

*official*

APR 28 1987

Tennessee Valley Authority  
ATTN: ✓ Mr. S. A. White  
Manager of Nuclear Power  
6N 38A Lookout Place  
1101 Market Street  
Chattanooga, TN 37402-2801

Gentlemen:

SUBJECT: MEETING SUMMARY - WATTS BAR, DOCKET NOS. 50-390 AND 50-391

This refers to the management meeting conducted at our request in the Region II office, on March 19, 1987. The meeting was held to discuss and clarify TVA's position on welding issues and the implementation of the August 23, 1985 Confirmation of Action Letter (CAL). A summary of the meeting topics is provided in Enclosure 1 and a list of attendees is shown in Enclosure 2. Licensee handout material is included in Enclosure 3.

It is our opinion that this meeting was beneficial in that we feel it provided both the NRC and TVA a better understanding of the issues.

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 its enclosures will be placed in the NRC Public Document Room.

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

Sincerely,  
**ORIGINAL SIGNED BY**  
**GARY G. ZECH**

Gary G. Zech, Assistant Director,  
Inspection Programs  
Division of TVA Projects  
Office of Special Projects

Enclosures:

1. Meeting Summary
2. Meeting Attendees
3. Licensee Handout Material

cc w/encls 1&2:

- ✓ G. Toto, Site Director  
Watts Bar Nuclear Plant
- ✓ R. W. Cantrell, Acting Director Nuclear  
Engineering
- ✓ R. L. Gridley, Director  
Nuclear Safety and Licensing
- ✓ J. A. McDonald, Site Licensing Manager

bcc w/encls: (See page 2)

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PDR ADOCK 05000390  
● A PDR

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Tennessee Valley Authority

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bcc w/encls 1&2:

J. G. Keppler, OSP

S. D. Ebnetter, OSP

J. A. Zwolinski, OSP

B. D. Liaw, OSP

S. D. Richardson, OSP

S. R. Connelly, OIA

K. P. Barr, OSP/RII

NRC Resident Inspector  
State of Tennessee

bcc w/encls 1, 2 & 3:

NRC Document Control Desk

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SE/Kob fer  
04/23/87

OSP/RII

KBarr  
4/27/87

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ENCLOSURE 1

MEETING SUMMARY

On March 19, 1987, representatives of TVA met with the NRC, at NRC's request, in the Region II office. The basic issues discussed were the improper recertification of welders, other welding concerns, and TVA's responses to the Confirmation of Action Letter (CAL) issued August 23, 1985.

TVA provided a history of the issues resulting from the improper recertification of welders and their corrective action plan. This program included weld record review, weld reinspection and a programmatic review.

TVA then addressed questions raised in the NRC to TVA letter dated July 31, 1986 concerning requirements of the CAL. The questions in the above letter concerned: (1) clarification of commitments from the September 25, 1985 meeting, (2) reinspection of all ASME welds made by uncertified welders, (3) justification for the timeframe covered by TVA's program, (4) reinspection of safety-related AWS welds and (5) adequacy of weld inspections.

The NRC was concerned about the implementation of the welder continuation of certification program in that the program has the welder's supervisor alone, vice the welder and supervisor, signing for performance of welding on the input form that is used to update the welder's record card. It appears that this practice ignores a prime input for the validity of the certification.

In summary, TVA committed to submit a formal response to the questions raised in the NRC to TVA July 31, 1986 letter and to indicate which program will track issues that are not complete.

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ENCLOSURE 2

MEETING ATTENDEES  
(MARCH 19, 1987)

U. S. Nuclear Regulatory Commission

- G. G. Zech, Assistant Director, Regional Inspections, Division of of TVA Projects (DTVAP), Office of Special Projects (OSP)
- B. D. Liaw, Assistant Director, Technical Programs, DTVAP, OSP
- A. F. Gibson, Director, Division of Reactor Safety
- S. A. Elrod, Section Chief (Watts Bar)
- G. Walton, Senior Resident Inspector Construction (Watts Bar)
- J. York, Senior Resident Inspector, Construction (Bellefonte)
- G. K. Hunegs, Project Engineer (Watts Bar)

Tennessee Valley Authority

- R. A. Pedde, Nuclear Project Manager
- J. A. McDonald, Site Licensing Manager
- H. C. Johnson, Site Quality Manager
- C. D. Lundin, Weld Program Manager
- K. Hasting, Supervisor Welding Engineer
- J. R. McGuffey, Consultant

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ENCLOSURE 3

**MEETING WITH THE NRC STAFF**

**ATLANTA, GEORGIA**

**MARCH 19, 1987**

**WELDER RECERTIFICATION  
WATTS BAR NUCLEAR PLANT**



**MEETING WITH THE NRC STAFF**

**ATLANTA, GEORGIA**

**MARCH 19, 1987**

**WELDER RECERTIFICATION  
WATTS BAR NUCLEAR PLANT**



AGENDA:

- o CORRECTIVE ACTION PLAN
  - PROBLEM IDENTIFICATION
  - ELEMENTS OF PLAN
  - RESULTS
  - CONSERVATISMS
- o RECENT RADIOGRAPHY PROBLEM
- o RESPONSES TO QUESTIONS
- o SUMMARY
- o ACTIONS TO BE TAKEN

TVA



## PROBLEM IDENTIFICATION:

### BASIC PROBLEM:

- o IMPROPER RECERTIFICATION OF WELDERS








### CONCERNS:

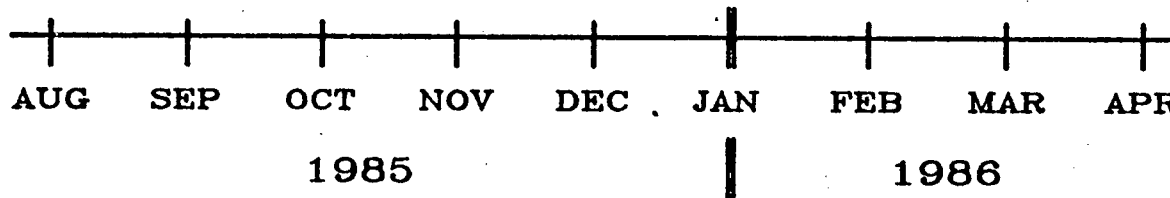
- o PROGRAMMATIC WEAKNESSES
- o UNQUALIFIED WELDERS
- o UNACCEPTABLE WELDS

### CONFIRMATION OF ACTION LETTER:

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# CORRECTIVE ACTION PLAN:

- \* { PROBLEM IDENTIFIED TO TVA  
CONFIRMATION OF ACTION LETTER  
STOP WORK ORDER
-  DEVELOPMENT OF CORRECTIVE ACTION PLAN
-  PROGRAMMATIC REVIEW
-  PROGRAMMATIC ENHANCEMENTS
-  OGC INVESTIGATION
-  { RENEWAL QUALIFICATION TESTING
-  WELD RECORDS REVIEW
-  { WELD REINSPECTION



## PROGRAMMATIC REVIEW:

### RESULTS:

- o PROGRAM MET ALL CODE REQUIREMENTS
- o IMPLEMENTATION PROCEDURES WERE ADEQUATE
- o FAILURES DID OCCUR IN EXECUTION

### ACTIONS:

- o ENHANCED PROCEDURES
- o PROVIDED SUPPLEMENTAL TRAINING
- o REDUCED NUMBER OF WELDERS



## RESULTS OF OGC INVESTIGATION:

- o NO WILLFUL FALSIFICATION SUBSTANTIATED
- o MISINTERPRETATION OF PROCEDURES IDENTIFIED
- o THIRTEEN WELDING FOREMEN RECERTIFIED IMPROPERLY
- o TWO WELDERS RECERTIFIED IMPROPERLY
- o THREE WELDING INSPECTORS INVOLVED
- o TIMEFRAME STARTED GENERALLY JANUARY 1, 1985

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RESULTS OF QUALIFICATION RENEWAL TESTING:

567 WELDERS



----- 30 WELDERS CERTIFIED IN LAST 90 DAYS

----- 4 WELDERS NOT TESTED, MISC REASONS

533 WELDERS



----- 413 WELDERS PASSED TEST ON FIRST ATTEMPT \*

120 WELDERS



----- 83 WELDERS PASSED TEST ON SECOND ATTEMPT \*

37 WELDERS FAILED RENEWAL QUALIFICATION TESTS (7%)



## WELD REEVALUATION:

### OBJECTIVE:

- o TO ASCERTAIN IF THERE WERE UNQUALIFIED WELDERS OR IF THERE WERE UNACCEPTABLE FIELD WELDS ASSOCIATED WITH WELDERS WHO DID NOT RENEW QUALIFICATION

### APPROACH:

- o WELD INSPECTION RECORDS REVIEW (100%)
- o WELD REINSPECTIONS (SAMPLE)

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## REVIEW OF WELD INSPECTION RECORDS:

- o OBJECTIVE: TO ASCERTAIN IF INITIAL WELD REJECTION RATE HAD BEEN NORMAL
- o INCLUDE RECORDS FOR ASME FIELD WELDS BY WELDERS WHO DID NOT RENEW QUALIFICATION AND WELDERS WHO DID NOT RENEW ON FIRST TEST PLATE
- o RESULT: REJECTION RATE WAS COMPARABLE TO THOSE WHO HAD PASSED
- o RESULT: FAILURE OF QUALIFICATION RENEWAL TEST DID NOT CORRELATE WITH UNQUALIFIED WELDING PERFORMANCE

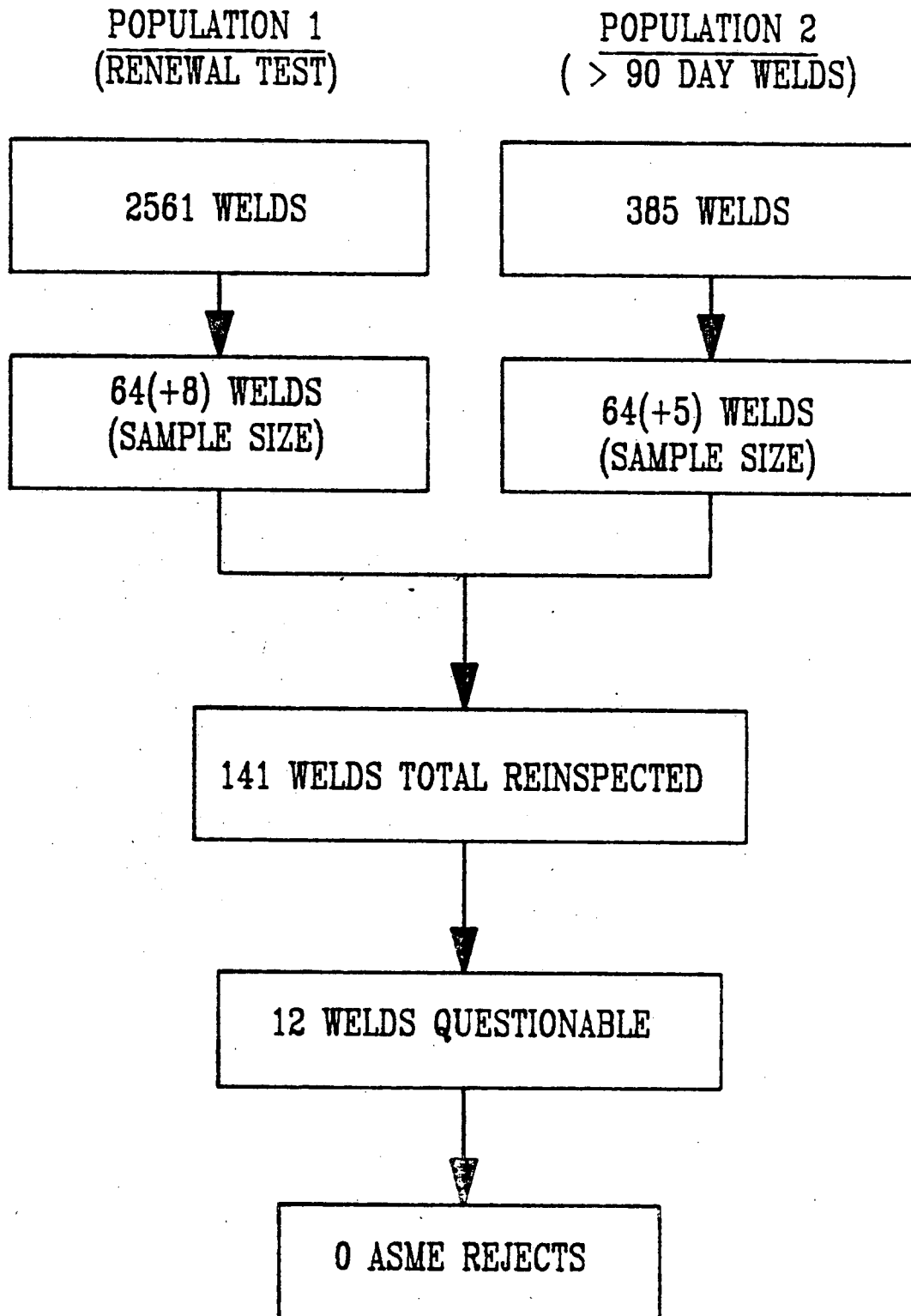
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## WELD REINSPECTION:

- o OBJECTIVE: TO ASCERTAIN IF FINAL ACCEPTED WELDS WERE INDEED ACCEPTABLE
- o ESTABLISH TWO POPULATION SAMPLES DURING TIMEFRAME
- o POPULATION #1: ASME WELDS BY WELDERS WHO DID NOT PASS FIRST REQUALIFICATION ATTEMPT
- o POPULATION #2: ASME WELDS MORE THAN 90 DAYS APART
- o SELECT SAMPLE SIZE BASED ON BINOMIAL STATISTICAL METHODS (NCIG-02)
- o EXPAND SAMPLE SIZE AS MAY BECOME APPROPRIATE
- o USE ORIGINAL INSPECTION CRITERIA
- o USE DIFFERENT INSPECTORS

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RESULTS OF ASME WELD REINSPECTION:

TVA

## SUMMARY OF CONCLUSIONS FROM CORRECTIVE

### ACTION PLAN:

- o SOME IMPROPER WELDER RECERTIFICATION DID OCCUR;  
NO WILLFUL FALSIFICATION INVOLVED
  
- o WELDER RECERTIFICATION PROGRAM MET ALL  
CODE REQUIREMENTS; HOWEVER, ENHANCEMENTS  
WERE APPROPRIATE
  
- o NO IMPACT ON FIELD WELDS FROM IMPROPER  
RECERTIFICATION



## CONSERVATISMS IN CORRECTIVE ACTION PLAN:

- o IMMEDIATE STOP WORK ORDER
- o QUALIFICATION RENEWAL TESTING FOR 100% OF ASME/AWS WELDERS

DIFFICULTY OF TEST WELD

CHECK WELDS BY RADIOGRAPH

- o EXTENSIVE REEVALUATION OF WELDERS WORK

THREE MONTHS MARGIN IN TIMEFRAME

100% REVIEW OF ASME WELD INSPECTION RECORDS IN QUESTION

ALL 124 WELDERS WHO DID NOT PASS FIRST TEST TEST ATTEMPT - NOT JUST 37 WHO FAILED TO RENEW

REVIEW OF ALL WELDS >90 DAYS APART

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## RECENT RADIOGRAPHY PROBLEM:

- o GENERAL PROBLEM OF INTERPRETATION OF RADIOGRAPHS HAS AFFECTED WELDER REQUALIFICATION TESTING
- o AUDIT SHOWED THAT 2 OF 48 RADIOGRAPHS HAVE REJECTABLE INDICATIONS
- o MAY HAVE REINSTATED SOME WELDERS INAPPROPRIATELY
- o GENERAL APPROACH TO NEW PROBLEM:

REEVALUATE ALL ACCEPTED RENEWAL TEST  
RADIOGRAPHS

DETERMINE STATUS OF WELDERS

DETERMINE ACCEPTABILITY OF FIELD WELDS

TREAT NEW FAILURES SAME AS PREVIOUS FAILURES

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**RESULTS TO DATE:**

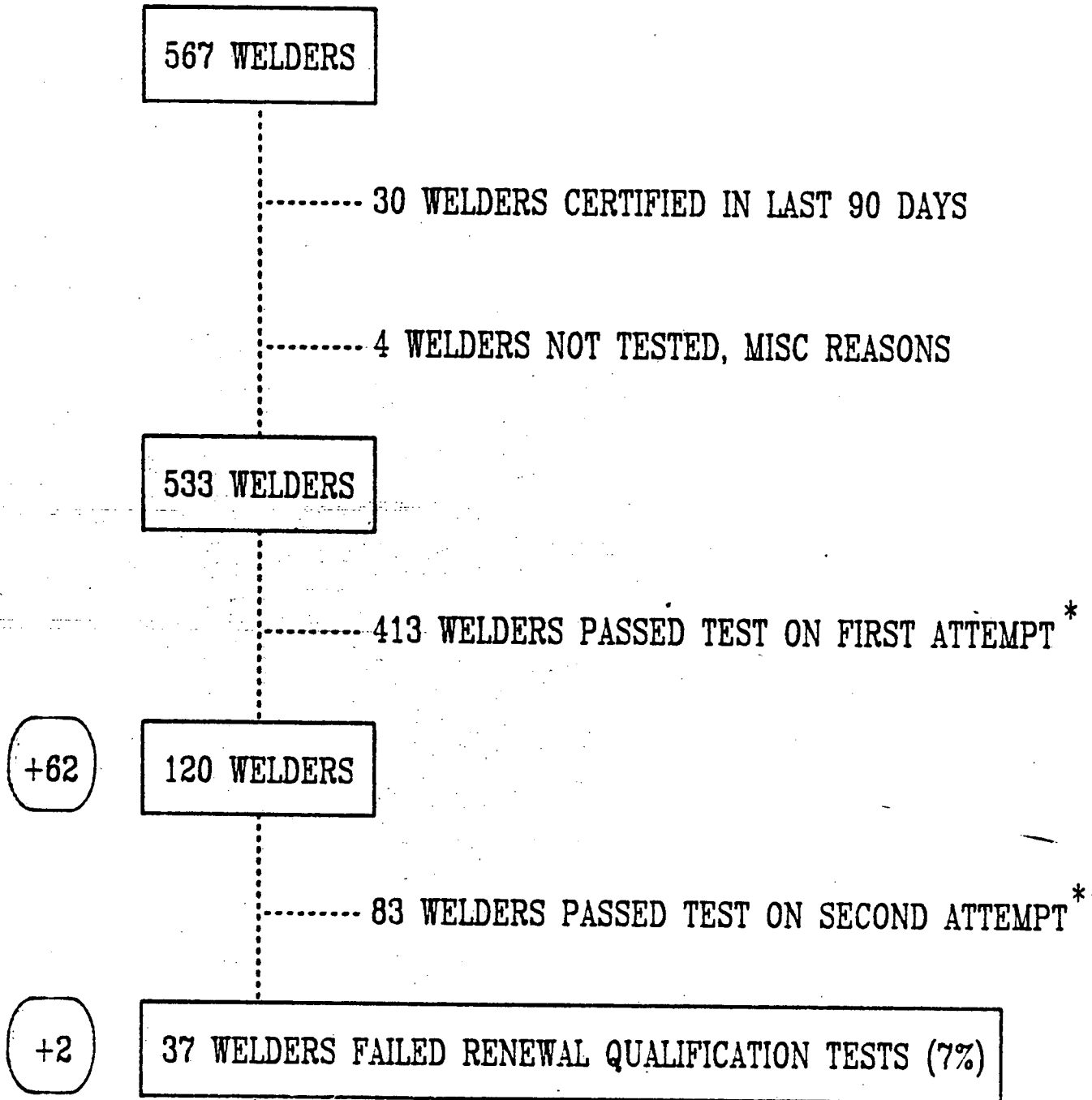
- o 496 WELDERS TEST RESULTS PREVIOUSLY ACCEPTED
- o 64 WELDERS TEST RESULTS NOW DETERMINED TO HAVE BEEN UNACCEPTABLE
- o 53 WELDERS NO LONGER AT ANY TVA NUCLEAR SITE
- o 11 WELDERS STILL AT WATTS BAR SITE; CERTIFICATION RESCINDED



- o 64 WELDERS FIELD WORK REEVALUATION;  
SAME AS FOR PREVIOUS FAILURES:
  - 100% REVIEW OF INSPECTION RECORDS
  - ADDITIONAL SAMPLE REINSPECTION OF ASME FIELD  
WELDS PERFORMED DURING "EXPANDED TIMEFRAME"  
(64 OUT OF 814)
  - 100% REINSPECTION OF ASME FIELD WELDS  
PERFORMED SINCE TIMEFRAME (33 OUT OF 33)
- o WELD RECORDS REVIEW INDICATES WELD REJECT RATE  
COMPARABLE WITH THOSE WHO PASSED
- o WELD REINSPECTION SHOWED NO ASME REJECTS
- o INVESTIGATION OF NEW PROGRAM HAS BEEN COMPLETED

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RESULTS OF QUALIFICATION RENEWAL TESTING:



## RESPONSES TO QUESTIONS:

- o CLARIFICATION OF COMMITMENTS--  
SEPTEMBER 25, 1985 MEETING
- o REINSPECTION OF ALL ASME WELDS BY  
UNCERTIFIED WELDERS
- o JUSTIFICATION FOR TIMEFRAME
- o REINSPECTION OF SAFETY-RELATED AWS WELDS
- o ADEQUACY OF WELD INSPECTIONS



**QUESTION:**

"YOUR JUNE 20, 1986, LETTER ALSO DISCUSSED OUR MEETING IN THE REGIONAL OFFICE ON SEPTEMBER 25, 1985. THE MEETING WAS NOT HELD FOR THE REASONS STATED IN YOUR LETTER, BUT BECAUSE OF THE STATEMENTS MADE BY YOUR CONTRACTOR, QTC, TO CONGRESS RELATED TO LIFTING OF THE STOP WORK ORDER ON WELDING AT WATTS BAR. CHANGES WERE NOT DISCUSSED AT THIS MEETING."

(NRC QUESTION NO. 5)



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CLARIFICATION OF COMMITMENTS

--SEPT. 25, 1985 MEETING:

RESPONSE:

- o PURPOSE OF MEETING  
---STATEMENTS BY QTC TO CONGRESS
- o RELATED TOPICS WERE DISCUSSED
- o REINSPECTION OF WELDS OF IMPROPERLY  
RECERTIFIED WELDERS

SUGGESTION MADE TO RECONSIDER COMMITMENT  
TO REINSPECT ALL SUCH WELDS

"REINSPECT" CHANGED TO "REEVALUATE"

UNDERSTOOD THAT NOT LOOKING FOR 100%  
REINSPECTION

TVA

- o CLARIFICATION LETTER (OCT. 29, 1985) OF  
CORRECTIVE ACTION PLAN

"REINSPECT" CHANGED TO "REEVALUATE"

"REEVALUATE" DEFINED:

1. 100% REVIEW OF INSPECTION RECORDS
2. WELD REINSPECTION

START WITH SAMPLE

EXPAND SAMPLE AS APPROPRIATE

SHOULD HAVE REQUESTED REVISION OF  
CONFIRMATION OF ACTION LETTER

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QUESTION:

"TVA HAS NOT SHOWN THAT ALL WELDS HAVE BEEN OR ARE BEING REINSPECTED FOR WELDERS WHO FAILED THE WELDER RENEWAL QUALIFICATION TEST PROGRAM. SUCH ACTION IS NECESSARY RELATIVE TO ASME WELDING TO SATISFY OUR SEPTEMBER 17, 1985 LETTER."

(NRC QUESTION NO. 1)

**REINSPECTION OF ALL ASME WELDS OF WELDERS  
WHO FAILED RECERTIFICATION TESTING:**

**RESPONSE:**

- o PREVIOUSLY UNDERSTOOD THAT 100%  
REINSPECTION NOT REQUIRED
  
- o QUALIFICATION RENEWAL TESTING DID NOT INDICATE  
A DETERIORATION OF WELDER PERFORMANCE
  
- o RESULTS OF WELD REEVALUATION:  
  
WELD INSPECTION RECORDS REVIEW  
--ONLY FEW DISCREPANCIES  
  
WELD REINSPECTION---NO ASME REJECTS



o ADDITIONAL ACTION WAS TAKEN

FOR 39 WELDERS WHO FAILED, REVIEWED INSPECTION  
RECORDS FOR ALL ASME WELDS

DISCREPANCY RATE FOR WELDERS WHO FAILED TO  
RECERTIFY WAS COMPARABLE TO THOSE WHO PASSED

o NO FUTHER REEVALUATION NECESSARY

TVA

**QUESTION:**

"WE NOTE THAT YOUR PROGRAM ONLY COVERS A TIMEFRAME FROM OCTOBER 1, 1984, TO AUGUST 23, 1985. YOUR SUBMITTALS HAVE NOT JUSTIFIED LIMITING YOUR CORRECTIVE ACTIONS AND EVALUATIONS TO THIS TIMEFRAME."

(NRC QUESTION NO.3)

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## JUSTIFICATION FOR TIMEFRAME:

### RESPONSE:

- o IMPOSSIBLE TO ESTABLISH TIMEFRAME ABSOLUTELY
- o END-DATE FIRMLY ESTABLISHED BY STOP WORK ORDER (AUG 23, 1985)
- o OGC INTERVIEWS INDICATE TIMEFRAME GENERALLY STARTED JAN 1, 1985
- o 3-MONTH MARGIN ADDED ON START-DATE (I.E. BACK UP TO OCT 1, 1984)

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**QUESTION:**

"FAILURE TO CONDUCT ANY REINSPECTION OF SAFETY--  
RELATED AWS WELDS DOES NOT SATISFY THE COMMITMENTS  
OF OUR SEPTEMBER 17, 1985, LETTER. ANY SAMPLING  
PROGRAMS PROPOSED BY TVA MUST FIRST GET NRC  
CONCURRENCE."

(NRC QUESTION NO. 2)



## REINSPECTION OF SAFETY-RELATED AWS WELDS:

### RESPONSE:

- o SAFETY-RELATED AWS WELDS NOT IGNORED
- o AWS WELD RECORDS NOT REQUIRED TO BE TRACEABLE TO SPECIFIC WELDER
- o MAJORITY OF WELDERS WHO PERFORM SAFETY-RELATED AWS WELDING (89%) WERE EVALUATED IN ASME WELD REEVALUATION
- o TECHNICAL ASPECTS OF TVA-AWS WELDING PROGRAM INTENTIONALLY SIMILAR TO ASME WELDING PROGRAM
- o ADDITIONAL CONFIDENCE IN AWS WELDS WILL BE PROVIDED BY TVA WELD EVALUATION PROGRAM



QUESTION:

"IN REFERENCE TO REEVALUATION OF SAFETY-RELATED ACTIVITIES PERFORMED BY QC INSPECTORS INVOLVED IN FALSIFICATION OF RECORDS, YOUR SUBMITTALS DO NOT ADDRESS A PROGRAM TO DETERMINE THE ADEQUACY OF PREVIOUSLY ACCEPTED ITEMS IN EITHER THE ASME OR AWS WELDING AREAS. WE UNDERSTAND THE QC INSPECTORS INVOLVED IN FALSIFICATION CONDUCTED NUMEROUS SAFETY-RELATED INSPECTIONS."

(NRC QUESTION NO.4)



## ADEQUACY OF PREVIOUSLY INSPECTED WELDS:

### RESPONSE:

- o NO WILLFUL FALSIFICATION SUBSTANTIATED
- o OGC INVESTIGATION REVEALED ONLY  
3 INSPECTORS INVOLVED
- o TVA WELD EVALUATION PROGRAM DATA WAS REVIEWED:  
AT THAT TIME ABOUT 10,000 WELDS (INVOLVING  
ABOUT 200 INSPECTORS) HAD BEEN REINSPECTED
- o FOUND DISCREPANCY RATES OF 0%, 0.4%, 7.6% FOR  
THE THREE INSPECTORS INVOLVED
- o 7.6%—INSPECTOR REMOVED FROM DUTY.
- o EVALUATION OF INSPECTION ADEQUACY WILL  
BE DETERMINED BY TVA WELD EVALUATION PROGRAM



**SUMMARY:**

- o IMPROPER RECERTIFICATION DID OCCUR IN FEW CASES;  
NOT INTENTIONAL
- o EXTENSIVE INVESTIGATION AND CORRECTIVE ACTIONS  
IMPLEMENTED; INCLUDED NUMEROUS CONSERVATISMS
- o PROGRAM MET ALL CODE REQUIREMENTS; HOWEVER  
ENHANCEMENTS WERE APPROPRIATE
- o WELD REEVALUATION INDICATED FAILURE TO MAINTAIN  
PROPER WELDER CERTIFICATION DID NOT CORRELATE  
WITH QUALITY OF FIELD WELDS
- o IMPACT OF RADIOGRAPHIC INTERPRETATIONS  
ON WELDER QUALIFICATION RENEWAL HAS BEEN  
ADDRESSED APPROPRIATELY



ACTIONS TO BE TAKEN:

- o PROVIDE REVISED FINAL REPORT ON WELDER  
RECERTIFICATION ISSUE
  - REQUEST MODIFICATION OF CONFIRMATION OF  
ACTION LETTER
  - DOCUMENT RESPONSES TO QUESTIONS
  - DOCUMENT FINAL RESULTS OF RECENT RADIOGRAPHY  
PROBLEM AS IT RELATES TO WELDER  
QUALIFICATION RENEWAL
- o REQUEST CLOSURE OF CONFIRMATION OF ACTION LETTER

