



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

FEB 01 1985

MEMORANDUM FOR: Dennis M. Crutchfield, Assistant Director
for Safety Assessment
Division of Licensing

THRU: *JK* James P. Knight, Assistant Director
for Components and Structures Engineering
Division of Engineering

FROM: George Lear, Chief
Structural and Geotechnical Engineering Branch
Division of Engineering

SUBJECT: TECHNICAL EVALUATION OF WOLF CREEK WELD INSPECTION PROGRAM

- References:
1. Memorandum for D. G. Eisenhower of NRR from R. P. Denise of Region IV "Request for a Technical Assistance Wolf Creek Generating Station DN-50-482" dated November 2, 1984.
 2. Memorandum to File from S. B. Kim of Structural and Geotechnical Engineering Branch, NRR, "Response to the Technical Assistance Request on Wolf Creek Weld Joints Inspection Program, dated November 19, 1984.

In response to the above referenced technical assistance request (Reference 1) Mr. S. B. Kim of SGEB visited Bechtel in Gaithersburg on November 6 and 13, 1984, and as a result, a technical evaluation has been written (Reference 2). To followup an outstanding item during his November 13 trip, Mr. Kim visited Bechtel for the third time on November 27. Outstanding item discussed in Reference 2 concerns adequacy of weld overrun. A technical evaluation on this issue is enclosed (Enclosure 1). The Reference 2 has been transmitted to Mr. L. Martin of Region IV on November 19, 1984, and attached here as Enclosure 2.

George Lear

George Lear, Chief
Structural and Geotechnical Engineering Branch
Division of Engineering

Enclosures: As stated

cc: S. Kim
C. Tan
P. Kuo
P. O'Connor
D. Smith

8502110092 XA
400-

Ally

ENCLOSURE 1

TECHNICAL EVALUATION OF WELD OVERRUN
WOLF CREEK WELD INSPECTION PROGRAM

BY SANG BO KIM
STRUCTURAL AND GEOTECHNICAL ENGINEERING BRANCH
DIVISION OF ENGINEERING
OFFICE OF NUCLEAR REACTOR REGULATION

On November 27, 1984, the staff visited Bechtel facility located in Gaithersburg, Maryland and met with Messrs. J. Ivany, G. Brown, P. Corato, and N. Goel. The purpose of the visit was to close out an outstanding item described in my previous report (Reference 2) in which it was noted that "Bechtel has agreed to perform calculations to provide further technical justification for disposition of weld overrun. We expect to review the calculations when they become available..."

The calculations concern adequacy of the steel beam supports. The beam support consists of a plate which is imbedded to the concrete wall by anchor bolts and clip angles which are welded to the imbedded plate as well as to the beam web. Original design of the beam support is to transmit only shear because it was designed as a simply supported beam. However, weld overruns will introduce moments to the supports. The moments will be resisted by the anchor bolts in tension. This requires that concrete wall has adequate shear capacity so that it provides a proper imbedment to the bolts.

Bechtel's upper bound calculation (CE Calculation #44-22 "Weld Overrun Evaluation" November 25, 1984) demonstrated that tension capacity of the anchor bolts and shear capacity of the concrete are sufficient to resist

the moment introduced by the return weld overrun. Bechtel investigated beam supports in the Reactor Building. All Category I buildings other than Reactor Building are made of composite beams where a reinforced concrete slab is supported by steel beams. The concrete slab is built into the concrete wall thus making the weld overrun insignificant as a moment contributing element. Bechtel's approach for demonstrating adequacy of the return weld overrun was found to be acceptable.

Following is a list of items covered during the visits.

a. NCRs concerning joint weld deficiencies:

ISN 20851 CW

ISN 20569 CW

ISN 20568 CW

ISN 20509 CW

b. Drawings:

Reactor Building

Control Building

Master Drawings for Imbedded Plates

c. Calculation Sheets and Other Document:

CE Calculation #44-22 "Weld Overrun Evaluation" Nov. 25, 1984

CE Calculation #44-24 "Containment Cooler"

CE Calculation #44-25 "Pressurizer Support"

REFERENCES

1. Memorandum from D. G. Eisenhut of NRR from R. P. Denise of Region IV
"Request for a Technical Assistance Wolf Creek Generating Station
DN-50-482" dated November 2, 1984.
2. Memorandum to File from S. B. Kim of Structural and Geotechnical
Engineering Branch, NRR, "Response to the Technical Assistance Request
on Wolf Creek Weld Joints Inspection Program, dated November 19, 1984.