

Sept. 4, 1990

1990

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

Mr. Oliver D. Kingsley, Jr.
Senior Vice President, Nuclear Power
Tennessee Valley Authority
6N 38A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

566
RPT

Dear Mr. Kingsley:

SUBJECT: SUMMARY OF AUGUST 16, 1990 TVA/NRC MEETING ON WATTS BAR

This letter refers to the meeting held on August 16, 1990, at the Watts Bar Nuclear Plant in Spring City, Tennessee. The purpose of the meeting was to discuss the status of the Corrective Action Program and related issues at TVA's Watts Bar Nuclear Plant. A list of attendees, a summary of the meeting, and a copy of your handout are enclosed.

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 NRC Public Document Room.

Should you have any questions concerning this matter, please contact us.

Sincerely,

Original Signed By
BRUCE A. WILSON

Bruce A. Wilson, Chief
TVA Projects

Enclosures:

1. List of Attendees
2. Meeting Summary
3. Handout

cc w/encs: (See page 2)

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cc w/encls:

M. Runyon, Chairman
Tennessee Valley Authority
ET 12A 7A
400 West Summit Hill Drive
Knoxville, TN 37902

Director
Tennessee Valley Authority
ET 12A 11A
400 West Summit Hill Drive
Knoxville, TN 37902

J. B. Waters, Director
Tennessee Valley Authority
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W. F. Willis
Chief Operating Officer
ET 12B 16B
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D. Nunn, Vice President
Nuclear Engineering
Tennessee Valley Authority
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R. F. Wilson
Vice President, New Projects
Tennessee Valley Authority
6N 38A Lookout Place
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Dr. M. O. Medford
Vice President and Nuclear
Technical Director
Tennessee Valley Authority
6N 38A Lookout Place
Chattanooga, TN 37402-2801

Honorable Robert Aikman
County Judge
Rhea County Courthouse
Dayton, TN 37321

Honorable Johnny Powell
County Judge
Meigs County Courthouse
Route 2
Decatur, TN 37322

Dr. Henry Myers, Science Advisor
Committee on Interior and
Insular Affairs
U. S. House of Representatives
Washington, D. C. 20515

D. E. Douthit, Program Manager
Watts Bar Nuclear Plant
P. O. Box 800
Spring City, TN 37381

E. G. Wallace, Manager
Nuclear Licensing and
Regulatory Affairs
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R. J. Stevens
Site Licensing Manager
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Michael H. Mobley, Director
Division of Radiological Health
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150 -9th Avenue North
Nashville, TN 37247-3201

State of Tennessee

bcc w/encls: (See page 3)

Tennessee Valley Authority

3

bcc w/encls:

S. D. Ebnetter, RII

S. C. Black, NRR

K. P. Barr, TVAP/RII

J. Rutberg, OGC

M. S. Callahan, GPA/CA

A. R. Long, TVAP/RII

H. H. Livermore, TVAP/RII

G. C. Lainas, NRR

F. J. Hebdon, NRR

P. S. Tam, NRR

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NRC Resident Inspector

U.S. Nuclear Regulatory Commission

Route 2, Box 700

Spring City, TN 37381

TVA/RII

KBarr:vyg

08/31/90

Official

AUG 07 1990

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

Mr. Oliver D. Kingsley, Jr.
Senior Vice President, Nuclear Power
Tennessee Valley Authority
6N 38A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

Dear Mr. Kingsley:

SUBJECT: MANAGEMENT MEETING ON WATTS BAR GENERAL STATUS AND COMMUNICATION
PLANS (DOCKET NOS. 50-390 AND 50-391)

This confirms the conversation between Mr. E. Wallace, Manager, Nuclear Licensing and Regulatory Affairs, TVA, and Mr. K. P. Barr, Section Chief, TVA Projects Division, NRC, on July 20, 1990, concerning a Management Meeting to be conducted at the Watts Bar site, on August 16, 1990, beginning at 9:00 a.m.

The purpose of the meeting is to discuss General Status, Communication plans and other items of mutual interest. A proposed agenda is enclosed.

Should you have any questions regarding these arrangements, we will be pleased to discuss them.

Sincerely,

Signed By
B. A. WILSON

Bruce A. Wilson, Chief
TVA Projects

Enclosure:
TVA/NRC Meeting Agenda

cc w/encl: (See page 2)

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AUG 07 1990

Tennessee Valley Authority

2

cc w/encl:

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Tennessee Valley Authority
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400 West Summit Hill Drive
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bcc w/encl: (See page 3)

AUG 07 1990

Tennessee Valley Authority

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NRC Resident Inspector

U.S. Nuclear Regulatory Commission

Route 2, Box 700

Spring City, TN 37381

TVAP/RII

Along:vyg

08/6/90

TVAP/RII

KBarr

08/6/90

TVA/NRC MEETING
WATTS BAR NUCLEAR PLANT
AUGUST 16, 1990

INTRODUCTION

O. D. Kingsley

GENERAL STATUS

R. F. Wilson

Feedback on Actions from June 4 EDO Visit

Schedule/Value Earned

Workphase of Schedule Integration

Quality Assurance

Work Status (Construction, Engineering, Plant)

Other Work Initiatives

SPECIAL TOPICS

Progress Status CAPS/SP, Project Plans

R. L. George

Feedback on Decommittment Issues (7)

D. E. Douthit

Cable Issues Feedback

W. L. Elliott

Civil/Seismic Issues Feedback

W. L. Elliott

System Test/Status

M. K. Jones

OVERALL WBN CLOSURE FOR FUEL LOAD

R. F. Wilson

CAP/SP Closure (Integrated TVA/NRC Schedule)

NTOL Normal Activities

Integrated into
one discussion

FSAR

Technical Specifications

Fuel Load Certification

SUMMARY

TVA/NRC

ENCLOSURE 1

ATTENDEES

TVA/NRC MEETING
AUGUST 16, 1990

Nuclear Regulatory Commission:

S. D. Ebner, Regional Administrator, RII
F. J. Hebdon, Director, Project Directorate IV, NRR
B. A. Wilson, Chief, TVA Projects, RII
K. P. Barr, Watts Bar Section Chief, TVA/RII
H. H. Livermore, Senior Project Engineer, TVA/RII
G. A. Walton, Watts Bar Senior Resident Inspector, Construction, TVA/RII

Tennessee Valley Authority:

O. D. Kingsley, Senior Vice President, Nuclear Power
W. R. Cobean, Jr., Advisor to TVA Board
S. W. Crowe, Site Quality Manager
D. E. Douthit, Program Manager
W. L. Elliott, New Projects Engineering Manager
E. Fuller, Chairman, Program Team
R. L. George, Manager, Special Projects
S. E. Gibson, Project Engineer - Unit 1
M. O. Medford, Vice President, Nuclear Technology and Licensing
D. E. Nunn, Vice President, Nuclear Engineering
R. F. Salisbury, Plant Community Relations Specialist
J. A. Scalice, Plant Manager
R. J. Stevens, Manager, Site Licensing
E. G. Wallace, Manager, Nuclear Licensing
R. F. Wilson, Vice President, New Projects

ENCLOSURE 2

MEETING SUMMARY

TVA opened the joint TVA/NRC meeting with a presentation of Watts Bar special topics, overall closure processes, and general status.

TVA stated they were doing an independent look at schedule and expected some feedback in about 30 days.

TVA presented a discussion on Project Plans. Approximately 21,000 issues in the form of CAQR's, CATD's, MR's, VSR-DR's, etc., were open at Watts Bar and each of these has been captured in the Project Work Lists. In addition to these Project Work Lists, each of these issues have a specified closure process defined by procedure. Also, a final closure report will be published.

An issue on Microbiologically Induced Corrosion (MIC) has been discussed recently. TVA stated they planned a recertification of the carbon steel pipe by the end of the fiscal year.

TVA stated they planned a revision to the Cable Issue CAP and expected it to be issued by September 1, 1990. TVA also stated they wanted to meet with NRC staff to further discuss cable testing and cable bend radius issues.

TVA stated that Seismic/Civil Issues should be resolved after TVA submits an FSAR change projected for August 20, 1990. TVA requested quick NRC feedback on that submittal.

TVA presented the logic of the Prestart Test Program currently in progress. The Control Air system has been essentially completed but the system has not yet been turned over to Operations. Some additional testing of the system will be required due to some switch and panel rewiring and installation of additional fuses in control circuits. Component Cooling Water System testing is progressing but testing is about two months behind schedule. Essential Raw Cooling Water System testing is four to five months behind schedule. These systems are not on the critical path so there has been no impact on the projected fuel load schedule.

TVA discussed schedule development and indicated they expected to have a roll-up schedule in about six weeks.

TVA provided a general discussion on their plans for development of a closure process. Closure of each open item was identified as one of the necessary pieces that support the certification process.

Mr. Ebnetter (NRC) stated that the project plans were generally good and were a good step forward. He noted that more positive signs of TVA's actions were evident. He also stated that TVA is more forthright and open than in the past. Mr. Ebnetter related that NRC staff will be very interested in TVA-QC plans/procedures that overview the Project Plans. He also stated that WBN will gain more and more attention by the Commission as the time of licensing nears. Mr. Ebnetter summed up the aforementioned items by stating that TVA is making good progress.

Mr. Ebnetter also informed TVA that Watts Bar Operators would be reexamined as though they were new license applicants but that the licenses held currently would not be revoked.

TVA proposed that the next meeting include discussions on:

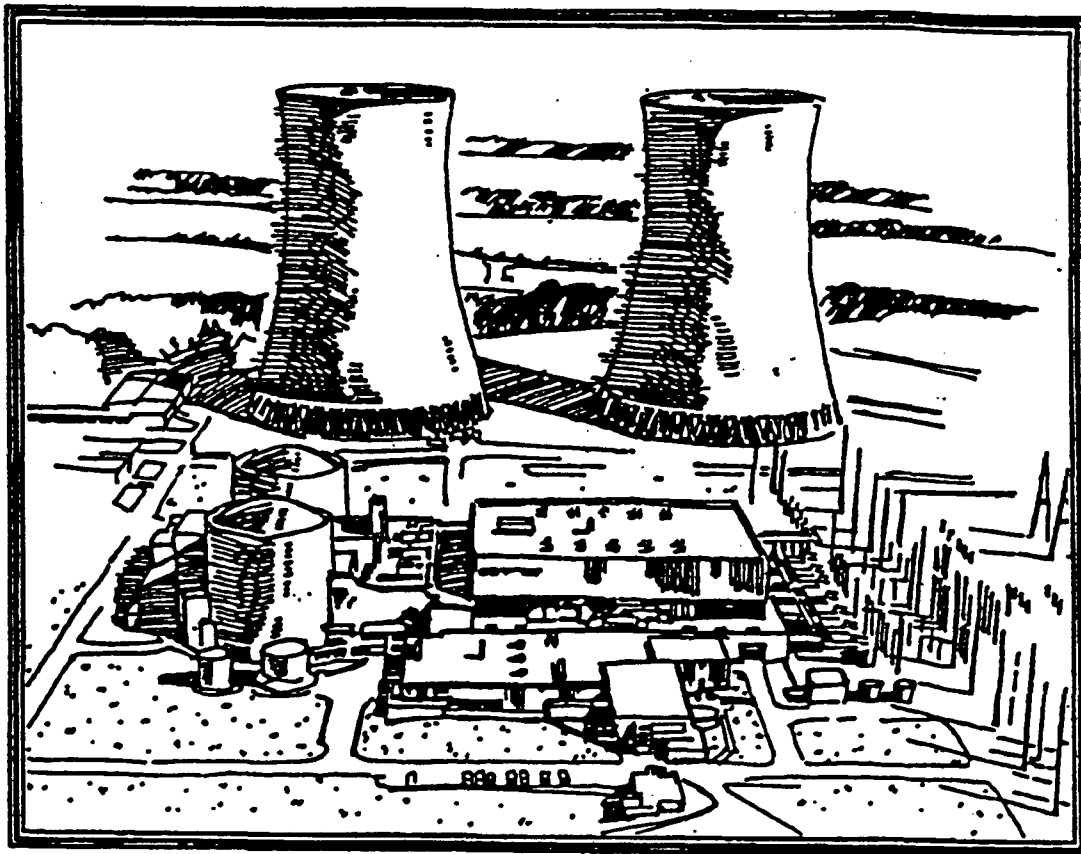
- Certification of calculations by Engineering on a System Basis
- QA Program to verify all areas are accepted
- Program that will "buy-off" all areas
- Program to stop "innovative" field work
- Review of commitments in other areas
- QA records - a demonstration of records coordination of critical case usage and other existing records (construction records)
- Additional information on the MIC program and on the CAP Certification Process in general
- General deterioration of the plant - and how they will limit damage to equipment

The next management meeting was proposed for October, 1990.

TVA requested prompt review by NRR of their submittals on the Vendor Information CAP and the revision to their Q-List CAP. TVA also requested expedited review of their submittal on Seismic/Civil issues (FSAR revision) since those could have long term impacts on additional work.

TVA also requested meetings with NRC on cable testing issues and operator licensing exams.

TENNESSEE VALLEY AUTHORITY



NEW PROJECTS WATTS BAR NUCLEAR PLANT UNIT #1

TVA/NRC REVIEW
AUGUST 16, 1990

WATTS BAR NUCLEAR PLANT UNIT 1 TVA/NRC REVIEW

INTRODUCTION

O. D. KINGSLEY

SPECIAL TOPICS

**PROJECT PLAN/COMMITMENT CLOSURE/CAP
AND SP STATUS**

R. L. GEORGE

FEEDBACK ON DECOMMITMENT ISSUES (7)

D. E. DOUTHIT

CABLE ISSUES FEEDBACK

W. L. ELLIOTT

CIVIL/SEISMIC ISSUES FEEDBACK

W. L. ELLIOTT

SYSTEM TEST/STATUS

M. K. JONES

**CAP/SP CLOSURE (INTEGRATED TVA /
NRC SCHEDULE)**

R. J. STEVENS

GENERAL STATUS/CLOSURE

R. F. WILSON

SUMMARY

O. D. KINGSLEY

AUGUST 16, 1990



PROJECT PLAN/COMMITMENT CLOSURE/CAP AND SP STATUS

- **OPEN ITEMS EVALUATION AND COMPLETION**
- **PROJECT PLANS/EVALUATIONS/CLOSURE REPORTS**
- **STATUS CAP/SP**

AUGUST 16, 1990



SAMPLE

OPEN ITEMS MATRIX

WATTS BAR NUCLEAR PLANT
UNIT 1
TVA/NRC REVIEW

CAPITAL PROJECTS PWLs	CAQ CAQ MCR PRO PER SCR	CATD	DCM	DCR	BCN	EC	ENV AUDIT ITEMS	PCR	INPO	INS	ISBO	MR	NER	NMRG NSRB NSRS	NRC CAT EFI URI OPEN	NRC COMT	ONCP	OILV OILB	PRCDS UPG SIS IMLS OP	QA AUD FIND NON CAQ	TACF	TI	VSR DR	WP	34 PGMS TOT
DESCRIPTION																									
Calcs Program	42	8	27		1									2	3	40	373						105		600
CTBD Line & Pond Repair		2	25		1																			13	41
C. L. Accumulator	1	1	2											1							1			2	8
Conduit Supports	20	4	80		2										8	9							33	24	180
Security System Upgrade	4		2		5											1								5	17
ALARA		4	12													3								3	22
U1/U2 Interface			8								5				1									6	20
Misc MRs																								4	4
Control Air			6												2	11									19
ERCW Pressure Relief	1		4	1																				5	11
Control Room Design Review	9	2	840		4						1				2	14							1	85	958
Containment Hydrogren Analyzer	2		1												2	3								1	9
CDWE Upgrade																									0
Mech/Nuc/Elec Calcs															4								27		31
Civil/Seismic Review																									0
SG Upper Nozzle Flow			1																						1
Drawing Deviations			35																						35
	1		2	1											1	8									13
Heavy Equipment	2	1	27		1											3								6	40
Mechanical Equipment Qualification			2													3							2		7
Facility Mods			15		3								1												19
Master Fuse List	3		4												1	3								4	15
Design Baseline	.18	9	20		1										8	72		1165			2		43		1,338

AUGUST 16, 1990



SAMPLE

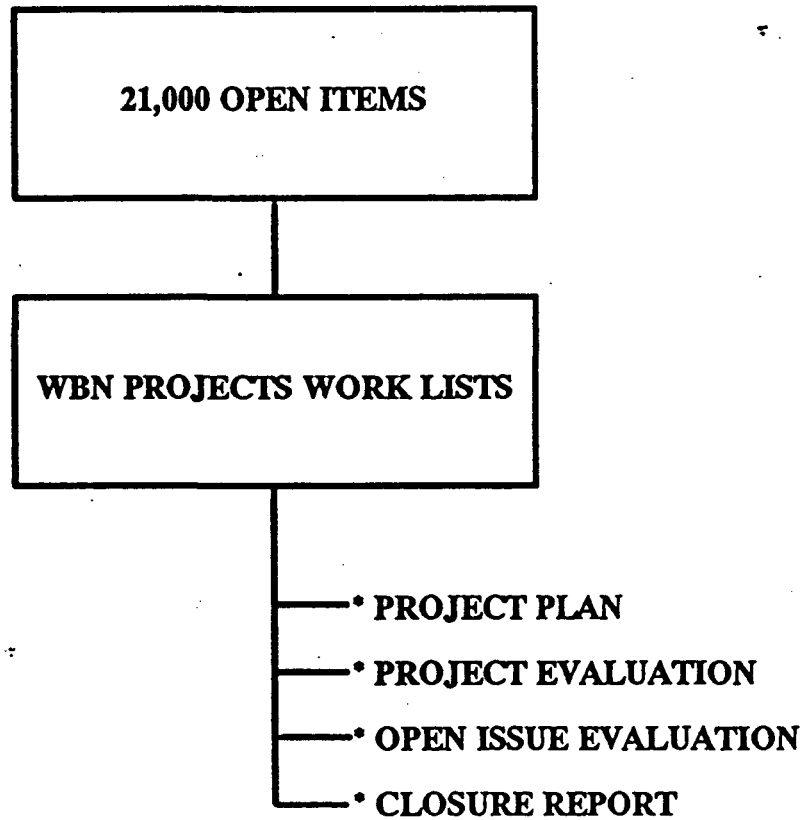
SUMMARY OF OPEN ITEMS

	CAQ CAQR MCR PRO PER SCR	CATD	DCM	DCR	BCN	BC	ENV AUDIT ITEMS	PCR	INPO	INS	ISGO	MR	NER	NMRO NSRB NSRS	NRC CAT IFI URI OPEN	NRC COMT	OICP	OILV OIDS	RCDS UPG SLS DML OP	QA AUD FIND NON CAQ	TACP	TI	VSR DR	WP	38 POMS TOT
DESCRIPTION																									
CAPITAL PROJECTS	647	138	8047	22	237	4	0	500	0	27	6	1561	6	2	102	965	409	1165	0	6	24	0	565	1775	16,208
PLANT PROGRAMS	48	21	7	0	0	0	1		0	0	0	2014	145	2	8	53	0	0	0	1	366	255	9	1	2,931
NE PROGRAMS	12	0	0	0	3	0	0		0	0	0		64	6	3	13	0	0	0	6	0	0	0	0	106
NC PROGRAMS	14	7	0	0	0	2	0		1	0	0		6	0	3	8	0	0	0	0	0	0	0	1	42
SUMMARY A																									
PM PROGRAMS	31	19	0	0	0	8	0		0	0	0		0	18	61	63	0	0	0	2	0	0	0	0	202
UNASSIGNED / IN PROCESS	108	0	96	1	8	0	0		0	0	0		4	0	0	0	0	0	0	0	0	0	1	0	218
DISCOVERY / FACILITIES PWLS	0	0	3	0	0	0	0		0	0	0	132	0	0	5	27	0	0	1301	0	0	0	1	2	1,417
TOTAL	860	185	8153	23	248	14	1	500	1	27	6	3707	225	28	181	1129	409	1165	1301	15	390	255	576	1779	21,178

AUGUST 16, 1990



OPEN ITEMS EVALUATION PROCESS



* SELECTION BASED ON PROJECT STATUS

AUGUST 16, 1990



PROJECTS WORK LISTS (PWLs)

TOTAL PWLs **132 ***
PWLs WITH OPEN ITEMS **113**
PWLs WITHOUT OPEN ITEMS **19 ***

CURRENT STATUS

	<u>TOTAL</u>	<u>PROJECT PLAN</u>	<u>OPEN ITEMS/ PROJECT EVALUATION</u>	<u>CAP/SP FINAL/ CLOSURE REPORT</u>
WITH OPEN ITEMS:				
CAP/SP	29	25	2	2
OTHER PROJECTS	55	31	10	14
OTHER PROGRAMS	<u>29</u>	—	29	0
	113			
WITHOUT OPEN ITEMS:				
OTHER PROJECTS	19	12	7	—

* EXCLUDES 40 ADMIN/MISC.

AUGUST 16, 1990



CORRELATION OF CAPs AND PROJECT PLANS

CAPs/SPECIAL PROGRAMS

CABLE ISSUES

CABLE TRAY AND CABLE TRAY SUPPORTS

DESIGN BASELINE & VERIFICATION PROGRAM

ELECTRICAL CONDUIT AND CONDUIT SUPPORTS

ELECTRICAL ISSUES

EQUIPMENT SEISMIC QUALIFICATION

FIRE PROTECTION

HANGER ANALYSIS AND UPDATE PROGRAM

HEAT CODE TRACEABILITY

HVAC DUCT AND DUCT SUPPORTS

INSTRUMENT LINES

PRESTART TEST PROGRAM

QUALITY ASSURANCE RECORDS

Q-LIST

REPLACEMENT ITEMS PROGRAM

SEISMIC ANALYSIS

VENDOR INFORMATION

WELDING

CONCRETE QUALITY PROGRAM

CONTAINMENT COOLING

DETAILED CONTROL ROOM DESIGN REVIEW

ENVIRONMENTAL QUALIFICATION PROGRAM

MASTER FUSE LIST

MECHANICAL EQUIPMENT QUALIFICATION

MICROBIOLOGICALLY INDUCED CORROSION

MODERATE ENERGY LINE BREAK FLOODING

RADIATION MONITORING SYSTEM

SOIL LIQUEFACTION

USE-AS-IS CAQs

PWL

EA

WF

DV,CA, CW

CG

EA

GH

BJ

HN,HR

HC

WE

HB

RK

BV

LR

PP

CA

DV

WP,WT

NR

BE

CR

EC

DN

DJ

DE

EB

AU

NR

BD

REPORT

PROJECT PLAN

PROJECT PLAN

PROJECT PLAN

PROJECT PLAN

PROJECT PLAN

PROJECT PLAN

PROJECT PLAN

PROJECT PLANS

DRAFT CAP PROJECT FINAL
REPORT

PROJECT PLAN

PROJECT PLAN

PROJECT EVALUATION

PROJECT PLAN

DRAFT CAP PROJECT FINAL
REPORT

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PROJECT PLAN

PROJECT EVALUATION

PROJECT PLAN

AUGUST 16, 1990



CORRECTIVE ACTION PROGRAMS

SPECIAL PROGRAMS

WATTS BAR NUCLEAR PLANT
UNIT 1
TVA/NRC REVIEW

PROGRAMMATIC ALL DISCIPLINES

1. DBVP - DV,DA,CW
2. VENDOR INFO - DV

Q-LIST - LR

REPLACEMENT
ITEMS PROGRAM
- PP

USE-AS-IS-CAQS

QA RECORDS - BV

ELECTRICAL

CABLE ISSUES - EA

ELECTRICAL
ISSUES - EA

DETAILED CONTROL
ROOM DESIGN
REVIEW - CR

MASTER FUSE
LIST - DN

RADIATION
MONITORING - AV

MECHANICAL/ NUCLEAR

FIRE
PROTECTION - BJ

HEAT CODE
TRACEABILITY - HC

WELDING PROJECT/
PROGRAM - WP, WT

MICROBIOLOGICALLY
INDUCED CORROSION
- DE

MODERATE ENERGY
LINE BREAK - EB

CONTAINMENT
COOLING - BE

ENVIRONMENTAL
QUALIFICATION
PROGRAM - EC

MUCHANICAL
EQUIPMENT
QUALIFICATION - DJ

CIVIL/NUCLEAR

HANGER ANALYSIS &
UPDATE PROGRAM
1. LARGE BORE PIPING-HR
2. SMALL BORE PIPING-HN
3. INTERACTIONS
(PROGRAMMATIC)-HN

EQUIPMENT SEISMIC
QUALIFICATION - GH

ELECTRICAL CONDUIT
& CONDUIT SUPPORT
- CG

CABLE TRAY &
CABLE TRAY
SUPPORT - WF

HVAC DUCT & DUCT
SUPPORT - WE

INSTRUMENT
LINES - HB

CONCRETE QUALITY
PROGRAM - NR

SOIL
LIQUEFACTION - NR

DBVP - CA
1. SEISMIC ANALYSIS
2. STEEL
3. CONCRETE

PRESTART TEST PROGRAM

AUGUST 16, 1990



PROJECTS WORK LIST

PROJECT COMPLETION PLAN TABLE OF CONTENTS

Section	Title
---------	-------

- | | |
|-----|--|
| 1.0 | EXECUTIVE SUMMARY |
| 1.1 | Project Definition |
| 1.2 | Project Status |
| 1.3 | Remaining Work and Assumptions |
| 1.4 | Schedule Summary and Projections |
| 1.5 | Budget Analysis and Projections |
| 1.6 | Problem Areas and Workaround Recovery Plans |
| 2.0 | WORKSCOPE |
| 2.1 | Problem or Issue
Background
Technical Evaluation |
| 2.2 | Requirements and Objectives
Applicable Criteria
Methodology
Clarifications/Exceptions |
| 2.3 | Solution
Technical Approach/Corrective Actions and Recurrence Controls
Alternative Synopsis
Permanent Plant Configuration Changes
Verification of Solution |
| 2.4 | Implementation Strategy
Prerequisites
Integration
Segmentation |
| 2.5 | Workscope Unresolved Issues
Proposed Changes/Clarifications
Action Plan/Follow-Up Actions
Risks |

AUGUST 16, 1990

PROJECTS WORK LIST

PROJECT COMPLETION PLAN TABLE OF CONTENTS

Section	Title
3.0	LICENSING
3.1	Regulatory Strategy, Position Summary, and History
3.2	Commitment and Nuclear Regulatory Commission Open Item Matrix
3.3	Final Safety Analysis Report and Technical Specification Changes
3.4	Nuclear Regulatory Commission Reviews and Approval Needed
3.5	Inspection Plan
4.0	SCHEDULE
4.1	Deliverable Based Milestone Flowchart
5.0	BUDGET
6.0	DELIVERABLE (PRODUCTS AND SERVICES) ESTIMATES AND EARNED VALUE BASIS Project Deliverables Source Document Lists and Comparative Reviews Engineering Estimates and Earned Value Basis
7.0	CONSTRUCTION COMMODITY INSTALLATION ESTIMATES AND EARNED VALUE BASIS
8.0	RESOURCE ALLOCATIONS
9.0	MATERIAL LIST (PURCHASE/TRANSFER/BUY OUT)
10.0	INITIAL/VARIANCE AUTHORIZATIONS
11.0	PROJECT ANALYSIS (PROBLEM AREAS AND WORKAROUND RECOVERY PLANS)

AUGUST 16, 1990



OPEN ITEM REVIEW CATEGORIES

<u>CAPs/SPECIAL PROGRAMS</u>	<u>PWL</u>	<u>CATEGORY</u>			
		<u>B</u>		<u>C</u>	
		<u>E</u>	<u>I</u>	<u>E</u>	<u>I</u>
CABLE ISSUES	EA	4	1	5	1
* CABLE TRAY AND CABLE TRAY SUPPORTS	WF	-	-	-	-
* DESIGN BASELINE & VERIFICATION PROGRAM	DV, CA	-	6	-	3
* ELECTRICAL CONDUIT AND CONDUIT SUPPORTS	CG	-	-	-	-
ELECTRICAL ISSUES	EA	3		1	
* EQUIPMENT SEISMIC QUALIFICATION	GH				
FIRE PROTECTION	BJ			1	
* HANGER ANALYSIS AND UPDATE PROGRAM	HN, HR	-	-	-	-
HEAT CODE TRACEABILITY	HC				
* HVAC DUCT AND DUCT SUPPORTS	WE	-	-	-	-
INSTRUMENT LINES	HB		1	3	1
** PRESTART TEST PROGRAM	RK	-	-	-	-
QUALITY ASSURANCE RECORDS	BV				
Q-LIST	LR				
REPLACEMENT ITEMS PROGRAM	PP				
* SEISMIC ANALYSIS	CA				
VENDOR INFORMATION	DV	2			
WELDING	WP, WT			4	2
CONCRETE QUALITY PROGRAM	NR				
CONTAINMENT COOLING	BE				
DETAILED CONTROL ROOM DESIGN REVIEW	CR				
ENVIRONMENTAL QUALIFICATION PROGRAM	EC				
MASTER FUSE LIST	DN				
MECHANICAL EQUIPMENT QUALIFICATION	DJ				
MICROBIOLOGICALLY INDUCED CORROSION	DE				
MODERATE ENERGY LINE BREAK FLOODING	EB				
RADIATION MONITORING SYSTEM	AU		2		2
SOIL LIQUEFACTION	NR				
USE-AS-IS CAQs	BD	-	-	-	-
		9	10	14	9

B - Clarification

C - Change

* - Civil/Seismic Issues

** - Later

E - External Commitment

I - Internal Commitment

AUGUST 16, 1990



CORRECTIVE ACTION PROGRAMS/SPECIAL PROGRAMS CATEGORY C ITEMS REMAINING SUBMITTALS

PWL PROPOSED CHANGE

BASIS

DOCUMENT

BJ Rebaseline Fire Protection Program to confirm current regulatory guidance and compliance.

More efficient to rebaseline than modify old program.

Various

HB As opposed to inspecting all supports built to typical drawings 47A051-35 and -35A and performing individual analyses, accept supports built to these typicals.

Based on a walkdown of all such supports in System 032, 067, and 070, all supports were evaluated to be acceptable.

WBP900115
NCO860091001
NCO860091002

WT As opposed to rewriting all welding specifications, clarify the existing specifications. Revise the welding CAP, Welding Project WBN Phase I Report, and Welding Project Final Reports to reflect this revision to the commitments.

Evaluation of the existing welding specifications by NE determined that clarifications to existing specifications would be more efficient and less confusing while still providing quality guidance.

NC0860124025
NC0860124068
NC0840012023
NC0890012024

EA No further cable records reviews required.

Based on the results of the calculations and trending analysis performed to date, the CCRS adequately reflects the installed cable configuration. Therefore, no further cable records review is required.

NCO860291002

AUGUST 16, 1990

**CORRECTIVE ACTION PROGRAMS/SPECIAL PROGRAMS
CATEGORY C ITEMS
REMAINING SUBMITTALS
(cont.)**

<u>PWL</u>	<u>PROPOSED CHANGE</u>	<u>BASIS</u>	<u>DOCUMENT</u>
EA	TVA proposed to not replace Cable 1B41-B.	The environment in regards to the above cable has been shown to be locally mild (see NE calculation WBN-EM-75).	NCO860291007
EA	DCN P-03658-A, P-03656-A and P-02572-A will revise design change documentation; instead of revising it on FCR WB-87-208.	The actual documentation revision is to be done. However, it will be accomplished through the design change process rather than the field change request process as previously indicated in the related 10 CFR 50.55(e) final report.	NC0860291008
EA	DCN P-03658-A, P-03656-A and P-02572-A will revise design change documentation; instead of revising it on FCR WB-87-208.	The actual documentation revision is to be done. However, it will be accomplished through the design change process rather than the field change request process as previously indicated in the related 10 CFR 50.55(e) final report.	NC0860291016

AUGUST 16, 1990



**CORRECTIVE ACTION PROGRAMS/SPECIAL PROGRAMS
CATEGORY C ITEMS
REMAINING SUBMITTALS
(cont.)**

PWL PROPOSED CHANGE

BASIS

DOCUMENT

EA As opposed to walkdown identification of all mid-route flex and subsequent inspection of cable for damage, utilize evaluation of test results from low risk conduit testing if sufficient statistical data can be obtained.

Testing would identify significant cable damage resulting from pulling cable through mid-route flex.

NCO TBD

EA As opposed to developing a list of flex conduit mounted to Class 1E pipe mounted devices, all Class 1E conduit will be walked down to ensure proper flex installation.

Walkdown would identify all Class 1E pipe mounted devices with flex conduit connections.

NCO860099004

AUGUST 16, 1990



CAPS AND SPECIAL PROGRAMS (SEPTEMBER 30, 1990 PROJECTION)

	PROGRAM APPROVED	CRITERIA SUBMITTED	DISCOVERY ESSENTIALLY COMPLETE	ENGINEERING PROGRESSING	CONSTRUCTION PROGRESSING	PROGRAM COMPLETE
CORRECTIVE ACTION PROGRAMS						
- CABLE ISSUES		X	X	X	X	
- CABLE TRAY AND CABLE TRAY SUPPORTS	X	X	X	X		
- DESIGN BASELINE AND VERIFICATION PROGRAM	X	X		X	N/A	
- ELECTRICAL CONDUIT AND CONDUIT SUPPORT	X	X	X	X	X	
- ELECTRICAL ISSUES	X	X		X	X	
- EQUIPMENT SEISMIC QUALIFICATION	X	X		X	X	
- FIRE PROTECTION	X	X	X	X		
- HANGER AND ANALYSIS UPDATE PROGRAM	X	X		X	X	
- HEAT CODE TRACEABILITY	X	X	X	X	X	X
- HVAC DUCT AND DUCT SUPPORTS	X	X	X	X	X	
- INSTRUMENT LINES	X	X	X	X	X	
- PRESTART TEST PROGRAM	X	X	N/A	N/A	N/A	
- QA RECORDS	X	X		N/A	N/A	
- Q-LIST	X	X	N/A	X	X	
- REPLACEMENT ITEMS PROGRAM (PIECE PARTS)	X	X	N/A	X	N/A	
- SEISMIC ANALYSIS	X	X	X	X	N/A	
- VENDOR INFORMATION		N/A		X	N/A	
- WELDING	X	X	X	X	X	
SPECIAL PROGRAMS						
- CONCRETE QUALITY PROGRAM	X	X	X	X	N/A	X
- CONTAINMENT COOLING	X	X	X	X	X	
- DETAILED CONTROL ROOM DESIGN REVIEW	X	N/A	X	X	X	
- ENVIRONMENTAL QUALIFICATION PROGRAM	X	X	X	X	X	
- MASTER FUSE LIST	X	X	X	X	X	
- MECHANICAL EQUIPMENT QUALIFICATION	X	X		X	N/A	
- MICROBIOLOGICALLY INDUCED CORROSION	X	X		X	X	
- MODERATE ENERGY LINE BRAKE FLOODING	X	N/A		X	X	
- RADIATION MONITORING SYSTEM	X	N/A	X	X		
- SOIL LIQUIFACTION	X	X	X	X	N/A	X
- USE-AS-IS-CAQS	N/A	X		X	N/A	

AUGUST 16, 1990



NRC PERCEPTION OF TVA CHANGING COMMITMENTS WITHOUT PRIOR DISCUSSION

CONTROL ROOM LOGIC DIAGRAMS

RESOLVED

QA RECORDS

PARTIALLY RESOLVED

Q-LIST

RESOLVED

VENDOR INFORMATION CAP

RESOLVED

CONDUIT CAP

OPEN

DETAILED CONTROL ROOM DESIGN REVIEW

RESOLVED

ER-SPECS VS G-SPECS

RESOLVED

AUGUST 16, 1990



CABLE ISSUES

VARIOUS CONCERNS RELATED TO CABLE INSTALLATION HAVE BEEN IDENTIFIED AT WATTS BAR NUCLEAR PLANT THROUGH EMPLOYEE CONCERNS, CONDITION ADVERSE TO QUALITY, AND NRC FINDINGS.

THESE ISSUES ARE:

- CABLE PULLBY EVALUATION AND CABLE REPLACEMENT PROGRAM
- Hi-POT CABLE TEST PROGRAM
- CABLE SIDEWALL BEARING PRESSURE
- SILICONE RUBBER CABLE
- CABLE SUPPORT IN VERTICAL TRAY
- CABLE SUPPORT IN VERTICAL CONDUIT
- CABLE BEND RADIUS
- CABLE SPLICES
- HOT PIPE
- CABLE AMPACITY
- LOW VOLTAGE POWER CABLE
- > 300 MCM IN CONDUITS WITH LBs
- CABLE JAMMING
- MID-ROUTE FLEX



CABLE ISSUES

SIGNIFICANT ACCOMPLISHMENTS

- TECHNICAL/STATUS MEETING WITH NRC ON MAY 22, 1990
- LICENSING SUBMITTALS ON JUNE 15, 1990
- TECHNICAL REVIEW MEETING WITH NRC ON AUGUST 1 THROUGH 3, 1990
- STARTED LOW RISK CABLE TESTING
- ISSUED CABLE DAMAGE DCNs



CABLE ISSUES

STATUS OF CABLE ISSUE CORRECTIVE ACTION PLAN AS A RESULT OF NRC MEETING AUGUST 1 THROUGH 3, 1990

<u>ISSUE</u>	<u>NRC ASSESSMENT</u>
• CABLE PULLBY EVALUATION AND CABLE REPLACEMENT PROGRAM	- NRC CONCURS
• SILICONE RUBBER CABLE	- NRC CONCURS
• CABLE SUPPORT IN VERTICAL TRAY	- NRC CONCURS
• CABLE SPLICES	- NRC CONCURS
• LOW VOLTAGE POWER CABLE > 300 MCM IN CONDUITS WITH LBs	- NRC CONCURS
• CABLE JAMMING	- NRC CONCURS WITH TVA PROGRAM PROVIDED. TVA TO REVISE CAP.
• MID-ROUTE FLEX	- NRC CONCURS WITH TVA PROGRAM PROVIDED. TVA TO REVISE CAP.

AUGUST 16, 1990



CABLE ISSUES

STATUS OF CABLE ISSUE CORRECTIVE ACTION PLAN AS A RESULT OF NRC MEETING AUGUST 1 THROUGH 3, 1990

ISSUE

NRC ASSESSMENT

- CABLE TESTING
 - NRC CONCURS WITH TEST POPULATION EXCEPT FOR 1 CONDUIT. NRC STATED THAT IF ONE CABLE FAILS TEST, THEN TVA MUST REPLACE OR REMOVE AND INSPECT ALL CABLES ABOVE FAILED CABLE IN RANK. TVA EVALUATING.
- CABLE SIDEWALL BEARING PRESSURE
 - NRC REQUESTED ADDITIONAL 40 CONDUITS BE ADDED TO POPULATION FOR EVALUATION. TVA EVALUATING REQUEST.
- CABLE SUPPORT IN VERTICAL CONDUIT
 - NRC CONCURS WITH ANALYSIS FOR CONTROL AND SIGNAL CABLES. NRC DOES NOT CONCUR WITH USING HORIZONTAL CONTRIBUTION FOR POWER CABLES. TVA EVALUATING COMMENTS.



CABLE ISSUES

STATUS OF CABLE ISSUE CORRECTIVE ACTION PLAN AS A RE- SULT OF NRC MEETING AUGUST 1 THROUGH 3, 1990 (CONTINUED)

ISSUE

NRC ASSESSMENT

- CABLE BEND RADIUS
 - NRC REQUESTED ADDITIONAL TEST FOR MEDIUM VOLTAGE AND LOW VOLTAGE MULTICONDUCTOR CABLES. TVA EVALUATING REQUEST. TVA TO HAVE CABLE MANUFACTURERS REVIEW BEND RADIUS PROGRAM.
- CABLE AMPACITY
 - NRC CONCURS WITH PROGRAM EXCEPT FOR DERATE FACTOR FOR CABLE TRAYS > 6' AND < 10'. TVA EVALUATING COMMENTS.
- HOT PIPE
 - NRC CONCURS. NRC REQUESTED TVA TO ADD REQUIREMENT TO SEPARATE CONDUITS FROM HOT PIPES < 2" FOR FUTURE INSTALLATIONS. TVA EVALUATING REQUEST.



CABLE ISSUES

SUMMARY

- TVA HAS DONE EXTENSIVE ENGINEERING ANALYSIS, LAB TESTING, IN-SITU TESTING, AND FIELD INSPECTIONS/WALKDOWNS TO UNDERSTAND AND DEFINE CABLE ISSUES.
- ENGINEERING ACTIONS FOR COMPLETION IN NEAR TERM AND CONSTRUCTION ACTIVITIES ARE SCHEDULED .
- ADDITIONAL FIELD DATA WILL CONTINUE TO BE EVALUATED AS ACQUIRED TO PROVIDE CONTINUING CONFIRMATION OF THE CABLE CAP.
- CORRECTIVE ACTION PROGRAM IMPLEMENTATION AS DESCRIBED PROVIDES ADEQUACY OF INSTALLED CABLE.

AUGUST 16, 1990



SEISMIC/CIVIL ISSUES

VARIOUS CONCERNS RELATED TO SEISMIC/CIVIL HAVE BEEN IDENTIFIED AT WATTS BAR THROUGH EMPLOYEE CONCERNS, CONDITIONS ADVERSE TO QUALITY AND NRC FINDINGS. THESE ARE COVERED IN CORRECTIVE ACTION AND SPECIAL PROGRAMS AND INCLUDE:

- **SEISMIC ANALYSIS**
- **HANGER ANALYSIS UPDATE PROGRAM**
- **EQUIPMENT SEISMIC QUALIFICATION**
- **CONDUIT AND SUPPORTS**
- **HVAC AND SUPPORTS**
- **CABLE TRAY AND SUPPORTS**
- **DBVP (DESIGN BASES VERIFICATION CAP)**
- **SPECIAL PROGRAMS**
 - **SOIL LIQUEFACTION**
 - **CONCRETE QUALITY**

AUGUST 16, 1990



SEISMIC/CIVIL ISSUES

NRC REVIEW SUMMARY

- **SERs ISSUED ON CAPs AND SPECIAL PROGRAMS – 1989, 1990**
- **SER ISSUE ON WBN PERFORMANCE PLAN VOLUME 4 – DECEMBER 1989**
 - **SOIL LIQUEFACTION**
 - **CONCRETE QUALITY**
- **INSPECTION REPORT 390, 391/89-14 – DECEMBER 1989**
 - **HANGER AND ANALYSIS UPDATE PROGRAM**
 - **CABLE TRAY AND CABLE TRAY HANGERS**
 - **CONDUIT AND CONDUIT SUPPORTS**
- **INSPECTION REPORT 390, 391/89-21 – MAY 1990**
 - **SEISMIC ANALYSIS DESIGN CRITERIA WB-DC-20-24**
- **INSPECTION REPORT 390, 391/90-05 – MAY 1990**
 - **HEATING, VENTILATION, AND AIR CONDITIONING**
 - **EQUIPMENT SEISMIC QUALIFICATION**
- **SEISMIC TECHNICAL MEETING AUGUST 6-9, 1990**

AUGUST 16, 1990



SEISMIC/CIVIL ISSUES

TVA/NRC MEETING AUGUST 2, 1990

- ISSUES PRESENTED
- ACTION ITEMS
 - FSAR SUBMITTAL
 - METHODOLOGY COMPLETION
 - CIVIL PROJECT PLANS
- FSAR MARKUP
- CAP COMMITMENTS BEING MET

FSAR UPDATE

- MARK UP AUGUST 2, 1990
- FINAL SUBMITTAL AUGUST 20, 1990

AUGUST 16, 1990



SEISMIC/CIVIL ISSUES

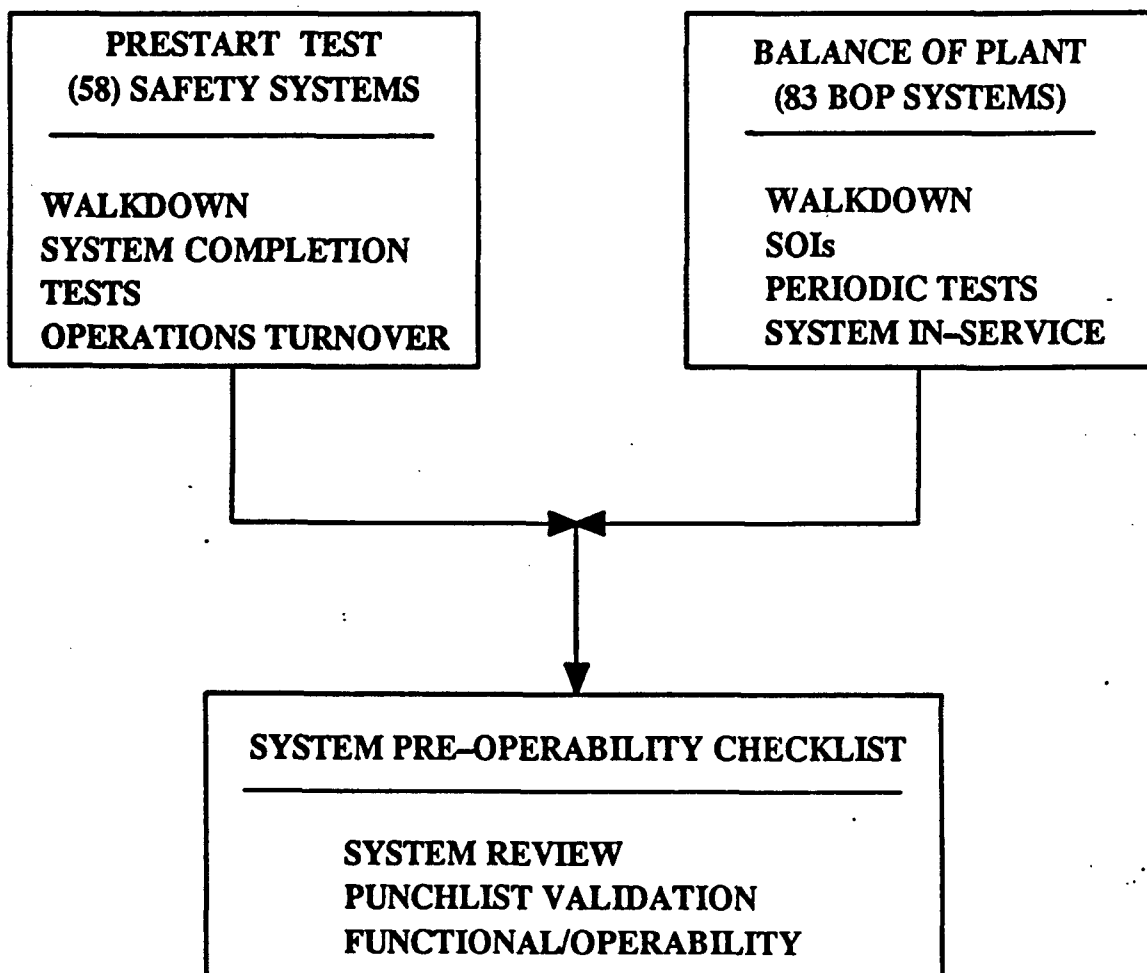
SUMMARY

- WORKSCOPE AND PLANS REVIEWED FOR ADEQUACY WITH MPR, R. L. CLOUD & ASSOC., CYGNA, R. KENNEDY, AND J. STEVENSON
- INTEGRATED PLAN DEVELOPED
- INITIATION OF MAJOR EFFORT WITH CONTRACTOR
- CLOSURE PRESENTED TO NRC
- CONTINUED NRC AND TVA INTERACTIONS NECESSARY
 - INCLUDING EARLY FEEDBACK SUBSEQUENT TO TVA's FSAR SUBMITTAL

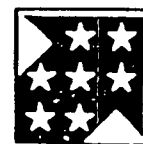
AUGUST 16, 1990



SYSTEM COMPLETION PROGRAM

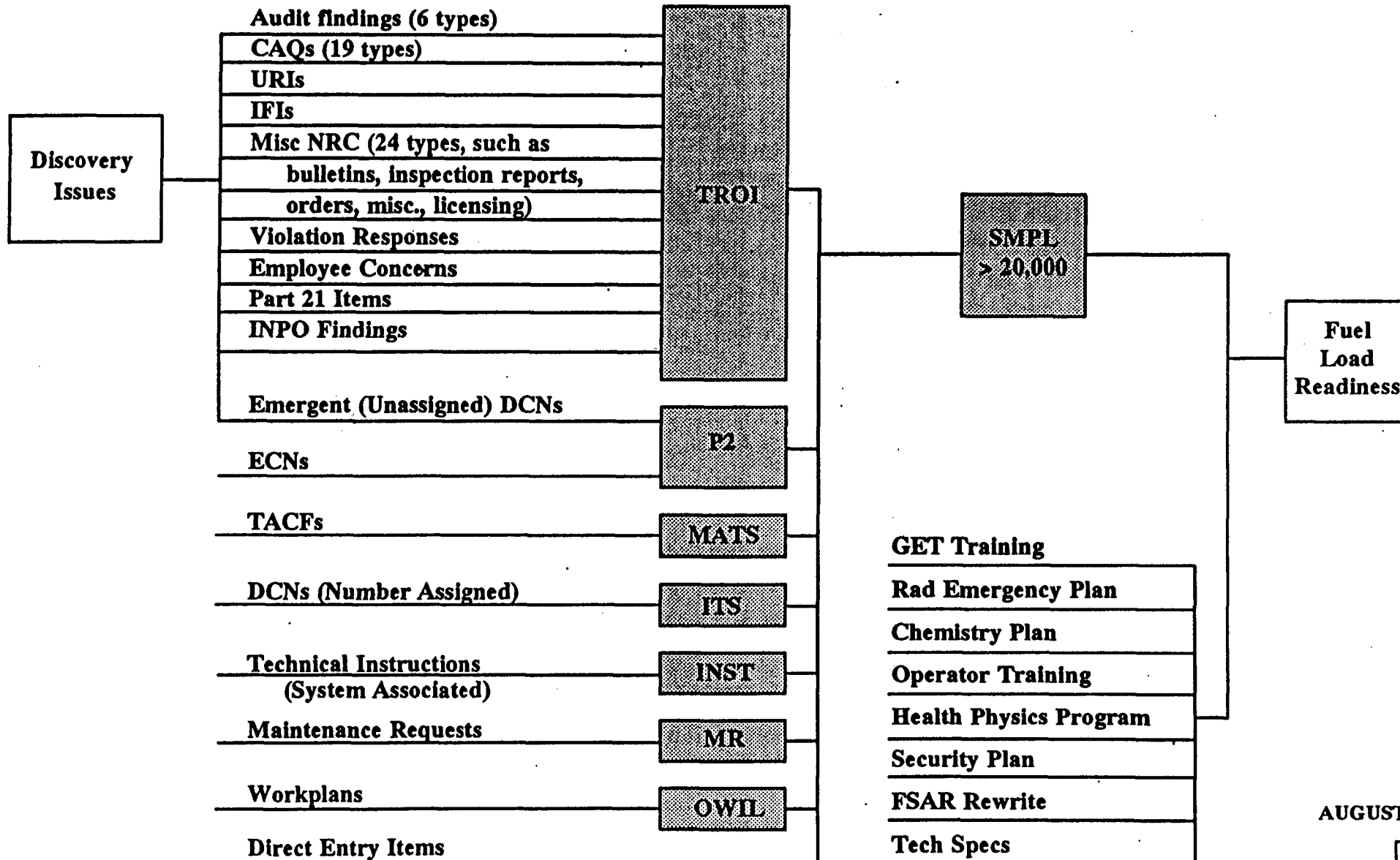


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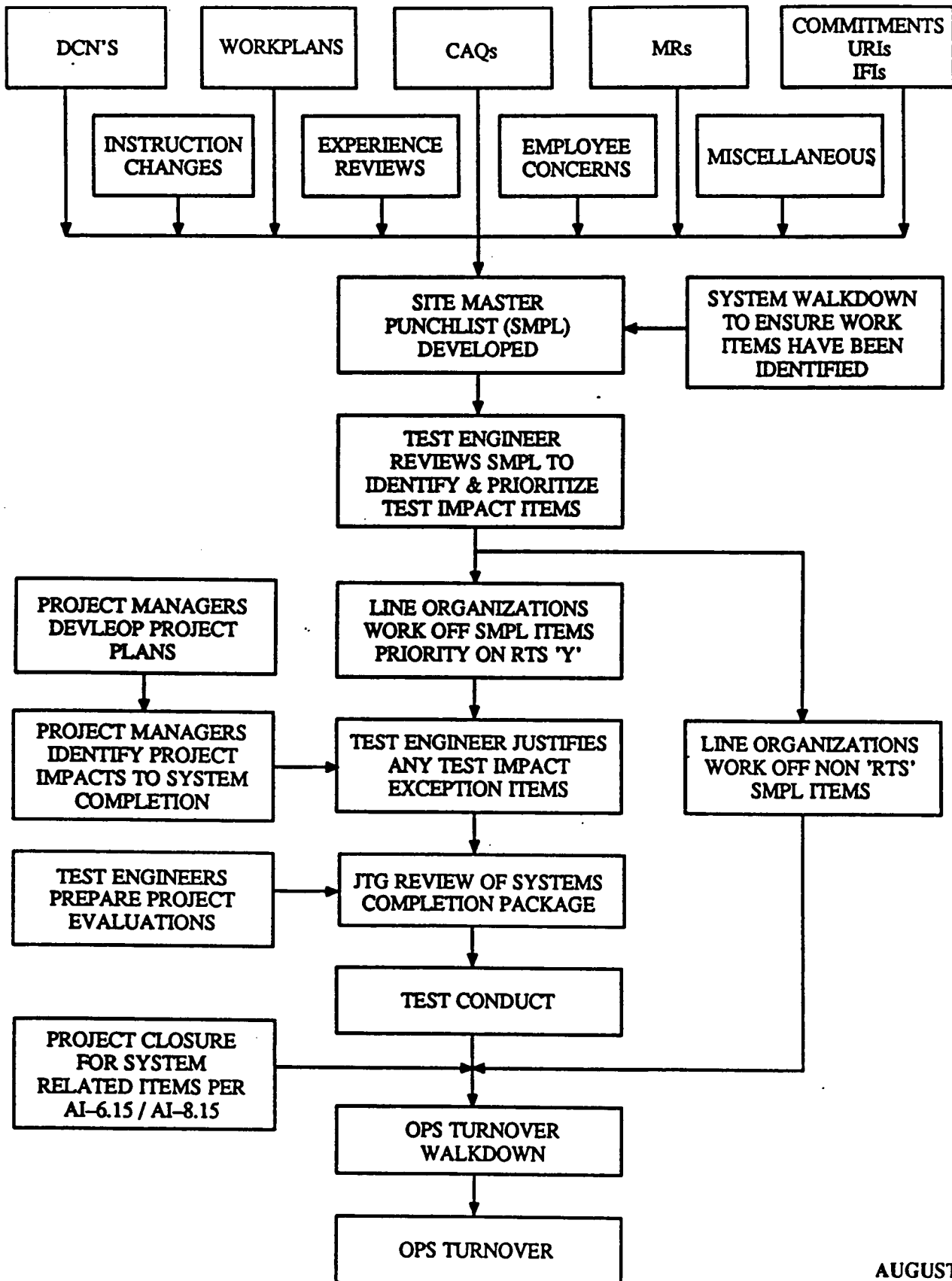


SITE MASTER PUNCHLIST

SMPL SOURCE DATABASES



SYSTEM TURNOVER



AUGUST 16, 1990



GROUP 1 TEST STATUS

SYSTEM 32 (CONTROL AIR)

- TEST CONDUCT IS COMPLETE. FINAL TESTING TO RESOLVE VIBRATION AND AIR QUALITY DEFICIENCIES TO BE COMPLETED BY AUGUST 17, 1990
- TYPES OF DEFICIENCIES –
 - COMPRESSOR CAPACITIES
 - INDICATOR LIGHTS ON DRYERS
 - TAGGING PROBLEM ON DRYERS
 - STATUS MONITOR RELAY
 - PRESSURE CONTROLLER & AIR FLOW MEASUREMENTS
 - PIPING VIBRATION DEFICIENCY ON RELIEF VALVE

SYSTEM 70 (COMPONENT COOLING)

- CONTROL CIRCUIT FUNCTIONAL AND PUMP TESTING IS COMPLETE
- RETESTING WILL BE REQUIRED DUE TO LOW RISK CABLE TESTING. THE REMAINING MAJOR TEST ACTIVITY IS FLOW BALANCING OF THE SYSTEM. FLOW BALANCE TESTING IS SCHEDULED TO BE COMPLETE BY SEPTEMBER 6, 1990.
- TYPES OF DEFICIENCIES –
 - INDICATOR BULBS
 - ANNUNCIATOR PROGRAMMING
 - VALVE STROKE TIMES
 - THERMAL BARRIER BOOSTER PUMP CONTROL CIRCUIT
 - AND PUMP CONTROL CIRCUIT AND PUMP PERFORMANCE

AUGUST 16, 1990



SYSTEM COMPLETION STATUS

SYSTEM 67 (ESSENTIAL RAW COOLING WATER)

- **SYSTEM COMPLETION SCHEDULE AUGUST 27, 1990**
- **SCHEDULED TEST START DATE IS SEPTEMBER 18, 1990**
- **MAJOR PROBLEM AREAS ARE FIRE PROTECTION INTERACTION CABLE WORK, OBSOLETE INSTRUMENTATION, AND PUMP WEAR/CORROSION**

AUGUST 16, 1990



ISSUE COMPLETION

OUTSTANDING ISSUES AT SYSTEM COMPLETION AND CURRENT STATUS:

- FIRE PROTECTION INTERACTION
 - SYSTEM 32 NOT AFFECTED
 - SYSTEM 70 DISCOVERY COMPLETE
- CABLE BEND RADIUS/UNDOCUMENTED SPLICES
 - SYSTEM 32 COMPLETE
 - SYSTEM 70, 128 OF 294 CONDUITS INSPECTED
- VERTICAL CABLE DROP
 - SYSTEM 32 COMPLETE
 - SYSTEM 70 IN WORK

AUGUST 16, 1990



REVIEW OF VERTICAL SLICE DEFICIENCY REPORTS

- REVIEWED 654 DRs TO VERIFY THAT TESTING IMPACT WAS APPROPRIATELY ADDRESSED.
- DRs WERE VERIFIED TO BE IN THE FOLLOWING CATEGORIES:
 - IMPLEMENTING DOCUMENT IN SMPL
 - PROJECT WITH DOCUMENTED TEST EVALUATION
 - CALCULATION
- CALCULATIONS WERE FURTHER REVIEWED TO VERIFY NO TESTING IMPACT
- ACTION TO ADD CALCULATIONS TO THE SMPL

AUGUST 16, 1990

TEST IMPACT ITEMS REQUIRING RETEST

- **SYSTEM 32: ADDITIONAL FUSES FOR AUXILIARY AIR COMPRESSOR CONTROL CIRCUITS.**
- **SYSTEM 32: REWIRING POSITION SWITCHES ON THE CONTAINMENT ISOLATION VALVES. (CABLE BEND PROBLEM)**
- **SYSTEM 32: MINOR REWIRING OF THE CONTAINMENT ISOLATION STATUS PANEL**
- **SYSTEM 70: HIGH POT TESTING OF LOW RISK CABLE**

AUGUST 16, 1990

BOP ACTIVITIES FOR EACH SYSTEM

- BY WORKING THE 83 BOP SYSTEMS IN PARALLEL WITH THE PRESTART SYSTEMS, THE "PLANT" CAN BE COMPLETED AT THE SAME TIME.
- ENSURES THAT SUPPORT SYSTEMS ARE READY TO SUPPORT OTHER PRESTART TESTS.
- THE BOP SCHEDULE IS DESIGNED TO SUPPORT THE PRESTART PROGRAM.
- MINIMIZES THE IMPACT OF COMPLETION OF "ALL OTHER SYSTEMS" BEING SCHEDULE WITH PRESTART GROUP 6.
- EACH BOP SYSTEM WILL BE WALKED DOWN TO CORRECT ALL IDENTIFIED DEFICIENCIES USING WALKDOWN GUIDELINES TO GENERATE TROUBLE TAGS.
- EXISTING MAINTENANCE REQUESTS (MRs) AND MODIFICATIONS REQUIRING DESIGN CHANGE NOTICES (DCNs) PLUS THOSE GENERATED BY THE WALKDOWNS WILL ENSURE EACH BOP SYSTEM IS FUNCTIONAL.
- THE SYSTEM WILL BE TESTED BY USING PLANT PROCEDURES.
- THE SYSTEM ENGINEER DECIDES WHEN HIS ASSIGNED SYSTEM IS READY, GENERATES A SYSTEM PREOPERABILITY CHECKLIST (SPOC) STATING THE SYSTEM IS OPERABLE. SPOC IS REVIEWED BY PORC AND APPROVED BY THE PLANT MANAGER.

AUGUST 16, 1990



BOP SYSTEM STATUS

- **RECENTLY COMPLETED ESTABLISHMENT OF CONDENSER VACUUM. THIS ACTIVITY INVOLVED OPERATION OF THE FOLLOWING SYSTEMS:**
 - **CONDENSER CIRCULATING WATER**
 - **CONDENSATE**
 - **FEEDWATER**
 - **AUXILIARY FEEDWATER**
 - **GLAND SEAL WATER**
 - **GLAND SEAL STEAM**
 - **LUBRICATING OIL**
- **25 SYSTEMS IN SPOC EVALUATION PROCESS**
- **4 SYSTEMS IN SPOC CHECKLIST PROCESS**

AUGUST 16, 1990

CAP/SP CLOSURE

CRITERIA

- **ADDITIONAL NECESSARY TVA SUBMITTALS—JULY–SEPTEMBER 1990**
- **NRC REVIEW AND SER**

IMPLEMENTATION

- **TVA APPLIES METHODOLOGY IN ACCORDANCE WITH CAP/SP**
- **NRC MONITORS ACTIVITIES/REVIEWS METHODOLOGY**

PARTIAL CLOSURE

- **TVA COMPLETES**
 - DISCOVERY**
 - APPROACH DEVELOPMENT/CRITERIA FINALIZED**
 - ALL DESIGN WORK FOR SOME SYSTEMS**
 - CONSTRUCTION WORK FOR SOME SYSTEMS**
 - QA REVIEW**
- **TVA NOTIFIES NRC CAP/SP READY FOR INSPECTION**
- **NRC INSPECTION – SER**

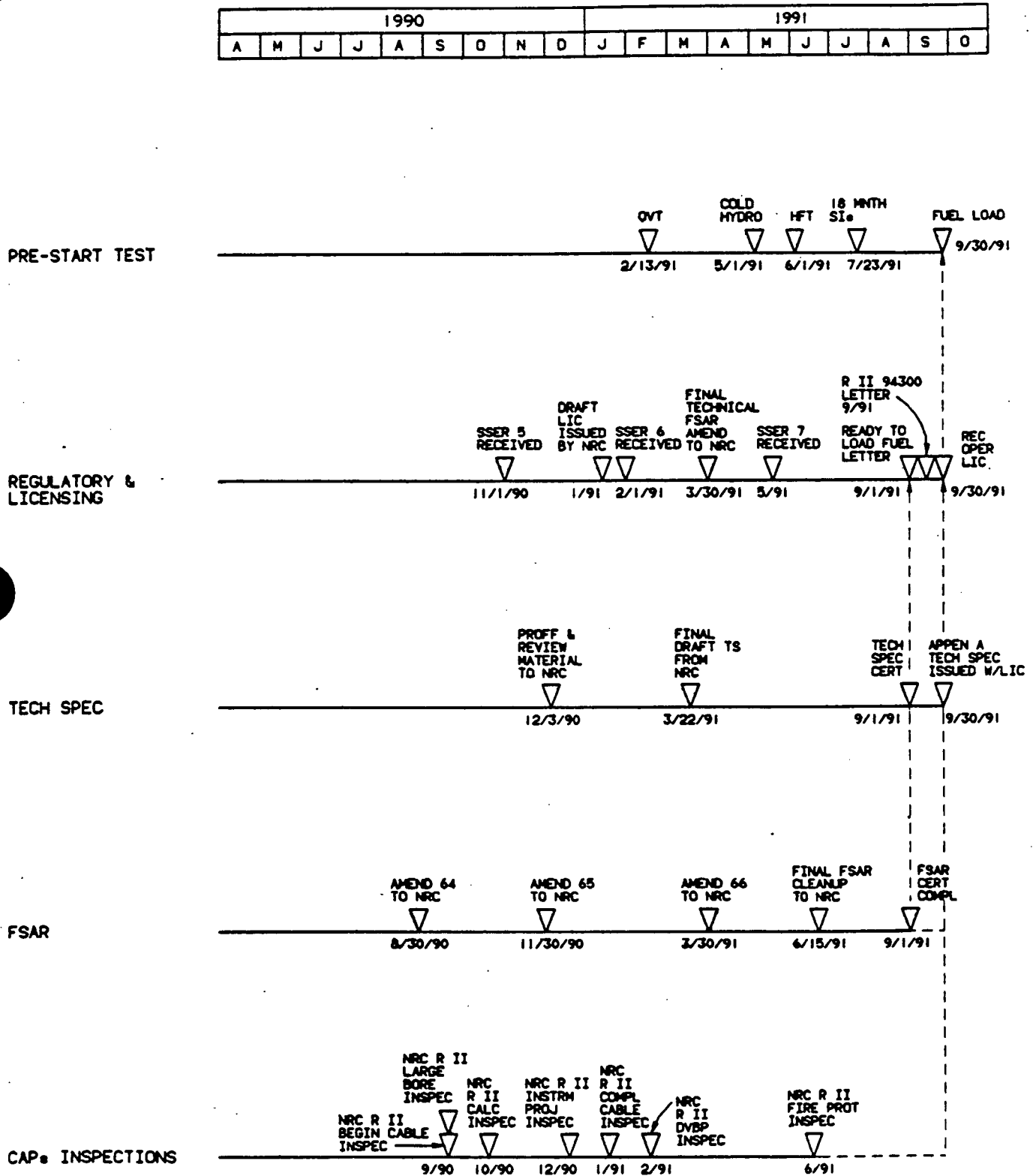
FINAL CLOSURE

- **TVA NOTIFIES NRC PROJECT READY FOR FINAL INSPECTION**
- **NRC ISSUES INSPECTION REPORT**
- **TVA FINAL REPORT**

AUGUST 16, 1990



WATTS BAR LICENSING SUMMARY SCHEDULE



AUGUST 16, 1990



GENERAL STATUS/CLOSURE

AUGUST 16, 1990



ACTION ITEMS - FROM JUNE 4, 1990 TVA/NRC MEETING

ITEM

STATUS

- | | |
|--|--|
| 1. REVIEW CATD COMMITMENTS | - REVIEW COMPLETE 7/23 AGAINST
CURRENT PROGRAM |
| | - RECOMMENDATIONS UNDER
STUDY |
| 2. PROJECT PLAN DEVELOPMENT | - PROJECT PLANS FOR CAP/SP,
ISSUED 7/27, DELIVERED TO NRC |
| 3. CIVIL ISSUE APPROACH | - NRC BRIEFED 8/2 CLOSEOUT |
| 4. CABLE ISSUE SUBMITTALS | - ISSUED 6/15 |
| | - FOLLOW-UP MEETINGS 8/1-8/3 |
| 5. FSAR SUBMITTALS AND
NRC REVIEW | - AMENDMENT 63 ISSUED 6/90 |
| | - SSER 5 EXPECTED 9/90 |
| 6. CAP/SP INSPECTION PLAN | - INPUT PROVIDED TO NRC 7/13 |
| | - PREREQUISITE SUBMITTALS
JULY - SEPT 1990 |
| 7. TVA QA VERIFICATION LARGE
BORE PIPING, Q LIST,
INSTRUMENT LINES | - COMPLETE 7/15 |
| 8. TEST PROGRAM LOGIC | - PRESENTED TO NRC 7/27 |
| 9. RESOLVE POTENTIAL
COMMITMENT CHANGE ISSUES | |
| - CONTROL ROOM DRAWINGS | - RESOLVED |
| - CRDR | - RESOLVED |
| - CONDUITS AND SUPPORT
WALKTHROUGHS | - OPEN |
| - Q-LIST | - RESOLVED |
| - QA RECORDS | - PARTIALLY RESOLVED |
| - VENDOR INFORMATION | - RESOLVED |
| - SPECIFICATION IMPROVEMENT
PROGRAM | - RESOLVED |

AUGUST 16, 1990



SCHEDULE DEVELOPMENT

BASIS

- **ACCEPT SOME REWORK RISK**
- **KNOWN PARALLEL ACTIVITY (I.E., DISCOVERY, ENGINEERING, CONSTRUCTION, TEST, WBN ORGANIZATION DEVELOPMENT)**
- **EARLY AS POSSIBLE "TEST" OF KEY PROCESSES**
 - **CONSTRUCTION TRANSFER FROM BULK TO SYSTEMS DRIVEN**
 - **TEST**
 - **TURNOVER AND CLOSURE**
 - **PROJECT/REGULATORY CLOSURE**
- **MAINTAIN BASIC LOGIC AND SEQUENCING OF WORK**

APPROACH

- **FOCUS EARLY ON KNOWN "EARLY CRITICAL PATH" WORK, I.E., CAP/SP WORK (SO CALLED 120 DAY SCHEDULE)**
- **SECOND STAGE-INTEGRATE SYSTEM TEST/OPERATIONAL READINESS SYSTEM EFFORT - 141 PLANT SYSTEMS TOTAL**
- **THIRD STAGE - FINALIZE WBN PROGRAM CRITICAL ACTIVITIES THROUGH FUEL LOAD, WITH KNOWN LOGIC TIES - INTEGRATE TVA/NRC CLOSURE PLANNING**

AUGUST 16, 1990



WBN PRESTART SCHEDULE

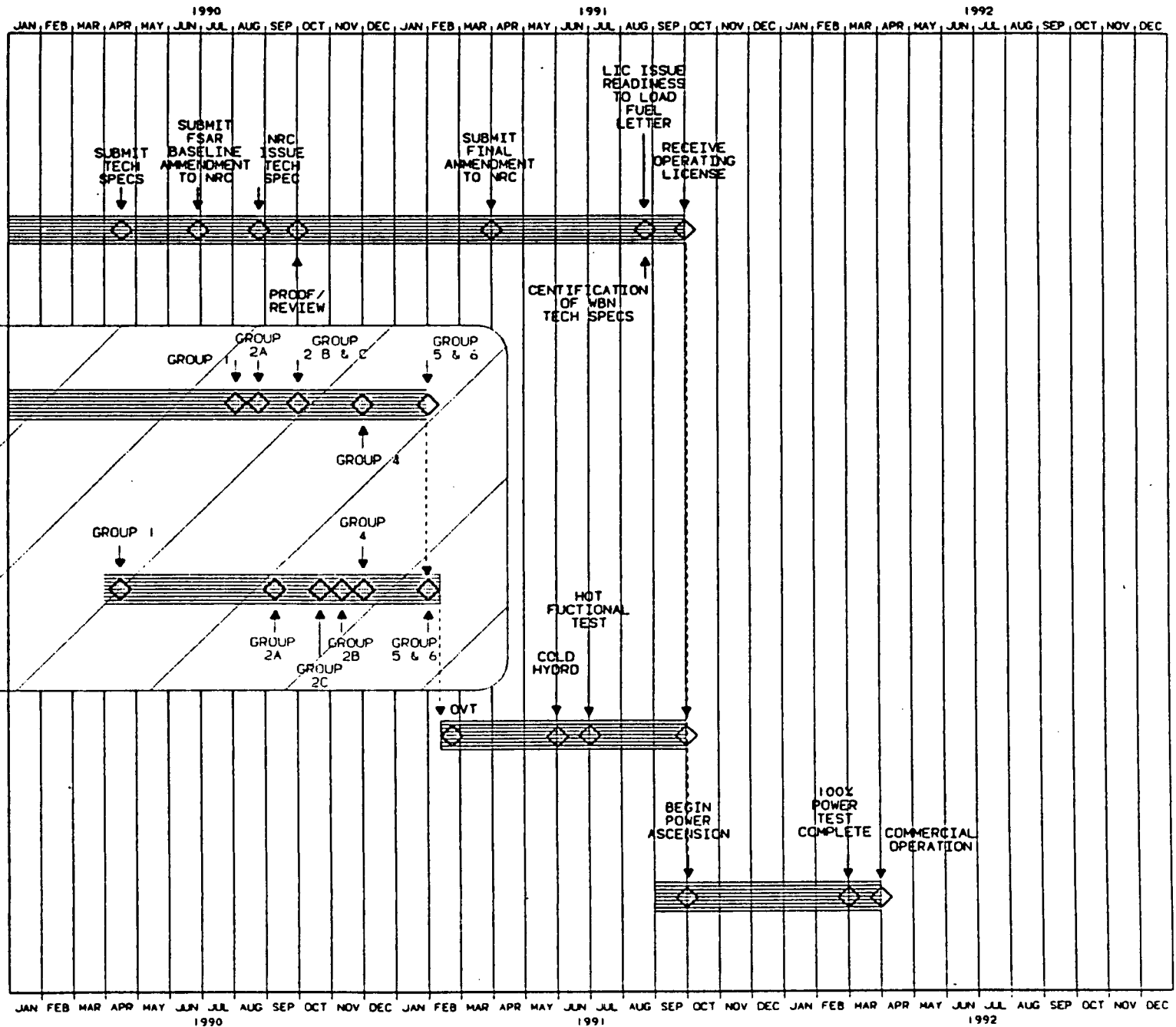
LICENSING

PRE-START
SYSTEMS COMPLETION

BEGIN PRE-START
TESTING (SYSTEMS)

PRE-START TESTING

POWER ASCENSION TO
COMMERCIAL OPERATION



WATTS BAR TOTAL SYSTEMS SUMMARY SCHEDULE

1990												1991									
A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O			

PRESTART
GROUP 1
(32,70,67)

DESIGN 7/21/90
CONST AND MAINT 8/3/90
PM MOVATS AND CALIBRATIONS 8/12/90

4/17/90 PRESTART TESTING
4/3/90 NON RETURN TO SERVICE COMPLETION

PRESTART
GROUP 2A
(30,31,65)

DESIGN
CONST AND MAINT
PM MOVATS AND CALIBRATIONS 8/27/90

PRESTART TESTING 2A

NRTS COMP

PRESTART
GROUP 2B & C
(38,46B,62,63,72,74)
(3A,15,36,43,46A)

DESIGN
CONST AND MAINT
PM MOVATS AND CALIBRATIONS 10/1/90

PRESTART TESTING 2B & C

NRTS COMP

BOP SYSTEMS
(24,27,28,280,281,225,226,4,29,959,33,9,50,219,56,12,54)

WALKDOWN
DESIGN
MAINT AND MODIFICATION 10/1/90

PRESTART
GROUP 4
(13,18,25,26,57,59,61,68,77,81,82,86,211,212,213,214,215,232,235,236)

DESIGN
CONST AND MAINT
PM MOVATS AND CALIBRATIONS 12/1/90

PRESTART TESTING 4

NRTS COMP

BOP SYSTEMS
(40,41,42,207,221,224,244,246,247,201,203,205,202,206,238,218,240,262,239)

WALKDOWN
DESIGN
MAINT AND MODIFICATION 12/28/90

PRESTART
GROUP 5 & 6
(1,2,14,24,27,33,47,78,79,84,92,99,268)

DESIGN
CONST AND MAINT
PM MOVATS AND CALIBRATIONS 1/28/91

PRESTART TESTING 5 & 6

NRTS COMP

BOP SYSTEMS
(5,6,7,38,35,57,58)

WALKDOWN
DESIGN
MAINT AND MODIFICATION 1/28/91

OPEN VESSEL TESTING

COLD HYDRO

CONT INT LEAK RATE TEST 5/14/91

18 MINT SIG

COMP OPERABILITY TURNOVER 8/23/91

FUEL LOAD

TEST

2/13/91

5/1/91

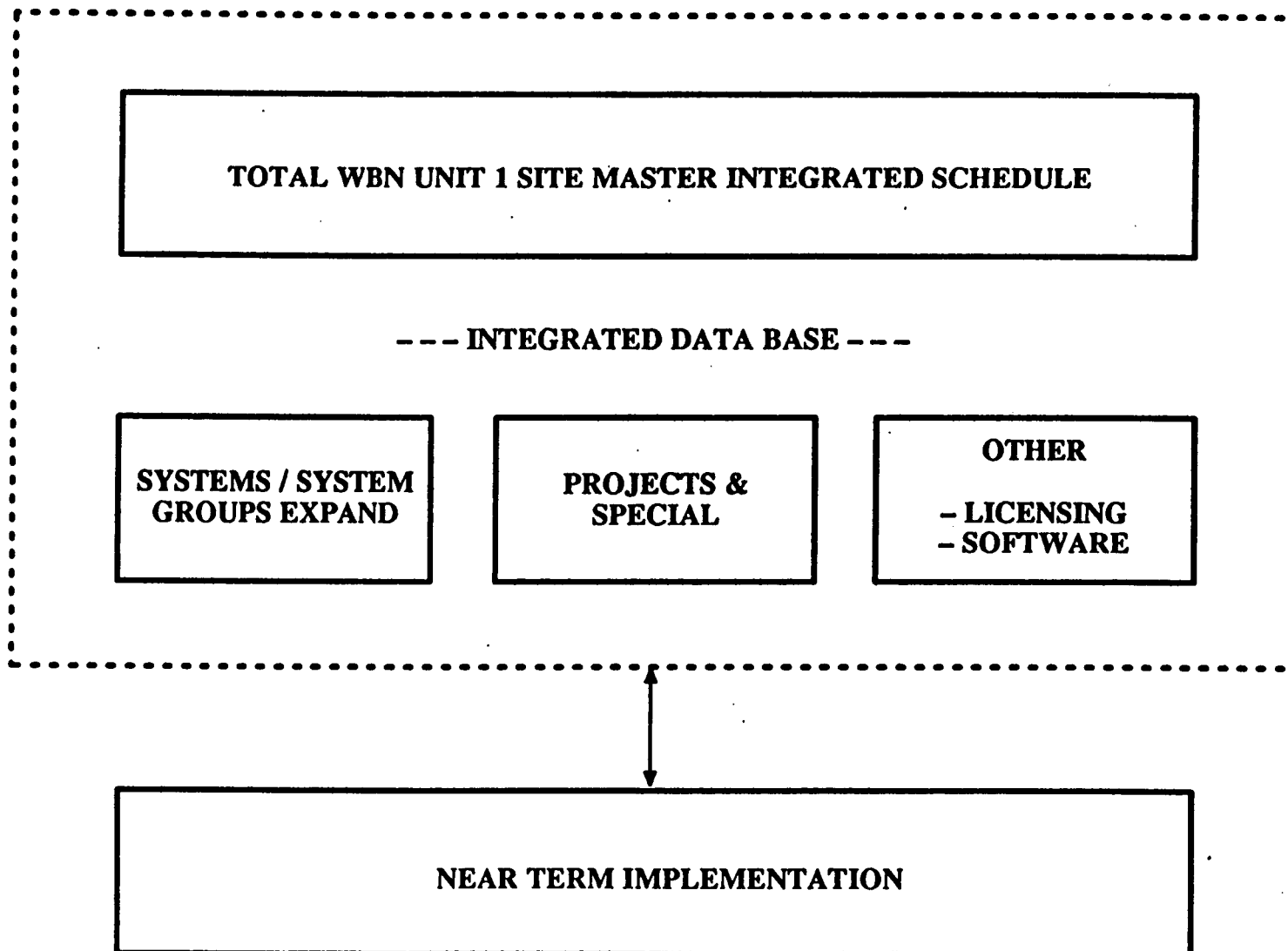
6/1/91

7/23/91

9/30/91

SCHEDULE / PLANNING

LEVEL / DESCRIPTION



- SYSTEM / WORKPLAN ACTIVITIES

AUGUST 16, 1990



COMMODITY INSTALLATION

<u>COMMODITY</u>	<u>INSTALLED FY 1989</u>	<u>TOTAL INSTALLED OCT - JUNE</u>	<u>INSTALLATION RATE JULY</u>	<u>QUANTITY REMAINING</u>	<u>TOTAL</u>
Cable (LF) (73,000)*	14,000	658,000	218,000	956,000	1,850,000
Splices (EA) (1,200)*	850	11,100	1,640	13,000	26,600
Terminations (EA) (4,900)*	1,950	44,100	3,160	51,200	100,000
Conduit (LF) (5,000)*	3,950	44,700	5,400	74,700	129,000
Conduit Supports (EA) (410)*	500	3,730	680	6,030	10,900
Large Bore Hangers (EA) (100)*	350	940	160	2,540	4,000
Small Bore Hangers (EA)	0	0	0	1,000	1,000
Tubing (LF) (700)*	3,600	6,260	1,520	12,300	38,000
Tubing Supports (EA) (670)*	2,700	6,030	1,010	9,060	23,800

DATA DATE: JULY 1990

* AVERAGE MONTHLY INSTALLATION RATE FOR THE FY

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SOFTWARE STATUS (TYPICAL - NOT COMPLETE LIST)

	<u>FEBRUARY 1989</u>	<u>AUGUST 1990</u>
CAQ's	932	919
COMMITMENTS	1,691	1,820
IFT's/URI's	90	176
CATD's	308	212
STARTUP & TEST INSTRUCTIONS (APPROVED)	0	27
PROCEDURES UPGRADES (TO GO)	1,542	992
MR's (BACKLOG)	3,665	2,014
TACF's (BACKLOG)	479	384
CALCS (MECH, ELECT, I&C) (TO GO)	1,195 (Oct 89)	337

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OTHER WORK INITIATIVES

- **PRODUCTIVITY/EFFICIENCY IMPROVEMENTS**
 - **MATERIAL BACKLOG**
 - **CONSTRUCTION BULK COMMODITIES**
 - **MR BACKLOG**
- **SITE MASTER PLAN/IMPROVEMENTS**
- **WORK CONTROL PROCEDURAL SIMPLIFICATION**
- **TRANSFORMER PCB REMOVAL**
- **VALVE PACKING CHANGED TO "LIVE LOAD"**
- **REPLACEMENT OF SELECTIVE PUMP SEALS**
- **STARTING SELECTIVE PLANT CLEANUP/COATINGS**
- **CONDUIT CHRISTMAS TREES**

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QUALITY ASSURANCE SITE ASSESSMENT

SATISFACTORY

- MAINTENANCE PLANNING (99%) AND IMPLEMENTATION (96%) ACCEPTANCE RATE
- MATERIAL RECEIPT ACCEPTANCE RATE FROM 51 PERCENT (7/84) TO 86% (7/90)
- LICENSING COMMITMENT CLOSURE ACCEPTANCE RATE 100%
- NUCLEAR ENGINEERING OUTPUT SATISFACTORY
- QUALITY ASSURANCE ORGANIZATION RELATIONSHIP TO SITE LESS ADVERSIAL
- TECHNICAL CLOSEOUT OF VARIOUS CORRECTIVE ACTION PROGRAMS
- TEST CONDUCT

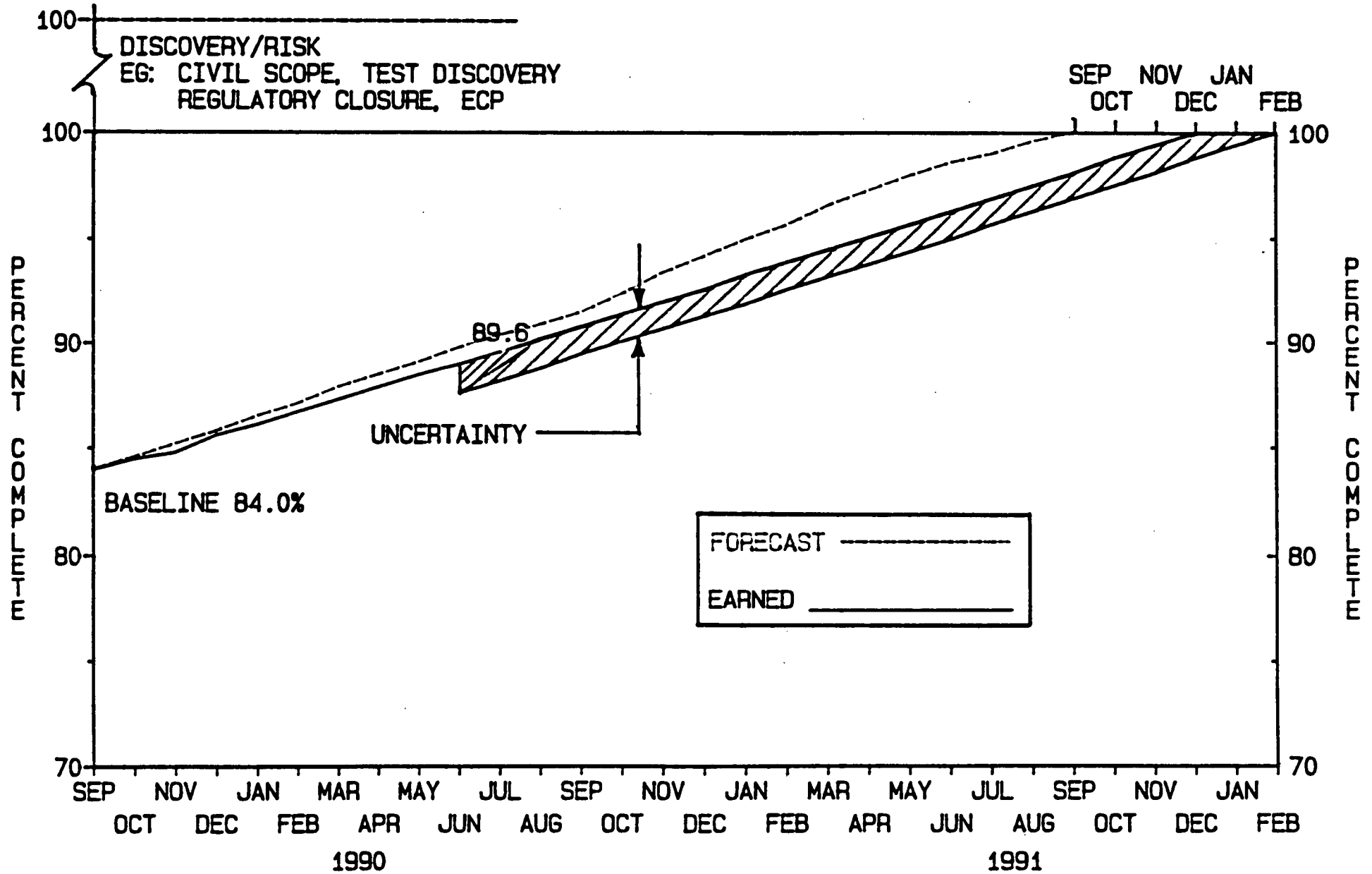
IMPROVEMENT REQUIRED

- CONSTRUCTION PLANNING (90% TECH) AND INSTALLATION (91%) ACCEPTANCE RATE 5% LOW
- LINE MANAGEMENT OWNERSHIP OF ADMINISTRATIVE CONTROL PROGRAMS AND TRENDING
- SOME ASPECTS OF PLANT CHEMISTRY CONTROL - MIC
- NUCLEAR ENGINEERING INTERNAL INTERFACING

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WBN UNIT # 1 PERCENT COMPLETE



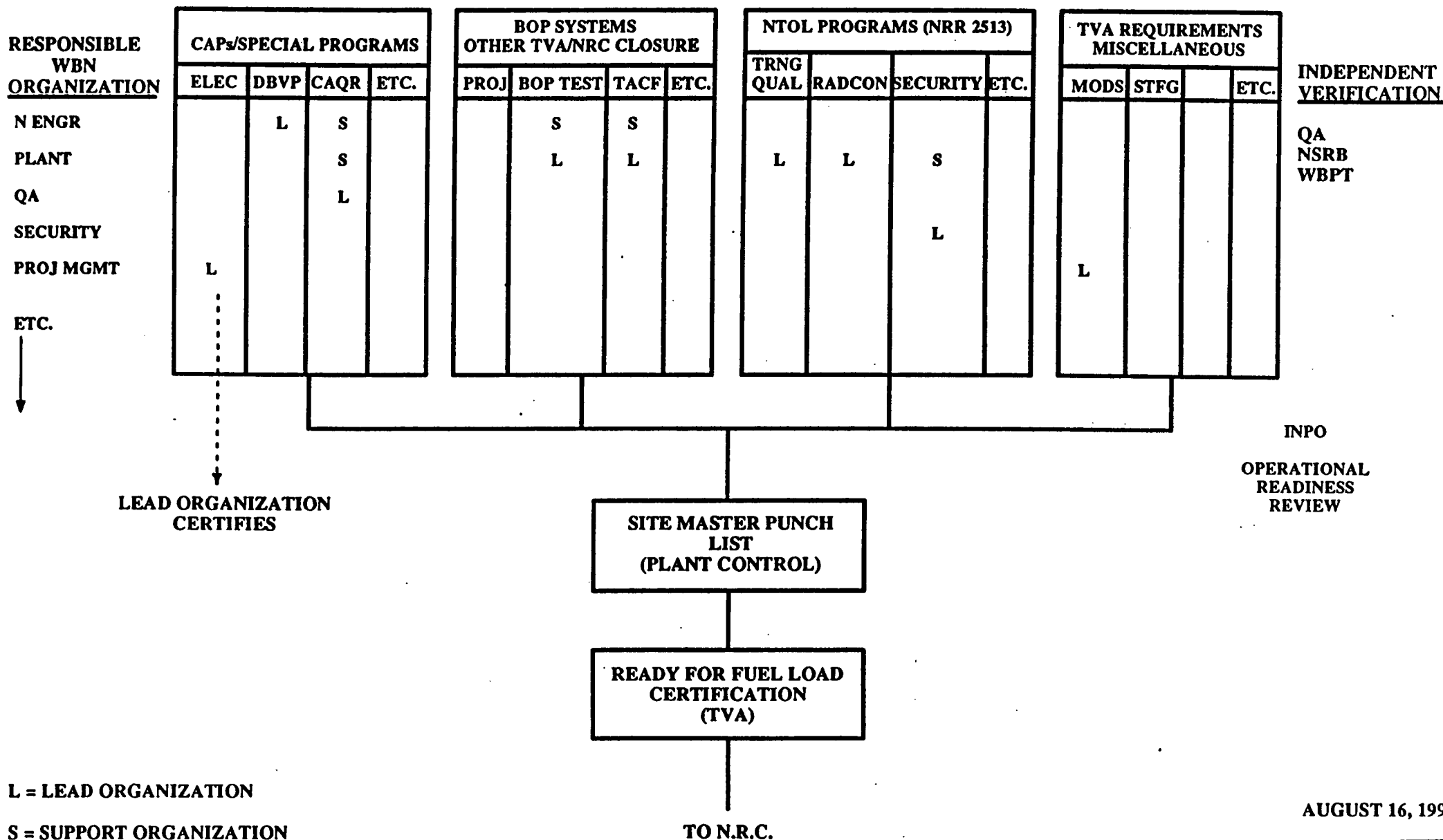
WBN CERTIFICATION PROGRAM

- COVER REGULATORY PLUS TVA REQUIREMENTS
- OF SUCH AN EXTENT REQUIRES A GRADUAL WORKDOWN - CANNOT BE ACCOMPLISHED IN LAST 3-4 MONTHS BFL
- MUST DEPEND UPON A "SYSTEMATIC APPROACH" WITH ADEQUATE CHECKS AND BALANCES AND INDEPENDENT REVIEW
- MUST INVOLVE AN INTERNAL CASCADING TVA CERTIFICATION PROCESS - WITH PLANT TAKING THE LEAD IN FINAL CERTIFICATION CLOSEOUT

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WBN FUEL LOAD CERTIFICATION PROCESS



L = LEAD ORGANIZATION
S = SUPPORT ORGANIZATION

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SUMMARY

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