

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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

TESTIMONY OF WALTER R. BIRD
ON QUALITY ASSURANCE

Q1. Please state your name and position.

A1. My name is Walter R. Bird. I am Manager, Midland Project Quality Assurance Department ("MPQAD"). My qualifications are set forth in a resume which was submitted with my testimony on February 14, 1983, and follows transcript page 11408.

Q2. Would you please respond to the concern raised in Mr. Keppler's October 29, 1982, testimony, Attachment B, Paragraph 9 regarding installation of a slope not in conformance with the specification requirement?

A2. We acknowledge that this matter is a valid noncompliance. Design specifications called for a trench excavation near the turbine building with a slope layback of 1 vertical to 1.5 horizontal. The slope layback in the

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field was in fact approximately 1 vertical to 1 horizontal. The discrepancy was due to difficulty in determining a reference point for the horizontal dimension. Monitoring of the installation of the slope was the responsibility of the Onsite Geotechnical Soils Engineer.

Promptly after the NRC pointed out the discrepancy, Project Engineering prepared a Field Change Notice ("FCN") to reflect the as built condition of the slope layback. However, since the slope layback was completed by this time, an NCR, not an FCN, should have been issued. At this point *found 2 wks* MPQAD became involved in the problem and issued NCR M01-4-2-109.

Project Engineering has since reviewed the as built condition of the slope layback and determined that reworking of the slope is not required. A design change has been processed to clarify the slope requirement so that it is now 1 vertical to 1-1.5 horizontal. The slope conforms to this requirement.

On November 2, 1982, training sessions were conducted to augment prior training received by the engineers. The Field Soils Organization conducted training for all of its Field Engineers in the proper use of FCRs/FCNs and the need to write nonconformance reports. The Resident Geotechnical Engineer conducted training for all Onsite Geotechnical Soil

Engineers and Resident Geotechnical Engineers in the responsibilities of the Onsite Geotechnical Engineer as they relate to the Site Excavation Permit Procedure. Closure of NCR M01-4-2-109 awaits a final response from the Field Soils Organization and QC verification that the remaining cribbing work in the area is completed. The NRC authorized the cribbing work on March 17, 1983.

Q3. Would you please respond to the question raised in Paragraph 11(a) of Attachment B to Mr. Keppler's October 29, 1982, testimony relating to maintenance of the proper mix ratio of high pressure grout?

A3. In Inspection Report 82-18, the NRC cited the calibration of crack grouting equipment as an item of noncompliance. The concern of the NRC inspector was that manual control appeared to be needed to maintain the proper mix ratio and that such control was not possible while grout was actually being applied. In a letter dated November 5, 1982, the Company responded to this concern by explaining that an approved procedure, "Guidelines for Specific Concrete Bonding Process," by Adhesive Engineering Company was used to calibrate the mixing ratio of the adhesive components for the grout. The procedure was briefly described, and the Company took the position that the

calibration and the actual grouting were done in conformance to requirements. Based on this additional information, the Staff agreed that this concern was not a noncompliance with regulatory requirements. It therefore was deleted as an item of noncompliance and made an unresolved item pending additional calibration tests.

On February 24, 1983, tests of the same equipment used to grout the BWST were conducted at Structural Bonding Company. The tests conclusively demonstrated that the pressure in both lines of the grouting gun is identical for the full range of grouting pressures. The tests also confirmed that the pumping system was in fact supplying the correct mix ratio. Manual control is necessary to maintain the pressure desired but not to maintain the proper mix ratio. Review of the test results by the NRC is expected to result in closure of this item.

Q4. Would you please explain how trend analysis relates to hanger welding data and the ability to determine specific problems with hangers? (Mr. Keppler's October 29, 1982, testimony, Attachment B, Paragraph 16).

A4. The trending system presently in place at Midland is a systematic means to sum the numbers of problems for specific categories of commodities and probable causes. The

program provides for the recording of numbers of nonconformances reported in a given time frame against the specific trend categories and the display of these results both in absolute numbers and against the four-month trailing average of previous data. In this way, the current trend analysis program is valuable in identifying a change in the quantity of defects or deficiencies.

The program was not intended or formulated to provide information concerning the type and degree of nonconforming conditions for a specific commodity or to uncover specific problems which occur in relatively small numbers. The current program does not contain provisions to collect and normalize inspection results against the total population of characteristics or items inspected.

When the trending analysis reveals that a rise in the number of deficiencies for a given category exceeds certain levels, MPQAD takes action. The action taken is either for MPQAD to review the input or for MPQAD to cause the responsible organization to determine the root cause and take corrective action. Individuals in MPQAD responsible for trending review documents such as nonconformance reports and quality action requests in order to make judgments as to problems and trends other than those declared to be "trends" on the basis of charted data.

Based on the trend report for May 1982 for field welding, MPQAD issued QAR-175 on May 17, 1982. Construction was charged with determining the root cause of the problem and taking corrective action. QAR-175 was closed out on August 24, 1982.

Q5. How will changes which are currently being made to the trending program improve information concerning nonconforming conditions?

A5. MPQA trend analysis Phase 4 is now under development although it has not yet been approved by management. It was determined that the trend program required an approach that was more statistically based to be responsive to the concern the NRC expressed, the INPO evaluation, and the biennial audit. It is being designed to detect changes in the rates of nonconformances in selected performance areas and for selected nonconforming categories.

The Phase 4 trend analysis is considering having the total number of attributes inspected and the number of attributes rejected recorded for each inspection as defined by the scope of an individual quality control inspection plan. The data from the individual inspections would be processed to generate weekly trend graphs. The trend graphs would display a percent defective curve. Control limits would be calculated on the basis of initial and ongoing data collection once the revised PQCIs are

implemented. The data collection must be at a volume level which is statistically significant in order to calculate control limits. Any two consecutive weeks' data that exceed the upper control limit would require investigation for the indication of deteriorating quality trend and appropriate corrective action, if any, will be taken. A monthly report would also be published and distributed to management and affected organizations.

The Phase 4 program as presently conceived will serve as a real time indicator of problem areas requiring immediate attention and will provide useful information for determination of root cause and corrective action.

Q6. What is the purpose of MPQP-1?

A6. At the initiation for the underpinning work, there were two contractors who were identified as being technically excellent and experienced in the type of work that had to be undertaken. These particular contractors did not have a Nuclear Quality Assurance Program. MPQP-1 was written to describe the application of Bechtel and Consumers QA programs on the subcontractors. The Quality Plan provides a detailed written description of the accomplishment of quality related activities specific to the soils remedial work, specifically the underpinning work by the two underpinning subcontractors.

Q7. What is the purpose of MPQP-2?

A7. This Quality Plan was written to document Consumers' commitment that all activities for the remedial soils work and all work within the area covered by the C-45 drawing are covered by the existing Consumers Power Company and Bechtel Power Corporation Topical Reports. The scope of the Quality Plan is written to be consistent with the activities listed in the Licensing Board's April 30, 1982, Order. The Plan provides for some specific MPQAD responsibilities for reviewing and assuring that design documents contain appropriate quality requirements and that work activities include adequate inspection plans for the QA coverage of the work. There is also a commitment to have the excavation procedure in place, to have specific Quality Plans developed for providing quality program coverage of the underpinning subcontractors who do not have their own Nuclear Quality Assurance programs, and to have prior concurrence of Region III before any soils work is excluded from QA program coverage.

Q8. What are the controls on these documents?

A8. Quality plans are treated as controlled documents. For the project, approval is required of the Manager of MPQAD, the Bechtel Assistant Project Manager for soils work, and the Executive Manager of the Midland Project Office for Remedial Soils. In addition, the original issue of MPQP-2

and revision 3 of MPQP-1 were coordinated with the NRC prior to issue. It was determined that NRC desired formal approval of the Quality Plans prior to implementation. They were submitted to the NRC by letter on August 9, 1982, and NRC approved them on September 16, 1982. Revisions to these plans now must receive NRC approval under the "NRC and CCo work authorization procedure," subject to the exception discussed in answer 11 of the March 25, 1983 prepared testimony of Messrs. Gilray, Landsman, and Shafer.