

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401
1750 Chestnut Street Tower II

March 28, 1985

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Denton:

WATTS BAR NUCLEAR PLANT - AWS WELD PROGRAM

During our meeting in Washington on March 25, 1985, the AWS weld program at Watts Bar Nuclear Plant was discussed with Hugh Parris and myself. You raised a concern of whether or not the NRC Office of Nuclear Reactor Regulation (NRR) was aware of the employee concern on this issue when TVA discussed the subject with NRR in 1984. For your information, I would like to summarize the actions we have taken since the issue was first raised.

The initial concerns regarding the program were identified by our Nuclear Safety Review Staff (NSRS) in early 1982. Later, the lead responsibility for follow-up and closure of such items was transferred from the NSRS to the Office of Quality Assurance (OQA) which in mid-1983 issued memorandums to close the items on welding based on their evaluations. Subsequently, an employee concern was raised to the TVA Board of Directors that OQA had acted prematurely in closing the NSRS findings and that, in fact, concerns still existed regarding:

1. Weld filler material controls.
2. Weld inspection records.
3. Welds inspected through carbo-zinc.

OQA conducted a detailed review of these concerns in conjunction with the NSRS and concluded that there were no remaining technical or programmatic problems. Prior to finalizing the OQA/NSRS conclusions, TVA met with NRC Region II in Atlanta, Georgia, on January 12, 1984, to discuss the employee concerns and the TVA conclusions and to ensure that there were no NRC concerns related to our AWS weld program (enclosure 1). Region II representatives indicated their full satisfaction with TVA's program and that they were satisfied with disposition of the issues as proposed (enclosure 2).

On January 18, 1984, representatives of OQA, NSRS, and the Office of Engineering Design and Construction (OEDC) presented their conclusions to the TVA Board. The Board members agreed with the conclusions but requested that a meeting be held with NRR to ensure that they understood the programmatic commitments made to AWS D.1.1 and the specific exceptions TVA had taken to that code (enclosure 3).

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Mr. Harold R. Denton

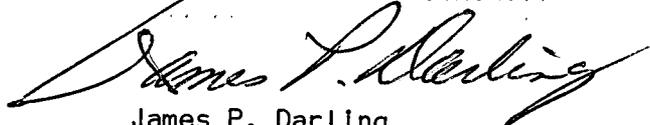
March 28, 1985

The meeting with NRR was held on February 10, 1984 (enclosures 4 and 5). Your attention is invited to the fact that in both meetings with NRC (Region II and NRR), they were clearly informed that TVA was dealing with an internal employee concern that had been raised to the TVA Board and that the meetings were held to ensure that all issues were clearly understood and resolved. In both instances, NRC representatives indicated they did not have any concerns and did not feel that further detailed review by NRC was necessary.

On January 30, 1984, subsequent to the meetings with NRC Region II and the TVA Board, the OQA submitted to the NSRS a memorandum to document closure of the NSRS concerns (enclosure 6). NSRS formally closed the issue by memorandum dated February 3, 1984 (enclosure 7). The meeting held subsequently with NRR at the direction of the TVA Board provided no reason to reverse the decision to close the issue.

Very truly yours,

TENNESSEE VALLEY AUTHORITY



James P. Darling
Manager of Nuclear Power

Sworn to and subscribed before me
this 28 day of March 1985

L. Cheryl Clark

Notary Public

My Commission Expires 6/24/86

Enclosures

UNITED STATES GOVERNMENT

ENCLOSURE 1

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : SEB files

OQA '84 0118 401

FROM : John R. Lyons II, Chief, Systems Engineering Branch, M144 MIB-K

DATE : January 16, 1984

SUBJECT: AWS WELDING - NOTES OF INFORMATION MEETING WITH NRC - JANUARY 12, 1984

TVA representatives met with NRC Region II in Atlanta, Georgia, on January 12, 1984, to discuss TVA's AWS welding program at Watts Bar. The purpose of the exchange was to discuss TVA resolution of NSRS concerns relative to the TVA program, to determine if the NRC had any concerns with the TVA program, and to review with NRC any potential similarities with the welding problems at Zimmer Nuclear Plant.

Attendance

TVA

J. W. Anderson
 E. N. Culver
 K. Whitt
 L. M. Mills
 J. A. Raulston
 J. R. Lyons

NRC

J. A. Olshinski
 D. M. Verrelli
 P. Fredrickson
 A. R. Herdt
 J. Blake

J. W. Anderson lead the discussion of the TVA program (see attachment 1). The discussion included an address of the original NSRS concerns relative to AWS welding, TVA weld requirements as specified in G-29C, TVA's commitment to the NRC relative to AWS D1.1-1972, the TVA welding program controls relative to filler materials, and the records provided by that program. The OQA and NSRS conclusions that the TVA program satisfies regulatory requirements and TVA commitments to the NRC and provides adequate confidence in the integrity of structural welds made at WBN were presented. The following questions and observations were noted:

1. The NRC asked several questions regarding the TVA program which we agreed to pursue and to evaluate the need for program improvements. These questions are contained in attachment 2.
2. The NRC indicated that they concur with the OQA and NSRS conclusions that the TVA weld program provides adequate controls of weld filler materials and the weld process and that the records provided satisfy the requirements of AWS D1.1-1972.



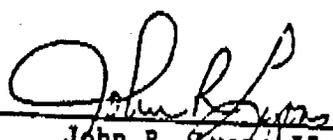
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SEB files
January 16, 1984

AWS WELDING - NOTES OF INFORMATION MEETING WITH NRC - JANUARY 12, 1984

3. The NRC indicated that the principal causes which led to the NRC citations of the Zimmer program were related to inadequate material procurement and issuance controls and to inadequate welder qualifications. They indicated that they do not have any concerns that these conditions or other conditions present at Zimmer are present in the TVA welding program.

SEB is researching the NRC questions and will develop any recommendations for program improvements which we feel are appropriate.


John R. Lyons II

JRL:AH

Attachments

cc (Attachments):

- J. W. Anderson, M155G MIB-K
- H. N. Culver, 249A HBB-K
- M. S. Kidd, M145 MIB-K
- MEDS, W5B63 C-K
- L. M. Mills, 400 CST2-C
- J. A. Raulston, W10C126 C-K

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ENCLOSURE 2

UNITED STATES
NUCLEAR REGULATORY COMMISSION

A02 840124 007PWR/Lmm
ARMS

REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30303

JAN 23 1984



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Tennessee Valley Authority
ATTN: Mr. H. G. Parris
Manager of Power
500A Chestnut Street Tower II
Chattanooga, TN 37401

Gentlemen:

SUBJECT: MEETING SUMMARY

This letter refers to a meeting conducted at your request in the NRC Region II office on January 12, 1984. This meeting was held to discuss the TVA program for control of welding filler material at Watts Bar when performing AWS D1.1 structural welding.

It is our opinion that this meeting was beneficial. It provided a clear understanding of the Watts Bar welding filler material control program.

In accordance with Section 2.790 of NRC's "Rules of Practice," Part 2, Title 10 Code of Federal Regulations, a copy of this letter and enclosures will be placed in the NRC's Public Document Room.

Should you have any questions concerning these matters, we will be pleased to discuss them.

Sincerely,

R.C. Lewis
Richard C. Lewis, Director
Division of Project and
Resident Programs

Enclosures:

1. Meeting Summary
2. Attendance List

cc w/encl:

- J. A. Coffey, Director of Nuclear Power
- W. T. Cottle, Plant Superintendent
- G. Wadewitz, Project Manager
- D. L. Williams, Jr., Supervisor,
Licensing Section
- R. E. Teamer, Project Engineer
- H. N. Culver, Chief, Nuclear Safety
Review Staff
- J. W. Anderson, Manager
Office of Quality Assurance
- R. M. Pierce

RECEIVED
JAN 24 1984
NUCLEAR
LICENSING STAFF

RECEIVED
CHATTANOOGA, TENN
JAN 24 1984
MANAGER OF POWER

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ENCLOSURE 1

MEETING SUMMARY

On January 12, 1984, representatives of TVA met with the NRC in the NRC Regional Office in Atlanta, Georgia to discuss the adequacy of the TVA program for control of weld filler material used during the AWS D1.1 welding of safety-related structures at Watts Bar.

TVA stated that the reason for the meeting was to describe the Watts Bar weld filler material control program and to elicit any NRC comments with respect to adequacy of the program.

The TVA concern over this program was based on a Nuclear Safety Review Staff (NSRS) review of the Watts Bar program and a need for clarification as to whether traceability to heat and lot number is explicitly required on AWS D1.1 safety-related weld filler material. TVA described the present program, which requires verification during receipt inspection of heat and lot number to the purchase documentation including applicable material specifications, and verification by both welder and QC inspector of correct filler material used during welding. The weld control card or appropriate weld joint documentation identifies the welding filler material but not the heat and lot number. TVA requisitions and uses on the site only acceptable certified weld filler material regardless of whether the application is safety or non-safety related. It is to be noted that ASME Class 1 pipe welding (e.g. Reactor Coolant Piping) has traceability as to heat and lot number on the weld joint control documentation. With this type procurement and receipt inspection program, the intent of traceability, which is to prevent use of inadequate material, is accomplished.

The NRC made several comments concerning ways to possibly better control the existing program but did not find any regulatory inadequacies in the program, as described by TVA. The NRC did concur that the weld filler material program described as being in place at Watts Bar would be acceptable in the AWS D1.1 welding program.

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ENCLOSURE 2

ATTENDEES

Name

Organization

J. Anderson	TVA
H. Culver	TVA
K. Whitt	TVA
J. Lyons	TVA
L. Mills	TVA
J. Raulston	TVA
J. Olshinski	NRC
A. Herdt	NRC
D. Verrelli	NRC
J. Blake	NRC
P. Fredrickson	NRC

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General Manager's Files
January 18, 1984

SUMMARY OF BRIEFING - WATTS BAR NUCLEAR PLANT, AWS WELDING PROGRAM -
JANUARY 18, 1984

2. Inspection Records

OQA presented the concern, the OEDC program, and the conclusion that the OEDC program satisfies regulatory requirements and TVA commitments to the NRC and provides adequate confidence that in-process welding activities were conducted in accordance with specified requirements. The NSRS agreed with this conclusion and again stated that the concerns were based on a belief that the program at the Watts Bar Nuclear Plant was similar to the program at the Zimmer Nuclear Plant which the NRC had determined was deficient and that TVA may have a problem in this area. After an in-depth review of the program in place at the Watts Bar Nuclear Plant and the assurance by NRC Region II that the problems at the Zimmer Nuclear Plant were not like the Watts Bar Nuclear Plant, the NSRS determined that their concerns had been alleviated.

3. Inspection through Carbo-zinc

OQA presented the concern, the purpose for this type of inspection, the bounds of the problem, the results of the sample programs, and a summary of the key data relative to inspection through carbo-zinc. OQA presented their conclusion that based on the information regarding the area of uncertainty from the weld sample program, the area of concern for any inspection through carbo-zinc, and the extent to which inspections may have been conducted through carbo-zinc, the integrity of the welds at the Watts Bar Nuclear Plant is not in question. NSRS agreed with the final position taken by OQA indicating that the NSRS position was based upon finally receiving sufficient information to determine that the sampling program had been performed in an acceptable manner and that there was adequate technical support for accepting all welds on the basis of the sampling program.

4. Additional Concerns

In the general discussion of the above items, a statement was made that the NRC-NRR had not been informed of the specific exceptions to AWS D1.1-1972 that were made in the welding program at the Watts Bar Nuclear Plant nor had justifications for the exceptions been provided to the NRC-NRR. A concern was expressed that, if the NRC-NRR did an in-depth evaluation of the exceptions to this code, they might have significant questions that could seriously affect the licensing of the Watts Bar Nuclear Plant. To satisfy this concern, a detailed exception will be presented to NRC-NRR.

0999

3

General Manager's Files
January 18, 1984

SUMMARY OF BRIEFING - WATTS BAR NUCLEAR PLANT, AWS WELDING PROGRAM -
JANUARY 18, 1984

<u>Action Items</u>	<u>Organization</u>	<u>Due Date or Status</u>
To present the detailed exception to AWS D1.1-1972, with technical justification, to the NRC-NRR and determine if they have any concerns regarding the IVA program. A report to be given to the Board.	OEDC	Report due within 30 days

W. F. Willis Jr.
W. F. Willis Jr.

cc: C. H. Dean, Jr.,
S. David Freeman
Richard M. Freeman
J. W. Anderson, M155G MIB-K
Craven Crowell, E12A4 C-K
H. N. Culver, 294 HBB-K
L. H. Edwards, E6C7 C-K
K. E. Gray, Washington
G. H. Kimmons, W12A9 C-K
J. S. Lyon, E12D47 C-K
H. S. Sanger, Jr., E11B33 C-K
District Administrators
Power District Managers

Prepared by J. A. Thompson, OQA, N147 MIB-K
16526

NOTE: Date of this memo reflects actual briefing date. This memo was released 2/10/84.

DES '84 0214 020

7/14/84 - MFG

cc: J. A. Raulston, W10C126 C-K

cc: MEDS, W5863 C-K

Memorandum

ENCLOSURE 4

TENNESSEE VALLEY AUTHORITY

EDC '84 0217 005

TO : W. F. Willis, General Manager, E12B16 C-K (7)

FROM : G. H. Kimmons, Manager of Engineering Design and Construction,
W12A9 C-K

DATE : FEBRUARY 17 1984

SUBJECT: WATTS BAR NUCLEAR PLANT - MEETING WITH NUCLEAR REGULATORY COMMISSION
(NRC) - WELDING PROGRAM

Please refer to your memorandum to the General Manager's Files dated January 18, 1984.

(EDC 840213 00)

On February 10, 1984, a meeting was held with NRC to discuss the welding program at the Watts Bar Nuclear Plant (WBN). This is in response to an action item in reference I. The following attended the meeting:

TVA

- H. N. Culver, Director of Nuclear Safety Review Staff, JGM
- L. M. Mills, Manager of Nuclear Licensing, NUC PR
- John A. Raulston, Chief, Nuclear Engineering Support Branch, EN DES
- R. M. Jessee, Staff Engineer, Nuclear Engineering Support Branch, EN DES

NRC

- Eleanor Adensam, NRR, Division of Licensing, Licensing Branch No. 4
- T. J. Kenyon, NRR, Division of Licensing, Licensing Branch No. 4
- B. D. Lisw, NRR, Materials Engineering Branch
- D. Smith, NRR, Materials Engineering Branch
- R. Bosnak, NRR, Mechanical Engineering Branch
- H. Brammer, NRR, Mechanical Engineering Branch

Larry Mills indicated in a general way the reasons the TVA representatives were meeting with the NRC staff. H. N. Culver provided some additional background regarding how some of the issues relating to the welding program had developed, culminating in a meeting with the TVA Board and an employee's concern and the Board's direction to meet with NRC. Bob Jessee provided the background regarding the changes made to the AWS Code and the bases for the changes. The TVA attendees indicated to the NRC staff that TVA would provide any additional information NRC wanted regarding this matter.

The NRC attendees indicated that they had an understanding of the TVA welding program requirements as defined in the General Specifications (G-Spec). They further indicated that the designer is allowed by the Code to interpret requirements and that they consider that TVA has not modified a commitment but has merely provided in the G-Spec implementing instructions as permitted by the Code. Consequently, the NRC has indicated no apparent concern regarding what TVA has done in

E44047.07



W. F. Willin
FEBRUARY 17 1984

WATTS BAR NUCLEAR PLANT - MEETING WITH NUCLEAR REGULATORY COMMISSION
(NRC) - WELDING PROGRAM

clarifying requirements for the welding program at WBN. The NRR representatives indicated that they had been in discussion with the I&E staff in this matter and, as a result, they had no specific concerns regarding the TVA welding program at WBN. They indicated there was no need for TVA to provide additional information regarding the welding program requirements. The NRC attendees will provide TVA with a summary of the meeting that will reflect these general conclusions. This summary will be made available in the Public Document Room.

Original signed by
D. R. Patterson

 G. H. Kimmons

JAR (RMJ):TU

- cc: C. Bonine, E7B24 C-K
- R. W. Cantrell, W11A9 C-K
- H. N. Culver, 249A HBB-K
- J. P. Darling, 546 CST2-C
- MEDS, W5B63 C-K
- L. M. Mills, 400 CST2-C
- R. M. Pierce, 104 ESTA-K
- John A. Raulston, W10C126 C-K
- J. C. Standifer, 204 GB-K
- G. Wadewitz, Watts Bar Nuclear CONST (3)

Concurred in: NSRS

Principally Prepared By: R. M. Jessee, extension 6743.

E44047.07

ENCLOSURE 6

UNITED STATES GOVERNMENT

Memorandum

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TENNESSEE VALLEY AUTHORITY

OQA '8401

Handwritten: (P) H

Stamp: FEB 3 '84

Mr. Tolson	
Mr. Felt	
Mr. Rosen	
Mr. Sullivan	
Mr. Tavel	
Mr. Trotter	
Tele. Room	
Miss Holmes	
Miss Gandy	

TO : H. M. Culver, Director of Nuclear Safety Review Staff, 249A

FROM : J. U. Anderson, Manager of Quality Assurance, N155C N1B-K

DATE : January 30, 1984

SUBJECT: WATTS BAR NUCLEAR PLANT - AWS WELD PROGRAM

The purpose of this memorandum is to document final resolution and closure of NSRS concerns with the AWS Welding Program at the Watts Bar Nuclear Plant.

The following is a summary of the key events that led to the eventual resolution of the NSRS concerns:

1. In your memorandum to me dated August 10, 1983 (GNS 830811 030), you identified three concerns your organization had with respect to the AWS Welding Program at Watts Bar Nuclear Plant. They were filler material records, inspection records, and inspection through carbo-zinc. *(023230211030) 1/B*
2. We attempted to respond to your concerns in my memorandum to you dated October 20, 1983 (OQA 831020 002). *(023230211030) 1/A*
3. Your concerns were not resolved and on October 28, 1983, we met with you to attempt to reach a resolution. The meeting was documented by a memorandum to the Systems Engineering Branch Files dated November 18, 1983 (OQA 831118 425). A plan of action was agreed to in the meeting, and OQA proceeded to implement the plan.
4. Numerous informal meetings were conducted between our organizations to attempt to clarify the concerns and their resolutions. Attachment 1 of this memorandum is the final resolution on filler material records and supporting information which was used to draw OQA conclusions. Attachment 2 of this memorandum is the final resolution on inspection records and supporting information which was used to draw OQA conclusions. Attachment 3 of this memorandum is the final resolution on inspection through carbo-zinc and supporting information which was used to draw OQA conclusions.
5. On January 18, 1984, NSRS and OQA met with the TVA Board of Directors. In that meeting you concluded that all of your concerns were resolved and that you agreed with OQA's conclusions.

We believe that all of your concerns have been satisfactorily resolved and we no longer consider your AWS Welding Program concerns to be an open issue.



2

H. H. Culver
January 30, 1984

WATTS BAR NUCLEAR PLANT - AMS WELD PROGRAM

We will place a copy of this memorandum and all attachments in the permanent record files for our closure of each of the following NSRS findings: E-82-02-WBN-24, R-82-07-WBN-02, E-82-07-WBN-06.

[Handwritten Signature]
R. W. Anderson

JRL:JAT:LAO

Attachments

cc (Attachments):

- G. F. Dilworth, E12D46 C-K
- G. H. Kimmons, E12A9 C-K
- J. R. Lyons, M144 M18-K
- MEDS, W5863 C-K

DES '84 0203 031

2/3/84 - MPG

cc (Attachments):

- L. J. Cooney, W6D224 C-K
- J. C. Standifer, 204 GB-K

cc: MEDS, W5863 C-K

Engineering Services		
BY	DATE	INITIALS
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<input checked="" type="checkbox"/>	Thompson	
<input type="checkbox"/>	Wright	
<input type="checkbox"/>	Y.C.P.	

ESB '84 0210 001

cc (Attachments):

fc

- R. M. Hodges, 1117 18N-K---Reference Audit W682-3,---110
- J. A. Raulston, W10C126 C-K
- J. P. Vineyard, W3D224 C-K---Reference Audit W682-4,---110
- R. W. Cantrell, W11A9 C-K
- MEDS, W5863 C-K
- J. C. Standifer, 204 GB-K

TVA 100-441

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

GNS '840203 054

TO : J. W. Anderson, Manager of Quality Assurance, M155 M1B-K

FROM : H. N. Culver, Director of Nuclear Safety Review Staff, 249A HBB-K

DATE : February 3, 1984 840209F0014 (1)

SUBJECT: WATTS BAR NUCLEAR PLANT - CLOSURE OF NSRS ITEM R-82-02-WBN-24

- Reference:
1. My memorandum to you dated August 10, 1983, "Closure of NSRS Item R-82-02-WBN-24 - Comparison of G-29C to AWS D1.1" (GNS 830811 050)
 2. Your memorandum to W. F. Willis dated January 19, 1984, "Key Topics Report No. 20" (OQA 840119 001)
 3. Your memorandum to me dated January 30, 1984, "AWS Welding Program" (OQA 840130 002)

NSRS concurs with the conclusions that the AWS welding program for WBN satisfies regulatory requirements and TVA commitments to the NRC as expressed in reference 2 and 3. It is NSRS's position that the concerns expressed in items R-82-02-WBN-24, R-82-07-WBN-02, and R-82-07-WBN-06 have been satisfactorily resolved. These items are closed.

H. N. Culver
H. N. Culver

JCJ:LML

cc: G. F. Dilworth, E12D46 C-K
MEDS W5863 C-K

Principally prepared by J. C. Jones



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