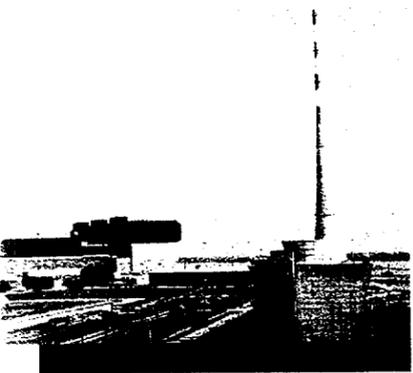


# Tennessee Valley Authority Browns Ferry Nuclear Plant Unit 1 Restart



TVA/NRC Meeting  
Nuclear Reactor Regulation - Rockville, MD  
June 12, 2002



Enclosure 2

# Agenda

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- Introduction/Meeting Objectives - Jon Rupert
- Regulatory History - Tim Abney
- Overview and Schedule - Jon Rupert/Joe Valente
- Methodology for Special Programs - Joe Valente
- Licensing Actions - Tim Abney
- Generic Communications - Tim Abney
- Licensing Actions of Special Interest - Tim Abney
- Commitment Closure - Tim Abney
- Unit 1 Regulatory Framework - Tim Abney
- Summary and Open Discussion - Jon Rupert

## Unit 1 Restart - Introduction/Meeting Objectives

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- Objectives of this meeting are:
  - Provide overview of Unit 1 Restart Project
  - Discuss regulatory history of Units 2 and 3 restarts
  - Present licensing actions, and other reviews that will be needed from NRR
  - Initiate dialogue on Regulatory Framework for Unit 1 restart

# Regulatory History

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- Unit 2 Restart

- All 3 BFN units voluntarily shutdown by TVA in March, 1985 because of safety, regulatory and management issues
- TVA committed to obtain NRC approval prior to restart of any BFN unit
- NRC issued a "show cause" letter for all TVA nuclear plants in September, 1985, under 10 CFR 50.54 (f), and requested TVA to specify corrective actions
- TVA submitted the Nuclear Performance Plan, Volume 3, in August, 1986 outlining the steps needed to recover the BFN units, specifically directed to Unit 2
- TVA and NRC conducted several meetings and TVA made several submittals to fully define the regulatory actions needed to restart BFN Unit 2
- NRC issued NUREG 1232, Volume 3, Supplement 2 in January, 1991, concluding that TVA's actions acceptably addressed deficiencies in BFN
- NRC approved Unit 2 restart on May 23, 1991
- Unit 2 restarted on May 24, 1991

# Regulatory History

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- Unit 3 Restart
  - TVA proposed regulatory framework for restart of Units 1 and 3 in July, 1991, outlining improvements from the Unit 2 precedent
  - NRC approved framework proposed by TVA in April, 1992
  - Unit 3 restart effort dealt primarily with resolving Special Programs, as the management issues had been resolved for Unit 2 restart
  - NRC staff issued SECY-95-264 recommending restart of Unit 3 on November 1, 1995
  - NRC approved Unit 3 restart on November 15, 1995
  - Unit 3 restarted on November 19, 1995

# Regulatory History

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- Unit 1
  - Based on Energy Vision 2020 recommendations, TVA decided to delay decision on Unit 1 restart
  - Unit 1 was removed from the NRC's problem plant list on June 21, 1996 based on commitments from an April 16, 1996 TVA letter to:
    - Implement same special programs on Unit 1 that were done for Unit 3
    - Not restart Unit 1 without prior approval of NRC

# Overview and Schedule

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- Detailed Scoping, Estimate and Planning (DSEP)
  - Extensive effort to support Unit 1 restart decision
  - Utilized key TVA personnel with both discipline expertise and experience on restart of units 2 and 3
  - Results in organizational structure and strong team in place for recovery effort
- Unit 1 Restart Principles
  - BFN units will be operationally the same at completion of Unit 1 Restart
  - Unit 1 Restart activities will use plant processes and procedures when available

# Overview and Schedule

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- **Workscope Required for Unit 1 Restart**
  - Special Programs using criteria consistent with Unit 3 Restart
  - Design changes since Units 2/3 restart
  - Future design changes in 5 year BFN Project Plan
  - Corrective/Preventive Maintenance
  - Regulatory Issues
  - Licensing Actions
  - Inservice Inspection

# Methodology for Special Programs



Special Program	Differences in Unit 1 vs. Unit 3 Approach
Configuration Management	None
Design Calculations	None
Equipment Qualification	None
Seismic Design	None
Fire Protection Improvement	None
Instrument Sensing Lines	None
Wall Thinning	None
PRA	Not Required
Component & Piece Part Qualification	None
Electrical Issues	None
Q-List	None
MELB	None
Platform Thermal Growth	None
IGSCC	Complete replacement of recirculation piping
Coatings	None
Restart Test	None
Plant Welding	Not Required
Heat Code Traceability	Not Required

Joe Valente

2002				2003			2007				2008	
Q2	Q3	Q4	Q1	Q2	Q3	Q1	Q2	Q3	Q4	Q1	Q2	

BOARD APPROVAL

WARD MAJOR CONTRACTS

ENGINEERING PROGRAMS REQ'D FOR MODS

ENGINEERING ISSUE DRYWELL DCN'S

NRC BRIEF

MOBILIZE MODIFICATIONS SUPPORT TEAM

LONG LEAD MATERIAL - ORDER

MODIFICATIONS - DEMOLITION & NON DCN ACTIVITIES

PREPARE & ISSUE BULK MATERIAL ORDER

LONG LEAD MATERIAL - DELIVER

ENGINEERING ISSUE REACTOR BUILDING DCN'S

DESIGN ENGINEERING SUPPORT

ENGINEERING ISSUE CONTROL BUILDING DCN'S

MODIFICATIONS IMPLEMENT DRYWELL DCN'S

CRD

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AL READINESS REVIEW

NRC TESTING NOTIFICATION

LICENSING TO NOTIFY NRC OF FUEL LOAD

FUEL LOAD

TURBINE GENERATOR ON TURNING GEAR

NCR APPROVAL FOR RESTART

POWER ASCENSION TESTING

BREAKER CLOSURE

# Licensing Actions

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- Technical Specifications Changes/ License Amendments
  - High Range Primary Containment Radiation Monitors
  - Power Range Neutron Monitor (PRNM) Upgrade With Implementation of Average Power Range Monitor (APRM) and Rod Block Monitor (RBM) TS ARTS/MELL
  - 14 Day Allowable Outage Time for Emergency Diesel Generators
  - Extended Power Uprate Operation
  - 24 Month Fuel Cycle
  - Crediting of Containment Overpressure for Net Positive Suction Head Calculations for Emergency Core Cooling Pumps
  - Change Setpoint of Scram Discharge Volume
  - PT Curves
  - Safety Limit Minimum Critical Power Ratio (SLMCPR)
  - Allowable Value for Reactor Vessel Water Level - Low, Level 3
  - Oscillation Power Range Monitor (OPRM)
  - Main Steam Isolation Valve (MSIV) Leakage Rate Limits and Exemption from 10 CFR 50 Appendix J
  - Excess Flow Check Valve Surveillance Intervals
  - Containment Air Dilution (CAD) AOT
  - Alternative Source Term
  - Miscellaneous I & C Changes

## Licensing Actions

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- Relief Requests

- Inservice Inspection Program - 11 requests for relief including one which provides for permanent deferral of examinations for circumferential shell welds of the RPV
- Containment Inspection Program - 5 requests for relief
- System Pressure Test (SPT) Program - 6 requests for relief
- Programmatic Relief Requests - 5 requests for relief
- Risk-Informed ISI Program - 1 request for relief

# Generic Communications

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- **Bulletins**
  - 88-03 Inadequate Latch Engagement in HFA Type Relays Manufactured by GE
  - 88-04 Potential Safety Related Pump Loss
  - 90-01 Loss of Fill Oil in Rosemount Transmitters
  - 93-02 Debris Plugging of Emergency Core Cooling Suction Strainers
  - 95-02 Unexpected Clogging of a RHR Pump Strainer While Operating in Suppression Pool Cooling Mode

- **Generic Letters**

- 88-01 NRC Position on IGSCC in BWR Austenitic Stainless Steel Piping
- 88-20, S4 Individual Plant Examination of External Events for Severe Accident Vulnerabilities
- 89-13 Service Water System Problems Affecting Safety Related Equipment
- 92-01 Reactor Vessel Structural Integrity
- 94-02 Long Term Solutions and Upgrade of Interim Operating Recommendations for Thermal-Hydraulic Instabilities in BWRs
- 94-03 Intergranular Stress Corrosion Cracking of Core Shrouds in BWRs
- 95-07 Pressure Locking and Thermal Binding of Safety Related and Power-Operated Gate Valves
- 96-06 Assurance of Equipment Operability and Containment Integrity During Design Basis Accident Conditions
- 97-04 Assurance of Sufficient Net Positive Suction for Emergency Core Cooling and Containment Heat Removal Pumps
- 98-04 Potential for Degradation of the Emergency Core Cooling System and the Containment Spray System After a Loss of Coolant Accident Because of Construction and Protective Coating Deficiencies and Foreign Material in Containment

# Generic Communications

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- **NUREG-0737 (TMI Action Plan) Action Items**

I.D.1	Control Room Design Review
I.D.2	Safety Parameter Display Console
II.B.2	Plant Shielding
II.B.3	Post-Accident Sampling System
II.E.4.2.1-4	Containment Isolation Dependability - Implement Diverse Isolation
II.F.1.2.C	Accident - Monitoring - Containment High Range Radiation
II.F.1.2.D	Accident - Monitoring - Containment Pressure
II.F.1.2.E	Accident - Monitoring - Containment Water Level
II.F.2.4	(Generic Letter 84-23) - Instrumentation for Detection of Inadequate Core Cooling
II.K.3.13	HPCI/RCIC Initiation Levels
II.K.3.18	ADS Actuation Modifications
II.K.3.28	Qualification of ADS Accumulators

# Licensing Actions of Special Interest

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- License Renewal
- Extended Power Uprate
- Unit 1 license condition to provide analysis for Technical Specifications changes since 1985

# Commitment Closure

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- 268 total open Unit 1 commitments
- 68 associated with Generic Communications
- 70 from LERs, violations and inspections
- 130 from other miscellaneous sources
- These will be evaluated in accordance with NEI 99-04 for potential decommitments

Tim Abney

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# Unit 1 Regulatory Framework

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- Regulatory Framework will include
  - Summary of Special Programs
  - Submittals required
  - Concurrent licensing actions for all 3 units, where applicable
  - Commitment closure process
  - Actions needed for NRC restart approval
- TVA intends to submit proposed Regulatory Framework document by December 31, 2002

## Summary and Conclusions

# BFN UNIT 1 PROJECT PLAN

PRIORITY ISSUES.....	2
INSPECTIONS .....	2
MEETINGS/VISITS.....	2
PENDING NRC ACTIONS.....	2
TECHNICAL SPECIFICATIONS .....	3
SUBMITTALS.....	4
NRC COMMITMENTS.....	8

# BFN UNIT 1 PROJECT PLAN

PRIORITY ISSUES	TVA SUB DATE	NRC ISSUE DATE	NRC APPROVAL DATE	RESP TVA MGR

INSPECTIONS	INSPECTION DATE	INSPECTION PROCEDURE	NRC CONTACT	TVA CONTACT

MEETINGS/VISITS	MILESTONE DATE	CONTACT (NRC, INPO, NEIL, ANI)	TVA CONTACT
NRR - Unit 1 Restart Overview @ Rockville	6/12/02	K. Jabbour	T. Abney
NRR - License Renewal @ Rockville	7/24/02	K. Jabbour	M. Morrison

PENDING NRC ACTIONS	TVA SUBMITTAL DATE	NRC ISSUE DATE	NRC APPROVAL NEED DATE	RESP TVA MGR
NONE				

# BFN UNIT 1 PROJECT PLAN

TECHNICAL SPECIFICATIONS	TVA CONTACT	SUBMITTAL DATE	FED REG DATE	TVA NEED DATE
Containment Air Dilution (CAD) AOT		3Q/03		
Excess Flow Check Valve Surveillance Intervals		3Q/03		
High Range Primary Containment Radiation Monitors		4Q/03		
PT Curves		4Q/03		
Crediting of Containment Overpressure for Net Positive Suction Head Calculations for Emergency Core Cooling Pumps		1Q/04		
Allowable Value For Reactor Vessel Water Level - Low Level 3		1Q/04		
Oscillation Power Range Monitor (OPRM)		2Q/04		
Main Steam Isolation Valve (MSIV) Leakage Rate Limits and Exemption From 10 CFR 50 Appendix J		2Q/04		
SDIV Setpoint Change		2Q/04		
14-Day Allowed Outage Time for Emergency Diesel Generators		2Q/04		
Power Range Neutron Monitor (PRNM) Upgrade with Implementation of Average Power Range Monitor (APRM) and Rod Block Monitor (RBM) TS ARTS/MELL		3Q/04		
Miscellaneous I & C Changes		3Q/04		
24 Month Fuel Cycle		3Q/04		
Alternative Source Term		4 Q/04		
Extended Power Uprate Operation		3Q/05		
Safety Limit Minimum Critical Power Ratio (SLMCPR)		4Q/05		

## BFN UNIT 1 PROJECT PLAN

SUBMITTALS - LOOK AHEAD DUE DATE AND INPUT DUE										
Description	Input Due	Resp Org	Input Rec'd	Sch'd Date to Concur	Actual Date to Concur	Sch'd Date to Signature	Actual Date to Signature	Due Date	Comment	Lic Eng
1	Regulatory Framework							4Q/02		
2	GL 88-01 NRC Position on IGSCC in BWR Austenitic Stainless Steel Piping							1Q/03		
3	GL 94-03 Intergranular Stress Corrosion Cracking of Core Shrouds in BWRs							Part 1 - 1Q/03 Part 2 - 3Q/03		
4	Inservice Inspection (ISI) Program Relief Requests							2Q/03		
5	Containment Inspection Program Relief Requests							3Q/03		
6	System Pressure Test (SPT) Program Relief Requests							3Q/03		
7	Programmatic Relief Requests							4Q/03		
8	BL 93-02 Debris Plugging of Emergency Core Cooling Suction Strainers							1Q/04		

## BFN UNIT 1 PROJECT PLAN

SUBMITTALS - LOOK AHEAD DUE DATE AND INPUT DUE										
Description	Input Due	Resp Org	Input Rec'd	Sch'd Date to Concur	Actual Date to Concur	Sch'd Date to Signature	Actual Date to Signature	Due Date	Comment	Lic Eng
9	BL 95-02 Unexpected Clogging of a RHR Pump Strainer While Operating in Suppression Pool							1Q/04		
10	BL 88-03 Inadequate Latch Engagement in HFA Type Relays Manufactured by GE							2Q/04		
11	BL 88-04 Potential Safety Related Pump Loss							2Q/04		
12	GL 89-13 Service Water System Problems Affecting Safety Related Equipment							2Q/04		
13	GL 94-02 Long Term Solutions Thermal-Hydraulic Instabilities in BWRs							2Q/04		
14	BL 90-01 Loss of Fill Oil in Rosemount Transmitters							3Q/04		

## BFN UNIT 1 PROJECT PLAN

SUBMITTALS - LOOK AHEAD DUE DATE AND INPUT DUE										
Description	Input Due	Resp Org	Input Rec'd	Sch'd Date to Concur	Actual Date to Concur	Sch'd Date to Signature	Actual Date to Signature	Due Date	Comment	Lic Eng
15	GL 95-07 Pressure Locking and Thermal Binding of Safety-Related and Power-Operated Gate Valves							3Q/04		
16	GL 96-06 Assurance of Equipment Operability and Containment Integrity During Design Basis Accident Conditions							3Q/04		
17	GL 97-04 Assurance of Sufficient Net Positive Suction for Emergency Core Cooling and Containment Heat Removal Pumps							3Q/04		
18	GL 98-04 Potential for Degradation of the Emergency Core Cooling Systems Because of Construction and Protective Coating Deficiencies and Foreign Material in Containment							4Q/04		

# BFN UNIT 1 PROJECT PLAN

SUBMITTALS - LOOK AHEAD DUE DATE AND INPUT DUE										
Description	Input Due	Resp Org	Input Rec'd	Sch'd Date to Concur	Actual Date to Concur	Sch'd Date to Signature	Actual Date to Signature	Due Date	Comment	Lic Eng
19	Risk-Informed Inservice Inspection Program							3Q/05		
20	GL 88-20, S4 Individual Plant Examination of External Events for Severe Accident Vulnerabilities							4Q/05		
21	GL 92-01 Reactor Vessel Structural Integrity							4Q/05		

**NRC COMMITMENTS - TOTAL OPEN (14) - FOUR-WEEK LOOK AHEAD**

None						
<b>CCTS Number</b>	<b>Originating Document</b>	<b>Lead Coord.</b>	<b>Closure Pkg Due to Lic</b>	<b>TVA Due Date</b>	<b>Commitment Description</b>	<b>Lic Eng.</b>
None						

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