

Power Reactor

Event # 43782

<b>Site:</b> FARLEY		<b>Notification Date / Time:</b> 11/14/2007 15:34 (EST)	
<b>Unit:</b> 1 2	<b>Region:</b> 2	<b>State :</b> AL	<b>Event Date / Time:</b> 11/14/2007 13:00 (CST)
<b>Reactor Type:</b> [1] W-3-LP,[2] W-3-LP		<b>Last Modification:</b> 11/14/2007	
<b>Containment Type:</b> DRY AMB DRY AMB			
<b>NRC Notified by:</b> BEN GEORGE		<b>Notifications:</b> GEORGE HOPPER R2	
<b>HQ Ops Officer:</b> FANGIE JONES		VERN HODGE (EMAIL) NRR	
<b>Emergency Class:</b> NON EMERGENCY		JOHN THORP (EMAIL) NRR	
<b>10 CFR Section:</b>			
21.21		UNSPECIFIED PARAGRAPH	

Unit	Scram Code	RX Crit	Init Power	Initial RX Mode	Curr Power	Current RX Mode
1	N	Yes	30	Power Operation	30	Power Operation
2	N	Yes	100	Power Operation	100	Power Operation

PART 21 NOTIFICATION - AREVA 4kV CUTLER HAMMER BREAKERS

The licensee provided the following information via facsimile:

"In accordance with 10CFR21.21(d)(3), Southern Nuclear Operating Company (SNC) is making notification of a defect in a basic component supplied to Joseph M. Farley Nuclear Plant (Farley). A 10CFR21 report regarding a defect associated with Model MA-VR-350 4160 V circuit breakers supplied by AREVA was made by AREVA to SNC on October 3, 2007. The breaker design incorporates the use of a C-clip which may not have been properly installed or that can become dislodged from its groove on the Main Link Assembly pin which holds the Banana Link in place. If the Banana Link becomes disengaged from the Main link Assembly pin, the breaker will charge, but not close or it will leave the breaker in a 'trip-free' condition.

"The Model MA-VR-350 4160 V circuit breakers are used in the plant safety related 4160 V switchgear and serve as pump motor supply breakers for multiple safety related applications, e.g., component cooling water, low-head and high-head safety injection, containment spray, auxiliary feedwater, as well as the emergency diesel generator output breakers. Currently, there are breakers in stock and installed. Consequentially, their postulated failure in these critical applications could create a substantial safety hazard.

"Existing plant procedures already included pre-installation inspection steps for the Model MA-VCR-350 4160 V circuit breakers to identify loose nuts, bolts, retaining rings, or other hardware. In response to this concern, SNC revised plant procedures to add the C-clips to the inspection list to verify they are properly seated on the main link. Given the multiple examinations that were being conducted on the breakers in accordance with existing procedures, and the subsequent procedure enhancements that have been made to examine the C-clips, SNC determined that the installed breakers would continue to operate as designed on demand.

IE19  
NRR

Power Reactor

Event # 43782

"As recommended by AREVA, a visual inspection, of the Model MA-VR-350 4160 V circuit breakers should be performed at regular maintenance intervals to insure proper installation of the C-clip on the main link assembly."

SNC has been in contact with NRC Region II (Scott Shaffer, Chuck Casto) and has notified the NRC Resident Inspector.

\*\*\*\*\*



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION II  
SAM NUNN ATLANTA FEDERAL CENTER  
61 FORSYTH STREET, SW, SUITE 23T85  
ATLANTA, GEORGIA 30303-8931

November 9, 2007

CAL No. 02-07-001

Southern Nuclear Operating Company, Inc.  
ATTN: Mr. J. Randy Johnson  
Vice President - Farley  
Joseph M. Farley Nuclear Plant  
7388 North State Highway 95  
Columbia, AL 36319

SUBJECT: CONFIRMATORY ACTION LETTER FOR JOSEPH M. FARLEY NUCLEAR  
PLANT, UNITS 1 AND 2

Dear Mr. Johnson:

This letter refers to the 4160 volt Cutler Hammer (C-H) breaker failures that have occurred at the Farley Nuclear Plant (FNP) since September 2007 and confirms the actions that Southern Nuclear Company (SNC) has taken and plans to take to address these issues.

Your letter dated October 29, 2007, stated that SNC has developed an 11-point breaker inspection process for the safety related 4160 volt C-H breakers to further ensure operability of the subject components. You also stated that SNC established a breaker oversight team to review the inspection results. In addition, you indicated a root cause evaluation will be performed to determine if any additional actions were needed to assure breaker performance. You indicated the root cause evaluation will be completed by December 1, 2007.

On November 5, 2007, you supplemented your October 29, 2007, letter. In this letter, you advised that additional verifications were performed to ensure all inspections had been accomplished on Unit 2. We understand that, based on additional inspections of two breakers on November 3, 2007, all inspections are complete for Unit 2 breakers in accordance with your October 29, 2007 letter. Confirmation is still pending for the completion of all breaker inspections planned for Unit 1 following the Refueling Outage U1R21.

In light of your Commitments in your letters dated October 29 and November 5, 2007, a discussion between you and Charles Casto, Director, Division of Reactor Projects (DRP) Region II (RII) on October 25, 2007, and a subsequent discussion between you and Scott Shaeffer, Chief, Branch 2, DRP, RII on November 1, 2007, it is our understanding that you have taken (or will take) the following actions:

1. FNP Unit 1 – SNC will inspect 4160 volt C-H breakers that are required to support reload of fuel into the reactor (7 Breakers total), prior to reloading fuel (Mode 6) during Refueling Outage U1R21 in the fall of 2007.
2. FNP Unit 1 – SNC will inspect 4160 volt C-H breakers required to support second train of Residual Heat Removal (5 Breakers Total), prior to draining the reactor cavity with fuel in the core during Refueling Outage U1R21 in the fall of 2007.

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3. FNP Unit 1 – SNC will inspect 4160 volt C-H breakers that must be able to close on a Safety Injection signal, reopen on a subsequent Loss of Site Power and then re-close one additional time to accommodate accident recovery action (12 Remaining Breakers). This will be accomplished prior to entering Mode 4 following Refueling Outage U1R21 in the fall of 2007.
4. FNP Unit 2 – Breaker DF-13 was inspected by November 3, 2007, as detailed in your letter dated November 5, 2007.
5. FNP Unit 2 – SNC has completed the established 11-point breaker inspection process for 13 critical 4160 Volt C-H breakers designated in Enclosure 2, Section 3 of your letter dated October 29, 2007.
6. SNC will complete the root cause review and determine any additional required actions by December 1, 2007.
7. SNC will review their corrective action and work order systems to confirm the established 11-point breaker inspection process encompasses all critical and necessary inspection attributes based on available information. This one time review will be completed by December 1, 2007.

This Confirmatory Action letter will remain open until the NRC has concluded that SNC's actions are complete and that you have demonstrated that your corrective actions were effective.

Pursuant to Section 182 of the Atomic Energy Act, 42 U.S.C. 2232, you are required to:

1. Notify me immediately if your understanding differs from that set forth above;
2. Notify me if for any reason you cannot complete the actions within the specified schedule and advise me in writing of your modified schedule in advance of the change;
3. Notify me in writing if you intend to change, deviate from, or not complete any of the actions documented above and advise of the bases for any changes or deviations prior to implementation of the change or deviation; and
4. Notify me in writing when you have completed the actions addressed in this Confirmatory Action Letter.

Issuance of this Confirmatory Action Letter does not preclude issuance of an order formalizing the above commitments or requiring other actions on the part of the licensee; nor does it preclude the NRC from taking enforcement action for violations of NRC requirements that may have prompted the issuance of this letter. In addition, failure to take the actions addressed in this Confirmatory Action Letter may result in enforcement action.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure(s), and your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC website at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed

copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide, in detail, the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

Should you have any questions concerning this letter, please contact Charles Casto at (404) 562-4500.

Sincerely,

*/RA/*

William D. Travers  
Regional Administrator

Docket No.: 50-348, 50-364  
License No.: NPF-2, NPF-8

cc: (See page 4)

cc:

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Fleet Operations Support  
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William D. Oldfield  
Quality Assurance Supervisor  
Southern Nuclear Operating Company  
Electronic Mail Distribution

**FAX**

Southern Nuclear Operating Company  
40 Inverness Center Parkway  
P. O. Box 1295  
Birmingham, Alabama 35201



To NRC Operations Center

Date November 14, 2007

From Ben George

Manager Nuclear Licensing

Telephone 301-816-5100

Telephone 205.992.7870

Fax 301-816-5151

Fax 205.992.7885

CC

Number of pages with cover sheet - 18

REMARKS \_\_\_\_\_ Urgent X Reply \_\_\_\_\_ For your review \_\_\_\_\_

Southern Nuclear Operating Company 10 CFR 21.21(d)(3) notification regarding AREVA 4 kV Cutler Hammer Breakers.

u1 30%  
u2 100%

**Jeffrey T. Gasser**  
Executive Vice President  
and Chief Nuclear Officer

**Southern Nuclear  
Operating Company, Inc.**  
40 Inverness Center Parkway  
Post Office Box 1295  
Birmingham, Alabama 35201  
Tel: 205.992.7721  
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NL-07-1959

November 14, 2007

Docket Nos.: 50-348  
50-364

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D. C. 20555-0001

Joseph M. Farley Nuclear Plant  
10 CFR 21 Report  
AREVA Model MA-VR-350 4160 V Circuit Breakers

Ladies and Gentlemen:

In accordance with 10 CFR 21.21(d)(3), Southern Nuclear Operating Company (SNC) is making notification of a defect in a basic component supplied to Joseph M. Farley Nuclear Plant (Farley). Accordingly, Enclosure 1 contains a 10 CFR 21 report regarding a defect associated with Model MA-VR-350 4160 V circuit breakers supplied by AREVA. Enclosure 2 contains a copy of AREVA's 10 CFR 21.21(b) notification to SNC dated October 3, 2007, indicating that a potential defect in a basic component exists. Enclosures 3 and 4, contain additional letters from AREVA dated February 23, 2007, and April 23, 2007, respectively, related to this issue, indicating at that time that the breaker concern represented an isolated event.

This letter satisfies both the 2-day and 30-day reporting requirements contained in 10 CFR 21.21(d)(3). This letter contains no NRC commitments. If you have any questions, please advise.

Sincerely,

J. T. Gasser  
Executive Vice President

JTG/TMM/PHR

Distribution and Enclosure listing on next page

U. S. Nuclear Regulatory Commission  
Log: NL-07-1959  
Page 2

Enclosures:

1. 10 CFR 21 Report-AREVA Model MA-VR-350 4160 V Circuit Breakers
2. AREVA Notification Letter to SNC of Potential Defect dated October 3, 2007
3. AREVA Letter to SNC dated February 23, 2007
4. AREVA Letter to SNC dated April 23, 2007

cc: Southern Nuclear Operating Company  
Mr. L. M. Stinson, Vice President Fleet Operations Support  
Mr. J. R. Johnson, Vice President - Farley  
Mr. D. H. Jones, Vice President - Engineering  
RTYPE: CFA04.054; LC# 14657

U. S. Nuclear Regulatory Commission  
Dr. W. D. Travers, Regional Administrator  
Ms. K. R. Cotton, NRR Project Manager - Farley  
Mr. E. L. Crowe, Senior Resident Inspector - Farley

**Joseph M. Farley Nuclear Plant**

**Enclosure 1**

**10 CFR 21 Report**

**AREVA Model MA-VR-350 4160 V Circuit Breakers**

**Enclosure 1****10 CFR 21 Report  
AREVA Model MA-VR-350 4160 V Circuit Breakers**

The following 10 CFR 21 written report is provided by Southern Nuclear Operating Company (SNC) for Joseph M. Farley Nuclear Plant. The contents are in accordance with 10 CFR 21.21(d)(4).

- (i) Name and address of the individual or individuals informing the Commission.

Mr. J. T. Gasser  
Executive Vice President  
40 Inverness Center Parkway  
Post Office Box 1295  
Birmingham, AL 35201

- (ii) Identification of the facility, the activity, or the basic component supplied for such facility or such activity within the United States which fails to comply or contains a defect.

AREVA Model MA-VR-350 4160 V Circuit Breakers

- (iii) Identification of the firm constructing the facility or supplying the basic component which fails to comply or contains a defect.

AREVA NP  
200 West Kensinger Drive, Suite 600  
Cranberry Township, PA 16066

- (iv) Nature of the defect or failure to comply and the safety hazard which is created or could be created by such defect or failure to comply.

By letter dated October 3, 2007, AREVA issued a 10 CFR 21.21(b) notification to SNC regarding a potential defect regarding the manufacture of Model MA-VR-350 4160 V Circuit Breakers (Refer to Enclosure 2). This letter was determined by SNC to represent a 10 CFR 21.21(b) transfer of information vendor notification based on discussions with AREVA on October 5, 2007. The Model MA-VR-350 4160 V circuit breaker design incorporates the use of a C-clip that secures its main link assembly together. The concern is that the C-clip can become dislodged from its groove on the main link following an operation. The C-clip serves to secure retaining washers that hold the main link assembly roller and banana link in place. In the event the main link assembly becomes unsecured and fails following a trip, it will leave the breaker in a "trip-free" condition.

The Model MA-VR-350 4160 V circuit breakers are used in the plant safety related 4160 V switchgear and serve as pump motor supply breakers for multiple safety related applications, e.g., component cooling water, low-head and high-head safety injection, containment spray, auxiliary feedwater, as well as the emergency diesel generator output breakers. Currently, there are breakers in stock and installed. Consequently, their postulated failure in these critical applications could create a substantial safety hazard.

**Enclosure 1****10 CFR 21 Report  
AREVA Model MA-VR-350 4160 V Circuit Breakers**

- (v) The date on which the information of such defect or failure to comply was obtained.

AREVA's October 3, 2007, letter was received by SNC on October 4, 2007. Discussions between AREVA and SNC on October 5, 2007, confirmed that the letter represented a 10 CFR 21.21(b) notification that a potential defect exists. The February 23, 2007, and March 23, 2007, letters from AREVA to SNC referenced in the October 3, letter are provided in Enclosures 3 and 4, respectively. Note that the reference to the March 23, 2007, was incorrect and should have been April 23, 2007, instead. SNC has confirmed this error with AREVA. The letters from AREVA dated February 23, 2007, and April 23, 2007, indicated at that time that the breaker concern represented an isolated event.

- (vi) In the case of a basic component which contains a defect or fails to comply, the number and location of these components in use at, supplied for, being supplied for, or may be supplied for, manufactured, or being manufactured for one or more facilities or activities subject to the regulations in this part.

As stated in Item (iv) above, the Model MA-VR-350 4160 V circuit breakers are used in the plant safety related 4160 V switchgear and serve as pump motor supply breakers for multiple safety related applications, e.g., component cooling water, low-head and high-head safety injection, containment spray, auxiliary feedwater, as well as the emergency diesel generator output breakers. Currently, there are breakers in stock and installed.

- (vii) The corrective action which has been, is being, or will be taken; the name of the individual or organization responsible for the action; and the length of time that has been or will be taken to complete the action.

Existing plant procedures already included pre-installation inspection steps for the Model MA-VR-350 4160 V circuit breakers to identify loose nuts, bolts, retaining rings, or other hardware. In response to this concern, SNC revised plant procedures to add the C-clips to the inspection list to verify they are properly seated on the main link. Given the multiple examinations that were being conducted on the breakers in accordance with existing procedures, and the subsequent procedure enhancements that have been made to examine the C-clips, SNC determined that the installed breakers would continue to operate as designed on demand.

- (viii) Any advice related to the defect or failure to comply about the facility, activity, or basic component that has been, is being, or will be given to purchasers or licensees.

As recommended by AREVA in Enclosure 2, a visual inspection of the Model MA-VR-350 4160 V circuit breakers should be performed at regular maintenance intervals to insure proper installation of the C-clip on the main link assembly.

**Joseph M. Farley Nuclear Plant**

**Enclosure 2**

**AREVA Notification Letter to SNC of Potential Defect dated October 3, 2007**

**AREVA NP**

200 West Kensington Drive, Suite 600  
Cranberry Township, PA 16066

LTR07333

October 3rd, 2007

Southern Nuclear Operating Company  
Corporate Headquarters  
P. O. Box 1295  
40 Inverness Center Parkway  
Birmingham, AL 35201  
Attention: Herb Beacher

**Subject:** Medium Voltage – Vacuum Replacement Circuit Breaker  
Failure Notification

**Reference:** MA-VR-350 Vacuum Replacement Medium Voltage Circuit  
Breakers procured under SNOC Purchase Orders:  
QP010541, QP060536, QP070023/002

AREVA CR-2007-4419

Dear Mr. Beacher:

The purpose of this letter is to provide notification to Southern Nuclear Operating Company that equipment of the type purchased under the referenced procurement documents failed to operate properly while undergoing testing at the manufacturer's facility following the completion of warranty repairs.

During testing of a Medium Voltage – Vacuum Replacement Circuit Breaker, MA-VR-350, 1200 Amp, the breaker became "trip-free" following one (1) electrically controlled operation of a planned five (5) operational cycle test. The cover was removed from the circuit breaker and it was readily observed that the Main Link Assembly had become partially disassembled.

Page 2

The C-clip had become dislodged from the groove in the Main Link Assembly pin and washers that retain the Banana Link and Roller were missing from the Main Link Assembly. The Banana Link had fallen off of the Main Link Assembly, leaving the breaker in a "trip-free" condition.

As part of the AREVA NP Corrective Action Program, an investigation is underway. The results of this investigation will be distributed at its conclusion. As a part of this process, a Deviation Determination has been performed and it has been determined that a deviation does exist.

Whether the issue has the potential to be a defect is completely dependent upon the application. This determination can only be made by the equipment owner as AREVA NP does not possess sufficient application information to make the determination. For this reason, a defect determination by AREVA NP is not possible and the appropriate disposition of the issue is being turned over to the affected utility customers.

As additional information, a similar failure occurred in 2006 and was documented in a notification letter to you dated on or about February 23<sup>rd</sup>, 2007. In a following letter dated March 23<sup>rd</sup>, 2007, it was recommended that a visual inspection to insure proper installation of the C-clip on the Main Link Assembly be performed at regular maintenance intervals.

Should you have any questions regarding this offer please contact Walter R. Senchesen at (724) 779-9800 on Extension 1320. Technical questions should be directed to Dave Garbulinski at (724) 779-9800 on Extension 1331.

Sincerely,



Harry Medsger

Engineering Manager  
Electrical Products  
**AREVA NP Inc.**  
Fax: 724-779-9844  
Office : 724-779-9800 x1314  
Mobil: 724-272-2803  
E-mail: [harry.medsger@areva.com](mailto:harry.medsger@areva.com)

**Joseph M. Farley Nuclear Plant**

**Enclosure 3**

**AREVA Letter to SNC dated February 23, 2007**



LTR 07073

February 23, 2007

Southern Nuclear Operating Company  
Corporate Headquarters  
P. O. Box 1295  
40 Inverness Center Parkway  
Birmingham, AL 35201

Attention: Mr. Eddle Dixon, Jr.

**Subject:** Notification of Medium Voltage – Vacuum Replacement Circuit Breaker Failure  
(Reference OE-24137)

Dear Mr. Dixon:

The purpose of this letter is to inform you of a Medium Voltage Vacuum Replacement Circuit Breaker failure that occurred on December 21<sup>st</sup>, 2006 at the Susquehanna nuclear plant in Luzerne County, Pennsylvania.

You are being notified of this event due to equipment purchased by Southern Nuclear Operating Company for the Farley nuclear plant under your Purchase Order #QP060536 for a quantity of (16) MAVR350 Circuit Breakers purchased in 2006, and Purchase Order #P010541 for a quantity of (9) MAVR350C circuit breakers purchased in 2001.

The breaker model 50DHP-VR250U was manufactured by Eaton Electrical and supplied to PPL Susquehanna LLC by AREVA NP. This breaker had been operated through 279 cycles since it was installed in May of 2004. Details of the failure have been reported in OE 24137, "4kv Vacuum Circuit Breaker Tripped Due to Internal Mechanical Failure of Operating Mechanism – Preliminary (Susquehanna)." Please refer to this report to obtain specific information regarding the circumstances of the event.

Following initial examinations and evaluations of the failed circuit breaker it has been confirmed that an internal mechanical failure did occur, most likely due to improper assembly at the time of manufacture. As a result of the failure, the breaker could not be reset and closed.

---

AREVA NP, Electrical Products  
200 Kensing Drive, Suite 600, Cranberry Twp., PA 16068  
Fax: 724-776-9844

This failure has been determined to be an isolated occurrence and there is no corrective action required.

This conclusion has been determined by the lack of history of similar failure modes and an evaluation of the circuit breaker following the event.

The manufacturer has recommended a visual inspection of the main link assembly be performed at regular maintenance intervals. The inspection methods will be available upon request at no charge within sixty (60) days of this notification.

Should there be any questions regarding this matter please contact Harry Medsger at (724) 779-9800 on extension 1314 or Walt Sanchesen at (724) 779-9800 on extension 1320.

Sincerely,

*Walt Sanchesen*



Walt Sanchesen  
Manager, Electrical Product Development

*Harry Medsger*



Harry Medsger  
Engineering Manager  
Electrical Products

**Joseph M. Farley Nuclear Plant**

**Enclosure 4**

**AREVA Letter to SNC dated April 23, 2007**



LTR007145

April 23, 2007

Southern Nuclear Operating Company  
Corporate Headquarters  
P. O. Box 1295  
40 Inverness Center Parkway  
Birmingham, AL 35201

Attention: Mr. Eddie Dixon, Jr.

**Subject: MV-VR Circuit Breaker Main Link Assembly Failure**  
**PO# QP060536 Quantity (16) MAVR350 Circuit Breakers 2006**  
**PO# QP010541 Quantity (9) MAVR350C Circuit breakers 2001**

Dear Mr. Dixon:

On December 21<sup>st</sup>, 2006 (1) 50DHP-VR250 Medium Voltage Circuit Breaker owned by the PP&L Susquehanna Plant failed while in use. After the breaker was removed from service, it was observed that the Banana Link on the main Link Assembly had become disengaged from the Main Link Assembly pin and was resting on the trip shaft. In this condition, the breaker would charge but not close. It has been concluded that the retaining ring, which holds the Banana Link on to the Main Link Assembly pin, had not been properly installed at the time of manufacture. This has been confirmed to be an isolated incident.

AREVA and the OEM recommend that an inspection to confirm that the retaining ring is fully seated in the groove of the Main Link Assembly pin is performed on all MV-VR equipment at the next regular maintenance interval.

As a follow-up to the previously distributed notification, please find attached the inspection instructions and associated visual aids.

Please contact either Walter Senchesen on extension 1320 or Harry Medsger on extension 1314 at 724-779-9800 with comments or questions about this information.

Sincerely,

*Walter Senchesen*  
Walter Senchesen  
Manager, Electrical Product Development  
[Walter.Senchesen@areva.com](mailto:Walter.Senchesen@areva.com)

*Harry Medsger*  
Harry Medsger  
Engineering Manager  
[Harry.Medsger@areva.com](mailto:Harry.Medsger@areva.com)

Attachments: Inspection Instructions, Graphic Aids, Photo

AREVA NP, Inc.  
200 Kensington Drive, Suite 600, Cranberry Twp., PA 16068  
Fax: 724-779-9844



## MV-VR Main Link Assembly Inspection Instructions

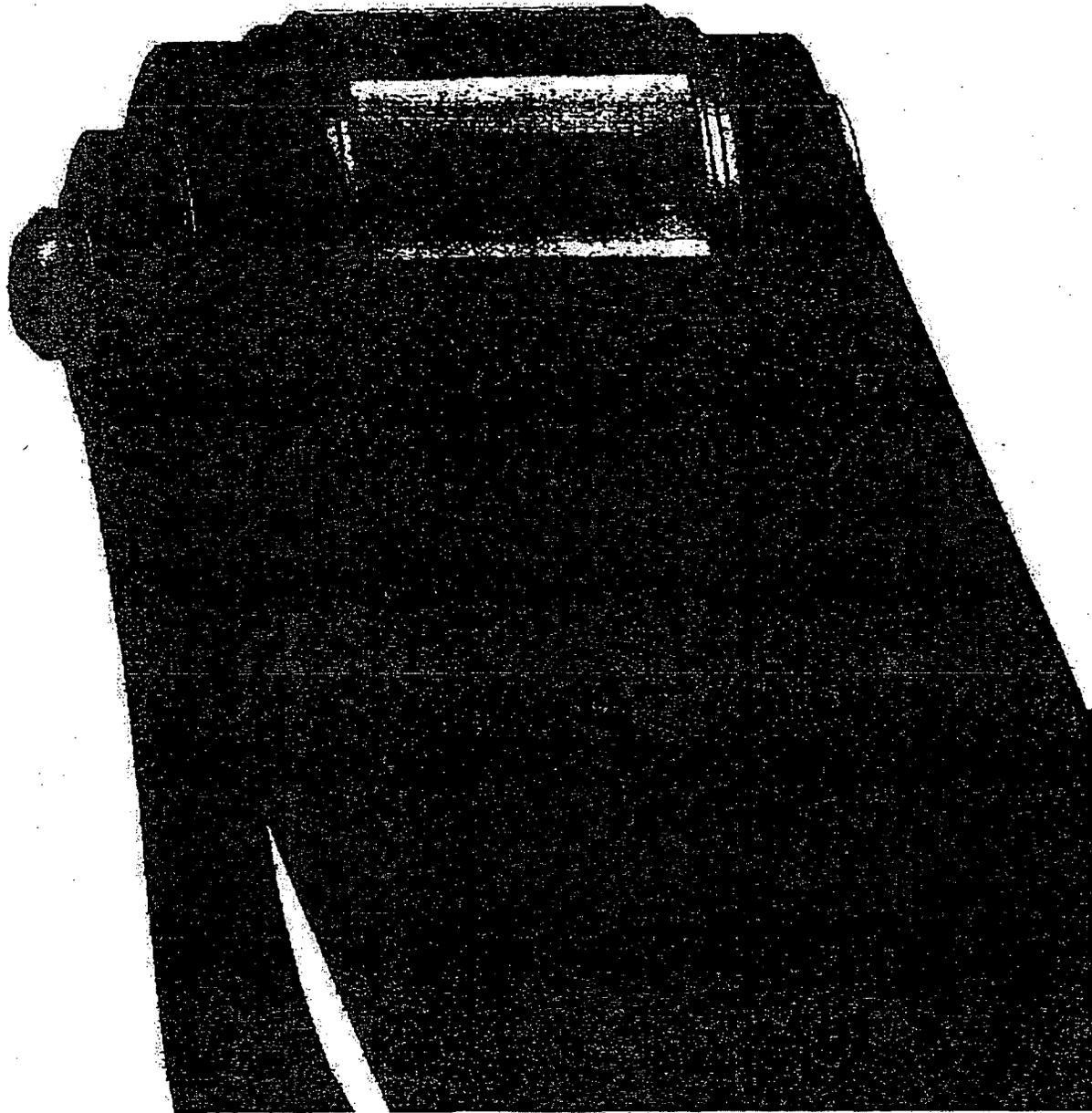
The purpose of this inspection is to provide confirmation that the retaining ring that holds the Main Link Assembly together is in place and fully seated in the groove of the pin.

1. Remove MV-VR breaker from cell.
2. Ensure MV-VR is in the "open" position.
3. Remove the front cover by completely removing the (4) 5/16-18 x 3/4" long hex head bolts that attach the front cover to the vacuum breaker element.
4. Look above the "Push To Open" clapper and behind the main mechanism shaft to locate the Main Link Assembly.
5. Remove excess grease with a dry rag to obtain a clear view of the retaining ring on the Main Link Assembly.
6. If needed, use a mirror and properly placed lighting to visually verify that the retaining ring is fully seated in the groove of the Main Link Assembly pin. Observe that no aspect of the inner diameter of retaining ring side facing the end of the Main Link Assembly pin is visible outside the pin groove.
7. See attached photo and drawings for example.

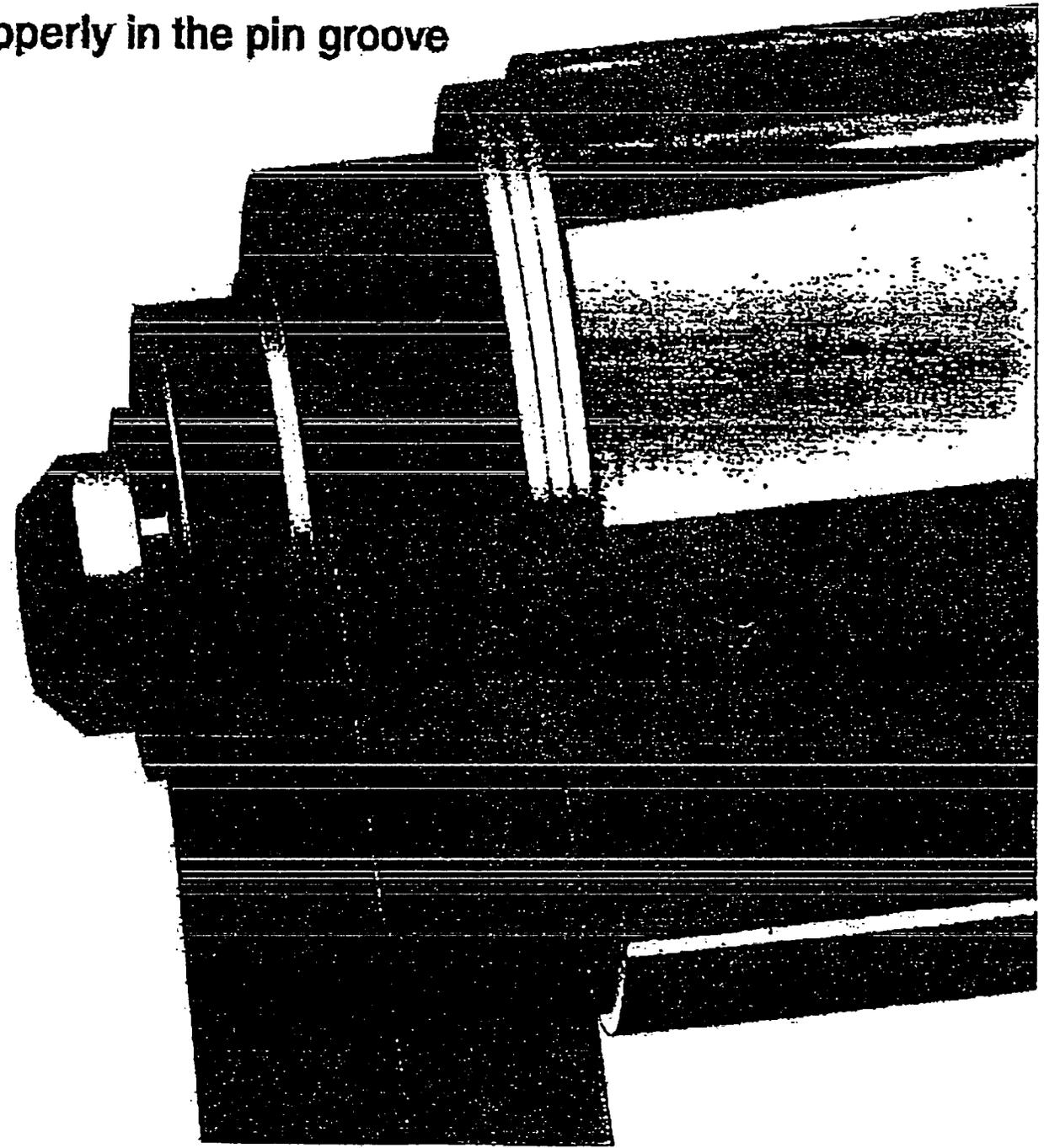
Two views of a graphical representation of a properly assembled Main Link Assembly.

Photograph of a Main Link Assembly that was purposely assembled improperly for demonstration purposes. The retaining ring is not seated in the groove of the pin.

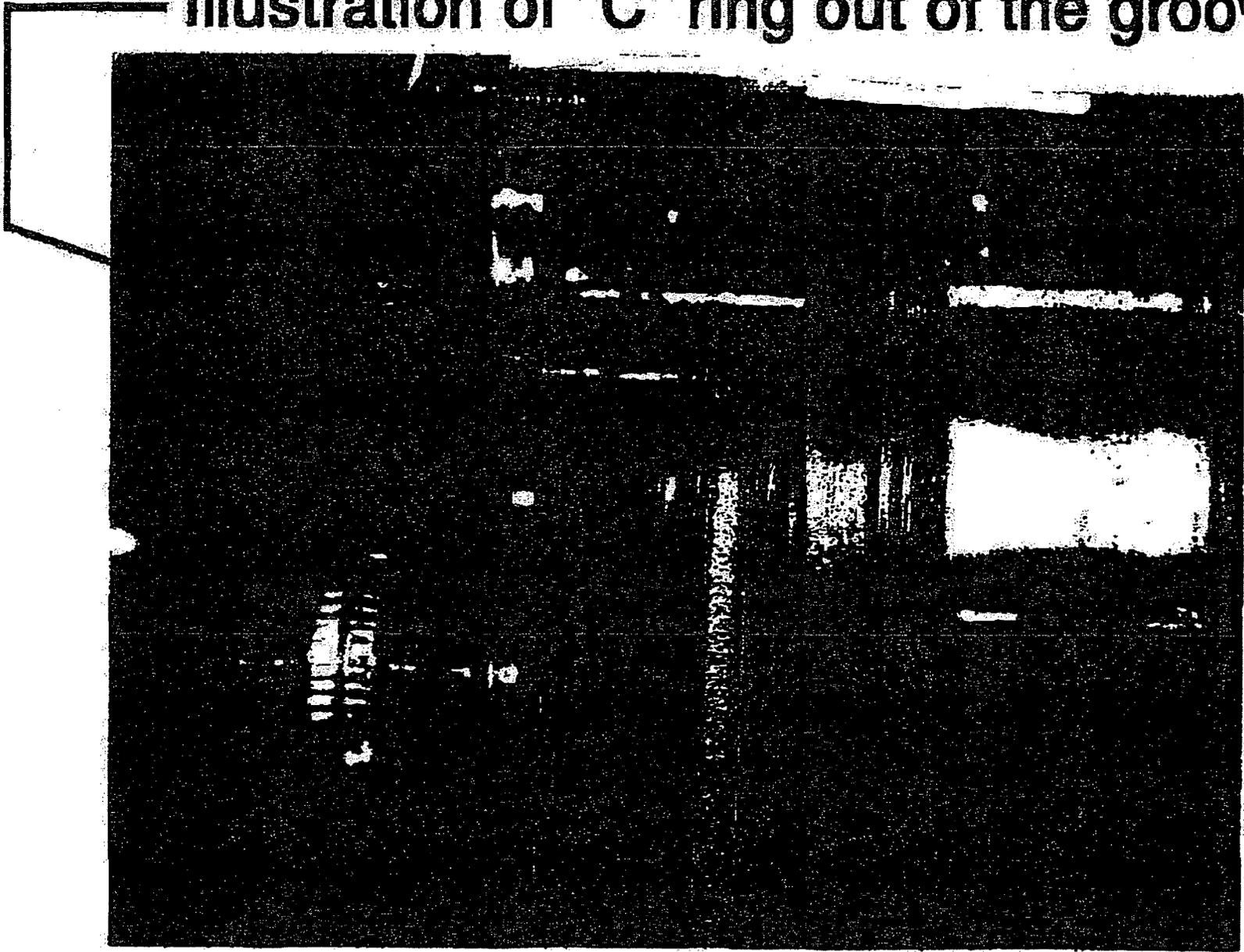
**"C" Ring properly in the pin groove**



**"C" Ring properly in the pin groove**



# Illustration of "C" ring out of the groove



**J. R. Johnson**  
Vice President - Farley

**Southern Nuclear  
Operating Company, Inc.**  
Post Office Drawer 470  
Ashford, Alabama 36312-0470

Tel 334.814.4511  
Fax 334.814.4728



November 5, 2007

Docket Nos.: 50-348  
50-364

NL-07-2113

U. S. Nuclear Regulatory Commission  
Region II  
Sam Nunn Atlanta Federal Center  
61 Forsyth Street, SW, Suite 23T85  
Atlanta, Georgia 30303-8931

**Joseph M. Farley Nuclear Plant – Units 1 and 2**  
**Operability Evaluation of AREVA Cutler-Hammer Breakers**

Ladies and Gentlemen:

On October 25, 2007, Southern Nuclear Operating Company (SNC) participated in a call with NRC Region II to discuss current evaluations of AREVA Cutler-Hammer 4160 volt breakers at Farley Nuclear Plant (FNP). SNC identified the current issues with the AREVA Cutler-Hammer breakers and presented the inspection plans and corrective actions to address these issues. SNC submitted a letter to NRC Region II on October 29, 2007, providing more detailed information on the Cutler-Hammer breaker issues and inspection plans. This letter supplements the October 29 submittal.

For Unit 1, the inspections are proceeding in accordance with the plan detailed in Enclosure 1 of the October 29 letter. In addition, documentation verification has been completed for Unit 1 breakers, as required for entry into Mode 5. Unit 1 has been refueled and is currently in Mode 5.

With respect to Unit 2, on November 2, 2007, in the course of its documentation review, SNC determined that inspection of two of the Unit 2 breakers: DK-04 and DF-13, did not include the Anti-pump Relay Socket Connection inspection, in accordance with the approved inspection plan. Inspection of the Anti-pump Relay Socket Connection was performed and documented for these two breakers on November 3, 2007. Inspections of all Unit 2 breakers within the scope of the October 29, 2007, letter have now been completed satisfactorily, in accordance with the approved inspection plan. In addition, documentation verification has been completed for these Unit 2 breaker inspections.

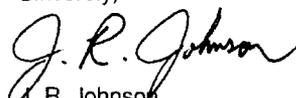
U. S. Nuclear Regulatory Commission  
NL-07-2113  
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The action plan identified in the October 29, 2007, letter is continuing and provides reasonable assurance that each breaker will perform its intended design function. In addition, SNC safety-related breaker inspection checklist and procedures have been updated to ensure that quality aspects described in the SNC October 29, 2007, letter are verified on each new AREVA Cutler-Hammer breaker.

Finally, the AREVA Cutler Hammer breaker monitoring program will include additional breaker checks during equipment maintenance to ensure proper breaker operation. SNC will continue to monitor the AREVA Cutler-Hammer breakers and any additional problems identified, will be addressed in accordance with the SNC Corrective Action Program. This would include appropriate causal analysis and extent of condition.

This letter contains no new NRC commitments. If you have any questions, please advise.

Sincerely,



J. R. Johnson  
Vice President – Farley

JRJ/CHM/daj

cc: Southern Nuclear Operating Company  
Mr. J. T. Gasser, Executive Vice President  
Mr. D. H. Jones, Vice President – Engineering  
RTYPE: CFA04.054; LC # 14671

U. S. Nuclear Regulatory Commission  
Dr. W. D. Travers, Regional Administrator  
Ms. K. R. Cotton, NRR Project Manager – Farley  
Mr. E. L. Crowe, Senior Resident Inspector – Farley  
Document Control Desk



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION II  
SAM NUNN ATLANTA FEDERAL CENTER  
61 FORSYTH STREET, SW, SUITE 23T85  
ATLANTA, GEORGIA 30303-8931

November 9, 2007

CAL No. 02-07-001

Southern Nuclear Operating Company, Inc.  
ATTN: Mr. J. Randy Johnson  
Vice President - Farley  
Joseph M. Farley Nuclear Plant  
7388 North State Highway 95  
Columbia, AL 36319

SUBJECT: CONFIRMATORY ACTION LETTER FOR JOSEPH M. FARLEY NUCLEAR  
PLANT, UNITS 1 AND 2

Dear Mr. Johnson:

This letter refers to the 4160 volt Cutler Hammer (C-H) breaker failures that have occurred at the Farley Nuclear Plant (FNP) since September 2007 and confirms the actions that Southern Nuclear Company (SNC) has taken and plans to take to address these issues.

Your letter dated October 29, 2007, stated that SNC has developed an 11-point breaker inspection process for the safety related 4160 volt C-H breakers to further ensure operability of the subject components. You also stated that SNC established a breaker oversight team to review the inspection results. In addition, you indicated a root cause evaluation will be performed to determine if any additional actions were needed to assure breaker performance. You indicated the root cause evaluation will be completed by December 1, 2007.

On November 5, 2007, you supplemented your October 29, 2007, letter. In this letter, you advised that additional verifications were performed to ensure all inspections had been accomplished on Unit 2. We understand that, based on additional inspections of two breakers on November 3, 2007, all inspections are complete for Unit 2 breakers in accordance with your October 29, 2007 letter. Confirmation is still pending for the completion of all breaker inspections planned for Unit 1 following the Refueling Outage U1R21.

In light of your Commitments in your letters dated October 29 and November 5, 2007, a discussion between you and Charles Casto, Director, Division of Reactor Projects (DRP) Region II (RII) on October 25, 2007, and a subsequent discussion between you and Scott Shaeffer, Chief, Branch 2, DRP, RII on November 1, 2007, it is our understanding that you have taken (or will take) the following actions:

1. FNP Unit 1 – SNC will inspect 4160 volt C-H breakers that are required to support reload of fuel into the reactor (7 Breakers total), prior to reloading fuel (Mode 6) during Refueling Outage U1R21 in the fall of 2007.
2. FNP Unit 1 – SNC will inspect 4160 volt C-H breakers required to support second train of Residual Heat Removal (5 Breakers Total), prior to draining the reactor cavity with fuel in the core during Refueling Outage U1R21 in the fall of 2007.

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3. FNP Unit 1 – SNC will inspect 4160 volt C-H breakers that must be able to close on a Safety Injection signal, reopen on a subsequent Loss of Site Power and then re-close one additional time to accommodate accident recovery action (12 Remaining Breakers). This will be accomplished prior to entering Mode 4 following Refueling Outage U1R21 in the fall of 2007.
4. FNP Unit 2 – Breaker DF-13 was inspected by November 3, 2007, as detailed in your letter dated November 5, 2007.
5. FNP Unit 2 – SNC has completed the established 11-point breaker inspection process for 13 critical 4160 Volt C-H breakers designated in Enclosure 2, Section 3 of your letter dated October 29, 2007.
6. SNC will complete the root cause review and determine any additional required actions by December 1, 2007.
7. SNC will review their corrective action and work order systems to confirm the established 11-point breaker inspection process encompasses all critical and necessary inspection attributes based on available information. This one time review will be completed by December 1, 2007.

This Confirmatory Action letter will remain open until the NRC has concluded that SNC's actions are complete and that you have demonstrated that your corrective actions were effective.

Pursuant to Section 182 of the Atomic Energy Act, 42 U.S.C. 2232, you are required to:

1. Notify me immediately if your understanding differs from that set forth above;
2. Notify me if for any reason you cannot complete the actions within the specified schedule and advise me in writing of your modified schedule in advance of the change;
3. Notify me in writing if you intend to change, deviate from, or not complete any of the actions documented above and advise of the bases for any changes or deviations prior to implementation of the change or deviation; and
4. Notify me in writing when you have completed the actions addressed in this Confirmatory Action Letter.

Issuance of this Confirmatory Action Letter does not preclude issuance of an order formalizing the above commitments or requiring other actions on the part of the licensee; nor does it preclude the NRC from taking enforcement action for violations of NRC requirements that may have prompted the issuance of this letter. In addition, failure to take the actions addressed in this Confirmatory Action Letter may result in enforcement action.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure(s), and your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC website at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed

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copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide, in detail, the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

Should you have any questions concerning this letter, please contact Charles Casto at (404) 562-4500.

Sincerely,

*/RA/*

William D. Travers  
Regional Administrator

Docket No.: 50-348, 50-364  
License No.: NPF-2, NPF-8

cc: (See page 4)

SNC

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cc:

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