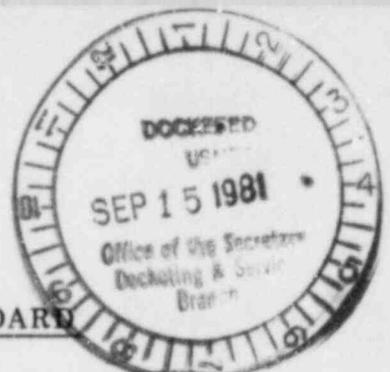


RELATED CORRESPONDENCE

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

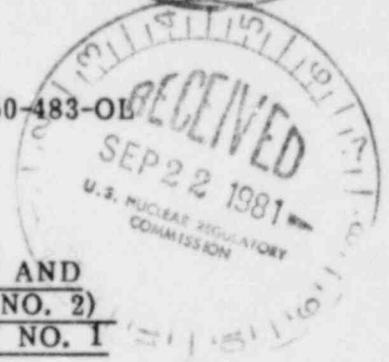
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD



In the Matter of)
UNION ELECTRIC COMPANY)
(Callaway Plant, Unit 1))

9/10/81

Docket No. STN 50-483-OL



RESPONSE TO APPLICANT'S INTERROGATORIES AND
REQUESTS FOR DOCUMENT PRODUCTION (SET. NO. 2)
TO JOINT INTERVENORS ON THEIR CONTENTION NO. 1

Joint Intervenors submit the following Response to Applicant's Interrogatories and Requests for Document Production (Set No. 2) to Joint Intervenors on their Contention No. 1. All documents identified, unless otherwise indicated, are in the possession and/or control of Kenneth M. Chackes, Attorney for Joint Intervenors and will be made available for inspection and/or copying upon reasonable request.

1A-18. No.

1A-19. Objected to.

1A-20. Yes.

1A-21. Kay Drey provided to Joint Intervenors information and/or documents used in responding to all substantive interrogatories. The information and/or documents provided by Kay Drey included information and/or documents which were obtained by her from other persons whose identities are not being disclosed.

1A-22. Objected to.

1A-23. Yes.

1A-24. Kay Drey participated in the preparation of answers to all substantive interrogatories. This participation included providing documents to persons drafting answers, reviewing answers prepared by others, and drafting answers herself.

1A-25. Objected to.

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- 1A-26. (a) The NRC Staff had suggested that the Applicant identify the location of each plate installed prior to June 9, 1977, according to a letter to Mr. Eugene Gallagher, ULNRC-349, dated April 24, 1980, at page five, from Mr. Donald F. Schnell. The Applicant's response, in a letter of May 23, 1980, ULNRC-354, to Mr. E. Gallagher, includes no evidence that UE acted upon the NRC Staff's suggestion, relying instead on a probability analysis of the 480 plates' safeness.
- (b) See (a) above.
- (c) Objected to.
- (d) None.
- 1A-27. (a) The four exceptions deviated from the American Welding Society's Structural Welding Code - Steel, AWS D1.1-75, which is the American National Standard approved by the American National Standards Institute.
- (b) See above answer part (a) and Joint Intervenors' Response to Interrogatory 1A-11(a), Set No. 1.
- (c) Objected to.
- (d) None.
- 1A-28. (a) The quoted statement from Joint Intervenors' response to Interrogatory No. 1A-12(a) was intended to mean that apparently there was no reinspection or testing after June 9, 1977, of the stud welds on the embedded plates which had been installed prior to June 9, 1977 — that is, there was no reinspection of those which had been installed prior to the issuance of the stop work orders. The factual basis for this allegation is that no

documentation exists of such reinspection of the plates already installed, to the best of our knowledge.

- (b) None.
- (c) Objected to.
- (d) None.

1A-29. (a) The sentence in Joint Intervenors' response to interrogatory 1A-12 at page four should have read "Live load tests" instead of "Five load tests." Standard engineering procedures dictate that the embeds should have been tested for live loads as well as dead loads in order to determine structural soundness. In other words, for example, testing should have taken into consideration not just the weight of the concrete and steel (the dead load) but, added to that, the weight of the equipment and a consideration of vibrations under normal, malfunctioning and fatigue conditions.

- (b) None.
- (c) Objected to.
- (d) None.

1A-30. (a) According to NRC Inspection Report #80-14 at page 5, a visual inspection yielded the following observation: "The machine welded embedded plates, some of which were loaded with support attachments and others not yet loaded, were observed to be fully intact with no sign of distress." In the response to Interrogatory No. 1A-12(a) Joint Intervenors are questioning whether the visual inspection of dead-load testing of "some" machine-welded embeds installed prior to June 9, 1977, is adequate or commensurate with the quality and quantity of the evidence of a lack of compliance with the specified welding requirements of those plates fabricated

at the same time by Cives which had not yet been installed as of that date. Joint Intervenors also question whether such testing complies with the requirements of AWS D1.1-75, Sections 4.29, 4.30 and 4.31.

(b) See (a) above.

(c) Objected to.

(d) None.

1A-31. (a) This was stated in NRC Report No. 50-483/80-14 at pages 5 and 6.

(b) See (a) above.

(c) Objected to.

(d) None.

1A-32. Joint Intervenors have not located an engineer or other person who is both qualified and willing to answer this interrogatory for the record.

1A-33. As stated in Joint Intervenors' Answer to Interrogatory 1A-14 the failure in the quality assurance program is evidenced by the fact that manually and mechanically welded plates with substandard welds were allowed to be fabricated over a period of time, were allowed to be shipped from the fabricators without detection of the flaws by Cives or Bechtel quality assurance personnel, were accepted on site by Union Electric and Daniel quality assurance personnel, and were installed, without detection of the flaws. See also Joint Intervenors' Answers to Interrogatories 1A-6 through 1A-12.

1A-34. Joint Intervenors have not located an engineer or other person who is both qualified and willing to answer this interrogatory for the record. The burden of proof that this nonconformance will not affect the safe operation of the Callaway Plant lies with the Applicant. According to §103(b) of the Atomic Energy Act of 1954, as amended, 42 U.S.C. §2133(b) (1970):

"The Commission shall issue such licenses on a non-exclusive basis to person applying therefor . . . (2) who are equipped to observe and who agree to observe such safety standards to protect health and to minimize danger to life or property as the Commission may by rule establish . . ."

This would include compliance with the 10 CFR 50, Appendix A General Design Criteria and Appendix B Quality Assurance Criteria. See also 10 CFR §2.732.

- 1B-12. No.
- 1B-13. Objected to.
- 1B-14. Yes.
- 1B-15. See 1A-21, above
- 1B-16. Objected to.
- 1B-17. Yes.
- 1B-18. See 1A-24, above.
- 1B-19. Objected to.

1B-20. Joint Intervenors have not located an engineer or other person who is both qualified and willing to answer this interrogatory for the record. The burden of proof that this nonconformance will not affect the safe operation of the Callaway Plant lies with the Applicant. According to §103(b) of the Atomic Energy Act of 1954, as amended, 42 U.S.C. §2133(b) (1970):

"The Commission shall issue such licenses on a non-exclusive basis to person applying therefor . . . (2) who are equipped to observe and who agree to observe such safety standards to protect health and to minimize danger to life or property as the Commission may by rule establish . . ."

This would include compliance with the 10 CFR 50, Appendix A General Design Criteria and Appendix B Quality Assurance Criteria. See also 10 CFR §2.732.

1B-21. Joint Intervenors have no facts to support said allegations and hereby strike the last sentence from their answer to Interrogatory No. 1B-6(a).

1B-22. Joint Intervenors have not located an engineer or other person who is both qualified and willing to answer this interrogatory for the record. The burden

of proof that this nonconformance will not affect the safe operation of the Callaway Plant lies with the Applicant. According to §103(b) of the Atomic Energy Act of 1954, as amended, 42 U.S.C. §2133(b) (1970):

"The Commission shall issue such licenses on a non-exclusive basis to person applying therefor . . . (2) who are equipped to observe and who agree to observe such safety standards to protect health and to minimize danger to life or property as the Commission may by rule establish . . ."

This would include compliance with the 10 CFR 50, Appendix A General Design Criteria and Appendix B Quality Assurance Criteria. See also 10 CFR §2.732.

1B-23. (a) In U.S. Nuclear Regulatory Commission Office of Inspection and Enforcement Region III Report No. 50-483/78-01, summarizing the inspections of January and February, 1978, page 20, Number 13 "Items Inspected as a Result of Allegations and Not Addressed Elsewhere in this Report," this matter was discussed. The allegation was that the next lift of the wall was poured in spite of the crack at elevation 2059-6", and the finding was that cracks were located extending from the inside to the outside of the wall. Therefore, the crack was either overlooked or ignored by UE's Quality Assurance personnel.

(b) See (a) above.

(c) Objected to.

(d) None.

1B-24. See answer to 1B-23 above.

1C-13. No.

1C-14. Objected to.

1C-15. Yes.

1C-16. See 1A-21, above.

1C-17. Objected to.

- 1C-18. Yes.
- 1C-19. See 1A-24, above.
- 1C-20. Objected to.
- 1C-21. (a) In a letter to Mrs. Leo A. Drey from James S. Keppler, Director of Region III of the NRC, dated April 4, 1980, Mr. Keppler states that "Air pocket problems do stem in part from the designing of a large number of reinforcing bars into walls and floor."
- (b) See (a), above.
- (c) Objected to.
- (d) None.
- 1C-22. (a) See NRC IE Inspection Report No. 50-483/77-06, pp. 22-24, which specifically cites Criterion V. Joint Intervenors' contend that Criterion X was violated also.
- (b) See (a), above.
- (c) Objected to.
- (d) None.

1C-23. Joint Intervenors have not located an engineer or other person who is both qualified and willing to answer this interrogatory for the record. The burden of proof that this nonconformance will not affect the safe operation of the Callaway Plant lies with the Applicant. According to §103(b) of the Atomic Energy Act of 1954, as amended, 42 U.S.C. §2133(b) (1970):

"The Commission shall issue such licenses on a non-exclusive basis to person applying therefor . . . (2) who are equipped to observe and who agree to observe such safety standards to protect health and to minimize danger to life or property as the Commission may by rule establish . . ."

This would include compliance with the 10 CFR 50, Appendix A General Design Criteria and Appendix B Quality Assurance Criteria. See also 10 CFR §2.732.

1C-24. (a) The exact nature and location of the repair work are not specified in the document relied upon. The document is a letter from the NRC to UE, stamped October 17, 1977, which states:

"During a visit to the honeycomb areas of the tendon gallery for Unit 1 reactor building, the NRC inspector observed repair activity in progress even though the NCR covering the repair work was unapproved by the A-E." (at page 13)

(b) See (a) above.

(c) Objected to.

(d) None.

1C-25. Joint Intervenors have not located an engineer or other person who is both qualified and willing to answer this interrogatory for the record. The burden of proof that this nonconformance will not affect the safe operation of the Callaway Plant lies with the Applicant. According to §103(b) of the Atomic Energy Act of 1954, as amended, 42 U.S.C. §2133(b) (1970):

"The Commission shall issue such licenses on a non-exclusive basis to person applying therefor . . . (2) who are equipped to observe and who agree to observe such safety standards to protect health and to minimize danger to life or property as the Commission may by rule establish . . ."

This would include compliance with the 10 CFR 50, Appendix A General Design Criteria and Appendix B Quality Assurance Criteria. See also 10 CFR §2.732.

1C-25. Yes.

1C-27. (a) Information communicated from a worker to Kay Drey.

(b) None.

(c) Objected to.

(d) None.

1C-28. Joint Intervenors have not located an engineer or other person who is both qualified and willing to answer this interrogatory for the record. The burden of proof that this nonconformance will not affect the safe operation of the Callaway

Plant lies with the Applicant. According to §163(b) of the Atomic Energy Act of 1954, as amended, 42 U.S.C. §2133(b) (1970):

"The Commission shall issue such licenses on a non-exclusive basis to person applying therefor . . . (2) who are equipped to observe and who agree to observe such safety standards to protect health and to minimize danger to life or property as the Commission may by rule establish . . ."

This would include compliance with the 10 CFR 50, Appendix A General Design Criteria and Appendix B Quality Assurance Criteria. See also 10 CFR §2.732.

- 1D-10. No.
- 1D-11. Objected to.
- 1D-12. Yes.
- 1D-13. See 1A-21, above.
- 1D-14. Objected to.
- 1D-15. Yes.
- 1D-16. See 1A-24, above.
- 1D-17. Objected to.
- 1D-18. It refers to the interpretation of such requirements by the NRC.
- 1D-19. (a) The discrepancy between the NRC's interpretations of the requirements and Bechtel's and UE's interpretations indicates such a situation. For example, Bechtel Power Corporation interpreted the cover requirements to be that the 2 inch cover requirement could be reduced to an absolute minimum of an inch and one-third per a provision of the specifications which allows a reduction of the specified cover by one-third. NRC personnel interpreted the requirement to be that the 2 inch cover minimum could not be further reduced. This is described in a NRC Report No. 50-483/77-11, dated February 10, 1978, at page 10. This matter is

also discussed in NRC Report No. 50-483/78-01, dated March 24, 1978, at pages 8-9.

(b) See (a) above.

(c) Objected to.

(d) None.

1D-20. January 23, 1978, as this appears to be the official decree on the matter referred to in Report 50-483/78-01, the minutes of the meeting between NRC and UE. However, Report 50-483/77-11, at page 11 states that "UE representatives were informed that they would be expected to comply with the NRC interpretation of the cover requirements." This latter document is dated December 13-14, 18-22, 1977 and January 3-6, 1978.

1D-21. The NRC indicated that it would be acceptable if requirements would be met beginning at the 6th lift.

1D-22. (a) See the minutes of the NRC/UE meeting of January 23, 1978, enclosed with Report No. 50-483/78-01. Also see Report No. 50-483/77-11, at page 11.

(b) See (a) above.

(c) Objected to.

(d) None.

1D-23. No answer required. See Supplemental Answer to Interrogatory No. 1D-6(b) in which the quoted phrase is deleted.

1D-24. Joint Intervenor's have not located an engineer or other person who is both qualified and willing to answer this interrogatory for the record. The burden of proof that this nonconformance will not affect the safe operation of the Callaway Plant lies with the Applicant. According to §103(b) of the Atomic Energy Act of 1954, as amended, 42 U.S.C. §2133(b) (1970):

"The Commission shall issue such licenses on a non-exclusive basis to person applying therefor . . . (2) who are equipped to observe and who agree to observe such safety standards to protect health and to minimize danger to life or property as the Commission may by rule establish . . ."

This would include compliance with the 10 CFR 50, Appendix A General Design Criteria and Appendix B Quality Assurance Criteria. See also 10 CFR §2.732.

1E-20. No.

1E-21. Objected to.

1E-22. Yes.

1E-23. See 1A-21, above.

1E-24. Objected to.

1E-25. Yes.

1E-26. See 1A-24, above.

1E-27. Objected to.

1E-28. In reference to SA-358 piping, the answer to Interrogatory 1E-6(a) states, "Some SA-358 piping contains poor fusion and excess inside reinforcement (See Deficiency Report 2SD-0699-P). Although the cause of these defects has not been investigated, inadequate control of parameters is a possible cause." This statement does not refer to other alleged instances of which we have specific knowledge, however, there is probable cause to suspect the existence of other defects of a similar nature. The reasons constituting probable case are as follows:

- (1) Radiographic film of the defective area, "indicated apparent incomplete fusion and excess reinforcement and yet the pipe piece had not been judged unacceptable or repaired." (The quoted portion of the above sentence is taken from an NRC, Notice of Violation, dated June 25, 1981 and is signed by James G. Keppler.) Since the interpreter of the film did not judge this area

unacceptable it is reasonable to believe other similar areas would be judged in the same manner.

- (2) The defects were located near the end of a spool piece, close to a weld preparation. Their accessible location facilitated their discovery. Defects less accessible may remain undiscovered.
- (3) Dravo's craft personnel and inspectors could not easily avoid seeing the defective area of the pipe piece during the fabrication of the spool piece, yet they did not report it as a nonconformance. It is reasonable to believe they would not report similar defects.

1E-29. Yes.

- 1E-30. (a) While visual inspections, measurements and radiographic review of the reworked pipe piece indicates that it meets ASME Code requirements, the condition of the weld prior to rework indicates irregularities in the welding of the pipe's longitudinal seam. Those irregularities may involve ASME Code violations and may have altered the metallurgical properties of the weld deposit rendering the pipe piece unacceptable. The engineering review and disposition of the nonconforming condition of the weld, did not address these apparent irregularities and in so doing did not comply with 10 CFR Part 50, Appendix B, Criterion XV and Criterion XVI.

Criterion XV reads as follows, "Measures shall be established to control materials, parts, or components which do not conform to requirements in order to prevent their inadvertent use or installation. These measures shall include, as appropriate, procedures for identification, documentation, segregation, disposition, and notification to affected organizations.

Nonconforming items shall be reviewed and accepted, rejected, repaired or reworked in accordance with documented procedures."

Criterion XVI reads as follows, "Measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. In case of significant conditions adverse to quality, the measures shall assure that the cause of the condition is determined and corrective action taken to preclude repetition. The identification of the significant condition adverse to quality, the cause of the condition and the corrective action taken shall be documented and reported to appropriate levels of management."

The Callaway plant site procedures for dispositioning nonconforming materials are discussed in I&E Report No. 50-483/81-04. The following is an excerpt from that discussion:

Daniel International procedure AP-VII-02 details "Nonconformance Control Reporting." Section III provides functions for both Nonconformance Reports (NCRs or NRs) and Deficiency Reports (DRs). NCRs are intended to be used to document material deficiencies that are dispositioned as "use-as-is" or "repair", and DRs are intended to be used to document deficiencies dispositioned as "rework" or "reject." DRs may be "used to initiate correction of either suspected or actual deficiencies in supplier material or equipment," and "nonconforming items shall be dispositioned as 'rework' when the applicable specification provides for correction" of the nonconformance.

Appendix I of procedure AP-VII-02, page 1, defines repair as: "A disposition which is imposed when it can be established that a nonconforming characteristic can be restored to a condition such that the capability of the item to function reliably and safely is unimpaired even though that item still may not conform to the original requirement."

"Rework" is defined as: "A disposition which is imposed when it can be established that a nonconforming item or activity can be made to fully conform to a prior specified requirement."

The difference between a DR and an NCR, in terms of Criterion XVI, can be seen in the word "significant" as used in the criterion. A "significant condition adverse to quality" is routed as a "Nonconformance Report." The cause of the condition and an action to prevent recurrence are required on all NCRs but not on DRs. The required signatures and distribution of an NCR is meant to fulfill the requirements of Criterion XVI while DRs are contained at lower levels of management.

The nonconforming condition of the pipe piece described in DR No. 2SD-0699-P was errantly dispositioned as a DR. Depending on the cause of the defects, surface grinding may or may not have restored the pipe to prior specified requirements as is necessary for DRs.

If the excess reinforcement, overlap and fissures or cracks were caused by melt-thru, surface grinding may not have restored the pipe to prior specified requirements. (Fissures or cracks are shown in the photographs attached to the DR and are cited in I&E Report No. 50-483/81-04 but are not mentioned in the DR). Melt-thru is defined as, "Complete joint penetration for a joint welded from one side. Visible root reinforcement is produced." (Glossary, Welding Handbook. American Welding Society, Vol. 1, Seventh Edition). The weld in question was made with the Submerged Arc Welding process, which is susceptible to melt-thru because of the high current and heat involved in the process. "If the amperage is too high at a given travel speed, the depth of fusion or penetration will be too great. The resulting weld may have a tendency to melt through the metal being joined." (ibid.

Vol. 2, page 202). If melt-thru was the cause of the defects the weld puddle could have been exposed to air and deleterious gas-metal reactions could have occurred. (ibid. Vol. 1, page 126).

Photographs of the defective weld may show a rough, blackened surface, which when compared to photographs of submerged arc welds in the Welding Handbook (ibid.), can be seen to be atypical of the process. This is especially so after pickling and may indicate a gas-metal reaction had occurred.

If the defects were caused by melt-thru all of the weld metal would have been deposited from the outside of the pipe. The welding procedure specifies a double-weld and therefore the weld is not in conformance with the procedure. Grinding the surface of the weld could not bring the weld into conformance with the prior specified requirement of double-welding.

If the defects were not caused by melt-thru they may have been caused by improper welding parameters and involve inadequate flux coverage or contaminated flux.

The Intervenors do not contend that the defects were caused by any one particular cause but that the determination of the cause is appropriate and that the disposition of the nonconformances as a DR was errant.

The defects in question were first reported in a Nonconformance Report, No. 2SN-0501-F, which Bechtel failed to disposition. This failure is consistent with the Applicant's view of nonconformances. During the period after June 23, 1978 field personnel were advised to disposition nonconformances as DRs instead of NCRs. (I&E Report No. 50-483/80-04). The Applicant's

actions to route nonconformances in this manner subverts Criterion XV and Criterion XVI and may have allowed nonconforming materials to be installed and used at the Callaway Plant.

(b) 10 CFR Part 50 Appendix B

I&E Reports No. 50-483/81-04 and 50-483/80-04

Welding Handbook, Vol. 1 & 2, published by The American Welding Society

The Procedures Handbook of Arc Welding, published by Lincoln Electric

Welding Metallurgy by G.E. Linnert

1E-31. See answer to 1E-30.

1E-32. See answer to 1E-30.

1E-33. See answer to 1E-30.

Same as above.

1E-34. (a) The documents and references cited in answer to 1E-30(a) and listed in 1E-30(b) indicate melt-thru as a probable cause for the reported defects. The documented facts of the case and not the opinions of individuals are relied upon to substantiate the contentions however, identification of individuals has been objected to.

(b) See answer to 1E-30.

(c) Objected to.

(d) None.

1E-35. (a) See answer to 1E-28.

(b) Same as above.

(c) Objected to.

(d) None.

1E-36. (a) While craft personnel may report deficiencies and nonconformances, Joint Intervenors have no information or evidence that craft personnel were informed by their employer in a meaningful way of responsibility or obligation to identify deficiencies or nonconformances.

(b) None.

(c) Objected to.

(d) None.

1E-37 through 1E-48 will be provided within the next few days.

1F-12. No.

1F-13. Objected to.

1F-14. Yes.

1F-15. See 1A-21, above.

1F-16. Objected to.

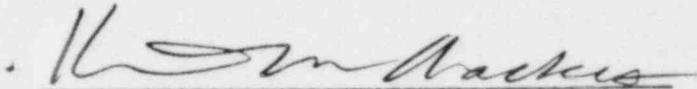
1F-17. Yes.

1F-18. See 1A-24, above.

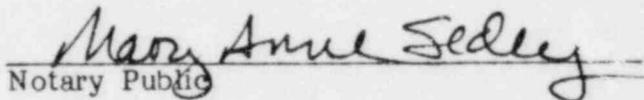
1F-19. Objected to.

General Interrogatories F, G, H and I have been objected to.

Kenneth M. Chackes, attorney for Joint Intervenors Coalition for the Environment, St. Louis Region; Missourians for Safe Energy; and Crawdad Alliance, and authorized as their agent for the purpose of answering the above interrogatories, hereby states to the best of his knowledge, information and belief that the responses provided above are true and contain such information as is presently available to Joint Intervenors.

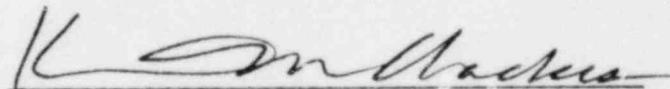

Kenneth M. Chackes

Subscribed and sworn to before me this 10 day of September, 1981.


Notary Public

My Commission Expires: 5/18/82

CHACKES AND HOARE


Kenneth M. Chackes
Attorneys for Joint Intervenors
314 North Broadway
St. Louis, MO 63102
314/241-7961

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
)
UNION ELECTRIC COMPANY) Docket No. STN 50-483-OL
)
(Callaway Plant, Unit 1))

CERTIFICATE OF SERVICE

I hereby certify that copies of the Response to Applicant's Interrogatories and Request for Document Production (Set. No. 2) to Joint Intervenors on Their Contentions No. 1 have been served on the following by deposit in the United States mail this 11th day of September, 1981.

James P. Gleason, Esq., Chairman
Atomic Safety and Licensing Board
513 Gilmoure Drive
Silver Spring, MD 20901

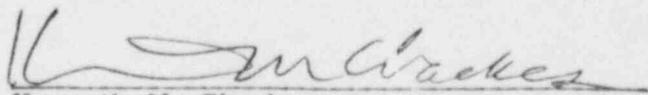
Mr. Glenn O. Bright
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