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Company**

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MIDLAND NUCLEAR PLANT - RESUMPTION OF  
SAFETY-RELATED WORK BY THE ZACK COMPANY  
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Reference: Letter J G Keppler to S H Howell, dated May 22, 1980

This letter responds to the two actions required by the NRC in the referenced letter prior to the resumption of work by The Zack Company.

Enclosure 1 outlines the complete program for the resumption of safety-related work activities by The Zack Company. The program describes actions that have been or are being taken by Consumers Power Company, Bechtel Power Corporation and The Zack Company. Commitment dates are identified for milestone activities.

Enclosure 2 describes the various methods utilized to cause management to be aware of site problems and certain enhancements to the procedure regarding the issuance of a "stop work."

We are available for further discussions with the NRC on the resumption of activities by The Zack Company. We request that a meeting or telephone discussion of these matters be held prior to mid-July.

*James W. Cook*

**JUL 7 1980**

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PROGRAM PLAN FOR RESUMPTION OF  
SAFETY-RELATED WORK BY THE ZACK COMPANY

I. PROGRAM EVALUATION

Consumers Power Company and Bechtel Power Corporation (Bechtel) in response to previously identified concerns and the results of the NRC investigation, undertook a comprehensive QA/QC program review of The Zack Company. The purpose of the review was to ensure that all aspects of the Zack quality program were included in the current remedial program. Thus, when the "stop work" is finally lifted, there will be full confidence that no additional problems have been overlooked.

The program review by Consumers Power and Bechtel consisted of the following:

- A. The Zack Company QA Manual and Quality Control Procedures (QCPs) were reviewed for adequacy and clarity. Comments generated are being addressed by Zack through procedural revisions.
- B. Bechtel Material and Quality Services (M&QS) has reviewed Zack welding procedures. The procedures are being rewritten and requalified and previous welding evaluated for adequacy.
- C. The Zack Chicago facility was audited by a joint Consumers Power/Bechtel audit team. The results of this audit are being addressed by Zack.
- D. Implementation of the QCPs in all areas has been verified. Discrepancies were identified and additional QCP comments generated.
- E. Bechtel Specification M-151A (HVAC Seismic Class I Equipment and Ductwork Installation) was reviewed and revised in the area of code references for welding to clearly indicate the applicable codes.
- F. All NRC findings were included for corrective action. Additional NRC items were identified or clarified subsequent to the March NRC investigations on site.

In addition to the above comprehensive program review by Consumers Power and Bechtel, The Zack Company conducted its own internal program reviews.

Significant corrective actions had previously been initiated as a result of Consumers Power and Bechtel involvement in Zack quality activities. These corrective actions were initiated prior to the NRC investigation, and included a change in the top production and Quality Control management positions at the job site. Another action was to expand the Zack QC manning levels. The positive effect of these actions and others had not been fully realized when the NRC investigation was initiated.

## II. PROGRAMMATIC CHANGES BY THE ZACK COMPANY

The Zack Company has responded to the identified concerns by providing a re-structured QA program that provides well defined responsibilities and actions. This effort centered primarily on rewriting the Quality Control Procedures (QCPs) which are the mechanism for implementing the QA program.

The previous forty-one (41) QCPs have been reviewed in depth and consolidated. The result of this review is that there will be fourteen\* Field Quality Control Procedures (FQCPs) for the site, ten\* Plant Quality Control Procedures (PQCPs) for the Chicago facility, and seven Welding Procedure Specifications (WPSs) for use at the site and at the Chicago facility. These procedures are as detailed below:

### Field Quality Control Procedures

MB-FQCP-1	Requisition/Receipt Inspection
MB-FQCP-2	Storage & Maintenance
MB-FQCP-3	Field Fabrication
MB-FQCP-4	Rework and Repair
MB-FQCP-5	Installation
MB-FQCP-6	Weld Filler Metal Control
MB-FQCP-7	Document Control
MB-FQCP-8	NCR
MB-FQCP-9	Testing
MB-FQCP-10	Calibration
MB-FQCP-11	Training, Certification & Evaluation of Quality Control Inspectors
MB-FQCP-12	Anchor Bolt Installation/Inspection
MB-FQCP-13	Painting
MB-FQCP-14	Hold

### Plant Quality Control Procedures

PQCP-1	Receiving Inspection
PQCP-3	Fabrication
PQCP-6	Weld Rod Control
PQCP-7	Document Control
PQCP-8	Nonconformance
PQCP-9	Testing
PQCP-10	Calibration
PQCP-11	Training
PQCP-13	Painting (Coating)
PQCP-14	Hold

\*This figure is the number of procedures as provided by Zack. It is noted that, pending completion of the review of the procedures by Consumers Power and Bechtel, the need for additional or fewer procedures may be identified.

### Weld Procedure Specifications

WPS-1	Carbon Steel - GMAW
WPS-2	Carbon Steel - SMAW
WPS-3	Stainless Steel - GMAW
WPS-4	Stainless Steel - SMAW
WPS-5	Silicon Bronze - Arc Brazing
WPS-6	Silicon Bronze - GMAW
WPS-7	Qualification/Certification of Welders

All of the above procedures are being reviewed and approved by Consumers Power and Bechtel. Training of cognizant personnel will be conducted prior to lifting of the Stop Work.

The Zack Company Quality Assurance Manual will be revised to reflect programmatic changes made as a result of the identified concerns. This manual will be reviewed and approved by CP Co and Bechtel Power Corporation. The manual has been submitted with review and approvals of CP Co and Bechtel to be accomplished prior to lifting the Stop Work on Installation activities.

### III. CORRECTIVE ACTION

As a result of the Consumers Power/Bechtel review of the complete Zack Company Program at both the site and the Chicago facility, discrepancies were identified and evaluated for specific part corrective actions. These items include all outstanding findings against Zack. Each item has a commitment date established and is being tracked through a listing that has been prepared and is available for NRC review. The duration of these actions vary from immediate action, such as the scrapping of an improperly fabricated and documented turning vane, to actions which, due to craft availability and schedule coordination with the prime contractor, will require work through mid-November of 1980 to completely resolve. An example is the reinspection of welds, and the subsequent rework or scrapping of any component as required. As many of the Zack open items require repairs to upgrade components to an acceptable condition, the lifting of the Stop Work will be required in order to complete the part corrective actions.

The adequacy of previous work is being assessed through reinspections that are being accomplished in response to identified discrepancies. These reinspections include duct, hangers and equipment installation. Additionally, Bechtel Engineering is dispositioning the effect on past work of the weld procedure qualification anomalies discovered as part of the overall review.

The following is a summary and schedule of the corrective action both underway and to be taken:

#### A. Items not related to the lifting of Stop Work:

1. The completion of 22 open item part corrective actions to date has been accomplished. These items involved scrapping of material and the forwarding of certifications from the Chicago facility to the site records.

2. Twenty-six additional open items will be closable in the part corrective action areas without a lifting of Stop Work. These items concern the review of material certifications and the corrections of QC documentation (for example, transposing welder IDs from a component onto the Traveller).
3. Also included in this category is the closure of the audit findings at the Chicago facility, and approval of all the revised PQCPs.

B. Corrective action required prior to lifting the Stop Work:

1. All PQCPs and WPS 1, 2 and 7 will be reviewed and approved. The revised QA manual will be reviewed and approved by Consumers Power and Bechtel.
2. All process corrective action will be complete for the Quality Control personnel within two weeks after procedure review and approval is completed. The main point of the process corrective actions is the training and respective certification of the QC personnel to assure their proficiency in executing the new quality program.
3. Site production personnel will be trained in the procedural requirements of the Quality Program when they are assigned to work in the safety-related areas. Training will be conducted prior to the lifting of the Stop Work for those personnel who will be doing the initial safety-related work.
4. To date, ten open items have process corrective action complete, where retraining was conducted under the requirements of the existing procedures. These items were in the areas of weld filler metal control and its documentation, of which the requirements are basically the same under the new Quality Program.
5. The present estimated date for completion of the corrective action required prior to lifting the Stop Work is on or about July 15, 1980.

C. Open items requiring a lifting of Stop Work:

1. Mid-November 1980 closure date is established for closing out Consumers Power NCRs M-01-4-9-057, 083, 087, which requires a 100% reinspection of specific welds due to weld process and weld acceptance problems noted in mid-1979. As the upgrading of welds and the methods utilized to attain acceptability requires Bechtel Engineering input, Consumers Power/Bechtel review of these upgrading activities and the coordination of the repairs with the other plant construction activities by the prime contractor, the duration of these actions is considered realistic.
2. Certain other activities require 12 weeks after lifting of the Stop Work to be completed. These activities involve the verification of material control identification markings on items installed. These verification



requirements will parallel the weld reinspection activities in Item C.1 above. As these activities will require either removal or a use-as-is disposition, the duration for completion will be slightly less than that required for the possible weld rework activity.

3. Another group of corrective action activities require two to four weeks after lifting of Stop Work. The bulk of these items involve inspections presently in progress and concern comparing design details to actual installed configurations. As the amount of discrepancies is considered to be isolated cases only and all rework, based upon existing data, will require three weeks to complete. Also, scoped in this duration is the upgrading of specific open items noted by the NRC. As all information concerning the problem has been identified, these items require a relatively short amount of time to upgrade to acceptable status, and two weeks is considered reasonable. These items include:

- a. Hanger configuration.
- b. Hanger identification numbers.
- c. Weld appearance problems.
- d. Welder IDs which are missing from the hanger, but are traceable.
- e. Removal of parts which lack proper documentation.
- f. Missing control number IDs on specific hanger subcomponents.

NOTE: The above schedules are contingent on ability to remain the work force including accomplishing all required training.

#### IV. VERIFICATION ACTIVITY BY CONSUMERS POWER AND BECHTEL

In order to assure that safety-related activities performed by Zack Company are performed as required, the following project commitments will be implemented:

- A. Bechtel Quality Control will have two men performing full time surveillance inspection in accordance with the Bechtel Quality Control subcontractor surveillance program.
- B. When Q work resumes in the Zack Chicaco facility, the Supplier Quality Representative status will be upgraded from a Level 3 to Level 4 which is a full residency.
- C. Consumers Power Midland Project Quality Assurance will assign the equivalent of one man full time on Zack. This person (or persons) will perform over-inspections, conduct audits and will review Zack activities to assure compliance with, and the viability of, the program. A heavy emphasis will be placed on the overinspection activity.

- D. Consumers Power is contracting with an outside inspection agency to provide additional inspection personnel to cover the commencement of the Zack work activities. The personnel would be individuals specifically qualified in the type activities associated with HVAC installation. The additional inspection personnel would remain on the job until such time as we have concluded that the Zack inspection activities are effective.
- E. A full scope audit of Zack activities will be initiated approximately 90 days of the lifting of the Stop Work. This audit will include the Midland site and the Chicago facility.
- F. Consumers Power Midland Project Quality Assurance will verify completion of part (hardware) corrective action on discrepancies identified previously. Additionally, specific training commitments will be verified

The above commitments represent a high verification activity level based on the ratio of overviews to the number of Zack QC inspectors located at Midland (8) and in the Chicago facility (2). The above commitments will remain in effect pending further assessments of the Zack QC inspection effort. A review will be made of the overall Zack performance in conjunction with the full scope audit to be carried out 90 days after the Stop Work is lifted. Based on the audit findings and data to be developed regarding Zack's inspection effectiveness, the degree of overview may be reduced to levels consistent with the rest of the project. This reduction will not take place until Consumers Power and Bechtel are convinced that Zack has demonstrated satisfactory performance. The NRC will be informed of our findings and actions.

#### V. RESUMPTION OF WORK ACTIVITIES

Based on the completion of the requisite action, it is expected that Zack could begin work on or about July 15, 1980. For this initial, limited work, a specific scope of work will be identified. Specific approved procedures involved would be identified and training in the procedures complete. The work would be subject to the Consumers Power/Bechtel verification activity described in IV above.

Limited work that is performed will be evaluated and, if an acceptable level of confidence is attained, then full production can resume. It is expected this will happen on or about August 1, 1980.

The above program is contingent upon NRC concurrence. Review by and any necessary informational meetings with the NRC would have to be completed prior to lifting the Stop Work.

JWC

6/30/80

Midland Project Stop Work Procedure  
and Management Awareness of Site Problems

Management Involvement

Consumers Power Company management is made aware of quality problems at the site through a Quarterly Quality Assurance Management Meeting, through the information in the monthly activities report and, as part of the recent project reorganization, through the biweekly meetings with Mr J D Selby, the Company's Chief Executive. The Bechtel Project Manager is now invited to the Midland QA Quarterly Meetings. In addition, there is a monthly Project Management Meeting between Consumers Power and Bechtel. This meeting is attended by the key project management individuals up through the Vice President-Midland Project for Consumers Power and up through the Project Manager for Bechtel.

Enhancement to Stop Work Procedure

In order to better assess the need for a Stop Work, the following changes, which will be effective July 1, 1980 have been made to the Stop Work Procedure:

The conditions under which Stop Work consideration shall be made have been expanded to include cases for which there is evidence that an activity is not under control in addition to the previous requirement to stop work when the requirements for an activity would not be met. The need to evaluate whether activities are out of control is triggered by any of the following occurrences: repetitive nonconformances in the same performance area for principal suppliers or site subcontractors as noted by the review of nonconformance reports (broad definition), when the need for an MCARR is determined, or when the quality tracking graphs from the Trend Program demonstrate an increase in occurrence rate which exceeds the four-month trailing average (which is the average of the latest four-month deficiency rates).

To support the above, Consumers Power will begin a review of all Trend Reports from the site making an assessment as to whether conditions described in those Trend Reports warrant stop work action to be taken. The results of that assessment will be reported in the monthly QA activities report. By the time the Stop Work Order against Zack is lifted, Deviation Reports written by Bechtel Quality Control and Nonconformance Reports written by Zack will be factored into that Trend Report. In the future, any new major subcontractor activities will also be included in the Trend Program as an individual performance area.