

**SARGENT & LUNDY**  
**ENGINEERS**  
FOUNDED 1891

55 EAST MONROE STREET

CHICAGO, ILLINOIS 60603

(312) 269-2000

TWX 910-221-2807

E. V. ABRAHAM  
PARTNER  
312-269-3920

February 14, 1990

Tennessee Valley Authority  
Watts Bar Nuclear Plant - Unit 1

By Registered Mail  
Return Receipt Requested

10CFR21 Report of a Defect Related to the  
Tennessee Valley Authority  
Watts Bar, Unit 1

Dr. Thomas E. Murley  
Director, Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Dr. Murley:

In accordance with the provisions of 10CFR Part 21, this is to inform you that a defect in engineering documents developed by Sargent & Lundy for Watts Bar Unit 1 has come to my attention. The following specific information is provided in accordance with 10CFR21.21(b)(3):

1. Name and address of the individual informing the Commission:  
E. V. Abraham  
Sargent & Lundy  
55 East Monroe Street  
Chicago, Illinois 60603
2. Identification of the facility which contains the defect:  
Watts Bar Unit 1  
Spring City, Tennessee
3. Identification of the firm supplying the engineering documents that contain the defect:  
Sargent & Lundy  
Chicago, Illinois
4. Nature of the defect and the safety hazard which could be created by such a defect:  
Under Task 32 of TVA Contract Number TV-72103A,

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Sargent & Lundy provided 10CFR50 Appendix R Support to TVA. The Appendix R Support consisted of engineering documents which TVA would utilize in performing fire protection Appendix R interaction analyses. The engineering documents to be supplied by Sargent & Lundy included cable block diagrams, Appendix R separation sketches, cable listings and conduit location sketches. After delivery of separation sketches, TVA discovered errors in certain of the deliverables. Further review by S&L verified that errors were present as identified by TVA. S&L recalled the separation sketches on January 4, 1990. On January 10, 1990, TVA formally rejected the cable block diagrams, the required cable list and the separation sketches. Sargent & Lundy has withdrawn the deliverables in question. Had the errors not been detected, certain of the information utilized by TVA in its interaction analysis would not have been valid; hence the interaction analysis would have been invalid. Since an interaction analysis determines the particular safe shutdown path in the event of a specific fire, the safe shutdown of the plant could have been affected. Hence the errors found are considered as a defect under 10CFR21. Sargent & Lundy's task under the TVA contract did not involve hardware design. Hence no defect was identified by Sargent & Lundy in plant hardware design. The defect identified was in the engineering information supplied by Sargent & Lundy for use by TVA in Appendix R interaction analyses.

5. The date on which information of such defect was obtained:

In accordance with Sargent & Lundy procedures regarding 10CFR21 evaluations, notice was provided to me on January 26, 1990 that a deviation on the TVA Watts Bar Appendix R Support project was being evaluated by the Sargent & Lundy Nuclear Safety Review Committee regarding its possible reportability under 10CFR21. On February 14, 1990, the Chairman of the Committee reported to me that the Committee's evaluation had been completed and that the deviation was considered a defect which was reportable under 10CFR21.

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6. Number and location of all basic components that contained the defect:  
The defect is not in a hardware component but is in engineering documents (which were supplied to TVA as part of Task 32, Watts Bar Appendix R Support, under TVA Contract Number TV-72103A). The Sargent & Lundy produced documents have been withdrawn on this project and are under re-review and revision as necessary. The defects are specific to this particular task of the overall TVA project.
  
7. The corrective action which has been taken, the name of the organization responsible for that action, and the length of time that has been or will be taken to complete the action:  
Corrective action is being conducted by Sargent & Lundy. The separation sketches, cable list and cable block diagrams are being re-reviewed and corrected for all identified errors. The re-review is being conducted in accord with a specific approved project instruction procedure for this task. Personnel conducting the re-review have been appropriately trained in this procedure. A special Sargent & Lundy Quality Assurance audit is being conducted to identify root causes of deficiencies and to implement appropriate corrective actions to prevent possible future recurrences on other projects. The re-review of the engineering documents and initial implementation of the audit corrective actions are expected to be completed by early April, 1990.

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8. Any advice related to the defect that has been given to the purchasers or licensees:  
The Tennessee Valley Authority was notified by letter on February 2, 1990 that Sargent & Lundy had formed a Nuclear Safety Review Committee to evaluate a deviation on the Watts Bar Appendix R Support Task and determine if there was a reportable defect under 10CFR21. The Tennessee Valley Authority is being informed of this 10CFR21 report by copy of this letter.

Yours very truly,



E. V. Abraham  
Director of Engineering

EVA:  
Copies:

Mr. Stewart D. Ebnetter (3 copies)  
Regional Administrator, Region II  
U.S. Nuclear Regulatory Commission  
101 Marietta Street - Suite 2900  
Atlanta, Georgia 30323

Mr. W. S. Raughley  
Engineering Manager  
Tennessee Valley Authority  
Watts Bar Nuclear Plant (C106-IOB)  
Post Office Box 800  
Spring City, Tennessee 37381