

SEP 23 1992

Official Copy

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

Tennessee Valley Authority
ATTN: Dr. Mark O. Medford, Vice President
Nuclear Assurance, Licensing & Fuels
3B Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

Gentlemen:

Subject: MEETING SUMMARY - WATTS BAR UNIT 1

This letter refers to two meetings conducted in the Region II office on September 9, 1992. The purpose of the first meeting was to discuss Watts Bar Readiness for Unit 1 Pre-Operational Testing. The purpose of the second meeting was to discuss inaccuracies in preventative maintenance records. NRC requested additional information regarding management actions following the discovery that certain preventative maintenance records were found to be inaccurate. TVA agreed to provide the information at a later date. A list of attendees for each meeting and a copy of the TVA handout for the Pre-Operational Testing Meeting are enclosed.

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 E. Merschoff)

Ellis W. Merschoff, Director
Division of Reactor Projects

Enclosures:

1. List of Attendees (Pre-Operational Testing)
2. Presentation Summary (Pre-Operational Testing)
3. List of Attendees (Inaccurate PM Records)

cc w/encls: (See page 2)

9210060015 920923
PDR ADOCK 05000390
A PDR

IA3

IE01

Tennessee Valley Authority

2

cc w/encls:

J. B. Waters, Director
Tennessee Valley Authority
ET 12A
400 West Summit Hill Drive
Knoxville, TN 37902

D. Nunn, Vice President,
Tennessee Valley Authority
3B Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

W. J. Museler
Vice President, Watts Bar Site
Tennessee Valley Authority
P. O. Box 800
Spring City, TN 37381

M. J. Burzynski, Manager
Nuclear Licensing and
Regulatory Affairs
Tennessee Valley Authority
3B Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

G. L. Pannell
Site Licensing Manager
Watts Bar Nuclear Plant
Tennessee Valley Authority
P. O. Box 800
Spring City, TN 37381

TVA Representative
Tennessee Valley Authority
11921 Rockville Pike
Suite 402
Rockville, MD 20852

General Counsel
Tennessee Valley Authority
400 West Summit Hill Drive
ET 11B 33H
Knoxville, TN 37902

The Honorable Robert Aikman
County Executive
Rhea County Courthouse
Dayton, TN 37321

The Honorable Johnny Powell
County Executive
Meigs County Courthouse
Decatur, TN 37322

M. H. Mobley, Director
Division of Radiological Health
T.E.R.R.A. Building, 6th Floor
150 9th Avenue North
Nashville, TN 37219-5404

State of Tennessee

A. Harris

bcc w/encls: (See page 3)

SEP 23 1992

Tennessee Valley Authority

3

bcc w/encls:

E. W. Merschoff, DRP/RII
J. R. Johnson, DRP/RII
K. P. Barr, DRP/RII
B. M. Bordenick, OGC
J. B. Brady, DRP/RII
M. S. Callahan, GPA/CA
R. D. Gibbs, DRP/RII
F. J. Hebdon, NRR
G. C. Lainas, NRR
H. H. Livermore, DRP/RII
P. S. Tam, NRR
J. F. Wechselberger, EDO
NRR Document Control Desk

NRC Resident Inspector
U. S. Nuclear Regulatory Commission
Route 2, Box 700
Spring City, TN 37381

*FOR PREVIOUS CONCURRENCE - SEE ATTACHED COPY

RII:DRP

RII:DRP

RII:DRP

RII:DRP

*RGibbs:vyg

09/ /92

*KBarr

09/ /92

*BWilson

09/ /92

*JJohnson

09/ /92

Tennessee Valley Authority

3

bcc w/encls:

E. W. Merschhoff, DRP/RII

J. R. Johnson, DRP/RII

K. P. Barr, DRP/RII

B. M. Bordenick, OGC

J. B. Brady, DRP/RII

M. S. Callahan, GPA/CA

R. D. Gibbs, DRP/RII

F. J. Hebdon, NRR

G. C. Lainas, NRR

H. H. Livermore, DRP/RII

P. S. Tam, NRR

NRR Document Control Desk

J. W. Chiselberg

NRC Resident Inspector

U. S. Nuclear Regulatory Commission

Route 2, Box 700

Spring City, TN 37381

RII:DRP
RJH
RGibbs:vyg
09/22/92

RII:DRP
RJH *Folz*
KBarr
09/22/92

RII:DRP
[Signature]
BW:LSCH
09/22/92

RII:DRP
[Signature]
JJJohnson
09/23/92

ENCLOSURE 1

LIST OF ATTENDEES

Name

Title

NRC Staff

L. Reyes	Deputy Regional Administrator, Region II, (RII)
E. Merschhoff	Director, Division of Reactor Projects, RII
B. Wilson	Branch Chief, Division of Reactor Projects, RII
K. Barr	Section Chief, Reactor Projects Section 4B, Watts Bar, RII
F. Hebdon	Director, Project Directorate II-4, Office of Nuclear Reactor Regulation
A. Gibson	Director, Division of Reactor Safety, RII
G. Humphrey	Resident Inspector, Watts Bar
C. Julian	Engineering Branch Chief, Division of Reactor Safety, RII
N. Merriweather	Reactor Inspector, RII
C. Smith	Reactor Inspector, RII
P. Taylor	Reactor Inspector, RII
G. Walton	Senior Resident Inspector, Watts Bar, RII

TVA Staff

R. Bellamy	Start-up Manager, Watts Bar
W. Elliott	Engineering Manager, Watts Bar
N. Kazanas	Vice President, Completion Assurance
D. Moody	Plant Manager, Watts Bar
B. Museler	Vice President, Watts Bar Site
D. Nunn	Vice President, Nuclear Production
G. Pannell	Site Licensing Manager, Watts Bar
R. Purcell	Start-up and Test Manager, Watts Bar
H. Weber	Engineering and Modifications Manager, Watts Bar

NRC REGION II MEETING

SEPTEMBER 9, 1992

1-3 PM

ATLANTA

WATTS BAR NUCLEAR PLANT

CONSTRUCTION COMPLETION

AND

TEST PROGRAM

UPDATE

AGENDA

Topic	Presenter	Pg
Remarks	NRC / TVA	
Introduction (5 Min.)	Bill Museler	2
NRC Concerns (20 Min.)	Bill Museler Henry Weber Rick Purcell Mike Bellamy	4
Objectives Of The Test Program (2 Min.)	Henry Weber	8
Status And Results Of Test Program (10 Min.)	Mike Bellamy	9
Test Program Assessments And Improvements (5 Min.)	Mike Bellamy	12
Completion Assurance Verification (5 Min.)	Nick Kazanas	13
Conclusion (5 Min.)	Bill Museler	15

INTRODUCTION

- Review Of June 9th Meeting On Watts Bar Nuclear Plant Startup Program
 - Items Covered
 - System Completeness At Time Of Test Start (Punchlist)
 - Plant Participation In The Test Program
 - Carefully Monitored Test Activities Using Non-safety Related Systems
 - Status Of Electrical Milestone Activities
 - QA Overview Of The Testing Activities
 - NRC Concerns
 - Design And Modifications Changes Potentially Invalidating Preoperational Tests
 - Complete NRC Reviews Of The Startup Program And Initial Preoperational Test Procedures
 - TVA Readiness To Begin Testing

INTRODUCTION

Continued

- Major Developments Since The Last Meeting
 - Three Months Of Non-safety Related System And Component Tests Have Progressed Well
 - The Test Program Is Sound And Effective
 - Systems Are Being Turned Over For Testing Physically Complete (More Than Usual)
 - NRC Reviews And Internal Reviews (Self Assessments And Quality Assurance) Have Validated Program Adequacy
 - TVA Delayed The Safety Related Testing Schedule To Factor In Program Enhancements
 - Design And Modifications To Systems Once Acceptance Tests Have Started Have Been Minimal (Primarily Involving Resolutions of Test Deficiencies)
 - Only One Significant Change To System Design
 - NRC Identified Concerns During The Review Of System 211 (6.9 Kv Shutdown Power) Procedure
- Purpose Of This Meeting
 - Address NRC Concerns
 - Review TVA Readiness To Begin Safety Related Testing
 - Obtain Agreement To Begin Safety Related (Preoperational) Testing Subject To NRC Review Of :
 - Revised Preoperational Test 211 (Minor Changes Only)
 - Revised SPAE (System Plant Acceptance Evaluation) Package On System 211 To Be Provided To The NRC On 9/11/92
 - Deferred Punchlist Items

NRC CONCERNS
(Preoperational Test 211 Review)

- Readiness To Test
- Test Boundaries
- Test Control

NRC CONCERNS
Continued

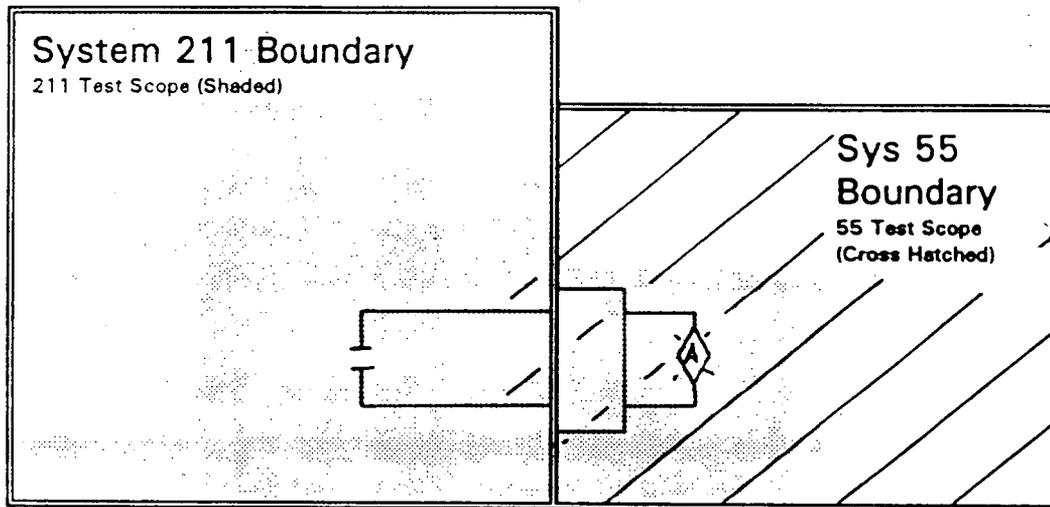
- Readiness To Test
 - Prior To The Start Of System Testing, All Punchlist Items Are Closed, Deferred, Or Test Excepted
 - To Date The Only Modifications Implemented After Acceptance Tests Have Started Have Been Required To Resolve System Test Deficiencies (On Systems Tested To Date No Design Changes Have Been Required Except For Test Generated Changes)
 - All Non System, Non Area, Punchlist Items Will Be Closed Or Deferred (per SMP-4) Prior To Starting Safety Related Testing
 - Senior Site Management Is Reviewing The Non-Administrative Deferral Justifications. Examples Are:
 - QA Records CAP
 - Equipment Qualification
 - Certain Modifications To Systems Tested Will Require Retest Following The Completion Of The Modifications
 - Annunciator Upgrades
 - Computer Inputs
 - Certain Unit Two Control Room Upgrade Modifications (Others Will Be Complete Prior to Unit One Testing)

NRC CONCERNS

Continued

- Testing Annunciator Circuits In System 211
 - Annunciator Test Schedule
 - Completion Of Design and Upgrade Prevented Early Annunciator System Testing (Scheduled To Complete In November 1992)
 - Initial Plan Was To Test Through To Window In System Tests And Retest As Required Upon Completion Of System 55

Annunciator Test Plan



- Preoperational Test 211 Will Test The Complete Annunciator Circuit To The Annunciator Window. Acceptance Test 55 Will Retest The Annunciator Circuit To Overlap The Portion Affected By The Upgrade
 - Test Engineer Verified Annunciator Circuit To The Window Via Design Documents To Ensure That Preoperational Test 211 Performs A Valid Test
- Preoperational Test 211 Has Been Clarified To State That Preoperational Test 55 Will Retest The Annunciator Circuit Beyond The System 211 Boundary
- Testing Of Annunciators For Other Systems Will Be Performed In A Similar Manner

NRC CONCERNS
Continued

- Test Control
 - Potential Violation Identified 390/92-23
 - TVA Has Verified, Following The Inspection, That Design Document Support For The "As-Built" Plant And For The Test Procedures Does Exist, However:
 - Some Design Document Errors Exist
(But Do Not Prevent Adequate Procedure Development)
 - TVA Design Document Process Is Complex But Workable
(As Evidenced By NRC Agreement That Preoperational Test 211 Correctly Reflects The System Design)
- Design Document Issues On Preoperational Test 211 Have Been Reviewed With Site Residents

OBJECTIVES OF THE TEST PROGRAM

On A System Basis:

- Verify Adequacy Of Design and Construction via Testing
- Verify Design Completion Using The SPAE (System Plant Acceptance Evaluation) Process
- Verify Construction Completion By Documentation Review And Walkdown
- Maximize Use Of Plant Personnel

STATUS OF THE TEST PROGRAM

- **Component Testing**
 - 16 Systems Have All Or Some Components Tested
 - 2127 Component Tests Have Been Completed
 - Problems Discovered And Corrected By The Electrical Component Test Program Include:
 - Wiring Errors (4 To Date)
 - Hardware Deficiencies (eg: Expansion Joints, Breakers)
 - Drawing Deviations (eg: References, Identifiers)
 - Minor Maintenance And Replacement Requirements (Broken Covers, Missing Labels, Paint)
- **System Testing**
 - 7 Systems Have Completed SPAE Packages Required for System Testing
 - Acceptance Tests Have Started On Four Non- Safety Related Systems (All Four Have Been Completed)
 - One Safety Related System Test Procedure Has Completed The NRC Review Process, and All Modification Field Work Is Complete
 - One Safety Related Test Procedure is Ready To Be Submitted To The NRC For Review

STATUS OF THE TEST PROGRAM
Continued

- Turnover To Plant
 - 4 Systems Have Been Turned Over To The Plant
 - 500 Kv Switchyard
 - 24 Kv Power
 - 6.9 Kv Unit Power
 - 500 Kv Switchyard Conduit

RESULTS OF THE TEST PROGRAM

- Acceptance Test Program Results
 - Tests Have Gone As Expected
 - Test Changes Required During Performance Of The 4 Completed Tests (6.2 % of Steps Affected)
 - 21 Non-intent Changes
 - Updated Drawing Revision Level At Test Start
 - Typo On Component Location Or Identification
 - Incorporated Additional Precautions As A Lesson Learned From A Previous Test
 - 2 Intent Changes
 - Added Acceptance Criteria For Manual Bus Transfer
 - Deleted Steps For Verification Of Annunciation Due To Error In Procedure
 - Deficiency Notices Written During Performance Of The 4 Completed Tests
 - Only One Significant Deficiency
 - 8 Circuits Required Modification
 - Minor Deficiencies
 - 8 Required Minor Maintenance Or Replacement Of Fuses, Relays Or Breakers
 - 4 Were Corrected By Procedure Changes
 - 2 Other
- In Summary, The Test Program Is Successfully Accomplishing The Objectives

TEST PROGRAM ASSESSMENTS AND IMPROVEMENTS

- Site Wide Lessons Learned Effort
 - Remaining Work Identification Now Occurs Earlier In The Process
 - Initiatives Developed To Reduce Field Design Changes
 - Streamlined Design Change Process To Better Support System Completion Process (Partial Closures Issue)
- Internal Startup Self-assessment Using INPO Guides
 - Retest Instructions Are Being Clarified
 - Use Of Test Deficiencies In Lieu Of Adverse Condition Documentation Clarified (Test Deficiencies Are Not Substitutes For Adverse Condition Documents)
 - Scope Boundary Process Improved
 - Test Procedure Reviewer Qualification Documentation Improved
 - Requirement To Obtain Startup Engineer's Signature On Work Documents Will Be Clarified

COMPLETION ASSURANCE VERIFICATION

- Status
 - 70 Monitorings Performed Resulting In 8 FIR's And 13 COT's Which Were Resolved With Program Improvements
 - SPAE Assessment Identified A Number Of Concerns That Strengthened The Controls For:
 - Advanced Authorization
 - Documentation Of Partial Closure
 - Assessment Of Readiness To Begin Safety Related Preoperational Tests Evaluated 14 Management Areas And Found Them Adequate
 - Some Minor Weaknesses Were Found And Corrected
 - PAC/AQ Review Of System 211 (VSR) Is In Progress
 - Extensive Walkdowns
 - Review Of SPAE, Calculations, Procedures, Setpoints, Drawings, SQN Issues, Employee Concerns, And System Waterfall Logic
 - Review Is Finding A Limited Number Of Potential Problems For System 211 Which Are Being Corrected (No Significant Problems Are Anticipated)

COMPLETION ASSURANCE VERIFICATION
Continued

- Overall Conclusions

- The Results Of Monitoring, Assessments, PAC/AQ Reviews, And Procedure Reviews Indicate That The Startup Test Program Is Adequate and That Safety Related Preoperational Testing Can Begin.
- The Startup Organization Is Adequately Staffed, Well Oriented To The QA Program, Qualified, Experienced, And Capable
- Weaknesses Identified Earlier With The Program Have Been Resolved And The Program Strengthened
- QA And PAC/AQ Will Continue To Review And Monitor Startup Activities

CONCLUSIONS

- Three Months Of Continuous Testing Confirm The Completeness Of The Engineering And Construction Process And The Adequacy Of The Test Program

- Internal And External Assessments And Experience To Date Have Provided Program Upgrades And Enhancements

- The NRC Concerns Identified During The Preoperational Test 211 Audit Represent Neither A Programmatic Breakdown Nor Significant Technical Errors

- The Preoperational Test Program Is Sound And It Should Proceed

- TVA Is Prepared To Begin Safety Related System Testing On The Following Basis:
 - NRC Comments On Preoperational Test 211 Have Been Responded To
 - MTS Deferrals Have Been Significantly Reduced And Remaining MTS Items Are Appropriate
 - System 211 SPAE Assessment Resolving TVA And NRC Comments

ENCLOSURE 3

LIST OF ATTENDEES

Name

Title

NRC Staff

L. Reyes	Deputy Regional Administrator, Region II, (RII)
E. Merschoff	Director, Division of Reactor Projects, RII
B. Wilson	Branch Chief, Division of Reactor Projects, RII
K. Barr	Section Chief, Reactor Projects Section 4B, Watts Bar, RII
F. Hebdon	Director, Project Directorate II-4, Office of Nuclear Reactor Regulation
G. Jenkins	Director, Enforcement and Investigation Coordination, RII
G. Walton	Senior Resident Inspector, Watts Bar, RII

TVA Staff

N. Kazanas	Vice President, Completion Assurance
B. Museler	Vice President, Watts Bar Site
D. Nunn	Vice President, Nuclear Production