification of INPO findings appear to be the weak areas.

14. DOCUMENT CONTROL

The Davis-Besse document control system is decentralized to the Divisions, which is essentially cumbersome and inefficient. It is recommended that the Nuclear Mission Document Control Center be centralized within Administration with designated satellite stations established on an as needed basis for selected documents.

15. QUALITY ENGINEERING REVIEW

The assessment included an analysis of the Quality Engineering review of the design documents, installation and modification documents, and post-installation/modification documents. The QA Division currently includes a Quality Engineering Department which is primarily involved in only procurement quality assurance. The report recommends expanding the role of Quality Engineering to address the other important areas.

16. QA DIVISION/NRC INTERFACES

The role of the QA Division was reviewed in terms of the interfaces with NRC, and the relationships to audit program effectiveness, corrective action, root cause identification, etc. The report recommends that the QA Division take a more active role in interfacing with the NRC, and to consistently initiate changes to the audit/surveillance program in order to preclude NRC identification of quality

deficiencies. Emphasis should be placed on the NRC identified deficiencies, and the root cause, in order to upgrade the previous SALP rating regarding quality assurance.

C. GENERAL CONCLUSIONS

The following items are intended to provide an overall picture of the status and adequacy of the Davis-Besse quality assurance program:

(1) The QA Division has not demonstrated a history of an aggressive attitude for identifying and attacking quality problems.

(2) The QA Division has perhaps in the past, suffered from a lack of management support, both budgetary and organizationally. However, it does not appear that this should be a current concern, considering the present organization of the Nuclear Mission, and increased emphasis on quality assurance and the re-start efforts for Davis-Besse.

(3) The QA Division should consider the organizational changes outlined in the report, with the establishment of an expanded Quality Engineering Department, consolidation of audit and surveillance activities into QA Audit Department, and establishment of the QA Systems Department.

(4) The Nuclear Quality Assurance Manual should be totally re-organized into a functional Nuclear Operation QA Manual,, and the ASME Code QA requirements should be organized into a separate QA Manual. The hierarchy of policies, manuals, and procedures should be clearly established, as discussed in the report.

(5) QA should upgrade the qualifications and experience of the QA staff, with emphasis on assuring that the qualifications and experience are at least equal to their peers in the other Divisions on which they perform reviews, audits, inspections, or surveillance.

(6) A concentrated effort should be made to develop an effective program of identification of root causes of quality problems and prompt corrective action. QA should maximize the utilization of trend analysis in this effort.

(7) The Nuclear Mission procedures will have an important function of linking the various policies, programs, and procedures into a more cohesive system, and therefore are urgently needed.

(8) Training is an area that should be significantly enhanced, coupled with less reliance on "required reading" as a training tool.

SECTION II

DETAILED ASSESSMENT RESULTS

II. DETAILED ASSESSMENT RESULTS

1. QUALITY ASSURANCE PROGRAM DOCUMENTS

COMMENTS

The assessment team reviewed the basic program documents which establish Toledo Edison's compliance with QA requirements for operating the Davis-Besse nuclear power plant. The Nuclear Quality Assurance Manual (NQAM) is the basic document that has been established in response to such requirements.

The NQAM was developed to satisfy two basic needs: (1) the operations QA requirements of the NRC which include 10CFR50 Appendix B, ANSI N18.7 and ANSI N45.2 (as endorsed by Regulatory Guide 1.33) and (2) the requirements of ASME (Sections III, VIII and XI) code requirements, and the National Board requirements, and the NR stamp. Consequently, the NQAM was developed in response to the 18 criteria format of ASME Section III, NCA-4000, and 10CFR50 Appendix B.

It was stated to the assessment team, that one of the primary reasons for keeping the 18 criteria format, was that any other format (such as, a functional format) was not acceptable to the ASME and National Board.

The 18 criteria format stems principally from the early development of QA requirements about 15 years ago when the NRC developed 10CFR50 Appendix B. The NRC has finally publicly stated that 18 criteria were developed primarily for the design and construction phase of nuclear plants, and that the 18 criteria format is not well-suited for an operations QA program. The Standard Review Plan and 10CRF50 Appendix B are still being utilized as the primary review tools of the NRC Staff.

However, for the utility with an operating power plant, the 18 criteria format is cumbersome, and is not user-oriented. The basic program commitments of the utility are best addressed along the functional lines of ANSI N18.7,

which was developed for the operations phase of nuclear power plants.

The NRC prefers the 18 criteria format because is easier for the NRC to review the QA manual against the Standard Review Plan. However, the utility should be looking at the long-range implementation benefits of a functionally oriented operations QA program, and not the convenience of the NRC. A matrix of the 18 criteria of 10CRF50 to the functional N18.7 QA Manual can serve the same purpose.

A functional operations QA program is based upon both the unique organizational needs of the utility, and the QA requirements as they apply to plant operations phase.

A functional operations QA program is much more easily implemented by the plant staff, engineering, training procurement, maintenance, operations, and QA organizations, than an 18 criteria format. The functional QA manual can become an effective management tool which defines management systems for the operating plant, and which is organized along the lines which apply to the operation's organization.

The QA program at Davis-Besse is further complicated by the introduction of Volume 2 of the NQAM. The Volume 2, which is about to be issued, consists of a mixture of policy, program requirements, and detailed implementation requirements. Volume 2 was developed hastily, with the intent of appending it to the 18 criteria QA manual (Volume 1). Volume 2 is organized functionally, and contains references to Volume 1 for 18 criteria requirements. Consequently, the user is repeatedly referred back and forth between two separate manuals to simply read and understand the QA manual requirements. However, Volume 2 only specifies the sections of Volume 1 which are applicabme, but does not identify the specific QA requirements.

The QA program development will be enhanced by the development of Nuclear Mission Procedures (NMP's) for the functions which cross Division boundaries. However, without specific QA policy from high-tier documents, the individuals who attempt to write procedures to implement the NQAM are faced with a difficult task.

RECOMMENDATION

Toledo Edison should develop a functionally oriented Nuclear Operations Quality Assurance Manual (NOQAM) to replace the existing 18 criteria format NQAM. The existing NQAM can be modified into a stand-alone ASME Code Manual. The Volume 2 of the NQAM which is now being issued can be modified into a functional NOQAM. The assessment team estimates that at least 75% of the material required for an ASME QA Manual and a Nuclear Operations QA Manual, is already developed in the current Volume 1 and Volume 2 of the NQAM.

Additionally, it is recommended that Toledo Edison develop the top-level Nuclear Mission Policy and Organizational Manual document which will establish the framework for the entire hierarchy of policy documents, program manuals, and implementing procedures.

The Nuclear Mission Policy and Organization Manual would provide the overall direction for the entire Mission, and would include policies regarding QA for both nuclear and non-nuclear applications and other policies regarding the Mission at Davis-Besse. This document establishes the framework for the lower tier manuals and procedures.

The Nuclear Operations Quality Assurance Manual (NOQAM) should: (1) define the QA requirements to which Toledo Edison is committed, (2) organize the requirements along the lines of the Toledo Edison organizational structure, (3) establish duties and responsibilities and (4) prescribe general methods for implementation.

The ASME Quality Assurance Manual (AQAM) should be organized according to the requirements of Section III, NCA-4000, of the ASME Boiler and Pressure Vessel Code. This 18 criteria format is preferred by the National Board and the Authorized Nuclear Inspection Agencies. It would serve a single purpose for ASME code-compliance and the "NR" stamp responsibilities. The requirements of the AQAM will be factored into the implementing division procedures.

The Nuclear Mission Procedures (NMP's) should prescribe the detailed interfaces between Divisions within the Nuclear Mission. The NMP's hierarchy, translate the policies into working level procedural requirements. In many instances, it will not be necessary to generate a NMP, if the subject matter does not cross division boundaries. In this situation the requirements would flow from the Nuclear Mission Policy and Organizational Manual, directly to a Division procedure(s).

The NMP's should be uniquely identified such that those which will be required to implement the QA program are identifiable from those which are administrative in function. The assessment team recommends consolidation of existing divisional procedures, to the maximum extent possible. Several of the existing division procedures can be combined in order to accommodate the recent organizational changes.

2. QUALITY ASSURANCE ORGANIZATION

COMMENTS

The assessment team evaluated the QA Division organizational structure and the functional responsibilities of each of the four Departments which makeup the division. These QA Departments consist of Quality Engineering, QA Operations, Quality Control, and Code Inspection. The major function of each of these Departments are as follows:

Quality Engineering Department

a) Audit/surveillance (Bechtel, B&W, and Suppliers)
b) Inspection (Supplier and Receipt)
c) Supplier Deficiency Document administration and control
d) Supplier QA program and procedure reviews
e) Supplier Document Reviews
f) Procurement specification and requisition reviews.
NOTE: These functions consist of procurement QA/QC and Audits with the exception of (e) and (f) which are Quality Engineering.

Operations QA Department

a) Audits/surveillance (TED internal, construction contractors)
b) QA/QC procedure preparation/review (QAI's and Mission procedures)
c) Installation specification review
NOTE: Eighty percent of the effort of the Department is associated with audits.

Quality Control Department

a) Inspections (MWO's and construction)
b) Surveillance (surveillance and performance testing)
c) NCR administration
d) Preparation of QCI's
e) NDE personnel qualification and certification
NOTE: These activities are essentially hardware oriented.

Code Inspection Department

a) Inspection (special piping and ISI)
b) Welding procedure and personnel qualification.
c) ASME/ANSI code enforcement and administration.
NOTE: This Department is responsible for ASME Code Section III, VIII, XI, and NR stamp compliance.

The QA Director has recently proposed a Quality Systems Department. This Department would be responsible for:

a) QA Division QA programs and procedures development and review of all mission procedures.
b) Coordinate QA Division personnel training, qualification and certification.
c) QA Records Administration
d) QA Department goals and objectives
e) Administer deficiency document trending and commitment tracking/verification
f) Review technical installation specifications
NOTE: The formulation of this Department is a very positive and needed QA Division function.

An analysis of the QA Department functions indicated the following:

a) The Quality Engineering Department functions primarily as procurement QA.
b) The Operation QA Department functions primarily as an audit function.
c) All departments are responsible for procedure preparation and review with the exception of the Code Inspection Department.
d) Quality Engineering functions are dispersed among different Departments and are not all inclusive as to what a Quality Engineering function should entail.

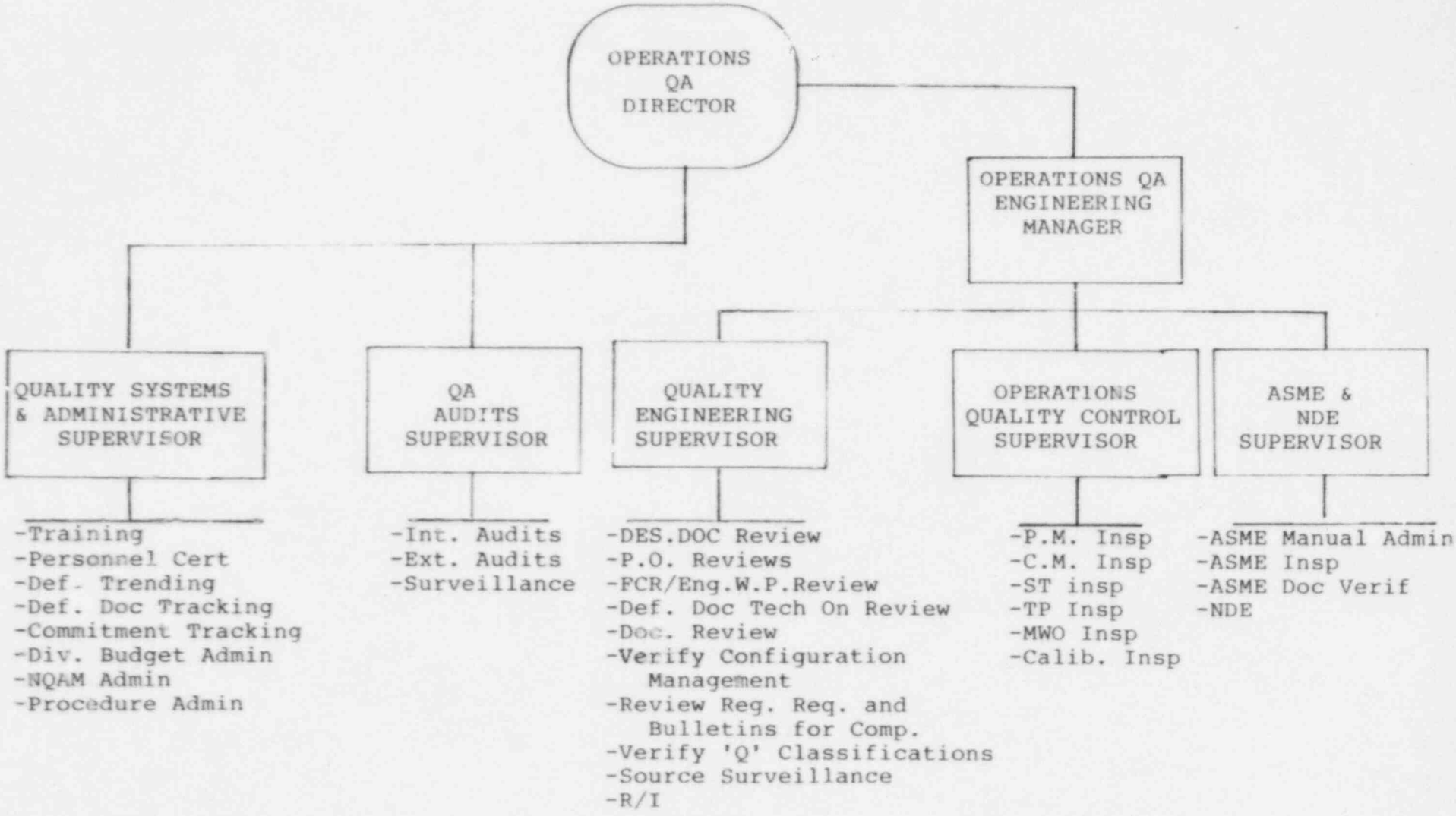
e) Audit functions are dispersed among these departments,
f) Inadequate assignment of responsibilities for:

1. Deficiency document trending and administration
2. QA Department personnel training
3. Surveillance and overview of plant functions such as operator activities.
4. QE review of MWO/FCR work packages and associated hold points.
   NOTE: Items 1 and 2 will be incorporated into the proposed Quality Systems Department.

RECOMMENDATION

The assessment team recommends the following organizational structure: (See Page 2.8)

RECOMMENDED QA DIVISIONAL ORGANIZATION



This proposed organization has the following advantages:

a) The Quality Systems and Administration Department would be responsible to the QA Director for QA Division QA program and procedure preparation and review, and administrative functions.
b) The QA Audits Department shall be responsible to the QA Director for assurance that all elements of the QA program and related procedures are being effectively complied with or deficiencies identified to TED management.
c) Establishment of an Operation QE Quality Engineering Manager who is responsible to the QA Director for the administration of the new Quality Engineering Department and the existing operation, QC Department and the Code Inspection Department. The Operations QE Manager is responsible for the "DOING" functions of the Department as opposed to the "ADMINISTRATION" functions of the Quality Systems & Administration Department and the "VERIFICATION" functions of the Audit Department.
d) The recommended organization will allow the QA Directors to better delegate functions with fewer interfaces and to allow more time to perform Division Management functions.

3. ANALYSIS OF PEER PERCEPTIONS

COMMENT

Interviews with interfacing divisions were conducted by the assessment team to evaluate perceptions of peers relative to strengths and weaknesses of the QA Division. As a result, it was generally concluded that additional emphasis needs to be directed toward an "aggressive philosophy" within the QA Division. A perception was developed that in general, each QA Department performs their responsible functions as identified in job descriptions and QA programs and procedures very well. However, inadequate attention is given to the prevention of potential problem areas by performing monitoring, checking, random surveillances, "special condition" QA planning by forward attention and an inquisitive posture to ask how and why. In general, a more profound proactive vs. reactive posture should be realized by QA personnel as opposed to relying that someone else has the responsibility and will perform correctly. Some examples where a more proactive posture could be realized are:

a) Why are deficiency documents not being closed out in a timely manner. (Question the validity of closure delay)
b) Question the validity of a "Q" List designation when in doubt. Is the "Q" List complete?
c) Is licensing picking up all required regulatory requirements and commitments on the "tracking system" and are they being resolved adequately in a timely manner?
d) Are all MWO's and procurement documents which are safety-related being adequately designated as "Q" items?
e) Is the configuration management system adequate?
f) Is the Equipment Qualification Program (EQ) adequate per requirements?
g) Do special construction and test activities require additional quality planning, verification or the establishment or a readiness review program?

Additional perceptions conveyed were that the audits conducted were not in depth and were more directed to strict compliance to procedures, hence, the "big picture" or problem areas were often overlooked. Divisional peers want the QA Department to identify potential problem areas within the areas of their responsibility and intend to look upon the QA Division as a management tool.

RECOMMENDATION

It is recommended that through further QA indoctrination by the QA Division Director the philosophy of aggressiveness toward problem identification be instituted and conveyed to QA personnel.

4. EFFECTIVENESS OF THE QA AUDIT SYSTEM

COMMENTS

The QA audit system is one of the most essential management tools of the nuclear utility. It is responsible for assuring compliance with both externally imposed requirements, and internal management requirements. The audit system should be identifying problems, and providing recommended corrective actions. The audits, and the frequency of audits, should consider changes in the regulatory environment, organizational changes, areas of known strengths and weaknesses, and past performance of the audited organizations.

Certain audits are required at intervals specified by the Technical Specifications. The remaining audits can be determined by the utility management, subject of course, to NRC review and inspection, and the available resources of the QA organization. An additional management tool is the QA surveillance of organizations and activites.

Toledo Edison has established both the audit system and the QA surveillance system, and is in compliance with regulatory requirements and industry practice in these areas. However, the assessment team concluded that three problems exist with the present system: 1) the audit system is very rigidly defined, and is not "forward-thinking," and adaptable to changing situations, (2) the auditing is "compartmental" in the assignment of auditors, and (3) the QA surveillance system is not well planned and scheduled.

The present system of QA audits is designed to cover the elements of the QA Program and the 18 criteria over a 2 year period, which is consistent with industry practice and NRC guidance. Subjects for QA audits have been identified, and are annually scheduled. Audit Team Leaders are identified well in advance, and typically are responsible for the same audit subjects from one year to the next. This method takes

advantage of experience gained from one audit to the following audit, but diminishes cross-fertilization of expertise in the QA Division, and the identification of problems which may be beyond the scope of a single audit.

The highly structured audit system lends itself to specialization within the defined boundaries, while potentially ignoring what would be the key problems.

From the information reviewed, it does not appear that the results of trend analyses have been incorporated into any adjustments of the QA audit topics or audit frequency.

The linkage between problem identification (AFR's etc.), adjustment of the audit program, and trending, seems to be an essential element that has not been addressed in the Toledo Edison QA system.

The assignment of QA auditors is an important part of the QA audit program. At Toledo Edison, certain specialties have been established within the QA organization. This has contributed to the relatively narrow focus of the audit system, while potentially missing the "big picture" problems.

With regard to the QA surveillance program, it appears that this can be an effective system at Toledo Edison. The QA surveillance contributes to identification and resolution of problems, and also minimizes the administrative workload that is required by formal QA audits. However, it appears that the existing QA surveillance program is not well planned or scheduled. The surveillances appear to be used as spot coverage of activities that are discovered, rather than a management program to prevent, detect, and correct QA deficiencies. This is similar to other observations contained in this report, which identify the reactive, rather than proactive performance of the QA organization at Toledo Edison. An effective QA surveillance program

would include the elements of trend analysis, corrective action commitments, regulatory actions, known or suspected problems, and coverage of all organizations responsible for quality-related activities.

RECOMMENDATION

Toledo Edison should take the following measures to improve the QA audit and QA surveillance program in each of the areas of weakness:

(1) The relatively rigid structure of QA program audits should be re-assessed, with the goal of developing an audit system (a) that is more responsive to the organizational needs of Toledo Edison, (b) that is more anticipatory of potential quality problems, and (c) that includes trend analysis as a factor in the scheduling and frequency of QA audits.

(2) The system of assignment of auditors should be re-examined. The present system develops detailed expertise in relatively narrow specialties. This may be beneficial for certain disciplines (e.g., security, health, physics, etc.) but may be to the detriment of a well-rounded QA organization.

(3) The QA surveillance program should be enhanced by: (a) a detailed surveillance/monitoring plan and schedule, (b) coverage of each organization performing quality-related activities, (c) adjustment and flexibility for unplanned or special situation, and (d) utilization of feedback from the trend analysis and/or audit systems to provide additional QA coverage of suspected problem areas.

(4) The management of the QA organization should routinely question the effectiveness of

the QA audit system, whenever deficiencies are discovered by external organizations, (NRC, INPO, etc.). The QA management should ensure that the root causes of the deficiencies are identified and corrected, but should also examine the reasons why the Toledo Edison QA audit system did not previously identify the problem, and take corrective measures to adjust the audit program, accordingly.

5. DEFICIENCY DOCUMENTATION

COMMENT

It is the opinion of the assessment team that an excessive number of types of deficiency documents are being used at Davis-Besse. Examples of these deficiency documents are:

- o Deviation Report (DVR) - used by the station personnel
- o Nonconformance Report (NCR) - used for hardware nonconformances
- o Surveillance Report (SR) - used by anyone to identify a deficient condition
- o Corrective Action Reports (CAR) - used for significant conditions adverse to quality
- o Audit Finding Reports (AFR's) - used for audit findings and other identified deficiencies
- o Supplier Deviations Reports (SDR & SDDR) used for deficiencies identified by receipt inspection and supplier facilities.

RECOMMENDATION

It is recommended that the following deficiency documents be used:

1) Nonconformance Report (NCR) - used to identify hardware related nonconformances (except supplier related deficiency)
2) Corrective Action Report (CAR) - used to identify all software related deficiencies (i.e., nonconpliance to QA programs and Mission procedures)
3) Management Corrective Action Report (MCAR) - used to elevate deficiency documents which meet the criteria for significant conditions adverse to quality for management attention and/or corrective action and to evaluate for reportability.

4) Audit Finding Reports (AFR's) - used for audit findings only.
5) Supplier Deviation Report (SDR) - used for deficiencies supplier related only.

Any deficiencies identified during surveillances or station observations should be identified (if appropriate) on a NCR, CAR, LER, or MWO.

6. TRENDING OF DEFICIENCY RELATED DOCUMENTS

COMMENTS

A review of current trending activities indicated that the Quality Systems Group shall have the responsibility for tracking and trending deficiency documents. Currently, different deficiency documents, such as the NCR, AFR, and the SDR have unique cause code attributes which are few in number and do not have deficiency codes. Deviation Reports (DVR's) and Surveillance Reports (SR's) are not trended.

The QA Department uses an excellent system, DBMMS to maintain status of open and closed deficiency documents and identify where the document action item responsibility is in the closure process. A falacy in the system is that deficiency documents are not statused as to priority requirements for closure.

RECOMMENDATION

It is recommended that a program for the identification of cause and deficiency codes be established which is broad enough in scope to cover all hardware and software items. These codes should be placed on all deficiency documents on spaces provided for on the deficiency forms by Quality Systems Department personnel. The cause-deficiency codes should be imputted into the computer for establishing trends which may be sorted by responsible organizations, systems, QA program criteria and activities. Identified trends should be reported and evamuated for root cause and for corrective action when appropriate, and reported to management. This information should also be used to trigger additional audits and/or surveillance in potential problem areas. Also, a system should be devised for applying a priority code on deficiency documents based on outage requirements, safety-related, EQ-related, balance of plant related, etc.

7. EQUIPMENT QUALIFICATION

COMMENTS

The Equipment Qualification (EQ) program at Toledo Edison has been underway for several years, and has paralleled the industry efforts for EQ.

In the process of reviewing the status and adequacy of QA, as related to the EQ program, the assessment team concluded that there are major deficiencies at Toledo Edison which require immediate management attention. It is recognized that these issues are currently under review by Toledo Edison management. However, the assessment team concluded that a major problem has been inadequate management attention to the EQ issues. Management, including the QA Divison, has allowed a potentially significant problem to be identified several months ago, but to remain dormant and uncorrected until the present time.

To the credit of the QA Division, they commissioned a consultant study of the EQ program for Davis-Besse. The study was performed in early 1985, (February-March time frame). The consultant (DiBenedetto Associates) identified several problems with the EQ files and the preventive maintenance program, and presented their findings in a report to Toledo Edison.

It was not until mid-August that AFR's were issued by QA to formalize the corrective action measures for the EQ problems. Responses were due by mid-September. NRC has issued its Generic Letter informing the utilities that equipment not qualified will result in civil penalties of $5,000 per item (of unqualified equipment) per day of plant operation.

Interviews with Toledo Edison personnel indicate that the organizations involved (Engineering, Operations, QC and QA) are generally not knowledgeable of the EQ program requirements. The status of EQ program implementation (the PM program in particular) lags the efforts of other utilities, both operating plants and NTOL's.

The specialized expertise for equipment qualification (both environmental and seismic) has not been infused into all of the organizations responsible for EQ implementation. It appears that engineering has the requisite expertise, but has a limited role; (maintenance requirements are not identified and controlled); QA is lacking in EQ expertise (the most knowledgeable person has been transferred to Engineering); and Operations has been relying on Engineering for input to the PM program, with apparently little or no involvement to identify and solve the EQ-related PM issues on their own.

RECOMMENDATION

Toledo Edison should undertake several efforts to improve the current conditions relative to the EQ program requirements, as described below:

1. Establishment of a central organization that will be responsible for all EQ issues. This organization should be the primary organization for EQ with which all of the other organizations would interface with.

2. Quality Assurance should initiate both surveillance and audits for EQ-related activities (design, procurement, installation, maintenance, and modifications) which may affect the qualification status of both electrical (Class IE) equipment and EQ-related mechanical components.

3. Training programs should be developed to ensure that the requisite EQ expertise is developed and infused throughout the engineering, operations, QA, and QC organizations.

4. Immediate measure should be taken to integrate the EQ requirements for maintenance and replacement intervals into the plant PM program. This information should be extracted from the EQ files and developed into a Toledo Edison EQ summary document which would be controlled and maintained for all EQ-related equipment, and should be considered as part of the overall configuration management plan.

5. The existing EQ files should be reviewed to assure conformance with NRC and Toledo Edison requirements. The design control process for FCR packages should be reviewed to assure that all EQ-related design changes are processed through engineers that are responsible for EQ requirements.

8. COMMERCIAL GRADE ITEMS

COMMENT

Procurement of commercial grade items was reviewed by the assessment team. The issue of commercial grade procurement is becoming increasingly important, and is receiving additional attention by regulatory authorities. Resolution of the issues surrounding commercial grade procurement requires a uniform approach by the utility, which should consider all factors; such as, policies for 10CFR21 applicability, policies for like-for-like purchases, off-the-shelf purchases, allowable substitutions, upgrading from non-safety related to safety related, "dedication" from commercial grade to "basic component" under Part 21 definitions, etc.

Some of the issues are addressed in existing procedures, but it does not appear that Toledo Edison has adequately addressed all of the relevant issues. For example, the relationships between commercial grade procurement and the new system of "Q" levels (Q1, Q2, Q3) are not defined. The procedures do not define the point at which 10CFR21 responsibility begins for commercial grade items, e.g., (1) at receipt inspection at the Davis Besse warehouse, or (2) removal from the warehouse, prior to installation, or (3) installation or post-installation testing. This "dedication" process under 10CFR21 should be defined in the procedures.

In the process of interviewing various personnel in both the QA organizations, and the organizations which interface with QA, it became evident that there is not a common understanding or approach regarding commercial grade procurement.

RECOMMENDATION

Toledo Edison should develop an overall policy, that is implemented through detailed procedures for the procurement of commercial grade items.

This could be contained in the Nuclear Mission Procedures. The policy and procedures should address the aforementioned items, as well as the applicability to EQ-related purchases, Certificates of Conformance, "Q"-Levels, etc.

9. GRADED QUALITY ASSURANCE (Q1, Q2, Q3)

Toledo Edison has recently revised the QA classification methodology to provide for three levels of quality designation. The three levels (Q1, Q2, and Q3) should identify the programmatic requirements. There are, therefore, conflicting procedures between the old system and the new system. Currently, Toledo Edison is in a transition stage from the old system (Categories of Q, F, A, and Non-Q) to the new system of Q1, Q2, Q3, and Non-Q, (also "A" for non-Q, but which is ASME, Section VIII related.)

The transition to the Q1, Q2, Q3 system (hereinafter referred to as the "graded" QA system) is not well defined or controlled. Currently, both the old system and the new system are simultaneously in effect. There are therefore, conflicting requirements in the existing procedure, between the old system and the new graded QA system. The NQAM establishes the graded QA system, however all of the implementing procedures have not yet been updated to the graded QA system. Consequently, the implmentation of the new system is not uniform.

There are conflicting definitions between the NQAM and the Facility Engineering Procedures, for Q1, Q2, and Q3.

Most of the personnel responsible for implementing the graded QA system have not received formal training on how to designate a component or part as Q2 or Q3.

The designation of the Q-Code is a very critical step in the Toledo Edison QA system. For example, if an individual designates a purchase requisition as "non-Q", it bypasses both the engineering and the QA reviews. If a Facility Change Request is designated as non-Q, it bypasses the QC review for hold points and witness points. It is therefore essential that qualified personnel be assigned to the task of designating Q-codes on such documents, and that they receive the necessary training on the graded QA system.

Currently, the listing for Q3 and Q2 are in draft form (a draft was being circulated for approval at

the time of this assessment), however the listings are only to the system level, and provide little useful guidance to the engineer who is procuring a spare or replacement part of component.

Additionally, the QA Manual and related division procedures do not specify an effective date by which the graded system is to be implemented.

In summary, it appears that the development of the graded QA system is a commendable step in the right direction, and should prove to be a long term benefit to Toledo Edison. However, it does not appear that the transition has been well planned or coordinated with the requisite attention to details and implementation schedules.

RECOMMENDATION

Toledo Edison should specify the graded QA program requirements for each of the identified Q-levels, and these graded QA program requirements should be translated into the applicable procedures or technical specifications. Measures should be taken to reconcile the discrepancies of the definitions for Quality Levels. The definitions contained in the NQAM and the Division Procedures should be consistent.

Training should be provided to the cognizant personnel who are responsible for assigning Q-codes to technical documents.

Toledo Edison should reconsider the process by which Q-codes are assigned, to assure that documents, such as MWO's, FCR's, Purchase Requisitions, etc., are not improperly assigned "non-Q" codes.

10. IMPLEMENTING PROCEDURES

COMMENT

A review was made of selective Quality Assurance Instructions (QAI's) and Quality Instructions (QCI's) which were prepared to implement the NQAM. It was verified that a redundancy exists in procedures among QA Departments and also a redundancy and inconsistency in procedures content between Divisions. Within the QA Department, there is a lack of procedures to control the process of conducting management QA assessments, QA process for procurement, bidder evaluations, and QA review of purchase orders to verify consistency with QA approved purchase requisitions. In general, procedures do not contain flow charts, provisions for formal procedure change request, provisions for establishing effective dates after issuance of procedures to allow time for training, and control of forms used within procedures. The current program underway for the preparation of Nuclear Mission Procedures should alleviate the redundancy and inconsistency of procedures.

RECOMMENDATION

It is the recommendation of the assessment team that the formulation of the Nuclear Mission Policy and Organization Manual and the Nuclear Mission Procedures ensure that the process of procedure development minimize the redundancy and inconsistency of interdivisional procedures. Also, the procedures should: (1) maximize the use of flow charts (which enhance procedural development and are a useful training tool), (2) provide a time period between the procedure issue date and effective date for adequate training of personnel to the procedure and; (3) provide a procedural mechanism for a requested procedure change with identified rationale. It is also recommended that Nuclear Mission Procedures address the functions of QA review of procu-

rement documents, administration of management QA program assessments and the process of the evaluation of bidder proposals. To ensure that the correct forms addressed within specific procedures stay current, a forms control system should be addressed within the NMP's to ensure that forms are controlled and cannot be changed without a commensurate procedure change.

11. QA ON THE SRB

COMMENT

Until recently, Quality Assurance has not actively participated in Station Review Board (SRB) meetings. It was explained to the assessment team that due to the Technical Specification listing of SRB members, QA was not considered a member of SRB.

Davis-Besse is one of the very few plants that does not have a QA or QC representative as a full member of the SRB.

It is essential both from the QA perspective and the plant operation (and SRB) perspective that QA and SRB work closely together on items which are of joint responsibility. This includes procedures and procedure revisions, facility modification requests (FCR's), etc.

During the period of the independent assessment, this comment was relayed to plant management, and immediate action was taken by Davis-Besse to include QA on the SRB for the upcoming revision to the Technical Specifications.

RECOMMENDATION

No additional recommendation is offered at this time. QA has been recently attending the SRB meetings, and action is being taken to revise the Technical Specifications.

12. TRAINING

COMMENTS

The training system was reviewed by the assessment team only from the perspective of interfaces with the QA Division, and for an overall evaluation of the Quality Awareness program. From interviews with cognizant personnel, and review of selected procedures, it appears that the primary role of the training division is to support the training needs of the plant staff, and that the support of training needs for the QA and Engineering organizations receives minimal support.

There appears to be a general organization interface problem between QA, Engineering, and Training, which should be reviewed and addressed by management.

The Training Division has apparently been criticized by QA for training deficiencies, and a frequently used audit finding by QA, is to cite inadequate training, rather than QA defining the root cause of the problem. QA, on the other hand, believes that the Training Division is not providing sufficient support for the Mission-wide training needs.

Throughout the assessment period, training was discussed relative to each individual's understanding and knowledge of the procedures that impact the requirements of his/her function. There seems to be very little formal classroom training on procedural requirements, and there is extensive reliance on "required reading lists." From some of the records reviewed, it did not seem plausible that an individual could adequately read and understand the material within the time periods that were documented.

Training in certain technical areas, such as, Appendix R (Fire Protection), Equipment Qualification, etc., has not been thorough nor widely enough distributed throughout the Nuclear Mission organizations.

Additionally, training interfaces are not well coordinated. The recent MOVATS training that was provided to maintenance personnel, was not offered to the QC personnel who are responsible for QC coverage for the current MOVATS work.

RECOMMENDATION

The role of the Training Division, relative to supporting the needs of Engineering and QA Divisions should be further reviewed. Training needs should be assessed and defined. Formal classroom training should be provided for new or significantly revised procedures. Less reliance should be placed on "required reading lists." Quality Control and other organizations should be provided the equivalent training as the organizations with which they interface. Certain technical training (e.g. EQ and Appendix R) should be provided to the responsible organizations.

13. INPO EVALUATIONS

COMMENTS

The assessment team reviewed the INPO Evaluation Reports for 1982 and 1984, and performed a review of actions that were commitments contained in the Toledo Edison responses to INPO findings.

In general, it was found that there is not an effective tracking system to ensure that Toledo Edison commitments to INPO are promptly addressed, implemented, and closed out.

The INPO evaluations are not tracked by Licensing, QA, or the plant staff. There is no documented verification that commitments have actually been implemented.

For the current INPO evaluation due to begin in October, there was no evidence that any Toledo Edison organization had performed an analysis of previous INPO findings to assure that previous findings had been closed out.

RECOMMENDATION

Toledo Edison should provide a system of tracking, close-out, and verification of implementation for commitments made in response to INPO findings. The system can be the same as that utilized for NRC Inspection Reports, or Quality Assurance AFR's. One acceptable method would be for QA to issue CAR's or AFR's for each INPO finding.

14. DOCUMENT CONTROL

COMMENT

It was verified by the assessment team that the Davis-Besse Document control function is decentralized to each Division. As a result, each division controls their own manuals, drawings, documents, etc. Not only is this system inefficient but it creates additional administrative work for the various Divisions.

RECOMMENDATION

It is recommended that a Nuclear Mission Document Control Center be established under Administration as a focal point for all Document Control activities with satellite station established on a need basis for pre-determined documents.

15. QUALITY ENGINEERING REVIEW

COMMENTS

In the review of the QA organization structure and functions, it was noted the absence of a quality engineering review of documents, such as MWO's modification/installation packages, etc.

The existing Quality Engineering Department functions are primarily in the area of procurement quality assurance, with little or no involvement in the design control, installation control, or post-installation testing functions.

The typical architect-engineer organization usually provides for quality engineering reviews of design and installation-related documents, as well as procurement-related documents. The quality engineering function is intended to ensure that quality requirements are being included in the design, installation, and testing functions, as well as the procurement functions. Since, Toledo Edison intends to become much more self-sufficient in the performance of engineering w o r k . There should be a corresponding degree of quality engineering into the design and installation activities.

RECOMMENDATION

The assessment team recommends the formation of a Quality Engineering Department within the QA Division, (see Section II.2 of this report), that would have broad responsibilities for quality engineering functions. In addition to review of procurement documents, other activities should include:

- o Drawings, specifications
- o Testing Documents
- o Q-Lists (Q1, Q2, Q3, etc.)
- o Safety-Evaluations (10CFR50.59)
- o Maintenance Work Orders

- o Deficiency Documents (NCR's, DVR's, etc.)
- o Facility Change Requests and FCR Package Documents
- o Licensing submittals
- o Position statements (e.g. EQ, Appendix R, review of replies to NRC Inspection Reports, etc.)

The Quality Engineering Department should interface directly with both the plant staff and facility engineering, as well as NRC and licensing.

16. QA DIVISION/NRC INTERFACES

COMMENT

As a general observation, the assessment team noted that the QA Division's interfaces with the NRC are not as significant as compared to some other utilities.

The basic reason for this concern, is that QA does not appear to take an active role (See Section II.3 and II.4) in aggressively pursuing quality-related problems and adjusting or re-directing the QA audit system to correct the root causes of problems which are identified by the NRC.

QA is not required to be in the review and approval cycle for responses to NRC Inspection Reports. QA is not required to attend NRC pre-inspection or exit meetings. The corrective action audits by QA do include verification of implementation for commitments made to the NRC. However, it appears that this does not provide thorough coverage of QA verification of NRC-committed items, root cause analysis, and preventive and corrective measures to preclude repetition.

RECOMMENDATION

Toledo Edison should re-examine the role that the QA Division has with respect to interfaces with the NRC. This can be accomplished through efforts by the QA Division to establish close interaction with the NRC staff, in order to provide Toledo Edison with early detection of potential quality problems to avoid NRC enforcement actions. These efforts should be combined with systems for ensuring prompt corrective action. These measures should include initiation of CAR's, AFR;s, increased surveillance, trending of NRC-identified deficiencies, etc.

SECTION III

APPENDICES

APPENDIX A

QUALIFICATION OF ASSESSMENT TEAM

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QUALIFICATIONS OF INDEPENDENT ASSESSMENT TEAM

The following is a summary of the qualifications of the independent assessment team, Mr. L. Ramsett and Mr. T. R. Kishbaugh.

Mr. Ramsett has had extensive experience in managing QA Departments for several nuclear projects. As such, he had developed several nuclear QA programs and has been responsible for their successful implementation. He had also prepared several ASME Sections III and VII programs. As a consultant, he has provided QA program assessments and corrections to QA systems for nuclear utilities. Mr. Ramsett has developed QA program systems for the Department of Energy as related to the nuclear waste repository project and was the team leader for an independent NRC evaluation of a utilities deficiency document corrective action system. He is a professional engineer and is affiliated with ASQC and ANS.

Mr. Kishbaugh is a recognized expert in the field of quality assurance for operating power plants and has developed numerous quality assurance programs in the nuclear industry. He has conducted many independent management audits and assessments. He is Chairman of the ASQC Energy Division's Committee on Quality Assurance for Operating Power Plants.

A brief qualification and experience summary for L. Ramsett, the team leader on the subject independent assessment is provided below.

SUMMARY

Mr. Ramsett is currently responsible for managing the Quality Assurance Department of CER Corporation which provides services relative to the development, verification, assessment and implementation of Quality Assurance Programs and related systems for industrial, government and utility clients. He performs assessments, consistent with client needs, as to the adequacy and effectiveness of Quality Assurance organizations, programs and systems, makes recommendations as to any corrective action required and provides assistance in the implementation of such corrective action. He provides management planning to assure that necessary quality assurance programs, procedures and resources are in place for major project phases and evaluations. Mr. Ramsett also performs internal and supplier audits, supplier qualifications and provides support for surveillance of supplier programs. Mr. Ramsett also provides support to clients in the development of management systems such as records management, trending and document control programs.

As president, Mr. Ramsett formed LORCO to provide Quality Systems Consulting Services to the power industry. Assistance and direction were provided to a utility in the rewrite and formulation of a Construction Quality Assurance Program required as a result of a construction stop work order via an NRC Show Cause Order.

As an officer of Public Service Indiana, he was directly accountable for the overall Quality Assurance Program development and implementation for the Marble Hill Nuclear Generating Station which consists of 2-1130 MW units. In this capacity he had responsibility for the review and approval of NSSS suppliers, A/E, site contractors and suppliers, quality assurance programs, and shop surveillance of procured plant equipment items. He also provided surveillance activities over design, site construction and start-up testing activities. This program received "excellent" ratings from

the NRC in their Systematic Appraisal of License Performance (SALP) in 1981 and 1982.

Mr. Ramsett was the Director of Corporate Quality Assurance for Wright-Schuchart-Harbor Company and its subsidiary companies. In this position, he had the responsibility for quality assurance program policy, preparation and implementation, as well as staffing and verifying conformance to the quality assurance programs. He also prepared ASME programs (ASME Sections III and VIII) for four companies and successfully obtained certification on the initial survey.

Mr. Ramsett was responsible for the initiation, development, staffing and budget control of Quality Assurance Department for the Sundesert Nuclear project of San Diego Gas & Electric Company. He was responsible for the planning, development and implementation of all Quality Assurance Program Manuals for the Sundesert Nuclear Project. He was also responsible for the development of a non-nuclear Quality Assurance Program for the Corporate Operational Divisions of San Diego Gas & Electric.

Mr. Ramsett was responsible to the Vice President of Power Generation and Engineering for the site selection, design and construction of fossil-fueled electric generation plant of 300 MW size.

Mr. Ramsett was responsible for the planning, preparation, implementation and overall supervision of a quality assurance program for the Kewaunee Nuclear Power Plant Construction and operations. In this effort, he was also responsible for the approval and implementation of all contractor, NSSS and A/E quality assurance programs. He directly supervised the site quality control group; he conducted selective vendor quality control audits and supervised closely the activities of the A/E quality assurance effort.

Mr. Ramsett was responsible for the designing of electrical transmission lines for voltages of 46, 69, 115 and 169 KV. This work consisted of route location, surveying and mapping, budgeting, design, specification writing and awarding the work. Twelve to sixteen men were supervised in this effort.

As Field Engineer for the 75 MW Weston No. 2 fossil plant and the 125 MW Pulliam No. 8 fossil plant, he acted as liaison engineer between Wisconsin Public Service, the A/E and the contractors. He was responsible for the preparation of structural work specifica-

tions, field supervision and coordination of the site contractors.

Mr. Ramsett has 26 years of experience with electric utilities and nuclear contractors. Seventeen of those years were directly related to having primary responsibility for the management direction, formulation and implementation of Nuclear Quality Assurance programs for three electric utility companies. In this effort, responsibilities included the review, approval and coordination of Quality Assurance programs for NSSS supplies, architect engineers, contractors and suppliers and the effectiveness of their programs. Six years were directly related to fossil plant construction as a field assistant construction engineer. He has also had direct primary responsibility for Quality Assurance program preparation, direction and implementation for a site mechanical equipment and piping installation contractor and an ASME piping and hanger fabrication facility. In this effort, he prepared and had approved by ASME several ASME Section III and VIII Quality Assurance programs.

Mr. Kishbaugh was a member of the independent assessment team. A brief summary of Mr. Kishbaugh's experience and qualifications is provided below:

SUMMARY

Mr. Kishbaugh has more than sixteen years of diversified experience in project management, business development, quality assurance consulting, quality assurance management, quality control, process engineering, stress analysis, mechanical design, and management consulting services. Fifteen years of this experience have been with the design, procurement, construction, and operation of nuclear power plants. Mr. Kishbaugh has a comprehensive understanding of nuclear industry codes and standards (NRC, ASME, ANSI, etc.) and a practical knowledge of implementing the regulatory requirements in a cost effective manner. He is an active member of professional societies and industry organizations.

Mr. Kishbaugh is experienced in performing management evaluations for utilities, architect engineers, constructors, and fabricators. He is adept at providing assessments for improving overall organizational efficiency and with assisting to interpret and provide compliance with necessary regulations.

In his project management responsibilities, Mr. Kishbaugh has managed many large consulting projects, both international and domestic. The diversity of his project management responsibilities include. quality assurance programs; equipment qualification programs; quality list (Q-List) development programs; emergency planning programs; and reactor operator training programs. He has also managed the quality assurance organization of a major consulting company.

He has developed and implemented training programs for nuclear utilities, and has lectured on several topics included in the training modules.

Mr. Kishbaugh has been responsible for providing licensing and regulatory information services to the nuclear industry. He frequently communicates with the NRC staff on matters of current importance to the nuclear industry, and has been an advisor to several clients on regulatory requirements.

He has developed design control programs for operating power plants, and is experienced in developing programs that are cost--beneficial to the client while maintaining compliance with NRC requirements.

In his management consulting and quality assurance consulting projects, Mr. Kishbaugh has assisted his clients in developing cohesive and synergistic programs, in response to both regulatory requirements and internal company needs. He is currently involved in the forefront of quality assurance for operating nuclear power plants, and is a member of several industry organizations concerned with quality assurance.

Mr. Kishbaugh is adept at management consulting for utility companies, with his understanding of both the regulatory requirements and the internal workings and organizational needs of the utility. He is able to interpret NRC regulations, review the utility's compliance, provide recommendations, assist in modifications of management practices (if needed), and perform periodic management assessments to assure that the utility continues compliance with regulatory requirements and its internal management policies. In his quality assurance consulting projects, he has frequently been required to resolve internal conflicts in management approaches to meet QA requirements, and has served as a consultant to many quality assurance managers throughout the nuclear industry.

Mr. Kishbaugh has been involved with developing quality assurance and quality control surveillance programs, including training and implementing procedures, for over forty-five nuclear industry clients required to be certified by ASME or licensed by the NRC. Operations quality assurance programs and engineering management procedures that he developed have been recommended to other utilities as model programs by regulatory authorities. He has contributed to the licensing process by direct program/procedure involvement, in responding to NRC concerns, and preparation of SAR Chapter 17's.

Mr. Kishbaugh is an experienced auditor, is certified as a Lead Auditor in accordance with ANSI N45.2.23, and has performed numerous QA audits in the nuclear industry. He has a comprehensive knowledge of quality assurance requirements for operating nuclear power plants, and has served in a consulting capacity to the quality assurance managers of nuclear utilities and other nuclear industry clients.

Mr. Kishbaugh is experienced in nuclear power plant construction in the areas of installation of mechanical equipment and field quality control. He is experienced with vendor inspection and surveillance activities, with design review of technical documents, and with non-destructive examination procedures and practices. His experience also includes stress analysis of nuclear pressure vessels, process development, process engineering, welding, heat treating, and metallurgical examination.

APPENDIX B

LIST OF PERSONNEL CONTACTED

APPENDIX B

LIST OF PERSONNEL CONTACTED

The following is a partial listing of the personnel contacted during the performance of the independent assessment.

NAME	ORGANIZATION
JIM HELLE	ENGINEERING
M. C. BEIER	QUALITY ENGINEERING
D. J. MOMINEE	OPERATIONS QA
BOB PETERS	LICENSING
MIKE SHEPHARD	QA CODE INSPECTION
DON RHODES	QUALITY CONTROL
CHUCK DAFT	QA DIRECTOR
B. L. GEDDES	OPERATIONS QA
DAVE POAGUE	OPERATIONS QA
JIM BUCK	OPERATIONS QA
J. M. LOCHOTZKI	OPERATIONS QA
E. F. BERDYCK	OPERATIONS QA
T. P. JARDY	QE, RECEIPT INSPECTION
P. A. MAINZER	QE, RECEIPT INSPECTION
J. C. BYRNE	QA SYSTEMS
C. A. ESH	QA SYSTEMS

APPENDIX B (CONT.)

J. SCHULTZ	QA SYSTEMS
L. F. STORZ	PLANT MANAGER
S. J. SMITH	ASSISTANT PLANT MANAGER, MAINTENANCE
STEVE QUENNOZ	ENGINEERING GROUP DIRECTOR
JOHN WOODS	MECHANICAL/STRUCTURAL ENGINEERING
T. CHOWDHARY	ENGINEERING SERVICES
TERRY MURRAY	ASSISTANT VICE PRESIDENT
M. STEWART	TRAINING DIRECTOR
STEVE WIDEMAN	LICENSING
DAVE INGMIRE	LICENSING
J. S. LIETZOW	LICENSING
MIKE MORRIS	RECORDS MANAGEMENT CONSULTANT
DENNIS MILLICAN	MILLICAN ASSOCIATES
CAROL BRAMSON	RECORDS MANAGEMENT
TOM STIEFEL	RECORDS MANAGEMENT
BILL WAGNER	BETA
MAGGIE STURDIVANT	CONSULTANT
JACK WEED	CONSULTANT, QSI

APPENDIX C

LIST OF DOCUMENTS REVIEWED

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LIST OF DOCUMENTS REVIEWED

The following is a partial list of the documents that were reviewed during the performance of the management assessment.

DOCUMENT DESCRIPTION

1. Updated Safecy Analsis Report, Section 17
2. Nuclear Quality Assurance Manual (NQAM), Volume 1
3. Nuclear Quality Assurance Manual (NQAM), Volume 2
4. Facility Modification Department Procedures
5. Davis-Besse Administration Manual, (Selected Procedures)
6. Nuclear Material Management Procedures (Selected Procedures)
7. Nuclear Facilities Engineering Division Procedures
8. Quality Control Instructions
9. Quality Assurance Instructions
10. Job Descriptions (Selected)
11. Personnel Qualification Records (Selected)
12. Audit Reports
13. Purchase Orders
14. Surveillance Reports
15. Nonconformance Reports
16. Corrective Action Requests
17. Audit Finding Reports (AFR's)
18. Receipt Inspection Records

LIST OF DOCUMENTS REVIEWED, (CONT.)

19. Organization Charts
20. INPO Reports
21. QA Management Review Reports
22. NRC Inspection Reports
23. NMP Procedure Index
24. Monthly QA Director's Reports
25. Course of Action Plan, Volumes 1 and 2
26. Mechanical P&ID's
27. Equipment Lists
28. NRC SALP Report
29. Q-List
30. MWO's
31. FCR Packages
32. License Commitment Tracking System Reports
33. DBMMS, Davis-Besse Maintenance Management System Reports
34. QA Surveillance Plan for Course of Action Plan
35. Required Records List