RFW

TESTIMONY OF

JAMES G. KEPPLER

REGIONAL ADMINISTRATOR

REGION III (CHICAGO) OFFICE

BEFORE THE

SUBCOMMITTEE ON ENERGY AND THE ENVIRONMENT

OF THE

COMMITTEE ON INTERIOR AND INSULAR AFFAIRS

UNITED STATES HOUSE OF REPRESENTATIVES

WASHINGTON D.C.

JUNE 16, 1983

6/14

Good morning Mr. Chairman and members of the Subcommittee. My name is James Keppler and I am Regional Administrator of the Nuclear Regulatory Commission's Region III (Chicago) office. I am appearing before this Subcommittee today, in response to your May 6, 1983 request, to present testimony on behalf of the NRC staff concerning the NRC's procedures for handling construction quality issues at the Midland Nuclear Power Plant, specifically problems in the remedial soils and the Quality Assurance (QA) program areas.

The NRC has recognized that there have been significant problems at Midland. You will recall, Mr. Chairman, that at this Subcommittee's Hearing of November 19, 1981, on the subject of quality assurance, Chairman Palladino identified Midland as one of several facilities where there have been serious QA problems with broad repercussions. We want to assure you, however, that before the NRC will issue Operating Licenses for Midland, we will be satisfied that the plant has been properly constructed and can be operated safely.

Since the inception of this project in 1970, there has been a series of QA problems. The most significant of these have been:

1. inadequacies in splicing of concrete reinforcing steel in 1973,

2. inadequate control of concrete rebar installation in safety-related structures in 1976,

3. omission of containment tendons in 1977 and a bulge in containment liner in that same year,

4. failure to properly compact soil under safety-related structures, identified in 1978,

5. deficiencies in the heating, ventilating and air conditioning system and deficiencies in reactor anchor studs identified in 1979, and

6. problems in pipe suspension systems and electric cable routing, identified in 1981.

Additionally, a comprehensive NRC inspection of systems and components within the Diesel Generator Building conducted in 1982 identified many construction problems which resulted from a breakdown in the implementation of the QA program.

Contrary to the Zimmer case where the NRC staff did not recognize the full significance of the QA problems as they unfolded, the NRC staff has been aware that there have been QA problems at Midland and has attempted to deal with them as they were identified.

In 1981, I provided testimony to the Atomic Safety and Licensing Board (ASLB), presiding over the hearing on the remedial soils issues at the Midland Plant. I testified on the more significant QA problems that had been experienced in connection with the Midland project and the corrective actions taken by Consumers Power Company and its contractors. I stated that, while many significant QA deficiencies had been identified, it was the NRC Staff's conclusion that the problems experienced were not indicative of a breakdown in the implementation of the overall QA program. I also noted that while deficiencies had occurred which should have been identified earlier, Consumers Power Company's QA program had been generally effective in the ultimate identification and subsequent correction of these deficiencies. Furthermore, I discussed the results of Region III's special QA inspection, of May 18-11, 1981, which I had initiated to determine whether modifications made to the QA program in August 1980 were effective. The results reflected favorably on the Midland Plant Quality Assurance Department, formed in August 1980 to improve QA performance. The thrust of my testimony was that I had confidence in Consumers Power Company's QA program, both for the remedial soils work and for the remainder of construction.

In April 1982, I was made aware that additional significant QA problems were being encountered. This concerned me in view of my 1981 testimony to the ASLB. As a result I notified the ASLB that this previous testimony would have to be modified, directed staff evaluations to assess the cause and correction of these problems, and created a special Section within the Region III office solely to handle the Midland facility. After reviewing the facility status and history, meetings were held with Consumers Power Company to discuss the NRC's concerns and to inform them that additional measures were required to assure the quality of the plant. In addition, the Midland Section recommended and then conducted the comprehensive inspection of systems and components within the Diesel Generator Building.

As a result of the problems found in the Diesel Generator Building by the NRC staff and similar findings by Consumers Power Company in other areas, a number of actions have been or are being taken. These include:

1. all safety related work was stopped on December 2, 1982 by Consumers Power Company except the following: (1) nuclear steam supply system installation work, performed by Babcock & Wilcox; (2) heating, ventilating, and air conditioning installation work performed by Zack Company; (3) post system turnover work; (4) hanger and cable reinspection (5) design engineering; (6) system layup activites and (7) remedial soils work.

2. a civil penalty of $120,000 was proposed in February 1983 for two violations related to the findings from the inspection of the systems and components within the Diesel Generator Building.

3. a Construction Completion Program (CCP) is being developed by Consumers Power Company and is being reviewed by the NRC staff. This CCP will require an evaluation of the quality of construction completed to date and will provide a team approach to complete future work. Furthermore, a separate review of the design and construction of portions of three safety related systems will be performed by an independent third party (TERA Corporation).

Although these actions are encouraging and should lead to an acceptable QA program and assurance of plant quality, the NRC is requiring an additional third party overview of the TCP until the NRC determines that Consumers Power Company's QA program is effective on a sustained basis.

From a technical standpoint, the remedial soils work required to correct the settlement of safety related structures at Midland is complex and unique in the nuclear industry. Because of this complexity, Consumers Power Company developed a comprehensive remedial soils program. The design and construction methods for the necessary remedial work to support properly the affected safety-related structures have been reviewed and evaluated by the NRC Staff, as set forth in the Safety Evaluation Report related to the operation of Midland Plant, Units 1 and 2, NUREG-0793, Supplement No. 2.

During the course of remedial soils work, problems have been identified by both Consumers Power Company and NRC inspectors. As a result of these problems, the ASLB issued an order in April 1982 requiring Consumers Power Company to obtain prior NRC staff authorization for remedial soils measures. In August 1982, Consumers Power Company and the NRC staff agreed to a Work Authorization Procedure, under which the NRC staff would review and authorize remedial soils activities before they are conducted. Remedial soils work at the site is presently reviewed and authorized under this procedure.

To provide assurance that the remedial soils activities are being conducted in accordance with established QA requirements, the NRC staff also requested Consumers Power Company to retain an independent third party to overview the remedial soils work activities. Stone and Webster was selected for this role by Consumers Power Company and was subsequently approved by the NRC. They have been onsite performing the independent overview since September 20, 1982.

Mr. Chairman, I have attempted to summarize the significant issues with respect to remedial soils problems and problems in the QA area at Mildand. I will be happy to respond to questions concerning the Midland project.

COPY

Consumers Power Company

James W Cook
Vice President - Projects, Engineering and Construction

General Offices: 1945 West Parnall Road, Jackson, MI 49201 • (517) 788-0453

March 29, 1983

Mr J G Keppler, Regional Administrator
US Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

MIDLAND ENERGY CENTER PROJECT
DOCKET NOS 50-329 AND 50-330
RESPONSE TO SUPPORT REINSPECTION
FILE 0.4.2 SERIAL 20746

Reference: A. R F Warnick letter to J W Cook, Subject: Support Reinspection dated August 30, 1982.

B. J W Cook letter to J G Keppler, Subject: Support Reinspection dated November 15, 1982.

Reference A requested our schedule for the reinspection of the supports at the Midland site. Reference B identified our planned actions in this area and indicated that we expected to commence support reinspection by January 1, 1983.

Our recent effort in planning and developing the Construction Completion Program (CCP) has resulted in a revision to the planned actions and schedule. Considering the current status of construction activities, we no longer believe the approach outlined in Reference B to be consistent with timely completion of the project.

We now intend to reinspect all installed supports irregardless of the time of their installation or turnover. We expect the new support reinspection procedure, training and certification of inspection personnel, QA program revisions, and other support activities to be in place so that we can commence support reinspections during the week of April 11, 1983. It is estimated that the support reinspection program will extend into 1984.

James W. Cook

JWC/RAW/lr

OC0383-0040A-MP01

8304120510

CC RWarnick, NRC Region III
WShafer, NRC Region III
RGardner, NRC Region III
RJCook, NRC Resident Inspector, Midland Site
BBurgess, NRC Region III

Warnick

AUG 4 1983

MEMORANDUM FOR: Region III Files

FROM: R. F. Warnick, Director, Office of Special Cases

SUBJECT: MEETING WITH CONSUMERS POWER COMPANY REGARDING CURRENT MIDLAND PROBLEMS

A meeting was held between Mr. James Cook of Consumers Power Company (CPCo), Mr. Gerald Charnoff, legal counsel for CPCo, and the NRC (Messrs. Keppler, Warnick, and Harrison of RIII and Messrs. Eisenhut and Novak of NRR) at the NRC Glen Ellyn office on July 28, 1983. The purpose of the meeting (which was requested by CPCo) was to discuss current management problems at Midland, NRC's perception of management performance, and Consumers interface with the NRC. The discussion focused on the NRC perceptions of the problems and top Midland management's attitude and performance.

"Original signed by R. F. Warnick"

R. F. Warnick, Director
Office of Special Cases

cc: R. C. DeYoung
D. G. Eisenhut
T. M. Novak
J. Lieberman
J. C. Stone
DMB/Document Control Desk (RIDS)

8308100110

OFFICE	RIII		RIII					
SURNAME	Harrison/ls	RFW for RW	Warnick	Keppler				
DATE	8/3/83			8/3/83				

NRC FORM 318 (10-80) NRCM 0240

OFFICIAL RECORD COPY

Warnick

AUG 4 1983

MEMORANDUM FOR: Region III Files

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"Original signed by R. F. Warnick"

R. F. Warnick, Director
Office of Special Cases

cc: R. C. DeYoung
D. G. Eisenhut
T. M. Novak
J. Lieberman
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OFFICE	RIII						
SURNAME	Harrison/ls	RFW for RW Warnick	Keppler				
DATE	8/3/83		8/3/83				

NRC FORM 318 (10-80) NRCM 0240

OFFICIAL RECORD COPY

RFW

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
799 ROOSEVELT ROAD
GLEN ELLYN, ILLINOIS 60137

AUG 3 1 1983

Docket No. 50-329
Docket No. 50-330

MEMORANDUM FOR: U. Potapovs, Chief, Vendor Programs Branch, Region IV

FROM: R. F. Warnick, Director, Office of Special Cases

SUBJECT: REQUEST FOR FOLLOWUP ON POTENTIALLY GENERIC PROBLEM REGARDING TRANSAMERICA DELAVAL DIESEL GENERATOR EXHAUST SILENCERS

Enclosed is a memorandum from R. Cook of my staff identifying a problem with the Midland Diesel Generator Exhaust Silencers not being designed and fabricated as being safety-related/seismic Category I qualified. Mr. Cook's memorandum also points out that Transamerica Delaval had stated to Consumers Power Company (CPCo) that although they had provided safety-related equipment to other nuclear sites, they did not consider the silencers to be performing an active safety-related function. Also included as part of this enclosure is a note from D. Hood, NRR, to E. Jordan, IE, containing pages of the ASLB Hearing session of July 29, 1983, which documented this same subject and a letter from Isham, Lincoln, & Beale (attorneys for CPCo) to the ASLB, further clarifying the silencer "Q-ness."

Region III requests the Vendor Program Branch to evaluate the generic aspects of this problem including applicability to other diesel generator vendors and the applicability of 10 CFR 21 reporting requirements for Transamerica Delaval.

Should you have additional questions concerning this matter please contact J. Harrison (384-2635) of my staff.

RF Warnick

R. F. Warnick, Director
Office of Special Cases

Enclosures: As stated

cc w/encl:
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R. Cook, RIII
R. Spessard, RIII
C. Norelius, RIII
Director, DPRP, RI
Director, DPRP, RII
Director, DRRPEP, RIV, RV
R. Heishman, IE
C. Heltemes, Jr., AEOD

8309070134

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
799 ROOSEVELT ROAD
GLEN ELLYN, ILLINOIS 60137

August 10, 1983

MEMORANDUM FOR: J. J. Harrison, Chief, Office of Special Cases, Section 2

FROM: R. J. Cook, Senior Resident Inspector, Midland Site

SUBJECT: MIDLAND DIESEL GENERATOR EXHAUST SILENCERS

Consumers Power Company supplied additional information responding to an item of noncompliance identified in NRC Inspection Report 50-329/82-22; 50-330/82-22 (Item 82-22-08) by letter to Mr. J. G. Keppler, Regional Administrator dated July 12, 1983. In this response (ltr dtd July 12, 1983) Consumers Power Company stated that, "TDI (Transamerica Delaval, Inc.) has stated that they had not previously provided safety-related exhaust silencers to others, and did not consider the silencers to perform an active safety-related function." This sentence was discussed on July 29, 1983 at the ASLB Hearings. I responded to Board questioning by stating that perhaps Transamerica Delaval, Inc. should have made a 10 CFR 50 Part 21 notification when it was established that non-safety-related silencers were supplied.

The Headquarters Daily Report for July 28, 1983 (copy attached) states that a Part 21 notification had been made by Gilbert Associates pertaining to the diesel generators at the Perry Nuclear Power Station and the ability of the exhaust system as designed to elevate the engine back pressure. A telecommunication with the Resident Inspector Office at the Perry Plant revealed that Perry uses Transamerica Delaval, Inc. diesel generators.

The Part 21 notification by Gilbert Associates at the Perry Plant adds credence to my belief that Transamerica Delaval, Inc. should make a Part 21 notification pertaining to diesel generator exhaust and intake systems not being safety-related. (reference CPCo NCR M01-9-3-158 and FSAR Table 3.2-1 attached)

R. J. Cook

R. J. Cook
Senior Resident Inspector
Midland Site

cc/attachments
B. L. Burgess

8309070136

AUG 15 1983

HEADQUARTERS DAILY REPORT
JULY 28, 1983

DIVISION OF EMERGENCY PREPAREDNESS AND ENGINEERING RESPONSE

1. POTENTIAL PART 21 - ON JULY 27, 1983, IE (ROBERT BAER) RECEIVED A POTENTIAL PART 21 NOTIFICATION FROM MR. WILLIAM SAILER OF GILBERT ASSOCIATES. THE NOTIFICATION CONCERNED THE EXHAUST SYSTEM FOR THE DIESEL GENERATOR (DG) UNITS FOR THE PERRY NUCLEAR POWER STATION AND IS BELIEVED TO BE UNIQUE TO THOSE PLANTS. DURING DESIGN OF MODIFICATIONS TO THE DG EXHAUST SYSTEM, GILBERT ASSOCIATES RECHECKED THEIR CALCULATIONS. THEY CONCLUDED THAT THE EXHAUST SYSTEM, AS DESIGNED, WOULD HAVE RESULTED IN A DG BACK PRESSURE THAT EXCEEDED THE MANUFACTURER'S RECOMMENDATIONS.

2. POTENTIAL PART 21 - ON JULY 27, 1983, IE (ROBERT BAER) RECEIVED A POTENTIAL PART 21 NOTIFICATION FROM MR. ROBERT BRADLEY OF SIEMENS-ALLIS CORPORATE OFFICES IN ATLANTA, GEORGIA. A DIVISION OF THE COMPANY LOCATED IN NORWOOD, OHIO MANUFACTURERS MOTORS. IN 1979 AND 1980, A TOTAL OF FOUR MOTORS FOR AUXILIARY FEEDWATER PUMPS WERE PROVIDED FOR SAN ONOFRE UNITS 2 AND 3. RECENTLY, PROBLEMS DEVELOPED AND ONE MOTOR AND BEARINGS WERE RETURNED TO THE MANUFACTURER ON JULY 13, 1983. THE MOTORS WERE DISASSEMBLED AND EXAMINED. IT WAS FOUND THAT THE LUBRICATION GROOVES IN THE SLEAVE BEARINGS HAD NOT BEEN MACHINED TO THE CORRECT DEPTH. THE PROBLEM IS BELIEVED TO BE UNIQUE TO THE SAN ONOFRE 2/3 MOTORS WHICH HAVE BEEN REWORKED AT THE SITE.

TABLE 3.2-1 (continued)

System/Component	FSAR Section	Location	Quality Group	Design Code/ Standard	Seismic Category	
Engine driven jacket water pump		G	D	DEMA	I	30
Piping and valves						15
Engine mounted[9]		G	NA	DEMA	I	27
Non-engine mounted		O,G	C	III-3	I	30
Diesel Generator Starting System	9.5.6					
Air receivers		G	C	III-3	I	
Compressors		G	NA	NA	NA	
Air dryers		G	NA	NA	NA	15
Piping and valves						
Air receiver to engine		G	C	III-3	I	
Compressor to receiver		G	D	B31.1	NA	15
Engine mounted		G	NA	DEMA	I	
Filters		G	NA	NA	I	
Diesel Generator Lubrication System	9.5.7					
Lube oil cooler		G	C	III-3	I	
Lube oil sump tank		G	C	III-3	I	30
Auxiliary lube oil pump		G	C	III-3	I	
Engine driven lube oil pump		G	D	DEMA	I	
Lube oil keepwarm pump		G	C	III-3	I	30
Piping and valves						
Engine mounted		G	NA	DEMA	I	15
Aux skid mounted		G	C	III-3	I	
Diesel Generator Combustion Air Intake and Exhaust System	9.5.8					
Turbocharger		G	NA	DEMA	I	
Intake air louvers		G	NA	NA	I	

TABLE 3.2-1 (continued)

System/Component	FSAR Section	Location	Quality Group	Design Code/ Standard	Seismic Category	
Intake filters		G	NA	NA	I	15
Ducts and dampers		G	NA	SMACNA	I	
Intake and exhaust silencers		G	NA	NA	I	
Chemical Waste System	9.5.9					
Motors		E,T	NA	NEMA MG-1	NA	
Pumps		E,T	D	HI	NA	
Piping and valves		U,E,T	D	B31.1	NA	
Oily Waste System	9.5.10					
Motors		E,P,T	NA	NEMA MG-1	NA	
Pumps		E,P,T	D	HI	NA	
Piping and valves		E,O,T,U,P	D/NA	B31.1	NA	21
Tanks		P	D	API-650	NA	

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

AUG 0 9 1983

PRINCIPAL STAFF				
RA		ENF		
D/RA		SCS		
A/RA		PAO		
DRP		SLO		
DRMA		RC		
DRMSP				
DE				
ML				
OL		FILE		

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NOTE TO: E. L. Jordan, Director
Division of Engineering and Quality Assurance

FROM: Darl Hood, Project Manager
Licensing Branch No. 4
Division of Licensing

SUBJECT: POTENTIAL PART 21 ISSUE REGARDING INTERNAL DIESEL GENERATOR MUFFLER FAILURES

A potential Part 21 issue was identified during a hearing session on the Midland Plant, July 29, 1983. The issue is whether or not non-seismic mufflers and exhaust systems for diesel generators can fail in a manner which would restrict the exhaust flow path and thereby, adversely impact starting or subsequent operation of the emergency diesel generators following a seismic event. Enclosed hearing transcript pages 19535-19537 and James W. Cook's letter of July 12, 1983, describe this concern.

The issue is not restricted to the Midland Plant. Non-seismic mufflers and exhaust systems provided by Transamerica Delavel, Inc. (TDI), to other nuclear plants have not been designed to safety-related requirements. Because the design is being corrected to be Category I on the Midland Plant, no seismic analyses of exhaust blockage potential has been provided to the NRC during its Midland review. I also do not know whether the problem applies to plants with diesel generator vendors other than TDI.

Darl Hood, Project Manager
Licensing Branch No. 4
Division of Licensing

Enclosure:
As stated

cc: See next page

AUG 29 1983

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DISTRIBUTION
LB #4 r/f
NRC PDR
PRC System
D. Hood
E. Adensam
M. Duncan
R. Warnick
R. Cook
M. Srinivasan
R. Bosnak
V. Noonan
G. Lainas
T. Novak
R. DeYoung
W. Paton
G. Lanik
W. Laudan

JUDGE BECHHOEFER: Yes, there has been. The other way around.

MS. BERNABEI: I think it has been that Category 1 is always Q.

JUDGE BECHHOEFER: Everything that is Seismic Category 1 is Q.

MS. BERNABEI: The assumption of this is that Q can be broken down to Category 1 and non-Q.

MS. LAUER: If I can ask a preliminary question.

BY MS. LAUER:

Q Back of the whole system is Q. Does that mean every component in the system is necessarily Q?

A First off, I do not know if it says that the whole system is Q, to be honest with you. I cannot answer that question without having an opportunity to go back and review the words in the FSAR. The thing was, in our prose, we indicated that -- if I remember right -- that these particular portions, pertaining to the muffler system, that that was required to be safety related, as defined by the FSAR.

MS. LAUER: No further questions.

BOARD EXAMINATION

BY JUDGE HARBOUR:

Q Referring to Consumers Power Exhibit 51, which is the letter to Mr. Keppler from Mr. Cook --

A The July letter, July 12th letter?

by Ron Cook, RIII Resident Inspector

lb2

Q That's right. Correct. Section C-2 -- starts on the second page of C-2. The first sentence, starting with TDI, which stands for TransAmerica DeLaval. Do you see that sentence there?

A Yes. I see several starting with TDI. At the top you mean?

Q The top of the page.

A Okay. Yes, sir.

Q Are silencers on diesel generators always Siesmic Category 1?

A I feel that they should be. I cannot say whether they always are. The reason I feel that way is because it is imperative that the diesel generator be able to function during the earthquake events. So if any damage could be sustained by either the intake or the exhaust, it would cripple the engine since it would either not put out its required amount of power or would not run at all, depending.

Q In other words, you believe the diesel generator -- diesel engine on the generator would not run if the muffler was disconnected?

A It would run if the muffler was disconnected. My concern would be that the muffler would close off the exhaust or that a portion of the piping would become choked or such that it would reduce the flow of exhaust gases from the engine. The same concern would also apply to the intake side of the

lb3

engine.

Q Do you know whether TransAmerica DeLaval has furnished diesel generators to be used at sites in California, or a site?

A Yes, they have and I'm trying to think what site it was. I want to say Rancho Seco, if I recall right. When they issue a Part 21 notice, they put the listing of the affected plants and if I remember right on one of those listings there was a California plant listed. I think it was Rancho Seco, but I do not want to say for sure without checking.

Q To you knowledge, do all sites for nuclear power plants in California have larger safe shutdown earthquakes than Michigan?

A Yes, to my knowledge.

Q Do you have any comment, then, on the statement that TransAmerica DeLaval has stated that they have not previously provided safety related exhaust silencers to others?

A I personally feel that TransAmerica DeLaval should issue a Part 21 if that is truly the case.

Q You were asked about the root cause. From your description it seemed to me that the fact that the drawing did not indicate that the muffler should be Seismic Category 1 were limiting to all of the other problems. No matter what anybody did, if they referred back to the basic drawing and it

PRINCIPAL STAFF

Consumers Power Company

James W. Cook
Vice President - Projects, Engineering and Construction

General Offices: 1945 West Parnall Road, Jackson, MI 49201 • (517) 788-0453

July 12, 1983

50-329
50-330

Mr J G Keppler, Regional Administrator
US Nuclear Regulatory Commission
Region III
799 Roosevelt Road
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MIDLAND ENERGY CENTER
DOCKET NO 50-329 AND 50-330 - AMENDED MIDLAND PROJECT RESPONSE TO NRC, REGION III LETTER DATED MAY 23, 1983
File: 0485.16 UFI: 42*05*22*04 Serial: CSC-6781
0.4.2 70*01

REFERENCES: (1) J W Cook letter to J G Keppler, dated June 24, 1983, Serial CSC-6764
(2) J G Keppler letter to J W Cook, dated May 23, 1983

This letter, including Attachment 1, and in addition to Reference 1, provides our amended response to Reference 2.

We appreciate your consideration in extending the due date for this response in order that our personnel could properly examine the vendor information available and hopefully provide a thorough and accurate response. This was discussed with your Mr. R. Cook.

James W. Cook

JWC/BHP/klm

cc: RFWarnick, NRC Region III
JJHarrison, NRC Region III
RNGardner, NRC Region III
RJCook, NRC Senior Resident Inspector, Midland Site
RBLandsman, NRC Region III
BLBurgess, NRC Resident Inspector, Midland Site

1pp.

JUL 20 1983

OC0783-0004A-CN01

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CONSUMERS POWER COMPANY
Midland Units 1 and 2
Docket No 50-329/50-330

Letter Serial CSC-6781 Dated July 12, 1983

At the request of the Commission and pursuant to the Atomic Energy Act of 1954, and the Energy Reorganization Act of 1974, as amended and the Commission's Rules and Regulations thereunder, Consumers Power Company submits the amended response to J G Keppler letter to J W Cook dated May 23, 1983.

CONSUMERS POWER COMPANY

By J W Cook
J W Cook, Vice President
Projects, Engineering and Construction

Sworn and subscribed before me this 14th day of July 1983.

Patricia A Puffer
Notary Public

My Commission Expires 3-4-86

PATRICIA A. PUFFER
Notary Public, Bay County, MI
My Commission Expires Mar. 4, 1986

OC0783-0004A-CN01

Attachment 1

Amended Response to J G Keppler letter to J W Cook dated May 23, 1983

The amended response to J G Keppler letter to J W Cook dated May 23, 1983 is submitted in the following format:

NOV Item B Identification Number

A. Statement of Original Violation (from J G Keppler letter to J D Selby dated February 8, 1983: Notice of Violation EA 83-3.)

B. Request For Additional Information (from J G Keppler letter to J W Cook dated May 23, 1983.)

C. Statement of Additional Information

1. Admission or denial of the alleged violation
2. The reasons for the violation, if admitted
3. The corrective steps which have been taken and the results achieved
4. The corrective steps which will be taken to avoid futher violations
5. The date when full compliance will be achieved

OL/OM SERVICE LIST

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NOV Item B - 2.a (82-22-08)

A. Statement of Original Violation

"Measures were not established for the selection and review for suitability of application of "Q" materials associated with the diesel generator exhaust muffler in that design drawings and specifications did not indicate the material identity of the installed muffler saddle supports and plates."

B. Request For Additional Information

"Regarding Item B.2.a, we reiterate our position that the lack of design documentation which specified the material requirements for the diesel generator exhaust mufflers constituted an item of noncompliance. Please provide any additional information supplied by the vendor regarding the traceability of the exhaust muffler materials, and as appropriate, your corrective actions and the results achieved, corrective actions taken to avoid further noncompliance, and the date when full compliance will be achieved."

C. Statement of Additional Information

1. The violation is admitted.

2. The violation occurred because the design intent was not implemented in the design, fabrication and inspection of the exhaust silencers the diesel generator prime supplier, Transamerica Delavel, Inc., (TDI). This was not recognized or corrected by the design organization responsible for the procurement. The design intent was that the diesel generator exhaust silencers be subject to the appropriate elements of 10CFR50, Appendix B, and ANSI N45.2-1971.

   The Bechtel procurement documents for the diesel generators specify the functional performance requirements of the diesel generators. It is not the intent to specify all details of design and construction. The expertise for the detailed design and construction of the diesel generator and accessories rests with TDI.

   The procurement documents (Specification 7220-M-18, Paragraph 12.2) specified; "Quality assurance requirements are applicable to all components and assemblies which affect the reliability and ability of the equipment furnished by the Seller to perform its design function." Additionally, the specification provides a check of this requirement by requiring the vendor to submit a list of all items which he intends to supply as "Q" for review by Bechtel. When properly implemented, these requirements in Specification 7220-M-18 provide adequate direction to the vendor and control by Bechtel. Bechtel did not take action to correct the failure of TDI to fully comply with the requirements of Specification 7220-M-18, Paragraph 12.3 to submit a "list of all items to be furnished to quality control standards."

TDI has stated that they had not previously provided safety-related exhaust silencers to others, and did not consider the silencers to perform an active safety-related function. Specification requirements were not understood by TDI to apply to the exhaust silencers. As a result, the exhaust silencers were not included as an item to be safety-related. TDI procured the exhaust silencers from a sub-supplier, American Air Filter (AAF), with essentially commercial quality standards. TDI did specify to AAF that material certification, weld procedures, and weld procedure qualifications be provided. AAF did not fully comply with the purchase order requirements of TDI. TDI did provide a seismic analysis of the exhaust silencers to verify the capability to withstand a safe shutdown earthquake.

The procurement documents leave the selection of materials for construction of the exhaust silencers to TDI and AAF. The materials of construction were selected by AAF and specified in the fabrication drawing based on its experience. Common grades of steel (e.g., A-36 and A-569) are typically used.

TDI provided a certificate of conformance to the purchase requirements for the exhaust silencers and the saddle suppport modification plates as required by the procurement documents. That information is on site. If the exhaust silencers and saddle support modification plates had been identified by TDI as having a safety-related function, they would have been included under the TDI quality assurance program. That program would have required actions to be taken to assure appropriate material identification and control. Specific material traceability (i.e., certified material test reports) is not applicable because of the design and function of these items.

3. The following corrective action for the exhaust silencers has been taken: We have met with TDI and visited AAF, and subsuppliers at their facilities, and reviewed all available purchasing and quality documentation. TDI will provide a Material Certificate of Compliance to confirm that the materials used were consistent with the seismic analysis. TDI has been directed to provide a fabrication inspection procedure to verify that construction of the exhaust silencer satisfies the design and seismic analysis. This inspection will be performed on site under the direction of MPQAD. If any deficiencies are found during the inspection, the silencers will be reworked to conform to the requirements.

   In accordance with the partial redisposition of NCRs 4693 and 4994, muffler saddle support end and center support plate extensions are to be replaced because the dimensions of the slots/holes do not conform to the design drawings. Replacement plates will have material certificates of compliance.

   Project Engineering and TDI have reviewed the technical specifications to determine if other items have been considered to be non-safety related contrary to the design intent. To date, the intake air

filters, intake air silencers, intake air flexible connectors, and exhaust expansion joints have been identified as not being considered safety related by TDI, and consequently not provided as safety related. An action plan to upgrade these items to safety-related-status by verifying that the construction of these items satisfies the design and seismic analysis is underway. NCRs M-01-9-3-158 and 4955 have been written to document the indeterminant status of these components.

Further investigation to ascertain if there are any additional suspect items in the package provided by TDI is in progress and is expected to be complete by August 15, 1983.

4. The general approach to ensure that purchased material/equipment is fabricated in accordance with the specification requirements is as follows: The Project Engineering review and acceptance of vendor submitted documents required by the specification such as drawings, procedures, and quality assurance manual; the Procurement Supplier Quality Department's performance of audits on adequacy of vendor quality program implementation and source surveillance inspections at the vendor's facility as required by the purchase order; the QC performance of receipt inspection to verify supplier submittal of the required documentation on "Q" items that are received on site; the Supplier Quality Review of the required documentation for adequacy; and MPQAD/QA performance of a quality overview inspection on selected items on site.

   In view of the experiences on this procurement, we will conduct a review of functional/performance oriented procurements which contain "Q" and non-"Q" items to verify that safety-related items were designated by the vendors in accordance with project design requirements. A review program and schedule will be developed by September 10, 1983.

5. Full compliance will be achieved when:

   a) Receipt of the exhaust silencer Material Certificate of Compliance and completion of the fabrication inspection is expected by October 15, 1983. A schedule for any subsequent rework as a result of the inspection will be established at that time.

   b) The exhaust silencer saddle support and center support plate extensions are replaced and NCRs 4693 and 4994 are dispositioned.

   c) NCRs M-01-9-3-158 and 4955 will be resolved by October 15, 1983. A schedule for any subsequent rework resulting from this resolution will be established then.

   d) Further investigation to ascertain if there are any additional suspect items in the package provided by TDI is expected to be complete by August 15, 1983.

e) The review program and schedule described in part 4 and the subsequent review is completed and any findings are addressed.

BCC W R Bird, P14-418A
J E Brunner, M1079
F W Buckman, P14-113A
D M Budzik, P124-517
M L Curland, MPQAD
M A Dietrich, Bechtel
F D Field, Union Electric
J F Firlit, JSC236A
W J Friedrich, MPQAD/QC
W D Greenwell, Bechtel AA
G A Hierzer, Bechtel
R C Hollar, Bechtel AA
E M Hughes, Bechtel AA
K E Marbaugh, QA-NO, Midland
B W Marguglio, JSC220A
D B Miller, Site Manager (3)
NRC Correspondence File, P24-517
J A Rutgers, Bechtel AA
P Steptoe, IL & B, Chicago
R A Wells, MPQAD
F C Williams, IL & B, Washington

NONCONFORMANCE REPORT

PROJECTS, ENGINEERING AND CONSTRUCTION

RECEIVED: MAY 13 1983

1 of 3

1. NCR NUMBER: MO1-9-3-158

3. PRIORITY CODE: 1

4. TRADE CODE: K-9 C. P. Co. Legal

5. ACTION ITEM NO: S-2595

7. NONCONFORMING PART NO: N/A

8. NONCONFORMING PART NAME: D.G. Intake and Exhaust Systems

9. DATE ISSUED: May 12, 1983

11. RESPONSIBLE ORGANIZATION: Bechtel Project Engineering

12. LOCATION IN PLANT: Diesel Generator Building

13. DATE OF REVISION: N/A

E M Hughes

REMcCue
DBMiller
JAMooney
BHPeck
JARutgers
TKSubramanian
DATaggart
RAWells
ALAB-2
MRubenstein
REWhitaker
PDMarcello/DJones

16. REQUIREMENT:

Midland Plant FSAR, Section 9.5.8.3 and Table 3.2-1 requires the Diesel Generator intake (combustion air) and exhaust systems including silencers, turbochargers, filters, ducts, dampers and louvers to be designed in accordance with Seismic Category 1 requirements.

(continued)

17. NONCONFORMANCE:

Contrary to the above, only the unsupported shell (not including internal components) of the silencers have received a seismic analysis.

	YES	NO
ENGINEERING DISPOSITION REQ?	X	
QUALITY ENGR. INVOLVED?	X	
PROJECT QA REQ? (SEE BACK)	X	
HOLD TAGS APPLIED?		X
REPORTABLE PER 50.55(e)?	*	

18. RECOMMENDED PART CORRECTIVE ACTION:

(1) Bechtel to instruct vendor (Transamerica Delaval Inc) to re-design all above components, in their entirety, in accordance with the above noted project commitments.

(continued)

23. LOCATION OF TAGS:

25. REPORTED BY: *TBD

26. REPORTED TO:

27. DATE OF REPORT:

28. TIME OF REPORT:

29. NCR ORIGINATED BY: MRubenstein 5/12/83

30. WRITTEN REPLY REQUIRED: By 5/25/83

31. SUPERVISOR'S SIGNATURE/DATE: REWhitaker 5/12/83

32. PART CORRECTIVE ACTION PROPOSED:

32a. TECHNICAL DEPT CONCURRENCE-SIG/DATE

32b. CP Co CONSTRUCTION CONCURRENCE-SIG/DATE

33. QA CONCURRENCE-SIG DATE:

34. PART CORRECTIVE ACTION VERIFIED:

35. VERIFIED BY-SIG. DATE:

36. HOLD TAGS REMOVED BY-SIGNATURE/DATE:

37. NCR CLOSED BY - SIGNATURE/DATE:

Consumers Power Company

NONCONFORMANCE REPORT

PROJECTS, ENGINEERING AND CONSTRUCTION -

PROCESS CORRECTIVE ACTION

NCR SERIAL NUMBER: M01-6-3-158

QA ASSESSMENT OF ROOT CAUSE(S):

1. Specification not sufficiently clear.
2. Failure of vendor ? to make inquiry as to components requiring Seismic I design.

ACTUAL ROOT CAUSE(S), IF DIFFERENT FROM ABOVE (TO BE COMPLETED BY ORG. RESPONSIBLE FOR PROCESS CA):

PROCESS CA REQUIRED FROM:

DESIGN [X] FABRICATION [ ] CONSTRUCTION [ ] PROCUREMENT [ ] INSPECTION [ ]

OTHER: _____

QA RECOMMENDATION FOR PROCESS CA:

1. Bechtel is to review documentation relating to all diesel generator components required to be seismically qualified by the FSAR/Specification to ensure that all components supplied by this vendor or his suppliers comply with these requirements.
2. MPQAD is to receive the above documentation for review and concurrence.

PROCESS CA TO BE TAKEN BY ORG(S) CHECKED IN BLOCK 4 & DATE OF COMPLETION:

METHOD OF PROCESS CA VERIFICATION:

SIG. OF ORG. RESPONSIBLE FOR PROCESS CA SIGNIFYING COMPLETION:

4b. PROCESS CA COMPLETION VERIFIED BY/DATE:

Block 16 (continued):

Specification 7220-M-18(Q), R. 8; Appendix A - Design Data for Emergency Diesel Generators . . . ., Article 2.1 states in part ". . . . the Emergency Diesel Generators and their auxiliaries are designated Seismic Category 1 and shall be designed . . . ."

Block 18 (continued):

2. If the existing, installed components are deemed by the vendor as acceptable without removal, the vendor is to submit to Bechtel documentary justification for this action.

3. If the existing components do not meet Seismic Category 1 Criteria, vendor is to replace them with acceptable components.

4. MPQAD is to review and concur on Corrective Action Items 1 through 3 above.

Harrison
Gardner
Sanderson

ISHAM, LINCOLN & BEALE
COUNSELORS AT LAW

THREE FIRST NATIONAL PLAZA
CHICAGO, ILLINOIS 60602
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EDWARD S. ISHAM, 1872-1902
ROBERT T. LINCOLN, 1872-1899
WILLIAM G. BEALE, 1885-1923

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202 833-9730

August 12, 1983

PRINCIPAL STAFF			
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DRMA		RC	
DRMSP			
DE			
ML			
OL		FILE	

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of:	)	Docket Nos. 50-329 OM
	)	50-330 OM
CONSUMERS POWER COMPANY	)	Docket Nos. 50-329 OL
(Midland Plant, Units 1 & 2)	)	50-330 OL

Dr. Frederick P. Cowan
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Dr. Jerry Harbour
Atomic Safety and Licensing
Board Panel
U.S. Nuclear Regulatory
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Dear Administrative Judges:

At the last hearing session, Judge Harbour requested that Consumers Power determine the date as of which the FSAR specified that the diesel generator exhaust system should be Seismic Category I. This letter and the accompanying attachments are intended to respond to that inquiry.

Mr. Bruce Peck testified that Bechtel issued the specifications to Transamerica DeLavel, Inc. ("TDI") for the procurement of the diesel generator system in approximately May of 1977. (Transcript at 19563). At that time the FSAR had not yet been issued and the governing document was the

AUG 22 1983

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PSAR. Appendix 5A of the PSAR lists the emergency generators as a Class 1 system. The PSAR further states that "[w]hen a system as a whole is referred to as Class 1, portions not associated with loss of function of the system are designated as Class 2." (Attachment A includes the relevant pages of the PSAR). The design criteria for Class 1 and Class 2 systems and equipment set forth in PSAR Appendix 5A do not refer specifically to Q-ness. However, the procurement documents supplied to TDI specified that "[q]uality assurance requirements are applicable to all components and assemblies which affect the reliability and ability of the equipment furnished to the Seller to perform its design function." (C.P.Co. Exhibit 51).

The FSAR was submitted to the Midland docket in November of 1977. Attachment B to this letter includes a portion of FSAR section 9.5.8, "Diesel Generator Combustion Air Intake and Exhaust System." Revisions to the original FSAR are noted in the right hand margin of the pages with a vertical line marking the portion revised and an accompanying number indicating the revision which incorporated the change. The pages included herein indicate that the diesel generator exhaust system was to be designed in accordance with Seismic Category I requirements (§9.5.8.3) and that codes and standards indicated in Table 3.2-1 should be applied to the exhaust system (§9.5.8.1.3). These requirements have been a part of the FSAR since November of 1977.

As Attachment C to this letter, I have provided relevant portions of FSAR section 3.2, "Classification of Structures, Components, and Systems," including pages from Table 3.2-1 referred to above. Table 3.2-1 lists the diesel generator intake and exhaust silencers as Seismic Category I and provides that design requirements were to be specified by the designer "with appropriate consideration of the intended service and operation conditions." These requirements have also been a part of the FSAR since November of 1977.

In order to provide greater clarity and more detail, the Project Q-list was revised in May of 1983. This

Revision 10 breaks down components of the diesel generator system and now lists the exhaust silencers specifically as Q items. (Attachment D provides the relevant portions of the current Q-List). At the time when the diesel generators were ordered, Revision 7 to the Q-list did not provide this level of detail. (See Attachment E).

The appropriate use of the categorizations Seismic Category I and Q-listed is further clarified in Consumers Powers' response to DGB Notice of Violation Item B-2e which states that structures, systems, or components identified as Seismic Category I are considered Q and project QA program requirements are to be applied to them. A review was performed to confirm that where the Seismic Category I designation was applied to structures, systems, or components QA program requirements had been applied. (See Attachment 1 to B. Peck testimony following Tr. 18921 at p. A2-24).

Very truly yours,

Rebecca J. Lauer

Rebecca J. Lauer
One of the Attorneys for
CONSUMERS POWER COMPANY

RJL:bc
Encs.

cc: Midland Service List (w/encs)

APPENDIX 5A

DESIGN BASES FOR STRUCTURES, SYSTEMS AND EQUIPMENT

GENERAL

The design bases for structures for normal operating conditions are governed by the applicable building design codes. The design bases for specific systems and equipment are stated in the appropriate PSAR Section. The basic design criterion for the maximum loss-of-coolant accident and seismic conditions is that there be no loss of function if that function is related to public safety.

CLASSES OF STRUCTURES, SYSTEMS AND EQUIPMENT

CLASS 1

Class 1 structures, systems and equipment are those whose failure could cause release of radioactivity which would exceed 10 CFR 20 limits at the site boundary or those essential for immediate and long-term operation following a loss-of-coolant accident or those necessary for safe shutdown. When a system as a whole is referred to as Class 1, portions not associated with loss of function of the system are designated as Class 2.

The following are typical Class 1 structures:

Reactor buildings.

Portions of the auxiliary building housing the engineered safeguards systems, control room and radioactive materials.

Enclosures for the service water pumps, auxiliary feed-water pumps and diesel generators.

Diesel fuel storage facilities.

Supports for Class 1 system components.

Typical Class 1 equipment and systems follow:

Reactor vessel and internals including control rods and control rod drives.

Other reactor coolant system components (steam generators, pressurizer, pumps, etc) and piping, including vent and drain piping inside the reactor building.

Reactor building penetrations up to and including the first isolation valve outside the reactor building.

Main steam and main feed-water piping up to the first stop valves outside the reactor building.

New and spent fuel storage racks and fuel handling equipment, including the crane above the fuel pool (unloaded condition).

Motor-driven and steam-driven auxiliary feed-water systems.

Emergency generators including fuel supply.

Reactor building crane (unloaded condition).

Control boards, switchgear, load centers, batteries, transformers, and cable runs serving Class 1 equipment.

Service water systems (critical portions).

Component cooling (critical portions).

Reactor building spray system.

Reactor building air recirculation and cooling system.

Low-pressure injection and decay heat removal system.

Makeup and purification system (critical portions).

Core flooding tanks and piping.

Borated water storage tank.

CLASS 2

Class 2 structures, systems and equipment are those whose failure would not result in the release of radioactivity which would exceed 10 CFR 20 limits at the site boundary and would not prevent safe shutdown. The failure of Class 2 structures, systems and equipment may interrupt power generation.

DESIGN BASES

CLASS 1 STRUCTURES DESIGN

Normal Operation - For loads to be encountered during normal plant operation (excluding earthquake loads), Class 1 structures are designed in accordance with design methods of accepted standards and codes insofar as they are applicable.

(Paragraph Deleted)

The final design of Class 1 concrete structures (except the reactor building) under normal operating conditions satisfies the most severe of the following load combination equations. (Design equations for the reactor building are given in Section 5, Reactor Building and Structures.)

ϕ = 0.85 for tension, shear, bond, and anchorage in reinforced concrete.

ϕ = 0.75 for spirally reinforced concrete compression members.

ϕ = 0.70 for tied compression members.

ϕ = 0.90 for fabricated structural steel.

ϕ = 0.90 for reinforcing steel (not prestressed) in direct tension.

ϕ = 0.85 for lap splices of reinforcing steel.

ϕ = 0.90 for welded or mechanical splices of reinforcing steel.

ϕ = 0.95 for prestressed tendons in direct tension.

The reactor building, engineered safeguards, steam and feed-water system components are protected by barriers from all credible missiles which might be generated from the reactor coolant system. Local yielding or erosion of barriers is permissible due to jet or missile impact, provided there is no general failure.

The final design of the missile barrier and equipment support structures inside the reactor building is reviewed to assure that they can withstand applicable pressure loads, jet forces, pipe reactions and earthquake loads without loss of function. The deflections or deformations of structures and supports are checked to assure that the functions of the reactor building and engineered safeguards equipment are not impaired.

CLASS 1 SYSTEMS AND EQUIPMENT DESIGN

Components and systems classified as Class 1 are designed in accordance with the following criteria:

a. Primary steady state stresses when combined with the seismic stress resulting from the "Design Earthquake" are maintained within the allowable working stress limits accepted as good practice as set forth in the appropriate design standards, eg, ASME Boiler and Pressure Vessel Code, UASAS B31.7 Code for Pressure Piping.

b. Primary steady state stress when combined with the seismic stresses resulting from the "Maximum Earthquake" are limited so that the function of the component or system is not so impaired as to prevent a safe and orderly shutdown of the plant.

CLASS 2 STRUCTURES DESIGN

Class 2 structures are designed in accordance with design methods of accepted codes and standards insofar as they are applicable. Seismic design is in

accordance with the Uniform Building Code with the appropriate working stress allowance and shear coefficients.

CLASS 2 SYSTEMS AND EQUIPMENT DESIGN

Class 2 systems and equipment are designed in accordance with design methods of accepted codes and standards. Wind loads and seismic loads, where applicable, conform to the requirements of the Uniform Building Code.

WIND AND EARTHQUAKE LOADS FOR CLASS 1 STRUCTURES

WIND FORCE

Class 1 structures (except the enclosure over the fuel storage facilities) are designed to resist the effects of a tornado.

The reactor building is analyzed for tornado loading (not coincident with accident or earthquake) on the following basis:

a. Differential bursting pressure between the inside and outside of the reactor building is assumed to be three pounds per square inch positive pressure.

b. Lateral force is assumed as the force caused by a tornado funnel having a maximum peripheral tangential velocity of 300 mph and a forward progression of 60 mph. These components are conservatively applied as a 300 mph wind over the entire surface of the structure for each reactor building and are additive for a 360 mph wind over the entire surface of other Class 1 structures. The applicable portions of wind design methods described in ASCE Paper 3269 are used, particularly for shape factors. The provisions for gust factors and variation of wind velocity with height are not applied.

c. Tornado driven missiles equivalent to an airborne 4 inch by 12 inch by 12 foot plank traveling end-on at 300 mph, or a 4000 pound automobile flying through the air at 50 mph and at not more than 25 feet above the ground, are assumed.

SEISMIC FORCES (E AND E')

AEC Publication TID 7024, "Nuclear Reactors and Earthquakes," is used as the basic design guide for seismic analysis.

The "Design Earthquake" used for this plant is a ground acceleration of 0.06 g horizontally and 0.04 g vertically, acting simultaneously. The "Maximum Earthquake" is a ground acceleration 0.12 g horizontally and 0.08 g vertically, acting simultaneously.

Seismic loads on structures, systems and equipment are determined by realistic evaluation of dynamic properties and the accelerations obtained from the attached acceleration spectrum curves. (Figures 5-A-1 and 5-A-2 in this Appendix)

9.5.7.4 Tests and Inspections

Testing of the diesel generator system is discussed generally in Subsection 8.3.1.1.3. Abstracts of the diesel generator system are provided in Chapter 14. The diesel generator lubrication system is operationally tested during the startup and periodic check-out of the diesel generator. Lube oil pressure and temperature are monitored to ensure operability of the engine driven pump and the recirculation lines. Operation of the electric pump and heater are evidence of their operability. Inspection and testing of the system can be performed without disturbing normal plant operations. The oil is checked periodically to determine that it is within the engine manufacturer's specifications. The duplex filters and strainers are valved for full flow through one side only and may be removed and inspected for the buildup of impurities following engine operation. Periodic testing of the diesel generator is discussed in Chapter 16.

9.5.7.5 Instrumentation Applications

Instrumentation provided for the diesel generator lubrication system includes pressure and temperature switches, indicators, and automatic protection devices. The temperature and pressure switches support the automatic control modes of lubrication operation. Diesel generator controls and indication are provided at the local diesel generator control panels and in the control room. These controls, instruments, and annunciators are discussed in Subsection 8.3.1.1.3. In addition, a dipstick is provided on the engine oil sump. Low lube oil level is the primary means provided for lube oil leakage detection. A secondary means of detection is provided by the diesel generator room sumps which are equiped with high level alarms as shown on Figure 9.5-30. No lube oil sump high level alarm is provided. 10

9.5.8 DIESEL GENERATOR COMBUSTION AIR INTAKE AND EXHAUST SYSTEM

This subsection discusses the mechanical features of the diesel generator combustion air intake and exhaust system. The standby power supply (i.e., the diesel generator system) is discussed in detail in Subsection 8.3.1.1.3. The diesel generator building ventilation system is discussed in Subsection 9.4.7.

9.5.8.1 Design Bases

Criteria for the selection of design bases are stated in Subsection 1.1.2.2.

Protection of the diesel generator combustion air intake and exhaust system from wind and tornado effects is discussed in Section 3.3. Flood design is discussed in Section 3.4. Missile

protection is discussed in Section 3.5. Protection against dynamic effects associated with postulated rupture of piping is discussed in Section 3.6. Environmental design is discussed in Section 3.11.

9.5.8.1.1 Safety Design Bases

SAFETY DESIGN BASIS ONE - The diesel generator combustion air intake and exhaust systems are capable of supplying adequate combustion air and disposing of resultant exhaust products to permit continuous operation of each diesel generator under a load of 110% of rated load.

SAFETY DESIGN BASIS TWO - The diesel generator combustion air intake and exhaust systems are designed to remain functional during and after a design basis earthquake.

SAFETY DESIGN BASIS THREE - The diesel generator combustion air intake and exhaust systems are designed so that a single failure of any component, assuming a loss of offsite power, cannot result in loss of both diesel generators.

SAFETY DESIGN BASIS FOUR - The diesel generator combustion air intake and exhaust systems are capable of being tested even during operation of the diesel generators in accordance with 10 CFR 50 General Design Criterion 10.

9.5.8.1.2 Power Generation Design Bases

The diesel generator combustion air intake and exhaust system has no power generation design bases.

9.5.8.1.3 Codes and Standards

Codes and standards applicable to the diesel generator combustion air intake and exhaust system are listed in Table 3.2-1.

9.5.8.2 System Description

9.5.8.2.1 General Description

Each diesel generator is provided with an air intake and exhaust system. The system is shown in Figure 1.2-27. Major components of the system include intake filters, intake and exhaust silencers, and two turbochargers with aftercoolers for each diesel generator unit. A more detailed description of components is included in Table 9.5-7. Performance data for the aftercooler heat exchangers are provided in Table 9.5-10. 10

9.5.8.3 Safety Evaluation

Safety evaluations are numbered to correspond to the safety design bases.

SAFETY EVALUATION ONE - The combustion air intake provides enough air to the turbochargers to ensure rated diesel output under the most adverse conditions.

SAFETY EVALUATION TWO - The diesel intake and exhaust system is designed in accordance with Seismic Category I requirements as specified in Section 3.2. Systems, equipment, or structures whose failure could result in loss of a required function of the diesel generator intake and exhaust system are checked to determine that they will not fail when subjected to seismic loadings.

SAFETY EVALUATION THREE - The diesel generator air intake is sized to provide adequate combustion air as described in safety evaluation one above. A single failure of the air intake or exhaust may be assessed as a failure of the diesel generator with which the failure is associated. In such a circumstance, safe shutdown is attained and maintained by the appropriate redundant diesel generator installation.

SAFETY EVALUATION FOUR - All active components are capable of being tested during power generation to ensure proper functioning of the system as discussed in Subsection 9.5.8.4 below.

9.5.8.4 Tests and Inspection

Testing of the diesel generator system is discussed generally in Subsection 8.3.1.1.3. Abstracts of the diesel generator system are provided in Chapter 14. Visual inspections, pressure and leak testing, and operational checks of the combustion air intake and exhaust system are performed as the system is installed. The diesel generator combustion air intake and exhaust system is operationally checked during the periodic testing of the diesel generator system. Periodic testing of the diesel generator is discussed in Chapter 16.

9.5.8.5 Instrumentation Application

Diesel generator controls and indication are provided at the local diesel generator control panels and in the control room. The local diesel generator control panels are mounted on the diesel generator building foundation, which is structurally isolated from the diesel generator pedestals. The controls, instruments, and annunicators, associated with the diesel generators are discussed in Subsection 8.3.1.1.3. 27

3.2 CLASSIFICATION OF STRUCTURES, COMPONENTS, AND SYSTEMS

This section provides a guide to the classification method of structures, components, and systems.

Subsection 3.2.1 applies to the balance of plant; that is, all structures, components, and systems except those provided by the NSSS supplier.

Subsection 3.2.2 applies to all components and systems provided by the NSSS supplier.

Subsection 3.2.3 lists effective dates of major codes for components including balance of plant and NSSS supplied items.

3.2.1 CLASSIFICATION OF BALANCE OF PLANT STRUCTURES, COMPONENTS, AND SYSTEMS

3.2.1.1 Seismic Classification

General Design Criterion 2 of Appendix A to 10 CFR 50, General Design Criteria for Nuclear Power Plants, and Appendix A to 10 CFR 100, Seismic and Geologic Siting Criteria for Nuclear Power Plants, require that nuclear power plant structures, systems, and components important to safety be designed to withstand the effects of earthquakes.

3.2.1.1.1 Definitions

Seismic Category I structures, components, and systems are defined in accordance with NRC Regulatory Guide 1.29 as those necessary to assure:

a. The integrity of the reactor coolant pressure boundary

b. The capability to shut down the reactor and maintain it in a safe shutdown condition

c. The capability to prevent or mitigate the consequences of accidents that could result in potential offsite exposures comparable to the guideline exposures of 10 CFR 100

Seismic Category I structures, components, and systems are designed to withstand the appropriate seismic loads as discussed in Section 3.7 and other applicable loads without loss of function. Seismic Category I structures are sufficiently isolated or protected from other structures to ensure that their integrity is maintained at all times.

Components (and their supporting structures) which are not Seismic Category I and whose collapse could result in loss of

required function of Seismic Category I structures, equipment, or systems are reviewed to confirm their integrity against collapse when subjected to seismic loading resulting from the safe shutdown earthquake.

3.2.1.1.2 Classifications

Table 3.2-1 provides a listing of structures, components, and systems and identifies those which are Seismic Category I.

Where only portions of systems are identified as Seismic Category I on this table, the boundaries of the Seismic Category I portions of the system are shown on the piping and instrument diagrams in appropriate sections of this report. Compliance of the above seismic classifications with NRC Regulatory Guide 1.29 is discussed in Appendix 3A.

3.2.1.2 System Quality Group Classification

This subsection provides the system quality group classification for each fluid or gas system pressure-containing component. Components are classified according to safety-related importance as dictated by service and functional requirements and by the consequences of failure. The design, fabrication, inspection, and testing requirements fixed for each classification provide the required degree of conservatism in assuring pressure integrity.

3.2.1.2.1 Quality Group Classifications

Equipment quality group classifications are indicated in Table 3.2-1. System quality group classifications and interfaces between classifications in systems with components of different classifications are indicated on the system piping and instrumentation diagrams which are found in the pertinent sections of this safety analysis report. The boundaries are designated by a three letter sequence, for example, "HBD." The last letter (A, B, C or D) stands for applicable code which corresponds to a quality group in the table, as described in Regulatory Guide 1.26. Regulatory Guide 1.26 does not apply if the last letter is F, G, H, or J.

Last Letter of Three Letter Group	Corresponding Quality Group
A	A
B	B
C	C
D	D
F	NA
G	NA
H	NA
J	NA

Compliance of quality group classification with NRC Regulatory Guide 1.26 is discussed in Appendix 3A.

3.2.1.2.2 Code Requirements

The code requirements applicable to each quality group classification are identified in Table 3.2-2. Design code requirements correspond to those indicated in Section 50.55a of 10 CFR 50 and NRC Regulatory Guide 1.26, Table 1, except for quality group D pumps. The design standard of these pumps is discussed in the footnote of Table 3.2-2. Codes and applicable addenda for all piping and equipment in the plant are listed in Tables 3.2-3 and 3.2-4.

3.2.2 CLASSIFICATION OF STRUCTURES, COMPONENTS, AND SYSTEMS PROVIDED BY THE NSSS SUPPLIER

A system boundary includes those portions of the system required to accomplish the specified safety function and connected piping up to and including the first valve (including a safety or relief valve) that is either normally closed or capable of automatic closure when the safety function is required.

This section identifies the B&W classification method for structures, components, and systems. It is intended that 1) the seismic classification of structures, systems, and components, and 2) the system quality group classification for pressure-containing components of fluid systems utilize the guidelines set forth in Regulatory Guides 1.29 and 1.26 respectively.

3.2.2.1 Seismic Classification

General Design Criterion 2 of Appendix A to 10 CFR 50, General Design Criteria for Nuclear Power Plants, and Appendix A to 10 CFR 100, Seismic and Geologic Siting Criteria for Nuclear Power Plants, require that nuclear power plant structures,

TABLE 3.2-1

DESIGN CRITERIA SUMMARY [1]

System/Component	FSAR Section	Location	Quality Group	Design Code/ Standard	Seismic Category	
SEISMIC CATEGORY I STRUCTURES						
Concrete Containment	3.8.1					
Containment building		C	NA	ACI-318[2] AWS D1.1	I	43
Crane supports		C	NA	ACI-318[2] AISC AWS D1.1	I	
Liner plate		C	NA	ACI-318[2] AISC AWS D1.1	I	
Penetration sleeve		C	NA	ACI-318[2]	I	
Personnel lock, emergency airlock, equipment hatch		C	NA	ACI-318[2] AISC ASME	I	30
Containment Internal Structures	3.8.3					
NSSS supports		C	NA	ACI-318[2] AISC AWS D1.1	I	
Other internal structures		C	NA	ACI-318[2] AISC AWS D1.1	I	
Auxiliary Building	3.8.4	A	NA	ACI-318[2] AISC AWS D1.1	I	
Diesel Generator Building	3.8.4	G	NA	ACI-318[2] AISC AWS D1.1	I	

TABLE 3.2-1 (continued)

System/Component	FSAR Section	Location	Quality Group	Design Code/ Standard	Seismic Category	
Engine driven jacket water pump		G	D	DEMA	I	30
Piping and valves						15
Engine mounted[9]		G	NA	DEMA	I	27
Non-engine mounted		O,G	C	III-3	I	30
Diesel Generator Starting System	9.5.6					
Air receivers		G	C	III-3	I	
Compressors		G	NA	NA	NA	
Air dryers		G	NA	NA	NA	15
Piping and valves						
Air receiver to engine		G	C	III-3	I	
Compressor to receiver		G	D	B31.1	NA	15
Engine mounted		G	NA	DEMA	I	
Filters		G	NA	NA	I	
Diesel Generator Lubrication System	9.5.7					
Lube oil cooler		G	C	III-3	I	
Lube oil sump tank		G	C	III-3	I	30
Auxiliary lube oil pump		G	C	III-3	I	
Engine driven lube oil pump		G	D	DEMA	I	
Lube oil keepwarm pump		G	C	III-3	I	30
Piping and valves						
Engine mounted		G	NA	DEMA	I	15
Aux skid mounted		G	C	III-3	I	
Diesel Generator Combustion Air Intake and Exhaust System	9.5.8					
Turbocharger		G	NA	DEMA	I	
Intake air louvers		G	NA	NA	I	

TABLE 3.2-1 (continued)

System/Component	FSAR Section	Location	Quality Group	Design Code/ Standard	Seismic Category	
Intake filters		G	NA	NA	I	15
Ducts and dampers		G	NA	SMACNA	I	
Intake and exhaust silencers		G	NA	NA	I	
Chemical Waste System	9.5.9					
Motors		E,T	NA	NEMA MG-1	NA	
Pumps		E,T	D	HI	NA	
Piping and valves		U,E,T	D	B31.1	NA	
Oily Waste System	9.5.10					
Motors		E,P,T	NA	NEMA MG-1	NA	
Pumps		E,P,T	D	HI	NA	
Piping and valves		E,O,T,U,P	D/NA	B31.1	NA	21
Tanks		P	D	API-650	NA	

TABLE 3.2-1 (continued)

NOTES:

A. Equipment hangers and supports are designed to the same quality classification as the associated equipment when the equipment is required for safety.

B. Hangers and supports of Seismic Category I systems in Seismic Category I buildings meet the Seismic Category I requirements.

C. The trays and supports for safety-related cables meet Seismic Category I requirements. Conduit and wireways as well as the support materials for all raceways for safety-related cables are designed to maintain their integrity during a safe shutdown earthquake. 30

D. This equipment is seismically qualified as required to ensure that, during normal and safe shutdown earthquake conditions, fuel damage will not occur that would release radioactivity in excess of allowable limits.

(1) Below are listed the definitions of abbreviations used in this table for each table heading.

FSAR Section

Number: Section where system, component, or structure is discussed.

NA: The FSAR does not discuss this system, component, or structure.

Location

A: Auxiliary building

C: Containment

E: Evaporator and auxiliary boiler building

G: Diesel generator building

H: Guard house

M: Main chlorination facility

O: Outdoors onsite

TABLE 3.2-1 (continued)

P: Oil waste treatment facility

R: Solid radwaste building

S: Office and service building

T: Turbine building

U: Underground onsite

W: Service water pump structure

X: Circulating water intake structure

Y: Makeup water pump structure

Quality Group

A, B, C, D: Quality group classification as defined in Regulatory Guide 1.26.

NA Quality group classification as defined in Regulatory Guide 1.26 does not apply.

Design Code/Standard

I: ASME Boiler and Pressure Vessel Code, Section I

III: ASME Boiler and Pressure Vessel Code, Section III

III-1, 2, 3: ASME Boiler and Pressure Vessel Code, Section III, Class 1, 2, 3

III-A: ASME Boiler and Pressure Vessel Code, Section III, Class A (1968) | 39

IV: ASME Boiler and Pressure Vessel Code, Section IV

VIII: ASME Boiler and Pressure Vessel Code, Section VIII

ABMA: American Boiler Manufacturers Association

ACI-318-63: American Concrete Institute, "Building Code Requirements for Buildings" (for calculations initiated prior to February 1, 1973)

ACI-318-71: American Concrete Institute, "Building Code Requirements for Building" (for calculations initiated on or after February 1, 1973)

TABLE 3.2-1 (continued)

IEEE-344: Institute of Electrical and Electronic Engineers, Recommended Practices for Seismic Qualification of Class 1E Equipment for Nuclear Power Generating Stations

IEEE-383: Institute of Electrical and Electronic Engineers, Standard for Type Test of Class 1E Electric Cables, Field Splices and Connections for Nuclear Power Generating Stations

IEEE-387: Institute of Electrical and Electronic Engineers, Trial-Use Criteria for Diesel-Generator Sets Applied as Standby Power Supplies for Nuclear Power Generating Stations

IEEE-450: Institute of Electrical and Electronic Engineers; Recommended Practice for Maintenance, Testing, and Replacement of Large Lead Storage Batteries for Generating Stations and Substations

IPCEA-S-19-81: Insulated Power Cable Engineers Association; Rubber Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy

MSAR-71-45: Entrained Moisture Separator for Fine Particle Water-Air-Stream Service, Their Performance Development and Status | 30

NA: Design requirements specified by designer with appropriate consideration of the intended service and operation conditions

NEC: National Electrical Code

NEMA ICS-1 to 110: National Electrical Manufacturers' Association, Industrial Controls and Systems

NEMA MG-1: National Electrical Manufacturers' Association, Motors and Generators

NEMA SM-22: National Electrical Manufacturers' Association, Single Stage Steam Turbine for Mechanical Drive Service

NFPA: National Fire Protection Association

SIP: Standard Industrial Practice

SMACNA: Sheet Metal and Air Conditioning Contractors National Association, Inc.

TABLE 3.2-1 (continued)

TEMA-C: Tubular Exchanger Manufacturers Association Class C

TEMA-R: Tubular Exchanger Manufacturers Association Class R

UBC: Uniform Building Code

UL: Underwriters' Laboratories

Seismic Category

I: Construction in accordance with seismic requirements of Regulatory Guide 1.29 and Appendix A to 10 CFR 100

NA: Not Seismic Category I

(2) See referenced FSAR section for additional codes and standards applicable to these structures.

(3) These components and associated supporting structures must be designed to retain structural integrity during and after a Seismic Category I event but do not have to retain operability for protection of public safety. The design basis requirement is prevention of structural collapse and damage to equipment and structures required for protection of the public safety.

(4) For other applicable codes and standards see Section 7 1 and referenced FSAR sections.

(5) Air handling unit fans and unit cooler fans are not rated in accordance with AMCA. The entire unit is rated in accordance with ARI.

(6) Refer to Subsection 10.2.1.3 for further discussion of turbine-generator codes and standards.

(7) Refer to Table 3.2-6 | 30

(8) See Response to Regulatory Guide 1.143 in Appendix 3A. | 33

(9) The engine-mounted fuel and cooling water lines are composed of either ASTM A 53 or A 106, Grade A seamless steel pipe. For pipe sections to be bent or formed, ASTM A 106 Grade B is used, with the compatible 106 Grade A pipe. | 27

THIS REPLACES LOST ORIGINAL

PROJECT Q-LIST
COVER SHEET
CONSUMERS POWER COMPANY
MIDLAND PLANT UNITS 1 AND 2
MIDLAND, MICHIGAN

ATTACHMENT "D"

1.1.8.9.5.3
1.1.6.2.7.5

JOB NO. 7220 REV. NO. 10 Sheet 1

REV.	DATE	REASON FOR CHANGE	APPROVAL SIGNATURES	DISCIPLINE TITLE
△				
△				
△				
10	5-23-83	General Revision for the Purpose of Updating Information	M A Hughes	Architecture
				Civil Struct/ Soils
				Control Systems
				Electrical
				Mechanical/Nuclear
				Nuclear Engineer
				Project Engineer
				Consumers Power Co.
9	1/6/82	Updated the Civil section to include underpinning requirements	M.A. Hughes	Architecture
				Civil Struct./Soils
				Control Systems
				Electrical
				Mechanical/Nuclear
				Nuclear Engineer
				Project Engineer
				Consumers Power Co.

ED-15 REV. 1 (5-74)

SHEET	LATEST REV.	SHEET	LATEST REV.	SHEET	LATEST REV.	SHEET	LATEST REV.	SHEET	LATEST REV.	SHEET	LATEST REV.	SHEET	LATEST REV.
1	10	ELECTRICAL		MECH. (cont.)		MECH (cont.)							
11	10	1	10	18	10	29	10						
1	10	2	10	19	10	30	10						
2	10	3	10	20	10	31	10						
3	10	4	10	21	10	32	10						
4	10			22	10	33	10						
				23	10								
CIVIL		MECHANICAL		24	10								
1	10	1	10	25	10								
2	10	2	10	26	10								
3	10	3	10	27	10								
4	10	4	10	28	10								
5	10	5	10	CONTROL SYS.									
6	10	6	10	1	10								
7	10	7	10	2	10								
8	10	8	10	3	10								
9	10	9	10	4	10								
10	10	10	10	5	10								
11	10	11	10										
		12	10	SERVICES									
ARCHITECTURE		13	10	1	10								
1	10	14	10										
		15	10	CPCO									
		16	10	1	7								
		17	10										

NO.	DATE	REVISIONS	BY	CHK'D	APP'D	NO.	DATE	REVISIONS	BY	CHK'D	APP
10	5-23-83	Revised to Update	[illegible]	[illegible]	[illegible]						
9	1/?/82	Revised Civil section	DLB	BRK	LHC						

FACING SHEET

MIDLAND PLANT UNITS 1 & 2

PROJECT Q-LIST

BECHTEL

JOB No. 7220

Sheet ii

REV. 10

PROJECT Q-LIST

CONSUMERS POWER COMPANY

MIDLAND PLANT UNITS 1 AND 2

The Project Q-List is the master control document which identifies the structures, systems, components, and services that are important to safety and necessary to ensure 1) the integrity of the reactor coolant pressure boundary, 2) capability to shut down the reactor and maintain it in a safe shutdown condition, or 3) capability to prevent or mitigate the consequences of accidents which could result in potential offsite exposure in excess of the guideline exposures of 10 CFR 100. Q-listed portions of structures, systems, and components are designated as Seismic Category 1 or Electrical Class 1E. 10

Application:

1. Each item supplied by the Babcock & Wilcox Company is identified in the purchaser column by "B&W." Quality Assurance for the design, fabrication, shipment, and shop testing of such items is the responsibility of B&W and shall be in accordance with the latest revision of NPGD QA Manual 19AN.1 with exception for the CPCo contract.

2. Items purchased by the Bechtel Power Corporation are identified by "BPC." Quality Assurance for the design, procurement and installation of these items is the responsibility of Bechtel and shall be in accordance with the Bechtel NQAM. 19

3. Items supplied by Consumers Power Company are identified in the purchaser column by "CPCo." Quality Assurance for the design, procurement, and installation of these items is the responsibility of CPCo and shall be in accordance with the CPCo QA Manual.

4. All Q-listed items are subject to the requirements of the Consumers Power Company Quality Assurance Program for design, procurement, shipping, construction, preoperational testing, fuel loading, operation and maintenance.

Notes Referenced in the Q-List:

1. All Q-valves, dampers, strainers, restricting orifices, lines, and pressure boundary instruments will be identified on the system P&ID, HVAC duct layout drawing. system, isometric drawings and piping class summary sheets, and the applicable material requisition or specification. 18

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All Q electrical instruments, devices, and components can be identified through the use of logics, loops, schemes, and applicable material requisition or specification. 19

2. Portions required for control room emergency ventilation.

3. See penetration schedule Drawings M-301 and M-302.

4. Material requisition number is not available at this time.

5. See penetration schedule Drawing C-334.

6. B&W supplied equipment is identified by a Bechtel/CPCo file number. This number is not the MR number for that item. 19

7. Only the NDE that applies to field welding of Q-listed structures and systems as required by applicable specifications is Q-listed.

8. Seismic Category 1 applies only to those components necessary to insure structural integrity of the system during a seismic event. No electrical portions are Seismic Category 1. 10

9. Identified and purchased with driven equipment.

10. This item is included on the Q-List to provide additional controls to ensure a 90% data recovery between March 1, 1975 and February 28, 1977 as required by Regulatory Guide 1.23. Operation of the meteorology program after February 28, 1977, is for information only and is not Q-listed. Meteorological tower instrumentation and its operation does not meet the Q-List definition of a safety-related system.

11. Piping, valves, hangers, and supports for 2 inch and smaller piping are field routed. Refer to FSK-M drawings.

12. For control valves and solenoid valves which are part of these systems, see the control systems portion of Q-List.

13. This item covers Q-listed plans applicable to remedial soils activities. The Q-List for this work is included in MPQP-2, Quality Plan for Remedial Soils Activities and Soils-Related Work in Q Areas. This quality plan is applicable for all aspects of the remedial soils activities and, as such, the activities and materials associated with this work are deemed Q-listed. Q-listing provided in MPQP-2 covers activities, items, and structures beyond the requirements provided in the 19

Project Q-List (Continued)

FSAR. This extension to provide quality assurance program coverage over and above strictly safety-related items will provide additional assurance that no activity will adversely affect safety-related structures.

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14. See Instrument Installation Summary J-705(Q) for guide to details of individual instrument installations. See individual installation details for specific use of instrument valves, valve manifolds, instrument tubing and fittings, flexible metal hose, and instrument and tubing supports. 15

15. This item is CPCo purchaser responsibility and is identified by a Bechtel file number. This number is not the MR number for that item.

16. This specification is Q listed for receipt, inspection, and placement only. Design is not Q listed (based on ASLB Order of April 30, 1982).

Supporting Documents

1. Mechanical Equipment List - An alphanumeric listing of equipment by equipment number with additional information such as MR number, equipment rating, location, vendor, P&ID number, and cost code. Prepared and updated by the mechanical group. Assigned Drawing 7220-M-485(Q). M-485 is not definitive in designating Q or non-Q.

2. Drawing Control Log - A numerical listing of all drawings subdivided by discipline groups. Contains the title, Q-designation, revision number, and revision date. Prepared and updated by the project administrator on a monthly basis. 18

3. Material Requisition and Specification Control Log - A numerical listing of specifications and material requisitions subdivided by discipline groups. Contains such supplementary information as revision dates and purpose, date purchase order issued, and the supplier. Prepared and updated by the Project Administrator on a monthly basis.

4. Piping Class Summary Sheets - Specify the design and key operating conditions for each piping system and subsystem shown on the Piping and Instrument Diagram, and Piping Design Specifications. A numerical listing of piping by line number subdivided by piping class. Contains such information as seismic class, design rating, service conditions, insulation class, and critical hanger designation. Prepared and updated by the mechanical group. Assigned Drawing 7220-M-480(Q).

Project Q-List (Continued)

5. Instrument Index - An alphanumeric listing of instruments and valves by instrument number with additional information such as MR number, location, and related drawings. Prepared and updated by the Control Systems Group. Assigned Drawing 7220-J-700. Instrument Q categories of Q_f (functional) and Q_p (pressure boundary only) are shown in the Q column of the instrument index. (The instrument index is not a "Q" document because it is referenced for information only.)

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6. 7220-G-33(Q) - Provides for the purchase of Q-listed bulk materials/shelf items and special service orders, excluding ASME Section III materials in accordance with the quality assurance requirements of Specification 7220-G-33(Q). Items procured under G-33 are not listed herein. 10

7. Logic and Loop Diagrams - Logic diagrams represent the functional logic of the equipment and clarify the intended use (Q and non-Q) of individual system components. Loop diagrams represent the wiring of the system components (generally for analog systems) and indicate Q or non-Q usage of components.

8. Instrument Installation Summary [J-705(Q)] - Provides Q status for all Bechtel-installed instrumentation. Provides reference to applicable location drawing installation detail and instrument supports.

PROJECT Q-LIST

MIDLAND UNITS 1 AND 2

MECHANICAL

JOB NO. 7220

Revision	Identity Number	Item/Description	Purchaser	Equipment Number	Drawing	Material Requisition
10	4.482	Piping (Only Containment Penetration)	BPC	(1)	M-648(G) (11)	M-104A(Q) M-215(G) M-305(Q) (Spec M-204(Q)) (Spec M-214(Q))
10	4.483	Valves (Only Containment Penetration)	BPC	(1)	M-648(G) (11)	M-125C(Q) M-129A(Q) M-204(Q)
10	4.484	Reactor Bldg Penetration Flued Heads	BPC	(3)	M-301(Q), M-302(Q)	M-111(Q)
7	4.49	PLANT WATER STORAGE AND TRANSFER SYSTEM			M-649(Q)	
10	4.491	Supports and Hangers (Only Containment Penetration)	BPC	(1)	M-649(Q) (11)	M-106(G) (Spec M-326(Q)) (Spec M-343(Q)) (Spec M-366(Q), M-217(Q))
10	4.492	Piping (Only Containment Penetration)	BPC	(1)	M-649(Q) (11)	M-104A(Q) M-215(Q) M-305(Q) M-204(Q) M-214(Q)
10	4.493	Valves (12) (Only Containment Penetration)	BPC	(1)	M-649(Q) (11)	M-204(Q), M-125C(Q), M-129A&B(Q), M-379D(Q)
10	4.494	Reactor Bldg Penetration Flued Heads	BPC	(3)	M-301(Q), M-302(Q)	M-111(Q)
10	4.52	DIESEL ENGINE, GENERATOR, AND ACCESSORIES				
10	4.521	Diesel Engine, Generator, and Engine Mounted Auxiliaries	BPC	1G11 2G11	N/A	M-18(Q)
10	4.522	Diesel Engine, Generator, and Engine Mounted Auxiliaries	BPC	1G12 2G12	N/A	M-18(Q)
10	4.523	Supports & Hangers	BPC	(1)	M-652(Q)	M-106(Q),M-18(Q) (Spec M-326(Q)) (Spec M-343(Q)) (Spec M-366(Q), M-217(Q))

PROJECT Q-LIST

MIDLAND UNITS 1 AND 2

JOB NO. 7220

MECHANICAL

Revision	Identity Number	Item/Description	Purchaser	Equipment Number	Drawing	Material Requisition
10	4.524	Emergency Diesel Oil Transfer Pumps and Motors	BPC	1P78A,B 2P78A,B	M-452(Q)	M-19(Q)
10	4.525	Piping	BPC	(1)	M-652(Q) M-452(Q) (11) M-18 (V.P.)	M-104A(Q),M-18(Q) M-215(Q) M-305(Q) (Spec M-204(Q)) (Spec M-214(Q))
10	4.526	Emergency Diesel Oil Day Tanks	BPC	1T77A,B 2T77A,B	M-452(Q)	M-64(Q)
10	4.527	Emergency Diesel Oil Storage Tanks	BPC	1T78A,B 2T78A,B	M-452(Q)	M-64(Q)
10	4.528	Valves	BPC	(1)	M-652(Q) (11)	M-127A,B,&C(Q), M-18(Q),M-379D(Q)
10	4.529	Jacket Water Coolers	BPC	1E25A,B 2E25A,B	M-419(Q)	M-18(Q)
10	4.5210	Valves, Strainers, Filters and Miscellaneous Components	BPC		M-452(Q)	M-127B(Q) M-18(Q) M-336(Q)
10	4.5211	Auxiliary Fuel Oil Booster Pumps	BPC	1P-137A,B 2P-137A,B	M-18-26 (V.P.)	M-18(Q)
10	4.5212	Air Receivers	BPC	1T-93A,B,C,D 2T-93A,B,C,D	M-452(Q)	M-18(Q)
10	4.5213	Jacket Water Standpipe	BPC	1T-94A,B 2T-94A,B	M-452(Q)	M-18(Q)
10	4.5214	Lube Oil Sump Tank	BPC	1T-61A,B 2T-61A,B	M-18-23 (V.P.)	M-18(Q)
10	4.5215	Auxiliary Lube Oil Pumps	BPC	1P-137A,B 2P-137A,B	M-18-23 (V.P.)	M-18(Q)
10	4.5216	Lube Oil Coolers	BPC	1E-81A,B 2E-81A,B	M-18-23 (V.P.)	M-18(Q)
10	4.5217	Control Panels and Instrumentation	BPC	1C111,112 2C111,112 1C231,232 2C231,232	M-18 (V.P.)	M-18(Q)
10	4.5218	Intake Air Filter	BPC	1F-19A,B,C,D 2F-19A,B,C,D	M-18 (V.P.)	M-18(Q)

Revision	Identity Number	Item/Description	Purchaser	Equipment Number	Drawing	Material Requisition
10	4.5219	Intake Air Silencer	BPC	1M-100A,B,C,D 2M-100A,B,C,D	M-18 (V.P.)	M-18(Q)
10	4.5220	Exhaust Silencer	BPC	1M-101A,B 2M-100A,B	M-18 (V.P.)	M-18(Q)
10	4.5221	Expansion Joints	BPC	1XJ-5201A,B, C,D 2XJ-5201A,B, C,D 1XJ-5202A,B, C,D 2XJ-5202A,B, C,D	M-18 (V.P.)	M-18(Q)
6	4.53	REACTOR BUILDING HV & AC SYSTEM UNIT 1				
7	4.531	---DELETED---				
10	4.532	Recirculating Air Cooling Unit Ductwork and Supports (Including Installation)	BPC	(1)	M-453(Q) M-515, Sh 1(Q)	Subcontract M-151(Q)
10	4.533	Hydrogen Recombiners	BPC	1VE54A,B	M-453(Q)	M-169(Q)
10	4.534	Reactor Building Recirc. Air Cooling Units	BPC	1VM56A,B C,D	M-453(Q)	M-163(Q)
10	4.535	Reactor Building Recirc. Air Cooling Unit Fans	BPC	1VV57A,B C,D	M-453(Q)	M-163(Q)
10	4.536	Reactor Building Purge Penetration Isolation Valves (Includes H_2 Vent and Air Room Isolation Valves)	BPC	(1)	M-453(Q) M-513, Sh 1(Q) M-514(Q), M-518, Sh 1(Q)	M-168(Q) M-127(Q) M-129(Q)
10	4.537	Reactor Building Penetration Flued Heads	BPC	(3)	M-301(Q)	M-111(Q)
10	4.538	Reactor Cavity Vent & Access Pipe and Supports	BPC	(1)	M-453(Q) M-517(Q), M-518, Sh 1(Q)	M-104A(Q)

ATTACHMENT "E"

PROJECT Q-LIST

FOR THE

CONSUMERS POWER COMPANY

MIDLAND PLANT UNITS 1 AND 2

MIDLAND, MICHIGAN

REV.	DATE	REASON FOR CHANGE	APPROVAL SIGNATURES	DISCIPLINE TITLE
3	11/21/79	General Revision for the purpose of updating information and storage on ATS		Architecture
				Civil
				Control Systems
				Electrical
				Mechanical
				Nuclear Engineer
				Project Engineer
				Consumers Power Co.
4	4-20-77	General Revision for the purpose of updating information and storage on ATS		Architecture
				Civil
				Control Systems
				Electrical
				Mechanical
				Nuclear Engineer
				Project Engineer
				Consumers Power Co.

ORIGIN

BECHTEL

JOB No 7220

SPEC DES GUIDE No

REV

Sheet 1

8

PROJECT Q-LIST

MIDLAND UNITS 1 AND 2

MECHANICAL

JOB NO. 7220

REV. NO.	IDENTITY NO.	ITEM/DESCRIPTION	PURCHASER	EQUIP. NO.	DWG. NO.	M.R. NO.
7	4.484	Reactor Bldg Penetration Flued Heads	BAPC	(3)	M-301(Q),M-302(Q)	M-111(Q)
7	4.49	PLANT WATER STORAGE AND TRANSFER SYSTEM			M-449(Q)	
7	4.491	Supports and Hangers	BAPC/BPC	(1)	M-649(Q)	M-106(Q) (Spec M-326(Q)) (Spec M-343(Q))
7	4.492	Piping	BAPC/BPC	(1)	M-649(Q)	M-104A(Q) M-215(Q) M-305(Q) M-204(Q) M-214(Q)
7	4.493	Valves	BAPC/BPC	(1)	M-649(Q)	M-204(Q) M-129A&B(Q)
7	4.494	Reactor Bldg Penetration Flued Heads	BAPC	(3)	M-301(Q),M-302(Q)	M-111(Q)
8	4.52	EMERGENCY DIESEL GENERATOR AND ASSOCIATED SYSTEMS			M-452(Q)	
7	4.521	Diesel Generator	BAPC	1G11 2G11	N/A	M-18(Q)
7	4.522	Diesel Generator	BAPC	1G12 2G12	N/A	M-18(Q)
7	4.523	Supports & Hangers	BAPC/ BPC	(1)	M-652(Q)	M-106(Q) (Spec M-326(Q)) (Spec M-343(Q))
7	4.524	Emergency Diesel Oil Transfer Pumps and Motors	BAPC	1P78A,B 2P78A,B	N/A	M-19(Q)
7	4.525	Piping	BAPC/BPC	(1)	M-652(Q)	M-104A(Q) M-215(Q) M-305(Q) (Spec M-204(Q)) (Spec M-214(Q))
7	4.526	Emergency Diesel Oil Supply Tanks	BAPC	1T77A,B 2T77A,B	N/A	M-64(Q)

REV. NO.	IDENTITY NO.	ITEM/DESCRIPTION	PURCHASER	EQUIP. NO.	DWG. NO.	M.R. NO.
7	4.527	Emergency Diesel Oil Storage Tanks	BAPC	1T78A,B 2T78A,B	N/A	M-64(Q)
7	4.528	Valves	BAPC/	(1)	M-652(Q)	M-127B(Q)
8	4.529	Diesel Generator Cooler	BAPC	1E25A,B 2E25A,B	N/A	M-18(Q)
			BPC			(Spec M-204(Q))
6	4.53	REACTOR BUILDING HV & AC SYSTEM UNIT 1			M-453(Q)	
7	4.531	---DELETED---				
8	4.532	Reactor Building Ductwork and Supports	BAPC/BPC	(1)	M-453(Q)	Subcontract M-151(Q)
7	4.533	Hydrogen Recombiners	BAPC	1VE54A,B	M-453(Q)	M-169(Q)
7	4.534	Reactor Building Recirc. Air Cooling Units	BAPC	1VM56A,B C,D	M-453(Q)	M-163(Q)
7	4.535	Reactor Building Recirc. Air Cooling Unit Fans	BAPC	1VV57A,B C,D	M-453(Q)	M-163(Q)
7	4.536	Reactor Building Purge Penetration Isolation Valves (Includes H_2 Vent and Air Room Isolation Valves)	BAPC	(1)	M-453(Q)	M-168(Q)
7	4.537	Reactor Building Penetration Flued Heads	BAPC	(3)	M-301(Q)	M-111(Q)
7	4.538	Reactor Cavity Vent & Access Pipe and Supports	BAPC	(1)	M-453(Q)	M-104A(Q)
7	4.539	H_2 Vent System Piping & Supports Within Reactor Building	BAPC	(1)	M-453(Q)	M-104A(Q) M-215(Q) (Spec M-204(Q)) (Spec M-214(Q))

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of:	)	Docket Nos. 50-329 OM
	)	50-330 OM
CONSUMERS POWER COMPANY	)	Docket Nos. 50-329 OL
(Midland Plant, Units 1 & 2)	)	50-330 OL

CERTIFICATE OF SERVICE

I, Rebecca J. Lauer, hereby certify that copies of the letter to the Administrative Judges, dated August 12, 1983, in the above-captioned proceeding have been served upon all persons shown in the attached service list by deposit in the United States mail, first-class postage prepaid, this 12th day of August, 1982.

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Rebecca J. Lauer

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Mr. Louis Clark
Government Accountability
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for Policy Studies
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Washington, DC 20009

Jzy
Bill

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA ST., N.W. SUITE 3100
ATLANTA, GEORGIA 30303

AUG 19 1983

MEMORANDUM FOR: Uldis Potapovs, Chief, Vendor Program Branch, Division of Vendor and Technical Programs, RIV

FROM: Richard C. Lewis, Director, Division of Project and Resident Programs

SUBJECT: CONSTRUCTION DEFICIENCY REPORT - CONFIRMATION OF TELECON (AITS NO. F02700381)

Enclosed is a 10/CFR 50.55(e)/10 CFR 21 report received from Carolina Power and Light Co . This appears to be a generic problem. Would you please follow up on the generic aspects of the problem with the AE/Vendor? Should you have additional questions, we will be glad to discuss them with you.

R.C. Lewis
Richard C. Lewis

PRINCIPAL STAFF			
RA		ENF	
D/RA		SCS	
A/RA		PAO	
[illegible]		SLO	
DRMA		RC	
DRMSP			
DE			
ML			
OL		FILE	

Enclosure:
10/CFR 50.55(e)/10 CFR 21 Report

cc w/encl:
R. W. Starostecki, DPRP, RI
J. A. Olshinski, EOP, RII
C. E. Norelius, DPRP, RIII
J. E. Gagliardo, DRRP&EP
J. Crews, DRRPEI, RV
R. F. Heishman, RCPB, IE
C. J. Heltemes, Jr., AEOD

CONTACT: P. R. Bemis
(242-5649)

8309070139

AUG 22 1983

DAILY REPORT INPUT — DIVISION OF PROJECT AND RESIDENT PROGRAMS — DATE August 19, 1983

FACILITY	NOTIFICATION	ITEM OR EVENT	REGIONAL ACTION
Harris 1, 2 DNS: 50-400 50-401	Licensee, 8/18	Potential 50.55e - Diesel Generator Receipt Inspection Deficiencies: During receipt inspection of Units 1 and 2 Diesel Generator rotor, stator and AC boxes (1ASA & 1BSB), ~~had~~ were identified dimensional, electrical and specification deficiencies. The deficiencies are under evaluation by the licensee. Delaval is supplier.	Followup per MC 2512 RIV notified

DISTRIBUTION:
Regional Administrator (Original)
DR File
Originator: R. C. Butcher for P. Bemis

APPROVED BY:
Originator
for { Section Chief
Branch Chief
Mr. Lewis

Nilaces - make cc for Harrison. OSC

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

PRINCIPAL STAFF			
RA		ENF	
D/RA		ECS	
A/RA		PAO	
[illegible]	Ha	SLO	
DRMA		RC	
DRMSP			
DE			
ML			
OL		FILE	

JUL 12 1983

MEMORANDUM FOR: R. W. Starostecki, Director, DP&RP, RI
R. C. Lewis, Director, DP&RP, RII
E. E. Norelius, Director, DP&RP, RIII
J. E. Gagliardo, Director, DRRP&EP, RIV
J. L. Crews, Director, DRRP&EI, RV

FROM: Robert L. Baer, Chief
Engineering and Generic
Communications Branch
Division of Emergency Preparedness
and Engineering Response, IE

SUBJECT: RESOLUTION TO TRANSAMERICA DELAVAL DIESEL GENERATOR TURBOCHARGER THRUST BEARING LUBRICATION PROBLEM

The enclosed subject report is forwarded for your information. The problem pertains to Transamerica Delaval diesel generators at nuclear sites in all regions. The lube oil system has been or should be modified by the appropriate licensees or construction permit holders as recommended by the vendor and described in the enclosed report. While some of the nuclear sites are presently in the process of working on this modification, other nuclear sites may not require their diesel generator for many years because of construction delays. For these sites, you may want to include this matter in the outstanding items list.

If you have any further questions pertaining to the subject, please call Wolfgang Laudan of my staff on FTS 492-9759.

cc Tomlinson

Robert L. Baer, Chief
Engineering and Generic
Communications Branch
Division of Emergency Preparedness
and Engineering Response, IE

Enclosure: Closeout Report

cc: see page 2

CONTACT: W. Laudan, IE
49-29759

8309070141

JUL 14 1983

cc: R. C. DeYoung, IE
J. H. Sniezek, IE
J. M. Taylor, IE
R. L. Baer, IE
W. Laudan, IE
R. H. Vollmer, NRR
D. G. Eisenhut, NRR
R. J. Mattson, NRR
C. Michelson, AEOD
J. C. Higgins, SRI
A. R. Wagner, SRI
P. K. Vandoorn, SRI
J. F. Schapker, SRI
J. D. Wilcox, SRI
B. L. Burgess, RI
M. L. Gildner, RI
D. L. Kelley, SRI
A. E. Chaffee, RI
A. D. Toth, SRI

RESOLUTION TO TRANSAMERICA DELAVAL DIESEL GENERATOR TURBOCHARGER THRUST BEARING LUBRICATION PROBLEM

SUMMARY

The design of the lubricating oil system permits the oil flow to the turbocharger bearing only when the diesel is running. When the diesel is in the standby mode, the turbocharger bearing lube oil system is bypassed in order to prevent a possible fire hazard by having pressurized oil leaking around the bearing seals onto hot impellers. Therefore, during startup a sufficient amount of oil would not be available to adequately lubricate the turbocharger bearing. Since diesels are started once a month and run for a short length of time, premature bearing wear was experienced because of insufficient lubrication.

At San Onofre, the wear rate for this condition after 100 hours of operation was equivalent to 15,000 to 20,000 hours of continuous operation.

To assure proper lubrication during startup, a design modification in form of a lubrication oil drip system causing the lubricating oil to drip on the bearings through an orifice at a given rate was proposed, installed, and tested. At sites where this design modification was implemented, its operation was found to be satisfactory. Only at San Onofre the modified lube oil system did not perform as intended because the pre-lube pumps have an inadequate head capability at the required flow and, therefore, does not provide sufficient lube oil flow to the thrust bearings. Rather than replacing the pre-lube pumps at San Onofre, the licensee decided to adopt the vendors proposed option, to revise the operating procedures. Prior to a normal start (monthly), an operator would be dispatched to run the auxiliary lube oil pump for 30-60 seconds and confirm lube oil pressure to the turbochargers prior to starting. In the event of an emergency start, the bearings will function until oil pressure is developed.

BACKGROUND

On December 16, 1980, Transamerica Delaval reported to the NRC under 10 CFR Part 21 a potential defect in their DSR and DSRV standby diesel generators. The potential problem with lubrication of the thrust bearing of the turbochargers could result in engine non-availability.

Transamerica Delaval reported the following nuclear sites as being affected:

Shoreham	Perry	~~WPPSS No. 4~~
Grand Gulf	~~Bellefonte~~	Midland 1 & 2
Catawba	WPPSS No. 1	~~Hartsville~~
San Onofre	Commanche Peak 1 & 2	Phipps Bend

The turbochargers are manufactured by the ELLIOTT Company of Jeanette, Pennsylvania. They are installed on the engines by Transamerica Delaval and lubricated in accordance with the ELLIOTT Co. recommendations.

In order to eliminate the lubricating oil system problem as described in the summary, Transamerica Delaval modified the lubrication system to assure

adequate lubrication to the thrust bearings during startup. Transamerica Delaval will furnish all necessary information, parts, and technical services on request to their customers. Detailed instructions for performing inspections of the turbocharger thrust bearings and for performing the lube-oil modification were sent to the above licensees.

The first modification was installed and field tested at the San Onofre nuclear plant. It failed to operate due to a lack of lube oil supply to the drip system. The San Onofre prelube pump (Johnston No. H-1730-A, 104 gpm at 26 ft head) had inadequate head capability at the required flow. All other Transamerica Delaval diesel generators have turbochargers with lubricating oil pumps from IMO P/N 74033-101, with 125 gpm at 25 psi. Site operational testing of drip systems at sites with IMO pumps was found to be functional and satisfactory.

To aid San Onofre in their operations, options to the drip system were reviewed. San Onofre decided not to replace the Johnston pump with an IMO pump for a drip system, but rather pre-prime the turbo thrust bearings manually as described in the summary.

Most of the nuclear sites affected are presently not in commercial operation. While some of the nuclear plants are presently in the process of installing the drip lube system, others may not require this modification for many years. For these sites, the regional and/or resident inspectors may want to include this matter on their outstanding item list.

H. Landau, I.E.

Still potential: need to input to computer if really a 50.55(e)

~~Stepp~~ Gardner Landsman

Consumers Power Company

James W Cook
Vice President - Projects, Engineering and Construction

General Offices: 1945 West Parnall Road, Jackson, MI 49201 • (517) 788-0453

December 30, 1982

82-16 #1

Mr J G Keppler, Regional Administrator
US Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

MIDLAND NUCLEAR COGENERATION PLANT -
DOCKET NOS 50-329 AND 50-330
POTENTIAL 50.55(e) REPORT CONCERNING
PROCURED ELECTRICAL EQUIPMENT
FILE 0.4.9.72 SERIAL 19130

On December 3, 1982, W R Bird reported a potential 50.55(e) condition concerning delivered, safety-related electrical equipment not meeting project requirements to R Gardner of your Staff. The attachment provides a description of the problem and the overall corrective actions to resolve this issue. This letter is the first interim report on this subject.

The condition remains as a potential reportable condition in that it is indeterminate whether the specific nonconforming conditions found would have prevented the equipment/components from properly functioning during all design basis events. The types of electrical equipment in question are those panels and cabinets having extensive vendor wiring and which provide instrument, control, and power functions. Actions being initiated to support the overall corrective actions include:

1. Establishing a comprehensive review of the subject equipment purchases to support determining root causes as to how equipment was manufactured with deficiencies and delivered to the Midland site without detection of the deficiencies.

2. Development of a matrix of past corrective actions implemented to provide improvements in this area versus the timing of manufacture and delivery of nonconforming equipment.

3. Development of specific inspection planning to be utilized at the supplier facilities for source or receipt inspection of future orders.

4. Review the status of the overinspections performed on delivered subject equipment to assure that no items were missed.

oc1282-1489a131

JAN 5 1983

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5. Dispositioning and necessary rework or replacement of items identified.

Either another interim or final report will be submitted on or before February 28, 1983.

James W. Cook

WRB/MJS/jm

Attachment: Management Corrective Action Report MCAR-1, Report No 66, Rev 2, dated 12/30/82

CC: Document Control Desk, NRC
Washington, DC

R J Cook, NRC Resident Inspector
Midland Nuclear Plant

CBechhoefer, ASLB Panel
RSDecker, ASLB Panel
FPCowan, ASLB Panel
JHarbour, ASLB Panel
AS&L Appeal Panel
MMCherry, Esq
MSinclair
BStamiris
CRStephens, USNRC
WDPaton, Esq, USNRC
FJKelley, Esq, Attorney General
SHFreeman, Esq, Asst Attorney General
WHMarshall
CJMerritt, Esq, TNK&J
Great Lakes QA Managers

oc1282-1489a131

AI#: A5014 s/u: PGM000 Priority: 02

QUALITY ASSURANCE PROGRAM
MANAGEMENT CORRECTIVE ACTION REPORT
MCAR-1

REPORT NO.: 66-Revision 2

JOB NO.: 7220 Q NO.: _____ DATE: 12/30/82

I DESCRIPTION* (Including References):

Unacceptable workmanship conditions, such as insufficient solder, broken wire strands, damaged wire insulation, leads pulling from lugs, loose identification tags and markers, use of improper wire lugs, and improper crimping have been identified on electrical control panels and cabinets supplied by various suppliers. Approximately 30 discrepancy reports

(continued on page 2)

RECOMMENDED ACTION* (Optional):

The following recommended corrective actions are for vendor supplied electrical panels and cabinets.

A. Safety Evaluation of Identified Conditions

1. Based on cases of workmanship identified as not in compliance with MPQAD overinspection (plan 01-E-7B) predict the potential effects on component performance. (continued on page 2)

REFERRED TO: ☒ Engineering ☐ Construction ☒ QA Management ☒ Quality Control ☒ Procurement (Supplier Quality) ☒ MPQAD

NOTE: This condition was reported to the NRC by CPCo as potentially reportable on 12/3/82.

ISSUED BY: D.R. Reis for 12/30/82
Project QA Engineer Date

II REPORTABLE DEFICIENCY:

☐ NO ☐ YES

NOTIFIED CLIENT: see above
Date

Project Manager for J. Kutgers 12/30/82
Date

III CAUSE:

CORRECTIVE ACTION TAKEN:

AUTHORIZED BY: _____
Date

AAPD DISTRIBUTION	PROJ DISTRIBUTION	OTHER DISTRIBUTION
MGR OF CONSTRUCTION	CHIEF CONSTR QC ENGR	MGR OF QA - TPO
MGR OF ENGINEERING	CLIENT	GPD - QA MGR
MGR OF PROCUREMENT	PFOCE	UAPD - QA MGR
MGR OF PROJ OPERATIONS	PROJECT CONSTR MGR	SFPD - QA MGR
MGR OF QUALITY ASSURANCE	PROJECT ENGINEER	
CONSTRUCTION MGR	PROJECT MGR	
ENGINEERING MGR	PROJ PROCUREMENT MGR	
SUPPLIER QUALITY MGR	SITE MGR	
QE SUPERVISOR		

FORMAL REPORT TO CLIENT (If Section II Applies) _____ Date

CORRECTIVE ACTION IMPLEMENTED

VERIFIED BY _____
Project QA Engineer Date

*Describe in space provided and attach reference document.

Description (continued)

(e.g., nonconformance reports and quality action requests) have been written in the last two years on electrical equipment for similar conditions discovered during MPQAD overinspections using Consumers Power Company Project Inspection Plan 01-E-7B. Recent examples of these conditions have also been noted on items supplied by Terry Corp. (auxiliary feedwater pump turbine control panel), Vitro Laboratories (ESIS cabinet internal circuit board) and Transamerica Delaval (diesel engine control panel).

The above is evidence of a weakness in the electrical panel and cabinet suppliers for Midland to fully meet specified requirements in the areas identified. The source and receipt inspection activities have not been structured to be completely effective in identifying the vendor's discrepancies.

Recommended Actions

2. Evaluate the effects on plant safety due to the predicted effects from Item A.1 above.

B. Evaluation of Requirements and Vendor Programs

1. Review the material requisitions for definition of workmanship requirements or criteria using the discrepancy reports (nonconformance reports and quality action requests) from MPQAD overinspection plan 01-E-7B. This will be input to Item B.2.

2. Evaluate the vendors' programs (i.e., workmanship standards, inspection planning, etc.). Modify the programs as appropriate.

3. Evaluate the vendors' implementation of their program (i.e., methods used and results obtained) in the area of workmanship. Initiate corrective action as appropriate.

C. Evaluation of Bechtel Programs

1. Evaluate the source and receipt inspection programs with regard to vendor workmanship and modify the programs as appropriate.

2. Determine process corrective actions necessary for Bechtel to improve control of vendors' performance in the area of workmanship.

D. Interim Report

1. Provide interim report by February 15, 1983 to meet client commitment date of February 28, 1983.

CCP

Consumers Power Company

Midland Project: PO Box 1963, Midland, MI 48640 • (517) 631-8650

PRINCIPAL STAFF			
RA		ENF	
D/RA		[illegible]	+ 3
A/RA		PAO	
DPRP		SLO	
DRMA		RC	
DRMSP			
DE			
ML			
OL		FILE	

August 18, 1983

Mr Stanley Baranow
Store & Webster Construction Co
Midland Nuclear Cogeneration Plant
PO Box 1963
Midland, MI 48640

MIDLAND ENERGY CENTER - SERIAL: 23517 FILE: 24.2

References: 1. MLCurland letter to RAWells, dated August 8, 1983, Serial 25172
2. RAWells letter to JWCook, dated August 8, 1983, Serial 23677
3. RAWells letter to DBMiller, dated August 9, 1983, Subject: Midland Energy Center Project - Material Traceability Review CCP Zone 6

Please find attached copies of the three memos referenced above which deal with material traceability.

Should you have any questions, please feel free to contact me or Brien Palmer.

HPLeonard, General QA Superintendent
Plant Assurance Division
Midland Project Quality Assurance Department

HPL/BMP/ckb

cc: JHarrison, USNRC
DBMiller, Midland
BMPalmer, Midland
DATaggart, Midland
RAWells, Midland

8308300642

AUG 25 1983

To RAWells

From MLCurland M L Curland

Date August 8, 1983

Subject MIDLAND ENERGY CENTER PROJECT - PROGRAMMATIC REVIEW OF MATERIAL TRACEABILITY BY MPQAD
FILE 24.0 SERIAL 25172

CC

Consumers Power Company

INTERNAL CORRESPONDENCE

MPQAD has completed a review of the procedures and systems in use at the Midland Plant for identification and control of material and components in response to a Zone 6 action item of the Construction Completion Program. An evaluation was made of the adequacy of these procedures and systems to fulfill and adhere to regulatory, code and standard requirements regarding material identification and control. The review consisted of: a search of requirement documents, procedures, specifications and instructions; personnel contact; and observations of stockrooms, storage areas and field installations. Investigations concentrated on pipe hangers and supports, structural materials, piping, and weld filler material.

Based on this review, my staff and I have concluded that the systems in use for material identification and control do provide for compliance with ASME Code requirements of identification through fabrication, and for 10CFR50 Appendix B requirements of preventing the use of incorrect material. Although the requirements are met, the degree of compliance is considered minimal. The report prepared by my staff does recommend some actions which it is believed will provide a more positive control for future activities and will lessen project vulnerability to subsequent difficulty in responding to questions of material acceptability. However, it is my judgement that the present program and the verification of material identification imposed by appropriate PQCIs complies with the commitments for this project. It is my conclusion that although certain improvements will be recommended as noted above, there should be no constraint or holds placed on the inspection process at this time.

MLC/pab

To JWCook, P-26-336B

From RAWells, Midland

Date August 8, 1983

Subject MIDLAND ENERGY CENTER PROJECT -
CCP PROGRAMMATIC REVIEWS
MATERIAL TRACEABILITY
FILE 24.0 SERIAL 23677

Consumers Power Company

Internal Correspondence

CC WRBird, P-14-418A
MLCurland, Midland
HPLeonard, Midland
DBMiller, Midland
BMPalmer, Midland

As part of our Construction Completion Program, MPQAD was assigned the responsibility to conduct certain programmatic reviews as a prerequisite to initiation of Phase 2 of the CCP. The purpose of this memo is to address the review conducted on material identification and control. This study has been completed under the direction of M L Curland, Principal Quality Advisor for MPQAD. The fundamental conclusion of the study is that the systems in use for material identification and control do provide for compliance with ASME Code requirements of identification through fabrication, and for 10CFR50 Appendix B requirements of preventing the use of incorrect material.

The detailed findings, conclusions and recommendations contained in the MPQAD report will be presented to the CCP Management Review group and selected staff in the very near future. It is the position of MPQAD that our material identification and control systems are acceptable, although certain recommendations may be made for future improvements. Additionally, since material identification and control verification is required where necessary through appropriate PQCIs, it is concluded that the program for material identification and control requirements and verification is acceptable for inspection purposes. Although some improvements will be recommended to the overall program, these are not considered a constraint to our inspection process. The ongoing larger reinspection effort and reinspections under the QVP will meet programmatic material identification and control requirements.

This position is based upon a collective review of the final draft report by my staff and upon the recommendation of M L Curland, attached.

RAW/pab

To DBMiller

From RAWells

Date August 9, 1983

Subject MIDLAND ENERGY CENTER PROJECT -
MATERIAL TRACEABILITY REVIEW
CCP ZONE 6

Consumers Power Company

Internal Correspondence

CC JWCook
~~HPLeonard~~

The attached memos indicate that MPQAD has completed its review of material traceability as required by Zone 6 of the CCP. As indicated in the attached, the programs presently in place are acceptable, although some recommendations for improvements for future use will be made. The details of the study and conclusions will be presented to the CCP management group for information in the near future.

I consider this CCP assignment closed.

jln