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May 17, 1982

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

MIDLAND PROJECT
RESPONSE TO DRAFT SALP REPORT
FILE 0.6.1 SERIAL 17485

On April 26, 1982, Mr J G Keppler and members of the NRC Region III staff met with Consumers Power Company personnel in Jackson where the NRC presented the observations and findings of the Midland SALP board for the period July 1, 1980 to July 30, 1981. At the conclusion of that meeting we were informed that we should make written comments to the Region III office within 20 days of that meeting date. This letter transmits Consumers Power Company's response to the draft SALP evaluation report and to other comments made by Mr Keppler at that meeting.

Our general reaction to the SALP evaluation can be summarized as follows: We support the SALP goals and objectives because we believe it is vital to have an active and continuing dialogue with those who have direct regulatory responsibility for the Midland Nuclear Plant. We do believe, however, that the SALP process has not yet reached maturity and there are areas where the process can be made more effective. With regard to the specific contents of the draft SALP report, we are concerned with what we believe is an unnecessarily negative characterization of the inspection results for the period covered by the SALP report. Because of this concern and our belief that the facts do not support the characterization presented by the authors of the draft SALP report, we have spent considerable time reviewing the detailed information on which the draft SALP report was based, and this analysis forms the basis of our attached response. We believe a careful review of this material will enable Region III management to understand the basis for our concern and to gain an appreciation for our perspective in this matter.

In addition t the review of the draft SALP report, Mr Keppler made several comments at the April 26 meeting regarding his own participation in both the NRC team inspection of May 1981 and his subsequent testimony in the ASLB hearings on the soils matter. In order to respond to those comments we have also included additional material and analyses that directly respond to Mr Keppler's comments.

Our detailed response to the SALP report and Mr Keppler's comments has been divided into three attachments transmitted with this letter. A description of each of the attachments follows.

Attachment 1 is a detailed review of the entire draft SALP report and the inspection results upon which the SALP report was based. We conclude that the details of the SALP analysis support a more positive conclusion than was presented at the SALP meeting. The basis for this suggestion is that there appears to be considerable overstatement of the actual severity of the inspection findings, some factual errors and omissions within the draft SALP report itself, and further, there are some assignments to this SALP evaluation of events that occurred prior to the SALP evaluation period, all of which contribute to an unnecessarily harsh characterization of the Midland Project regulatory performance during this SALP evaluation period. Attachment 1 also contains our comments on the SALP process.

Attachment 2 to this letter is a comparison of Mr Keppler's testimony in the Midland soils hearing with the specifics of the draft SALP report. This detailed comparison concludes that even with the generally negative characterization of the Midland Project by the SALP board, there is still no contradiction of Mr Keppler's prior testimony by the draft SALP report nor any need, in our opinion, for him to modify that testimony.

The third attachment to this letter entitled "Analysis of Current and Future Quality Activities With Regard to Remedial Soils Work," addresses specific questions raised by Mr Keppler at the conclusion of the SALP meeting. This attachment points out that there appear to have been considerable regulatory difficulties experienced by the Midland Project during the past two months, mainly because of the inability of the NRC staff and the Company to finalize the quality assurance program coverage requirements for the soils remedial work, particularly for the underpinning activities. Attachment 3 points out that this difficulty appears to have been generally resolved and that there are numerous reasons for confidence that with the regulatory requirements properly defined, the remaining soils work can be carried out in a fully satisfactory manner.

Consumers Power Company urges the Region III management and staff to carefully consider the information and reasoning contained in this response to the April 26, SALP meeting. We believe that there is ample basis for the Region Administrator to reaffirm his 1981 overall team inspection findings in his overall conclusion to the 1980/1981 SALP evaluation.

Finally, as noted previously, we were disappointed with the negative tone of the draft SALP report. We take very seriously the comments made by the Region III SALP board members and will do whatever we can from the applicant's point of view to engender productive working relationships with the staff and to be responsive to the staff's concerns. Nevertheless, we must disagree with some of the material in the draft SALP report, and we request the opportunity to meet with Mr Keppler and his staff to review the detailed contents of this response.

James W. Cook

JWC/WRB/aat

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CONSUMERS POWER COMPANY RESPONSE TO THE DRAFT SALP REPORT FOR THE MIDLAND NUCLEAR PLANT

Reference: 1. NRC letter; J A Hind to J W Cook; dated April 20, 1982; with Enclosures 1 and 2.

This response is in three parts. The first part provides a general response to the SALP appraisal and SALP process as a whole. The second part provides our detailed response to Enclosure 1 of the reference, the Significant SALP Report Findings. The third part provides a detailed response to Enclosure 2 of the reference, the Preliminary SALP Report, dated March, 1982, covering the assessment period of July 1, 1980 to June 30, 1981.

Part 1 - General Response

A. We are encouraged by the general statements to the effect that the NRC sees progress in Consumers Power Company's overall quality assurance program and in its management. Undoubtedly, there has been improvement in our regulatory performance from the 79/80 assessment period to the 80/81 period and from the 80/81 period to the present. Literally, dozens of actions have been taken in order to achieve this improvement. These actions have been communicated to the NRC.

In May, 1981, Mr Keppler and members of his staff performed an extensive team inspection from which they concluded that ". . . the scope and depth of this NRC inspection was such that the identified noncompliances do not contravene our conclusion that Consumers Power Company has established an effective organization for the management of construction and implementation of quality assurance at the site."

B. We are, however, disappointed by the overall negative tone of the draft SALP Report. Nonetheless, we continue to be dedicated to attaining two goals:

1. First and foremost, to ultimately assure that the as-built configuration of the plant is in conformance with all regulatory and design requirements; and,

2. To continue to improve our regulatory performance.

C. We welcome feedback relative to our regulatory performance--the sooner the better. We have encouraged such feedback in a number of ways, and we shall continue to do so. A number of meetings with Region III management and staff have been at our initiative. On numerous occasions we have proposed the establishment of routine, periodic meetings to exchange information with Region III's home office staff. On our own initiative, we submitted our Preoperational Testing Manual in order to obtain Region III review and comments at an early date. Our specific invitation may have contributed to Mr Keppler's personal participation in the NRC team inspection conducted in May, 1981. We have proposed that an NRC Inspector be on site as much of the time as possible to assess our remedial soils work. Of course, at the completion of NRC inspections, exit interviews with the Inspectors are a routine feedback mechanism.

D. In reviewing how to improve the Company's overall regulatory performance, it becomes evident that the most timely regulatory feedback is that which is received before the accomplishment of the work in question. While both Consumers and the NRC attempt to achieve this objective, we believe both our organizations have fallen short in this area.

It is our recommendation that the NRC consider scheduling seminars for the various ongoing nuclear construction jobs as they approach each major phase. One purpose of these seminars would be to review the detailed quality programs and procedure for each major new activity at each job. This review would verify that all programmatic requirements at the detailed level were in place prior to the work or could be upgraded before the fact to meet Region III expectations. In addition, the NRC inspection specialists could review with the applicant's quality personnel typical detailed inspection plans used by the NRC in their on-site inspections. At the same time, discussions of actual experience from other earlier construction sites could make the Licensees for current construction sites more aware of and responsive to potential problems in the work area about to begin.

We in industry have tried to accomplish this objective with our various regional and industry groups, and by reviewing inspection reports from other jobs. However, these efforts suffer by lack of NRC input at detailed working levels. We urge the NRC to consider this type of an approach to supplement their other inspection programs.

A specific benefit to Midland's future performance has already occurred as a result of this concept. It was mentioned at the SALP meeting that we had submitted our Test Program Manual to Region III some time ago in order to obtain feedback prior to the start of detailed systems testing. Even though some testing has already taken place, we are delighted to report that follow-up from the April 26 meeting has resulted in the scheduling of a detailed NRC review of the Midland test program for later this month.

E. We recognize that the SALP process is a relatively new one and that the NRC is attempting to develop an approach to the SALP reviews that will be timely, fair and based on the best available information. This second SALP Report is a major improvement over the first, National SALP Report which was issued in the fall of 1981. Nonetheless, our review of this SALP Report discloses additional improvements which can be achieved in meeting the objectives of the SALP process.

First, there appears to be no consistent format in characterizing the areas which are being evaluated. The assessment can be made by functional engineering areas such as soils, containment, piping, etc; or it can be made on the basis of discrete engineering activities such as design, procurement, construction, etc. The current SALP Report has both categorizations which leads to an inevitable double counting of deficiencies identified during a reporting period. The report itself recognizes this problem, but discounts it. We appreciate the need perceived by Region III for singling out certain specific activities, such as design control, for separate treatment in the SALP Report. However, the overlap of function and activity categories detracts substantially from the systematic nature of the appraisal. Certainly, there are mechanisms available to

Region III to express its particular concern with a designated activity other than the SALP Report.

Second, the rankings do not appear to be consistent. For example, no items of noncompliance were identified with respect to the Fire Protection, Containment and other Safety-Related Structures, and Preservice Inspection areas. Yet Fire Protection was rated a "Category 1" while Containment and other Safety-Related Structure and Preservice Inspection were rated a "Category 2."

We believe that the major criteria in evaluating licensee performance should be the number and seriousness of items of noncompliance identified by NRC for a given unit of inspection time. We are not suggesting that there is no room for subjective judgment in the appraisals of each area. What seems to occur, however, is a lack of consistency from area to area in applying the factors which shape that judgment. Moreover, we note that most of the specific items discussed were the subject of testimony before the ASLB conducting the soils hearings. Yet no review of that testimony seems to have taken place.

Finally, the time period during which the Licensee's performance is being evaluated is unclear. Part V of the Preliminary SALP Report does indicate that the noncompliances and deviations in the HVAC area were reported also in the first SALP report. However, one item of noncompliance listed in the Piping Systems and Support Performance Evaluation related to an apparent nonconformance that took place in November, 1973, but was identified during an NRC inspection during the SALP evaluation period. In addition, all of the 50.55(e) reports cited in the Preliminary SALP Report represented design deficencies which occurred long before the SALP period. If those are the groundrules for the SALP process, they should be clearly stated. The Licensee and the public will then recognize that the evaluation rests not only on events which occurred during the evaluation process, but also on events identified during the evaluation period, regardless of when they took place.

What follows is a response to specific statements in the Preliminary SALP Report. Those specific statements are either direct quotations from, or characterizations of, items which were included in various NRC inspection reports. We have responded in writing to each inspection report and refer you to those responses for the details of the Company's position regarding each item. However, some of the characterizations of the findings of the inspection reports in the Preliminary SALP Report are incomplete. For your convenience, we have summarized our responses to each of the inspection findings, as well as clarifying the content in which those findings arose, as appropriate.

Part 2 - Response to Enclosure 1, Significant SALP Report Findings

A. General Observations

1. We are pleased that the Preliminary SALP Report noted the "improvements in the overall quality assurance program"; that we have "established an effective organization for the management of QA/QC activities"; and that "the numbers and qualifications of personnel in the QA/QC organization(s)

and the overview and audit functions performed were found to be above that normally found at other construction sites."

2. Also, we are pleased that for the Support Systems (HVAC) area the Preliminary Report recognized our resolution of the problems which existed during the previous SALP period prior to July 1, 1980. This resolution was realized through considerable expenditures of resources. We believe this demonstrates our responsiveness to problems with concrete actions.

3. The general observations relative to the less technical administrative areas are of concern to us. We do not view our past responses as argumentative merely because they provide additional facts or reasoning which may not have been available for presentation to the NRC Inspector at the time of the exit interview or because they provide information with which the NRC Inspector disagrees. The Staff, in at least two instances in the soils hearing, testified that making legitimate appeals is entirely proper, and is part of the normal give and take between the NRC Staff and the licensee. It is disappointing that the Preliminary SALP Report does not embrace the essence of that testimony and also of our management conference on this subject. At that conference, we were told not to be reluctant to appeal on any legitimate issue, but to discuss our differences with Region III prior to submitting any written appeal in order to facilitate its resolution. This suggestion has been adopted.

B. Piping Systems and Supports

1. We agree with the Preliminary SALP Report item relating to the unavailability of Committed Preliminary Design Calculations (CPDCs) to support the drawings for small bore piping. This, in our opinion, was the major quality deficiency that occurred during this SALP period. Upon discovery of the unavailability of the CPDCs, we stopped the design work, began immediate corrective action, and did not resume the work until both we and the NRC Staff were assured that the process had been corrected. Even with the design process deficiency identified, it is heartening to report that not a single pipe segment required rework as a result of this situation.

2. We also note with pleasure that the informal current rating in the Piping Systems and Supports area as of this time is "Category 2" based on Mr R Cook's statements made during the April 26 presentation of the Preliminary SALP Report. This improved rating is, we assume, based upon recognition of our positive and effective corrective actions in this area.

C. Electrical Power Supply and Distribution

1. While we understand that any noncompliance is "less than desired" and also understand the Staff's particular interest in our ambitious cable pulling schedule, we do not understand the apparently negative observations in this area. The implication given is that were it not for the NRC's advice, we would have had an inadequate number of QA/QC personnel available to support the cable pulling schedule. This is an erroneous implication. We believe we have always supported the cable pulling activities with the appropriate

number of QA/QC personnel. In fact, the amount of cable pulling carried out by the Company could not have been completed without adequate QC personnel, because in process inspection is required to verify cable pulling tensions.

2. We also believe that the seven items identified during this period were not excessive and were of relatively low consequence. These items are discussed more fully in the third part of this Attachment.

D. Soils and Foundations

1. We view the finding in this area especially harsh because it is predicated on some relatively minor items of noncompliance, and on misinformation in the Preliminary SALP Report, as demonstrated in the third part of this Attachment.

2. Reference is made to "limited QA/QC coverage." At no time has the QA/QC staff been insufficient to cover the ongoing work. At one time the NRC advised us of the need for additional personnel to cover future work. We were fully aware of and agreed with that need, and we have staffed and are staffing to meet it. Also, in our opinion, there has never been any inadequacy in the qualifications of the QA/QC personnel assigned to the remedial soils work. The QA Engineers so assigned are all degreed civil engineers.

Part 3 - Response to Enclosure 2, Preliminary SALP Report

A. Section I, Introduction

Our comments on this section are found in our general comments provided in Part 1, above.

B. Section II, Criteria

1. Our general comments relating to the manner in which evaluations are made are contained in Part 1, Paragraph E, above.

C. Section III, Summary of Results

1. Our comments on this section are found in our general comments provided in Part 1, Paragraphs A and B, above.

D. Section IV.1, Performance Analysis of Quality Assurance

1. It is gratifying, as noted earlier, that the NRC recognizes our above normal efforts with regard to the Quality Assurance organization and program, with regard to our overinspections and audits, and with regard to our aggressiveness in assuming the primary inspection responsibility for the HVAC installation.

2. Seven of the eight items identified from the May, 1981, inspection and referenced in this section of the Preliminary Report are duplicated elsewhere in the report under the Soils, Piping and Supports, and Electrical

Sections. Therefore, we will address these noncompliances specifically in the other sections.

3. The eighth item from the May, 1981 inspection dealt with the correction of adverse quality trends. Action was taken to provide a procedural change to cause the more timely closeout or verification that correction has been made in response to an adverse trend.

Our trend analysis activity is among the most comprehensive anywhere, in terms of scope and sophistication. Such an activity is not specifically required by NRC regulations or ANSI standards. Should not credit be given for this?

4. This section of the Preliminary Report also refers to another inspection

> "indicating questionable QA managerial control (because) the licensee failed to fully evaluate the technical capability of the principal supplier of services for soil boring activities."

This is an unfair and incorrect summary of what occurred. The original NRC Inspection Report states:

> "The technical capabilities of Woodward-Clyde (principal supplier of services for soil boring activities) were not evaluated prior to commencement of drilling operations on April 2, 1981."

Our original letter of response stated:

> "On March 31, 1981, Consumers Power Company approved Woodward-Clyde consultants as the principal supplier of services for the soils boring and sample program based upon meetings (between March 3 and 11, 1981) with Woodward-Clyde consultants. . . . Woodward-Clyde consultants were considered qualified as documented by letter serial 12134, dated April 8, 1981, N Ramanujam to File B.2.5.4 (Attachment 1). Even though this letter is dated April 8, 1981, it documents steps taken prior to April 2, 1981, in qualifying Woodward-Clyde. Woodward-Clyde consultants were approved by Oral Communication Report serial 11883, R C Hirzel to R C Bauman, dated April 2, 1981, (Attachment 2). Both of these documents (Serials 12134 and 11883) were presented to Dr Ross Landsman of the Nuclear Regulatory Commission on April 9, 1981."

This is not "questionable QA managerial control." This is not "failure to fully evaluate the technical capability of the principal supplier." The documentation was provided to the NRC Inspector.

The actual noncompliance was failure to provide our Procurement Department with the letter documenting the approval of Woodward-Clyde prior to the commencement of activities on April 2.

Re. - Full evaluation was made. - Contract May 74

5. Also, this same paragraph of the Preliminary SALP Report states:

> "The NRC identified 15 deficiencies in the principal supplier's quality assurance program manual indicating that the licensee had not adequately reviewed and approved the procedures prior to preparation of drilling activities."

We are concerned both about the substantive and procedural implications of this comment. The 15 items referred to were generated as a result of our quality assurance programmatic requirements. The NRC Inspector participated with us in the initial and timely review of Woodward & Clyde's quality assurance manual. We welcomed his participation and anticipate that it will continue, at least through the conclusion of the soils remedial work. But it is simply counterproductive and unnecessarily adversarial for the NRC Inspector to "take credit" for having identified these deficiencies. Indeed, he did not do so. In any event, the important point is these items were uncovered in a routine review, in accordance with established quality assurance practices. Had they gone undetected past the review stage, some might have risen to the level of "deficiencies." Our timely handling of these matters is inappropriately characterized as a deficiency in the Preliminary SALP Report, when in fact it represents the proper functioning of the Quality Assurance Program.

E. Section IV.2, Performance Analysis of Soils and Foundations

1. The second paragraph of this section of the Preliminary SALP Report, states:

> "Every inspection involving regional based inspectors and addressing soils settlement issues has resulted in at least one significant item of noncompliance."

The correctness of this statement depends upon how the term "inspection" is defined. It has been customary to define an inspection in terms of the duration of the inspection trip. For example, if an Inspector visits the site for three days in the first week, leaves and does not return until the third week, at which time he visits the site for two days, the practice has been to view these as two separate inspections. However, the practice of the NRC Inspector in this area has been to combine, into a single NRC Inspection Report, the results of two or more inspection trips. If an NRC inspection is defined as the inspection performed during a single trip, this statement in the Preliminary SALP Report is incorrect.

2. The Preliminary SALP Report states:

> "There was a failure to initiate audit corrective action concerning the rereview of the FSAR and references to determine if design documents had modified the FSAR and if so that changes had been made to the FSAR."

This item is duplicated in the Preliminary SALP Report in the section dealing with Design Control. Read carefully, the item reflects a failure to initiate audit corrective action, not a failure to perform an adequate

rereview of the FSAR. The need for the corrective action was, in our view, of minor importance.

The FSAR rereview was an extensive, as well as intensive effort spanning 18 months and involving three companies--Consumers Power Company, Bechtel, Babcock & Wilcox. Bechtel, alone, spent an excess of 10,000 manhours on this effort prior to its completion in September, 1980. This effort resulted in a clarification and upgrading of the content of the FSAR. Two audits were made by the Consumers Power Company Quality Assurance Department to assess the adequacy of the FSAR rereview effort. Both audit teams concurred that the rereview had been accomplished conscientiously and effectively, assuring that design changes had not modified the FSAR or, if so, that such changes had been subsequently reflected in the FSAR.

The item given in the Preliminary SALP Report stems from our audit finding to the effect that all of the design documents which were rereviewed were not listed in block 8 of the rereview form as required by the rereview procedure. The instructions for block 8 indicated that the rereviewers were to list the design documents to be rereviewed, to indicate whether or not any conflicts existed between the design documents and the FSAR, and then to indicate the necessary resolution. The audit showed that some rereviewers had listed only the design documents which contained conflicts, and had indicated the required resolutions. In essence, therefore, these rereviewers did not understand the block 8 instructions to require a complete listing of documents--those which did not contain conflicts as well as those which did.

Nevertheless, the technical correctness of the rereview was validated, as follows: Rereview packages which did not provide a complete list of the reviewed documents were identified, and a large sample of them was selected. The packages selected were those which were most likely to contain design document conflicts. The packages were re-rereviewed. From this re-rereview, it was ascertained that not a single package contained even a single unresolved conflict. At this point, the rereview process was approximately 80 percent complete (recall that it was an 18 month effort). While there appeared to be some misinterpretation of the block 8 procedural requirement, all the rereviewers appeared to understand the intent of the rereview effort and were adequately resolving any conflicts between the design documents and the FSAR. Based on this, it was decided not to rewrite the procedure for block 8 and not to redo the block 8 document listings. It was thought that such actions only would have confused the process at this point in time. After an exchange of correspondence with the NRC on this item, however, we agreed to change the procedure and to provide additional training to the reviewers.

At the completion of the FSAR rereview effort, another sample of packages was re-rereviewed by the audit team with the same results, thus verifying the adequacy of the remaining 20 percent of the effort which had not been subject to the initial audit re-rereview. In essence, then, the two audit re-rereviews confirmed the adequacy of the entire effort.

In testimony before the Soils Hearing Board, Dr Landsman indicated that the block 8 condition did not call into question the technical effectiveness of the rereview, which Dr Landsman specifically found adequate (TR.p-4857, 4930).

3. The Preliminary SALP Report notes:

> "Three examples of failure to translate applicable regulatory requirements and design criteria into design documents."

This item is also duplicated in the Design Control section of the Preliminary SALP Report.

a. The first example given is:

> "Failure to maintain a coordination log of Specification Change Notices (SCNs)."

In response, there are three separate coordination logs in the civil discipline. These logs are maintained by three different people. The Drafting Supervisor maintains the coordination log for drawings and drawing change notices. The remaining documents, including SCNs, are covered by two other coordination logs which are maintained by Discipline Aides.

During the Region III inspection, the Company could not immediately document that all coordination had been included on an SCN log. The problem was made worse by the fact that the NRC Inspector was inadvertently shown the wrong log. Also the NRC Inspector felt that applicable procedures required all revisions of specifications, whether technical or clerical in nature, including those merely incorporating previously approved or coordinated SCNs, be reviewed by Geotech and so noted in the log. Although the Company disagreed with this interpretation, the procedure was modified, making it clear that clerical revisions merely incorporating previously reviewed changes need not be re-coordinated or re-reviewed by Geotech. At the request of the Region III Inspector, the Company also committed to review current revisions of civil, Q specifications to insure appropriate coordination of changes was carried out.

In any event, this is hardly something which can be properly characterized as a "failure to translate applicable regulatory requirements and design criteria into design documents."

b. The second example given is:

> "Failure to correctly translate Specification Change Notice No SCN-9004 as a requirement into Revision 20 of Specification C-208."

This item arose as a result of a slight difference in wording between an SCN and the specification, after incorporation of the SCN into the

specification, relative to the Geotechnical Engineer's responsibilities for establishing the laboratory compaction test frequency. The SCN was issued to describe the responsibilities of the newly assigned on-site Geotechnical Engineer. The specification after incorporation of the SCN, used terms different from and more general than the SCN to describe the geotechnical engineer's responsibility for the establishment of the frequency for laboratory compaction testing. In our view, the intent of both the SCN and the specification was the same, although the NRC Inspector did not agree. Subsequently, any difference in wording was eliminated. Again, this situation appears to be very harshly characterized as a "failure to translate applicable regulatory requirements and design criteria into design documents."

c. The third example given in the Preliminary SALP Report is:

> "Failure of Engineering Department Project Instruction No EDPI 4.25.1, Revision 8 to establish adequate measures for design interface requirements."

In response, the EDPI was revised to state that it is the responsibility of the originator of a design change to coordinate the change with all groups which are affected by, or involved with, the revised portion of the document, regardless of whether the change is technical or editorial. This procedural change was made to eliminate the previous option of the Group Supervisor to waive the need for the coordination or interface when, in his judgment, it was unnecessary. This coordination is now required even for editorial changes. Adequate coordination had been accomplished prior to the EDPI revision.

The need for this added conservatism introduced by the EDPI revision is a matter of opinion and Consumers Power Company has accommodated the NRC's concern in this regard. However, there was never any "failure to translate applicable regulatory requirements and design criteria into design documents" and to characterize this item in that way is erroneous and unfair.

4. The Preliminary SALP Report gives the following item:

> "Failure to establish test procedures for soils work activities."

The NRC Inspector found that US Testing did not previously determine the rheostat setting which produced the maximum density. However, US Testing did previously determine the rheostat setting that produced the maximum amplitude required by ASTM D2049. Tests were reperformed to verify that the maximum rheostat setting yields the maximum amplitude given in the relative density table used for the project. Results were documented and supplied to the NRC. This is far different from a "failure to establish test procedures" as stated in the Preliminary SALP Report. Again, the Report's comments are a gross generalization and a misrepresentation of the factual situation.

In this situation, the NRC Inspector did not accept an ASTM Standard procedure called out in the specification and imposed his own personal preference as to the technical requirement.

5. The Preliminary SALP Report also indicates a:

> "Failure to supply a qualified on-site Geotechnical Engineer."

As part of the original response to soils issues, a Geotechnical Engineer was assigned to be on site. The resumes of the assigned engineer ("the first engineer") and of another applicant to the position ("the second engineer") were reviewed by Mr E Gallagher, then the cognizant NRC Inspector. Mr Gallagher expressed his opinion to our Mr Horn that the second engineer was preferable because of his many years of field experience. We cannot say whether or not Mr Gallagher noticed that the second engineer was not a degreed engineer (although Mr Gallagher reviewed the man's resume). On the basis of Mr Gallagher's opinion, the first engineer was removed and the second engineer was assigned to the site. Subsequently, another NRC Inspector, Dr Landsman, became cognizant in this area. Dr Landsman who was accompanied by Mr Gallagher during this inspection, was advised of the original coordination with Mr Gallagher, but Dr Landsman held an opinion different from Mr Gallagher because the second engineer did not have a civil engineering degree. Dr Landsman then cited the Company with a deviation for failure to provide a qualified Geotechnical engineer for the job. Immediately thereafter, the first engineer was reassigned to the on-site position. Dr Landsman concurred with this assignment. In view of these facts, the citation seems to us unfair.

6. The Preliminary Report also states:

> "It was noted in NRC Inspection Reports No. 50-329/81-12; 50-330/81-12 that a sufficient number of qualified personnel were not available for the complex nature of the remedial soils work. This had previously been identified in NRC Inspection Reports No. 50-329/81-01; 50-330/81-01, referenced previously as a deviation to a commitment."

Inspection Reports No. 50-329/81-01; 50-330/81-01 deal with the deviation relative to the on-site Geotechnical Engineer. This was covered in Paragraph 5, immediately above. By the placement of this item in two different parts of the Preliminary Report, the appearance is given of two different items when, in fact, there is only one.

NRC Inspection Reports No. 50-329/81-12; 50-330/81-12 merely indicated the NRC's advice to the effect that additional QA/QC personnel would be needed to accommodate the forthcoming remedial soils work. We agreed with this NRC observation. We were not cited for any noncompliance on that score in these inspection reports. We now have 8 full time and 2 part time QA/QC persons employed in MPQAD and 27 QA/QC persons employed by both MPQAD and Bechtel Quality Control to cover remedial soils work--appropriate for the current workload, also taking into account the time necessary to assure their adequate training and certification. Five more persons are due on site by

mid May. Additional personnel are being sought to fill the 2 remaining authorized positions. The Preliminary SALP Report gives the impression of an inadequacy with regard to the quantity of personnel when, in fact, quite the opposite situation exists.

7. Finally, another item referenced in this section of the Report is duplicated in the Quality Assurance Section of the Report. Please refer to Part 3, Paragraph D.4, above.

8. In summary, while we find this section of the Preliminary Report inaccurate and overstated, we fully recognize the special sensitivities involved in the remedials soils area, and we are especially dedicated to the implementation of the quality controls and assurances required by law and engineering prudence.

F. Section IV.3, Performance Analysis of Containment and Other Safety-Related Structures

1. The cracks in the BWST foundation are also referred to in the section of the Preliminary SALP Report dealing with Design Control.

G. Section IV.4, Performance Analysis of Piping Systems and Supports

1. Item a(1) of this section of the Preliminary SALP Report states that:

> "Bechtel Purchase Order did not specify applicable codes for purchase of 60,000 pounds of E-7018 electrode."

The original statement of the item, from NRC Inspection Reports No. 329/80-20-01 & 330/80-21-01 was as follows:

> "Bechtel Corporation Welding Standard WFMC-1, Revision 8, dated January 4, 1971, 'Welding Filler Material Control Procedure Specification,' Paragraph 2.1, states, in part, that'. . . welding filler material ordering information shall include the appropriate requirements of the job engineering specification, the applicable Code and this procedure specification. . . .'
>
> 'Contrary to the above, on July 10, 1980, the (NRC) Inspector established (that) Bechtel Purchase Order No. 7220-F-5780, dated November 2, 1973, for 60,000 pounds of E-7018 electrodes did not specify the applicable Code.'"

First, note that the Preliminary SALP Report statement omits any reference to the November 2, 1973, date. The Bechtel Purchase Order for the E-7018 electrode was issued on November 2, 1973. We question whether we should be cited in this assessment period for an event which occurred 7 years prior to the assessment period.

Second, at the time of the procurement, a revision of WFMC-1, dated May, 1973, was applicable, whereas the citation referenced the January 4, 1971

revision of WFMC-1. The procurement was made in accordance with the May, 1973 specification. The procurement documentation reflected complete compliance with the requirements. Although these facts were not available immediately during the period of July 8-10, 1980, when the NRC Inspector was making the inspection, these facts were provided in our original response to the citation on August 25, 1980.

In addition, Consumers Power Company has performed an audit of the procurement documentation for weld filler materials procured from 1973 through 1980. This, too, was reported to the NRC in the August 25, 1980 response.

2. Item a(2) in this section of the Preliminary Report indicates that an Authorized Nuclear Inspector's hold point was bypassed for the pressurizer surge piping.

   This item was detected by the NRC Inspector on September 24, 1980. By September 25, corrective action had been taken and verified by the NRC Inspector.

3. Items a(3) and (4) indicate that large bore pipe restraints, supports and anchors were installed incorrectly and that QC Inspectors did not detect the incorrect installations.

   It is highly unusual to cite a licensee twice for what is essentially a single QA defect (one citation for the construction defect and another for not having detected the defect).

   The NRC Inspector found 7 cases of apparent nonconformances to design requirements. He stated that he was using cursory inspection techniques. Upon our further inspection, we agreed that 3 of the cases were defects, but with more refined inspection techniques our investigation indicated that 2 cases were within tolerance, 1 case was a result of obvious post-inspection damage that would be checked for during walkdown inspection, and 1 case was for work yet to be inspected initially. The 3 real defects were of a relatively minor nature, and none of them impaired the function of the hangers even though they constitute a legitimate basis for the NRC's finding.

   On the basis of these findings, we agreed to make an extensive sampling reinspection of hanger installations which were made prior to 1981. The results of this reinspection have indicated the presence of additional minor defects and may necessitate further reinjection. The results have been made available to the NRC and now are being analyzed by both the NRC and Consumers Power Company. TTPO

4. Item a(5) in this section of the Preliminary Report, dealing with the availability of Committed Preliminary Design Calculations for small bore pipe and piping suspension systems, is duplicated in another section of the draft SALP Report dealing with Design Control and Design Changes and is the major contributor to the Significant SALP Report Findings for Piping Systems

and Supports given in Enclosure 1 to the Reference. Correspondingly, our response to this item is covered in Part 2, Paragraph B of this attachment.

5. Item a(6) indicates:

> "Failure to adequately control documents used in site small bore piping design activities."

The original item from NRC Inspection Report No 50-329/81-12 and 50-330/81-12 stated that:

> "An (one) outdated specification was maintained at the small bore piping design group work location and revised calculations were not marked 'superseded' in accordance with the procedural requirements (our emphasis)."

After careful checking, this finding was determined to have been an isolated case.

Nevertheless, the calculations were checked and were found to be correct. Training was conducted of all personnel in this group. An audit was made. A procedure was changed to require that the specific revision number of the specification on which the calculation is based be documented in the calculation package.

6. Item a(7) indicates that Consumers Power Company audits did not:

> "Include a detailed review of system stress analysis and (did not) follow up on previously identified hanger calculation inconsistencies."

In response, the above statement refers to the fact that we did not audit for the availability and correctness of the Committed Preliminary Design Calculations as discussed in Part 2, Paragraph B, and Part 3, Paragraph G.4, above. The audits that were made previously in this area concentrated on the completed calculations, rather than the preliminary calculations. The audit checklist for this area has since been adjusted to reflect a requirement relative to the preliminary calculations.

H. Section IV.5, Performance Analysis of Safety-Related Components

1. As a result of the two original items, from which the two items in this section of the Preliminary SALP Report are drawn, Consumers Power Company issued a formal Stop Work Order to Babcock & Wilcox and a letter to the NRC stating that the work stoppage would remain in effect until the corrective actions had been completed and reviewed by the NRC. Corrective actions were taken, as follows: The installation procedure for this activity was revised to clarify the method of installation and to specify the required dimensional checks. The indoctrination and training of the personnel performing the installation and of the personnel inspecting the work was strengthened. The Consumers Power Company overview inspection plan for this activity was revised. The NRC Resident Inspector verified these actions.

2. Again, it is encouraging that today's rating in this area, as stated by Mr R Cook during the April 26 meeting, is a strong "Category 2," or even, perhaps, a "Category 1," based on the aggressiveness of our overview efforts. We recognize the particular importance of this area, and we intend to continue our agressive overview of this area.

I. Section IV.6, Performance Analysis of Support Systems (HVAC)

1. We appreciate the "Category 1" rating for the period in question and on an informal basis for the current period, as well, as stated by Mr R Cook during the April 26 meeting.

2. It should be noted that the civil penalty was imposed for conditions which existed prior to the assessment period in question.

3. The 17 items referred to were all identified as a result of investigations which were completed prior to June 30, 1980, and, therefore, prior to the start of the assessment period in question. This may be observed by review of the individual items given in NRC Inspection Reports No. 50-329/80-10; 50-330/80-11. Although these Inspection Reports are dated January 12, 1981, they clearly provide findings that were available prior to June 30, 1980. During management meetings held on March 24 and 28, 1980, these investigation findings were discussed extensively.

J. Section IV.7, Performance Analysis of Electrical Power Supply and Distribution

1. Item a(1) in this section of the Preliminary SALP Report indicates a failure to establish procedures for temporary support of cable.

   The four damaged cables were repaired. The procedure was revised to require that coiled cables be properly supported, protected from damage and prevented from violating the minimum bend radius.

2. Item a(2) in this section of the Report indicates that electrical contractors did not verify conformance to Paragraph 3.1 of Project Quality Control Instruction E-5.0.

This item was an isolated incident of two wires violating separation standards inside a control panel. The cable routing was rearranged to provide the required separation, and the separation was verified by inspection. Electrical crafts and inspection personnel were formally reinstructed with regard to the separation requirements. Installation and inspection aids were provided to these personnel.

3. Item a(3) indicates a:

> "Failure to identify and control nonconforming components."

Because of the general nature of this item, we are not sure to what it refers. After a thorough review of the NRC Inspection Reports for this assessment period, however, we believe that it refers to an item from NRC Inspection Reports No. 50-329/81-11; 50-330/81-11, as follows:

> "On April 23, 1981, the (NRC) Inspectors identified 14 instances in which cable tray in the upper and lower cable spreading areas were not installed in accordance with the separation requirements delineated in the Midland FSAR and which had not been identified and controlled to prevent inadvertent use or installation. . . ."

Consumers Power Company documented the nonconforming condition for a few cases on a Nonconformance Report issued in May, 1979, long before the NRC Inspectors' finding. Late in 1979, it was determined that the existing Marinite barriers were not the most suitable separation device for our plant configuration. This resulted, in January, 1980, in the removal of the requirement for the Marinite barriers. In the spring of 1980, a study was conducted to determine which kind of barriers would be more suitable when the required spatial separation is not possible. Two things resulted from this study--first, that barrier installation would be accomplished best after cable pulling was complete; and second, that there was no risk in reworking cable trays after cable pulling to install the barriers, if needed. In August, 1980, a new barrier was chosen and SAR and design changes were made in April and June, 1981, respectively to reflect these changes.

This is a lengthy discourse, we realize, but in essence, the main points are as follows: we were well aware of the condition. At the time, we made a conscious decision not to provide any more inspection to identify additional specific cases where separation was not maintained. We were aware that the design was being changed, that the construction process was being changed, and that the final Bechtel Quality Control inspection for this condition would be carried out at the conclusion of the construction process. The Bechtel Project Quality Control Instruction E-3.0, "Final Electrical Area Completion Activities," was revised to reflect the inspection for separation and, as needed, for the installation of barriers at the completion of the cable pulling activities. Correspondingly, we were holding open our Nonconformance Report to assure that these changes were correctly implemented. There was no inadvertent "failure to identify and control." It was a conscious and knowledgeable decision.

This information was provided to the NRC on July 16, 1981, in our response to the NRC Inspection Report. Considering the explanation supplied to the Staff, we believe that there was no item of noncompliance and that this item should not have been in this Preliminary SALP Report.

4. Item a(4) indicates a:

> "Failure to translate design criteria into drawings and specifications."

This inspection finding related to whether or not the color coding of instrumentation process lines was required. Based on our reading of the applicable codes and standards, it was not, and we stated this position in our original response to the NRC. At least one other licensee has the same position and is maintaining it. However, we have acceded to the NRC concern in this area by agreeing to identify the instrument process lines with a two digit alpha designator, and the specification has been changed to add this new requirement. We are also not clear whether this requirement applies generally or only in Region III, since the Draft Regulatory Guide on this subject makes no mention of the requirement.

5. Item a(5) indicates a:

> "Failure to identify during inspection that a nonconforming condition with regard to minimum installed cable bend radius existed."

The condition referred to was discovered by a Consumers Power Company employee who was accompanying the NRC Inspector during his inspection. A Consumers Power Company Nonconformance Report was written to document the condition for the single cable in question. In addition to physically correcting the condition, the Bechtel Quality Control Inspector who originally inspected the cable was given an 8-hour training program in all phases of cable termination.

6. Item a(6) indicates:

> "Failure to take prompt corrective action with regard to the lack of approval of procedures for the rework of electrical raceways."

We agreed that this was an entirely appropriate finding and Bechtel Construction and Bechtel Quality Control developed and issued the necessary administrative guidelines and instructions. Recently NRC Inspectors have conducted a follow-up inspection and determined that the rework controls have been properly implemented and carried out.

7. Item a(7) indicates:

> "Failure to provide adequate storage conditions for (three items)."

The storage conditions for each of the items was immediately corrected. The Bechtel Maintenance Engineers were given additional training in accordance with the requirements of the field maintenance procedure. Consumers Power Company performed a comprehensive audit in this area to assure compliance with the field maintenance procedure.

8. It should be noted that each of the foregoing items is a Severity Level V or VI, relatively low severity levels.

   We are gratified that our informal current rating is "Category 2," as stated by Mr R Cook during the April 26 meeting.

9. In two places in this section of the Preliminary SALP Report reference is made to the quantity of Bechtel Quality Control personnel being employed, with the implication that this quantity may be insufficient. To our knowledge it was not; nor is it now. In addition, in response to NRC concerns we have demonstrated both the qualifications of these personnel and the process by which they are certified.

K. Section IV.8, Performance Analysis of Instrumentation and Control Systems

No comment.

L. Section IV.9, Performance Analysis of Licensing Activities

Comments pretaining to our responsiveness to Staff requests for information regarding the "Soils" issue should certainly be qualified by noting the novelty or uniqueness of this technical review and the evolutionary nature of the Staff's positions. It is useful to note that as this review draws to its conclusion, the Advisory Committee on Reactor Safeguards (ACRS) subcommittee on the Midland soils questions characterized the Staff review as exhaustive and possibly an example of overkill. In addition, the ACRS subcommittee questioned the Staff extensively on whether portions of their review and requirements went beyond what was necessary to protect public health and safety. We are gratified that the Staff finds our more recent replies to be responsive and of high quality. We are striving to maintain this trend and improve communications with the Staff.

M. Section IV.10, Performance Analysis of Fire Protection

We appreciate NRC's "Category 1" rating in this area and its recognition of our efforts.

N. Section IV.11, Performance Analysis of Preservice Inspection

In view of the extensive amount of preservice inspection which was performed during the period corresponding to this SALP Report and continuing into the current period, with no items of noncompliance, we fail to understand why this area is not rated as "Category 1" instead of "Category 2,".

O. Section IV.12, Performance Analysis of Design Control and Design Changes

1. Items a(1)(a) and (b) given in this section of the Preliminary SALP Report are duplicates of items given in Section IV.2. As such, our specific response to these items is given in Part 3, Paragraphs E. 2 and 3, and will not be repeated here.

2. Item a(2) in this section of the Report is a duplicate of an item covered in Section IV.4. As such, our specific response is provided in Part 3, Paragraph G.4 and will not be repeated here.

3. Item a(3) in this section of the Report is a duplicate of an item given in Section IV.7 of the Report. As such, our specific response is given in Part 3, Paragraph J.4 and will not be repeated here.

4. The five 10CFR50.55(e) items listed in this section of the Preliminary Report relate to designs which were completed long before the start of the SALP period in question--in fact, years before. Our identification of these items during this assessment period indicates continuing design reviews, improved design control and our rigid compliance with the reporting requirements of 10CFR50.55(e).

5. We also call your attention to five inspections of Bechtel Power Corporation, Ann Arbor Division, engineering firm for the Midland Plant, conducted between January, 1979 and September, 1981 by the Vendor Inspection Branch of Region IV. The inspection covered a wide variety of design activities. For example, the October 7-10, 1980 inspection encompassed design verification, design interface, and design inspection activities. The March 31-April 3, 1981 inspection covered computer program control, technical personnel background verification, design change control and design corrective action. The two specifically referenced inspections were conducted during the SALP appraisal period. In all five inspections, there were a total of 6 nonconforming items identified, all of a relatively minor nature (nonconformances or deviations rather than violations). In two of the inspections no items of noncompliance were found. In our view, these inspections are indicative of a high degree of compliance within design segments of the Midland Project, and would clearly support a higher rating than the one given in this area.

   (The five inspection reports are documented in letters dated April 16, 1981; October 14, 1981; November 5, 1980; June 15, 1979; and January 19, 1979, to the Bechtel Power Corporation, Ann Arbor Division, from Uldis Potapors, Chief Vendor Inspection Branch.)

6. Considering the nature of Items a(1)(a) and (b) and a(3), and the unfairness of a citation for activities long before the period in question, we are disappointed by a "Category 3" rating in this area.

   We believe that design control is one of the most difficult and important aspects of nuclear power plant projects. Design control has been doubly difficult for the Midland Project mainly because of the duration of the project and the incorporation of a multitude of new regulatory requirements

into the design as it progressed. We do not dismiss for a moment our obligation to monitor and improve our own efforts in this area and we continue to institute our own internal programs to increase our confidence in the quality of the overall design effort. We raise this concern with the preliminary SALP evaluation because the only significant finding in the SALP period that indicates a design control problem was the small bore piping lack of design package cover sheet, which was concluded to be an isolated event. On the other hand, we believe that the Region IV inspection reports and the seven 50.55(e) reports referenced provide strong indications that the design control area is improving.

P. Section IV.13, Performance Appraisal of Reporting Requirements and Corrective Action

1. In this section of the Report, it is stated that:

> "The licensee failed to make a timely determination for the need to submit a 10CFR50.55(e) Report to the NRC based on a 10CFR Part 21 Report from TransAmerica DeLaval, Inc."

Consumers Power Company has always adopted a conservative attitude towards reporting under 10 CFR 50.55(e). We believe the industry practice in this regard varies, depending upon the amount of analysis undertaken and discretion exercised in determining whether a deficiency could have an adverse impact on safety. In the past, Region III has stated that the Company does a "good job" reporting under 10 CFR 50.55(e).

In this specific case, the DeLaval Part 21 Report was sent to Bechtel and was misrouted, such that Consumers Power Company and the appropriate Bechtel personnel were not aware of the Part 21 Report on a timely basis. In the final analysis, the condition was determined not to be 50.55(e) reportable.

Corrective actions were taken. They included issuing letters to suppliers to advise them of the person to whom Part 21 Reports should be submitted, conducting training sessions at the site for key personnel to assure that misdirected Part 21 Reports get correctly redirected, and issuing periodic memos reiterating the information offered in the training session.

2. This section of the Preliminary SALP Report also states:

> "Expeditious resolution of noncompliances is often delayed by inadequate licensee responses. The licensee has a tendency to spend too much time trying to justify why a finding is not a noncompliance rather than devoting the time to correcting the basic problem. Nine of 22 items of noncompliance were contested (excluding HVAC system noncompliances). Two of the contested noncompliances were retracted, but time and effort were lost in timely resolutions. Similar attitudes and responses have been observed regarding Company audit findings. This attitude is reflective of the licensee corrective action system and becomes a detriment to quality."

In response, let's deal with the statistics first. Two of the nine appeals (excluding HVAC) were granted, or 22 percent. Five other HVAC items were appealed, and two of those appeals were granted, or 40 percent. Combined, 14 items were appealed, 4 appeals were granted, or 29 percent. Of those not granted, the merits of the appeal are well documented.

While there may be some unavoidable delay because of appeals, in no instance has an appeal precluded timely corrective action. In addition, the Staff has repeatedly testified in the Soils Hearing that the Applicant should appeal when necessary or appropriate.

During a meeting on October 5, 1981, NRC's Region III management made it clear that NRC's concern was with the administrative process by which appeals were made, not with the appeals themselves. They stated that appeals should be made and dispositioned informally, if possible, prior to the issuance of NRC Inspection Reports or, at the latest, prior to our written response to the NRC findings. We agreed with this suggestion and assured the NRC that such appeals, if any, would be made accordingly. It is disappointing that the substance of this management discussion was not reported in the Preliminary SALP Report.

Q. Section V.A, Noncompliance Data

1. It is important to recognize that the noncompliances and deviations given in the table for Midland Unit 1 are identical to those given in the table for Midland Unit 2 in the large majority of cases. We recognize that this is so stated in the footnote to both tables in the Report.

2. At this point, it is appropriate to reiterate from our response given in Part 3, Paragraph I.3, that the 17 items associated with the HVAC were all identified as a result of investigations which were completed prior to June 30, 1980 and, therefore, prior to the start of the assessment period in question. This can be seen by review of the individual items given in NRC Inspection Reports No. 50-329/80-10; 50-330/80-11. Although these Inspection Reports are dated January 12, 1981, they clearly provide findings that were available prior to June 30, 1980. During management meetings held on March 24 and 28, 1980, these investigation findings were extensively discussed. In conversations with NRC Inspectors, we were advised that these items are included in this SALP Report because they were inadvertently excluded from the earlier Report, and that they have to be covered somewhere. We believe that the earlier SALP Report should be revised to reflect these items. The presence of these items in this SALP Report bears unfavorably and unfairly upon the overall impression offered by the Report for the period in question.

R. Section V.B, Licensee Report Date

1. The twelve 50.55(e) Reports listed herein further demonstrate our cooperative approach with regard to the submittal of 50.55(e) Reports, as stated earlier in our response given in Part 3, Paragraph O. 4 and 5.

S. Section V.C, Licensee Activities

No comment.

T. Section V.D, Inspection Activities

1. The results of the May 18-22, 1981, NRC team inspection evoked the following conclusion, as given in NRC Inspection Reports No. 50-329/81-12; 50-330/81-12:

> "This was an in-depth inspection to examine the implementation status and effectiveness of the current QA Program, to determine whether previously identified quality assurance problems were sufficiently precluded from occurrence in other areas, and to ascertain whether management involvement in the QA Program was sufficient and effective.
>
> Although eight items of noncompliance were identified during this inspection, it is our (NRC) judgment that the scope and depth of this NRC inspection was such that the identified noncompliances do not contravene our conclusion that Consumers Power Company has established an effective organization for the management of construction and implementation of quality assurance at the site."

U. Section V.E, Investigations and Allegations Review

No investigations or allegations were pursued during the assessment period corresponding to this SALP Report, including investigations and allegations for HVAC. This supports our earlier assertions that reference to the 17 HVAC items should be deleted entirely from this Report.

V. Section V.F, Escalated Enforcement Actions

1. The civil penalty was imposed for conditions which existed prior to the assessment period corresponding to this SALP Report.

2. Under the heading of "Confirmatory Action Letter" are two examples of inspection findings that appear to be characterized in an overly harsh manner. We have been told in prior conversations that letters of committment by the licensee with regard to inspection findings and which commit to actions desired by the NRC do not constitute an escalated enforcement action. Obviously, we misunderstood. Not only are these letters categorized under the escalated enforcement heading, but the text directly states that these were in fact the licensee equivalent of an immediate action letter. It was our understanding that Region III agreement to a licensee letter of commitment represented a Region III management decision that the item in question was downgraded in severity and did not represent an escalated enforcement action.

W. Section V.G, Management Conferences

1. Two of these management conferences were at Consumers Power Company's request.

2. We strongly support the need for more management conferences with top and intermediate level NRC management participation, especially focused on attaining mutual understanding as to the standards that will be applicable to Midland inspections.

COMPARISON OF TESTIMONY OF JAMES G KEPPLER BEFORE THE ASLB ON JULY 13-14, 1981 WITH FINDINGS IN THE DRAFT SALP REPORT

Introduction

On July 13-14, 1981, Mr James G Keppler, the Director of the Region III Office of Inspection and Enforcement, testified that the NRC has reasonable assurance that quality assurance and quality control programs at Midland will be appropriately implemented with respect to future soils construction activity, including remedial actions. In March 1982, Region III issued its Preliminary SALP Report on the Midland Plant. Nothing in the SALP Report contravenes Mr Keppler's testimony regarding reasonable assurance. All of the information contained in the SALP Report was known to Mr Keppler at the time he testified.

1. Quality Assurance

   a. SALP Analysis

      The report notes the creation of the MPQAD and Consumers Power's assumption of responsibility for onsite quality control and quality assurance functions for the installation of the HVAC systems. It also lists the findings of NRC Inspection Report No 81-12. The report concludes:

      > The licensee is rated Category 2 in his overall quality assurance capability. Notwithstanding weaknesses identified in specific areas, the licensee has been responsive in establishing an overall effective organization for the management of construction and implementation of quality assurance at the site.

   b. Prior Testimony

      Mr Keppler testified extensively regarding NRC Inspection No 81-12,[1] the MPQAD[2] and the Zack matters.[3] Mr Keppler initiated NRC Inspection No 81-12 for the purpose of determining the efficacy of the MPQAD.[4] Mr Keppler personally inspected the work of the NRC inspectors at the conclusion of the inspection,[5] participated in drafting the inspection report, and signed the final report.[6] Mr Keppler concurred in the report's conclusion that, although some problems were identified, the MPQAD and the quality assurance program at Midland were working quite well.[7] Mr Keppler also described the corrective actions Consumers Power had taken with regard to Zack, and concluded that the Zack problem did not indicate a broader breakdown in quality assurance.[8]

2. Soils and Foundations

a. SALP Analysis

The SALP Reports lists the soils-related noncompliances and deviations identified in NRC inspections of Midland during the SALP evaluation period (July 1, 1980 to June 30, 1981). The report concludes that:

> The licensee is rated Category 3 in this area. The enforcement history indicates that additional licensee attention is warranted.

b. Prior Testimony

The evidence before the Licensing Board shows that Mr Keppler was thoroughly familiar with the 1980-81 enforcement history relating to soils issues when he made his judgment regarding reasonable assurance at Midland. Mr Keppler was Regional Director of Region III during this period and signed all of the NRC inspection reports listed in the SALP analysis.[9] He testified in detail about many of the soils problems identifed in these reports.[10] He explained that all of the soils problems identified in 1980-81 were carefully reviewed and reassessed, and all pertinent records covering summer 1980, to May 1981 were examined, in arriving at the conclusion of reasonable assurance in May 1981.[11] Mr Keppler specifically noted that the history of soils work at Midland did not contravene his judgment of reasonable assurance. The soils problems, he testified, "can be largely attributed to the failure to fully recognize the importance of the application of quality assurance to soils work (but) the importance of quality assurance to soils work and to consequent remedial actions at the Midland site is now fully recognized" by Consumers Power.[12]

3. Containment and Other Safety-Related Structures

a. SALP Analysis

"The licensee is rated Category 2 in this area. The licensee's performance appears to be satisfactory; no significant strength nor weaknesses were identified."

b. Prior Testimony

Mr Keppler did not testify on this subject.

4. Piping Systems and Supports

a. SALP Analysis

The Report lists seven items of noncompliance identified by NRC Staff inspections during the evaluation period. Based on five of these

items, an Immediate Action Letter (IAL) was issued on May 22, 1981. The report concludes:

> The licensee is rated Category 3 in this area. The enforcement history is indicative of weaknesses in the implementation of the quality assurance program.

b. Prior Testimony

Mr Keppler testified regarding the piping problems identified during NRC Inspection No 81-12 in May 1981.[13] He explained that problems with piping systems are an industry-wide concern that is receiving considerable Region III attention.[14] Problems are being identified in this area at almost every nuclear site inspected.[15] The NRC Staff inspector who identified the piping problems at Midland is at the forefront of knowledge in this area, and did not consider the incidents at Midland to be significant.[16] NRC Inspection No 81-12 confirmed that the methodology of the design, installation and quality control inspection of the piping and support system was acceptable.[17] It was the unanimous view of the inspection team that the problems identified were isolated, and not indicative of any major programmatic weaknesses in the implementation of the program.[18]

5. Safety-Related Components

a. SALP Analysis

The report lists the two items of noncompliance which culminated in Consumers Power's issuance of a letter of understanding on January 22, 1981. The report concludes:

> The licensee is rated Category 2 in this area. The above enforcement was aimed at an isolated instance and may have been directly related to change in NSSS QC personnel changes. The licensee had in the past and since this episode maintained adequate QA control for the assembly of NSSS equipment.

b. Prior Testimony

No testimony was given on this subject.

6. Support Systems

a. SALP Analysis

The report notes the quality assurance deficiencies and the Civil Penalty of the previous SALP evaluation period. It commends Consumers Power's "aggressive action" in taking over complete responsibility for quality assurance and quality control in HVAC installations; this action resulted in significant improvement in control over the installations and in correction of identified weaknesses. The report concludes:

The licensee is rated Category 1 in this area. Management attention and involvement has been aggressive in accepting full QA/QC responsibility and supporting this organization with an adequate number of skilled personnel.

b. Prior Testimony

Mr Keppler testified that the HVAC problems problem did not indicate a broad breakdown in quality assurance.[19/]

7. Electrical Power Supply and Distribution

a. SALP Analysis

The report listed seven noncompliances identified during the evaluation period and concluded:

The Licensee is rated Category 3 in this area. The enforcement history indicates a lack of management attention and involvement. This is evident by apparent inadequate preplanning and assignment of priorities as activities increased, a poor understanding of procedures for control of activities and minimal QC Staffing for the magnitude of the activities.

b. Prior Testimony

Mr Keppler testified that electrical work was extensively reviewed during the May 1981 NRC Staff inspection of Midland.[20/] The inspection team reviewed five areas within electrical work: quality assurance records, quality assurance implementing procedures, quality control personnel, visual inspection of electrical work activities, and Consumers Power's actions on previously identified items.[21/] Only four problems were identified.[22/] These problems were isolated and not indicative of any major programmatic weaknesses in the implementation of the program.[23/] The inspection report also commended Consumers Power for several aspects of their electrical work program. First, the program and its implementation regarding calibration of termination tools was judged to be satisfactory.[24/] Second, Consumers Power had taken timely and comprehensive actions to correct areas addressed on previous NRC inspections.[25/] Finally, the quality assurance (electrical) organization was found to be strong and capable.[26/]

8. Instrumentation and Control Systems

a. SALP Analysis

"The Licensee is not rated in this area because a minimal amount of instrumentation installation and minimal inspection effort during this evaluation period."

b. Prior Testimony

There was no testimony on this subject.

9. Licensing Activities

a. SALP Analysis

"The Licensee is rated Category 2 in this area. Early responses during the evaluation period were lacking in responsiveness. However, the more recent responses tend to be substantive and of acceptable quality."

b. Prior Testimony

Mr Keppler did not testify on this subject

10. Fire Protection

a. SALP Analysis

"The Licensee is rated Category 1 in this area. Management attention has resulted in a high level of performance in this area."

b. Prior Testimony

There was no testimony on this subject.

11. Preservice Inspection

a. SALP Analysis

The Licensee is rated Category 2 in this area. The Licensee's performance appears satisfactory, no specific strengths nor weaknesses were identified."

b. Prior Testimony

There was no testimony on this subject.

12. Design Control and Design Changes

a. SALP Analysis

The report notes four design control related noncompliances identified by NRC inspections and five licensee-controllable Construction Deficiency Reports indicating a lack of quality assurance in design control during the evaluation period. The report concludes:

> The licensee is rated Category 3 in this area. The amount of re-engineering that has transpired in electrical, civil and piping areas and the specific design control weaknesses discussed in

Soils and Foundations, Piping Systems and Supports and Electrical Power Supply and Distribution indicate significant weaknesses in overall design control.

b. Prior Testimony

Mr Keppler did not consider the problems identified in the piping system to be a significant concern.[27] He also testified that noncompliances identified by NRC inspections in the soils area, although of concern, did not contravene his judgment of reasonable assurance.[28] Another NRC Staff witness, Mr Gilray, confirmed that the two soils noncompliances referenced here by the SALP Report were not substantive and did not bring the adequacy of Consumers Powers procedures into question.[29] The May 1981 NRC inspection affirmed the adequacy of the electrical program at Midland.[30] Mr Keppler did not identify design control as a significant quality related problem.[31]

13. Reporting Requirements and Corrective Action

a. SALP Analysis

The report notes that Consumers Power contested several apparent items of noncompliance during the evaluation period, and concludes:

> The Licensee is rated Category 3 in this area. The licensee responses to enforcement items and internal audit findings are often delayed requiring repeated submittal to obtain acceptable resolutions.

b. Prior Testimony

Mr Keppler testified that Consumers Power had responded to all items of noncompliance identified in NRC inspection reports. He noted that Consumers Power agrees with some such items and disagrees with others. Mr Keppler stated that the fact that Consumers Power does not agree with an apparent item of noncompliance is not a sign of poor management attitude. If there is a valid reason to disagree with the item, he added, then they should disagree with it. This is a normal part of the give and take between the NRC Staff and the licensee.[32]

1/ Keppler, Tr 1884-47, 1981-77, 1981-83, 1998-2002, 2004-09, 2076-84.

2/ Keppler, Tr 1973-76.

3/ Keppler, Tr 1935-36, 1964-66, and prepared testimony at p 4, following Tr 1864.

4/ Keppler, prepared testimony at pp 4-7, following Tr 1864.

5/ Keppler, Tr 2078-79.

6/ NRC Staff Exhibit No 1; Keppler, Tr.

7/ Keppler, Tr 1973.

8/ Keppler, Tr 1935-36, 1964-66 and prepared testimony at p 4, following Tr 1864.

9/ NRC Staff Exhibit No 1 (NRC Staff Inspection Report No 81-12); Staff Exhibit No 3 (NRC Inspection Report No 81-09), Gallagher, prepared testimony, Attachment No 3, (NRC Inspection Report No 80-32/80-33), following Tr, 1754.

10/ Keppler, Tr. 1935-36, 1964, 66 1887, 1942, 2002-09, 2013-2017 and prepared testimony at pp 4-5, 7 9, following Tr 1864.

11/ Keppler, Tr 1913-14, 1977, 1982-83, 2083.

12/ Keppler, prepared testimony at p 8, following Tr 1864.

13/ Keppler, Tr 2004-09, 2017, 1942.

14/ Keppler, Tr 2006-09.

15/ Id.

16/ Id.

17/ Id, prepared testimony, Attachment No 2, at p 5, following Tr 1864.

18/ Id, prepared testimony at p 8, following Tr 1864.

19/ Id., at p 4.

20/ Keppler, Tr 2076-78, and prepared testimony at p 7, following Tr 1864.

21/ Id, prepared testimony, Attachment No 2, at p 11, following Tr 1864.

22/ Id, at p 11-12.

23/ Id, prepared testimony at p 8, following Tr 1864.

24/ Id, prepared testimony, Attachment No 2 at p 12, following Tr 1864.

25/ Id

26/ Id

27/ See discussion supra under "Piping Systems and Supports."

28/ See discussion supra under "Soils and Foundations."

29/ Gilray, Tr 3742-43 (testifying regarding the soils noncompliances identified in NRC Inspection Reports No 80-32 and 80-33)

30/ See discussion supra under "Electrical Power Supply and Distribution."

31/ Keppler, prepared testimony at p 4, following Tr 1864.

32/ Keppler, Tr 2083-84

ANALYSIS OF CURRENT AND FUTURE QUALITY ACTIVITIES WITH REGARD TO REMEDIAL SOILS WORK

At the April 26, 1982 SALP meeting Region Administrator, Mr J G Keppler, expressed concern that his staff had informally characterized the ongoing soils and foundation work as only minimally acceptable. Mr Keppler asked CP Co's management to comment on its impression of this characterization and to provide its suggestion as to how this assessment could be improved.

The following consists of a brief analysis of what Consumers Power perceives to be the basis for this informal characterization and a description of some of the current organizational and programmatic features of the soils activities that lead us to conclude that prospects are excellent for the satisfactory execution of the remaining soils and foundation work.

The soils-related activities at the Midland job site are currently at a relatively low level pending completion of the NRC staff's technical review and release, by the NRC, of the major portion of the remedial work still to be undertaken. The work that has been done thus far in 1982 is concentrated in two areas. First, a significant number of wells have been drilled at the site, as part of the plant dewatering systems, as part of the freeze wall associated with the auxiliary building underpinning activity and to support the site drawdown tests. Second, the major contractor for the auxiliary building underpinning work was mobilized; the initial work on the access shaft was completed; and, in parallel the detailed underpinning construction planning and continuing technical review with the NRC staff of subsequent work was carried out. Very little work in the other remedial soils areas has been accomplished during this period.

In responding to Mr Keppler's comments at the SALP meeting, we believe that the basis for the staff's informal negative comments regarding the current soils quality assurance activities can be traced to one specific area of concern and one more broadly-based general concern. A discussion of each of these follows.

A specific area of work which may have been of concern to the staff, and one of immediate concern to Consumers, relates to the controls on the drilling and excavation activities that have been recently carried out. Because the number of NCR's that had been written in this specific area and the severity of the most recent occurrence (drilling into an electrical duct bank), the Company concluded that even with the formal controls that were previously in place, additional controls were required. As a result on April 28, the Company issued a stop work on all drilling. (This Consumers Power stop work direction preceded the ASLB Order of April 30, 1982.) As of May 12, the stop work order had not been removed, nor will it be until a new detailed drilling and excavation control procedure has been fully reviewed and accepted by Consumers Power Company. While there had been other corrective action taken prior to the CP Co stop work order, the Company is confident that the comprehensive revisions to the prior control procedures on drilling and excavation will preclude errors of the type recently experienced, and will assure that future

drilling and excavating work will be carried out in a satisfactory and controlled manner.

The general and considerably more significant area of inferred NRC concern can only be identified as the lack of timely agreement between the Company and the NRC on the specific quality assurance coverage requirements to be imposed on the remedial soils work, particularly those to be imposed on the underpinning work. The lack of timely resolution of this issue, the apparent misunderstanding regarding the Company's commitments, and the contentious atmosphere at the March 10, 1982 meeting on this subject and at the subsequent inspection undoubtedly contributed to the negative rating informally expressed by the staff.

When the auxiliary building underpinning work started with the first partial NRC release for construction of the vertical access shaft, CP Co presented a special quality assurance plan encompassing, in our opinion, appropriate portions of the underpinning work. This plan was initially presented to the staff at a meeting in Region III headquarters on January 12, 1982 and documented in a letter dated January 7, 1982. While the initial staff response to the plan appeared to be favorable, no official NRC conclusion was expressed. It became evident during the time between January and early March that at least one individual within the NRC staff believed that an extensive modification of the program coverage under the QA plan, MPQP-1, should be required. This preference for expanded NRC requirements became an NRC staff working level position, formally expressed to the Company at the meeting on March 10, 1982. As a result of that meeting, the NRC Region III inspector apparently concluded that Consumers had committed to fully accepting the NRC Staff position that essentially all to-go underpinning work should be Q-listed, unless exceptions are agreed upon. The NRC's meeting minutes reflect no such commitment. In fact, no commitment was made. This misunderstanding, and others arising out of follow-up discussions with the staff, has apparently affected Region III's feelings toward our soils quality assurance program and personnel. It is, therefore, not surprising that the NRC Region III staff considers the quality assurance activities in the soils and foundation area to be in need of improvement based on its recent experience. (It should also be noted that the NRC SALP Board held its second and final meeting on March 23, 1982.) The Company also agrees that it is extremely difficult to avoid regulatory difficulties unless both parties have a common understanding and agreement as to the scope of applicable requirements. The major issue with regard to QA program coverage was resolved at the management level meeting held on March 30, 1982 in Glen Ellyn and documented by the April 5, 1982 letter of J W Cook to J G Keppler, in which the Company agreed to "Q" list essentially all of the to-go underpinning work. However, the staff has still not formally acknowledged its concurrence with that letter. This concurrence would be of significant assistance in documenting the conclusion of the staff's review of program requirements and permitting the redirection of resources from program definition to successful program execution.

Resolution of the concerns noted above will make a significant contribution to the remaining soils work. In addition, the following considerations should provide added confidence that excellent results will be obtained in the remaining soils construction activities.

Dedication of a high quality professional staff to the underpinning and other soils work is of paramount importance to its successful completion. Because of the complexity and importance of the underpinning work as the dominant factor in the soils remedial program, a mini-project of dedicated groups has been set up to focus attention on the soils activities, with particular emphasis on the underpinning. The technical qualifications of the individuals staffing these activities emphasize previous related experience. At the site, specific underpinning groups have been formed within Bechtel construction, Bechtel quality control and MPQAD, all staffed with individuals having significant applicable technical experience and academic credentials. Both Bechtel resident engineering and Bechtel engineering in Ann Arbor have dedicated remedial soils groups. The onsite resident engineering office will have four geotechnical engineers and at least two structural engineers dedicated to supporting the field activities. Consumers Power Company home-office soils activities are currently staffed with two experienced geotechnical engineers and several experienced structural engineers who have been active in the design reviews and prior licensing evaluations and who will continue to follow the soils remedial work throughout the duration of the construction. The overall Consumers Power Company project management of soils is also organized as a mini-project, and the senior Consumers Power Company individual has had significant nuclear power plant experience at the project manager level.

In addition to the on-staff individuals for Consumers Power Company, Bechtel and the major subcontractors, significant consulting resources are also integrated into the soils work. The design consulting firm for the auxiliary building underpinning has a staff man onsite to coordinate with his home office personnel. All the major consultants will be asked to periodically review the job progress as the underpinning work proceeds.

To assist some of the technical specialists in fully understanding all of the quality requirements on the job, some additions to the staff are also planned. The Bechtel underpinning construction group leader, who oversees and interacts with the underpinning subcontractors, will have a quality consultant on his staff to assist him in any and all quality-related matters. It is also anticipated that the underpinning quality control organization will be augmented to enhance its breadth of leadership.

We believe that the NRC themselves can significantly assist in the successful completion of the underpinning and other soils remedial activities by expanding the presence of their lead inspector on the site as the work progresses. Specific steps to facilitate this NRC interaction were agreed upon, as documented in the April 5, 1982 letter referenced above, and complemented by day-to-day working agreements.

A second area which should significantly assist in the successful completion of the remedial soils work, particularly the underpinning activities, is the degree of design completion prior to the work entering the major construction phase. Because of the extent and thoroughness of the NRC staff review, there is a more complete design for the underpinning activities than is normally in place for other construction activities. Essential completion of the calculations for the underpinning work before the major construction phase

begins will minimize the kind of major design changes that can occur in nuclear plant structural design process because of calculation revisions. There will, of course, be design changes as the work progresses, but the degree of calculation completeness reached prior to initial drawing release will significantly contribute to the stability and success of the construction process.

In addition to the degree of completeness in the underpinning design activity, the interface review called for by the quality assurance plan for the underpinning activity, MPQP-1, is also substantial. These reviews will also contribute to both the validity of the design and the general understanding of design requirements and quality attributes by all persons participating in the underpinning activities. In addition, MPQP-1 directly inserted quality assurance (and through quality assurance, quality control) comments into the design review cycle, a significant requirement above and beyond the quality assurance program for the balance of the plant.

The number of procedural controls that have been or are being instituted for this work should also engender confidence that the critical underpinning activities will be satisfactorily controlled. Judging from the work to date, there will be more than 50 specific work procedures developed for the underpinning work. MPQP-1 calls for integration of inspection hold points directly in these construction work procedures. As a result of these steps, the procedural controls for the underpinning work will be more extensive than those for any other activities, with the possible exception of NSSS primary loop activities, covered by the QA program for the balance of the project. The extent of the construction procedures automatically increases the scope of the training activities and of the inspection plans which are developed based on the specific work procedures.

Finally, as a result of the extensive discussions with the NRC staff regarding the coverage of the "Q" program, MPQP-1 is being applied to essentially all of the underpinning work still to be done. While this application may or may not be completely consistent with a strict definition of what is "safety-related," it should lend added assurance that the work in total, and the safety-related work in particular, will be carried out successfully.

In light of the foregoing, it is hoped that the Region III management can gain an appreciation of Consumers Power Company's perception of recent events and that both the Region III management and staff can develop added confidence that the to-go soils work, particularly the extensive underpinning activities, can and will be carried out up to the expectations of both the applicant and the NRC.

2nd Rough Draft

To: DBMiller

From: BHPeck

Subject: USNRC EXIT MEETING

Date: October 19, 1982

cc:

This memorandum documents an NRC exit meeting held [redacted]
A list of attendees is attached. a summary listing of action items is also attached.

Mr. R. Cook began the meeting by stating that after the first four days of effort, the NRC has gotten into more areas than initially planned. The issues to be discussed are considered preliminary, and communication of status to us is the purpose of this meeting.

NRC Inspectors Cook and Landsman have been looking at Diesel Generator Building to get "a story." After they have completed their review, they will see what it says. The concerns at this point are as follows:

a. 1C231 Generator Control Panel - Bolts not installed to ~~a~~ design drawing. Ed Jones has more information on this. There was no number on the original FCR, ~~generated~~ "another" FCR was generated to get signature.

b. Terminations in Panel 1C231 were inspected. Problems with internal wiring separation were identified. This problem was documented by MPQAD on NCR 075, in June, 1982. The NRC will review the resolution of this NCR.

c. Foundation bolts for 1C111 - open item on traceability. Some missing washers were also noted.

d. Potential Item of Non-Compliance - 1C112 defective terminations on internal wiring done in the vendor's shop - broken strands, etc. The NRC felt there was poor workmanship inside the panel. A QA overinspection completed earlier, and it was not known if these items had been picked up. Mr. Ed Jones will follow up.

Mr Paul Barret stated he had an open item on the in-process QC inspection of hangers built to the ASME code. Mr. Barret needs to verify in-process inspections for the correct welder, procedure and fit-up during fabrication. He also had unanswered questions in the following areas:

a. Rusty welds on hangers and grouted anchor bolts in Bay 2 of Diesel Generator Building.

b. Control of distribution of redline changes. Changes should go through Document Control, not Field Engineering.

Mr. Barret also commented that the ~~insulation~~ installation of welds and piping looked good. He reviewed the controlled process from Engineering to Construction which looked good.

Mr. R. Cook reported on the following items reviewed by Dr. Landsman:

a. Hilti, drop-in anchors, in the Diesel Generator Building looked good.

b. The NRC is still looking at an FCR procedure over the issue of retired FCN's.

c. A pipe hanger over the Diesel Generator engine (for Diesel exhaust) was reviewed in detail.

This item is still open, pending resolution of several questions on "Q" vs. "non-Q", weld painting, documentation, inspection and welding to a beam.

Mr. Wayne Shafer discussed communications between the NRC and personnel on site as it related to an incident that came up yesterday with a Bechtel field engineer.

The NRC has the right to talk to anyone, however an individual has a right to ask that his supervisor be present.

Mr. Shafer said it was permissible for an individual to say I don't know if he doesn't, however, all answers should be given honestly.

He acknowledged the existence of our matrix of communications with Bechtel, but stated that we need to correct this.

Mr. J. W. Cook stated that our policy will be redefined and will meet the needs of the NRC. All organizations will understand this policy of communications, and it will be explained to everyone.

Mr. D. B. Miller pointed out that he would be issuing an interface procedure in the near future for communications with the NRC.

BHP/lrb

Attachment

1st Rough Draft

NRC EXIT MEETING NOTES

October 15, 1982

~~Discussion Of Communications With Bechtel (Matrix)~~

1. [redacted] Issues coming up are preliminary. Communications with us.

2. Paul Barret (other contacts: R. Corcoran, R. Marl, F. Schulmeister, and D. Vokal) - In-process QC inspection on hangers built to ASME code - he had a question on this. Still working on. Wants to verify in-process inspection during fabrication. Right welder, void procedure and fit-up. Verify doing fabrication.

3. Have gotten into more areas initially than originally planned.

4. Looking at Diesel Generator Building to get a story. Will then see what it says.

   a. 1C231 Gen Control Panel - Bolts not installed to a drawing. Ed Jones has information on this. No number on the FCR, generated "another" to get signature. Still sort of open.

   b. Inspected terms in panel. Internal wiring separation. (See NCR 075, dated 6/82). NRC to review resolution.

   c. Fdn bolts - open item on traceability. 1C111 - missing washers.

   d. Potential Item of Non-Compliance - 1C112 defective terms on internal wiring (by shop), broken strands, etc. (4 specifics). Poor workmanship in panel. QA overinspection completed. (Maybe not picked up - Ed Jones needs to check).

   e. General concern on wire separation throughout the plant.

   f. Unanswered questions (Paul Barret)
   - rusty welds on hangers and bolts (grouted anchors - bolted to drawings) (Bay 2 of Diesel Generator Building)

   Control of distribution of redline changes. Changes should go through Document Control, not Field Engineering.

INSTALLATION

g. Insulation of welds and piping looks good - Controlled.

Followed up from Engineering - Construction = Good.

5. Ross' items
--Hilti,
(?) Look at SWPS - see DBM

Looking at procedure. Still open.
Retracted FCN's?
Check with Ross on who he was working with.

Hanger over Diesel generator engine for Diesel exhaust.

241HBD-485-H5-10 / Drawing 632-1-510

a. Non-Q (why?) - QC didn't inspect, hanger critical (B3.1.1)

Does this violate 2 over 1?

b. FNE - inspected, but no records.

c. Mechanical Engineering - some records, but not on this.

d. Tack weld. Painted over. Weld not in accordance with print.

e. This hanger welded to a "Q" beam which should have showed preheat.

6. Wayne Shafer
--Rumor - Bechtel might have told people not to talk to NRC.

--Came up yesterday with an FE

--NRC has right to talk to anyone

--OK to say I don't know if he doesn't. Answer honestly. Not my area.

--Referred to some handwritten note. Sevo

--Acknowledged our matrix

--Read a memo from Curtis to Rutgers
JWC and WRB aware of and refuted

We need to correct this.

--Individual has right to ask his supervisor present.

--Leo responded. Defended FE response.

--JWC - Our policy will meet NRC needs. All organizations will understand communications. Explain this to everyone.

--DBM - His procedure is coming up

--Discussion

* --Verify that we have all the right up

7. JWC invited NRC to come to us with general concerns - Before they become a sore point.

NRC Exit
November 10, 1982

Q ~~[illegible]~~ been concentrating on the D/G Bldg. This area was picked deliberately for an in-depth review. Mr. Cook stated that The NRC Inspectors had grouped their collective findings into several categories. These were then presented as follows:

1. Material Traceability
   several examples
   a. Laydown Area - Cook
      plates with no identifying markings.
      what is actually A-36

   b. NCR 3266 - Bennett
      Material from unapproved vendor was installed.
      Pat Corcoran has some additional information.

   c. HVAC Fan supports - Landsman
      1/4" plates do not meet ASTM specs.

   d. Spec C-233 - allows purchase of Q and non-Q. (Gardner)
      Cook is researching this issue

   e. Indications of wrong material used in construction (Landsman)
      Gusset plates & HVAC

2. Plant not built according to dwgs
   a. HVAC fan support. (Landsman)

   b. Electrical hangers (Gardner)
      3 cable tray supports not per dwgs
      FCN's have been written

c. Conduit Pull boxes (Gardner)
Several do not conform to E-42

d. D/G. Engine Control Panels (Gardner)
Missing (Idle) bolt washers.

e. Problems with Silencers / Mufflers
Discussed this AM w/ Jack
Supports do not look like dwgs.

3. QC Inspector Records Incorrect
Closed QCIR's saying built per dwgs, but it does not.

4. Design Document Controls inadequate

a. FSK controlling work (Landsman)
D/G (from) engine
No cross reference from dwg to field sketch and vice-versa.

b Control of Redlines (Barnett)
Doc. Control is bypassed

c. Retiving of FCR's
need to label dwgs that this has been done.
last FCR

d. Rev. 6 of C-1004 HVAC Fan Support
Incop FCN C-335, but not listed on block.
(New item)

5. Field Inspections not adequate
   ? discussed earlier.

6. Design Control not adequate

   a. Monorail in D/G Bldg.
      should have written an NCR.

   b. FSK's used for fan supports

   c. D/G exhaust pipe.
      system is Q (pipe); hanger is non-Q.
      discussion of "Q" - new issue.
      should we have stopped work, or written an NCR?
      issue of preheat. open issue.

   d. Time for SCN's to come to the site.

7. Remedial Soils

   a. Perimeter dike & baffle dike should be Q.
      armor stone installation proceeded.
      a May 25, 82 letter from NRC to us said it.
      Call Ross on Monday (Mooney & Swanberg)

8. ASME on Air Start Lines (Barnett)
   what code are we working to?
   lead to track back to the FSAR.

9. Problem on Transducers (Cook)
   ?

II. Receipt Inspections

a. D/G Control Panels

numerous shop defects in terms.

{ Source inspections
Vendor QA program } inadequate
Receipt Inspections

19 page NCR by MRAD
SCRE written

b. CCW Pumps, 1 pump curve.

I. Other

a. Cable Tray Segregation

program to have correct cables

b. Painting of welds

c. Chipping of Concrete in CB.

Noise should touch plant unless design is there
Training program down to Foreman Level

Items from Landsman

a. Weld Rod Control
closed - comment

b. FE Daily Reports
new - Q

c. Hole in AB

need look up on FCN

∴ IPIN's

Control of non-conforming items.

TE's have to interpret IPIN's

NRC wants to follow up with us on this.

14. Use of IPIN's / ability to Trend Deficiencies

IPIN's — leaves open inspection records

management doesn't know about deficiencies

an IPIN does not halt further installation and use.

+ No comments at this time on enforcement action.

~~Denton~~ Don't type

Comments by Shafer:

Considered carefully this exit

Lots of raw data

need to evaluate

why haven't we found some of this.

NRC Exit

Nov, 10, 1982

Name	Organization
B. H. Peck	CPCo - S.M.O.
R M Wheeler	CPCo - SMO
M. J. Schaeffer	CPCo - MPQAD
Don S. Riat	Bechtel - Related Engr
Patrick Corcoran	Bechtel - Resident Proj. Engineer
L. H. Curtis	Bechtel - Proj Engrg Mgr
E. H. Smith	Bechtel Eng. Mgr.
J W. Cook	CPCo - VP Proj, Engg & Const.
D T Miller JR	CPCo — Site Manager
R A Wells	Ex. Mgr MPQAD
M. A. Dietrich	Bechtel QA/MPQAD
Eugene Smith	Bechtel PFQCE
J. J. Gilmartin	Bechtel PFE
L. E. Davis	Bechtel Site Mgr
T. C. Valenzano	Bechtel Proj Supt'd.
W. J Friedrich	INPO (MAC)
K. E. McCue	CPCo - Tech. Supt.
Jim Copley	INPO (MAC)
V. Solanki	Bechtel QAE
G W Rowe	CPCo. Construction
K E Marbaugh	CPCo - QA-Nuc Ops
J S Krepic	CPCo Const
J. K. Messenheimer	CPCo - MPQAD Site Supt.
P. R. Kappel	Bechtel - Resident QE
L. L. Richardson	Bechtel - Asst to Proj. Manager
Ed Jones	CPCo - Elect. & I&C Group Supv. 184TV

(over)

USNRC

R. Landsman

R. Cook

R. Warnick

M. Shafer

R. Gardner

P. Barrett

B. Burgess

L. R. Howell MPQAD

DLA
~~JDT~~
~~RMW~~
GWR
JSK

Please review and add comments from the notes you took - by Friday 11/12.
Bice

|||| O - me

Draft #1

TO: DBMiller

FROM: BHPeck

DATE: November 10, 1982

SUBJECT: MIDLAND PROJECT GWO 7020
USNRC EXIT MEETING

This memorandum documents the NRC Exit Meeting held on November 10, 1982. A list of attendees is attached. Mr. R. Cook opened the meeting and acted as the lead NRC spokesperson. He stated that over the last four weeks, the inspectors have been concentrating on the Diesel/Generator Building. This area was picked deliberately for an in-depth review. Mr. R. Cook stated that the NRC Inspectors had grouped their collective findings into several catagories. These were then presented as follows:

1. Material Traceability

   Several Examples were provided. The NRC has observed steel plates in the Laydown Area ~~Stock~~

   ~~Plates~~ with no identifying markings. They questioned what was actually A-36 steel. ~~What is actually A-36~~

   B. NCR 3266 - Barrett

      Material from unapproved vendor was installed.
      Pat Corcoran has some additional information.

   C. HVAC Fan Supports - Landsman

      ¼" plates do not meet ASTM specs.

   D. Spec C-233 - Allows purchase of Q and non-Q (Gardner)
      GWR is researching this issue.

   E. Indications of wrong material used in Construction (Landsman)
      Gusset plates and HVAC

2. Plant not built according to Dwgs.

   A. HVAC fan supports - (Landsman)

   B. Electrical Hangers (Gardner)

      3 cable tray supports not per Dwgs.
      FCN's have been written.

C. Conduit Pull Boxes (Gardner)

Several do not conform to E-42.

D. Diesel/Generator Enginer Control Panels (Gardner)

Missing foundation bolt washers.

E. Problems with Silencers/Mufflers

Discussed this AM with JSK.
Supports donot look like drawings.

3. QC Inspector Records Incorrect - Closed QCIR's saying built per dwgs, but it does not.

4. Design Document Controls Inadequate

A. FSK controlling work (Landsman)

Diesel/Generator fan support
No cross reference from dwg to field sketch and vice-versa.

B. Control of Redlines (Barrett)

Doc. Control is bypassed.

C. Retiring of FCR's

Need to label dwgs. that this has been done.
Lost FCR

D. Rev. 6 of C-1004 - HVAC Fan Support
Incomp FCN C-335, but not listed on block. (New item)

5. Field Inspections not adequate.

? Discussed Earlier

6. Design Control not adequate.

a. Monorail in Diesel/Generator Building
Should have written an NCR.

b. FSK's used for fan supports

c. Diesel/Generator Exhaust Pipe

System is Q (pipe), hanger is non-Q
Discussion of "Q" - ness issue.
Should we have stopped work, or written an NCR?
Issue of preheat open issue

d. Time for SCN's to come to the site.

7. Remedial Soils

   a. Perimeter dike and baffle dike should be Q.
   Armour Stone installation proceeded.
   A May 25, 1982 letter from NCR to us said it.
   Call Ross on Monday (Mooney and Swanberg)

8. NDE on Air Start Lines (Barrett)

   What code are we working to?
   Need to trace back to the FSAR

9. Problem on Trans - (Cook)

10. Receipt Inspections

   a. Diesel/Generator Control Panels

   Numerous shop defects in terms.

   Service inspections
   Vendor QA program Inadequate
   Receipt Inspections
   19 page NCR by MPQAD
   SCRE Written

   b. CCW Pumps, 1 pump curve.

11. Other

   a. Cable Tray Segregation

   Program to have correct cables

   b. Painting of Welds

   c. Chipping of Concrete in CB.

   No one should touch plant unless design is there
   Training Program down to F____ level.

12. Items from Landsman

   a. Weld Rod Control
   Closed - Comment

   b. FE Daily Reports
   Non-Q

   c. Hole in AB
   Need look up an FCN

13. IPIN's

Control of non-confirming items.
TE's have to interpret IPIN's
NRC wants to follow up with us on this.

14. Use of IPIN's/Ability to Trend Deficencies

IPIN's - Leaves open inspection records
Management doesn't know about deficiencies

An IPIN does not halt further installation and use.

No comments at this time on enforcement action.

NRC EXIT

November 10, 1982

NAME	ORGANIZATION
BHPeck	CPCo - SMO
RMWheeler	CPCo - SMO
MJSchaeffer	CPCo - MPQAD
Don S. Riat	Bechtel - Resident Engineer
Patrick Corcoran	Bechtel - Resident Project Engineer
LHCurtis	Bechtel - Project Engineer Manager
EHSmith	Bechtel Engineering Manager
JWCook	CPCo - VP Projs, Eng. & Const.
DBMiller	CPCo - Site Manager
RAWells	Ex. Mgr. MPQAD
MADietrich	Bechtel QA/MPQAD
Eugene Smith	Bechtel PFQCE
JVGilmartin	Bechtel PFE
LEDavis	Bechtel Site Manager
TCValenzano	Bechtel Project Supt.
WJFriedrich	INPO (MAC)
REMcCue	CPCo - Tech. Supt.
Jim Copley	INPO (MAC)
VSolanki	Bechtel QAE
GWRowe	CPCo Construction
KEMarbaugh	CPCo - QA - Nuc Ops
JSKreple	CPCo - Const.
JKMeisenheimer	CPCo - MPQAD Soils Supt.
BRKappel	Bechtel - Resident QE
GLRichardson	Bechtel - Ass't to Proj. Manager
Ed Jones	CPCo-Elect. and I&C Group Supv.
	IE&TV

USNRC

RLandsman
RCook
RWarnick
WShafer
RGardner
PBarrett
BBurgess

MPQAD
LNHowell

NOTES FROM MEETING WITH NRC ON 11/23/82

- We made a good presentation on individual items, however:
    - Generic approach is a concern to NRC
    - Where do we go now
- Inspection Program is behind where it should be:
    - Open IR's is over 12,000
    - IPIN's concern - big issue
    - D/G Building problems found over last several weeks.
- What about rest of plant?
    - What do we do?
    - How long to find them? Status of the plant.
- Inspectors feel safety related work should be stopped.
- Warnick not sure how much work he could allow to proceed.
- R.S. work should continue, also some other elements of work like HVAC, non-safety related work, B&W work.
- NRC has not really had time to think this through, but they wanted to talk to us.
- Need many more details on open IR's, IPIN's open.
- Issue of recertification of all QC Inspectors:
    - We say we will be done by April, 1983.
- Adequacy of Inspection Program, up-to-dateness and our grasp of the QC program. This is the center of their concern.
- It is hard for NRC to issue an order.

  Time consuming process, including going to the Commissioners.
- They want us to recognize the problem, take the action and take the credit. They would follow up with a C.A.L.
- JWCook reviewed his plan:
    - Go over inspection specifics
    - Get a time readout and response
    - Make a proposal to address NRC concerns, to include

      Statusing of inspections
      Systematic work suspensions - Certain areas
    - Not ready today to go over details.
- We are at a point in Construction where we will have to inspect quality into the job.

- Warnick says they are not fixed in their position today. They need to put their thoughts together. Strong feelings within his group on stopping all work. We should address the problem (Zimmer did this) in 2 areas:

  1) What are we doing today to control work going forward. Inspectors identify things.

  2) Look at past week, we have performed (backward look). Have problems been addressed?

- We should review our plan and present it to them prior to a 12/7/82 meeting they have with NRR. This is their deadline.

- NRC will be trying to determine if these problems exist in other areas of the plant.

- What are we doing differently from now forward to build quality into the plant?

- NRC lacks confidence that we will address concerns on a generic basis. We do respond well to specifics. We handled the meeting today very well.

- Good turnaround on our efforts to cooperate. Good attitude lately. Since we started communicating with NRC better, things have been good.

- Show NRC how we can address their concerns. They do not want to drop the building on us. We should be responsive.

- Our in process effort is the key to solving the problem.

- We did this before in HVAC - we should repeat the performance.

- We will do everything we can to prevent them from issuing an order to us - JWC. We will meet the NRC timetable to resolve this.

- NRC will put all of their thoughts together and get back to us before we make any presentations to them. This will be done in the next few days.

- IPIN's, design document changes (capricious ones), and material traceability are among Ron Cook's concerns. We didn't do much today to make these concerns go away.

- Attendees at this meeting:

  CPCO: JWCook, RAWells, DBMiller, BHPeck, MLCurland, Consultant from MAC (Vince)

  BPCO: KVassar, JRutgers

  NRC: Shafer, Cook, Warnick, Burgess, Gardner

BHP
11/24/82

NRC INSPECTION STATUS

TIMETABLE

- October 12, 1982	Entrance Meeting with Wayne Shafer and others.
- October 12, 1982 through November 5, 1982	Four (4) week inspection of Plant by up to nine (9) NRC inspectors. Three (3) informational "exit" meetings held throughout this time.
- November 10, 1982	Exit Meeting with Wayne Shafer, Bob Warnick and others.
- November 10, 1982 through November 22, 1982	Continued to work with NRC Inspectors by phone and in person to provide additional information on findings.
- November 23, 1982	"Final" Exit Meeting with NRC - held at CPCo request.

GENERIC ISSUES

I. Material Traceability

Examples: NRC has generic concerns with our perimeter control system of storage.

Our ability to locate a bad heat number after receipt once it is installed.

Use of high strength field fabricated materials (A-36 issue).

Resolution of a Bechtel NCR where material was purchased from an unapproved vendor.

Status: We have been unable to fully resolve all of the NRC concerns. They still feel our system has problems.

We feel we can resolve the Bechtel NCR issue, and plan to do so the week of 11/29/82.

II. The Plant is not built according to design drawings.

Example:
- HVAC fan supports
- Cable Tray supports
- Electrical Conduit pull boxes
- Welded vs. bolted connections
- D/G Engine control panels - missing washers.

Status: We have written NCR's, FCR's, etc. to track these items. Most of them are valid findings. Final QC inspection has not been done in all cases.

III. QC Inspector Records Incorrect

Examples:

- QCIR's have been closed, yet the item does not look like the drawing.

- IPIN's issue

Status: This is a major concern. Still open.

IV. Design Document Controls Inadequate

Example: - D/G fan support references design drawing to FSK.

- Control of redlines.

- Labeling of retired FCR's.

Status: We have prepared changes to our procedures to resolve all of these. Nevertheless, they are valid findings.

V. Field Inspections Not Adequate

The NRC feels that the problems in II and III above would not exist if we had adequate field inspections.

IV. Design Controls Not Adequate

Examples:

- "Q-ness" issue: monorail, hangers

- FSK's used to design structural connections.

- Length of time for SCN's to come to the site.

- Preheat of welds.

Status: The issue of "Q-ness" is a big one. The other ones can/are being resolved.

VII. Receipt Inspections

The panel in the D/G Building from DeLaval was found to have wiring defects not picked up by receipt inspection, or MPQAD overinspection. This is a major concern.

MISCELLANEOUS CONCERNS

- Painting of welds: resolved.

- Code question on D/G air start lines: resolved with Region III - referrel to NRR.

- Chipping of concrete: valid finding, being tracked now by an NCR.

- Cable tray segregation: valid find, procedural revisions being made.

BHPeck
11/29/82

To DBMiller, Midland Plant

From BHPeck, Midland Plant

Date October 18, 1982

Subject MIDLAND PROJECT GWO 7020
USNRC ENTRANCE MEETING
File: 0485.16 UFI: 99*04 Serial: CSC-6377

CONSUMERS POWER CO.
RECEIVED
OCT 19 1982
Site Mgr.
Midland Project

Consumers Power Company
INTERNAL CORRESPONDENCE

cc JWCook, P26-336B
BWMarguglio, MPQAD
MLCurland, MPQAD
JKMeisenheimer, MPQAD Civil

correct: dl copy

An NRC Entrance Meeting was held on October 12, 1982. The list of attendees is attached.

Mr. Shafer opened the meeting by stating that this was not a routine inspection, but rather a "hands on" inspection to look at areas of completed work, such as the Diesel-Generator Building and the Service Water Pump Structure. He stated that the inspectors planned to walk through areas, talk to people, ask questions and ask for documentation. The NRC may ask to have cabinets opened, handles turned, etc. Mr. Miller stated that extreme care should be taken in all areas of the plant since approximately 75 percent of the electrical systems are energized, hydrostatic tests and flushes are in progress and steam blows will be occurring shortly. It was agreed that Confined Space Training and New Employee Safety Indoctrination would be provided for NRC inspectors who have not already received this training.

Mr. Shafer stated that this inspection would last about one month, and he provided the names of additional inspectors who would arrive next week. Mr. Ron Cook will coordinate the inspection activities which will cover civil, electrical, and mechanical areas. At the close of the meeting asked for the latest status of five nonconformance reports, and gave us a copy of each. The writer will coordinate the response to this request with MPQAD (J. Meisenheimer).

Attachment

ATTENDANCE LIST

NRC ENTRANCE - 10/12/82

1:30 P.M.

NAME	ORGANIZATION
RMWheeler	CPCo - Construction
JKMeisenheimer	CPCo Soils MPQAD
MSSolanki	Bechtel QA
WDShafer	USNRC
RNGardner	NRC - R III
CHScheibelhut	NRC - R III
JFFisher	Bechtel
ESmith	Bechtel
MBlendy	Bechtel
ETCvikl	Bechtel
JDarby	Bechtel Resident
RBLandsman	NRC - R III
RJCook	NRC - Senior Resident
BLBurgess	NRC - Resident Inspector
REMcCue	CPCo - Tech. Supt.
BHPeck	CPCO - Construction
DBMiller	CPCo - Site Manager
MLCurland	CPCo - Site QA Supt.

TO DBMiller

FROM BHPeck

DATE October 25, 1982

Consumers Power Company

INTERNAL CORRESPONDENCE

SUBJECT MIDLAND PROJECT GWO 7020
USNRC EXIT MEETING
File: 0485.16 UFI: 99*04 Serial: CSC-6408

CC JWCook, P26-336B
RAWells, P14-113A
BWMarguglio, MPQAD
MLCurland, MPQAD
JKMeisenheimer, MPQAD Civil

corrected copy

This memorandum documents an NRC Exit Meeting held on October 15, 1982. A list of attendees is attached. A summary listing of action items is also attached. I am currently developing a mechanism to keep track of open items with the NRC, and plan to finalize something in the near future.

Mr. R. Cook began the meeting by stating that after the first four days of effort, the NRC had gotten into more areas than initially planned. The issues to be discussed are to be considered preliminary, and the communication of status to us is the purpose of this meeting.

NRC Inspectors Cook and Landsman have been looking at the Diesel Generator Building to get "a story." After they have completed their review, they will see what it says. The concerns at this point are as follows:

a. 1C231 Diesel Generator Control Panel - Bolts not traceable per design. There was no number or approval signatures on the original FCR presented. Bechtel found that the original was lost while being routed for coordinating signatures and caused a second copy of the original to be "walked through." A signed copy of the FCR (M-149) was provided to Mr. Gardner the same day.

b. Terminations in Panel 1C231 were also inspected. Problems with internal wiring separation were identified. This problem was documented by MPQAD on NCR 075, in June, 1982. The NRC will review the resolution of this NCR.

c. Foundation bolts for Panel 1C111 - open item on material traceability. Some missing washers were also noted.

d. Potential Item of Non-Compliance - An inspection of panel 1C112 revealed defective terminations on internal wiring done in the vendor shop. Several broken strands of wire was also noted. The NRC felt there was poor workmanship inside the panel. A QA overinspection completed earlier, and it was not known at this time if these items had been picked up. Mr. Ed Jones will follow up.

Mr. Paul Barret stated he had an open item on the in-process QC inspection of hangers built to the ASME code. Mr. Barret needs to verify in-process inspections for the correct welder, procedure and fit-up during fabrication. He also had unanswered questions in the following areas:

a. Rusty welds on hangers and grouted anchor bolts in Bay 2 of Diesel Generator Building.

b. Control of distribution of redline changes. Changes should go through Document Control, not Field Engineering.

Mr. Barret also commented that the installation of welds and piping looked good. He has reviewed the controlled process from Engineering to Construction, and he felt it looked good.

Mr. Ron Cook reported on the following items which were reviewed by Dr. Landsman:

a. Hilti anchors bolt installation in the Diesel Generator Building looked good.

b. The NRC is still looking at an FCR procedure over the issue of retired FCN's.

c. A pipe hanger over the Diesel Generator Engine (for Diesel exhaust) was reviewed in detail.

This item is still open, pending resolution of several questions on "Q" vs. "non-Q", weld painting, documentation, inspection and welding to a beam.

Mr. Wayne Shafer discussed communications between the NRC and personnel on site as it related to an incident that came up yesterday with a Bechtel Field Engineer. The NRC has the right to talk to anyone, however, an individual has a right to ask that his supervisor be present. Mr. Shafer said it was permissible for an individual to say I don't know if he doesn't, however, all answers should be given honestly. He acknowledged the existence of our matrix of communications with Bechtel, but stated that we need to correct this. Mr. J. W. Cook stated that our policy will be redefined and will meet the needs of the NRC. All organizations will understand this policy of communications, and it will be explained to everyone. Mr. D. B. Miller pointed out that he would be issuing an interface procedure in the near future for communications with the NRC.

BHP/dmw

Attachment

ATTENDANCE LIST

NRC EXIT - OCTOBER 15, 1982

10:00 A.M.

NAME	ORGANIZATION
BHPeck	CPCo - Construction
DBMiller	CPCo - Site Manager
REWhitaker	MPQAD
MJSchaeffer	MPQAD
VSSolanki	Bechtel QA
LEDavis	Bechtel Site Manager
ESmith	Bechtel - PFQCE
EJones	CPCo, MPQAD
RJCook	NRC Senior Resident
WDShafer	Chief, OCS
JWCook	CPCo - VP Projects, Eng. and Const
JMooney	CPCo
WRBird	CPCo - MPQAD Manager
CHScheihellmit	NRC - ANL
PGBarrett	NRC - Region III

ITEM	DESCRIPTION	NRC CONTACT	ACTION	RESOLVED
GWR- #1	Generator Control Panel 1C-231- Anchor Bolts not installed according to vendor drawing.	Ron Gardner.	FCR-M-6655 written 9-21-82 lost. FCR rewritten on 10-14-82 to install nut to hold Z channel to panel plus nut and washer to adhere to concrete curb.	Yes
GWR -#2	CPCo NCR-075 internal wiring separation inadequate in panel IC-232.	Ron Gardner	Delaval to be on site for inspection on GWR to follow-up with Delaval.	
GWR -#3	Foundation bolts for panel 1C-111 have no traceability. Anchor bolt washers missing.	Ron Gardner	Mike Verderosa has found that drawing NRC has referenced was internal drawing to Delaval. There is no requirement that these 'J' bolts have CMTR.	Closed per Exit Meeting Notes of 10-22-82
GWR -#4	Internal wiring in panel 1C-111 has defective shop terminations.	Ron Gardner	Delaval to be on site and should be able to provide some resolution. GWR to follow up with Delaval.	
GWR -#5	General concern on separation of wiring throughout plant.	Ron Gardner	QAC 191 written 8/2/82 response was to revise E-47 and E-42 and modify PQCI E4.0. E-42 8/13/82 signed off. E-47 9/15/82 signed off. Still require method of implementation. GWR working/GWarner	

GWR = G. W. Rowe

ITEM	DESCRIPTION	NRC CONTACT	ACTION	RESOLN
10/19/82 (JSK)	Questions Concerning Large Bore Hangers in D/G Building. 1. Why is this hanger Non Q 652-1-501?	Landsman	1. Section 9.5.8 of NRC SER states that NRC in agreement with this design philosophy. OPEN	
	2. Parts of hanger not welded according to Dwg. 652-1-501.	Landsman	2. Hanger Construction not complete.	10/20/82
	3. Strut Support not welded according to Dwg. 652-10501.	Landsman	3. Hanger Construction not completed.	10/20/82
	4. Item #1 Bill of Material not according Dwg. "10 x 8" tube steel replaced by "10 x 10" and not called out on work print 652-1-501.	Landsman	4. Hanger Dwg. redlined in Standish Fab Shop due to lack of material. Redline not included in work print.	10/20/82
	5. No preheat done to structural steel prior to welding of hanger member.	Landsman	OPEN	
10/19/82 (JSK)	Questions Concerning Large Bore Hangers in D/G Building. 6. Field Welding Engineer does not keep records of what inspected or what to inspect.	Landsman	F.W.E. daily reports on non-Q Welds for each welder in his responsibility area. Info is microfilmed and kept by CPCo.	10/20/82
10/20/82 (JSK)	Questions concerning large bore hangers in D/G Building. 1. Where is weld rod type specified for stiffener plate Dwg. 652-1-501.	Landsman	Form 84 civil as called out in weld spec. G-27.	10/20/82

ITEM	DESCRIPTION	NRC CONTACT	ACTION	RESOLVE
	2. Diesel Exhaust snubber 1-652-1-19 No stanchion to plate welding symbol.	Landsman	Assembly furnished by ITT Grinnell, no welding required at point in question.	10/20/82
	3. Upper Hangers on Diesel Exhaust system. Have they been inspected by QC.	Landsman	No QC awaiting clarification of Appendix M of M526 before inspection of hangers.	10/20/82
	4. Stiffener Plates Welded to structrual above hanger in question welded on one side only, is this good Eng'g practice.	Landsman	An obstruction would not allow welding to be done to both sides. This is technically acceptable. However both sides would be welded normally.	10/20/82
10/20/82 (JSK)	Questions concerning large bore hangers in D/G Building. 5. Is there a redline for snubber 1-652-1-19 showing weld to imbed in bay. Similar situation in Bay 1.	Landsman	OPEN	
	6. Bay 2 left side beam attachment for spring hanger, although welded there is a gap between two welded pieces is this acceptable redline to 1-652-1-501.	Landsman	Inspect weld for increase in fillet size equal to gap not to exceed 3/16" OPEN	
	7. Number on hanger FSK is not the same as number on ISO that references detail no. (1-652-1-19) US. 2-652-1-19	Landsman	OPEN	
	8. Procedure for time limit on forwarding SPEC changes from Ann Arbor.	Landsman	OPEN	

ITEM	DESCRIPTION	NRC CONTACT	ACTION	RESOLN
1 D/G 10/19 (JSK)	Rusty welds on hangers and grouted anchor bolts in Bay 2 of Diesel/Generator Building.	Paul Barret	Hangers - After QC and FE approval, surface will be prepared and painted Bechtel Spec. A-41. Anchor Bolts -	
2 10/19 (JSK)	Control of distribution of redline changes should go through D. C. not Field Engineering.	Paul Barret		
3 10/19 (BHP)	Questions on the IPIN's Program	Ron Gardner	Several meetings held during week of 10/18/82. We need to get back to the NRC to close out. Open	

BHP = B. H. Peck
JSK = J. S. Kreple

TO DBMiller, Midland Plant

FROM BHPeck, Midland Plant

DATE November 1, 1982

SUBJECT MIDLAND PROJECT GWO 7020
USNRC EXIT MEETING
File: 0485.16 UFI: 99*04 Serial: CSC-6412

Consumers Power Company

INTERNAL CORRESPONDENCE

CC JWCook, P-26-336B
RAWells, MPQAD
MLCurland, MPQAD
JKMeisenheimer, MPQAD Civil

This memorandum documents the NRC Exit Meeting held on October 22, 1982. A list of attendees is attached. The listing of open items that I am maintaining has been updated through November 1, 1982 and includes the contents of this memorandum.

Mr. R. Cook opened the meeting and stated that the purpose of this exit was to provide status on where we are, and where we are headed, on the current NRC inspection. A formal exit will be held later with Mr. Keppler and Mr. Warnick attending. The four personnel from Argonne National Laboratory assisting the NRC will not be returning next week. Mr. Paul Barret will be here next week to continue his portions of the current inspection.

Dr. Ross Landsman reviewed the areas he looked at during the week. With regard to remedial soils issues, he noted the following:

a) Drawing C-45 - Need to put a note on this drawing saying that the temporary underpinning tunnel is "Q".

b) Specification for rip-rap of Armour stone is needed. (A copy of this document was provided to Dr. Landsman after the exit meeting.)

c) Drawing C-45 - Areas of dike (baffle & perimeter) adjacent to SWPS need to be shown.

d) CPCo needs to provide a letter to NRC that our review of C-45 for underground piping was completed.

e) The issue of instrumentation readings for the Auxiliary Building Electrical Penetration rooms needs to be resolved. This is a prerequisite for Pier 12 work.

With regard to his continuing inspection of the Diesel-Generator Building, Dr. Landsman had the following comments:

The issue of items installed as "non-Q" is still open. This is an open issue between the NRR and the NRC-Region III Inspection group assigned to Midland. Examples of this concern include: The "non-Q" hangers that support the "Q" diesel engine exhaust piping, and the non-Q monorail system that is installed over the diesel-generators.

A concern with the "non-Q" field welding engineers reporting methods was raised.

The initial concern was with the availability of records of what the Bechtel Field Engineers had inspected and their responsibilities with what to inspect. He was shown a daily report form that is kept on file for 6 months and then is mocrofilmed by CPCo and stored. His concern seems to be now the accessibility of the records. Dr. Landsman had stated that this item was closed prior to the exit.

Dr. Landsman expressed concern with several hanger drawings in the diesel building. Several hanger numbers on FSK (2-652-1-19) did not match numbers on isometric drawing H652. There was a change in the method for attachment of a hanger plate to a wall. The change was not covered by a red line to the drawing.

A revision to specification M326 took from the September 27, 1982 sign-off date until October 15, 1982 when the revision was received from Document Control. He thought that this was an inordinate amount of time and he asked if the document control procedure addressed any time limits for document transmittal. This item will remain open until his next visit.

Mr. Ron Gardner reviewed the areas he had looked at during the week:

a) Vendor wiring terminations in Panel 1C112 - MPQAD NCR 139 has been written on this item.

b) Foundation bolts for Panel 1C111 - The problem on material traceability has been resolved. MPQAD NCR 138 has been written for the missing nuts and washers.

c) Type B conduit supports in Bay 4 of the Diesel-Generator Building - Mr. Gardner is waiting for more information on this item.

d) Cable Tray Supports - Mr. Gardner is reviewing FCR's 2369 and 5088 on this subject.

e) Bechtel Quality Control In-Process Inspection Notices (IPIN's) program- Mr. Gardner has several open items on this subject, which will be pursued on his next visit.

Mr. John Simon had several comments on Diesel-Generator Building intake piping:

a) A discrepant (undersize) weld was found on a filter housing.

b) Details to the welder for a bracket weld were reviewed.

c) Drawing attachments (FCN's) seem excessive on one drawing (Mr. DBMiller responded that this item had been previously identified, and corrective action was in progress.)

Finally, Mr. Ron Cook discussed the issue of vendor welds on structural steel. He acknowledged the writing of an NCR and a SCRE, and stated the item will remain open until the NRC reviews our disposition. Mr. M. Dietrich will arrange a briefing for Mr. Cook on this subject.

NRC EXIT MEETING

10/22/82

Name	Company
RMWheeler	Consumers Power Company
DBMiller, Jr.	Consumers Power Company
MJSchaeffer	Consumers Power Company
WDShafer	NRC
CHScheibelhut	NRC
Ray Gustafson	NRC
Bruce Burgess	NRC Resident Inspector
Ron Gardner	NRC
ALSather	NRC
RJCook	NRC Senior Resident
Ross Landsman	NRC
ELJones	CPCo
MADietrich	Bechtel
BRKappel	Bechtel Resident Engineering QE
Patrick Corcoran	Bechtel Resident Engineering QE
LEDavis	Bechtel
ESmith	Bechtel
JAMooney	Consumers Power Company
JRSchaub	Consumers Power Company
BHPeck	Consumers Power Company
John Simon	NRC

To DBMiller, Midland Plant

From BHPeck, Midland Plant

Date November 1, 1982

Subject MIDLAND PROJECT GWO 7020
USNRC EXIT MEETING
File: 0485.16 UFI: 99*04 Serial: CSC-6413

Consumers Power Company

INTERNAL CORRESPONDENCE

cc JWCook, P-26-336B
RAWells, MPQAD
MLCurland, MPQAD
JKMeisenheimer, MPQAD Civil

This memorandum documents the NRC Exit Meeting held on October 28, 1982. A list of attendees is attached. The listing of open items that I am maintaining has been updated through November 1, 1982, and includes the contents of this memorandum.

Mr. W. Shafer opened the meeting by stating that the purpose of this exit was to provide additional status on the current inspection. He stated that a formal exit was planned for November 10, 1982, at the plant, with Mr. Keppler and/or Mr. Davis attending.

Mr. P. Barrett reviewed the areas he looked at during the week:

1) Large Pipe Hanger Material Traceability - Bechtel NCR 3266 was written as a result of material purchased from an unapproved vendor. Mr. Barret stated the corrective action taken was inadequate because the use of the material was disallowed for Class 1 applications, but not for classes 2 and 3. This is an item of non-compliance.

2) Painting of pipe hanger welds - Mr. Barrett reported that he had reviewed our requirements for painting of welds and had several questions. Mr. P. Corcoran provided a copy of ANSI N101.4 and stated our position. Mr. Barrett stated he still needed to do more checking, and listed this item as unresolved.

3) Document Control of redline drawings - Mr. Barrett stated that Bechtel Field Engineer distribution of redline drawings was not in accordance with 10CFR50, Criterian 14 in that Document Control was bypassed. It was noted that the Bechtel Field Procedure was being followed as written. Mr. Barrett agreed. This is an item of noncompliance.

4) Control of Temporary Hangers - Mr. Barrett inquired about our system for performing this function, and asked that we get back to Mr. R. Cook with some information. This is an open item.

5) Cable Tray Segregation - Mr. Barret had several questions about a cable tray he observed in the Containment Building Purge Room at elevation 674: cable was observed to be overlapping the barrier, and the adequacy of the barrier to prevent spurious signals was questioned. Mr. E. Smith

provided a copy of the QCI as the control mechanism for inspecting for deficiencies of this nature. Mr. Barrett stated he would review this information and get back to us. This is an open item.

6. Hole chipped in Containment Building Exterior Wall - Mr. Barrett noticed that a hole had been chipped in the exterior wall in the Containment Building Purge Room at elevation 674. Upon further review of the matter, it was noted that no drilling permit (as required by FIG 1.111) had been obtained for the work, which was done sometime in 1981. A full response to this item was not possible due to shortness of time. We will follow up with any additional information next week. This is an item of noncompliance.

USNRC EXIT MEETING

OCTOBER 28, 1982

NAME	ORGANIZATION
BHPeck	CPCo Construction
ESmith	Bechtel - PFQCE
JSKreple	Construction
REWhitaker	MPQAD
BRKappel	Bechtel - Resident Engineer
Patrick Corcoran	Resident Prod. Engineer-Bechtel
MLCurland	CPCo-Site QA Supt.
LRHowell	CPCo - MPQAD
FHSchulmeister	Bechtel MPQAD
RLAkers	MPQAD
PABarrett	NRC
WDShafer	NRC
RJCook	NRC
MADietrich	Bechtel MPQAD
JJGilmartin	Bechtel PFE
LEDavis	Bechtel

TO DBMiller, Midland Plant

FROM BHPeck, Midland Plant

DATE November 29, 1982

SUBJECT MIDLAND PROJECT GWO 7020
USNRC EXIT MEETING
File: 0485.21 UFI: 99*04 Serial: CSC-6454

Consumers Power Company

INTERNAL CORRESPONDENCE

CC JWCook, P26-336B
RAWells, MPQAD
MLCurland, MPQAD
JKMeisenheimer, MPQAD Civil
REMcCue, Midland

This memorandum documents the NRC Exit Meeting held on November 10, 1982. A list of attendees is attached. These notes have been written in a general, narrative format. The detailed listing of specific items is being tracked in the NRC Open Items List that I am maintaining. Mr. R. Cook opened the meeting and acted as the lead NRC spokesperson. He stated that over the last four weeks, the inspectors have been concentrating on the Diesel/Generator Building. Mr. R. Cook stated that the NRC Inspectors had grouped their collective findings into several catagories. These were then presented as follows:

1. Material Traceability - Several examples were provided:

   A. The NRC has observed steel plates in the laydown area with no identifying markings. They questioned what was actually A-36 material.

   B. Bechtel NCR 3266 was written to document material purchased from an unapproved vendor which was installed in the plant.

   C. Certain HVAC fan support ¼" plates do not meet ASTM rolling steel tolerances.

   D. Bechtel specification C-203 permits the purchase of Q and non-Q materials.

   E. Indications of wrong material used in construction were observed on HVAC fan support gusset plates.

2. Plant not built according to design drawing - several examples were provided:

   A. Certain HVAC fan supports.

   B. Three cable tray supports are not installed in accordance with design drawings. FCN's have been written to correct this problem.

   C. Several electrical conduit pull boxes do not conform to drawing E-42.

   D. Diesel/Generator Engine Control Panels - Missing foundation bolt washers.

   E. Supports for Diesel/Generator Silencers do not look like the design drawings.

   F. In some cases, bolted connections are installed when welded connections are specified.

3. QC Inspector Records Incorrect -

   A. Several QCIR's have been closed, stating that the item is installed in accordance with design drawings, when in fact it is not.

   B. The NRC expressed concern with the Bechtel Inprocess Inspection Notices (IPIN's) program. They felt that it did not properly document nonconformances or provide for timely inspections, and it did not prevent further installation and use. Also, the IPIN is not properly addressed in the Trend Program.

4. Design Document Controls Inadequate - Several examples were provided:

   A. Diesel/Generator fan support
   No cross references from drawings that had the design drawing to the field sketch (FSK), and vice-versa.

   B. Document Control is bypassed in the Bechtel field procedure for the control of mechanical redline drawings.

   C. Bechtel design drawings do not properly reflect applicable retired FCR's. In addition, a file copy of an FCR was found to be lost.

   D. An incomplete FCN was noted on drawing C-1004 for an HVAC fan support.

5. Field Inspections not adequate.

   The examples given in item 2, above, are indications of inadequate field inspections.

6. Design Controls are not adequate - several examples were provided:

   a. A monorail in the Diesel/Generator Building was installed non-Q when it should have been Q.

      An NCR should have been written to document this.

   b. Field Sketches (FSK) were used for fan supports to design structural connections.

   c. A Diesel/Generator Exhaust pipe hanger was installed non-Q when it should have been Q.

      The piping system is Q, however, the hanger is non-Q.

   d. The length of time for Specification Change Notices to come to the site, seemed to be excessive, based upon an example noted.

   e. The requirements for preheat of welding were questioned based upon our example noted in the plant.

7. Receipt Inspections - Vendor wiring and termination deficiencies were found in Diesel/Generator control panels that been both receipt inspected by Bechtel QC and overinspected by MPQAD.

In addition to the above items grouped into generic categories, the NRC Inspectors stated the following, more specific, concerns:

1. Dr. Landsman reviewed problems he had with Bechtel drawing C-45. Portions of the baffle and perimeter dike should be Q, as should the armour stone installation. J. Mooney will discuss these items with Dr. Landsman for resolution.

2. Mr. Barrett reviewed four items:

   - Cable tray segregation procedures were reviewed based on example of a problem noted in the plant.

   - Diesel/Generator air start lines inspection code requirements need to be traced back to the FSAR.

   - Our requirements for the painting of welds outside the Containment Buildings need to be reviewed.

   - An area in the exterior wall of Containment Building 1 was observed to have a small pocket of concrete removed by chipping. Concern was expressed that the proper design and construction control were not in place for this item.

At the conclusion of the meeting, the Inspectors stated that they needed additional time to assess the above findings in detail, and they had no comments on enforcement action. They also stated that many of the items were preliminary in nature. Mr. J. Cook stated that CPCo personnel would be contacting the NRC Inspectors, prior to the finalization of their report, to provide additional information pertinent to the specific findings.

NRC EXIT

November 10, 1982

NAME	ORGANIZATION
B.H.Peck	CPCo - Construction Supt.
R.M.Wheeler	CPCo - Construction
M.J.Schaeffer	CPCo - MPQAD
Don S. Riat	Bechtel - Resident Engineer
Patrick Corcoran	Bechtel - Resident Project Engineer
L. H. Curtis	Bechtel - Project Engineering Manager
E. H. Smith	Bechtel Engineering Manager
J. W. Cook	CPCo - VP Projects, Eng. & Const.
D. B. Miller	CPCo - Site Manager
R. A. Wells	Ex. Mgr. MPQAD
M. A. Dietrich	Bechtel QA/MPQAD
E. C. Smith	Bechtel PFQCE
J. V. Gilmartin	Bechtel PFE
L. E. Davis	Bechtel Site Manager
T. C. Valenzano	Bechtel Project Supt.
W. J. Friedrich	INPO (MAC)
R. E. McCue	CPCo - Technical Supt.
Jim Copley	INPO (MAC)
V. Solanki	Bechtel QAE
G. W. Rowe	CPCO Construction
K. E. Marbaugh	CPCo - QA - Nuclear Operations
J. S. Kreple	CPCo - Construction
J. K. Meisenheimer	CPCo - MPQAD Soils Supt.
B. R. Kappel	Bechtel - Resident QE
G. L. Richardson	Bechtel - Ass't to Proj. Manager
E. L. Jones	CPCo - Elect. and I&C Group Sup. IE&T
L. R. Howell	CPCo - MPQAD

USNRC

R. Landsman
R. Cook
R. Warnick
W. Shafer
R. Gardner
P. Barrett
B. Burgess

MPQAD

L. N. Howell

To DBMiller, Midland Plant

From BHPeck, Midland Plant

Date November 29, 1982

Subject MIDLAND PROJECT GWO 7020
USNRC EXIT MEETING
File: 0485.21 UFI: 99*04 Serial: CSC-6454

Consumers Power Company

Internal Correspondence

cc JWCook, P26-336B REMcCue, Midland
RAWells, MPQAD
MLCurland, MPQAD
JKMeisenheimer, MPQAD Civil

This memorandum documents the NRC Exit Meeting held on November 10, 1982. A list of attendees is attached. These notes have been written in a general, narrative format. The detailed listing of specific items is being tracked in the NRC Open Items List that I am maintaining. Mr. R. Cook opened the meeting and acted as the lead NRC spokesperson. He stated that over the last four weeks, the inspectors have been concentrating on the Diesel/Generator Building. Mr. R. Cook stated that the NRC Inspectors had grouped their collective findings into several catagories. These were then presented as follows:

1. Material Traceability - Several examples were provided:

   A. The NRC has observed steel plates in the laydown area with no identifying markings. They questioned what was actually A-36 material.

   B. Bechtel NCR 3266 was written to document material purchased from an unapproved vendor which was installed in the plant.

   C. Certain HVAC fan support ¼" plates do not meet ASTM rolling steel tolerances.

   D. Bechtel specification C-233 permits the purchase of Q and non-Q materials.

   E. Indications of wrong material used in construction were observed on HVAC fan support gusset plates.

2. Plant not built according to design drawing - several examples were provided:

   A. Certain HVAC fan supports.

   B. Three cable tray supports are not installed in accordance with design drawings. FCN's have been written to correct this problem.

   C. Several electrical conduit pull boxes do not conform to drawing E-42.

   D. Diesel/Generator Engine Control Panels - Missing foundation bolt washers.

   E. Supports for Diesel/Generator Silencers do not look like the design drawings.

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In addition to the above items grouped into generic categories, the NRC Inspectors stated the following, more specific, concerns:

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NRC EXIT

November 10, 1982

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USNRC

R. Landsman
R. Cook
R. Warnick
W. Shafer
R. Gardner
P. Barrett
B. Burgess

MPQAD

L. N. Howell

	ACTION	INFORMATION
J W Cook (2)	____	X
R A Wells	____	X
J A Mooney	____	X
J E Brunner	____	X
R C Bauman	____	X
W R Bird	____	X
K R Kline	____	____
B W Marguglio	____	X
A R Mollenkopf	____	____
D B Miller (3)	____	X
T J Sullivan	____	____
D M Budzik	____	Y
IL&B (2)	____	Y
N J Saari	____	____
D F Lewis	____	Y
D F Judd	____	____
R W Huston	____	Y
J R Schaub	____	____
D J VandeWalle	____	X
D A Sommers	X	____
J N Leech	____	X
Subject File	0.4.3 0906.4	UFI____

Comments: P. 2, Table 1, P. 3, 4, 15, 17, 19, 23, 25

*Actionee is responsible for proposing subject file and correspondence logging for this document. Once correspondence logging has been completed, please return a copy of the completed routing slip along with a copy of the cover sheet from the document to P-24-517.

Draft Response Due NRR
(Date)

_____ By _____ Revision
Document

_____ By Letter

mi0881-0579a100

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

NOV 19 1982

Docket Nos: 50-329 OM, OL
and 50-330 OM, OL

Dr. Paul Shewmon, Chairman
Advisory Committee on Reactor Safeguards
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Dr. Shewmon:

Subject: Report on Midland Design and Construction Problems, Their Dispcsition, and Overall Effectiveness of the Effort to Assure Appropriate Quality

The ACRS Interim Report on Midland Plant, Units 1 and 2 dated June 8, 1982, requested, in part, "a report which discusses design and construction problems, their disposition, and the overall effectiveness of the effort to assure appropriate quality."

Supplement No. 1 to the Midland Safety Evaluation Report (SSER 1) replied that Region III would prepare such a report addressing construction problems for the period from the beginning of construction through June 30, 1982. The enclosed report responds to that reply. SSER 1 also indicates that a final report on overall quality of plant construction will be issued for the remaining period following completion of construction.

In addition, the staff is currently reviewing the several programs proposed by the applicant to independently verify design and construction of the Midland Plant. The results of this review will be addressed in a future supplement to the SER.

Sincerely,

Thomas M. Novak, Assistant Director
for Licensing
Division of Licensing

Enclosure:
As stated

cc: See next page

8211300004

MIDLAND

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cc: Commander, Naval Surface Weapons Center
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Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Geotechnical Engineers, Inc.
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1017 Main Street
Winchester, Massachusetts 0189[illegible]

Midland Nuclear Power Plant, Units 1 and 2

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

REPORT ON DESIGN AND CONSTRUCTION PROBLEMS FOR PERIOD FROM START OF CONSTRUCTION THROUGH JUNE 30, 1982

Report Requested by Advisory Committee on Reactor Safeguards

I. Introduction

The following report prepared by the NRC, through its Region III office, discusses Midland construction problems, their disposition, and the overall effectiveness of the Consumers Power Company's efforts to ensure appropriate quality. The report was prepared at the request of the Advisory Committee on Reactor Safeguards and in response to commitments made in Supplement No. 1 of the Safety Evaluation Report. The report covers the period starting with the beginning of construction up to June 30, 1982. A final report will be issued on the above subjects for the period from July 1, 1982 through the completion of construction discussing the overall quality of plant construction.

II. Summary and Conclusions of Overall Effectiveness

Since the start of construction, Midland has experienced some significant problems resulting in enforcement action (enforcement statistics are summarized in Table 1). Following the identification of each of these problems, the licensee has taken action to correct the problems and to upgrade the QA program and QA/QC staff. The most prominent action has been an overview program which has been steadily expanded to cover safety related activities. In spite of the corrective actions taken, the licensee continues to experience problems in the implementation of quality in construction.

Significant construction problems identified to date include: (1) 1973 - cadweld splicing deficiencies (Paragraph C.2); (2) 1976 - rebar omissions (Paragraph F.5); (3) 1977 - bulge in the Unit 2 Containment Liner Plate (Paragraph G.3); (4) 1977 - tendon sheath location errors (Paragraph G.4); (5) 1978 - Diesel Generator Building settlement (Paragraph H.10); (6) 1980 - allegations pertaining to Zack Company heating, ventilating, and air conditioning (HVAC) deficiencies (Paragraph J.7); (7) 1980 - reactor pressure vessel anchor stud failures (Paragraph J.8); (8) 1981 - piping suspension system installation definiencies (Paragraph K.4); and (9) 1982 - electrical cable misinstallations (Paragraph L.2).

Consumers Power has on repeated occasions not reviewed problems to the depth required for full and timely resolution. Examples are: (1) rebar omissions (1976); (2) tendon sheath location errors (1977); (3) Diesel Generator Building settlement (1978); and (4) Zack Company HVAC deficiencies (1980). In each of these cases the NRC, in its investigation, has determined that the problem was of greater significance than first reported or that the problem was more generic than identified by Consumers Power Company.

The Region III inspection staff believes problems have kept recurring at Midland for the following reasons: (1) Overreliance on the architect-engineer, (2) failure to recognize and correct root causes, (3) failure to recognize the significance of isolated events (4) failure to review isolated events for their generic application, and (5) lack of an aggressive quality assurance attitude.

A history of the Midland design and construction problems and their disposition, as identified and described in NRC inspection reports, is contained in the following section (III). This history is for the period from the beginning of construction through June 30, 1982.

Table I

ENFORCEMENT STATISTICS

YEAR	INSPECTIONS	NONCOMPLIANCES/ DEVIATIONS	HEADQUARTERS NOTICE OF VIOLATION	CIVIL PENALTIES	IALs/ CALs	ORDERS MODIFYING CP/ SHOW CAUSE ORDERS	SIGNIFICANT CONSTRUCTION PROBLEMS
1970	6	4	0	0	0	0	0
1971	2	0	0	0	0	0	0
1972	1	0	0	0	0	0	0
1973	11	6	0	0	0	1 (Cadwelds)	1 (Cadwelds)
1974	11	3	0	0	0	0	0
1975	7	0	0	0	0	0	0
1976	9	17	1 (Rebar)	0	1 (Rebar)	0	1 (Rebar)
1977	15	10	0	0	1 (Tendon Sheath)	0	2 (Bulge in Containment Liner and Tendon Sheath Installation Errors)
1978	23	14	0	0	0	0	1 (Diesel Generator Bldg. Settlement)
1979	10	17	0	0	0	1 (Diesel Generator Bldg. Settlement)	0
1980	37	21	0	1 (Zack)	1 (Zack)	0	2 (Zack HVAC & Reactor Anchor Studs)
1981	23	21	0	0	1 (Pipe Suspension System)	0	1 (Pipe Suspension System)
1982	14	7	0	0	0	2 (Diesel Generator Bldg. Settlement)	1 (Electric Cable Routing)

no related to QA so different

III. Design and Construction Problems As Documented in NRC Inspection Reports

A. 1970

Six inspection reports were issued in 1970. In July 1970, construction activities authorized by the Midland Construction Permit Exemption commenced. A total of four items of noncompliance were identified in 1970. These items are described below:

Four items of nonconformance were identified in Inspection Report Nos. 50-329/70-06 and 50-330/70-06 concerning the installation of concrete. The nonconformances regarded: (1) concrete placement activities violated ACI Code; (2) laboratory not performing tests per PSAR; (3) sampling not per ASTM; and (4) QA/QC personnel did not act on deviations when identified. Licensee corrective actions included: (1) Bechtel to provide a report attesting to the Auxiliary Building base slab where lack of consolidation was apparent; (2) a commitment to perform tests at frequencies specified in the PSAR; and (3) a commitment to retrain workers and the inspection staff. This matter was discussed during the Construction Permit Hearings and is considered closed.

Should ALAB106 be mentioned & that we have complied

B. 1971-1972

Three inspections were conducted during this period. No items of noncompliance were identified. Midland construction activities were suspended pending the pre-construction permit hearings.

On December 15, 1972, the Midland Construction Permit was issued.

C. 1973

Eleven inspection reports were issued in 1973 of which two pertained to special management meetings, two to vendor inspections, one to an audit of the architect engineer, and six to onsite inspections. A total of six items of noncompliance were identified during 1973. One significant construction problem was identified involving deficiencies in cadweld splicing of rebar (see Paragraph 2). These items/problems are described below:

1. Noncompliances involving two separate Appendix B criteria with five different examples were identified during a special audit of the architect engineer's Quality Assurance Program. The noncompliances were documented in Inspection Report Nos. 50-329/73-08 and 50-330/73-08. The items of noncompliance regarded: (1) inadequate requirements for quality record retention; (2) inadequate drawing control; (3) inadequate procedures; and (4) unapproved specifications used for vendor control. Licensee corrective actions included: (1) revision of Bechtel Nuclear Quality Assurance Manual; (2) revision of Midland Internal Procedures Manual; (3) personnel instructed to audit the status of the drawing stick files weekly; (4) project administrator assigned the

Should we take credit for what we found. As written, NRC not QA/QC found

responsibility for maintenance of master stick file; and (5) project engineer and staff to perform monthly surveillance of project record file. Inspection Report Nos. 50-329/74-03 and 50-330/74-03 concluded that appropriate corrective actions had been taken by the licensee relative to the identified violations.

2. One significant construction problem was identified during 1973. It involved cadweld splicing deficiencies and resulted in the issuance of a Show Cause Order. Details are as follows:

A routine inspection, conducted on November 6-8, 1973, identified eleven examples of four noncompliance items relative to rebar cadwelding operations. The noncompliances were documented in Inspection Report Nos. 50-329/73-10 and 50-330/73-10. These items were summarized as: (1) untrained cadweld inspectors; (2) rejectable cadwelds accepted by QC inspectors; (3) records inadequate to establish cadwelds met requirements; and (4) inadequate procedures.

As a result, the licensee stopped work on cadweld operations on November 9, 1973, which in turn stopped rebar installation and concrete placement work. The licensee agreed not to resume work until the NRC reviewed and accepted their corrective action. A Show Cause Order was issued on December 3, 1973, formally suspending cadwelding operations. On December 6-7, 1973, Region III and Headquarters personnel conducted a special inspection and determined that construction activities could be resumed in a manner consistent with quality criteria. Licensee corrective actions included: (1) the revision of the Bechtel specification to reflect requalification requirements; (2) development of instructions requiring that work specifications be reviewed prior to Class 1 work; (3) the establishment of provisions for Consumers Power QA review of work procedures; and (4) the establishment of procedures for the audit of Class 1 work.

and P&C - to my memory serves me correctly.

The Show Cause Order was modified on December 17, 1973 allowing resumption of cadwelding operations based on inspection results. The licensee answered the Show Cause Order on December 29, 1973 committing to revise and improve the QA manuals and procedures and make QA/QC personnel changes.

On September 25, 1974, the Hearing Board found that the licensee was implementing its QA program in compliance with regulations and that construction should not be stopped.

D. 1974

Eleven inspection reports were issued in 1974 of which one pertained to a vendor inspection, one to an inspection at the licensee's corporate offices, and nine to onsite inspections. Three items of noncompliance were identified during 1974. These items are described below:

1. One noncompliance was identified in Inspection Report No. 50-329/74-01 and 50-330/74-01 concerning the use of unapproved procedures during the preparation of containment building liner plates for erection. Licensee corrective actions included: (1) intensive review of liner plate records for accuracy; (2) issuance of nonconformance report; (3) requirement imposed that unapproved copies of procedures transmitted to the site be marked "advance copy;" and (4) identification of procedure approval status. The licensee's actions in regards to this matter were reviewed and the noncompliance closed by the NRC as documented in Inspection Report Nos. 50-329/74-01 and 50-330/74-01.

2. One noncompliance was identified in Inspection Report Nos. 50-329/74-04 and 50-330/74-04, concerning the use of a weld method which was not part of the applicable weld procedure. Licensee corrective actions included: (1) issuance of a nonconformance report; (2) repair of subject welds; (3) reinstruction of welders; and (4) increased surveillance of containment liner plate field fabrications. The licensee's actions in regards to this matter were reviewed and the noncompliance closed by the NRC as documented in Inspection Report Nos. 50-329/74-04 and 50-330/74-04.

3. One noncompliance was identified in Inspection Report Nos. 50-329/74-11 and 50-330/74-11 concerning the failure of QC inspections to identify nonconforming rebar spacing. This violation is discussed further in the 1976 section of this report, Paragraph F.5.

E. 1975

Seven inspection reports were issued in 1975 of which one pertained to a meeting in Region III, one to an inspection at the licensee's corporate offices, and five to onsite inspection.

No noncompliances were identified in 1975, however, the licensee in March and August of 1975 identified additional rebar deviations and omissions. This matter is further discussed in the 1976 section of this report, Paragraph F.5.

F. 1976

Nine inspection reports were issued in 1976 pertaining to nine onsite inspections. A total of seventeen items of noncompliance were identified during 1976. One significant construction problem was identified involving rebar omissions/placement errors and the issuance of a Headquarters Notice of violation (see Paragraph 5). These items/problems are described below:

1. Three items of noncompliance were identified in Inspection Report Nos. 50-329/76-01 and 50-330/76-01. These items regarded: (1) inadequate concrete oven temperature controls; (2) no measures to control nonconforming aggregate; and (3) failure to dispose of nonconforming aggregate as required. Licensee corrective actions included: (1) implementing a requirement for the reverification of oven temperature controls every three months; (2) removal of nonconforming aggregate from the batch plant area; (3) modification of subcontractor's QA manual; and (4) training of subcontractor's personnel to the revised QA manual. The corrective actions implemented by the licensee in regards to these noncompliances were subsequently reviewed and the items closed by the NRC as documented in Inspection Report Nos. 50-329/76-02 and 50-330/76-02.

2. Two items of noncompliance were identified in Inspection Report Nos. 50-329/76-02 and 50-330/76-02. These items regarded: (1) the Vice President of Engineering Inspection did not audit test reports as required; and (2) corrective actions required by audit findings had not been performed. Corrective actions taken by the licensee included revising the U.S. Testing QA manual. The licensee's corrective actions taken in regards to these matters were subsequently reviewed and the items closed by the NRC as documented in Inspection Report Nos. 50-329/76-08 and 50-330/76-08.

3. Three items of noncompliance were identified in Inspection Report Nos. 50-329/76-08 and 50-330/76-08. These items regarded: (1) inadequate classification, review, and approval of field engineering procedures and instructions; (2) inadequate documentation of concrete form work deficiencies; and (3) inadequate control of site storage of post tension embedments. Licensee corrective actions included: (1) revision of the Bechtel Nuclear QA manual; (2) revision of Bechtel field procedure for "Initiating and Processing Field Procedures and Instructions;" (3) initiation of Bechtel Discrepancy Report; (4) training sessions for Bechtel QC; and (5) revision of storage inspection procedures. The licensee's corrective actions in regards to these items were subsequently reviewed and the items closed by the NRC as documented in Inspection Report Nos. 50-329/77-01 and 50-330/77-01.

4. Two items of noncompliance were identified in Inspection Report Nos. 50-329/76-09 and 50-330/76-09. These items regarded: (1) noncompliance report not written to identify broken reinforcing steel; and (2) hold down studs for the reactor vessel skirt were not protected. Licensee corrective actions included: (1) inspection of all rebar dowels; (2) initiation of new field procedure; and (3) initiation of new

procedure for inspecting reactor vessel and steam generator anchor bolts. The licensee's corrective actions in regards to these items were subsequently reviewed and the items closed by the NRC as documented in Inspection Report Nos. 50-329/77-01 and 50-330/77-01.

5. One significant construction problem was identified during 1976. It involved rebar omissions/placement errors and the issuance of a Headquarters Notice of Violation. Details are as follows:

During an NRC inspection conducted in December 1974 the licensee informed the inspector that an audit had identified rebar spacing problems in the Unit 2 containment. The failure of QC inspectors to identify the nonconforming rebar spacing was identified in the 1974 NRC inspection report as an item of noncompliance. (See the 1974 section of this report, Paragraph D.3.) This matter was subsequently reported by the licensee as required by 10 CFR 50.55(e).

Additional rebar deviations and omissions were identified in March and August 1975 and in April, May and June 1976.

Five items of noncompliance regarding reinforcement steel deficiencies were identified in Inspection Report Nos. 50-329/76-04 and 50-330/76-04. These items regarded: (1) no documented instructions for the drilling and placement of reinforcement steel dowels; (2) nonconformance reports concerning reinforcement steel deficiencies were not adequately evaluated; (3) inadequate inspections of reinforcement steel; (4) inadequate evaluations of a nonconformance report problem relative to 10 CFR 50.55(e) reportability requirements; and (5) results of reviews, interim inspections, and monitoring of reinforcement steel installations were not documented.

The licensee's response, dated June 18, 1976, listed 21 separate items (commitments) for corrective actions. A June 24, 1976 letter from the licensee provided a plan of action schedule for implementing the 21 items. The licensee suspended concrete placement work until the items addressed in the licensee's June 24 letter were resolved or implemented. This commitment was documented in a Region III Immediate Action Letter (IAL) to the licensee, dated June 25, 1976.

Rebar installation and concrete placement activities were resumed in early July, 1976 following satisfactory completion of the corrective actions and verification by Region III as documented in Inspection Report Nos. 50-329/76-05 and 50-330/76-05.

A subsequent inspection to followup on reinforcing steel placement problems identified two noncompliances. These noncompliances are documented in Inspection Report Nos. 50-329/76-07 and 50-330/76-07. The noncompliances regarded: (1) failure to follow procedures; and (2) inadequate Bechtel inspections of rebar installations. The inspection report documents licensee corrective actions which included: (1) removal of cognizant field engineer and lead Civil engineer from the project; (2) removal of lead Civil Quality Control engineer from the project; (3) reprimand of cognizant inspector; (4) additional training given to cognizant foremen, field engineers, superintendants and Quality Control inspectors; and (5) assignment of additional field engineers and Quality Control engineers. The licensee's actions in regard to these items were reviewed and the items closed by the NRC as documented in Inspection Report Nos. 50-329/76-07 and 50-330/76-07.

As a result of the rebar omissions and placement errors, a Headquarters Notice of Violation was issued on August 13, 1976.

Additional actions taken by the licensee included the establishment of an overview inspection program to provide 100% reinspection of embedments by the licensee following acceptance by the contractor Quality Control personnel.

Additional actions taken by the contractor included: (1) personnel changes and retraining of personnel; (2) preparation of a technical evaluation for the acceptability of each identified construction deficiency; and (3) improvement in the QA/QC program coverage of civil work.

G. 1977

Twelve inspections pertaining to Unit 1 and fifteen inspections pertaining to Unit 2 were conducted in 1977. Ten items of noncompliance were identified during 1977. Two significant construction problems were identifed involving a bulge in the Unit 2 containment liner plate (see Paragraph 3) and errors in the placement of tendon sheathings (see Paragraph 4). These items/problems are described below:

1. Five examples of noncompliance with Criterimn V of 10 CFR 50, Appendix B, were identified in Inspection Report Nos. 50-329/77-05 and 50-330/77-08. The examples of noncompliance regarded: (1) inadequate clearance between concrete wall and pipe support plates; (2) assembly of pipe supports using handwritten drawing changes; (3) inadequate preparation and issue of audit reports; (4) inadequate review of nonconformance reports and audit findings for trends; and (5) inadequate tagging of defective measuring equipment. Licensee corrective actions included: (1) clarification of

design and acceptance criteria contained in pertinent specifications; (2) modification and review of Quality Control Instructions; (3) issuance of two field procedures relative to field modifications of piping hanger drawings; (4) staffing of additional QA personnel at the site; (5) closer management attention; and (6) additional training in the area of tagging. The licensee actions in regard to these items were subsequently reviewed and the items closed by the NRC as documented in Inspection Report Nos. 50-329/77-08, 50-330/77-11, 50-329/78-01, and 50-330/78-01.

2. Three items of noncompliance were identified in Inspection Report Nos. 50-329/77-09 and 50-330/77-12. The items regarded: (1) failure to follow audit procedures; (2) failure to qualify stud welding procedures; and (3) inadequate welding inspection criteria. Licensee corrective actions included: (1) administrative instruction issued to require the audit manager to obtain a semi-monthly audit findings status report from the project manager; (2) administrative instruction issued for the close out and followup of internal corrective action requests; (3) revision of Quality Control Instruction; (4) special inspections and audit; and (5) prescribing specific acceptance criteria. The licensee's actions in regard to these items were subsequently reviewed and the items closed by the NRC as documented in Inspection Report Nos. 50-329/78-01, 50-330/78-01, 50-329/78-05, and 50-330/78-05.

3. A significant construction problem involving a bulge in the Unit 2 containment liner plate was identified in 1977. Details of the liner plate bulge follow:

   The initial identification by the licensee of a bulge in the Unit 2 liner plate occurred on February 26, 1977. The liner plate bulge occurred between column line azimuths 250 degrees and 270 degrees and between elevations 593 and 700. Inspection Report No. 50-330/77-02 documents a special inspection concerning the liner plate bulge. This report further identifies an item of noncompliance relative to the failure of the licensee to report the bulge deficiency pursuant to the requirements of 10 CFR 50.55(e). The licensee's corrective actions in regard to this item were reviewed and the item closed by the NRC as documented in Inspection Report No. 50-330/77-14.

   The cause of the liner plate bulge was determined to be due to a leaking 2 inch water line installed in the containment concrete as a construction convenience. It was theorized that the water line froze, started to leak, allowing water to seep behind the liner. The water line was supplied by a construction water pump that was set to cycle between 100 and 130 PSI. This pressure was considered to be sufficient to cause the liner plate bulge.

A meeting was held on April 4, 1977 at the Ann Arbor, Michigan Office of Bechtel to review the original design and construction concept of the containment liner, the procedures and actions taken during the removal of bulge affected zones, the investigation activities and results, and to ascertain the concepts involved in the licensee's proposed repair program.

The containment liner bulge deficiency repair was started on August 1, 1977. Inspection Report No. 50-330/77-11 documents the observed fit up and welding of the first four foot lift of replacement liner plate installed. The completion of repair and the repair records were subsequently reviewed as documented in Inspection Report No. 50-330/79-25.

4. A second significant construction problem involved tendon sheath placement errors and resulted in an Immediate Action Letter (IAL). Details are as follows:

The licensee reported, on April 19, 1977, the discovery of an error in the Unit 1 containment building which resulted in two tendon sheathings (H32-036 and H13-036) being misplaced, and two tendon sheathings (H32-037 and H13-037) being omitted. As shown on pertinent vendor drawings, these four tendons were to be deflected downward to clear the two main steam penetrations at center line elevation 707' 0". Concrete had been placed to a construction joint at elevation 703' 7" approximately one week before these tendon deficiencies were discovered.

Corrective actions resulted in the rerouting of tendon sheathing H32-037, originally planned for below the penetration, to a new alignment above the penetration. Tendon sheathing H13-037 was installed below the penetration. Tendon sheathings H32-036 and H13-036 did not require modification.

The tendon sheath placement errors and the past history of rebar placement errors indicated the need for further NRC evaluation of the licensee's QA/QC program. As a result, an IAL was issued to the licensee on April 29, 1977. Licensee commitments addressed by this IAL included: (1) NRC notification prior to repairs or modifications involving the placement of concrete in the area of the misplaced and omitted tendon sheaths; (2) identification of the cause of the tendon sheath deficiencies and implementation of required corrective action; (3) expansion of the licensee's QC overview program; (4) NRC notification of all embedment placement errors identified after QC acceptance; (5) review and revision of QC inspection procedures; and (6) training of construction and inspection personnel.

A special QA program inspection was conducted in May 1977 as documented in Inspection Report Nos. 50-329/77-05 and 50-330/77-08. The inspection team was made up of personnel from Region I, Region III, and Headquarters. It was the consensus of opinion of the inspectors that the licensee's program was acceptable.

The licensee issued the final 50.55(e) report on this matter on August 12, 1977. Final onsite review was conducted and documented in Inspection Report Nos. 50-329/77-08 and 50-329/79-15.

H. 1978

Twenty-two inspections and one investigation were conducted during 1978. A total of fourteen items of noncompliance were identified in 1978. One significant construction problem was identified involving excessive settlement of the Diesel Generator Building foundation (see Paragraph 10). These items/problems are described below:

1. Three items of noncompliance were identified in Inspection Report Nos. 50-329/78-03 and 50-330/78-03. These items regarded: (1) inadequate inspections of welds on cable tray supports; (2) inadequate control of welding voltage and amperage as required by AWS; and (3) inadequate documentation of repairs on purchased equipment. Licensee corrective actions included: (1) additional training given Quality Control Engineers and craft welders; (2) revision of pertinent technical specifications and weld acceptance requirements; (3) revision of welding procedures; (4) revisions of vendor QA manual; and (5) reinspections and engineering evaluations. The licensee actions in regard to these items were subsequently reviewed and the items closed by the NRC as documented in Inspection Report Nos. 50-329/78-15, 50-330/78-15, 50-329/79-25, 50-330/79-25, 50-329/81-12, 50-330/81-12, 50-329/79-22, and 50-330/79-22.

2. Two items of noncompliance were identified in Inspection Report Nos. 50-329/78-05 and 50-330/78-05. These items regarded: (1) inadequate control of welding filler material; and (2) inadequate protection of spool pieces. Licensee corrective actions included: (1) additional instructions given to welding personnel; (2) generation of nonconformance report to require Bechtel to perform a thorough inspection of the facility, correct and document discrepancies noted, and instruct craft personnel. The licensee actions in regard to these items were subsequently reviewed and the items closed by the NRC as documented in Inspection Report Nos. 50-329/78-05, 50-330/78-05, 50-329/79-22, and 50-330/79-22.

3. Two examples of noncompliance with one 10 CFR 50 Appendix B criterion were identified in Inspection Report Nos. 50-329/78-07 and 50-330/78-07. These examples regarded: (1) inadequate

control of drawings; and (2) inadequate drawing control procedures. Licensee corrective actions included: (1) Zack and Bechtel revised drawing control procedures; and (2) extensive audits of drawing controls. The licensee actions in regard to these items were subsequently reviewed and the items closed by the NRC as documented in Inspection Report Nos. 50-329/79-25 and 50-330/79-25.

4. One item of noncompliance was identified in Inspection Report No. 50-330/78-09 concerning inadequate backing gas flow rate during welding operations. Licensee corrective actions included: (1) revision of Bechtel welding procedure specifications; (2) revision of Bechtel Quality Control Instruction; and (3) additional training for all welding Quality Control Engineers. The licensee's actions in regard to this item were subsequently reviewed and the item closed by the NRC as documented in Inspection Report No. 50-330/78-16.

5. Two items of noncompliance were identified in Inspection Report Nos. 50-329/78-13 and 50-330/78-13. The items regarded: (1) inadequate inspection of weld joints; and (2) inadequate storage of Class 1E equipment. Licensee corrective actions included: (1) revision of welding specifications; (2) additional instructions to QC inspectors; (3) additional overinspections; (4) upgrade of administrative procedures; and (5) actions to bring storage environment within controlled specifications. The licensee's actions in regard to these items were reviewed and the items closed by the NRC as documented in Inspection Report Nos. 50-329/78-13 and 50-330/78-13.

6. Two items of noncompliance were identified in Inspection Report Nos. 50-329/78-15 and 50-330/78-15. These items regarded: (1) nonconforming welds on Main Steam Isolation Valve support structures; and (2) inadequate corrective action taken to repair nonconforming Nelson Stud weld attachments. Licensee corrective actions included: (1) responsible welding Quality Control Engineer required to attend training course; (2) defective welds reworked; and (3) engineering evaluation. The licensee's actions in regard to these items were subsequently reviewed and the items closed by the NRC as documented in Inspection Report Nos. 50-329/79-22, 50-330/79-22, 50-329/79-25 and 50-330/79-25.

7. One deviation was identified in Inspection Report No. 50-330/78-16 concerning the failure to meet ASME code requirements for nuclear piping. Licensee corrective actions included the determination that the impact test values of the pipe material in question met the code requirements, and the UT thickness measurements made by ITT Grinnell were in error and

voided by measurements made by Bechtel. The licensee's actions in regard to this item were subsequently reviewed and the item closed by the NRC as documented in Inspection Report No. 50-330/79-24.

8. One item of noncompliance was identified in Inspection Report Nos. 50-329/78-17 and 50-330/78-17 regarding the failure to follow weld procedures pertaining to the repair welding of cracked welds on the personnel air locks. The licensee's corrective actions included steps to revise affected drawings and to update the stress analysis report for the air locks. The corrective actions taken by the licensee will be reviewed during future NRC inspections.

9. One item of noncompliance was identified in Inspection Report Nos. 50-329/78-22 and 50-330/78-22 concerning the failure to perform specified maintenance and inspection activities on Auxiliary Feed Pumps. Licensee corrective actions included: (1) training of pertinent Quality Control engineers; (2) transition of personnel in QC department relative to storage and maintenance activities; and (3) inspections and evaluations of omitted maintenance. The licensee's actions in regard to this item were subsequently reviewed and the item closed by the NRC as documented in Inspection Report Nos. 50-329/78-22 and 50-330/78-22.

10. One significant construction problem was identified during 1978. It involved excessive settlement of the Diesel Generator Building foundation. Details are as follows:

The licensee informed the Region III office on September 8, 1978, per requirements of 10 CFR 50.55(e), that settlement of the Diesel Generator foundations and structures was greater than expected.

Fill material in this area was placed between 1975 and 1977, with construction starting on the diesel generator building in mid-1977. Review of the results of the Region III investigation/inspection into the plant fill/Diesel Generator building settlement problem indicate many events occurred between late 1973 and early 1978 which should have alerted Bechtel and the licensee to the pending problem. These events included nonconformance reports, audit findings, field memos to engineering, and problems with the administration building fill which caused modification and replacement of the already poured footing and replacement of the fill material with lean concrete.

Causes of the excessive settlement included: (1) inadequate placement method - unqualified compaction equipment and excessive lift thickness; (2) inadequate testing of the soil material; (3) inadequate QC inspection procedures; (4) unqualified Quality Control inspectors and field engineers; and (5) overreliance on inadequate test results.

Lead technical responsibility and program review for this issue was transferred to NRR from IE by memo, dated November 17, 1978.

During 1978 the licensee conducted soil borings in the area of the Diesel Generator building and in other plant fill areas. In addition, a team of consultants who specialize in soils was retained by the licensee to provide an independent evaluation and provide recommendations concerning the soil conditions existing under the Diesel Generator building.

As previously stated, an investigation was initiated in December 1978 by the NRC to obtain information relating to design and construction activities affecting the Diesel Generator Building foundation and the activities involved in the identification and reporting of unusual settlement of the building. The results of the investigation and additional developments in regard to this matter are discussed in the 1979 section of this report, Paragraph I.11.

I. 1979

Thirty inspection reports were issued in 1979 of which one pertained to an onsite management meeting, two to investigations, one to a vendor inspection, one to a meeting in Region III, and twenty-five to onsite inspections. A total of seventeen items of noncompliance were identified in 1979. These items are described below:

1. One item of noncompliance was identified in Inspection Report Nos. 50-329/79-10 and 50-330/79-10 concerning inadequate measures to assure that the design basis was included in drawings and specifications. Licensee corrective actions included: (1) revision to Midland FSAR; and (2) revision to pertinent specification. The licensee's actions in regard to this item were subsequently reviewed and the item closed by the NRC as documented in Inspection Report Nos. 50-329/79-19 and 50-330/79-19.

2. Three items of noncompliance were identified in Inspection Report Nos. 50-329/79-12 and 50-330/79-12. The items were: (1) inadequate corrective action in regard to drawing controls; (2) discrepancy in Zack Welding Procedure Specification; and (3) inadequate control of purchased material. Licensee corrective actions included: (1) audit of drawing control program; (2) revision to drawing control requirements; (3) revision of Zack Welding Procedure Specification; (4) review of other Zack procedures; (5) missing data added to documentation packages; and (6) audits of other documentation packages. The actions taken by the licensee were subsequently reviewed and the items closed by the NRC as documented in Inspection Report Nos. 50-329/81-01, 50-330/81-01, 50-329/80-15, 50-330/80-16, 50-329/79-22, and 50-330/79-22.

3. One item of noncompliance was identified in Inspection Report No. 50-330/79-13 concerning the failure to inspect all joints and connections on the Incore Instrument Tank as prescribed in the hydrostatic test procedure. Licensee corrective actions included a supplemental test of the Incore Instrument Tank and the initiation of a supplemental test report. The licensee's actions in regards to this matter were subsequently reviewed and the item closed by the NRC as documented in Inspection Report No. 50-330/80-38.

4. One item of noncompliance was identified in Inspection Report No. 50-330/79-14 concerning the use of a wad of paper in making a purge dam during welding activities. Licensee corrective actions included: (1) revision of pertinent procedures; (2) revision of pertinent Quality Control inspection checklist; and (3) training sessions for welders and Quality Control inspectors. The licensee's actions in regards to this matter were subsequently reviewed and the item closed by the NRC as documented in Inspection Report No. 50-330/80-16.

5. One item of noncompliance was identified in Inspection Report Nos. 50-329/79-18 and 50-330/79-18 concerning inadequate controls to protect materials and equipment from welding activities. Licensee corrective actions included training sessions for cognizant Field Engineers, Superintendents, General Foremen and Foremen. The licensee's actions in regards to this matter were subsequently reviewed and the item closed by the NRC as documented in Inspection Report Nos. 50-329/80-15 and 50-330/80-16.

6. Two items of noncompliance were identified in Inspection Report Nos. 50-329/79-19 and 50-330/79-19. These items regarded: (1) failure to ensure that appropriate quality standards were in the specification for structural backfill; and (2) Quality Control inspection personnel performing containment prestressing activities were not being qualified as required. Licensee corrective actions included: (1) revision of pertinent specification; (2) examination given to Level I and Level II inspector; and (3) reinspection of selected tendons. The licensee's actions in regards to these items were subsequently reviewed and the items closed by the NRC as documented in Inspection Report Nos. 50-330/80-09, 50-329/80-04 and 50-330/80-04.

7. One item of noncompliance was identified in Inspection Report Nos. 50-329/79-20 and 50-330/79-20 concerning inadequate controls for welding activities pertaining to 4.16 KV switchgear. Licensee corrective actions included: (1) correction of relevant records; (2) additional training for Quality Control Engineers; and (3) additional training for the Quality Control Document Coordinator. The licensee's actions were subsequently reviewed and the item closed by the NRC as documented in Inspection Report Nos. 50-329/80-15 and 50-330/80-16.

8. One item of noncompliance was identified in Inspection Report No. 50-330/79-22 concerning inadequate weld rod controls. Licensee corrective actions included a training session for cognizant welding personnel. The actions taken by the licensee in regards to this matter were subsequently reviewed and the item closed by the NRC as documented in Inspection Report No. 50-330/80-01.

9. One item of noncompliance was identified in Inspection Report Nos. 50-329/79-26 and 50-330/79-26 concerning failure to follow procedures relative to the shipment of auxiliary feed water pumps to the site with nonconforming oil coolers. Licensee corrective actions included: (1) reinstruction given to cognizant engineer; and (2) Supplied Deviation Disposition Request (SDDR) generated by the vendor. The licensee's actions in regards to this matter were reviewed and the item closed by the NRC as documented in Inspection Report Nos. 50-329/79-26 and 50-330/79-26.

10. One item of noncompliance was identified in Inspection Report Nos. 50-329/79-27 and 50-330/79-27 concerning the violation of QC Hold Tags. Licensee corrective actions included: (1) a training session for Construction Supervisors and Field Engineers; and (2) a Field Instruction on Quality Control Hold Tags was issued. The licensee's actions in regards to this matter were subsequently reviewed and the item closed by the NRC as documented in Inspection Report Nos. 50-329/81-04 and 50-330/81-04.

11. As a followup to the significant construction problem identified in 1978 (see Paragraph H.10), an investigation was initiated in December, 1978 to obtain information relating to design and construction activities affecting the Diesel Generator Building foundations and the activities involved in the identification and reporting of unusual settlement of the building. The investigation findings were documented in Inspection Report Nos. 50-329/78-20 and 50-330/78-20, dated March 22, 1979. Information obtained during this investigation indicated: (1) a lack of control and supervision of plant fill activities contributed to the inadequate compaction of foundation material; (2) corrective action regarding nonconformances related to plant fill was insufficient or inadequate as evidenced by the repeated deviations from specification requirements; (3) certain design bases and construction specifications related to foundation type, material properties, and compaction requirements were not followed; (4) there was a lack of clear direction and support between the contractor's engineering office and construction site personnel; and (5) the FSAR contained inconsistent, incorrect and unsupported statements with respect to foundation type, soil properties, and settlement values. Nine examples of noncompliance involving four different 10 CFR 50, Appendix B Criteria were identified in the subject inspection report.

Meetings were held on February 23, 1979 and March 5, 1979 at the NRC Region III office to discuss the circumstances associated with the settlement of the Diesel Generator Building at the Midland facility. The NRC staff stated that it's concerns were not limited to the narrow scope of the settlement on the Diesel Generator Building, but extended to various buildings, utilities and other structures located in and on the plant area fill. In addition, the staff expressed concern with the Consumers Power Company Quality Assurance Program. Under the authority of Section 182 of the Atomic Energy Act of 1954, as amended, and Section 50.54(f) of 10 CFR Part 50, additional information was requested regarding the adequacy of the fill and the quality assurance program for the Midland site in order for the Commission to determine whether enforcement action such as license modification, suspension or revocation should be taken. Question 1 of the 50.54(f) letter dated March 21, 1979 requested information regarding the quality assurance program. On April 24, 1979, Consumers Power Company submitted the initial response to the 50.54(f) request, Questions 1 through 22. As a result of the NRC staff review of Question 1, the NRC concluded that the information provided was not sufficient for a complete review. Subsequently, on September 11, 1979, the NRC issued a request for additional quality assurance information (Question 23). On November 13, 1979, Consumers Power Company submitted Revision 4 to the 50.54(f) responses which included response to Question 23. As a result of the Region III investigation report and CPCo responses, the NRC issued an Order modifying construction Permits No. CPPR-81 and No. CPPR-82, dated December 6, 1979. This order prohibited further soils related activities until the submission of an admendment to the application seeking approval of the Remedial Soils work with the provision that the order would not become effective in the event that the licensee requested a hearing. Due to the licensee's decision to request a hearing this order forms the basis for the ongoing ASLB Hearings.

During 1979, the licensee continued soil boring operations in order to identify and develop the quality of material in the plant area fill and beneath safety related structures. The licensee completed a program regarding the application of a surcharge of sand material in and around the Diesel Generator Building. This surcharge was an attempt to accelerate any future settlement of the Diesel Generator Building by consolidating the foundation material.

Additional developments in this matter are discussed in the 1980 section o this report, Paragraph J.9.

J. 1980

Thirty-seven inspection reports were issued in 1980 of which two pertained to meetings at the licensee's corporate office, one to a meeting in Glen Ellyn, two to investigations, and thirty-two to onsite inspections. A total of twenty-one items of noncompliance were identified during 1980. Two significant construction problems were identified involving quality assurance problems at the Zack Company (see Paragraph 7) and deficient reactor vessel anchor studs (see Paragraph 8). These items/problems are described below:

1. Two items of noncompliance and one deviation were identified in Inspection Report Nos. 50-329/80-01 and 50-330/80-01. These items regarded: (1) a welder welding on material of thickness which exceeded his qualified range; (2) failure to date and sign the cleanliness inspection of Unit 2 Service Water System valve; and (3) failure to implement a design change or prepare a Field Change Request. Licensee corrective actions in regards to the items of noncompliance included: (1) testing and qualification of the subject welder; (2) reinstruction of QC engineer; (3) review of the inspection records for additional valves; and (4) the revision of applicable turnover procedures. The licensee's actions in regards to these items were subsequently reviewed and the items closed by the NRC as documented in Inspection Report Nos. 50-329/80-20, 50-330/80-21, 50-329/82-04 and 50-330/82-04.

2. One item of noncompliance was identified in Inspection Report No. 50-329/80-09 concerning the failure to maintain levelness requirements during core support assembly lifts. The licensee's corrective actions in response to the item of noncompliance included the issuance of a nonconformance report and the commitment to ensure compliance with Quality Control procedures. The licensee's corrective actions in regards to this matter will be reviewed during subsequent NRC inspections.

3. One item of noncompliance was identified in Inspection Report Nos. 50-329/80-20 and 50-330/80-21 concerning the failure of a Bechtel purchase order for E7018 welding rods to specify the applicable codes. Licensee commitments in regards to corrective actions included an audit of the ordering and receiving records of weld filler material. The licensee's corrective actions in regards to this matter will be reviewed during subsequent NRC inspections.

4. One item of noncompliance was identified in Inspection Report Nos. 50-329/80-21 and 50-330/80-22 concerning the failure to perform an audit of Photon Testing, Inc. for services to qualify Zack Company welders. Licensee corrective actions included an audit of Photon Testing, Inc. The licensee's actions in regards to this matter were subsequently reviewed and the item closed by the NRC as documented in Inspection Report Nos. 50-329/81-03 and 50-330/81-03.

5. One item of noncompliance was identified in Inspection Report Nos. 50-329/80-28 and 50-330/80-29 concerning the bypassing of a hold point on a Pressure Surge System weld. The inspection report further identifies that action had been taken to correct the identified noncompliance and to prevent recurrence. The item is closed.

6. One item of noncompliance was identified in Inspection Report Nos. 50-329/80-31 and 50-330/80-32 concerning substantial delays by the licensee in making 10 CFR Part 21 reportability determinations. Licensee corrective actions included training sessions for key personnel in recognizing 10 CFR 21 reporting obligations. The licensee's actions in regards to this matter were subsequently reviewed and the item closed by the NRC as documented in Inspection Report Nos. 50-329/81-07 and 50-330/81-07.

7. A significant construction problem involving quality assurance problems at the Zack Company, the heating, ventilating, and air condition contractor was identified in 1980. Details of the Zack problem follow:

During March and April, 1980 the NRC received numerous allegations pertaining to the Zack Company. The Zack Company is the heating, ventilation and air conditioning (HVAC) subcontractor at the Midland construction site. The allegations dealt with material traceability, violations of procedures, falsification of documents, and the training of quality control inspectors.

As the result of the allegations, an investigation was initiated by the NRC. During the initial phases of the investigation, the NRC determined that Consumers Power Company had issued a Management Corrective Action Request (MCAR), dated January 8, 1980, pertaining to the Zack Company. The MCAR showed that Zack had failed to initiate corrective action in a timely manner on a large number of nonconformance reports and audit findings and had failed to address other requirements and commitments of the quality program.

Consumers Power Company had issued seven nonconformance reports during the period of May 23 to October 2, 1979 all of which recommended 100% reinspection of work as a corrective action. The investigation determined that as of March 19, 1980, corrective action had not been completed on any of the nonconformance reports.

Based on preliminary findings during the investigation, which revealed some instances of continued nonconformance in the implementation of Zack's Quality Assurance Program, an Immediate Action Letter (IAL) was issued to the licensee on March 21, 1980. The IAL stated the NRC's understanding that a Stop Work Order had been issued to the Zack Corporation for all its safety related construction activities.

Seventeen examples of noncompliance involving eight different 10 CFR 50, Appendix B, criteria were identified during the investigation. The investigation findings are documented in Inspection Report Nos. 50-329/80-10 and 50-330/80-11. The licensee's actions in regards to the items of noncompliance were subsequently reviewed and the items closed by the NRC as documented in Inspection Report Nos. 50-329/82-15 and 50-330/82-15.

On June 30, 1980, the NRC received from the licensee a letter documenting a Program Plan for resumption of safety related work by the Zack Company. The licensee identified that corrective actions required prior to lifting the Stop Work included: (1) the review and approval of all Field Quality Control Procedures and specific Weld Procedure Specifications; (2) the review and approval of the revised Zack QA Manual; (3) the training and certification of the QC personnel; and (4) the training of site production personnel.

Subsequent to followup NRC inspections to determine the effectiveness of licensee corrective actions, it was determined by the NRC, on August 14, 1980 that HVAC safety related work could resume.

The Bechtel Power Corporation released the Zack Company from the Stop Work Order by letter dated August 14, 1980.

As a result of the aforementioned investigation findings, the NRC imposed a Civil Penalty, on January 7, 1981, on Consumers Power Company for the amount of $38,000.

8. The second significant construction problem involved reactor pressure vessel anchor stud failures. Details are as follows:

On September 14, 1979, Consumers Power Company personnel notified the NRC of the discovery of a broken reactor vessel anchor stud on the Midland Unit 1 reactor vessel. On October 12, 1979, this condition was reported under the requirements of 10 CFR 50.55(e). Two other studs were subsequently found to be broken. As this condition reflected a significant deficiency, an NRC investigation was initiated in February 1980 to review the materials, manufacturer, and installation of the studs.

The investigation findings, as documented in Inspection Report Nos. 50-329/80-13 and 50-330/80-14, indicate several Quality Assurance deficiencies: (1) lack of licensee involvement; (2) failure to advise the heat treater of different heats of material; (3) inadequate document review; (4) failure to respond to indications that the studs were deficient; (5) failure to review materials previously purchased when the purchase specification was revised; and (6) miscalculation of

the stud stress area resulting in a slight over-specification stressing of the studs (this item was identified by the licensee).

Three items of noncompliance were identified in the inspection report. These items regarded: (1) failure to identify Subsection NF of the ASME Code as the applicable requirement for the reactor vessel anchor bolts; (2) failure to establish measures to assure that purchased material conforms to the procurement documents; and (3) failure to establish measures to assure that heat treating and nondestructive tests were controlled in accordance with applicable codes and specifications. Licensee commitments in regards to corrective actions included: (1) a commitment to conduct a review to confirm that safety related low alloy steel bolting and/or component support materials, which have been tempered and quenched and are 7/8" or greater in diameter, have been procured in accordance with proper codes and standards; (2) a commitment to obtain NRR approval of the acceptability of the Unit 2 reactor vessel anchor bolts and (3) a commitment that actual plant modifications to compensate for the defective bolts would not be started on Unit 1 until approval of the design concept was received from NRR.

The stud failure mechanism was identified as stress corrosion cracking which propagated to the point that the studs failed by cleavage fracture. Tests indicated that some studs utilized in Unit 2, although of different material and heat treatment, have above specification surface hardness readings.

The final report per 50.55(e) requirements was submitted by the licensee on December 1, 1981.

NRR has the lead responsibility for evaluation and approval of the licensee's proposals for resolution of this matter.

9. A special inspection was conducted in December, 1980 at the Bechtel Power Company Ann Arbor, Michigan offices to verify implementation of the specific commitments and action items reflected in Consumers Power Company response to 10 CFR 50.54(f) questions (regarding excessive settlement of the Diesel Generator Building foundations). The results of this inspection were documented in Inspection Report Nos. 50-329/80-32 and 50-330/80-33. Two items of noncompliance were identified regarding: (1) failure to provide adequate corrective actions with regard to identified audit results; and (2) inadequate design control. Licensee corrective actions included: (1) revision of procedures; (2) revision of specification; and (3) audit of FSAR sections. The licensee actions were subsequently reviewed and the items closed by the NRC as documented in Inspection Report Nos. 50-329/81-12, 50-330/81-12, 50-329/81-19 and 50-330/81-19.

Additional information regarding this matter is discussed in the 1981 section of this report, Paragraph K.6.

K. 1981

Twenty-three inspection reports were issued in 1981 of which one pertained to a management meeting and twenty-two to onsite inspections. A total of twenty-one items of noncompliance were identified during 1981. One significant construction problem was identified involving deficiencies in piping suspension system installations (see Paragraph 4). These items/problems are described below:

1. Two items of noncompliance were identified in Inspection Report Nos. 50-329/81-04 and 50-330/81-04. These items regarded: (1) failure to account for all tools and materials used in a controlled clean room area; and (2) inadequate procedure for the installation of the Unit 2 vent valves in the core support assembly. Licensee corrective actions included: (1) the upgrading of personnel and equipment logs; (2) the addition of new logs; (3) issuance of a formal Stop Work Order for further work on the installation of vent valves; (4) the revision of installation procedures; (6) training and indoctrination of personnel performing vent valve installations; and (5) the revision of the overview inspection plan. The licensee's actions in regards to these items were reviewed and it was determined that action had been taken to correct the identified noncompliances and to prevent recurrence. This determination is documented in Inspection Report Nos. 50-329/81-04 and 50-330/81-04.

2. One item of noncompliance was identified in Inspection Report Nos. 50-329/81-08 and 50-330/81-08 regarding the failure to provide adequate storage conditions for Class 1E equipment. Licensee corrective actions included: (1) additional training for Bechtel maintenance engineers; (2) an audit of maintenance activities; and (3) reinspections of affected equipment. The licensee's actions in regards to this matter were subsequently reviewed and the item closed by the NRC as documented in Inspection Report Nos. 50-329/81-23 and 50-330/81-23.

3. Four items of noncompliance were identified in Inspection Report Nos. 50-329/81-11 and 50-330/81-11. These items regarded: (1) inadequate procedures for the temporary support of cables and for the routing of cables into equipment; (2) failure of QC inspectors to identify inadequate cable separation; (3) inadequate control of nonconforming raceway installations; and (4) failure to translate the FSAR requirements into instrumentation specifications. Licensee corrective actions in regards to (1) and (2) above, included: (1) the revision of cable pulling procedures;

(2) the repair of damaged cables; (3) training given to the termination personnel and the involved QC inspector; and (4) the revision of the cable termination procedure. The licensee's actions in regards to these items were subsequently reviewed and the items closed by the NRC as documented in Inspection Report Nos. 50-329/81-20, 50-330/81-20, 50-329/82-03 and 50-330/82-03. Licensee commitments in regards to corrective actions pertaining to items (3) and (4), above, included: (1) the addition of required barriers on pertinent raceway drawings; (2) the revision of Project Quality Control Instruction; (3) and the revision of the instrumentation specification. The licensee's actions in regards to these items will be reviewed during subsequent NRC inspections.

4. Eight items of noncompliance were identified during a special indepth team inspection to examine the implementation status and effectiveness of the Quality Assurance Program. The results of the inspection are documented in Inspection Report Nos. 50-329/81-12 and 50-330/81-12. Three of the items of noncompliance regarded: (1) failure to take adequate corrective action concerning the trend analysis procedure; (2) failure of QC inspections to identify a nonconforming cable bend radius; and (3) failure to take adequate corrective action in regards to the lack of rework procedures. Licensee corrective actions in regards to items (1) and (2) above, included: (1) the issuance of a new procedure for trending; (2) the revision of cable termination procedures; and (3) additional training given to the responsible QC inspector. The licensee's actions in regards to these items were subsequently reviewed and the items closed by the NRC as documented in Inspection Report Nos. 50-329/82-02, 50-330/82-02, 50-329/82-03 and 50-330/82-03. The licensee's commitments in regards to corrective actions pertaining to item (3) above, included: (1) the development of Administrative Guidelines and Instructions for rework; and (2) the revision of field procedures. The licensee's actions in regards to this item will be reviewed during subsequent NRC inspections.

The remaining five items of noncompliance identified in Inspection Report Nos. 50-329/81-12 and 50-330/81-12 are considered to be a significant construction problem. Safety related pipe support and restraint installations and QC inspection deficiencies in regard to those installations were identified. The five items of noncompliance pertaining to this issue regarded: (1) failure to install large bore pipe restraints, supports and anchors in accordance with design drawings and specifications; (2) failure of QC inspectors to reject large bore pipe restraints, supports and anchors that were not installed in accordance with design drawings and specifications; (3) failure to prepare,

review and approve small bore pipe and piping suspension system designs performed onsite in accordance with design control procedures; (4) failure to adequately control documents used in site small bore piping design activities; and (5) failure of audits to include a detailed review of system stress analysis and to follow up on previously identified hanger calculation problems. Licensee corrective actions in regards to items (3) through (5) included: (1) the review and upgrading of small bore piping calculations (2) audits of small bore piping activities; (3) revision of Engineering Directive; (4) additional training in QA procedures; and (5) audits of document control. The licensee's actions in regards to these items were subsequently reviewed and the items closed by the NRC as documented in Inspection Report Nos. 50-329/82-07 and 50-330/82-07.

As a result of the adverse findings, an Immediate Action Letter (IAL) was issued by the NRC on May 22, 1981 acknowledging the NRC's understanding that the licensee would not issue fabrication and construction drawings for the installation of the safety related small bore pipe and piping suspension systems until requirements identified in the IAL had been completed and audited.

The IAL requirements were subsequently reviewed and determined to have been satisfactorily addressed. This is documented in Inspection Report Nos. 50-329/81-14 and 50-330/81-14.

The licensee's actions in regards to noncompliance items (1) and (2) above, are discussed in Paragraph 1 of the following report section for 1982(L).

5. One item of noncompliance was identified in Inspection Report Nos. 50-329/81-14 and 50-330/81-14 concerning inadequate design controls involving the Bechtel Resident Engineer's review of the field engineers redline drawings for small bore piping. Licensee corrective actions included: (1) a 100% review of all questionable systems; and (2) the revision of a Project Instruction. The licensee's actions in regards to this matter were subsequently reviewed and the item closed by the NRC as documented in Inspection Report Nos. 50-329/82-07 and 50-330/82-07.

6. In January, 1981 an inspection was conducted by the NRC to verify whether adequate corrective actions had been implemented as described in the Consumers Power Company response to Questions 1 and 23 of 10 CFR 50.54(f) submittals (regarding excessive settlement of the Diesel Generator Building foundation). The findings during this inspection, which include three items of noncompliance and one deviation, are documented in Inspection Report Nos. 50-329/81-01 and

50-330/81-01. The items of noncompliance and the deviation regarded: (1) failure to develop test procedures for soils work activities; (2) failure to have soils laboratory records under complete document control; (3) failure to have explicit instructions for the onsite Geotechnical Engineer's review of test results; and (4) failure to have a qualified Geotechnical Engineer onsite. Licensee corrective actions included: (1) revision of Quality Control Procedures and Specification; (2) development of new Quality Control Procedures; and (3) the addition of a qualified Geotechnical Engineer. The licensee's actions in regards to these items were subsequently reviewed and the items closed by the NRC as documented in Inspection Report Nos. 50-329/81-12 and 50-330/81-12.

7. In March 1981, an inspection was initiated by the NRC to verify the licensee's Quality Assurance Program for the ongoing soil borings. The soil borings were performed by the licensee in response to a request from the Corps of Engineers for additional soil information for their review of the licensee's 10 CFR 50.54(f) answers. The findings of this inspection, which includes one item of noncompliance, are documented in Inspection Report Nos. 50-329/81-09 and 50-330/81-09. The noncompliance regards the lack of evaluation of Woodward-Clyde technical capabilities prior to the commencement of drilling operations. Licensee commitments in regards to corrective actions included: (1) the review, for compliance, of Midland Project major procurements and contracts; and (2) the review and revision of pertinent procedures. The licensee's corrective actions in regards to these items will be reviewed during subsequent NRC inspections.

L. 1982

Fourteen inspection reports have been issued during 1982 covering the period through June 30, 1982 of which two pertain to management meetings, one to an investigation, one to the SALP meeting, and ten to onsite inspections. During this period of time seven items of noncompliance were identified. One significant construction problem was identified involving electrical cable misinstallations (see Paragraph 2). These items/problems are discussed below:

1. The licensee conducted reinspections to determine the seriousness of the safety related support and restraint installation and QC inspection deficiencies identified in Inspection Report Nos. 50-329/81-12 and 50-330/81-12. The results of the reinspections are documented in Inspection Report Nos. 50-329/82-07 and 50-330/82-07. From a sample size of 123 safety related supports and restraints installed and inspected by Quality Control, approximately 45% were identified by the licensee as rejectable.

On August 30, 1982, the licensee was informed of the NRC's position that the licensee shall reinspect all the supports and restraints installed prior to 1981 and perform sample reinspections of the components installed after 1981. The licensee has agreed to perform the reinspections.

2. One significant construction problem was identified during 1982. It involved electrical cable misinstallations. Details are as follows:

   During the special team inspection conducted in May 1981, the NRC identified concerns in regards to the adequacy of inspections performed by electrical Quality Control inspectors. These concerns were the result of the NRC's review of numerous Nonconformance Reports (NCR) issued by Midland Project Quality Assurance Department (MPQAD) personnel during reinspections of items previously inspected and accepted by Bechtel QC inspectors. The NRC required the licensee to perform reinspections of the items previously inspected by the QC inspectors associated with the MPQAD NCRs. The licensee, in reports submitted to the NRC in May and June 1982, reported that of the 1084 electrical cables reinspected, 55 had been determined to be misrouted in one or more vias. This concern was upgraded to an item of noncompliance and is documented in Inspection Report Nos. 50-329/82-06 and 50-330/82-06.

   On September 2, 1982, the licensee was informed by the NRC that a 100% reinspection of class 1E cables installed or partially installed before March 15, 1982 was required. In addition, the licensee was required to develop a sample reinspection program for those cables installed after March 15, 1982. The licensee has agreed to perform the reinspections.

3. Three examples of noncompliance to one 10 CFR 50 Appendix B Criterion were identified in Inspection Report Nos. 50-329/82-03 and 50-330/82-03. These examples regarded: (1) failure to follow procedures concerning drawing changes; (2) inadequate specification resulting in the undermining of BWST No. 2 valve pit; and (3) inadequate control of changes to procedures. The licensee's response to the identified item of noncompliance is presently under review. Corrective actions taken by the licensee in regards to this item will be reviewed during future inspections.

4. Four examples of noncompliance to one 10 CFR 50 Appendix B Criterion and a deviation were identified in Inspection Report Nos. 50-329/82-05 and 50-330/82-05. The examples of noncompliance and the deviation regarded: (1) failure to review and approve a Mergentine (the soils contractor) field procedure prior to initiation of work; (2) inadequate control of specification changes; (3) inadequate acceptance

criteria for dewatering specification; (4) inadequate instruction to prepare or implement reinspection plans; and (5) inadequately qualified remedial soils staff. The corrective actions taken by the licensee in regards to this item will be reviewed during future inspections.

5. One item of noncompliance was identified in Inspection Report Nos. 50-329/82-06 and 50-330/82-06 concerning the licensee's failure to establish a QA program to provide controls over the installation of remedial soils instrumentation. This item resulted in the issuance of a letter by the licensee on March 31, 1982 confirming the licensee's suspension of all underpinning instrumentation installation activities until: (1) approved, controlled drawings and procedures or instructions were developed to prescribe underpinning instrumentation installation activities; (2) plans were established to inspect and audit instrumentation installation activities; and (3) Region III had concurred that (1) and (2), above, were acceptable.

   A followup inspection by Region III in April 1982 identified that the licensee had developed acceptable drawings, procedures, and instructions for underpinning instrumentation installations such that instrumentation installation activities could be resumed. An additional followup inspection on August 23, 1982 determined that the installation of underpinning instrumentation for the Auxiliary Building was complete and acceptable. This item will remain open pending the licensee's development of drawings, procedures, and instructions for the future installation of underpinning instrumentation for the Service Water Building.

6. One item of noncompliance and a deviation were identified in Inspection Report Nos. 50-329/82-11 and 50-330/82-11. The items regarded: (1) inadequate anchor bolt installation; and (2) the use of unapproved installation/coordination forms during remedial soils instrumentation installations. The licensee's responses to the identified items of noncompliance are presently under review. Corrective actions taken by the licensee in regards to these items will be reviewed during future inspections.

The ASLB issued an order modifying Construction Permits No. CPPR-81 and No. CPPR-82, dated April 30, 1982. This order suspended all remedial soils activities on "Q" soils for which the licensee did not have prior explicit approval. The ASLB issued another order, dated May 7, 1982 clarifying the April 30, 1982 order. This order only includes those activities bounded by the limits identified on Drawing C-45.

As a result of past Region III findings, the Region III Administrator created a special Midland Section staffed with individuals assigned solely to the Midland project. Since the formation of the Midland Section a work authorization procedure has been developed by Region III and the licensee to control work and ensure compliance to the ASLB Order.

Remedial Soils activities performed by the licensee thus far in 1982 involve: (1) the drilling of a number of wells which function as part of the temporary and permanent dewatering systems; (2) the installation of the freeze wall associated with the Auxiliary Building Underpinning activity; (3) the completion of the initial work on the access shaft; and (4) the completion of the Auxiliary Building instrumentation for remedial soils activities.

REQUIREMENT:

PROVIDE A PLAN TO ASSURE MIDLAND SITE IS BUILT IN ACCORDANCE WITH REQUIREMENTS, SPECIFICATIONS, ETC. TO ALLOW LICENSING

HISTORY OF STOP WORK PROCESS

1. NRC DETERMINES REQUIREMENTS ARE NOT BEING MET

2. NRC DETERMINES THAT CONDITIONS ARE NOT IMPROVING

3. NRC STOPS WORK ON PROJECT

4. NRC REQUIRES UTILITY TO DETERMINE STATUS OF PROJECT

STATUS MEANS: DETERMINE THE EXTENT THAT REQUIREMENTS ARE NOT MET FOR EQUIPMENT/INSTALLATIONS

MIDLAND PLAN

- PLAN MUST ADDRESS TWO NRC CONCERNS
  - IMPROVE THE SITUATION
  - DETERMINE STATUS
- PLAN MUST SPECIFY METHODS TO
  - GAIN CONTROL OF THE PROJECT
  - VERIFY STATUS OF INSTALLED EQUIPMENT
- FOR PLAN TO SUCCEED CPCo MANAGEMENT MUST
  - ALLOCATE RESOURCES
  - CONTROL ~~BECHTEL~~ Project

C.P.Co. Strengthen Gain control of Midland Project

Identify activities and schedule milestones To:

- Reorganize QA/QC
- Recertify QC Personnel
- Refine Inspection Process
  - Adequacy of PQCI's
  - Performance Evaluation of Inspection personnel
  - More experienced QC personnel
- Formalize QA Participation in Test Program
- Identify Problems
  - Evaluation of generic implications
  - Timely closure

VERIFY STATUS OF INSTALLED EQUIPMENT

KEY ON :

- EQUIPMENT
  - DELIVERED
  - INSTALLED
- INSTALLATION

PROCESS :

- IDENTIFY REQUIREMENTS
- REVIEW DOCUMENTATION/INSTALLATION
- IDENTIFY PROBLEMS
- EVALUATE/RESOLVE/FIX

APPLICATION:

- SAMPLE BASIS
- 100% IF NECESSARY