

# UNITED STATES NUCLEAR REGULATORY COMMISSION

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In the Matter of:

TVA - NRC MEETING ON )

WATTS BAR WELD REVIEW )

) Docket No. 50-390

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CORRECTED COPY  
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Pages: 1 through 109

Place: Rockville, Maryland

Date: October 11, 1988

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 TVA-NRC MEETING ON ) 50-390  
 WATTS BAR WELD REVIEW )  
 )

Tuesday,  
October 11, 1988

11555 Rockville Pike, Room 2F-17  
Rockville, Maryland

The meeting came to order, pursuant to notice, at  
1:05 p.m.

BEFORE: RAJ AULUCK  
Project Manager  
Watts Bar Facility  
P.O. Box 555  
Washington, D.C. 20555

APPEARANCES:

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Director, Office of Special Projects  
U.S. Nuclear Regulatory Commission  
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Washington, D.C. 20555

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1025 Lakeshore Lane  
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President  
Associated roject Analysts  
132 Teresita Way  
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Project Engineer, TVA Welding Project  
400 West Summitt Hill Drive  
Knoxville, Tennessee 37902

APPEARANCES (Continued):

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Idaho Falls, Idaho 83401

NICHOLAS C. KAZANAS  
Vice President, Nuclear Quality Assurance  
Nuclear Power Group  
Lookout Place 4N 45A  
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A T T E N D E E S

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 JIM G. PARTLOW  
 STEVE D. RICHARDSON  
 GLEN A. WALTON  
 B. D. LIAW  
 SUZY C. BLACK  
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 PETER L. JUDD  
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 ROBERT HERMANN  
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 NICOLAS C. KAZANAS

A T T E N D E E S (Cont.)

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CHARLES H. FOX  
S. A. WHITE  
JIM ROACH  
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RALPH SHELL  
CHRIS EEKLE  
ED WRIGHT  
JIM SPIRES  
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DAVID SORRELL  
DAVE SMITH  
ED GOODWIN  
JAMES A. LAIR  
DEBBIE CARTER  
CAROLE ANDERSON  
MR. PARSONT  
MR. GOLLER  
TOM GRIDLEY  
MR. GORRELL  
STAVE SIMS

P R O C E E D I N G S

1 1  
2 MR. AULUCK: Good afternoon. I'm Raj Auluck. I  
3 am the Project Manager for the Watts Bar facility. Today's  
4 meeting is at the request of NRC staff to discuss the status  
5 of the welding activities at the Watts Bar facility. This  
6 is a public meeting and it is being transcribed.

7 Before I introduce Mr. Jim Partlow, the Office  
8 Director. I would like to add a couple of comments here.

9 The first one is, we'd like to go around the room  
10 and introduce ourselves.

11 As I said, I am Raj Auluck, Project Manager.

12 MR. PARTLOW: Jim Partlow, Director of the Office  
13 of Special Projects.

14 MR. RICHARDSON: I'm Steve Richardson, Director of  
15 the CDA Division, Office of Special Projects.

16 MR. WALTON: Glen Walton, NRC Resident Inspector,  
17 Watts Bar.

18 MR. LIAW: B.D. Liaw, Office of Special Projects.

19 MS. BLACK: Suzy Black, Assistant Director for  
20 Projects, Office of Special Projects.

21 MR. CHARNOFF: Gerry Charnoff, Shaw-Pittman.

22 MR. POLK: Phil Polk, TVA.

23 MR. SPIRES: Jim Spires, News Reporter, The  
24 Technical Times.

25 MR. WRIGHT: Ed Wright, Department of Energy.

1 MR. VIGLUCCI: Ed Viglucci. I am an attorney with  
2 TVA.

3 MR. LUNDIN: Craig Lundin, TVA.

4 MR. JOHNSON: Hoyt Johnson, TVA, Quality Manager.

5 MR. EGAN: Geoff Egan, Amtech Engineering,  
6 Consultant for TVA.

7 MR. EISENHUT: Darrell Eisenhut, NUS.

8 MS. CHARNOFF: Debbie Charnoff, Shaw-Pittman.

9 MR. WEGNER: Bill Wegner, from Beta.

10 MR. LAIR: James A. Lair, TVA.

11 MS. CARTER: Debbie Carter, TVA.

12 MS. ANDERSON: Carole Anderson.

13 MR. PARSONT: Mr. Parsont, TVA.

14 MR. GROLLER: Mr. Groller, TVA.

15 MR. JONES: Lloyd Jones.

16 MR. GRIDLEY: Tom Gridley.

17 MR. GORRELL: Mr. Gorrell.

18 MR. SIMS: Steve Sims, NUS

19 MR. GRIDLEY: Dick Gridley.

20 MS. WHITNER: Jean Whitner.

21 MR. SALTZMAN: Harry Saltzman, Tech. Assistant,  
22 Special Projects.

23 MR. SORRELL: David Sorrell, NRC Office of Special  
24 Projects.

25 MR. SMITH: Dave Smith, Office of Special

1 Projects.

2 MR. GOODWIN: Ed Goodwin, Office of Special  
3 Projects.

4 MR. GRIDLEY: Dick Gridley, TVA Nuclear Power,  
5 Manager of Licensing.

6 MR. KAZANAS: Nick Kazanas, Vice President of  
7 Nuclear Quality Assurance.

8 MR. FULLER: Ed Fuller, Chairman of the Watts Bar  
9 Program Team.

10 MR. FOX: Charles Fox, Vice President, Nuclear  
11 Technical Director.

12 MR. WHITE: Steve White, TVA.

13 MR. ROACH: Jim Roach, Project Engineer, TVA  
14 Welding Project.

15 MR. FOGARTY: Frank Fogarty, EG&G.

16 MR. SHELL: Ralph Shell, Manager of Compliance and  
17 Services, Licensing, for TVA.

18 MR. AULUCK: Anybody else we missed?

19 I am going to pass an attendance sheet. Please  
20 sign your name and affiliation.

21 Before we start, I think Mr. Carlos would like to  
22 make a couple of comments.

23 THE REPORTER: I have to keep track of the  
24 speakers as you are speaking, so could you please sign that  
25 list in the order in which you pronounced your name?



1           Otherwise, I will have no idea who is speaking.

2           We ask that speakers identify themselves please.

3                       MR. AULUCK: At this time, I would like to ask Mr.  
4           Partlow to start the meeting.

5                       MR. PARTLOW: Thank you. Good afternoon, Mr.  
6           White, and others from TVA.

7                       On August 12 of this year we provided TVA with the  
8           NRC staff's review and evaluation of the EG&G Weld  
9           Evaluation Project Report for Watts Bar Nuclear Plant Unit  
10          1.

11                      This report was provided to us in TVA's letter of  
12          February 17, 1988. This letter stated that the EG&G review  
13          confirms the overall acceptability of TVA's safety-related  
14          welding program at Watts Bar.

15                      Based upon our own review of the Weld Evaluation  
16          Project Report, the NRC staff concluded that a significant  
17          breakdown in the quality assurance program for structural  
18          steel, ASME code and HVAC component welding, occurred at  
19          Watts Bar during the construction of Unit 1.

20                      This conclusion by the OSP staff was consistent  
21          with NRC's earlier views on this matter as communicated in  
22          letters between NRC and TVA during the December, 1986-  
23          January, 1987 time frame.

24                      Our letter of January 5, 1987, to Mr. C.H. Dean,  
25          Jr. indicated that NRC believed at that time sufficient

1 information existed to make a judgment on whether there was  
2 a breakdown in the QA aspects of TVA's welding program  
3 implementation during the construction of Watts Bar Unit 1.

4 This letter pointed out that based upon available  
5 information, the NRC's senior management team had concluded  
6 that there was a significant QA breakdown in the inspection  
7 of structural steel welding as well as in the area of  
8 interpretation of code required radiographs.

9 In a January 11, 1987 letter response, TVA  
10 acknowledged that the results of the TVA's own review of the  
11 Watts Bar welding program had indicated serious problems in  
12 these same areas.

13 These matters were further discussed in the  
14 meeting between NRC and TVA on January 12, 1987.

15 In conjunction with development of the Watts Bar  
16 Nuclear Performance Plan, TVA is preparing a series of  
17 corrective action program reports or CAPs, to address the  
18 resolution of issues identified through employee concerns,  
19 through internal and external reviews and audits, and  
20 through the established TVA program for identifying  
21 conditions adverse to quality.

22 The CAP report on the Watts Bar welding program,  
23 which we understand is to be submitted shortly, will  
24 describe the measures which TVA is taking to ensure that  
25 past welding deficiencies are identified and resolved as

1 well as measures to ensure that future work is in accordance  
2 with NRC regulatory requirements.

3 In anticipation of our receipt and review of the  
4 welding CAP report, I and we on the staff have three  
5 objectives in mind for this meeting today.

6 First, we want to investigate with you the reasons  
7 for our different perspectives on the conclusions to be  
8 reached from the WEP report. Our agreement on a plan for  
9 the completion of Watts Bar depends importantly on our  
10 mutual understanding of the starting point.

11 Secondly, the EG&G report represents only one  
12 element of the overall Watts Bar Welding Review Program. We  
13 would like to gain a better understanding of the overall  
14 program and its status, with emphasis on the status of the  
15 numerous corrective action programs associated with welding  
16 at Watts Bar.

17 Finally, with reference to our conclusion that  
18 TVA's QA program was in the past deficient in the ability to  
19 identify welding deficiencies, we would like to hear about  
20 any improvements in the welding QA program which have been  
21 implemented to prevent a recurrence of the past situation.

22 So, Mr. White, with that, again, if I could  
23 reiterate, my objectives here are to start us off on a  
24 common understanding of the status of welding at Watts Bar  
25 using the WEP report, to talk about your plans for submittal

1 of various corrective action programs and changes that have  
2 been made in QA to improve that area.

3  
4 STATEMENT OF STEVE WHITE, TVA

5  
6 MR. WHITE: Thank you, Mr. Partlow. I'm Mr.  
7 White. We look forward to a productive meeting this  
8 afternoon.

9 On February 17, 1988, TVA submitted to the NRC a  
10 report of the assessment of the welding program at Watts Bar  
11 Unit 1, by the Department of Energy's contractor, EG&G,  
12 Idaho, Incorporated.

13 And, as you have stated, the purpose of the  
14 meeting is really to discuss the status of welding  
15 activities at the Watts Bar facility.

16 In order to do that, I think it is important first  
17 to define the several elements which deal with Watts Bar  
18 welding and to understand clearly how they all fit together.

19 Let me do that with this simple, graphic  
20 representation.

21 Although not precise, it shows how the EG&G  
22 evaluation, which is one part of a comprehensive weld review  
23 program, shows how the EG&G effort complements other  
24 reviews. And I would like to kind of define that graphic  
25 now.

1 First, the largest square represents the entire  
2 TVA nuclear program. Note that it is divided into four  
3 quadrants, each representing one of the TVA nuclear sites.

4 The next largest square is labeled "Welding  
5 Program" and that represents the program established to  
6 assure the requirements imposed on the licensee with regard  
7 to welding would be met.

8 Every utility has a program such as this. If  
9 there had been no concerns, this graphic would stop here.  
10 But the fact is, there were concerns.

11 Historically, and on November 1985, TVA initiated  
12 actions to resolve employee and other concerns: concerns  
13 from the NRC, concerns from Congress, concerns from a number  
14 of areas. Those concerns had arisen regarding welding at  
15 all of TVA's nuclear plants.

16 A team of TVA personnel was assembled to determine  
17 actions necessary to resolve all of those concerns and to  
18 implement those actions. On January 7th of 1986, TVA  
19 representatives met with members of the NRC staff to  
20 describe the plan for reviewing the entire TVA weld program  
21 and for resolving the deficiencies identified.

22 The plan was submitted to the NRC on January 17th,  
23 1986. NRC has accepted this approach.

24 This effort you see labeled on the graph as the  
25 "Weld Project." And you can see, the Weld Project involves

1 all four of the nuclear sites.

2 In one sense, this project could be categorized as  
3 an over-inspection program.

4 Now, the smallest box on that graphic, labeled  
5 "Weld Evaluation Project," is the independent contracted  
6 organization chartered to assist the welding project in  
7 evaluating the Watts Bar Welding Program.

8 Remember, that although the concerns were across  
9 the board at all the sites, they were predominantly Watts  
10 Bar. The welding evaluation project, or WEP, is managed by  
11 EG&G, Idaho.

12 Even though this group was chartered for the Watts  
13 Bar project, note that the graphic has dashed lines. Those  
14 dashed lines signify that when they found an issue which  
15 might be applicable to other TVA plants, that issue was  
16 moved into the welding project for consideration at other  
17 sites.

18 Completion of this evaluation by EG&G marked a  
19 major milestone, a major accomplishment. It is clear that  
20 this effort was adequate for identifying welding problems at  
21 Watts Bar Unit 1 and for determining the overall quality of  
22 welding within the scope of this project.

23 Finally, let me address the box on the graphic  
24 labeled "Watts Bar Program Team."

25 I made the decision late last year to establish

1 this group to determine what activities are necessary in  
2 order to license Watts Bar Unit 1. This effort is over and  
3 above all other activities underway to complete and license  
4 the Watts Bar project.

5 Among other things, this group will review welding  
6 at Watts Bar. Now, I'll be frank with you. There were some  
7 who felt that because of the other efforts already in place  
8 at TVA, regarding welding, it was unnecessary to include  
9 welding under this group. I decided -- I decided to  
10 exclude nothing. I decided to exclude nothing.

11 Now, one other item, before I take the slide off,  
12 before we begin the briefs on the specifics of these  
13 projects and programs.

14 I understand a question has been asked as to  
15 whether the TVA letter of February 17, 1988, supercedes in  
16 some fashion the TVA letter of January 11, 1987.

17 The 1988 letter does not in any way cancel or  
18 supercede the 1987 letter.

19 In other words, the conclusion of the EG&G  
20 evaluation do not change the conclusions of my January, 1987  
21 report, which as you recall involved a description of a  
22 breakdown in several specific areas at Watts Bar. My  
23 opinion has not changed.

24 Now, let me present the first presenter, Mr. Ed  
25 Fuller. Mr. Fuller has 27 years of experience in commercial

1 nuclear power, including engineering, licensing, as well as  
2 operations.

3 Mr. Fuller is a contractor, and I selected him to  
4 lead the important independent group that has been chartered  
5 to develop a plan for the completion and licensing of Watts  
6 Bar.

7

Tape 2 8 STATEMENT OF ED FULLER, CHAIRMAN, WATTS BAR PROGRAM TEAM

9

10 MR. FULLER: Thank you, Mr. White. Is this  
11 microphone working up here?

12 My name is Ed Fuller. I am Chairman of the Watts  
13 Bar Program Team. As Mr. White has already indicated, the  
14 Watts Bar Program Team was established in November of 1987  
15 and we were chartered with the responsibility to determine  
16 any additional activities necessary to achieve licensability  
17 of Watts Bar. And I will say a little bit more about what  
18 that means in a minute.

19 Part of that includes review and assessment of the  
20 Weld Program and the Weld Evaluation Project, and all of the  
21 other activities that TVA has underway with respect to  
22 welding activities.

23 You will hear more about those in a moment. But I  
24 wanted to talk to you first of all about what the Watts Bar  
25 Program Team is all about. And Jim, I apologize. I know



1 you are familiar with our activities through the meetings  
2 that we have had. This is a little repetitious for you, but  
3 some others in the room may not have had the benefit of that  
4 background.

5 Our activity is defined in the Watts Bar Program  
6 Plan which was submitted to you in May of this year. You  
7 responded with a letter in June of this year endorsing the  
8 approach of the Watts Bar Program Plan.

9 So I am just going to pass through in summary  
10 fashion some of the important elements of that plan and how  
11 they relate to the Watts Bar Welding Program and review of  
12 TVA's activities in the Welding Program area.

13 First of all, I want to touch on who we are, who  
14 our team is. Our team is an independent body of people. I  
15 am the Chairman. There are five other members of our team  
16 chosen with varied backgrounds in engineering, construction,  
17 quality assurance, licensing, and a particular topic for  
18 which Watts Bar has been sensitive and that is the  
19 electrical instrumentation and control area.

20 The people on our team report directly to Mr.  
21 White. They were chosen by Mr. White. Their backgrounds  
22 were reviewed with the NRC to judge with reasonable  
23 confidence that they demonstrate sufficient independence  
24 from prior Watts Bar activities, that they would be viewed  
25 with high credibility and high objectivity. That is, they

1 had no prior Watts Bar experience that would cause their  
2 judgment to be questioned. They may have had some  
3 involvement in Watts Bar, but not sufficient that their  
4 judgment would be questioned with that background.

5 As I mentioned, we report to Mr White directly.  
6 And we will be providing a corrective action program and a  
7 nuclear performance plan at the conclusion of our effort  
8 that describes all of the activities that we judge necessary  
9 for the completion of the Watts Bar project.

10 Mr. White will review that program, and it will be  
11 submitted to the Nuclear Regulatory Commission.

12 I have alluded to our responsibility in statement  
13 of who we are. But in summary, our responsibility is to  
14 perform an independent assessment of the licensability of  
15 Watts Bar. That is, defining those additional programs over  
16 and above those already in place that will provide the  
17 reasonable assurance that there are no unidentified  
18 deficiencies that would cause Watts Bar to be in  
19 noncompliance with licensing commitments. That's a  
20 mouthful. What I mean to say is, Watts Bar is indeed  
21 licensable.

22 We will be looking at programs that have been  
23 defined already by TVA. We came into existence in November  
24 of 1987. The Watts Bar line organization had identified at  
25 that point in time and continues to a number of programs to

1 address, identify deficiency. We will be looking at those  
2 programs. The Weld Project is one of those programs that  
3 has been constructed to identify known deficiencies.

4 We will be looking at a number of others: hangar  
5 analysis, conduit supports, cable trace supports, quality  
6 assurance lists, design base line verification. Each of  
7 these are defined programs for which TVA had definitions  
8 underway to some degree.

9 We will be looking at these programs from the  
10 standpoint of have the problems been sufficiently  
11 identified, are there other problems that haven't been  
12 identified that we ought to be looking for, have the  
13 problems been sufficiently bounded so that we know that it  
14 is not more extensive than we have identified, do we have an  
15 adequate understanding of the root cause and therefore is  
16 the corrective action appropriate, and do we have an  
17 adequate documentation of our commitments to fix these  
18 problems?

19 That is essentially our approach towards  
20 corrective actions. We intend to use experts throughout the  
21 industry to look at our problems. Right now we are using on  
22 the order of 20 independent experts -- people from Impel  
23 from Tenera, from Sergeant Lundy, from Gilbert Commonwealth,  
24 from Teledyne. For example, in the Weld Project we're using  
25 Bill Cooper and Don Landers from Teledyne. Most of you that