

# CATEGORY 1

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9906080102      DOC. DATE: 99/05/24      NOTARIZED: NO      DOCKET #  
FACIL: 50-260 Browns Ferry Nuclear Power Station, Unit 2, Tennessee      05000260  
50-296 Browns Ferry Nuclear Power Station, Unit 3, Tennessee      05000296  
AUTH. NAME      AUTHOR AFFILIATION  
ABNEY, T. E.      Tennessee Valley Authority  
RECIP. NAME      RECIPIENT AFFILIATION  
Records Management Branch (Document Control Desk)

SUBJECT: Informs that by meeting test criteria established by this test based on ANSI/ANS 3.5-1985 (license amends 254 & 214) power uprate simulation was found to be acceptable for operator training.

DISTRIBUTION CODE: D030D      COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 6  
TITLE: TVA Facilities - Routine Correspondence

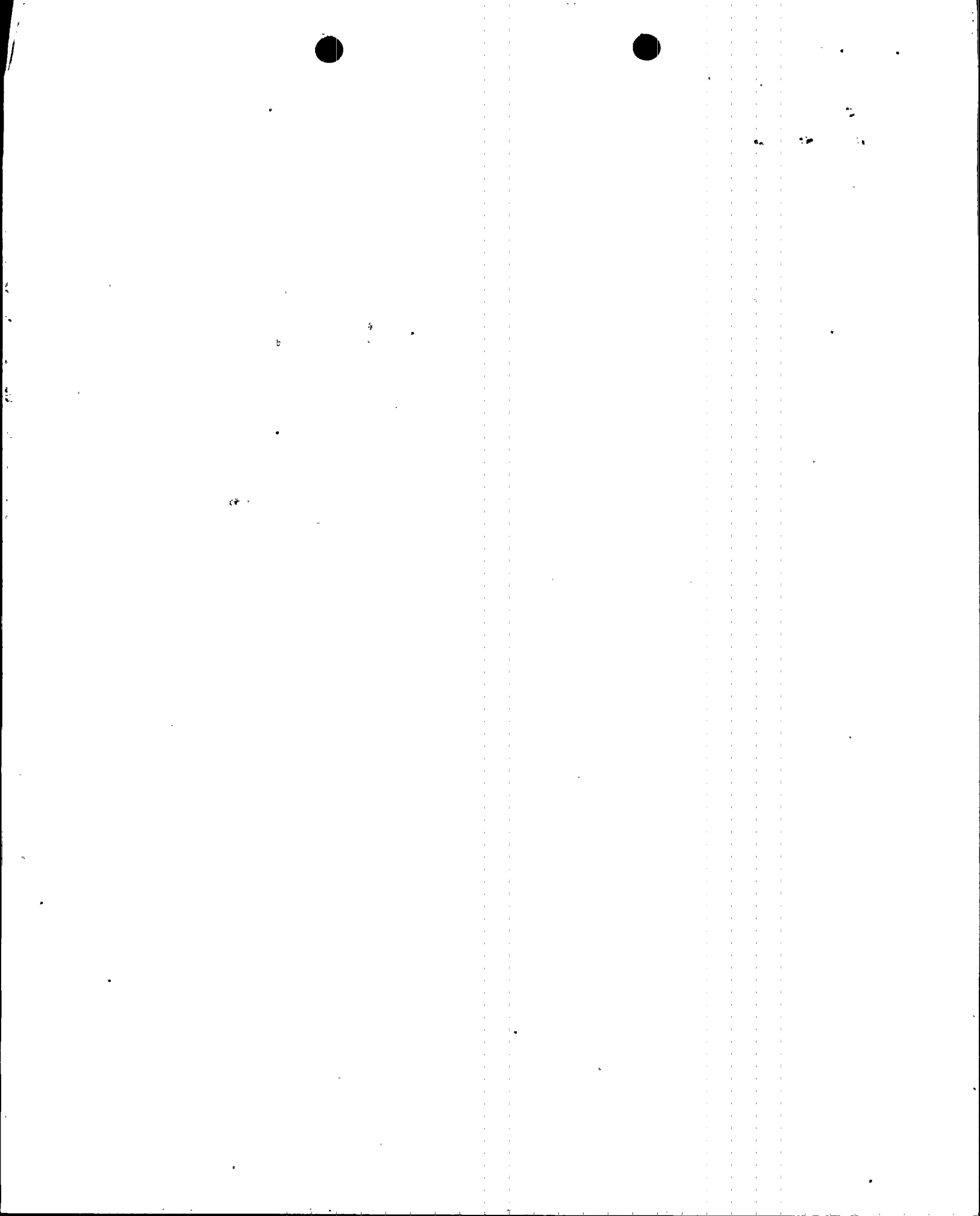
### NOTES:

	RECIPIENT ID CODE/NAME	COPIES LTR ENCL	RECIPIENT ID CODE/NAME	COPIES LTR ENCL
	LPD2-2 LA	1 1	LPD2-2 PD	1 1
	DEGAZIO, A	1 1		
INTERNAL:	ACRS	1 1	FILE CENTER 01	1 1
	OGC/HDS3	1 0	RES/DE/SSEB/SES	1 1
EXTERNAL:	NOAC	1 1	NRC PDR	1 1

MICROFILMED

NOTE TO ALL "RIDS" RECIPIENTS:  
PLEASE HELP US TO REDUCE WASTE. TO HAVE YOUR NAME OR ORGANIZATION REMOVED FROM DISTRIBUTION LISTS OR REDUCE THE NUMBER OF COPIES RECEIVED BY YOU OR YOUR ORGANIZATION, CONTACT THE DOCUMENT CONTROL DESK (DCD) ON EXTENSION 415-2083

TOTAL NUMBER OF COPIES REQUIRED: LTR 9 ENCL 8





Tennessee Valley Authority, Post Office Box 2000, Decatur, Alabama 35609

May 24, 1999

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D.C. 20555

Gentlemen:

In the Matter of ) Docket Nos. 50-260  
Tennessee Valley Authority ) 50-296

BROWNS FERRY NUCLEAR PLANT (BFN) - CLOSURE OF OPERATIONS  
TRAINING LICENSE CONDITION ASSOCIATED WITH UNITS 2 AND 3  
POWER UPRATE OPERATING LICENSE AMENDMENTS 254 AND 214 - (TAC  
NOS. M99711 AND M99712)

In a September 8, 1998 letter (Reference 1), NRC issued a license amendment to allow operation of BFN Units 2 and 3 at 3458 megawatts thermal power. As part of the amendment, NRC added the following license condition: "Classroom and simulator training on all power uprate related changes that affect operator performance will be conducted prior to operating at uprated conditions. Simulator changes that are consistent with power uprate conditions will be made and simulator fidelity will be validated in accordance with ANSI/ANS 3.5-1985. Training and the plant simulator will be modified, as necessary, to incorporate changes identified during startup testing."

43033

D030

9906080102 990524  
PDR ADOCK 05000260  
P PDR ]



• • • • •

•

•

•

•

•

•

•

•

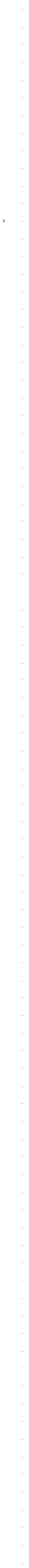
Background

By letter dated October 1, 1997 (Reference 2), TVA requested a license amendment to allow BFN to operate Units 2 and 3 at the uprated power level of 3458 megawatts thermal. In a March 30, 1998 letter (Reference 3), the staff requested additional information regarding the proposed power uprate license amendment. The letter stipulated that TVA propose a license condition and/or a commitment that certain aspects of operation training be completed prior to operating BFN at uprated conditions. These actions included the following:

- (a) Provide classroom and simulator training on all changes that effect operator performance caused by the power uprate modification. All training and the plant simulator will be modified, as necessary, to incorporate changes identified during the startup testing program.
- (b) Complete simulator changes that are consistent with ANSI/ANS 3.5-1985. Simulator fidelity will be re-validated in accordance with ANSI/ANS 3.5-1985, Section 5.4.1, "Simulator Performance Testing." Simulator revalidation will include comparison of individual simulated systems and components and simulated integrated plant steady state and transient performance with reference plant responses using similar startup test procedures.
- (c) Complete all control room and plant process computer system changes as a result of the power uprate.
- (d) Modify operator training and the plant simulator, as required, to address all related issues and discrepancies that are identified during the startup testing program.

In letter dated April 28, 1998 (Reference 4), TVA provided the requested information. As part of that response TVA committed to complete the requested actions. By letter dated September 1, 1998 (Reference 5), TVA agreed to the previously stated operating license condition. Accordingly, on September 8, 1998, the NRC issued the license condition as part of the power uprate license amendment.

This letter provides notification that the required training activities required for power uprate implementation have been completed.



Completed Actions

Prior to operator requalification training, the training content was revised to include power uprate parameters. Engineering and design data was used to revise the training material. Classroom training which included uprated conditions, involved an overview of various aspects of the power uprate (i.e., operating parameter value changes, setpoints and scaling changes, procedure changes, system changes, startup test plan, etc.).

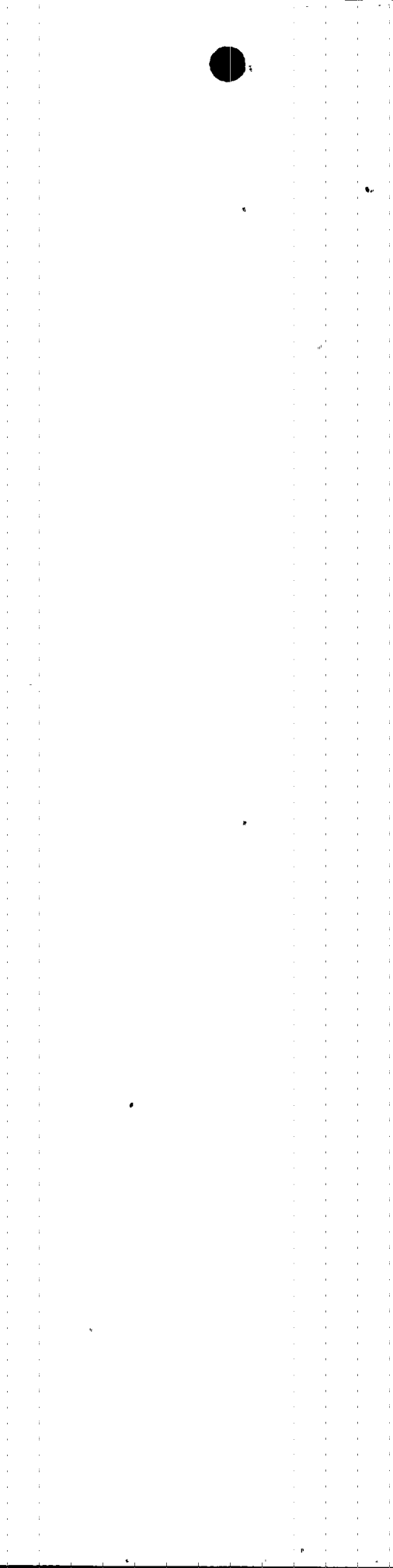
Simulator training was conducted in conjunction with the classroom training. The scenarios utilized included, those that demonstrated changes in plant responses at uprated power including changes in time to achieve critical points for operator actions. The operators were required to respond to the transients using applicable plant procedures.

The BFN simulator was modified to support Unit 3 power uprate implementation. The power uprate modifications were implemented on the simulator using engineering and design analysis prior to installation in Unit 3. Since the simulator reference unit is Unit 2, the installation of power uprate based on Unit 3 design caused some differences between the simulator and its' reference unit. These differences were noted and discussed as part of the classroom training.

Prior to training on the simulator, an acceptance test consistent with American Nuclear Standards Institute/American Nuclear Society (ANSI/ANS) 3.5-1985, Appendix B.1.1, was run to bench mark the simulator performance. The thrust of the test was to ensure the simulator heat balance matched the engineering and design analysis data for 105 percent steady-state power. Satisfactory completion of each test was accomplished with no major problems identified, therefore, the power uprate simulation was determined to be acceptable for operator training.

During the startup of Unit 3, Operations Training Instructors observed control room operators as they transitioned from Mode 4 through Mode 1 to track Unit 3's plant response during the power uprate startup test program. Observations from Unit 3 startup were included in revised Unit 3 and Unit 2 Power Uprate Classroom Training Lesson Plans.

Following startup of Unit 3, actual plant data was collected and a comparison analysis that would identify any performance differences between Unit 3 and the simulator was run. A steady state test was performed on the simulator that met the intent of ANSI/ANS 3.5-1985, Section 5.4.1. In that test,





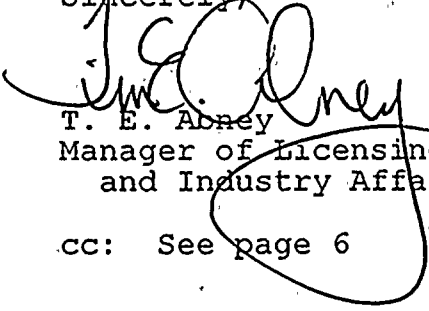
U. S. Nuclear Regulatory Commission

Page 4,  
May 24, 1999

the simulator values were compared with actual plant reference data. The results indicated that, the simulator displayed good agreement with Unit 3 plant data and no major problems were identified. The results of the testing also assured that the design data used as the basis of the simulator power uprate changes, was accurate when compared to actual Unit 3 plant data. By meeting the test criteria established by this test based on ANSI/ANS 3.5-1985, the power uprate simulation was found to be acceptable for operator training.

There are no commitments made in this letter. If you have any questions, please telephone me at (256) 729-2636.

Sincerely,

  
T. E. Abney  
Manager of Licensing  
and Industry Affairs

cc: See page 6



May 24, 1999

REFERENCES

1. NRC letter to TVA dated September 8, 1998, Issuance of Amendment Power Uprate - Browns Ferry Plant, Units 2 and 3
2. TVA letter to NRC dated October 1, 1997, Browns Ferry Nuclear Plant (BFN) Units 2 and 3 - Technical Specification (TS) Change TS-384 - Request For License Amendment For Power Uprate Operation
3. NRC Letter to TVA dated March 30, 1998, Browns Ferry Plant, Units 2 and 3 - Request For Additional Information Regarding Technical Specification Change TS - 384, Request For License Amendment For Power Uprate Operation (TAC NOS. M99711, M99712)
4. TVA letter to NRC dated April 28, 1998, Browns Ferry Nuclear Plant (BFN) - Response to Request For Additional Information (RAI) Regarding Units 2 and 3 Technical Specification (TS) Change TS - 384, - Response To The Request For Additional Information Relating To License Amendment For Power Uprate Operation (TAC NOS. M99711, M99712)
5. TVA letter to NRC dated September 1, 1998, Browns Ferry Nuclear Plant (BFN) - Units 2 and 3 Technical Specification (TS) NO. 384 - Request For License Amendment For Power Uprate Operation, Proposed Operating License Conditions (TAC NOS. M99711, and M99712)

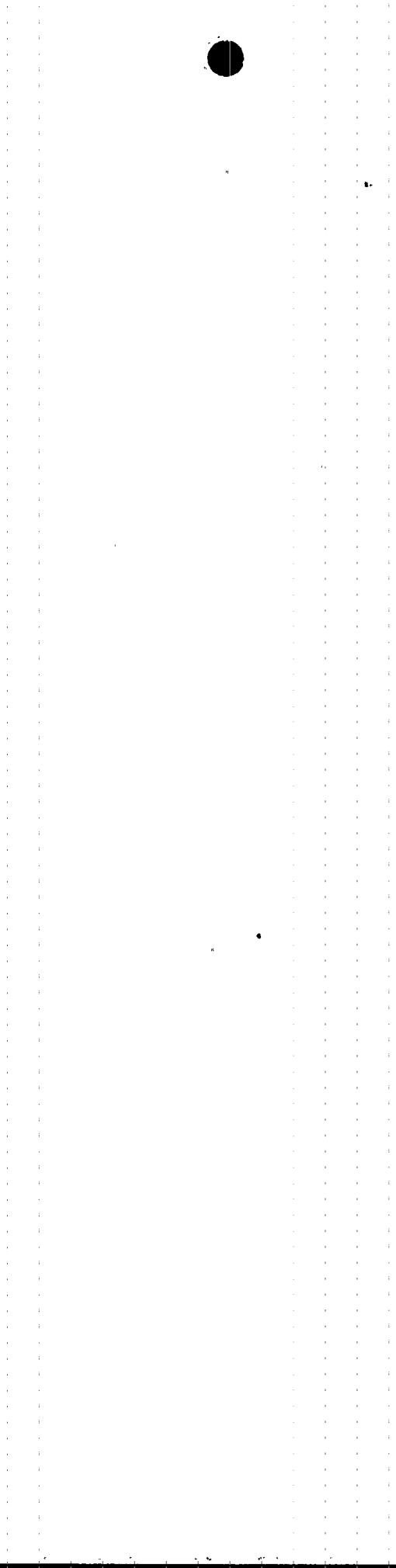


1 2 3 4

5

6

7



U. S. Nuclear Regulatory Commission

Page 6

May 24, 1999

cc: Mr. Albert W. De Agazio, Senior Project Manager  
U.S. Nuclear Regulatory Commission  
One White Flint, North  
11555 Rockville Pike  
Rockville, Maryland 20852

Mr. Paul E. Fredrickson, Branch Chief  
U.S. Nuclear Regulatory Commission  
Region II  
61 Forsyth Street, S. W.  
Suite 23T85  
Atlanta, Georgia 30303

NRC Resident Inspector  
Browns Ferry Nuclear Plant  
10833 Shaw Road  
Athens, Alabama 35611

