Official Copy

June 8, 1995

See Reports

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

SUBJECT: MEETING SUMMARY - WATTS BAR - TO DISCUSS PLANT STATUS AND ASSOCIATED ON-GOING ACTIVITIES

Gentlemen:

This letter refers to the management meeting conducted at our request at the Region II office in Atlanta, Georgia on May 24, 1995. The purpose of the meeting was to discuss with you the Watts Bar plant status and associated activities.

It is our opinion that this meeting was beneficial and provided a better understanding of TVA's activities associated with the Watts Bar facility. It was determined that the next management would be held at the Watts Bar site in early July 1995. This meeting will be the subject of separate correspondence to announce it formally. At this management meeting the following are tentatively planned as agenda items:

- Discussion of the historical perspective section of the NRC Quality Assessment of Watts Bar. Although this document is not yet completed, portions of it discussed will be docketed in draft form if discussed at the meeting. In a similar vein, TVA should be prepared to discuss the quality assurance portion of their reasonable assurance assessment.

- Discussion of where Watts Bar stands on preparation for implementation of new maintenance rule.

- Status of CAPs and SPs.

- Resolution of electrical issues - status of corrective actions.

- Discussion of the readiness to conduct HFT 2.

In accordance with Section 2.790 of the 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 Public Document Room.

IE05

IE45

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

Sincerely,

(Original signed by J. Jaudon)

Johns P. Jaudon, Deputy Director
TVA Construction
Division of Reactor Projects

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

Enclosures: 1. List of Attendees
2. Presentation Summary

cc w/encls: (See page 2)

cc w/encls:
Mr. O. J. Zeringue
Senior Vice President
Nuclear Operations
Tennessee Valley Authority
3B Lookout PL
1101 Market ST
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Dr. Mark O. Medford, Vice Pres.
Engineering & Technical Services
Tennessee Valley Authority
3B Lookout Place
1101 Market Street
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Mr. D. E. Nunn, Vice Pres.
New Plant Completion
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Mr. J. A. Scalice, Site Vice Pres.
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TVA Representative
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The Honorable Robert Aikman
County Executive
Rhea County Courthouse
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The Honorable Garland Lanksford
County Executive
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Mr. M. H. Mobley, Director
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Distribution w/encls: (See page 4)

Distribution w/encls:
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U.S. Nuclear Regulatory Commission
Watts Bar Nuclear Plant
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OFFICIAL RECORD COPY DOCUMENT NAME: G:\MTG-SUM.M24

LIST OF ATTENDEES

Name	Title
NRC Staff	
W. Russell	Director, Office of Nuclear Reactor Regulation (NRR)
S. Ebneter	Regional Administrator, Region II (RII)
J. Jaudon	Deputy Director, Division of Reactor Projects (DRP), RII
F. Hebdon	Director, Project Directorate II-4, NRR
P. Fredrickson	Chief, Construction Branch, DRP, RII
J. Julian	Chief, Startup Branch, DRP, RII
P. Tam	Senior Project Manager, PD, II-4, NRR
N. Norkin	Chief, Special Inspection Section, NRR
M. Peranich	Senior Project Engineer, DRP, RII
P. Vandoorn	Senior Resident Inspector, Operations, DRP, RII
G. Walton	Senior Resident Inspector, Construction, DRP, RII
T. D'Angelo	Reactor Operations Engineer, NRR
TVA Staff	
O. Kingsley	President and Chief Nuclear Officer
M. Medford	Vice President, Engineer and Technical Services
O. Zeringue	Senior Vice President, Nuclear Operations
J. Scalice	Vice President, Watts Bar Site (WB)
R. Baron	Manager, Site Nuclear Assurance and Licensing
D. Kehoe	Manager, Site Quality
B. Schofield	Manager, Site Licensing
R. Purcell	Plant Manager, WB
R. Mende	Manager, Operations, WB
M. Bajestani	Manager, Startup & Test Program
W. Elliott	Manager, Site Engineering
P. Pace	Manager, Compliance Licensing
T. Capozzi	Project Manager, PAC/AQ, WB
L. Spiers	Project Manager, Nuclear Assurance
K. Brown	Senior Electrical Engineer, WB
R. Summitt	Manager, Risk Assessment, WB
J. Yates	Milestone Coordinator, Hot Functional Test 2
E. Gamble	Shift Operations Supervisor
B. Martocci	Manager, Public Relations, WB
M. Philps	Engineer, Reasonable Assurance Team, WB
M Salley	Senior Engineering Specialist, WB

Enclosure 1

50-390 TVA WATTS BAR 1

MEETING SUMMARY - TO DISCUSS PLANT STATUS AND ASSOCIATED ON-GOING ACTIVITIES

REC'D W/LTR DTD 06/08/95....9506190373

NRC/TVA

MANAGEMENT MEETING

MAY 24, 1995

Enclosure 2

AGENDA

MAY 24, 1995

I.	INTRODUCTION	J. SCALICE
II.	CONSTRUCTION COMPLETION	W. ELLIOTT
	- FIRE PROTECTION/THERMO-LAG	
	- CABLE REPAIR STATUS	K. BROWN
	- CAP/SP COMPLETION	
III.	OPERATIONS	R. PURCELL
	- HFT2 PREPARATIONS	
	- SURVEILLANCE PROGRAMS	
IV.	LICENSING	B. SCHOFIELD
	- OPEN ITEMS	
	- CERTIFICATION PROCESS	
	- LICENSING PLAN	
	- GENERIC SAFETY ISSUE REVIEW	
V.	REASONABLE ASSURANCE	R. BARON
VI.	QUALITY ASSURANCE	D. KEHOE
VII.	CLOSING REMARKS	J. SCALICE

I. INTRODUCTION

J. SCALICE

II. CONSTRUCTION COMPLETION

W. ELLIOTT

FIRE PROTECTION/THERMO-LAG

- OVERALL STATUS

  - SAFE SHUTDOWN ANALYSIS AND IDENTIFICATION OF MANUAL ACTIONS COMPLETE
  - REVISION 1 OF FIRE PROTECTION REPORT SUBMITTED APRIL 27, 1995
  - REVISION 2 OF FIRE PROTECTION REPORT SCHEDULED JUNE 1, 1995
  - IMPLEMENTING PROCEDURES IN JUNE 1995
  - OPERATOR TRAINING BY EARLY JULY 1995
  - ON SCHEDULE TO SUPPORT JULY 10, 1995, NRC REVIEW

- TOPICS FOR DISCUSSION

  - CARBON DIOXIDE SUPPRESSION SYSTEM
  - REACTOR COOLANT PUMP OIL COLLECTION SYSTEM
  - THERMO-LAG STATUS
  - DIESEL FIRE PUMP

CARBON DIOXIDE (CO_2) SUPPRESSION SYSTEMS

- ADEQUACY OF CARBON DIOXIDE SYSTEM

- DISCUSSION
  - ORIGINAL DESIGN AND INSTALLATION TO 1973 NFPA CODE
  - CO_2 ACCEPTANCE CRITERIA UPGRADED

ROOM	ORIGINAL CRITERIA	UPGRADED CRITERIA	1995 TEST	RESULTS
DIESEL ENGINE ROOM	• SURFACE FIRE • 34% IN 1-MIN • NO SOAK TIME	• SURFACE FIRE AND ROTATING ELEC. EQUIP • 34% IN 1-MIN • HOLD 30% FOR 20-MIN	• 40% IN 1-MIN • HELD 38% FOR 20-MIN	ACCEPTABLE TEST
AUXILIARY INSTRUMENT ROOM	• DEEP SEATED FIRE • ACHIEVE 30% IN 2-MIN • ACHIEVE 50% IN 7-MIN • HOLD 50% FOR 10-MIN	• DEEP SEATED FIRE • ACHIEVE 30% IN 2-MIN • ACHIEVE 50% IN 7-MIN • HOLD 45% FOR 15-MIN	• ACHIEVED 30% IN 1.5 MIN • ACHIEVED 50% IN 3-MIN • HELD 42% FOR 15-MIN	• INCREASED DISCHARGE TIME 12-SEC • ESTIMATE 45% FOR 15-MIN

  - BASED ON IE NOTICE 92-28 COMPARED WBN INSTALLED SYSTEM TO 1986 SANDIA TEST
  - 1995 PREOP TEST
    - FULL SCALE DUMP ON MOST DEMANDING ROOM OF EACH TYPE
    - PERFORMED DOOR FAN TEST ON REMAINING SIMILAR ROOMS
  - DISCUSSED WITH NRC STAFF ON MAY 17, 1995
  - RESPONSE TO RAI IN FINAL REVIEW

REACTOR COOLANT PUMP OIL COLLECTION SYSTEM

- ADEQUACY OF COLLECTION BASIN
- OIL ENTERING RAD WASTE SYSTEM
- REQUIRED FOR APPENDIX R
  - PROTECTED WITH AUTO DETECTION AND SUPPRESSION
  - EACH RCP EQUIPPED WITH COLLECTION BASIN
    - SIZED TO HANDLE MAXIMUM LEAKAGE
    - HARD PIPED TO CLOSED AND VENTED SUMP
- OIL LOSS
  - MINOR LEAKAGE
    - SYSTEM ROUTINELY HANDLES
  - MODERATE LEAKAGE
    - SYSTEM CAN ACCOMMODATE
    - FREQUENT DEMINERALIZER BED CHANGES
  - EXCESSIVE LEAKAGE
    - ISOLATE AND CONTAIN IN SUMP
- SUMMARY
  - DISCUSSED ISSUE WITH STAFF MAY 22, 1995
  - RAI RESPONSE IN FINAL REVIEW

THERMO-LAG REDUCTION EFFORT RESULTS
(APPROXIMATE QUANTITIES)

COMMODITY	INITIAL DESIGN FOOTAGE	FOOTAGE REDUCTION	FINAL DESIGN FOOTAGE REMAINING
CONDUIT	5700	900 (17 JBs)	4800
CABLE TRAY	2400	1900	500
TOTAL RACEWAY	8100	2800	5300

- REDUCTIONS ACHIEVED THROUGH PLANT MODIFICATIONS
- MINIMAL IMPACT ON OPERATOR ACTIONS
  - TOTAL OF 12 ACTIONS FOR SPECIFIC FIRE LOCATIONS ADDED
  - MAXIMUM OF 5 ACTIONS OF THE 12 IN A SINGLE LOCATION
  - ALL BUT 1 OF 12 ACTIONS ARE REQUIRED AT 2 HOURS OR GREATER

- CURRENT INSTALLATION STATUS
  - CONDUIT WRAP APPROXIMATELY 43% COMPLETE
  - TRAY WRAP APPROXIMATELY 28% COMPLETE

DIESEL FIRE PUMP

- RECOGNIZED NEED FOR ENHANCEMENT IN PUMPING SYSTEM DIVERSITY

- NEW PUMP PROVIDES SYSTEM DIVERSITY

  - POWER
  - WATER SUPPLY

- PUMP MEETS NFPA CODE REQUIREMENTS

- SIZED FOR LARGEST SAFETY-RELATED FIRE

- REDUCED THERMO-LAG QUANTITY

- INSTALLATION TO BE COMPLETED BEFORE FUEL LOAD

CABLE DAMAGE AT TERMINATIONS AND SPLICES

BACKGROUND

- DAMAGE FOUND AT SPLICES AND TERMINATIONS
- NICKS, CUTS, RING CUTS AND ABRASIONS
- DAMAGE THE RESULT OF TERMINATION/SPLICING OR EQUIPMENT MAINTENANCE
- CONCERN FOR IMPACT OF INVASIVE REPAIRS ON SYSTEM TESTING
- DEVELOPED HEAT-SHRINKABLE RAYCHEM TAPE (NWRT) FOR SMALL WIRES
- UPGRADING QUALIFICATION OF NJRT TAPE TO MEET WBN REQUIREMENTS
- QUALIFICATION TESTS FOR BOTH TAPES UNDERWAY AT TVA

CABLE DAMAGE AT TERMINATIONS AND SPLICES (CONTINUED)

RESULTS OF INSPECTIONS TO DATE

- SPECIAL TRAINING PROVIDED TO ENGINEERS DOING INSPECTION

- SUMMARY OF VISUAL INSPECTIONS - ALL CATEGORIES

INSPECTION CATEGORY	NO. OF CONDUCTORS	PERCENT OF POPULATION
No damage	2409	80.8
Cosmetic "damage"	286	9.6
Partial-wall damage requiring repair	274	9.2
Through-wall damage	12	0.4
TOTAL	2981	100.0

CABLE DAMAGE AT TERMINATIONS AND SPLICES (CONTINUED)

- EVALUATION BY VOLTAGE LEVEL

INSPECTION CATEGORY	TOTAL NO.	PARTIAL-WALL	THROUGH-WALL
V1/V2 (visual)	595	4 (0.7%)	0
V3	2195	235 (10.7%)	12(0.5%)
V4	191	35 (18%)	0
V1/V2 (X-Ray)	236	2 (0.9%)	0

- BULK OF DATA FROM CONTAINMENT INSPECTIONS

- NO FURTHER SPECIAL INSPECTION OF V1/V2 (INSTRUMENTATION) CABLES REQUIRED
  - LOW DAMAGE RATE IN V1/V2
  - V1/V2 PARTIAL-WALL FIGURES INCLUDES DAMAGE TO INNER JACKET OF DOUBLE JACKETED COAX (2 CASES)
  - PARTIALLY ATTRIBUTABLE TO CABLE CONSTRUCTION STYLE
  - INSPECT V1/V2 WHEN ENCOUNTERED IN COMMON ENCLOSURE WITH OTHER CATEGORIES
  - ELIMINATES DESTRUCTIVE INSPECTION UNDER BREAKOUTS/OVERSLEEVES

CABLE DAMAGE AT TERMINATIONS AND SPLICES (CONTINUED)

ANALYSIS OF V3/V4 FINDINGS

- DAMAGE BY LOCATION

CATEGORY	TOTAL NO.	PARTIAL-WALL	THROUGH-WALL
V3 - MOTOR OPERATED VALVES	496	94 (19%)	2 (0.4%)
V3 - SOLENOID OPERATED VALVES	12	2 (16.7%)	0
V3 - JUNCTION BOXES	1687	139 (8.2%)	10 (0.6%)
V4 - MOTOR OPERATED VALVES	82	16 (19.5%)	0
V4 - JUNCTION BOXES	57	2 (3.5%)	0
V4 - MOTORS/HEATERS	52	17 (33%)	0

- CABLE CONSTRUCTION STYLE A CONTRIBUTOR

- MOV PIGTAILS DAMAGED DURING MOTOR REMOVAL

- CONTINUE 100% INSPECTION OF V3/V4 10CFR50.49 TERMINATIONS/SPLICES IN HARSH AREAS

CABLE DAMAGE AT TERMINATIONS AND SPLICES (CONTINUED)

REMAINING WORK AND SCHEDULE

- INSPECTIONS COMPLETE IN BOXES/CONDULETS TO BE WRAPPED WITH THERMO-LAG
- CORRECTIVE ACTIONS TO BE COMPLETE BY SEPTEMBER 1995
- 5 YEAR NJRT AND NWRT TEST COMPLETE BY EARLY JULY 1995
- 20 AND 40 YEAR NJRT AND NWRT TESTS COMPLETE BY END OF SEPTEMBER 1995

OPEN CAPs/SPs
SUMMARY STATUS

MECHANICAL/CIVIL CAP/SPs	PRINCIPAL COMMODITY	TOTAL SCOPE[1]	TO GO[1]	% TO GO[1]
CONDUIT AND CONDUIT SUPPORTS	SUPPORTS	1,700	20	1%
EQPT. SEISMIC QUALIFICATION	COMPONENT FIELD WALKDOWNS/EVAL.	19,000	0	0%
HAAUP CAP	SUPPORTS	8,300	10	0.1%
HVAC DUCT AND DUCT SUPPORTS	HVAC DUCT (LF)	12,600	0	0%
	HVAC SUPPORTS	460	4	0.9%
CABLE TRAY AND CT SUPPORTS	CABLE TRAYS (LF)	100,000	60,000	60%
	SUPPORTS	430	70	16%
INSTRUMENT LINES	LINES (LF)	19,000	0	0%
	HANGERS	5,200	180	4%
ELECTRICAL CAP/SPs				
CABLE ISSUES	CABLE FOOTAGE	660,000	35,000	6%
ELECTRICAL ISSUES	FLEX CONDUIT CABLE TRAY WP'S	8,000 170	800 40	10% 24%
ENVIRONMENTAL QUALIFICATION	INITIAL BINDERS	81	1	1.2%
MECHANICAL EQPT. QUALIFICATION	INITIAL BINDERS	1	0	0%
DESIGN RELATED CAP/SPs				
CONTAINMENT COOLING	COOLING UNITS	4	0 5 PROCEDURES	0%
DBVP CAP	COMMITMENTS	13,000	219	1.7%
	CONF. CNTRL DWGS	1,200	0	0%
FIRE PROTECTION	FIRE DOORS	171	38	22%
	PENETRATION SEALS	26,900	198	.07%
MODERATE ENERGY LINE BREAK	CONDUITS TO BE SEALED	1,200	600	50%
RADIATION MONITORING	INITIAL COMPONENT TESTS	372	109	29%
REPLACEMENT ITEMS	TVA ITEM ID CODES	139,203	201	.14%
VENDOR INFORMATION	VENDOR TECHNICAL MANUALS	258	0	0%
CRDR[2]	HEDs	221	23	10%

[1]NUMBERS ARE APPROXIMATE
[2]CLOSURE IN PROCESS

III. OPERATIONS

R. PURCELL

HFT2 PREPARATION OVERVIEW

- PURPOSE OF HFT2
  - RETESTING TO DISPOSITION DEFICIENCIES FROM THE HOT FUNCTIONAL TEST IN SPRING 1994
  - DRY RUN PLANT OPERATIONS USING PERMANENT PLANT PROCEDURES, PERSONNEL AND PROGRAMS

- HFT2 PROGRAM PLAN
  - SIGNATURE VERIFICATION BY ALL DEPARTMENTS ON READINESS TO COMMENCE HFT2
  - ESTABLISH MANAGEMENT EXPECTATIONS TO USE OPERATIONAL PROGRAMS
  - INVOKES WORK CONTROLS AND ACCESS CONTROL
  - IDENTIFIES OVERSIGHT ACTIVITIES AND RESPONSIBILITIES
  - ESTABLISHED THE TEST SEQUENCE, INCLUDING PERFORMANCE OF SURVEILLANCE INSTRUCTIONS PERFORMED DURING HEAT-UP
  - IDENTIFIES SYSTEMS AND AREAS REQUIRED TO BE COMPLETED
  - SELF ASSESSMENTS WILL BE CONDUCTED DURING HFT2

- PROGRAM PLAN REVIEWED WITH BOTH NRR AND REGION II:
  - SCOPE OF TESTING AND OPERATION
  - DRY RUN PHILOSOPHY
  - SYSTEM/AREA COMPLETION REQUIREMENTS

- OPERATOR TRAINING
  - DISCUSSIONS OF MANAGEMENT EXPECTATIONS HELD WITH CREWS
  - SIMULATOR TRAINING ON HEAT-UP AND COOL DOWN PER PROCEDURES TO BE USED DURING HFT2

- OPERATIONS PROCEDURES
  - GENERAL OPERATING INSTRUCTIONS TO BE USED DURING HFT2 REVISED TO REFLECT ACTUAL HFT2 CONDITIONS, AND VALIDATED ON THE SIMULATOR
  - ALL SYSTEM OPERATING INSTRUCTIONS TO BE USED DURING HFT2 WILL BE FINAL APPROVED VERSION

HFT2 PREPARATION OVERVIEW
(CONTINUED)

- COMMUNICATION TO ALL SITE PERSONNEL

  - BEGAN WITH TEAM 3 MEETINGS
  - REINFORCED PLAN AND MANAGEMENT EXPECTATIONS

- PLANT STATUS

  - 105 OF 114 SYSTEMS REQUIRED FOR HFT2 ARE COMPLETE
  - 45 OF 69 AREAS REQUIRED FOR HFT2 ARE COMPLETE
  - 211 CORRECTIVE MAINTENANCE ITEMS ON ALL 114 TURNED OVER SYSTEMS
  - 10 OF 16 PREOP TESTS REMAINING TO COMPLETE BEFORE HFT2 ARE IN PROGRESS

OVERVIEW OF REMAINING ACTIVITIES

- PLANT COMPLETION OF SYSTEMS AND AREAS
  - 16 MORE PREOP TESTS TO COMPLETE OF WHICH 10 ARE IN PROGRESS
  - RWST FILLED WITH BORATED WATER
    - CURRENTLY FILLING AND VENTING PRIMARY SYSTEMS TO SUPPORT SURVEILLANCE TESTING
  - VITAL BATTERY 1-4 REPLACEMENT IS COMPLETE. INSTALLATION OF THE 5TH VITAL BATTERY IS IN PROGRESS.

- COMPLETE AND APPROVE LEVEL 3 SCHEDULE TO INTEGRATE
  - HFT2 TESTING ACTIVITIES
  - SYSTEM COMPLETION ACTIVITIES
  - AREA COMPLETION ACTIVITIES

- HFT2 SYSTEM OPERABILITY
  - PLAN DEVELOPED WITH CRITERIA ESTABLISHED
  - LEVEL II SCHEDULE DEVELOPED FOR HFT2 OPERABILITY OF HFT2 SYSTEMS

- PERFORMANCE EXPECTATION COMMUNICATIONS
  - OPERATIONS
    - TEAM MEETINGS
    - SHIFT BRIEFINGS
    - SOS MEETING WITH OPS MGR AND PLANT MGR
    - PERFORMANCE MONITORING FEEDBACK
  - DEPARTMENTS
    - STANDDOWN MEETINGS WITH SUPERVISORS
    - TEAM MEETING WITH EMPLOYEES
    - DEPARTMENTAL READINESS REVIEWS

OPERATIONS SHIFT MANNING

	TECH SPEC REQMTS	NORMAL OPERATION	HFT
SHIFT OPERATIONS SUPERVISOR (SOS)	1	1	1
ASSISTANT SHIFT OPERATIONS SUPV (SRO)	1	2	2
UNIT OPERATOR (RO)	2	3	3
ASSISTANT UNIT OPERATOR (NON-LICENSED)	3	7	7
SHIFT TECHNICAL ADVISER	1	1*	1*
SHIFT SUPPORT SUPERVISOR	-	1**	1**
ON-SHIFT OPERATIONS ADVISOR	0	1***	1

* LICENSED SRO
** SHIFT WORK CONTROL, HOLD OR HAVE HELD SRO
*** DURING POWER ASCENSION ONLY

CONDUCT OF OPERATIONS

- EQUIPMENT/SYSTEMS WILL BE OPERATED IN ACCORDANCE WITH APPROVED PLANT PROCEDURES

- OPERATIONAL CONFIGURATION CONTROL PROGRAM WILL BE IN PLACE

- LCO EQUIPMENT OUT OF SERVICE TRACKING WILL BE IN PLACE
  - CURRENTLY IN PLACE FOR TRAINING ON TURNED OVER SYSTEMS SINCE DECEMBER
  - BASELINING OF LCO TRACKING FOR HFT2 WILL BE MAINTAINED TO ULTIMATELY TRACK LCO OPERABILITY FOR FUEL LOAD

- OPERABILITY CALLS FOR HFT2 PREPARATION WILL BE MADE AS FOLLOWS:
  - TEAM OF PERSONNEL FROM TECHNICAL SUPPORT, NUCLEAR ENGINEERING, LICENSING, AND OPERATIONS WILL REVIEW OPEN ITEMS ON SYSTEM BY SYSTEM BASIS FOR OPERABILITY IMPACT
  - RESULTS WILL BE PROVIDED TO OPERATIONS MANAGEMENT AND SOS FOR LCO TRACKING
  - ACTIVITIES WILL BE TRACKED TO COMPLETION IN THE LCO TRACKING LOG
  - WHEN SUFFICIENTLY COMPLETE, SOS WILL MAKE CALL OF OPERABILITY FOR HFT2

- ON SHIFT ADVISERS WILL BE IN PLACE BY MID-JUNE AND IN PLACE THROUGH POWER ASCENSION TESTING
  - SROs WITH RECENT PWR ON-SHIFT EXPERIENCE

- PLANT MANAGER'S STAFF WILL BE AUGMENTED WITH AN INDIVIDUAL WITH SIGNIFICANT PWR PLANT OPERATIONS.

PROCESS FOR FUEL LOAD PREPARATION

- IDENTIFIED FUEL LOAD MILESTONE MANAGER
  - INTEGRALLY INVOLVED IN HFT2 PREPARATION MANAGEMENT
- DEVELOPING MILESTONE PROGRAM PLAN SIMILAR TO PAST MAJOR MILESTONES
- INTEGRATING REMAINING WORK POST HFT2 WITH SURVEILLANCE TESTING ACTIVITIES
  - OVERLAYING LICENSING ACTIVITIES
- COORDINATING SECURITY LOCKDOWN AND RCA ESTABLISHMENT
- DEVELOPING COMMUNICATION PLAN
- BASELINE OF LCO EQUIPMENT OUT OF SERVICE TRACKING PRIOR TO HFT2 WILL BE MAINTAINED FOR LCO TRACKING FOR FUEL LOAD OPERABILITY

SURVEILLANCE PROGRAM STATUS

- PROCEDURES
  - TOTAL SURVEILLANCE INSTRUCTIONS: 1211
  - TOTAL SURVEILLANCE INSTRUCTIONS ISSUED: 980
  - TOTAL SURVEILLANCE INSTRUCTIONS IN DRAFT/REVIEW: 173
  - TOTAL SURVEILLANCE INSTRUCTIONS NOT STARTED: 58
    - 21 OF THE 58 ARE REQUIRED FOR FUEL LOAD (MODE 6)
    - 37 OF THE 58 ARE REQUIRED FOR MODE 5 AND ABOVE
    - REMAINING SURVEILLANCE INSTRUCTIONS FOR FUEL LOAD TO BE ISSUED IN JUNE

- SURVEILLANCE INSTRUCTION/SURVEILLANCE REQUIREMENT MATRIX VALIDATION EFFORT
  - VALIDATE THAT THE SURVEILLANCE INSTRUCTIONS FULFILL THE TECHNICAL SPECIFICATION SURVEILLANCE REQUIREMENTS
  - 1072 OF 1211 SURVEILLANCE INSTRUCTIONS HAVE BEEN VALIDATED TO SATISFY THE SURVEILLANCE REQUIREMENT
  - 31 PROCEDURES DID NOT SUFFICIENTLY ADDRESS THE SURVEILLANCE REQUIREMENT AND ARE BEING REVISED
  - AS A CHECK, A BACKWARD LOOK WILL BE PERFORMED TO VALIDATE THAT ALL SURVEILLANCE REQUIREMENTS HAVE BEEN ADDRESSED BY A SURVEILLANCE INSTRUCTION

SURVEILLANCE PROGRAM STATUS
(CONTINUED)

- SURVEILLANCE INSTRUCTION INITIAL PERFORMANCE
  - 256 TOTAL SIs COMPLETED FOR CREDIT
  - SCHEDULING IN PLACE TO START QUARTERLY SI PERFORMANCE FOR CREDIT BY JUNE 24, 1995 TO BE READY FOR FUEL LOAD BY SEPTEMBER 24, 1995
  - RE-EVALUATING 18 MONTH SURVEILLANCES PREVIOUSLY PERFORMED FOR TIMELINESS

- SURVEILLANCE PROCEDURE QUALITY
  - A SAMPLE OF 53 DEFICIENCY NOTICES INVOLVING 21 PROCEDURE INITIAL PERFORMANCES RESULTED IN THE FOLLOWING BREAKDOWN OF DEFICIENCY AREAS:

    HARDWARE RELATED: 23

    PROCEDURE RELATED: 9

    PLANT CONDITION: 21
  - 9 CHANGE NOTICES INVOLVING 8 OF THE 21 PROCEDURES WERE ISSUED

    INDICATES SI REVIEW VALIDATION, APPROVAL PROCESS IS PRODUCING QUALITY SURVEILLANCE INSTRUCTIONS

IV. LICENSING

B. SCHOFIELD

LICENSING

NRC OPEN ITEMS

TOTAL OPEN =	214
TVA PACKAGES TO GO =	119

FUEL LOAD CERTIFICATION PLAN

- PLAN ATTRIBUTES
  - ACCOUNTABILITY
  - COMPLETENESS
  - ACCURACY
  - OVERSIGHT
- BOTTOM UP METHODOLOGY
  - DEPARTMENT LEVEL CERTIFICATION
- PLAN INCORPORATES
  - FSAR CERTIFICATION
  - TECH SPEC CERTIFICATION
  - SR/SI CERTIFICATION
  - CFR CERTIFICATION
- BASED ON REVIEW OF CERTIFICATION LETTERS FROM LAST 17 PLANTS LICENSED
- FOCUSED ON REVIEWS OF VOGTLE, SOUTH TEXAS, AND COMANCHE PEAK
- INCLUDED A REVIEW OF MATERIAL ASSOCIATED WITH THE 1985 WBN CERTIFICATION LETTER

LICENSING PLAN

- IDENTIFIED ALL REMAINING LICENSING ISSUES:
  - SUBMITTALS
  - TAC ITEMS
  - OPEN ITEMS/VSR/CATDs
  - CAP/SPs
  - KEY INSPECTIONS
- REVIEWED WITH NRC STAFF

GENERIC SAFETY ISSUE REVIEW

- TVA MAY 19, 1995 RESPONSE ON 53 OF 183 GENERIC ISSUES:
  - 30 ISSUES OPEN AND SCHEDULED IN WBN LICENSING PROJECT PLAN
  - 23 ISSUES REVIEWED BY TVA
- PART 2 OF TVA RESPONSE SCHEDULED FOR JUNE 14, 1995
- FINAL SUBMITTAL SCHEDULED FOR JULY 14, 1995

V. REASONABLE ASSURANCE

R. BARON

TVA'S REASONABLE ASSURANCE ASSESSMENT METHODOLOGY
THREE LEVELS OF REVIEW

- REGULATORY REVIEW ASSESSMENT

BEGINS WITH TVA'S DETAILED ASSESSMENT OF WBN'S CONDITION IN RESPONSE TO THE NRC STAFF'S 1985 10 CFR 50.54(F) REQUEST FOR INFORMATION. THIS ASSESSMENT, DOCUMENTED IN VOLUME IV OF THE NUCLEAR PERFORMANCE PLAN (WBNPP), ESTABLISHES THE STEPS NECESSARY TO ASSURE THAT THE PLANT IS READY TO LOAD FUEL AND BEGIN OPERATIONS. THE NRC STAFF CONCURRED WITH THE WBNPP IN ITS DECEMBER 28, 1989 SER. THIS SECTION ASSESSES ASSURANCE OF COMPLETION OF THESE ACTIVITIES. THIS APPROACH MAINTAINS THE CONSISTENT LICENSING STRUCTURE ESTABLISHED IN 1989 TO WHICH TVA AND THE NRC HAVE BEEN MARCHING SINCE.

- CRITICAL ACTIVITY ASSESSMENT

THIS APPROACH ASSESSES SEPARATELY THE CONDITION OF THE 5 CRITICAL ACTIVITIES NECESSARY TO ESTABLISH READINESS TO LOAD FUEL AND BEGIN OPERATIONS, I.E., DESIGN, CONSTRUCTION, STARTUP TESTING, OPERATIONAL READINESS, AND OVERSIGHT. THE DEPTH OF REVIEW OF EACH ACTIVITY IS DEPENDANT ON THE ASSOCIATED PROBLEMS IDENTIFIED. THIS APPROACH COMPLEMENTS THE REGULATORY APPROACH NOTED ABOVE.

- SPECIAL AREA ASSESSMENT

UNLIKE THE TWO ASSESSMENT APPROACHES DESCRIBED ABOVE, THIS APPROACH IS "SUPPORTIVE" AND NOT INTENDED TO BE A "STAND ALONE" APPROACH. THIS SECTION ASSESSES READINESS BY ANALYZING SEPARATELY SELECTED ISSUES OF GREATER GENERIC CONCERN, SUCH AS EMPLOYEE CONCERNS.

OUTLINE OF REASONABLE ASSURANCE ASSESSMENT REPORT

I. EXECUTIVE SUMMARY

II. INTRODUCTION AND BACKGROUND

III. REGULATORY REVIEW ASSESSMENT--ASSESSES ASSURANCE OF COMPLETION OF REQUIRED ITEMS NOTED IN NPP AND SER

- COMPLIANCE WITH REGULATIONS AND COMMITMENTS
- STRUCTURE DOCUMENTED IN VOL. IV AND RELATED STAFF SER
- INCLUDES CORRECTION OF IDENTIFIED ISSUES (E.G., CAPS), FULFILLMENT OF NORMAL LICENSING ACTIVITIES, ADDRESSING NEW PROBLEMS, AND PERFORMING SPECIAL OVERSIGHT REVIEWS AND OPERATIONAL ASSESSMENTS

IV. ACTIVITY ASSESSMENT--EXAMINES CRITICAL ACTIVITIES

- ENCLOSURE 1--DESIGN/ENGINEERING
- ENCLOSURE 2-- CONSTRUCTION
- ENCLOSURE 3--STARTUP TESTING
- ENCLOSURE 4--OPS. READINESS
- ENCLOSURE 5--OVERSIGHT

V. SPECIAL AREA ASSESSMENT--ASSESSES SIGNIFICANT ISSUES--NOT A "STAND ALONE" APPROACH

- ENCLOSURE 6--EMPLOYEE CONCERNS
- ENCLOSURE 7--CORRECTIVE ACTION PROGRAM
- ENCLOSURE 8--CLOSURE ASSESSMENT (TMI ACTION ITEMS)
- ENCLOSURE 9--ASSESSMENT OF PROGRAMMATIC IMPROVEMENTS OVER TIME

VI. CONCLUSIONS

SECTION III--REGULATORY REVIEW ASSESSMENT

- BACKGROUND:
  - IN RESPONSE TO NRC'S 50.54 (f) REQUEST, DURING 1985-1989 TVA CONDUCTED DETAILED REVIEWS OF PLANT
  - AS A RESULT OF REVIEWS, ACTIONS/COMMITMENTS NECESSARY TO SUPPORT FUEL LOAD AND OPERATIONS DOCUMENTED IN VOL. 4 (AND VOL.1, IN PART) OF NPP AND ASSOCIATED STAFF SER.

- PURPOSE OF SECTION III: ASSESS ASSURANCE OF COMPLETION OF THOSE PLANT ACTIONS/COMMITMENTS NECESSARY TO SUPPORT FUEL LOAD AND OPERATIONS, INCLUDING
  - RESOLVE CAPs AND SPs
  - RESOLVE VERTICAL SLICE ISSUES (S&L)
  - RESOLVE EMPLOYEE CONCERNS
  - RESOLVE ANY ADDITIONAL LICENSING ISSUES RAISED
  - RESOLVE ANY ADDITIONAL PROBLEMS IDENTIFIED
  - IMPLEMENT INDEPENDENT VERIFICATION PLAN
  - IMPLEMENT OPERATIONAL READINESS PROGRAM
  - CONDUCT PAC/AQ
  - CONDUCT QA IDI

- SECTION III ASSESSES PROCESS OF RESOLUTION/CLOSURE AND IMPLEMENTATION OF PROCESS, AS APPROPRIATE.

- SUPPORT DRAWN FROM MANY SOURCES INCLUDING OVERSIGHT EFFORTS OF RECENTLY COMPLETED PAC/AQ (SEE NEXT PAGE FOR DISCUSSION)

PROGRAM FOR ASSURANCE OF COMPLETION AND ASSURANCE OF QUALITY (PAC/AQ)

- PURPOSE: PROVIDE TVA SENIOR MANAGEMENT ADDITIONAL ASSURANCE THAT
  - COMMITMENTS ARE KNOWN, CAPTURED, TRACKED AND MET
  - WBN DESIGNED AND CONSTRUCTED AS REQUIRED

- PROGRAM SCOPE--GENERAL
  - OVER 50 MAN-YEARS OF EFFORT
  - CONDUCTED OVER 4-1/2 YEAR PERIOD
  - MULTI-DISCIPLINE REVIEWS BY EXPERIENCED SENIOR PERSONNEL
  - FIELD WALKDOWNS OF HARDWARE

- FIVE PHASE PROGRAM--ALL PHASES SUCCESSFULLY COMPLETED (NRC REVIEWS OF PHASES I - IV ISSUED)

PROTOTYPE--VERTICAL SLICE REVIEW (VSR) OF THE ESSENTIAL RAW COOLING WATER SYSTEM TO DEBUG THE PROGRAM AND OBTAIN EARLY DATA

PHASE I--IDENTIFICATION OF COMMITMENTS: APPROXIMATELY 13,000 COMMITMENTS IDENTIFIED.

PHASE II--MATCHING OF COMMITMENTS TO THEIR IMPLEMENTING DOCUMENTS

PHASE III--TECHNICAL REVIEW OF IMPLEMENTING DOCUMENTS

PHASE IV--IMPLEMENTATION VERIFICATION INCLUDING REVIEW OF PLANT HARDWARE
- IN ADDITION TO PROTOTYPE VSR, 3 ADDITIONAL VSRs WERE PERFORMED
- COMPLEMENTARY HORIZONTAL REVIEWS CONDUCTED AT THE SAME TIME, E.G., SPAE/SPOC PROCESS
- AN IMPROVING TREND WAS NOTED IN THESE REVIEWS (1991 - 1993)

PHASE V--OVERSIGHT OF OPERATIONAL READINESS REVIEW AND WORK COMPLETION
- 30 MAJOR REVIEWS AND REPORTS ISSUED-IMPROVING BEHAVIORAL TRENDS NOTED
- ROLLUP OF PREVIOUS FOUR PHASES
- PERSONNEL, PROCESSES AND PROCEDURES ARE ADEQUATE TO SUPPORT WBN POWER OPERATIONS

GENERAL DESIGN/CONSTRUCTION ASSESSMENT METHODOLOGY SECTION IV, ENCLOSURES 1 AND 2

- MULTI-LEVEL DESIGN AND CONSTRUCTION ADEQUACY ASSESSMENT
  - ASSESS ADEQUACY OF COMPLETION ACTIVITIES
  - ASSESS ADEQUACY OF PROCESS STEPS
  - ASSESS OVERSIGHT COVERAGE OF HARDWARE ELEMENTS/ATTRIBUTES AND ANALYSIS OF AREAS OF CONCERN

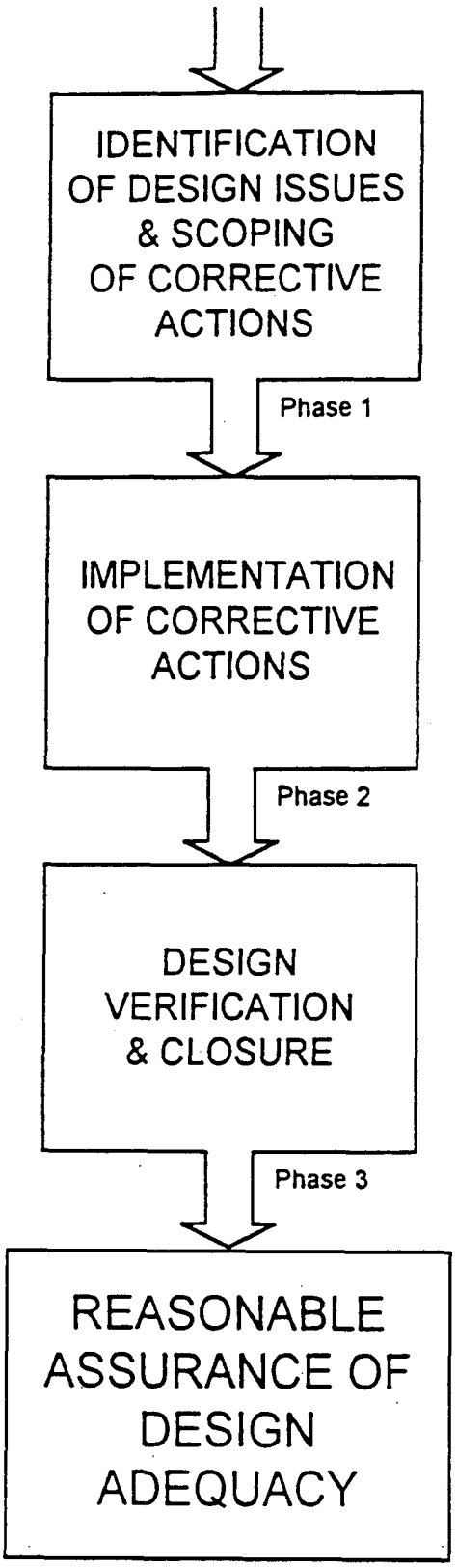
- IN ASSESSMENT, MORE FULLY AREAS/TIMEFRAMES OF CONCERN. E.G., 1985, 1990, AND 1994

- USE OF DATA TO ASSESS COVERAGE AND AREAS OF CONCERN (SEE PRELIMINARY DATA CHARTS)
  - COVERAGE MATRIX CONCEPT
  - ANALYSIS OF AREAS OF CONCERN

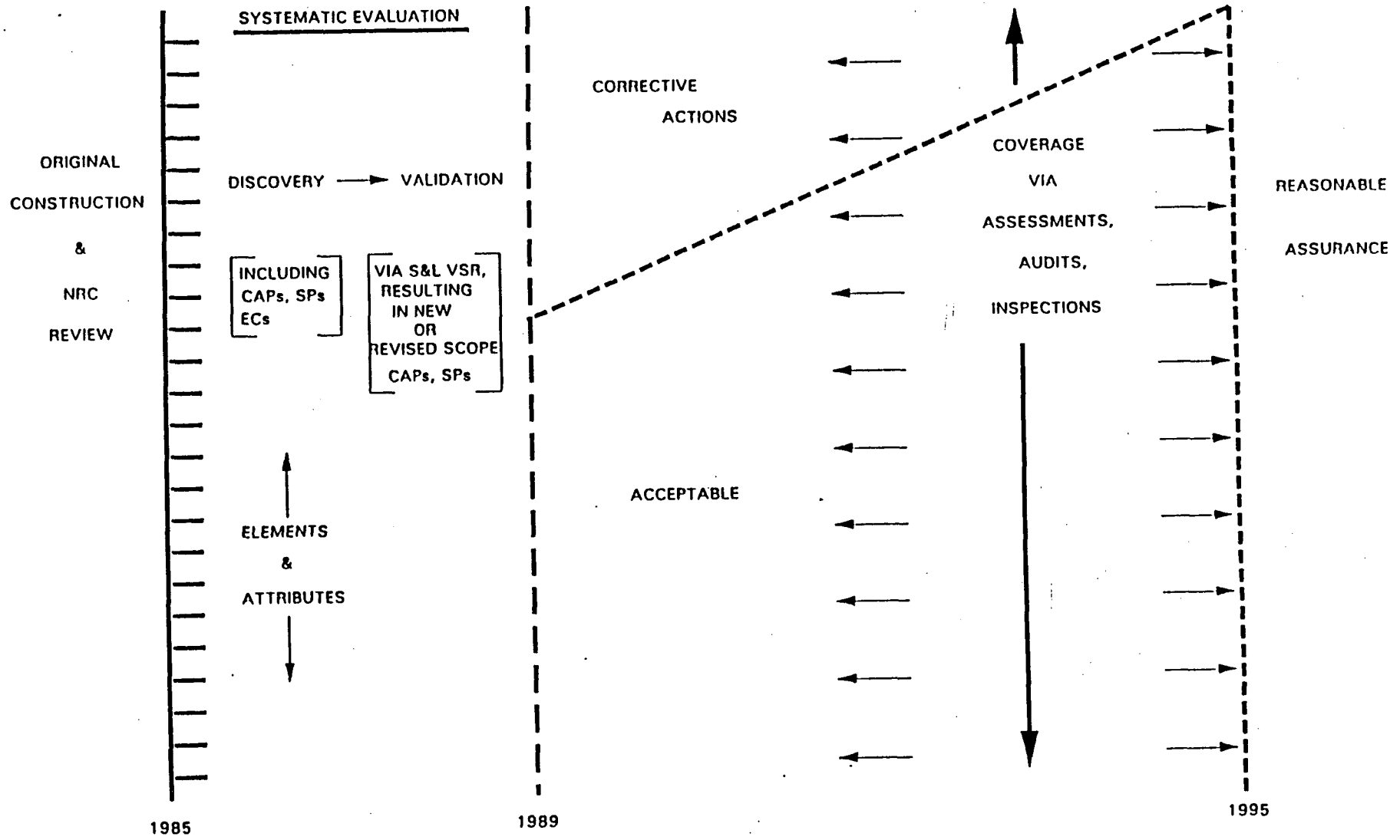
- WHERE CONCERNS IDENTIFIED, CONSIDERATION OF ADDITIONAL INSPECTIONS
  - IDI
  - ADDITIONAL QA AUDIT
  - INDEPENDENT REVIEW

WATTS BAR DESIGN ADEQUACY

Process Leading to Reasonable Assurance



WBN-1 CONSTRUCTION ADEQUACY
FIGURE E2-1
REGULATORY APPROACH



PARTIAL DATA--PRELIMINARY RESULTS
COVERAGE SUMMARY--SELECTED WBN OVERSIGHT ACTIVITIES

Reviewed Process/ Product	Oversight Coverage & Results				Collective Significance
	PAC/AQ VSR	Other QA Reviews	QA CAP/SP Verification	IE&FA '94-'95	% SCAR ITEMS
Design Inputs					
• FSAR	o	o	o	o	0%
• Gen. specs & design stds.	o		o	o	0%
• Design criteria & sys. descr.	●	●	●	o	0.92%
Design Implementation					
• Calcs, Eng. eval. & studies	●	●	o	o	0.55%
• Procedures	o	o	●	o	0.05%
Design Outputs					
• Drawings	o	o	o	o	0%
• Procurement/Specifications	o	●	o	o	0.06%
• Vendor manuals	o	o	o	o	0%
• Design/Eng classification	o	o	o	o	0%
• Test & accept. criteria	o	o	o	o	0%
• Technical specifications	o		o	o	0%
Design Control Config. Mgmt. & Corrective Action					
• Design interfaces & config control	o	●	●		0.26%
• Design change process	●	o	●	o	0.09%
• Corrective action	o	o	●	o	0.09%
Summary by Program & Overall Results % SCAR Items	0.34%	0.38%	0.08%	0%	0.16%

● ----Discrepancies identified in reviews that ended in a SCAR

o ----No SCAR generated as a result of the review

PARTIAL DATA-COVERAGE SUMMARY SELECTED WB OVERSIGHT ACTIVITIES

Element / Event/ Period	Sys Eval mid-86-mid-89	Assess mid-89-92	ASRR mid-91-mid-93	Assess '93-95	IE&FA late-94-95
1.0 Cable	●	○	○	●	●
2.0 Cable raceway	●	○	○	○	○
3.0 Cable R/W spts	●	○	○	○	○
4.0 Elect. equip.	○	○	○	●	○
5.0 HVAC duct/equip	○	○	○	○	○
6.0 HVAC supports	○	○	○	●	○
7.0 Instruments	○	○	○	○	○
8.0 Instr. lines	○	○	○	○	○
9.0 Instr line spts.	●	○	○	○	○
10.0 Large bore pipe	○		○	○	○
11.0 L B. pipe spts	○	○	○	○	○
12.0 Sm.B bore pipe	○	●	○	○	○
13.0 S.B. pipe/tube spts	●	●	○	○	○
14.0 Valves	●	○	○	○	○
15.0 Mech. equip.	○	○	○	○	○
16.0 Concrete struct.	●		○	○	○
17.0 Foundations	○		○	○	
18.0 Struct/misc steel	●	○	○	○	○
19.0 Masonry walls	○		○		○
20.0 Coatings	●		○		○
21.0 Process/trends & Documentation	●	○	○	●	○
21.2 Workplans	○	○	○	○	○
21.4 Maint. requests		○	○	○	
21.7 Material control		○		○	
21.9 CCDs-walked down		○		○	○
21.13 MAIs.		○			○
21.15 Damage/const Control	●				○
% SCAR ITEMS	2%	0.1%	0%	0.06%	0.015%

○ ---No identified SCAR resulting from reviews
● ---SCAR(s) identified during reviews

STARTUP AND TESTING ASSESSMENT METHODOLOGY
SECTION IV, ENCLOSURE 3

- TWO LEVEL ASSESSMENT METHODOLOGY

  - USING OVERSIGHT AND LINE RESULTS--ASSESSMENT OF MAJOR STARTUP MILESTONES

    - INTEGRATED TESTING SEQUENCE
    - INTEGRATED LEAK RATE TESTING
    - OPEN VESSEL TESTING
    - HOT FUNCTIONAL TEST (HFT-1)

  - ASSESSMENT OF COVERAGE AND CLOSEOUT OF ISSUES ASSOCIATED WITH CRITICAL ELEMENTS/ATTRIBUTES

    - SEE FOLLOWING EXAMPLE TABLES

- REVIEW INCLUDED ASSESSMENT OF THE FOLLOWING

  - TIMEFRAMES OF MAJOR PROBLEMS
  - MAJOR PROBLEM AREAS

PARTIAL DATA--PRELIMINARY RESULTS

Figure E3-3, Startup Testing Coverage Matrix

(ALL ATTRIBUTES)

ATTRIBUTES	NA ASSESSMENTS UTILIZED IN ANALYSIS OF EACH ATTRIBUTE	SIGNIFICANT FINDINGS	CLOSURE
Incorporation of requirements and commitments into Test Procedures	6	None	N/A
Review and approval of test procedures	4	None	N/A
Control and review of Drawing Change Paper	5		
Review and Evaluation of Open Items effecting testing	7	None	N/A
Testing personnel training and qualification	5	None	N/A
Pretest briefings	5	None	N/A
Measuring and Test Equipment Control	6		
Test Prerequisites	6		
Procedure Compliance	4	None	N/A
Test Deficiency Notices (TDNs)	6		
Review and Approval of test results	7		
Component Testing	6		

PARTIAL DATA--PRELIMINARY RESULTS
TABLE E3-5
STARTUP & TEST ASSESSMENT MATRIX
(DETAILS FOR ONE ATTRIBUTE)

STARTUP TEST ACTIVITY	TVA QA ASSESS./AUDIT	OVERSIGHT RESULTS/CONCLUSIONS	FINDINGS	CLOSURE
B-1 **Testing personnel training and qualific.**	NA-WB-94-0092 Assessment of Hot Functional Testing (HFT)	Training and certification records for test directors were reviewed and it was discovered that one test director's certification checksheet was not on file. The test director was required to complete another checksheet which was placed on file. A COTS was initiated.	No significant findings	N/A
	NA-WB-94-0091 Open Vessel Testing 7/14 thru 8/5 1994	Eight qualification packages for SUT level II and III engineers were reviewed. No problems were identified and, based on the documents reviewed, determined that the personnel certification program is adequately implemented.	No significant findings	N/A
	NA-WB-94-0112 Assessment of Startup Activities 9/3 thru 9/30 1994	Seven qualification/certification packages were reviewed to verify compliance with SMP-5.0. Based upon this review, the assessment team determined the test personnel certification program to have adequately supporting SUT activities.	No significant findings	N/A
	NA-WB-94-0118 Integrated Testing Sequence 10/3 thru 11/27 1994	Eight test personnel certification packages were reviewed against requirements of SMP 5.0 and were found to be satisfactory. Additionally, SMP 5.0 was verified as conforming to FSAR for personnel qualifications.	No significant findings	N/A
	NA-WB- 94-0146 Assessment of Startup test activities 12/12 thru 2/2 1995	Four certification packages were reviewed to verify compliance with SMP-5.0. The assessment determined the test certification program to be adequate.	No significant findings	N/A

OPERATIONAL READINESS ASSESSMENT METHODOLOGY
SECTION IV, ENCLOSURE 4

- FOUR BASES OF REASONABLE ASSURANCE DETERMINATION:

  - ORP SELF-ASSESSMENTS AND OVERSIGHT

    - LINE ORGANIZATION SELF-ASSESSMENTS USING INPO 90-15

    - OVERSIGHT OF OPERATIONAL READINESS
      - ORR PHASES I AND II
      - INPO NTOL
      - PAC/AQ
      - CONFIRMATION--NRC MINI-ORAT

  - INCORPORATION OF LESSONS LEARNED

    - SQN LESSONS LEARNED PROJECT

    - BFN SPOC PROCESS

    - WBN FUEL LOAD CERTIFICATION PLAN

  - ASSESSMENT OF TRANSITION TO OPERATIONS MINDSET (SEE NEXT PAGE)

  - FINAL DEMONSTRATION OF OPERATION READINESS DURING HFT2

    - VALIDATE OPERATING PROCEDURES

    - RESOLVE HFT 1 TESTING DEFICIENCIES

TVA'S TRANSITION TO AN OPERATIONS MINDSET AT WATTS BAR PROGRESSION ON THIS FRONT

- COMMONALITY STUDY OF OTHER PLANTS WITH POOR AND GOOD TRANSITIONS
  - FEW COMMON THREADS
  - PLANTS WITH GOOD CONSTRUCTION HISTORY HAD POOR STARTUP AND OPERATIONAL HISTORIES, AND VISA VERSA
  - ONE CONSISTENT THEME IS STRONG OPERATING STAFF
  - CONTACTED POOR TRANSITION PLANTS--HIGH BACKLOG

- TVA AS AN ORGANIZATION HAS IMPROVED TREMENDOUSLY IN TRANSITIONS FROM CONSTRUCTION TO OPERATIONS
  - SEQUOYAH'S TRANSITION VERSUS BROWNS FERRY'S TRANSITION
  - SEQUOYAH IMPROVEMENTS IN LATEST RESTART EFFORTS
  - LESSONS LEARNED FACTORED INTO WATTS BAR EFFORTS

- TVA IS ORGANIZATIONALLY MORE INTEGRATED SITE TO SITE TO PROVIDE COLLECTIVE SUPPORT

- WATTS BAR HAS IMPROVED SIGNIFICANTLY OVER TIME

- THE WATTS BAR TRANSITION IS BEING ACCOMPLISHED USING PRIMARILY BROWNS FERRY PEOPLE, PROCESSES AND PROGRAMS--A PROVEN SUCCESS TRACK
  - BROWNS FERRY HAD SIMILAR PROBLEMS TO WATTS BAR
  - BROWNS FERRY OVERCAME PROBLEMS -- HAD A SUCCESSFUL RESTART
  - BROWNS FERRY HAS GOOD OPERATING RECORD DESPITE MOVEMENT OF PERSONNEL OUT OF SITE ORGANIZATION -- A SELF SUSTAINING ORGANIZATION

- AT WATTS BAR OPERATING STAFF IS NOT THE CONSTRUCTION STAFF
  - SIGNIFICANT TRAINING
  - "SHADOW MANAGERS"
  - GOOD OPERATIONAL TRANSITION IN PROGRESS
  - HFT2 IS REPORT CARD

- CONCLUSION

OVERSIGHT ASSESSMENT METHODOLOGY
SECTION IV, ENCLOSURE 5

PAST OVERSIGHT ACTIVITIES

MULTI-LEVEL ASSESSMENT

- ASSESS ELEMENTS OF OVERSIGHT
  - PEOPLE: CREDENTIALS, TRAINING AND DIVERSITY
  - PROGRAM: SAME AS AT OPERATING PLANTS, REVIEWED MANY TIMES
  - COVERAGE: TREMENDOUS COVERAGE--OVER TIME MULTIPLE REVIEWS (FOR EXAMPLE SEE CHARTS OF ONE YEAR OVERSIGHT COVERAGE OF SELECTED AREAS)
  - IMPLEMENTATION: AUDITS AND RELATIVE CONSISTENCY AMONG OVERSIGHT ORGANIZATIONS

- ASSESS PERIODS OF MAJOR PROBLEMS
  - 1985, 1990-1 (STOP WORK), 1993 (SALP 3) AND 1994 (EIGHT CONSTRUCTION PROBLEMS)

- PAC/AQ OVERSIGHT OF QUALITY

- HFT2 AND THE QA IDI WILL PROVIDE A FURTHER ASSESSMENT OF OVERSIGHT ADEQUACY

OPERATIONAL OVERSIGHT

- ASSESSMENT OF OPERATIONAL PROGRAM AND CURRENT TRENDS AND STATISTICS TO EVALUATE READINESS OF OVERSIGHT TO SUPPORT OPERATIONS

COVERAGE MATRIX FOR THE PERIOD NOVEMBER 1991-NOVEMBER 1992

QUALITY ASSURANCE ACTIVITIES	AUDITS	MONITORING	CAPs/ SPs VERIFICATION	PAC/AQ	QE	QC	CATD VERIFICATION	RECORDS	TECH SUPPORT (QA)
Program Development and Administration	X								
Inspection Activities	X	X		X	X	X		X	
Monitoring	X							X	
Audits				X				X	
CAQ Program Review Control, Verification, and Effectiveness	X	X		X				X	X
QA Record Programs (ASRR)	X	X						X	
Training Qualification & Certifications	X	X		X				X	
PAC/AQ		X	X		X				
Trending/Reporting				X					
Reviews (Procedures, WPs, WOs, WRs, etc.)	X	X						X	
CATD							X	X	

COVERAGE MATRIX--NOVEMBER 1991-NOVEMBER 1992

ENGINEERING ACTIVITIES	AUDITS	MONITORING	CAPs/SPs VERIFICATION	PAC/AQ	QE	QC	CATD VERIFICATION	RECORDS	TECH SUPPORT QA
Drawings	X	X		X	X			X	
Calculations	X	X		X	X			X	
Design Change Notices	X	X		X	X			X	
Test Scoping Documents				X	X			X	
Design Criteria/System Descriptions	X	X		X	X			X	
Replacement Items Project	X			X	X			X	
Engineering Procedures	X	X		X	X			X	X
Environmental Qualification Program		X		X	X			X	
Training of NE Personnel	X	X		X	X			X	
Source Noting	X			X					
Tech Instructions				X				X	
SRN				X	X				
Implem/Verif. of NRC Comm.	X			X	X				
Installed Configuration & Labels				X	X			X	
FSAR Change Package	X			X					
Vendor Manuals				X				X	
Document Control & Ret.	X			X				X	
Fire Prot/App. R				X				X	
CAPs/SPs	X	X	X	X	X			X	
SCAR/FIR Implementation	X				X			X	X
CATD							X	X	

MODIFICATIONS / ACTIVITIES	AUDITS	MONITORING	CAPs/SPs VERIFICATION	PAC/AQ	QE	QC	CATD VERIFICATION	RECORDS	TECH SUPPORT QA
Procedure Development	X	X		X	X	X			X
Workplans	X	X		X	X	X		X	
Work Orders		X		X	X	X		X	
Installation	X	X		X	X	X		X	
Post Mod Testing		X						X	
Welder Training & Certification	X			X				X	
CAPs/SPs	X	X	X	X	X			X	
Housekeeping	X	X		X		X			
CATD							X	X	

STATUS OF REVIEW

- PRIMARY RESEARCH COMPLETED
- REPORT STRUCTURE ESTABLISHED
- AUGMENTED TEAM WITH ADDITIONAL RESEARCH CAPABILITY FOR SELECTED DATA GATHERING EFFORTS
- ADDITIONAL DATA GATHERING UNDERWAY
- REPORT DRAFTING UNDERWAY
- DRAFT OF REPORT--MAY 1995
- REPORT REVIEW EFFORTS--JUNE 1995
- REPORT ISSUANCE TO TVA MANAGEMENT--JUNE 1995
- SUPPLEMENT MAY BE NEEDED TO ADDRESS HFT2 AND IDI

VI. QUALITY ASSURANCE

D. KEHOE

QUALITY ASSURANCE PROGRAM

- TIMELINE EVALUATION - 1985 TO PRESENT
- TRANSITION FROM CONSTRUCTION COMPLETION TO OPERATIONS
- CONCLUSION

QUALITY ASSURANCE PROGRAM

TIME LINE EVALUATION

- TIMEFRAME: 1985 - 1986 - WORK STOPPAGE
  - NUMEROUS EMPLOYEE CONCERNS
  - WIDESPREAD PROGRAM AND IMPLEMENTATION PROBLEMS

ACTIONS:

- ESTABLISHED PROGRAM TEAM
- DEVELOPED CAPs/SPs

- TIMEFRAME: 1990 - 1991 - STOP WORK
  - SIGNIFICANT FIELD WORK IMPLEMENTATION PROBLEMS
  - INADEQUATE LINE ACCOUNTABILITY
  - FEWER EMPLOYEE CONCERNS

ACTIONS:

- QUALITY INDICATORS DEVELOPED
- SLOW MONITORED RESTART
- PAC/AQ ESTABLISHED

QUALITY ASSURANCE PROGRAM

TIME LINE EVALUATION

- TIMEFRAME: 1992 - 1994

  - RANDOM AND FEWER SIGNIFICANT IMPLEMENTATION PROBLEMS
  - CONSTRUCTION QUALITY GENERALLY GOOD
  - SOME IMPROVEMENTS IN LINE ACCOUNTABILITY
  - NUCLEAR ASSURANCE AGGRESSIVENESS IMPROVEMENT NEEDED

  ACTIONS:

  - STRENGTHENED NUCLEAR ASSURANCE ORGANIZATION
  - PROMPTLY INVESTIGATED AND BOUNDED PROBLEMS
  - REINFORCED MANAGEMENT EXPECTATIONS

- PRESENT:

  - CONSISTENTLY GOOD CONSTRUCTION QUALITY WITH HIGH PRODUCTIVITY
  - REDUCED IMPLEMENTATION PROBLEMS
  - INCREASED NUCLEAR ASSURANCE AGGRESSIVENESS
  - INCREASED LINE ACCOUNTABILITY
  - EMPLOYEE CONCERNS DECREASING

  ACTIONS:

  - CONTINUE IMPROVEMENTS

QUALITY ASSURANCE PROGRAM

TRANSITION FROM CONSTRUCTION COMPLETION

TO OPERATIONS

- <u>CONSTRUCTION</u>:
  - GOOD CONSTRUCTION QUALITY WITH HIGH PRODUCTIVITY
  - MOST CAPs/SPECIAL PROJECTS PROGRESSING ADEQUATELY
  - AREAS TO MONITOR:
    - ELECTRICAL ISSUES
    - RAD MONITORING
    - CORRECTIVE ACTION DOCUMENTS
    - FIRE PROTECTION

QUALITY ASSURANCE PROGRAM

TRANSITION FROM CONSTRUCTION COMPLETION

TO OPERATIONS

- <u>TURNOVER</u>:
  - AREA TURNOVER - GOOD PROGRESS AND QUALITY
  - SPOC/SPAE - EARLY PROBLEMS ADDRESSED
  - TESTING
    - HFT2 OVERSIGHT PLAN - COMPLETE
    - POWER ACCESSION TESTING OVERSIGHT PLAN - UNDER DEVELOPMENT

QUALITY ASSURANCE PROGRAM

TRANSITION FROM CONSTRUCTION COMPLETION

TO OPERATIONS

- <u>OPERATIONAL READINESS</u>:
  - OPERATIONAL READINESS PROGRAM SUCCESSFUL
  - AREAS TO MONITOR
    - CONFIGURATION/EQUIPMENT STATUS CONTROL
    - MAINTENANCE AWARENESS
    - SURVEILLANCE INSTRUCTION IMPLEMENTATION

QUALITY ASSURANCE PROGRAM

TRANSITION FROM CONSTRUCTION COMPLETION TO OPERATIONS

- NUCLEAR ASSURANCE:
  - ORGANIZATION IN PLACE
  - TRAINING COMPLETE
  - GOOD EXPERIENCE MIX, INCLUDING OPERATOR EXPERIENCE
  - CONFIDENT AND AGGRESSIVE

QUALITY ASSURANCE PROGRAM

CONCLUSION

- PROGRAM AND PROCEDURES ADEQUATE
- NUCLEAR ASSURANCE PERFORMANCE ADEQUATE
- LINE ACCOUNTABILITY CONTINUES TO IMPROVE
- PROBLEM IDENTIFICATION AND RESOLUTION EFFECTIVE
- APPROACHING OPERATIONAL ATTITUDE
- CONCLUSION CONSISTENT WITH PAC/AQ RESULTS

SIGNIFICANT PROBLEM AREAS

1988	1990	1994
Volume IV	Stop Work	Eight Construction Issues
Cable Issues	Significant Work Control Problems	• Cable Cut Issue
Cable Tray and Tray Supports	Changes to two separate databases used for tracking outstanding work activities were not properly controlled	• Close-out process during 4-month period of significant change
Concrete Quality	Procedural complexity, lack of clarity and non-compliance	• Recurrence Control
Containment Cooling	Inadequate controls for both in-process records stored in temporary facilities and QA records stored in the vault	
Design Baseline & Verification Program	Programmatic failure to establish and implement an adequate Corrective Action Program	
Detailed Control Room Design Review	Timeliness of corrective action initiation	
Electrical Conduit & Conduit Support		
Electrical Issues		
Environmental Qualification Program		
Equipment Seismic Qualification		
Fire Protection Program		
Hanger and Analysis Update Program		
Heat Code Traceability		
Heating, Ventilation, and Air Conditioning Ducts & Duct Supports		
Instrument Lines		
Master Fuse List		
Mechanical Equipment Qualification		
Microbiologically Induced Corrosion		
Moderate Energy Line Break		
Prestart Test Program		
QA Records		
Q-List		
Radiation Monitoring System		
Replacement Items Program		
Seismic Analysis Program		
Soil Liquefaction		
Use-As-Is CAQs		
Vendor Information Program		
Welding		

CAUSAL ANALYSIS

1988	1990	1994
Volume IV	**Stop Work**	**Eight Construction Issues**
Absence of effective organizational structure with clear lines of responsibility, authority and accountability	Inattention to detail, supervisory ineffectiveness, procedural lack of clarity, procedural non-compliance, ineffective implementation of QA/QC	Management failed to provide a more balanced allocation of management attention and resources.
Lack of sufficient numbers of experienced managers to provide necessary leadership & direction	Denial of need for change, failure to implement responsibilities, ineffective follow-through of corrective actions	Management failed to consistently establish expectations and hold personnel individually accountable.
Lack of commitment to and responsibility for achieving excellence in performance	Organizational structure, changing leadership direction, incorrect focus, unclear expectations	
Insufficient follow-up to verify proper implementation of goals and objectives	Inappropriate beliefs regarding personnel, responsibilites regarding quality, incorrect mind set that "Inspecting in Quality" was appropriate	
Failure to adequately scope, plan and apply resources to emerging problems		
Lack of centralized, established lines of authority, responsibility, and accountability for performance of key design control functions needed to ensure that design integrity is maintained		
Inadequate engineering evaluations, a lack of detail in design output, and the absence of a centralized design input/output		
Use of design and modification control methods that did not provide the coordination among groups required to ensure accurate documentation of plant configuration and performance of effective safety evaluations		

VII. CLOSING REMARKS

J. SCALICE