

November 23, 1994

Tennessee Valley Authority
ATTN: Mr. Oliver D. Kingsley, Jr.
President, TVA Nuclear and
Chief Nuclear Officer
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

SUBJECT: MEETING SUMMARY - WATTS BAR UNITS 1 AND 2

Gentlemen:

This letter refers to the technical meeting conducted at the Watts Bar site on November 17, 1994. The meeting was at our request to discuss problems identified during the 75% inspection of the Radiation Monitoring System Special Program (SP) inspection. Enclosure 1 is a list of individuals who attended the meeting and Enclosure 2 and 3 are the TVA handouts for the meeting. It is our opinion that this meeting was beneficial and provided a better understanding of TVA's activities.

Should you have any questions concerning this letter, please contact me.

Sincerely,

Original signed by
Bruce A. Boger (for)

Johns P. Jaudon, Acting Deputy Director
Division of Reactor Projects

Docket Nos. 50-390 and 50-391
License Nos. CPPR-91 and CPPR-92

Enclosures: 1. List of Attendees
2. TVA Handout, Presentation Outline (RM SP)
3. TVA Handout, Evaluation of Sample Line Walkdown Data

cc w/encls: (See page 2)

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cc w/encls:

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The Honorable Robert Aikman
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Distribution: (See page 3)

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PDR?	DATE	11/2/94	11/23/94	11/22/94	/ /94	/ /94
<input checked="" type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> Yes	<input checked="" type="radio"/> No	<input type="radio"/> Yes <input type="radio"/> No

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LIST OF ATTENDEES

Name and Title

NRC Staff

P. E. Fredrickson, Branch Chief, Watts Bar (WB) Construction, DRP, RII
C. A. Julian, Branch Chief, WB Startup/Operations, DRP, RII
G. A. Walton, Senior Resident Inspector, WB Construction, DRP, RII
M. W. Peranich, MC2512 Senior Program Coordination Manager, DRP, RII
G. B. Kuzo, Senior Radiation Specialist, DRP, RII

TVA Staff

B. S. Schofield, Site Licensing Manager, TVA
P. L. Pace, Compliance Licensing Manager, TVA, WB
P. W. Hughes, Radiological Control Manager, TVA
V. T. Smith, Project Manager, TVA
J. A. Simmons, CAP/SP Manager, TVA-Raytheon
J. E. Jones, Project Consultant TVA Contractor
D. L. Koehl, Technical Support Manager, TVA
F. A. Koontz, Jr., Lead Mechanical/Nuclear Engineer, TVA
W. J. Weisberg, Chemistry, TVA
D. A. Johnson, Engineer, TVA

Enclosure 1

RADIATION MONITORING SPECIAL PROGRAM

Summary of Findings/Issues:

1. NOV 50-390/94-56-01 identified during Radiation Monitoring 75% inspection.
2. Summary of Findings:
 - Lack of design control:
 - 1) "Tee" in condenser vacuum exhaust sample line
 - 2) Sample point location not 5 diameters downstream from flow disturbance
 - 3) Main steam line low-range monitor temperature and total integrated dose (TID) conditions
 - Programmatic concerns:
 - 1) Location basis of ARMs and CAMs
 - 2) Miscellaneous design criteria discrepancies
 - 3) Source traceability and calibration issues
 - 4) Hardware installation

Summary of Causes:

1. "Tee" in sample line/Sample point location.
 - WBPER940423
 - Human error - instrument line corrective actions dropped when design document cancelled
 - Human Error - necessary design requirements not considered
2. Main Steam line low-range detector conditions.
 - WBPER940601
 - Human error - exception not generated to address temperature and TID limits

Enclosure 2

Extent of Condition:

1. "Tee" in sample line/Sample point location.
 - Walkdown of liquid and gaseous sample lines needed for Unit 1 operation
 - Evaluating walkdown results against design requirements
 - Identified additional discrepancies
2. Main Steam line low-range detector conditions
 - Review other detector specifications against design requirements for temperature and TID
 - Determine if high-range detector will meet Reg Guide 1.97 range requirements

Corrective Actions:

1. "Tee" in sample line/Sample point location
 - Eliminate the "Tee"
 - Revise design criteria
 - Perform necessary modifications that result from evaluation of sample line walkdown data
2. Main steam line low-range detector environmental conditions
 - Preliminary review indicates high range detector will meet Reg Guide 1.97 range requirements.
 - Revise design criteria/calculation or perform modifications as necessary resulting from review of monitor specification temperatures and TIDs.
3. Recurrence Controls:
 - Counselling and training

Other Program Actions:

1. Dedicated team to address RMS commitments and system concerns. Team now includes members from: Chemistry, RADCON, Startup, Technical Support, Maintenance, special radiation monitor advisor, three (3) radiation monitoring contract engineers, two (2) dedicated plant engineers, and one (1) radiation monitoring manufacturer representative.
2. Systematically evaluate system/program requirements on a monitor-by-monitor basis. Horizontal review from design criteria and previous corrective actions through installation, testing, and plant operation.
3. Document criteria and basis for location of ARMs and CAMs and various design criteria improvements.
4. Revise design basis documents and perform field modifications where necessary based on the results of the system review.
5. NIST traceable beta and gamma sources for gaseous and liquid detector alignment have been ordered. These sources will provide a three-point energy response verification of detector response.
6. Develop a matrix of ANSI N13.1 requirements to WBN Design Criteria and field installations.

OVERVIEW OF EVALUATIONS OF SAMPLE LINE WALKDOWN DATA

Number of Monitors for which sample lines were walked down

32

Total Deficiencies

Applying specified counting methodology, the following number of deficiencies with regard to design criteria requirements and ANSI standards were identified:

117

Primary Deficiencies

- | | | |
|----|---------------------------------|-------------------|
| 1. | welded connections requirement | (21 deficiencies) |
| 2. | bend radius (no tees or elbows) | (16 deficiencies) |
| 3. | avoidance of low points | (13 deficiencies) |
| 4. | clearance to other lines/equip | (11 deficiencies) |
| 5. | root valve requirement | (9 deficiencies) |

Software Resolutions

Most of the deficiencies can be resolved by:

- | | | |
|----|--|----------------|
| 1. | clarifications to design criteria intent | (9 estimated) |
| 2. | exceptions to the design criteria | (22 estimated) |

Potential Hardware Impacts

The following are the potential hardware impacts resulting from the evaluation of the sample line walkdowns.

1. Install a separate probe for condenser vacuum pump exhaust sampler 1-RE-90-129 at a proper distance downstream/upstream of flow disturbances. This also eliminates the tee in line to the sampler.
2. Determine by analysis whether the following sample lines require modifications to prevent moisture condensation in the monitors: 0-RE-90-125, 126, 205, 206, 1-RE-90-106, 112, 99, 119, 129, 404, 130, 131, 400, 402, and 2-RE-90-400, 402. Initiate appropriate corrective actions.
3. Prepare a design criteria change or exception for non-isokinetic sampling on the secondary sample for the auxiliary building monitor 0-RE-90-101. (If this change/exception is not possible, a major rework effort could result.)