



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

November 9, 1979

Docket Nos. 50-295
and 50-304

LICENSEE: COMMONWEALTH EDISON COMPANY
FACILITY: ZION STATION, UNIT NOS. 1 AND 2
SUBJECT: SUMMARY OF OCTOBER 26, 1979 MEETING REGARDING INSPECTIONS FOR
FEEDWATER LINE CRACKING ON ZION UNIT NOS. 1 AND 2

At the request of the NRC staff representatives of the licensee, CECO, met with us in Bethesda, Maryland, on October 26, 1979 to discuss recently reported NDT indications of feedwater line cracking at the nozzles of the steam generators on Unit 1 and the licensee's plans with respect to performing the similar inspection required for Unit 2 which was still operating. A list of meeting attendees is attached.

The purpose of the meeting was reviewed by Ed. Reeves, Project Manager, ORB#1. Reference was made to CECO letter of June 19, 1979 which reported that previous radiographs had showed no evidence of cracking. CECO was asked to explain the new evidence reported to our Inspection and Enforcement (E) regional office on October 15, 1979 for Zion Unit No. 1.

Mr. Naughton (CECO) reviewed the situation since shutdown of Zion Unit 1 on October 6, 1979 for refueling as follows:

1. October 15 -- First CECO report of indications on the first two loops inspected.
2. October 24 -- CECO letter to IE Region III reported results using examination techniques more sensitive than previously used. Examinations revealed linear indications on all four steam generator (SG) feedwater piping lines at the SG nozzle on both sides of the weld. Piping upstream had shown no indications at welds on June 10-11, 1979 using the less sensitive techniques.
3. A specimen of the piping from the nozzle area of SG1A is being removed for metalographic examination on an expedited basis.
4. CECO proposed to check Zion Unit 2 about December 2, 1979.

Mr. R. Shannon, CECO, then discussed details of the more recent examinations and presented piping isometrics and a technical description of materials

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in the piping and nozzles. (The Engineering Branch of DOR will maintain a copy of sketches and other written data presented at the meeting by the licensee). Indications had been found on both sides of the weld in the areas shown on the attached sketch of SG1A through SG1D. Depths of indications had been estimated at less than 0.170 inches maximum. However, at the meeting, CECO could not give a definitive depth estimate. Westinghouse (E. Williams) estimated 0.060-0.090 inches in depth maximum.

Zion operating history was briefly reviewed by CECO:

1. Unit 1 started critical operations on June 19, 1973
2. Unit 2 started critical operations on December 25, 1973.
3. Auxiliary feedwater is maintained at a constant feed rate during hot conditions.
4. Water hammer experience at Zion Station has been well documented. Only Unit 2's SG 2C now has J-tubes installed. J-tube installation in the other SGs is scheduled as future work.

Mr. W. Bamford (Westinghouse) presented a Failure Prediction Analysis which showed combined water hammer load (previous reports) plus thermal and dead weight loads. With the aid of failure prediction curves (attached) Mr. Bamford indicated that pipe failure should not occur ever with an 80% through-wall crack for these combined loads. A discussion of Unit 2 status of examinations was held. CECO (Naughton) restated its position that the Unit 2 examinations should be delayed until the plant shuts down for an outage that had been scheduled to start on December 2, 1979. The NRC staff considered a more expeditious check is necessary.

Following an NRC staff caucus we requested that CECO:

1. Proceed to replace the affected feedwater piping for all loops on Unit No. 1 during the current outage.
2. Bring Unit 2 to shutdown condition as soon as the metalographic examination and the UT evaluation is completed on the Unit 1 specimen within a week to 10 days. Also perform inspections using latest techniques and then do an analysis to determine crack size, if existent.

Data would be used from the Unit 1 inspections to evaluate the safety status of the Unit 2 piping. This is necessary since Unit 2 has not been examined using the more sensitive examination techniques.

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CECO was asked to confirm no later than October 29, 1979* a commitment to take actions as stated above.



A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

cc: See next page

*Subsequent to the meeting, discussions between DOR and CECO management resulted in shutdown of Unit 2 on October 26, 1979.

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LIST OF ATTENDEES

OCTOBER 26, 1979

MEETING ON ZION FEEDWATER LINE CRACKS

CECO

Russ Tammings, Engineering
Wesley Witt, OAD
W. F. Naughton, Licensing
R. E. Shannon, Zion
W. Benjamin, SNED

NRC/Organization

Ed. Reeves DOR, ORB1
A. Schwencer DOR, ORB1*
R. A. Newmann DOR, EB
T. H. Liu DOR, EB
R. W. Klecker DOR, EB
William J. Collins IE, NRC*
Vince Noonan DOR, EB*
W. S. Hazelton DOR, EB*

Others

Gary Ellis, Westinghouse
Ed Williams, Westinghouse
Ronald Street, LLL
Warren Bamford, Westinghouse*

*Part-Time Attendance

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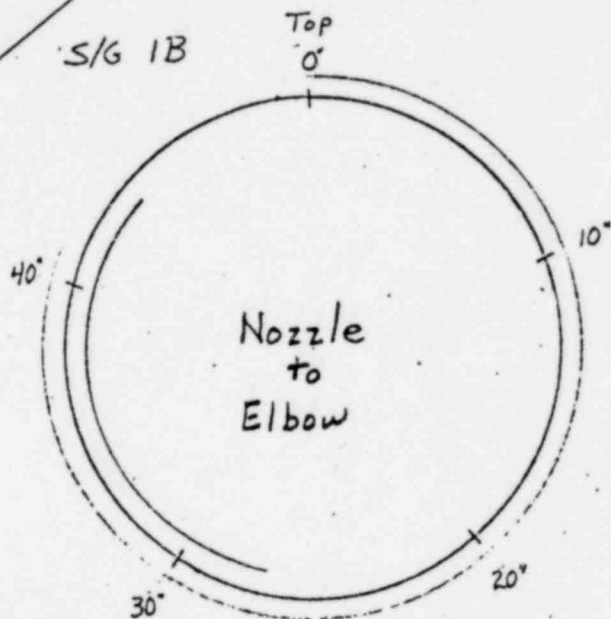
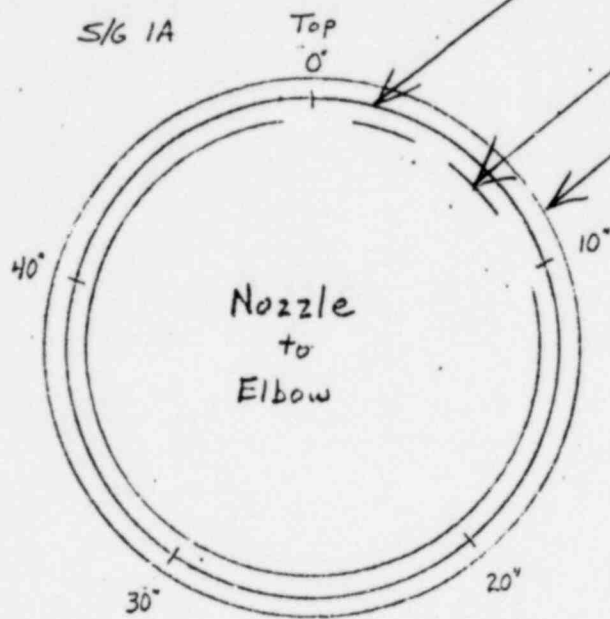
Zion Unit 2

Representation of Indications at Counterbore
Ramp Angle Found by Radiography

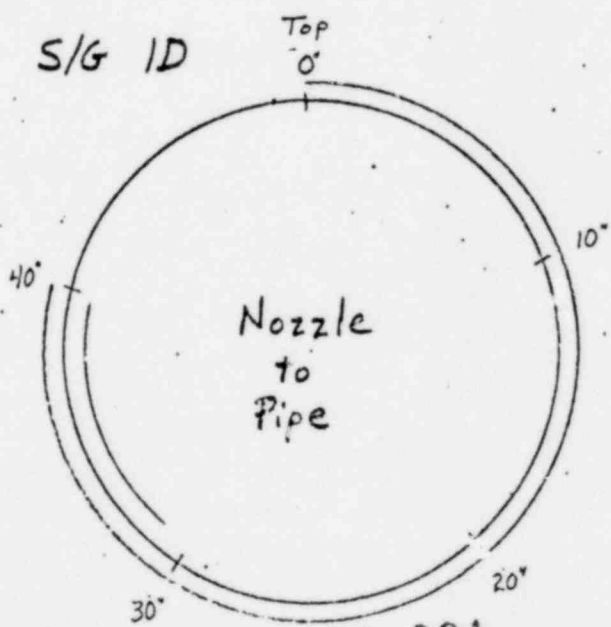
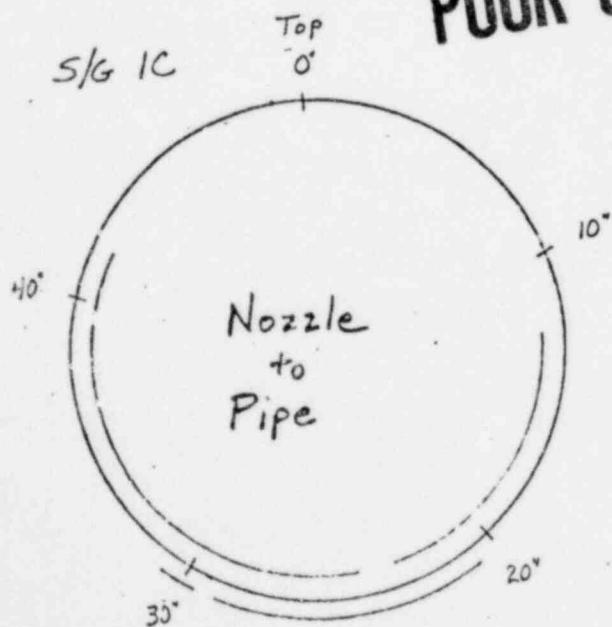
Nozzle Side : depicted outside

Pipe Side : depicted inside

Weld :



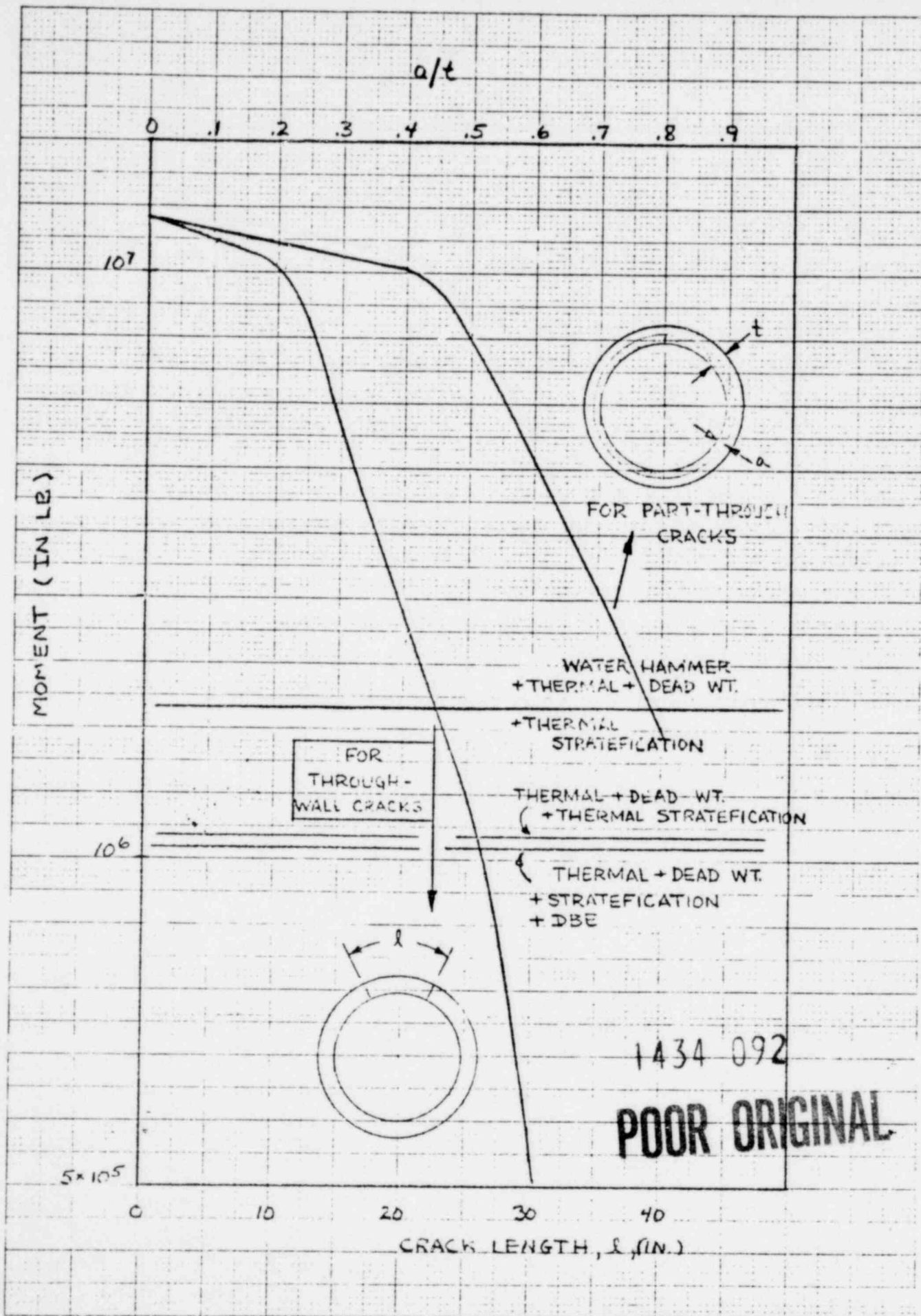
POOR ORIGINAL



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KE 10 X 10 TO 1/2 INCH 7 X 10 INCHES
HEUBLEIN & FISHER CO. MADE IN U.S.A.



FAILURE PREDICTIONS - 16 INCH SCH 120 PIPE - 1.09 INCH WALL

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Meeting Summary for
Zion

November 9, 1979

Docket Files

- NRC PDR
- Local PDR
- ORBI Reading
- NRR Reading
- H. Denton
- E. Case
- D. Lisenhut
- R. Tedesco
- G. Zech
- B. Grimes
- W. Gamill
- L. Shao
- J. Miller
- R. Vollmer
- T. J. Carter
- A. Schwencer
- D. Ziemann
- P. Check
- G. Lainas
- D. Crutchfield
- B. Grimes
- T. Ippolito
- R. Reid
- V. Noonan
- G. Knighton
- D. Brinkman
- Project Manager
- OELD
- OI&E (3)
- C. Parrish/P. Kreutzer
- ACRS (16)
- NRC Participants
- NSIC
- TERA
- Licensee
- Short Service List

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