

SEP 11 1992

*Official copy*

Docket Nos. 50-327, 50-328  
License Nos. DPR-77, DPR-79  
EA 92-155

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

Gentlemen:

SUBJECT: ENFORCEMENT CONFERENCE SUMMARY (NRC INSPECTION REPORT  
NOS. 50-327/92-29, 50-328/92-29)

This letter refers to the Enforcement Conference held at our request on September 9, 1992. This meeting concerned activities authorized at your Sequoyah facility. The issues discussed at this conference concerned the inoperability of one of your safety injection pumps for a period of time in excess of the Technical Specification allowable outage times. A list of attendees and a copy of your handout are enclosed. We are continuing our review of these issues to determine the appropriate enforcement action.

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 letter, please contact us.

Sincerely,

(Original signed by J. Johnson)

Ellis W. Merschoff, Director  
Division of Reactor Projects

Enclosures:

1. List of Attendees
2. SI Pump Breaker Trip Button Handout

cc w/encls: (See page 2)

9209250060 920911  
PDR ADOCK 05000327  
Q PDR

*IEO1*

Tennessee Valley Authority

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cc w/encls:

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

TVA Representative  
 Tennessee Valley Authority  
 Rockville Office  
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 Suite 402  
 Rockville, MD 20852

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

Mr. J. R. Bynum, Vice President  
 Nuclear Operations  
 Tennessee Valley Authority  
 3B Lookout Place  
 101 Market Street  
 Chattanooga, TN 37402-2801

Ms. Marci Cooper, Site Licensing  
 Manager  
 Sequoyah Nuclear Plant  
 Tennessee Valley Authority  
 P. O. Box 2000  
 Soddy-Daisy, TN 37379

Mr. Jack Wilson, Vice President,  
 Sequoyah Nuclear Plant  
 Tennessee Valley Authority  
 P. O. Box 2000  
 Soddy-Daisy, TN 37379

Mr. M. J. Burzynski, Manager  
 Nuclear Licensing and  
 Regulatory Affairs  
 Tennessee Valley Authority  
 5B Lookout Place  
 Chattanooga, Tennessee 37402-2801

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

County Judge  
 Hamilton County Courthouse  
 Chattanooga, TN 37402

State of Tennessee

bcc w/encls: (See page 3)

SEP 11 1992

Tennessee Valley Authority


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bcc w/encls:

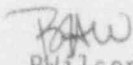
J. R. Johnson, RII  
G. C. Lainas, NRR  
F. J. Hebdon, NRR  
P. J. Kellogg, RII  
D. E. Labarge, NRR  
NRC Document Control Desk

NRC Senior Resident Inspector  
U.S. Nuclear Regulatory Commission  
2600 Igou Ferry  
Soddy-Daisy, TN 37379

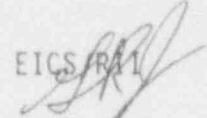
DRP/RII

  
PKellogg  
9/10/92


DRP/RII

  
BWilson  
9/10/92

EICS/RII

  
G. Jenkins  
9/11/92

DRP/RII

  
JJohnson  
9/11/92

ENCLOSURE 1

LIST OF ATTENDEES

NRC

S. D. Ebnetter, Regional Administrator, Region II, (RII)  
E. W. Merschhoff, Director, Division of Reactor Projects (DRP), RII  
A. F. Gibson, Director, Division of Reactor Safety, RII  
F. J. Hebdon, Director, Project Directorate II-4, Office of Nuclear Reactor  
Regulation (NRR)  
G. R. Jenkins, Director, Enforcement and Investigation Coordination Staff (EICS),  
RII  
B. A. Wilson, Chief, Reactor Projects Branch 4, DRP, RII  
P. J. Kellogg, Chief, Reactor Projects Section 4A, DRP, RII  
W. E. Holland, Senior Resident Inspector, RII  
D. E. LaBarge, Senior Project Manager, NRR  
B. Uryc, Senior Enforcement Specialist, EICS, RII  
C. F. Evans, Regional Counsel, RII

IVA

J. R. Bynum, Vice President, Nuclear Operations  
J. L. Wilson, Vice President, Sequoyah  
R. J. Beecken, Plant Manager  
M. A. Cooper, Site Licensing Manager  
J. P. Maciejewski, General Manager Nuclear Assurance  
T. A. Flippo, Site Quality Manager  
L. S. Bryant, Manager, Maintenance  
C. Carey, Engineering Specialist  
R. M. Eytchison, Management Trainee  
R. R. Thompson, Manager, Compliance Licensing

ENCLOSURE 2

TENNESSEE VALLEY AUTHORITY

SEQUOYAH NUCLEAR PLANT

ENFORCEMENT CONFERENCE PRESENTATION

SI PUMP BREAKER TRIP BUTTON

SEPTEMBER 9, 1992

## AGENDA

- I. INTRODUCTION
- II. CHRONOLOGY/FACTUAL BASIS
- III. POTENTIAL CAUSES/CONTRIBUTORS
- IV. CORRECTIVE ACTIONS
  - IMMEDIATE CORRECTIVE ACTIONS - SI PUMP BREAKER
  - OVERALL CORRECTIVE ACTIONS - PMT PROCESS
- V. SAFETY SIGNIFICANCE
- VI. LICENSING PERSPECTIVES
- VII. CLOSING REMARKS/CONCLUSIONS



# I. CHRONOLOGY/FACTUAL BASIS

## FUNCTIONAL CHARACTERISTICS

ELECTRICAL OPEN/CLOSE SWITCHES

CHARGING SPRINGS

MANUAL TRIP BUTTON

## RERACKING PROCEDURES

6.9 kV BREAKER RACKING PROCEDURE

Each Specified Step Followed

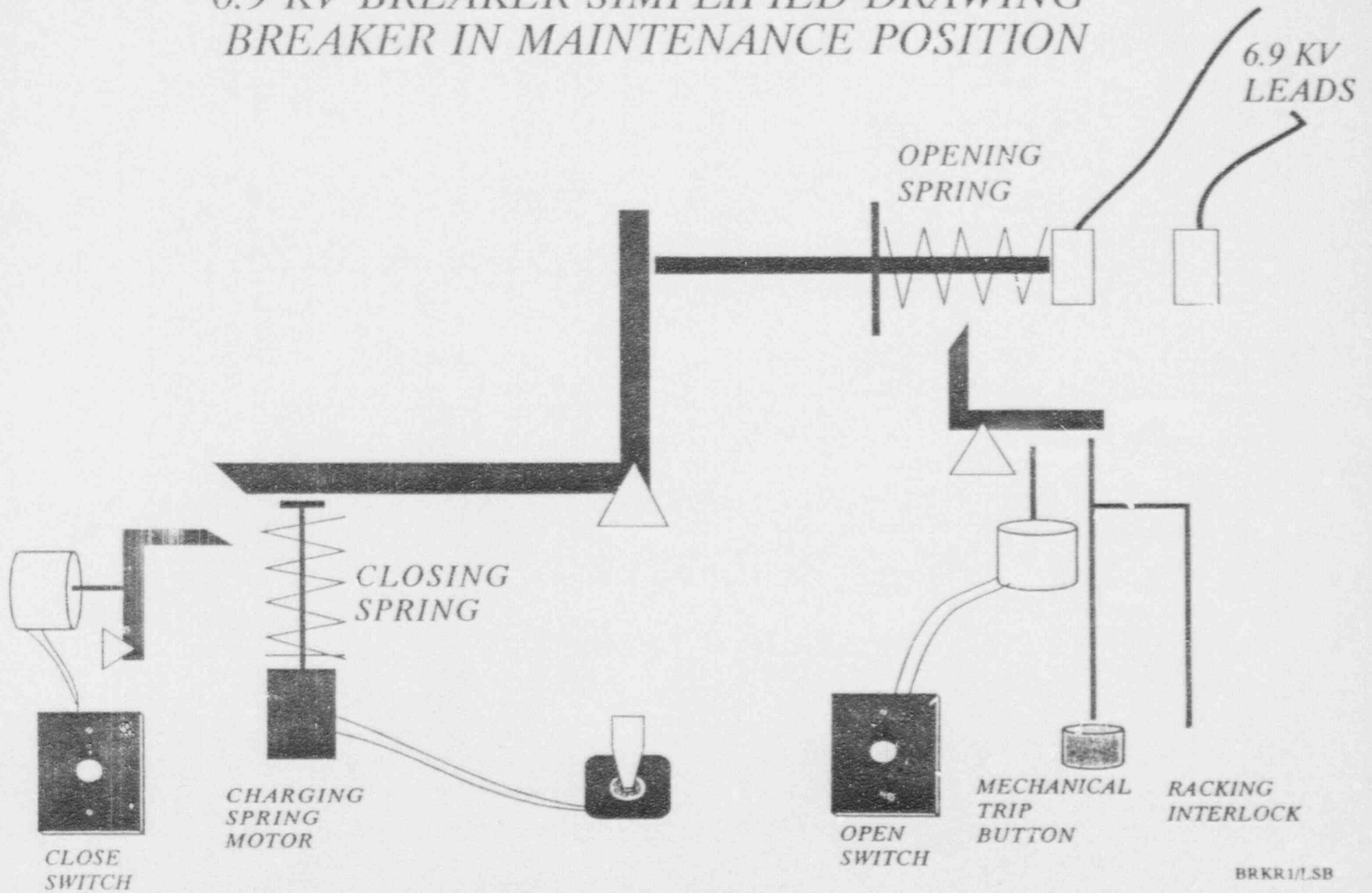
INDEPENDENT VERIFICATION

Consistent Verification With Racking Procedure

WORK ORDER PROCESS

Additional Cycling Specified

# 6.9 KV BREAKER SIMPLIFIED DRAWING BREAKER IN MAINTENANCE POSITION





## II. CHRONOLOGY/FACTUAL BASIS (Continued)

### CHRONOLOGY

JULY 31

INSPECTION OF 1B-B SAFETY INJECTION  
BREAKER CHARGING SPRING MOTOR

REPLACEMENT OF MOTOR NECESSITATED BY  
UNRELATED FAILURE

CRAFT VERIFICATION OF OPEP BILITY  
FOLLOWING MOTOR REPLACEMENT

ASOS VERIFICATION IN RACKING PROCESS

- Ensure Spring Charging Toggle ON
- Ensure Charging Spring Charged
- Verify Breaker Open (Position Flag)
- Ensure Racking Latch Down (Connect Position)

INDEPENDENT VERIFICATION OF BREAKERS

- Ensure Control Power (External Indicators)
- Ensure Racked In (Connect Position)
- Ensure Closing (Charging) Springs Charged
- Ensure Cubicle Door in Good Condition

BREAKER RETURNED TO SERVICE

AUGUST 3-7

VARIOUS MAINTENANCE/SURVEILLANCE  
ACTIVITIES ON TRAIN A COMPONENTS

AUGUST 10

QUARTERLY SURVEILLANCE ON TRAIN B  
SAFETY INJECTION PUMP

REPORT TO NRC IN ACCORDANCE WITH 50.72

INVESTIGATION INITIATED

### III. POTENTIAL CAUSES/CONTRIBUTORS

#### SYSTEMATIC APPROACH TO ROOT CAUSE REVIEW

##### LACK OF ATTENTIVENESS

Individual Aware of Function - Exercised Care

Independent Verifier - Reviewed Principal Indicators

Likely Contributor

##### MECHANICAL FAILURE/DESIGN WEAKNESS

Actual Breaker Testing

Manufacturer Involvement

Sticking Observed - Not Actual Conditions

Likely Contributor

##### UNAUTHORIZED WORK ON BREAKER

Records Reviewed

Considered Unlikely Cause

##### TAMPERING

Considered Unlikely Cause

LIKELY CAUSES - DESIGN WEAKNESS ALLOWED FOR STICKING  
COUPLED WITH LACK OF ATTENTIVENESS (MANUAL TRIP  
BUTTON STATUS)

## IV. CORRECTIVE ACTIONS

### CORRECTIVE ACTIONS REGARDING SI PUMP BREAKER

#### IMMEDIATE CORRECTIVE ACTIONS

Proper Alignment of Specific Breaker

- Completed Pump Surveillance

Inspected 6.9 kV Safety-Related Breakers On Both Units

Replaced Breaker - Ran SI Pump Following Installation

Notice To Operations Regarding Trip Button

#### ADDITIONAL CORRECTIVE ACTIONS

Breaker Racking - Appropriate End Device Testing

Breaker Tear Down - With Vendor

Evaluating Design Change Options

## IV. CORRECTIVE ACTIONS (Continued)

### OVERALL CORRECTIVE ACTIONS

#### FOCUS ON BROAD EFFORTS TO ENHANCE PMT PROCESS

Many Elements Already Underway at Time of Event

#### INTERIM MEASURES

##### Maintenance Directive

- Emphasis on Appropriate PMT and Verification

##### Guidance to Operators

- Focus on Appropriate PMT Requirements

##### Guidance to Planners

- Technical Review of PMT Matrix
- Emphasis on Appropriate PMT

Consideration of Direction Regarding Non-Maintenance Activities

#### LONG TERM ACTIONS

##### Procedural Enhancements

- Several Changes Regarding PMT and Verification

#### PERSONNEL PERFORMANCE

- Ongoing Plant Actions

## V. SAFETY SIGNIFICANCE

### ACTUAL SAFETY SIGNIFICANCE MINIMAL

LICENSING BASIS ANALYSIS REQUIRES SINGLE TRAIN ECCS AVAILABLE

SI Pumps Required For Limited Range Of Break Sizes

SINGLE COMPONENTS OF OPPOSITE TRAIN ECCS DESIGNATED "INOPERABLE" BY TECHNICAL SPECIFICATIONS

SI Pump On Two Occasions

ASSESSMENT OF EXISTING ANALYSES SHOWS ACCEPTABLE CORE PARAMETERS ASSUMING TIMELY OPERATOR ACTION

SI PUMP ADMINISTRATIVELY "INOPERABLE" - SURVEILLANCE ON AUGUST 5

Pump Running

Valve Alignment For Miniflow (17 Minutes)

Operators Aware Of Alignment

Operator Response By Emergency Procedure (E-0, Step 5) Within Required Time Frame

## VI. LICENSING PERSPECTIVES

CONDITION OUTSIDE TECHNICAL SPECIFICATIONS - SECTION 3.5.2

ECCS CAPABLE OF PERFORMING INTENDED SAFETY FUNCTION -  
MINIMAL SAFETY SIGNIFICANCE

PROMPT CORRECTIVE ACTIONS AND REPORTING AFTER TVA  
DISCOVERY

COMPREHENSIVE CORRECTIVE ACTIONS RELATED TO BREAKER  
PRACTICES AND OVERALL PMT PROCESS

Extensive Actions Already Planned in Response to RHR Event



## VII. CLOSING REMARKS/CONCLUSION

RECOGNIZE POTENTIAL SIGNIFICANCE

EXTENSIVE ONGOING EFFORTS - HEADED IN RIGHT DIRECTION

COMPREHENSIVE ACTIONS REFLECT COMMITMENT TO ASSURING  
QUALITY

EXTENSIVE CORRECTIVE ACTIONS TO ADDRESS UNDERLYING ISSUES