

05-06-90

DCS No: 03029300900308

Date: March 26, 1990

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE--PNO-IIT-90-02

This preliminary notification constitutes EARLY notice of events of POSSIBLE safety or public interest significance. The information is as initially received without verification or evaluation, and is basically all that is known by the IIT on this date.

Facility:
Georgia Power Company
Vogtle Unit 1
Docket No. 50-424
Waynesboro, GA

Licensee Emergency Classification:
 Notification of Unusual Event
 Alert
 Site Area Emergency
 General Emergency
 Not Applicable

2000
3/26 @ 1:00P

Subject: INCIDENT INVESTIGATION TEAM ARRIVES AT VOGTLE SITE

An Incident Investigation Team (IIT) is at the Vogtle site to investigate the event of March 20, 1990, which resulted in a Site Area Emergency when Unit 1 lost offsite and onsite AC power to both vital busses. An Augmented Inspection Team (AIT) has been at the site since March 22, 1990. However, due to the number of past incidents which have occurred at plants while in shutdown conditions and the potential for regulatory concerns, the agency has decided this most recent event, at Vogtle, warrants the more formal and detailed review of an IIT.

The team is composed of members from AEOD, NRR, Region I, and Region V. Under the provisions of a Memorandum of Agreement with the Institute of Nuclear Power Operations (INPO), there is also industry participation on the team, a member from INPO and two consultants.

Currently, Unit 2 is operating at full power; Unit 1 is in refueling mode. The team held an entrance briefing with utility management 9:00 a.m. on March 26 and the team leader participated in a press briefing at 12:00 p.m.

This information is current as of 8:00 a.m., March 26, 1990.

CONTACT: A. Chaffee (404-554-9901) W. Lazarus (404-554-9902)

DISTRIBUTION:

OWFN Chairman Carr
Comm. Roberts
Comm. Rogers
Comm. Curtiss
Comm. Remick

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SLITP

EWW
ASLAP

INPO----
NSAC----

RI Resident Office _____

Licensee: _____
(Reactor Licensees)

Exhibit 7

Agreement on Waiver of Compensation, Conflicts of Interest
and Release of Investigation Information for
Industry Participating in Incident Investigation
Team (IITs)

I agree that any services which I render to or for the benefit of the government, pursuant to the agreement between the NRC and INPO concerning IITs, shall be gratuitous, and I waive any claim for pay or compensation from the government of any kind. I understand that I will not be an employee of the government as a result of any service which I may render under the auspices of the agreement between NRC and INPO.

I agree that I will abide by the guidelines and procedures established for the operation of IITs, including the procedures for handling differences of opinion and release of investigation information. I understand that my input to the IIT will be subject to review by other team members and the team leader, and that differences of opinion will either be resolved or documented in an appendix to the IIT report. I understand that the NRC IIT team leader is to decide on the release of investigation information to parties outside the team.

With respect to proprietary and potentially proprietary information that is disclosed to me in connection with my participation in any IIT, I agree:

1. Not to make further disclosures.
2. Not to make further copies.
3. To return my copies to the NRC IIT team leader or otherwise dispose of them as directed by the team leader upon completion of the investigation.
4. Not to make further disclosures of copies of investigation or other notes that contain potentially proprietary information.
5. To report to the NRC IIT team leader any uses of information which do not comply with this agreement.
6. To consult with the NRC IIT team leader before taking any action if I have any doubt or question as to whether it would be in accordance with this agreement.

With respect to conflicts of interest, I make the following representations:

I have () do not have (X) direct previous involvement with activities at the facility that I will be reviewing or with other significant issues believed to be directly related to the cause, course, or consequences of the event. In addition:

Exhibit 7 (Continued)

1. I have not previously been employed by the Licensee.
 I have been previously employed by the Licensee.
(State the nature of the employment.)
2. Neither I nor members of my present household own or control Licensee stock in excess of \$1000 in value.
 I or members of my present household own or control Licensee stock in excess of \$1000 in value. (State the nature of the ownership).
3. Members of my present household are not employed by the Licensee.
 Members of my present household are employed by the Licensee.
(State the nature of the employment.)
4. My relatives are not employed by the Licensee in a management capacity.
 My relatives are employed by the Licensee in a management capacity. (State the nature of the employment.)

In the above statement, the "Licensee" is construed to mean the licensee, the architect-engineer, and the nuclear steam supply system vendor.

In the event that the potential for a conflict of interest develops during the course of an incident investigation, I will immediately report all relevant information to the team leader.

Signature Harvey J. Wyszoff

Date 03/25/90

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Signature Paul E. Ditz

Date 3/25/90

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Team (IITs)

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 My relatives are employed by the Licensee in a management capacity. (State the nature of the employment.)

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In the event that the potential for a conflict of interest develops during the course of an incident investigation, I will immediately report all relevant information to the team leader.

Michael A. Jones
Signature

3-25-90
Date

PC

05-08-90

BULLETIN BOARD NOTICE

MARCH 26, 1990

POST ON ALL BULLETIN BOARDS

TO: SITE PERSONNEL

SUBJECT: MARCH 20, 1990 LOSS OF ALL AC POWER TO BOTH
VITAL BUSES - UNIT 1

THE SUBJECT INCIDENT IS BEING INVESTIGATED BY AN INDEPENDENT TEAM OF NRC PERSONNEL. THE PURPOSE OF THE TEAM IS TO ESTABLISH WHAT HAPPENED, TO IDENTIFY THE PROBABLE CAUSE(S), AND TO PROVIDE APPROPRIATE FEEDBACK TO THE INDUSTRY REGARDING THE LESSONS LEARNED FROM THE INCIDENT.

ANYONE HAVING INFORMATION OR OBSERVATIONS THAT RELATE TO THIS EVENT, AND WISHING TO COMMUNICATE THIS INFORMATION TO THE INVESTIGATING TEAM MAY CONTACT AL CHAFFEE OR BILL LAZARUS AT EXTENSION 4249 OR 4116.

Al Chaffee

AL CHAFFEE
TEAM LEADER

Georgia Power Company
333 Piedmont Avenue
Atlanta, Georgia 30308
Telephone 404 526 3195

Mailing Address
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201
Telephone 205 868 5581

November 30, 1989

the southern electric system

W. G. Hairston, III
Senior Vice President
Nuclear Operations

ELV-01092
0127

Docket Nos. 50-424
50-425

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

Gentlemen:

VOGTLE ELECTRIC GENERATING PLANT
HARDWARE MODIFICATIONS
PURSUANT TO GENERIC LETTER 88-17


By letters dated December 29, 1988 (ELV-00109) and February 2, 1989 (ELV-00186), Georgia Power Company (GPC) responded to Generic Letter 88-17 related to loss of residual heat removal while operating with a reduced reactor coolant system inventory. Our letter of February 2, 1989 stated that an evaluation of hardware changes for level instrumentation and residual heat removal system performance indication was underway and that a description of these hardware changes would be submitted approximately two months after completion of the evaluation.

With regard to RCS level instrumentation, GPC plans to install permanent mounts for temporary level transmitters. The transmitters themselves will be installed prior to entry into a reduced inventory condition and removed upon exiting the reduced inventory condition. The tygon tubing, which has been used as a backup to the two independent channels of level indication provided by the transmitters discussed above, will be replaced by sight glasses which will be permanently installed, but removed from service when the unit is not in reduced inventory operation.

Residual heat removal (RHR) pump performance indication will be enhanced by providing indication and alarm of RHR pump motor current instability. This will be accomplished via the Safety Parameter Display System (SPDS) and the Emergency Response Facility (ERF) computer. The Critical Safety Function Status Tree logic will be revised to include a link to RHR pump motor current during Modes 5 and 6. If motor current instability is detected, an audible alarm will be generated by the ERF computer. At the same time the Core Cooling critical safety function will be illuminated on the SPDS display. The operator will refer to the Core Cooling function via the ERF computer and RHR pump motor current will be indicated or trended.

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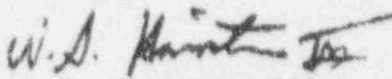
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Georgia Power 

U. S. Nuclear Regulatory
ELV-01092
Page Two

GPC believes that these hardware changes, accompanied by the other measures described in our letters of December 29, 1988 and February 2, 1989 adequately address the potential for loss of residual heat removal during operation with a reduced reactor coolant system inventory. If there are any questions concerning this letter, please contact this office.

Sincerely,


W. G. Hairston, III

WGH, III/NJS/gm

xc: Georgia Power Company
Mr. C. K. McCoy
Mr. G. Bockhold, Jr.
Mr. P. D. Rushton
Mr. R. M. Odom
NORMS

U. S. Nuclear Regulatory Commission
Mr. S. D. Ebnetter, Regional Administrator
Mr. J. B. Hopkins, Licensing Project Manager, NRR
Mr. J. F. Rogge, Senior Resident Inspector, Vogtle

PS 67
68

ELV- 00186
0942D

February 2, 1989

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

PLANT VOGTLE - UNITS 1, and 2
NRC DOCKET 50-424, 50-425
OPERATING LICENSE NPF-68, CONSTRUCTION PERMIT CPPR-109
RESPONSE TO GENERIC LETTER 88-17

Gentlemen:

In accordance with 10 CFR 50.54(f), Georgia Power Company hereby submits the enclosed response to the recommended programmed enhancements of Generic Letter 88-17 related to loss of residual heat removal while operating in a reduced inventory condition. This response applies to both Units 1 and 2, even though unit specific details may refer to Unit 1. Georgia Power Company responded to the recommended expeditious actions of Generic Letter 88-17 by letter dated December 29, 1988

Georgia Power Company expects to implement all hardware changes resulting from the programmed enhancements prior to resuming critical plant operations following the second Unit 1 and first Unit 2 refueling outages. Enhancements that do not involve hardware changes are scheduled to be implemented by May 3, 1990.

Evaluation of hardware changes for level instrumentation and residual heat removal system performance indication has not been completed. In that the evaluation is not complete, Georgia Power Company cannot be more specific than the enclosed response. Georgia Power Company will submit a description of these hardware changes within approximately two months following completion of the evaluations, which is currently projected for October 1, 1989.

The enclosed responses are based upon current or proposed practices and may be changed in the future, if appropriate. Information related to this issue will be available onsite for NRC review.

there are any questions concerning this letter, please advise.

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U. S. Nuclear Regulatory Commission
ELV-00186
Page Two

Mr. W. G. Hairston, III states that he is a Senior Vice President of Georgia Power Company and is authorized to execute this oath on behalf of Georgia Power Company and that, to the best of his knowledge and belief, the facts set forth in this letter and enclosures are true.

GEORGIA POWER COMPANY

By: W. G. Hairston, III
W. G. Hairston, III

Sworn to and subscribed before me this 2nd day of February, 1989.

Sherry Ann Mitchell
Notary Public

MY COMMISSION EXPIRES 7/1/89

c: Georgia Power Company
Mr. P. D. Rice
Mr. C. K. McCoy
Mr. G. Bockhold, Jr.
GONORMS

U. S. Nuclear Regulatory Commission

Mr. M. L. Ernst, Acting Regional Administrator
Mr. J. B. Hopkins, Licensing Project Manager, NRR (2 copies)
Mr. J. F. Rogge, Senior Resident Inspector-Operations, Vogtle

ENCLOSURE

GEORGIA POWER COMPANY RESPONSE TO NRC GENERIC LETTER 88-17 PROGRAMMED ENHANCEMENTS

The following discussion of Georgia Power Company's (GPC) plans for addressing the programmed enhancements of Generic Letter 88-17 at Plant Vogtle (VEGP) is provided pursuant to 10 CFR 50.54(f):

1. NRC RECOMMENDATION

Provide reliable indication of parameters that describe the state of the reactor coolant system (RCS) and the performance of systems normally used to cool the RCS for both normal and accident conditions. At a minimum, provide the following in the control room:

- (a) Two independent RCS level indications.
- (b) At least two independent temperature measurements representative of the core exit whenever the reactor vessel (RV) head is located on top of the RV. (We suggest that temperature indications be provided at all times.)
- (c) The capability of continuously monitoring residual heat removal (RHR) system performance whenever an RHR system is being used for cooling the RCS.
- (d) Visible and audible indications of abnormal conditions in temperature, level, and RHR system performance.

GPC RESPONSE

- (a) As stated in our December 29, 1988 submittal, RCS water level is monitored via temporary level instrumentation whenever the RCS is in a reduced inventory condition. Operations procedures include instructions to notify Instrumentation and Control personnel to install temporary level instruments prior to draining the RCS. Instrumentation and Control Procedure 23985-1, "RCS Temporary Water Level System", provides instructions for installation of two independent channels of level indication using temporary transmitters and existing level instrumentation in the control room. Level is measured directly from the hot leg between the RVLIS upper range lower tap and the pressurizer to minimize thermodynamic and pressure errors. One channel provides wide range level indication from approximately one foot below mid-loop to the vessel flange. The other channel provides narrow range level indication from approximately one foot below mid-loop to the top of the hot leg. Level is continuously monitored and alarmed in the control room. A low level alarm is set at three inches above the center of the hot leg.

GPC is presently evaluating a design change which will provide for permanent installation of the level transmitters. We expect to have this evaluation completed by October 1, 1989.

The design development will include a review of the instrumentation design and an error analysis. GPC will also perform a quality control and follow-up review of the installation and review maintenance and calibration practices.

- (b) Operations Procedures presently require at least two core exit thermocouples to be operable at all times during reduced inventory conditions with the RV head in place. However, during head installation, before the thermocouples can be connected, water level will be reduced to approximately four feet below the RV flange as recommended by Westinghouse to prevent O-ring seating area damage. After head installation, water level will be raised so that the RCS is no longer in a reduced inventory condition. These procedures will be revised to require either:
- Temperature will be monitored and recorded by an operator in the control room at intervals no greater than 15 minutes, or
 - Temperature will be continuously monitored and alarmed via the Emergency Response Facility (ERF) computer in the control room.

These two core exit thermocouples will provide continuous, independent, and representative indication of the core temperature.

- (c) An engineering study will be made to determine the specific parameters that will provide timely, reliable indication of the onset of degraded RHR pump performance. The study will include consideration of the recommendations of Generic Letter 88-17 such as indication of pump motor current, noise monitoring, suction pressure indication, and a possible correlation of parameters. We expect to complete this study by October 1, 1989. The results of this study will be implemented according to the schedule discussed in the cover letter to this transmittal.
- (d) As discussed above, RCS level is continuously monitored and alarmed in the control room during operation in a reduced inventory condition. Temperature will either be checked and recorded by an operator in the control room at intervals no greater than 15 minutes, or continuously monitored and alarmed via the ERF computer in the control room. The engineering study discussed in item (c) above, will include consideration of visible and audible indication of RHR system performance.

2. NRC RECOMMENDATION

Develop and implement procedures that cover reduced inventory operation and that provide an adequate basis for entry into a reduced inventory condition. These include:

- (a) Procedures that cover normal operation of the NSSS, the containment, and supporting systems under conditions for which cooling would normally be provided by the RHR system.

- (b) Procedures that cover emergency, abnormal, off-normal, or the equivalent operation of the NSSS, the containment, and supporting systems if an off-normal condition occurs while operating under conditions for which cooling would normally be provided by the RHR system.
- (c) Administrative controls that support and supplement the procedures in items (a), (b), and all other actions identified in Generic Letter 88-17, as appropriate.

GPC RESPONSE

- (a) As stated in our December 29, 1988 submittal, the controlling procedure for operation in a reduced inventory condition is Operations Procedure 12006-C, "Unit Cooldown to Cold Shutdown." This procedure contains precautions and limitations concerning operation in a reduced inventory condition and provides guidance for preparing the RCS for draining. This guidance address temperature and level instrumentation, RHR pump performance, and the use of a safety injection pump for inventory addition, if needed.

Procedure 13005-1, "Reactor Coolant System Draining", provides instructions for draining the RCS. This procedure also contains precautions concerning the effects of RCS level on RHR system operability and instructions which should minimize the impact of draining on level indication.

Procedure 13011-1 "Residual Heat Removal System", provides the necessary instructions for operation of the RHR system including operation in a reduced inventory condition. The precautions of this procedure address the effect of RHR system flow on pump suction during reduced inventory operation.

- (b) In the event of a loss of RHR, Abnormal Operation Procedure 18019-C, "Loss of RHR", will provide the necessary guidance to ensure core cooling and direct the operators to initiate containment closure. The operator will initiate a manual containment isolation actuation to close all penetrations which can be remotely closed. Any penetrations which have been opened manually (i.e. those which cannot be remotely actuated or which have been disabled in the open position) will be tracked by an Information Limiting Condition for Operation (LCO) so that action can be taken to close these penetrations. Closure of the equipment hatch will be accomplished via Maintenance Procedure 27505-C, "Opening and Closing Containment Equipment Hatch".
- (c) In addition to the above, Administrative controls will also ensure that the following is available for recognizing and mitigating a loss of RHR event:

- Instrumentation,
- Equipment for inventory addition,
- Adequate hot leg vent path, and
- Safe work environment to complete containment closure.

GPC believes that, with the revisions to procedures discussed in our December 29, 1988 submittal, VEGP procedures will reflect the best current practice with regard to operation in a reduced inventory condition. However, any further guidance that results from Westinghouse Owners' Group activity on this topic will be reviewed and incorporated into procedures as appropriate.

3. NRC RECOMMENDATION

- (a) Assure that adequate operating, operable, and/or available equipment of high reliability is provided for cooling the RCS and for avoiding a loss of RCS cooling.
- (b) Maintain sufficient existing equipment in an operable or available status so as to mitigate loss of RHR or loss of RCS inventory, should they occur. This should include at least one high pressure injection pump and one other system. The water addition rate capable of being provided by each equipment item should be at least sufficient to keep the core covered.
- (c) Provide adequate equipment for personnel communications that involve activities related to the RCS or systems necessary to maintain the RCS in a stable and controlled condition.

GPC RESPONSE

- (a) The RHR system at VEGP is part of the Emergency Core Cooling System (ECCS). This system is safety related and therefore highly reliable. Furthermore, the RHR autoclosure interlock function is defeated in Modes 5 and 6 which eliminates the associated potential for spurious closure of the RHR suction isolation valves.
- (b) Inventory addition will be accomplished via a centrifugal charging pump and a safety injection pump. Both of these pumps are part of the ECCS and are therefore highly reliable. The flowrates available from these pumps will be more than sufficient to keep the core covered. Administrative controls will ensure that flow paths are available for these pumps and that flow will not bypass the core. Furthermore, Procedure 18019-C provides for the use of the steam generators as an alternate means of cooling when appropriate.
- (c) Adequate equipment for personnel communications during reduced inventory operation presently exists at VEGP and is required by procedure.

4. NRC RECOMMENDATION

Conduct analyses to supplement existing information and develop a basis for procedures, instrumentation installation and response, and equipment/NSSS interactions and response. The analyses should encompass thermodynamic and physical (configuration) states to which the hardware can be subjected and should provide sufficient depth that the basis is developed. Emphasis should be placed upon obtaining a complete understanding of NSSS behavior under non-power operation.

GPC RESPONSE

GPC, as a member of the Westinghouse Owners' Group, has reviewed WCAP-11916 and utilized the analysis and guidance provided therein as a basis for the hardware and procedural changes discussed in our December 29, 1988 submittal. Further analysis is being performed by Westinghouse to validate the abnormal operating procedure guidance. When this analysis is complete and the procedural guidance finalized, GPC will review the information for VEGP and make changes as appropriate. In addition, the design review discussed for RCS level instrumentation will account for effects that may introduce level inaccuracies. Furthermore, special pre-operational testing has been performed on Unit 2 which varied RCS level and RHR system flow to determine susceptibility to vortexing. Finally, a plant specific analysis will be made to support inventory addition via gravity flow from the refueling water storage tank to the RCS.

5. NRC RECOMMENDATION

Technical Specifications that restrict or limit the safety benefit of the actions identified in this letter should be identified and appropriate changes should be submitted.

GPC RESPONSE

GPC plans to pursue a change to the Technical Specifications which will allow the safety injection pumps to be available during operation in a reduced inventory condition without having to invoke 10 CRF 50.54X.

6. NRC RECOMMENDATION

Item (5) of the expeditious actions should be reexamined and operations refined as necessary to reasonably minimize the likelihood of loss of RHR.

GPC RESPONSE

As stated in our December 29, 1988 submittal, VEGP has procedures in place that require authorization from the Unit Shift Supervisor prior to performing any work. Operations procedures include precautions to scrutinize and limit work activities that have the potential for reducing RCS inventory while in a reduced inventory condition. These procedures will be revised to ensure that any work that may impact RHR capability while in a reduced inventory condition be closely scrutinized. Work will not be allowed to be performed unless adequate measures exist (such as enhanced monitoring of critical parameters and precautions and limitations) to prevent a loss of RHR.

GPC believes that the above measures in conjunction with the emphasis placed on mid-loop operations during licensed operator training and the other measures discussed in this letter and our December 29, 1988 letter are adequate to minimize RCS perturbations during reduced inventory operation.

ELV- 00109
X7GJ17-V110
0869D

December 19, 1988

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

PLANT VOGTLE - UNITS 1, and 2
NRC DOCKET 50-424, 50-425
OPERATING LICENSE NPF-68, CONSTRUCTION PERMIT CPPR-109
RESPONSE TO GENERIC LETTER 88-17

Gentlemen:

In accordance with 10 CFR 50.54(f), Georgia Power Company hereby submits the enclosed response to the recommended expeditious actions of Generic Letter 88-17 related to loss of residual heat removal while operating with a reduced reactor coolant system inventory. This response applies to both Units 1 and 2, even though unit specific details may refer to Unit 1. With regard to Unit 1, the commitments contained in the enclosed response will be implemented prior to the next planned entry into a reduced inventory condition. With regard to Unit 2, implementation will be achieved prior to the next planned entry into a reduced inventory condition after initial criticality, since the requirements of this Generic Letter are only applicable with irradiated fuel in the reactor vessel. The responses provided are based upon current or proposed practices and may be changed in the future if appropriate.

Mr. W. G. Hairston, III states that he is a Senior Vice President of Georgia Power Company and is authorized to execute this oath on behalf of Georgia Power Company and that, to the best of his knowledge and belief, the facts set forth in this letter and enclosures are true.

GEORGIA POWER COMPANY

By: W. G. Hairston, III
W. G. Hairston, III

Sworn to and subscribed before me this 29th day of December, 1988.

Mary J. Winter
Notary Public

My Commission Expires November 24, 1991

8901030385 928

U. S. Nuclear Regulatory Commission
December 29, 1988
Page Two

c: Georgia Power Company
Mr. P. D. Rice
Mr. G. Bockhold, Jr.
GO-NORMS

U. S. Nuclear Regulatory Commission

Mr. M. L. Ernst, Acting Regional Administrator
Mr. J. B. Hopkins, Licensing Project Manager, NRR (2 copies)
Mr. J. F. Rogge, Senior Resident Inspector-Operations, Vogtle

ENCLOSURE

GEORGIA POWER COMPANY RESPONSE TO
NRC GENERIC LETTER 88-17
RECOMMENDED EXPEDITIOUS ACTIONS

The following discussion of Georgia Power Company's (GPC) plans for addressing the recommendations of Generic Letter 88-17 at Plant Vogtle (VEGP) is provided pursuant to 10 CFR 50.54(f):

1. NRC RECOMMENDATION

Discuss the Diablo Canyon event, related events, lessons learned, and implications with appropriate plant personnel. Provide training shortly before entering a reduced inventory condition.

GPC RESPONSE

The loss of decay heat removal capability and associated potential consequences are topics addressed in the initial and requalification training of licensed operators at VEGP. The Residual Heat Removal System (RHRS) lesson plan (LO-LP-12101-13-C) and the associated informational hand-out (LO-HO-12101-003-C-002) discuss several concerns and industry events related to reduced inventory conditions.

Included in the lesson plan and handout are discussions of the following:

- o Related industry events;
- o Recovery from a loss of RHR;
- o Precautions and limitations associated with mid-loop operations;
- o Necessity of accurate, reliable vessel water level indication; and
- o Vortex formation in the decay heat removal system.

Operations Procedure 10000-C, "Conduct of Operations", addresses infrequent and unusual plant evolutions (e.g., mid-loop operations). The Shift Supervisor is required by this procedure to brief the individuals to be involved in these evolutions. Included in these briefings are explanations of procedures, plans, and safety precautions involved in the evolution. The details of the briefings will depend on the complexity of the planned evolution.

The requirements of Operations Procedure 10000-C in conjunction with the licensed operator training, provides an adequate awareness on the part of personnel involved in mid-loop operations. Therefore, GPC believes that this recommended expeditious action has been appropriately addressed, and no further action is planned.

2. NRC RECOMMENDATION

Implement procedures and administrative controls that reasonably assure that containment closure will be achieved prior to the time at which a

When in part for maintenance

T. DAR

system + response

2. NRC RECOMMENDATION

Implement procedures and administrative controls that reasonably assure that containment closure will be achieved prior to the time at which a core uncover could result from a loss of Residual Heat Removal (RHR) coupled with an inability to initiate alternate cooling or addition of water to the Reactor Coolant System (RCS) inventory. Containment closure procedures should include consideration of potential steam and radioactive material release from the RCS should closure activities extend into the time boiling takes place within the RCS. These procedures and administrative controls should be active and in use:

- (a) prior to entering a reduced RCS inventory condition for Nuclear Steam Supply Systems (NSSSs) supplied by Combustion Engineering or Westinghouse, and
- (b) prior to entering an RCS condition wherein the water level is lower than four inches below the top of the flow area of the hot legs at the junction of the hot legs to the Reactor Vessel (RV) for NSSSs supplied by Babcock and Wilcox,

and should apply whenever operating in those conditions. If such procedures and administrative controls are not operational, then either do not enter the applicable condition or maintain a closed containment.

GPC RESPONSE

The capability to close containment within the required time in the event of a loss of RHR while in a reduced inventory condition will be ensured by the following measures:

1. The Shift Supervisor maintains cognitive control over the opening and closing of the containment equipment hatch via provisions of Maintenance Procedure 27505-C, "Opening and Closing Containment Equipment Hatch";
2. Operations Procedure 12006-C, "Unit Cooldown to Cold Shutdown", (the controlling procedure for operations in the reduced inventory condition) will be revised to require that all containment penetrations which have been opened by manual means will be tracked by an Information Limiting Condition for Operation;
3. Operations Procedure 12006-C will also be revised to incorporate a requirement to ensure that the containment equipment hatch can be closed within the applicable time requirements of Generic Letter 88-17, or ensure the hatch is closed prior to reducing RV water level to three feet below the vessel flange;

Handwritten signatures and notes:
H. [unclear]
O. [unclear]
penetrations

4. In the event of a loss of RHR, Abnormal Operating Procedure 78019-C, "Loss of RHR", will instruct the operators to initiate containment closure. This procedure will be revised to require that all non-essential personnel leave the containment and that all available containment cooling fans be started to help mitigate the effects of a loss of RHR on the containment environment;
5. The site Emergency Plan will be implemented in the event of a loss of RHR under the subject conditions. This places the Emergency Director in charge of personnel engaged in containment closure, including health physics personnel who would be responsible for radiation control and monitoring in the containment structure.

GPC believes that this recommendation will be appropriately addressed when the procedures referenced above are revised.

3. NRC RECOMMENDATION

Provide at least two independent, continuous temperature indications that are representative of the core exit conditions whenever the RCS is in a mid-loop condition and the reactor vessel head is located on top of the reactor vessel. Temperature indications should be periodically checked and recorded by an operator or automatically and continuously monitored and alarmed. Temperature monitoring should be performed either:

- (a) by an operator in the control room (CR), or
- (b) from a location outside of the containment building with provision for providing immediate temperature values to an operator in the CR if significant changes occur. Observations should be recorded at an interval no greater than 15 minutes during normal conditions.

GPC RESPONSE

Operations Procedures presently require at least two core exit thermocouples to be operable at all times during reduced inventory conditions with the RV head in place. These procedures will be revised to require either:

1. Temperature will be monitored and recorded by an operator in the control room at intervals no greater than 15 minutes, or
2. Temperature will be continuously monitored and alarmed via the Emergency Response Facility (ERF) computer in the control room.

If the latter method is used, the operations procedures will require notification of Instrumentation and Control personnel to revise the computer alarm setpoint to a conservative value above the expected RCS temperature.

GPC believes that this recommendation will be appropriately addressed when the procedures referenced above are revised.

4. NRC RECOMMENDATION

Provide at least two independent, continuous RCS water level indications whenever the RCS is in a reduced inventory condition. Water level indications should be periodically checked and recorded by an operator or automatically and continuously monitored and alarmed. Water level monitoring should be capable of being performed either:

- (a) by an operator in the CR, or
- (b) from a location other than the CR with provision for providing immediate water level values to an operator in the CR if significant changes occur. Observations should be recorded at an interval no greater than 15 minutes during normal conditions.

GPC RESPONSE

RCS water level is monitored via temporary level instrumentation whenever the RCS is in a reduced inventory condition. Operations procedures include instructions to notify Instrumentation and Control personnel to install temporary level instruments prior to draining the RCS. Instrumentation and Control Procedure 23985-1, "RCS Temporary Water Level System", provides instructions for installation of two independent channels of level indication using temporary transmitters and existing level instrumentation in the control room. Level is measured directly from the hot leg between the RVLIS upper range lower tap and the pressurizer steam space to minimize thermodynamic and pressure errors. One channel provides wide range level indication from approximately one foot below mid-loop to the vessel flange. The other channel provides narrow range level indication from approximately one foot below mid-loop to the top of the hot leg. Level is continuously monitored and alarmed in the control room. A low level alarm is set at three inches above the center of the hot leg.

In addition to the temporary level transmitters, a tygon tube is installed per Procedure 54890-1, "Installation and Removal Instructions For The RCS Water Level Tube". The tygon tube is used as a backup to be continuously monitored when operating below 1% pressurizer level, if either control room indication is lost or while reducing RCS level.

GPC believes that this recommendation is appropriately addressed, and no further action is planned.

5. NRC RECOMMENDATION

Implement procedures and administrative controls that generally avoid operations that deliberately or knowingly lead to perturbations to the RCS and/or systems that are necessary to maintain the RCS in a stable and controlled condition while the RCS is in a reduced inventory condition. If operations that could perturb the RCS or systems supporting the RCS must be conducted while in a reduced inventory condition, then additional measures should be taken to assure that the RCS will remain in a stable and controlled condition. Such additional measures include both prevention of a loss of RHR and enhanced monitoring requirements to ensure timely response to a loss of RHR should such a loss occur.

GPC RESPONSE

VEGP has procedures in place that require authorization from the Unit Shift Supervisor prior to performing any work. Operations procedures include precautions to scrutinize and limit work activities that have the potential for reducing RCS inventory while in a reduced inventory condition. These procedures will be revised to ensure that any work that may impact RHR capability while in a reduced inventory condition be closely scrutinized. Work will not be allowed to be performed unless adequate measures exist (such as enhanced monitoring of critical parameters and precautions and limitations) to prevent a loss of RHR.

GPC believes that this recommendation will be appropriately addressed when the procedures referenced above are revised.

6. NRC RECOMMENDATION

Provide at least two available or operable means of adding inventory to the RCS that are in addition to pumps that are a part of the normal RHR systems. These should include at least one high pressure injection pump. The water addition rate capable of being provided by each of the means should be at least sufficient to keep the core covered. Procedures for use of these systems during loss of RHR events should be provided. The path of water addition must be specified to assure the flow does not bypass the reactor vessel before exiting any opening in the RCS.

GPC RESPONSE

~~VEGP will maintain two available means of adding inventory to the RCS during operation in a reduced inventory condition. The water addition rate will be at least sufficient to keep the core covered in the event of a loss of RHR.~~

*plus
normal RHR*

The Technical Specifications require that a charging pump and an operable flow path to the RCS be maintained while in Modes 5 and 6. Maintaining the charging pump operable meets the requirement of Generic Letter 88-17 for a high pressure injection pump for inventory addition. Operations procedures will also specify that a charging flow path to a closed cold leg be used in the event of a loss of RHR to prevent flow from bypassing the core.

H. M. ...
In addition, a Safety Injection Pump and a hot leg injection path will be available by either revising the appropriate procedure or issuance of a Standing Order. This will be done to ensure the protection of the health and safety of the public under the provisions of 10 CFR 50.54(x). (Current Technical Specifications require that all Safety Injection Pumps be inoperable in Modes 4, 5 and 6 with the RV head on).

GPC believes that this recommendation will be appropriately addressed when the procedures referenced above are revised.

7. NRC RECOMMENDATION

Implement procedures and administrative controls that reasonably assure that all hot legs are not blocked simultaneously by nozzle dams unless a vent path is provided that is large enough to prevent pressurization of the upper plenum of the RV.

GPC RESPONSE

VEGP procedures will be revised to prevent blockage of the hot legs without an adequate vent path. Maintenance procedures will be revised to include a prerequisite that a vent path for the hot legs be provided prior to the installation of the hot leg nozzle dams. The cold leg nozzle dams will be installed first and removed last.

Operations Procedures will be revised to ensure that a vent path is provided for the RV upper plenum if the hot leg nozzle dams are installed or a cold leg opening is to be established. The operations procedures will define the vent path as one of the following:

1. Removal of the pressurizer manway; or
2. Removal of the steam generator manway on a hot leg that will not be dammed; or
3. Removal of three pressurizer code safety valves.

[Handwritten signature]
GPC believes that this recommendation will be appropriately addressed when the procedures referenced above are revised.

8. NRC RECOMMENDATION

Implement procedures and administrative controls that reasonably assure that all hot legs are not blocked simultaneously by closed stop valves unless a vent path is provided that is large enough to prevent pressurization of the RV upper plenum or unless the RCS configuration prevents RV water loss if RV pressurization should occur. Closing cold legs by nozzle dams does not meet this condition.

GPC RESPONSE

VEGP is not equipped with RCS loop stop valves, therefore, this recommendation is not applicable.

Sequence of Events
Chronology

SITE AREA EMERGENCY
3/20/90

*
Source
of Info.

EST

TIMELINE

9	-0900	Fuel truck entered protected area
1,2,3,4	-0920	Loss of 1A & 2B RAT due to switchyard accident because fuel truck backed into insulator support
1,2,3,4	-0920	Unit 2 Trip - Unit stable Unit 1 D/G-1A started, tripped 1 minute 30 seconds after breaker closure. PEO dispatched to investigate D/G trip, SRO dispatched to investigate sequencer.
6	0921	Security Diesel started and loaded properly
5,7	-0940	Site Area Emergency (SAE) declared due to loss of power
1,3	-0941	A train sequencer reset and D/G 1A Auto started and tripped 1 minute 10 seconds after breaker closure
12	-0957	Start initial notification of SAE using SC Backup ENN
1,3,5	-0956	Local start of D/G-1A - power to 1E Bus, NSCW and CCW pumps on A Train (onsite power restored)
10	-0958	NRC operations center notified of SAE
1,3,8	-1000	Started A Train RHR pump and placed it in the shutdown cooling mode. At this time the maximum core exit T/C temperature was 118 degrees F., RHR inlet was 136 degrees F.
5	1001	Page announcement to site (Site Area Emergency Announcement)
	1002	Security commenced accountability
	1002	Security (PESB) notified by ED via communicator
	1005	General Office Operations Center (Birmingham) activated
	1009	Visitors Center initial notification (Public Information)
	1011	GPC Public Information in Atlanta notified by Ray Harris

* - See Source Index (attached)

Sequence of Events
Chronology

SITE AREA EMERGENCY
3/20/90

Source
of Info.

EST

TIMELINE

- 5 - 1013 Completed initial notifications to Aiken, Allendale, Barnwell, SRS, S.C. (GEMA and BCEMA not notified).
- 1013 TSC ENN communicator conducts roll call to test TSC equipment.
- 1015 Called GEMA on commercial phone numbers, did not transmit message due to confusion by communicators.
- 1015 George Bockhold relieves John Hopkins as Emergency Director. #2 Emergency Notification form approved by ED.
- 5,7 - 1015 Site Area Emergency downgraded to Alert. Diesel Generator maintaining load.
- 1016 Initial notification made to Burke County EMA on commercial telephone.
- *1017 Alert Plant Page announcement made.
- 1020 OSC Activated
- 1022 EOF ENN communicator test ENN equipment from EOF.
- 7 - 1026 TSC Activated.
- 1030 Personnel dispatched to Met Tower to relay data.
- 3 - 1034 Steam generator Primary manways secured.
- 1035 EOF Standby Status.
- 1034 Message #3 started by communicator in Control Room (using BUENN)
- 11 - 1035 GEMA received notification message #1 from South Carolina EPD via FAX.

*Times are not confirmed

Sequence of Events
Chronology

SITE AREA EMERGENCY
3/20/90

Source
of Info.

EST

TIMELINE

1038 Message #2 complete to all South Carolina Agencies.

13 - 1040 Initial Notification completed to GEMA.

1,3,5 - 1042 Containment Equipment Hatch bolted.

1046 Met Data from MET Tower building 10 meter height, 8-9 mph; 340 degrees; Delta T = -3.0.

1050 Radiation monitors information received from PERMS; all normal.

1050 Message #2 completed to Georgia.

1050 Message #3 completed to all South Carolina agencies.

1050 Corporate Office Birmingham contacts Public Information - Atlanta with initial information.

1055 ED departs Control Room to TSC.

1056 Message #2 and #3 completed to Burke County. ED at TSC and assumes duties and responsibilities.

1059 Message #3 completed to Georgia.

1100 Briefing in TSC concerning accountability. PA announcement made for non-essential personnel to leave protected area and report to Admin Bldg parking lot.

1101 Containment Personnel hatch interlocks set.

1105 Message #4 initiated by ENN communicator in TSC using Primary ENN for both Georgia and South Carolina.

2,4 - 1112 Unit 2 in Mode 3.

1116 Message #4 completed to all agencies by TSC ENN communicator.

Sequence of Events
Chronology

SITE AREA EMERGENCY
3/20/90

<u>Source of Info</u>	EST	TIMELINE
5	-1130	Unit 1B RAT has offsite power to hi-side.
	1135	Message #5 initiated by ENN communicator in TSC.
1,3,5	-1140	1BA03 energized from RAT 1B.
7	-1140	Pressurizer manway installed.
	1141	Message #5 completed by TSC communicator.
5,7	-1143	All buses off of 1BA03 energized.
	1159	Train B NSCW started.
	1203	Train B CCW pumps started.
	1205	Message #6 initiated by TSC ENN communicator.
	1212	Message #6 completed by TSC ENN communicator.
	1222	TSC Briefing.
	1225	Public Information Manager leaves EOF and returns to Visitor Center.
	1229	TSC receives status of personnel accountability.
	1231	Train B RHR pump started.
	1235	Message #7 initiated by TSC ENN communicator.
1	-1238	RHR Train B place in shutdown cooling mode. RHR Train A placed in recirc.
	1241	Message #7 completed to all agencies TSC ENN communicator.
1,3	-1257	1AA02 alternate incoming breaker closed to supply power from RAT 1B/paralleled with D/G 1A.

Sequence of Events
Chronology

SITE AREA EMERGENCY
3/20/90

Source
of Info.

EST

TIMELINE

1305 Message #8 initiated by TSC ENN communicator.

1310 ED conference call to local agencies to discuss termination of emergency.

14 - 1313 Message #8 completed to all agencies by TSC ENN communicator.

1313 Offsite power restored - plant in normal refueling configuration.

1326 104 people unaccounted for by Security.

1,3,5,7 - 1347 Emergency Terminated

1350 Message #9 (Termination) initiated by TSC ENN communicator.

1356 Message #9 completed to all agencies by TSC ENN communicator.

1400 News Release concerning termination of emergency.

1430 Press Conference in Atlanta.

1545 Joint News Release to Media.

1630 Press Conference at Vogtle.

Source Index

- 1- Unit 1 Control Log
- 2- Unit 2 Control Log
- 3- Unit 1 J.S. Log
- 4- Unit 2 J.S. Log
- 5- Emergency Director's Log
- 6- Security Incident Report
- 7- TSC Manager's Log
- 8- ERF Computer Graphs
- 9- Security Vehicle Access Log
- 10- Event Notification Worksheet
- 11- Telecon between J.N. Roberts^(GRC) and Dick Garrett (GEMA)
- 12- Extract from Communications Log at SRS
- 13- Personal Statement from ENN communicators
- 14- Emergency Notification # 8

JUL 31 1989

Official file
05-13-90

Docket Nos. 50-424, 50-425
License Nos. NPF-68, NPF-81

Georgia Power Company
ATTN: Mr. W. G. Hairston, III
Senior Vice President -
Nuclear Operations
P. O. Box 1295
Birmingham, AL 35201

Gentlemen:

SUBJECT: NOTICE OF VIOLATION
(INSPECTION REPORT NOS. 50-424/89-19 AND 50-425/89-23)

This refers to the Nuclear Regulatory Commission (NRC) inspection conducted by Messrs. J. F. Rogge and R. F. Aiello, on June 9 - July 7, 1989. The inspection included a review of activities authorized for your Vogtle facility. At the conclusion of the inspection, the findings were discussed with those members of your staff identified in the enclosed Inspection Report.

Areas examined during the inspection are identified in the report. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observation of activities in progress.

The inspection findings indicate that certain activities appeared to violate NRC requirements. The violation, references to pertinent requirements, and elements to be included in your response are presented in the enclosed Notice of Violation.

The violation described in the enclosed Notice is similar to a violation contained in the Notice sent to you by our letter dated February 10, 1989. Because "similar violations," as described in the NRC Enforcement Policy, are of significant concern to the NRC, please give particular attention in your response to the identification of the root cause of this problem and your corrective action to prevent recurrence.

The enclosed Inspection Report identifies activities that appeared to violate NRC requirements but are not cited; therefore, no response is required for these items.

JUL 31 1989

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.

The responses directed by this letter and its enclosures are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, Pub. L. No. 96-511.

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

Sincerely,

ORIGINAL SIGNED BY
ALAN R. HERDT

Alan R. Herdt, Chief
Reactor Projects Branch 3
Division of Reactor Projects

Enclosures:

1. Notice of Violation
2. Inspection Report

cc w/encls:

R. P. McDonald, Executive Vice
President - Nuclear Operations
C. K. McCoy, Vice President - Nuclear
G. R. Fredrick, Quality Assurance
Site Manager
G. Bockhold, Jr., General Manager
Nuclear Plant
J. A. Bailey, Manager - Licensing
B. W. Churchill, Esquire, Shaw,
Pittman, Potts, and Trowbridge
J. E. Joiner, Esquire, Troutman,
Sanders, Lockerman, and Ashmore
D. Kirkland, III, Counsel,
Office of the Consumer's Utility
Council
State of Georgia

bcc w/encls:

E. Reis, OGC
J. Hopkins, NRR
A. R. Herdt, RII
NRC Resident Inspector
Document Control Desk

RII

LTrocine:dd
7/21/89

RII

AHerdt
7/21/89

ENCLOSURE 1

NOTICE OF VIOLATION

Georgia Power Company
Vogtle, Unit 1

Docket No. 50-424
License No. NPF-6B

During the Nuclear Regulatory Commission (NRC) inspection conducted on June 9 - July 7, 1989, a violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," 10 CFR Part 2, Appendix C (1988) the violation is listed below.

Technical Specification 6.7.1.a requires that written procedures be implemented covering activities delineated in Appendix "A" of Regulatory Guide 1.33, Revision 2, February 1978.

Operations Procedure 10001-C, Section 3.3, specifies Table 1 for inspection criteria when performing rounds. Paragraph 5.0 of 10001-C further states that the operator on duty is responsible for all charts in his area which includes assuring that the chart is operating properly.

Contrary to the above, on June 14, 1989, the NRC identified that improper control room rounds were being conducted. The findings include failure to verify proper operation of the refueling water storage tank level channel II and containment pressure channel IV.

This is a Severity Level IV violation (Supplement 1).

This violation is similar to a violation issued February 10, 1989.

Pursuant to the provisions of 10 CFR 2.201, Georgia Power Company is hereby required to submit a written statement or explanation to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555, with a copy to the Regional Administrator, Region II, and a copy to the NRC Resident Inspector, Vogtle, within 30 days of the date of the letter transmitting this Notice. This reply should be clearly marked as a "Reply to a Notice of Violation" and should include: (1) admission or denial of the violation, (2) the reason for the violation if admitted, (3) the corrective steps which have been taken and the results achieved, (4) the corrective steps which will

Georgia Power Company
Vogtle Unit 1

2

Docket No. 50-424
License No. NPF-68

be taken to avoid further violations, and (5) the date when full compliance will be achieved. Where good cause is shown, consideration will be given to extending the response time. If an adequate reply is not received within the time specified in this Notice, an order may be issued to show cause why the license should not be modified, suspended, or revoked or why such other action as may be proper should not be taken.

FOR THE NUCLEAR REGULATORY COMMISSION



Alan R. Herdt, Chief
Reactor Projects Branch 3
Division of Reactor Projects

Dated at Atlanta, Georgia
this 31 day of July 1989



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA ST., N.W.
ATLANTA, GEORGIA 30323

Report Nos.: 50-424/89-19 and 50-425/89-23

Licensee: Georgia Power Company
P.O. Box 1295
Birmingham, AL 35201

Docket Nos.: 50-424 and 50-425

License Nos.: NPF-68 and NPF-81

Facility Name: Vogtle 1 and 2

Inspection Conducted: June 9 - July 7, 1989

Inspectors:

J. F. Rogge
J. F. Rogge, Senior Resident Inspector

7/21/89
Date Signed

R. F. Aiello
R. F. Aiello, Resident Inspector

7/21/89
Date Signed

Approved By:

A. R. Herdt
A. R. Herdt, Branch Chief
Division of Reactor Projects

7/31/89
Date Signed

SUMMARY

Scope: This routine inspection entailed resident inspection in the following areas: plant operations, radiological controls, maintenance, surveillance, security, and quality programs and administrative controls affecting quality.

Results: Four violations were identified, one cited and three non-cited. The cited violation was identified in the area of operations for failure to implement Operations Procedure 10001-C as required by TS 6.7.1.a to verify proper operation of control room chart recorders (paragraph 2.a). One of the three non-cited violations was identified in the area of surveillance for failure to establish adequate diesel lube oil and analysis procedures to implement License Condition 2.C(b) - LER 89-14 (paragraph 3.b(2)(a)). The remaining two non-cited violations were identified in the area of operations for failure to establish an adequate procedure for transferring radwaste from the recycle holdup tank to the spent fuel pool per TS 6.7.1 - LER 89-13 (paragraph 3.b(3)(b)) and failure to implement Main Turbine Operation Procedure 13800-2 in verifying that the intercept valves properly open - LER 89-21 (paragraph 3.b(2)(c)).

No specific strengths or weaknesses of licensee programs were identified based on findings and observations in the areas inspected.

DETAILS

1. Persons Contacted

Licensee Employees

- *G. Bockhold, Jr., General Manager Nuclear Plant
- C. Coursey, Maintenance Superintendent
- *G. Frederick, Safety Audit and Engineering Group Supervisor
- *H. Handfinger, Manager Maintenance
- W. Kitchens, Assistant General Manager Plant Operations
- R. Legrand, Manager Chemistry and Health Physics
- G. McCarley, Independent Safety Engineering Group Supervisor
- A. Mosbaugh, Plant Support Manager
- W. Mundy, Quality Assurance Audit Supervisor
- *R. Odom, Nuclear Safety and Compliance Manager/Plant Engineering Supervisor
- *J. Swartzwelder, Manager Operations

Other licensee employees contacted included technicians, supervisors, engineers, operators, maintenance personnel, quality control inspectors, and office personnel.

*Attended Exit Interview

An alphabetical list of acronyms and initialisms is located in the last paragraph of the Inspection Report.

2. Operational Safety Verification - (71707)(93702)

The plant began this inspection period on June 9 and ended on July 7, 1989, with both units operating at 100% power. On July 6, both units experienced a loss of all meteorological monitoring channels which resulted in an NUIE which was declared and terminated the same day.

a. Control Room Activities

Control Room tours and observations were performed to verify that facility operations were being safely conducted within regulatory requirements. These inspections consisted of one or more of the following attributes as appropriate at the time of the inspection.

- Proper Control Room staffing
- Control Room access and operator behavior
- Adherence to approved procedures for activities in progress
- Adherence to technical specification limiting conditions for operations
- Observance of instruments and recorder traces of safety-related and important-to-safety systems for abnormalities
- Review of annunciators alarmed and action in progress to correct

- Control Board walkdowns
- Safety parameter display and the plant safety monitoring system operability status
- Discussions and interviews with the On-Shift Operations Supervisor, Shift Supervisor, Reactor Operators, and the Shift Technical Advisor (when stationed) to determine the plant status, plans, and to assess operator knowledge
- Review of the operator logs, unit logs, and shift turnover sheets

It was brought to the inspectors attention that insufficient time for rest was being allocated between the conclusion of requalification training and the beginning of the next shift for those who work the night shift. Therefore, an inspection was conducted during the night shift on June 30/July 1 to observe the alertness of the operators at their stations following requalification training. Based on interviews and observations, the inspector was unable to find evidence to support this concern.

While conducting control board walkdowns and observing instrument and recorder traces on June 14, 1989, the inspector noted that the refueling water storage tank level channel II, ILR 990, and containment pressure channel IV, IPR 934, had not been inking since June 13 and June 10 respectively. In the mean time, both recorders were stamped and subsequently assumed operational. Ensuring operability of these items was identified to be not in accordance with either TS 6.7.1.a or operations procedure 10001-C sections 3.3 and 5.0. Operations procedure 10001-C, section 3.3, specifies criteria when performing rounds. Paragraph 5.0 further states that the operator on duty is responsible for all charts in his area which include ensuring operability. The procedure violation did not result in a TS LCO violation; however, it was representative of a failure to implement a procedure required by TS 6.7.1.a to verify proper operation of the control room recorders daily and to implement corrective maintenance when required.

This violation is similar to violation 50-424/88-61-01 issued on February 10, 1989. The corrective action to violation 50-424/88-61-01 was completed on January 31, 1989, per the licensee's response on March 7, with the issuance of Standing Order C-89-01; however, it has not been effective.

This item is identified as violation 50-424/89-19-01, "Failure To Implement Operations Procedure 10001-C As Required By TS 6.7.1.a To Verify Proper Operation Of Control Room Chart Recorders."

b. Facility Activities

Facility tours and observations were performed to assess the effectiveness of the administrative controls established by direct observation of plant activities, interviews and discussions with licensee personnel, independent verification of safety systems status

and LCOs, licensee meetings, and facility records. During these inspections, the following objectives were achieved:

- (1) Safety System Status (71710) (50095) (37828) - Confirmation of system operability was obtained by verification that flowpath valve alignment, control and power supply alignments, component conditions, and support systems for the accessible portions of the ESF trains were proper. The inaccessible portions are confirmed as availability permits. A special inspection was conducted which observed final placement of the last spent fuel rack and drag testing. The inspector questioned the licensee's testing which did not include drag testing with the fuel pool wet. While the conservative approach would be dry, there is a swelling effect which has occurred in certain designs which leads to binding and interference. After review of the licensee's design, the inspector concluded that their design should not be susceptible to swelling; and therefore, dry drag testing in this case is conservative. Modifications were reviewed in conjunction with NRC Inspection Report Nos. 50-424/89-20 and 50-425/89-24. The inspector had no comments.
- (2) Plant Housekeeping Conditions - Storage of material and components and cleanliness conditions of various areas throughout the facility were observed to determine whether safety and/or fire hazards existed.
- (3) Fire Protection - Fire protection activities, staffing, and equipment were observed to verify that fire brigade staffing was appropriate and that fire alarms, extinguishing equipment, actuating controls, fire fighting equipment, emergency equipment, and fire barriers were operable.
- (4) Radiation Protection - Radiation protection activities, staffing, and equipment were observed to verify proper program implementation. The inspection included review of the plant program effectiveness. Radiation work permits and personnel compliance were reviewed during the daily plant tours. Radiation Control Areas were observed to verify proper identification and implementation.
- (5) Security - Security controls were observed to verify that security barriers were intact, guard forces were on duty, and access to the Protected Area was controlled in accordance with the facility security plan. Personnel were observed to verify proper display of badges and that personnel requiring escort were properly escorted. Personnel within Vital Areas were observed to ensure proper authorization for the area. Equipment operability or proper compensatory activities were verified on a periodic basis.

- (6) Surveillance (61726\{61700) - Surveillance tests were observed to verify that approved procedures were being used, qualified personnel were conducting the tests, tests were adequate to verify equipment operability, calibrated equipment was utilized, and technical specification requirements were followed. The inspectors observed portions of the following surveillances and/or reviewed completed data against acceptance criteria:

<u>Surveillance No.</u>	<u>Title</u>
14495-2 Rev. 0	AFW System Flow Path Verification
14510-2 Rev. 2	Control Room Emergency Filtration System Operability Test
14553-2 Rev. 1	ESF Room Cooler And Safety Related Chiller Flow Path Verification
14980-2 Rev. 2	DG Operability Test
14993-2 Rev. 0	SG Feedpump Turbine Lube Oil System Test
14994-2 Rev. 0	MFP Turbine Steam Admission Valve Movement
24810-1 Rev. 10	Delta T/Tavg Loop 1 Protection Channel 1 Analog Channel Operational Test
32144-C Rev. 3	Determination Of Boron - Auto Titration
32802-C Rev. 0	Flame Operation Of The Atomic Absorption Spectrophotometer
35515-2 Rev. 0	Operation Of The Nuclear Sampling System - Liquid

- (7) Maintenance Activities (62703) - The inspector observed maintenance activities to verify that correct equipment clearances were in effect, work requests and fire prevention work permits as required were issued and being followed, quality control personnel were available for inspection activities as required, retesting and return of systems to service was prompt and correct, and technical specification requirements were being followed. The Maintenance Work Order backlog was reviewed, and maintenance was observed and/or work packages were reviewed for the following maintenance activities:

<u>MWO No.</u>	<u>Work Description</u>
18901851	Repair DG "B" #8 Right Cylinder Inlet Jacket Water Leak
18902265	Reactor Coolant Pump Seal Water Injection Flows Channel Calibration

- (8) Multi-Plant Action Item A-15 (25593) - This inspection was to verify that plants utilizing diesel generators as backup power sources have complied with 10 CFR Part 50, Appendix B, requirements regarding diesel generator fuel oil. During the review, the inspector noted that the Q-list in FSAR Sections 3.2.2-1 and 17.3 does not specifically identify diesel fuel oil or other lubricants. Upon contacting the NRR technical contact, the inspector was informed that another inspection procedure would examine the proper receipt, storage, and handling of emergency diesel generator fuel oil and verify that the licensee has a quality program in place. This inspection was completed in NRC Inspection Report Nos. 50-424/89-08 and 50-425/89-11. The inspector was informed of Procedure 70515-C, "Requisition Review For Technical And Quality Requirements," and Procedure 261-C, "Fuel Oil Handling And Safety," as applicable. These procedures control both the purchase and receipt of diesel fuel oil.
- (9) Multi-Plant Action Item B-03 (25594) - This inspection was intended to verify that changes made to administrative controls or plant modifications committed to by licensees in response to Information Memorandum No. 7 issued on October 4, 1977, to comply with dilution requirements were completed. The inspector verified with the NRR lead technical contact that this issue is not applicable to this facility.
- (10) Operations Management Council - On June 26, 1989, the inspector attended the licensee's Operations Management Council. The agenda consisted of PRB activities, LER administration, procurement of fire protection and security equipment, and the recent unit overpower event. As a result of this meeting, the PRB membership will be upgraded by July 31 to utilize the Department Heads. While LER administration is still under study, proposals were made to reduce the barriers to submitting reports in a timely manner. Procurement activities, regarding Q and non-Q uses conflicting with the plant policy of ordering all parts Q, was resolved by deciding to split the systems. This council was formed as a forum to elevate and discuss issues of multi-departmental concern. The inspector determined that it apparently functions as planned.
- (11) Licensed Operator Requalification Program - The inspector was requested by the NRC Region Management to review the notification system for removing operators from licensed duty. Administrative Procedure 00715-C, "Licensed Operator

Requalification Program," was reviewed. This procedure establishes in step 4.2.6.1.3 that the Operations Superintendent Training will notify Operations of examination results. Written notification of placement in an Accelerated Requalification Program will be provided to the individual by the Manager Operations. Attachment 2 of the procedure is a fill-in-the-blanks letter to be used for notification with distribution to the responsible supervisor. Discussions with operations revealed that the notification is by telephonic means with the letter to follow. The inspector noted that the form could be enhanced to document what actually occurred since the letter does not document the who, what, and when of the actual notification. The inspector also suggested that they contact V. C. Summer Nuclear Power Station for details of how an operator assumed the controls while holding an inactive license. Further program enhancements may be needed. The inspector determined that the licensee understands the NRC requirements for timely removal from duty and has an adequate procedure for handling notification to operators of an inactive status.

One violation was identified in paragraph 2.a above.

3. Review of Licensee Reports (90712)(90713)(92700)

a. In-Office Review of Periodic and Special Reports

This inspection consisted of reviewing the below listed reports to determine whether the information reported by the licensee was technically adequate and consistent with the inspector knowledge of the material contained within the report. Selected material within the report was questioned randomly to verify accuracy and to provide a reasonable assurance that other NRC personnel have an appropriate document for their activities.

Monthly Operating Report - The reports dated June 6 and June 12, 1989, were reviewed. The June 6 report updates the test status of Unit 2 and includes information concerning PORV challenges which occurred on April 13, 1989. The inspector had no comments.

b. Deficiency Cards and Licensee Event Reports

Deficiency Cards and Licensee Event Reports were reviewed for potential generic impact, to detect trends, and to determine whether corrective actions appeared appropriate. Events which were reported pursuant to 10 CFR 50.72 were reviewed as they occurred to determine if the technical specifications and other regulatory requirements were satisfied. In-office review of LERs may result in further follow-up to verify that the stated corrective actions have been completed or to identify violations in addition to those described in the LER. Each LER is reviewed for enforcement action in accordance with 10 CFR Part 2, Appendix C, and if the violation is not being

cited, the criteria specified in Section V.G of the Enforcement Policy were satisfied. Review of DCs was performed to maintain a realtime status of deficiencies, determine regulatory compliance, follow licensee corrective actions, and assist as a basis for closure of the LER when reviewed. Due to the numerous DCs processed, only those DCs which result in enforcement action or further inspector followup with the licensee at the end of the inspection are listed below. The LERs and DCs denoted with an asterisk indicate that reactive inspection occurred at the time of the event prior to receipt of the written report.

(1) Deficiency Card reviews:

- (a) DC-1-89-1076, "Failure To Perform a Response Time Test Of a Newly Installed Reactor Trip Breaker."

On June 19, 1989, during the performance of the six month PM on the reactor trip breaker, a spare breaker which had not been response-time tested was installed in the reactor trip breaker cubic resulting in the inoperability of the breaker. This will be further followed up when submitted as a LER.

- (b) *DC-2-89-1138, "Failure To Implement The Monthly Tritium Analysis Required By Procedure 30025-C."

The licensee was attempting to perform the initial technical specification surveillance for E-BAR in May 1989, when it was discovered that no tritium data was available. The analysis was not implemented until May 24, 1989. It was the licensee's intention to begin implementation at fuel load. The licensee contacted NRR regarding the problem of having to perform surveillances which require a later surveillance to determine acceptability. This deficiency will be followed up when submitted as an LER.

- (c) *DC-2-89-1182, "Debris Found In The Installed Temporary Feedwater Transmitters Resulting In Overpower Condition."

On June 14, 1989, during the performance of test Engineering 89-09, calibration of the installed temporary feedwater transmitters revealed debris in the sensing lines from the nozzles to the installed transmitters. Feedwater flow indication increased and apparent reactor power increased approximately 0.5% (18 Mwt) higher than the licensed maximum power level of 3411 Mwt. This condition may have existed since Unit 2 first reached 100% power on May 15, 1989. Additional evaluation is underway. The unit 2 reactor is now operating within the licensed power level. This event will be further followed up when submitted as a LER.

- (d) *DC-1-89-1139, "Loss of Power to the meteorological monitoring channels."

On July 6, 1989, both units experienced a loss of power to both meteorological monitoring channels. An NUC was declared and terminated the same day per the emergency plan. This item will be followed up when submitted as a LER.

- (2) The following LERs were reviewed and are ready for closure pending verification that the licensee's stated corrective actions have been completed.

- (a) 50-424/89-14, Rev. 0, "Failure To Analyze Diesel Lube Oil Leads To License Condition Violation."

On June 2, 1989, it was discovered that the plant had not complied with the Operating License paragraph 5.c because the quarterly ferrographic analysis was last performed in October 1988 for the train A diesel generator and in July 1988 for the train B diesel generator. Operating License NPF-68, Section 2.C(6), requires GPC to implement diesel generator requirements as specified in Attachment 1 to the license. Attachment 1, paragraph 5.c, mandates quarterly spectrographic and ferrographic analysis of engine oil to detect evidence of bearing degradation. Additionally, spectrographic analyses have not been regularly trended to detect indication of abnormal bearing degradation. The cause of this event was the failure to adequately incorporate license commitments into plant procedures. A ferrographic analysis was performed and found acceptable based on comparison with previously taken baseline data. Corrective actions will also include revision to Procedures 54170-1, "Diesel Generator Lube Oil Analysis, Trending, And Evaluation," to require trend evaluation of quarterly spectrographic and ferrographic analyses and Procedure 32531-C, "Diesel Generator Lube Oil Sampling And Analysis," to require engine oil samples to be taken for ferrographic analysis. These actions will be complete by July 15, 1989. This item represents a violation of NRC requirements which meet the criteria for non-citation. In order to track this item, the following is established.

NCV 50-424/89-19-02, "Failure To Establish Adequate Diesel Lube Oil And Analysis Procedures To Implement License Condition 2.C(b) - LER 89-14."

- (b) *50-425/89-20, Rev. 0, "Loss Of Power To NI Channel Causes Reactor Trip During Surveillance Test."

On May 12, 1989, while personnel were performing surveillance of nuclear instrument channel N44, a 2 out of 4 Hi Flux rate trip coincidence signal was received causing an automatic reactor trip. Power range channel N43 experienced a momentary loss of power, which tripped the Rate Trip bistable on N43. The control room operator acknowledged the alarm for the tripped bistable but failed to notice that the wrong bistable had tripped for the work being performed. A step of the surveillance procedure, which was being performed for N44, requires the fuses to be pulled. This tripped the Rate Trip bistable for N44. The N43 and N44 bistables satisfied the 2 out of 4 Logic for a power range trip. The reactor trip breakers opened tripping the reactor. All automatic systems functioned as designed. The control room operators brought the plant to stable conditions in Mode 3 (Hot Standby). The causes of this event were the loss of power to channel N43 and the failure of control room operators to notice that the wrong bistable had tripped. Extensive troubleshooting of N43 was performed. The cause for the power loss could not be determined. The operations requalification training program will be revised to increase emphasis on recognizing the cause of the alarm being acknowledged. Nuclear instrument calibration procedures will be revised by August 1, 1989 to require reactor operator signoff (in addition to instrument technician signoff presently required) prior to manually tripping bistables or removing instrument power. The inspector discussed with the licensee why the loss of power to N43 had not been determined. Since N43 was not operating properly, the licensee suspects that improper cleaning of the high voltage power supply leads may have caused the problem. The licensee now requires the connectors to be cleaned whenever reinstallation occurs.

- (c) *50-425/89-21, Rev. 0, "Failure Of Intercept Valves To Open Results In Reactor Trip On SG LoLo Level."

On May 22, 1989, with the unit at 12% power, preparations were underway to start up the main turbine. Indications of a steam/feed mismatch problem were seen on SG #2. Operators checked various parameters but could not determine the cause of the problem. At approximately the same time, the Reactor Operator observed a decrease in primary temperature that was greater than expected. Because SG levels and pressures were decreasing, the Balance-of-Plant operator tripped the turbine. Feed to the steam generators was increased and the steam dumps were manually closed. An automatic reactor trip occurred on

LoLo level in SG #2. The cause of the event was the failure of the intercept valves to open when the turbine speed was increased and the failure of the operator to follow the main turbine operations procedure in verifying that the valves opened. The LER incorrectly states that the B Main Steam Reactor relief lifted creating an increased steam load, which resulted in the lowering of the SG water level and reactor trip. In fact, the steam flow had been increasing for five minutes prior to the relief lifting; and as a result of the lifting, steam flow stabilized. At this point, operators noticed a drop in primary temperature, steam generator levels, and steam generator pressures and subsequently tripped the main turbine. Due to the long period of high steam flow with limited feedflow, the SG inventory had been reduced and this resulted in a LoLo SG reactor trip. The intercept valves have been corrected and personnel counseled. Since the only action which can preclude a failed intercept valve from becoming a more serious transient is attention to detail during turbine startup. The proper corrective action should be to counsel the operators and utilize this event as an example in training on attention to detail. This item represents a violation of NRC requirements which meets the criteria for non-citation. In order to track this item, the following is established.

NCV 50-425/89-23-01, "Failure To Implement Main Turbine Operation Procedure 13800-2 In Verifying That The Intercept Valves Properly Open - LER 89-21."

(3) The following LERs were reviewed and closed.

(a) *50-424/89-12, Rev. 0, "Failed Vibration Monitoring Card Causes Main Feed Pump Trip And Reactor Trip."

On May 9, 1989, the unit began experiencing MFP 'B' high vibration alarms (6 alarms in 15 seconds), which would immediately clear. The Turbine Building Operator reported no unusual noise at the pump. The Advanced Turbine Supervisory Instrumentation was checked, and readings were found to be below alarm levels. At this time it was thought that painters working in the area had moved cables causing the alarm. Alarms were again received, and a check of the Advanced Turbine Supervisory Instrumentation and a report from the Turbine Building Operator did not indicate anything abnormal. Bearing metal and lube oil temperatures were checked on the main computer, and the readings were acceptable. Assistance was requested from Maintenance and Engineering. The individuals investigating the problem did not detect any unusual vibration of the MFP. The MFP tripped on high vibration. Control Room operators attempted recovery from the pump trip but were not able to prevent a reactor trip due to SG #4 LoLo level. The cause

of the MFP trip was a broken solder connection on a test jack in the Advanced Turbine Supervisory Instrumentation vibration card for the low pressure bearing. A contributing cause to the reactor trip was a failed bistable in the Control Rod Drive Circuitry which resulted in the failure of the rods to insert when placed in auto. Corrective actions included repair of the broken solder connection and replacement of the affected rod control system circuit card.

- (b) *50-424/89-13, Rev. 0, "Procedure Inadequacy Leads To Fuel Handling Building Isolation."

On May 30, 1989, with the unit at 86% power, filling of the spent fuel pool transfer canal from the Recycle Holdup Tank was in progress. Reactor Coolant System letdown was diverted from the Volume Control Tank to the RHT. However, because of the evolution in progress to fill the spent fuel pool transfer canal, the letdown was inadvertently sent to the spent fuel pool transfer canal. Dissolved gases came out of solution and actuated a high radiation signal, and a Fuel Handling Building Isolation occurred. This event was caused by an inadequate procedure which allowed both the filling for the spent fuel pool transfer canal and the letdown diversion to occur simultaneously. The appropriate procedure has been changed to prevent recurrence. Procedures 13719-1, 13719-2 (Spent Fuel Pool Cooling and Purification System), and 13703-C (Boron Recycle System), have been revised and were reviewed by the inspector. The changes remove direction from 13719 procedures and establish 13703-C as the overall procedure. During the review of 13703-C, the inspector noted that typographical errors had been made which reflected poor proofing prior to approval. These errors were discussed with the Operations Manager and Operations Radwaste Supervisor, and the inspector was informed that these would be corrected. In addition, the revision would include an enhancement to ensure that the tank to be transferred is removed from service. The inspector noted that the procedure in general has operators closing and opening valves which are already in the correct position. The inspector was concerned that the operator direction should be to "check closed" or "check open" these components. This methodology would serve to identify components that are not in the assumed position and lend itself to better plant control. A review of the operations procedure writers guide noted definitions for action verbs "check," "open," and "close" but does not indicate combined usage as a requirement when a component is already in the correct position. The inspector could only recall one event (LER 50-424/87-59) where an operator was directed to open a valve in which he failed to report

the valve as already open. This failure to report resulted in the failure of the plant to recognize that this was the wrong valve. The operator raised no concern because, as illustrated above, it is routine to position items which are already in position. The procedure weakness was referred to Operations Management for consideration. The event described in this LER represents a violation of NRC requirements which meet the criteria for non-citation. In order to track this item, the following is established.

NCV 50-424/89-19-03, "Failure To Establish An Adequate Procedure For Transferring Radwaste From The Recycle Holdup Tank To The Spent Fuel Pool Per TS 6.7.1. - LER 89-13."

- (c) *50-425/89-18, Rev. 0, "Loss Of Stator Cooling Water Leads To Feedwater Isolation."

On April 22, 1989, a plant operator, performing the weekly transfer of the generator stator cooling water pumps, attempted to start pump "A" but found that both dumps had shut down. A turbine trip occurred, as designed, from the loss of stator cooling water. The steam dumps opened, and reactor power was reduced from 36% to 8% due to automatic rod control motion. Control room operators manually controlled steam generator water levels during the power descent by manipulating the Main Feedwater Regulating Valves. A Feedwater Isolation occurred when SG #3 reached its high-high level setpoint. Placing control rod operation in automatic, per procedure 18011-C, allowed reactor power to rapidly drop to a level at which SG level control was difficult. This requirement was the cause of the Feedwater Isolation and AFW actuation. Procedure 18011-C was revised and reviewed. NRC enforcement action is documented in NRC Inspection Report No. 50-425/89-18.

Three non-cited violations were identified.

4. Loss of Decay Heat Removal (Generic Letter No. 88-17),
TI 2515/101-(255101) - Units 1 and 2

This inspection consisted of a review of the licensee response to Generic Letter 88-17 (Loss of Decay Heat Removal) dated October 17, 1988. The inspector verified that the licensee has completed or is in the process of completing its response to the expeditious actions by verification of the following:

- Training - Lesson plan RQ-LP-61991-00-C (Case Study On Loss Of RHR At Mid-Loop), covered loss of RHR during mid-loop operations. Included was a discussion of the consequences and possible mitigating actions for a loss of RHR during various mid-loop lineups. The lesson plan also discusses Vogtle's response to Westinghouse Owners Group letters

88-21 and 88-078. The lesson plan also references the licensee's response to Generic Letter 88-12. Lesson plan RQ-LP-61992-00-C (Case Study On RHR Valve Closure Events) covers the chain of events described in NRC Information Notice 87-01 (RHR valve misalignment causes degradation of ECCS in PWRs) and LER 50-424/87-55 (closure of the RHR system valves causes loss of availability of one RHR pump). The Westinghouse RHR vortex video tape was presented. The effects of varying loop water level and RHR flow rate on vortex formation were emphasized.

- Containment Closure - Operations procedure 12007-C, Rev. 11, Refueling Entry, Step 4.1.1b(1), requires the operators to ensure that the containment hatch is capable of being closed within 2 hours or ensure the equipment hatch is closed prior to reducing RCS level three feet below the reactor vessel flange. Operations procedure 18019-C, Rev. 6, Loss Of RHR, had a caution prior to Step A1. It states:

"During mid-loop operation with hot leg dams installed and inadequate RCS venting, a loss of RHR cooling will result in saturated RCS conditions within 10 minutes subsequently resulting in core uncover and requiring containment closure initiation."
- RCS Inventory - The licensee plans to pursue a change to the technical specifications which will allow the SI pumps to be available during operation in a reduced inventory condition without having to invoke 10 CFR 50.54x. There are three options available as a means of water addition: charging flow to a closed cold leg, gravity fill via the RWST, and the SI/RHR pumps (operations procedure 18019-C, Rev. 6, Loss Of RHR, Steps A6b, A6c, and A6e, respectively). Procedure 18019-C contains a graph (Figure 3), which graphs time to core uncover in seconds versus time after shutdown in hours. This procedure addresses flow rate sufficient to prevent uncovering the core. This is illustrated by operations procedure 18019-C, figure 1, which graphs ECCS flow rate in GPM versus time in hours. A vent path is provided on the RHR suction to vent unwanted steam or water as a result of a pump loss or cavitation.
- Hot Leg Flow Paths - The inspector verified that the licensee has implemented procedures and administrative controls that reasonably assure that all hot legs are not blocked simultaneously by nozzle dams unless a vent path is provided that is large enough to prevent pressurization of the upper plenum of the reactor vessel. The size of the openings specified in procedures 12006-C, Rev. 13, (Unit Cooldown to Cold Shutdown) and 12007-C, Rev. 11, (Refueling Entry) is sufficient per Westinghouse Owners Group generic analysis.

This inspection also included a review of temperature indications, RCS water level indication and RCS perturbations which have been addressed in GPC Response to Generic Letter 88-17 dated February 2, 1989, to the

inspectors satisfaction. The NRC staff reviewed the GPC response to Generic Letter 88-17 dated December 29, 1988, and found the licensee's response to appear to be incomplete in three areas. The inspector examined these areas. The result of the inspection are as follows:

- Tracking of Containment Penetrations - The licensee only addressed containment penetrations that have been opened by "Manual means." The auto closure items are covered by a caution statement (see above) prior to Step A1 in operations procedure 18019-C. The licensee stated that initiating containment closure means to also initiate containment isolation "phase A" and containment ventilation isolation as well as initiating closure of the containment hatch.
- Containment Closure Within Allowable Times - The licensee has two options with respect to closure status of the containment equipment hatch when the reactor vessel is drained down to mid loop (3 feet below the reactor vessel flange). In accordance with operations procedure 12007-C, Rev. 11 (Refueling Entry), paragraph 4.1.1.b.(1), they must either ensure the hatch is capable of being closed within 2 hours or ensure the hatch is closed prior to reaching a mid loop status. Penetrations other than the equipment hatch are tracked by information LCOs.
- Containment Cooling Fans/Feasibility of Continued Work Within Containment Once Boiling Initiates - A request for engineering assistance has been submitted to examine the feasibility of continued work inside containment once boiling initiates within the reactor vessel and creates a steam environment within containment. Additionally, the licensee has been asked to identify what reasonable assurance is available that containment fans will also be available under the same conditions. Resolution of these items is considered an IFI and is identified as:

IFI 50-424/89-19-04 and 50-425/89-23-02, "Review Resolution Of Engineering Evaluation On The Feasibility Of Continued Work Inside Containment And Identify What Reasonable Assurance Is Available That Containment Fans Will Be Available Once Boiling Initiates Within The Reactor Vessel."

5. Actions on Previous Inspection Findings - (92701)(92702)

- (a) (Closed) VIO 50-424/89-10-01, "Failure To Follow Procedure 85301-C For The Establishment Of Quality Control Hold Points."

The inspector reviewed the licensee's response dated May 18, 1989, to the Notice dated April 19, 1989. Full compliance was achieved subsequent to the assignment of hold points for the mechanical portion of the repairs on March 7, 1989. The inspector concluded that this issue has been resolved properly.

- (b) (Closed) VIO 50-425/89-12-01, "Failure To Maintain Two Independent Core Cooling Subsystems Operable As Required By TS 3.5.2."

The inspector reviewed the licensee's response dated May 18, 1989, to the Notice dated April 19, 1989. Full compliance was achieved on March 9, 1989, upon closure of valves 2-1205-U4-027 and 226. To preclude recurrence, an enhanced locked valve program which included more clearly defined Support Shift Supervisor responsibilities has been implemented and reviewed by the inspector. Enhanced sensitivity to system status has been included in the lessons learned portion of requalification training. The inspector concluded that this issue has been resolved properly.

6. Exit Interviews - (30703)

The inspection scope and findings were summarized on July 7, 1989, with those persons indicated in paragraph 1 above. The inspectors described the areas inspected and discussed in detail the inspection results. No dissenting comments were received from the licensee. The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspector during this inspection. Region based NRC exit interviews were attended during the inspection period by a resident inspector. This inspection closed two violations (paragraph 5(a) and 5(b)) and three Licensee Event Reports (paragraph 3.b(3)(a), 3.b(3)(b), and 3.b(3)(c)). The items identified during this inspection were:

- VIO 50-424/89-19-01, "Failure To Implement Operations Procedure 10001-C As Required By TS 6.7.1.a To Verify Proper Operation Of Control Room Chart Recorders" - paragraph 2.a.
- NCV 50-424/89-19-02, "Failure To Establish Adequate Diesel Lube Oil And Analysis Procedures To Implement License Condition 2.C(b) - LER 89-14" - paragraph 3.b(2)(a).
- NCV 50-424/89-19-03, "Failure To Establish An Adequate Procedure For Transferring Radwaste From The Recycle Holdup Tank To The Spent Fuel Pool Per TS 6.7.1. - LER 89-13" - paragraph 3.b(3)(b).
- NCV 50-425/89-23-01, "Failure To Implement Main Turbine Operation Procedure 13800-2 In Verifying That The Intercept Valves Properly Open - LER 89-21" - paragraph 3.b(2)(c).
- IFI 50-424/89-19-04 and 50-425/89-23-02, "Review Resolution Of Engineering Evaluation On The Feasibility Of Continued Work Inside Containment And Identify What Reasonable Assurance Is Available That Containment Fans Will Be Available Once Boiling Initiates Within The Reactor Vessel" - paragraph 4.

The licensee committed at the exit to submit a corrected LER 50-425/89-21 discussed in paragraph 3.b(2)(c).

7. Acronyms And Initialisms

AFW	Auxiliary Feedwater System
CDT	Central Daylight Time
CFR	Code of Federal Regulations
DC	Deficiency Cards
DG	Diesel Generator
ECCS	Emergency Core Cooling System
ESF	Engineered Safety Features
FSAR	Final Safety Analysis Report
GPC	Georgia Power Company
GPM	Gallons per Minute
IFI	Inspector Followup Item
ILR	Instrument Level Recorder
IPR	Instrument Pressure Recorder
LCO	Limiting Conditions for Operations
LER	Licensee Event Reports
LP	Low Pressure
MFP	Main Feed Pump
MWO	Maintenance Work Order
MWt	Megawatt thermal
NCV	Non-cited Violation
NI	Nuclear Instrument
NPF	Nuclear Power Facility
NRC	Nuclear Regulatory Commission
NRR	Office of Nuclear Reactor Regulation
NUE	Notice of Unusual Event
PM	Planned Maintenance
PORV	Power Operated Relief Valve
PRE	Plant Review Board
PWR	Pressurized Water Reactor
RCS	Reactor Coolant System
Rev.	Revision
RHR	Residual Heat Removal System
RHT	Recycle Holdup Tank
RWST	Refueling Water Storage Tank
SG	Steam Generator
SI	Safety Injection System
TI	Temporary Instruction
TS	Technical Specificatic..
VIO	Violation

05-14-70

Vogtle: Feds start probe of 3 areas in plant emergency

► Continued from D1

tion took an hour instead of the mandated maximum 15 minutes.

Mr. Chaffee said the NRC also wants to know why backup power systems were not available immediately.

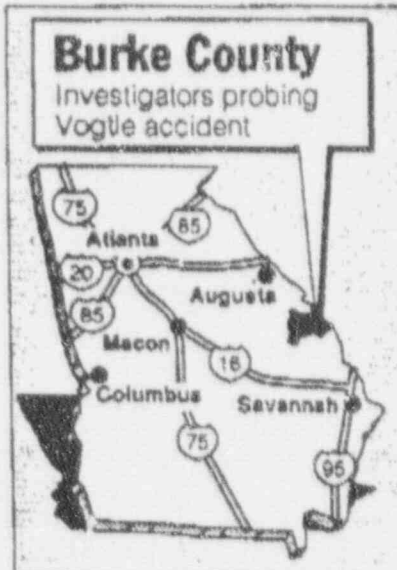
The Unit 1 reactor was out of service for refueling and was not generating electricity at the time of the accident. It will not resume operations until NRC officials give clearance. The reactor, one of two on the Savannah River in Burke County southeast of Augusta, had been scheduled to restart April 9.

"We will obviously cooperate with the NRC in every way and do everything we can to assist them in their investigation," Georgia Power spokesman Tal Wright said.

Meanwhile, Georgia Power reported no problems from an unrelated sickout by radiation protection technicians at Plant Hatch. About 50 of the 55 contract workers on the early shift at Plant Hatch called in sick Monday.

But the technicians showed up as normal at Plant Vogtle, utility spokesman Cindy Theiler said, and the job action did not affect work at either nuclear plant.

The workers, known as health physics technicians, are seeking better pay and benefits from the companies that contract with utilities to help detect radiation at shutdown nuclear reactor sites.



Staff

The International Brotherhood of Electrical Workers called for the walkout by 3,000 health physics technicians at 38 nuclear power plants nationwide, including the two Georgia facilities. One unit each at Vogtle and Hatch have been out of service for refueling.

Georgia Power operates both nuclear power plants but owns just 45.7 percent of Vogtle and 50.1 percent of Hatch, which is in Appling County near Baxley. The utility's partners in the ventures are Oglethorpe Power Corp., the Municipal Electric Authority of Georgia and the city of Dalton.

Feds study 3 areas at Vogtle

NRC upgrades inquiry
to 'high-level' ranking

By David K. Secrest
Staff writer

Federal investigators probing an accident that knocked out power at the Vogtle nuclear power plant last week said Monday they will concentrate on three areas affected by the emergency, including how close one of the reactors came to overheating.

A 10-member team started work Monday at the \$8.87 billion plant after the Nuclear Regulatory Commission (NRC) upgraded the investigation into a "high-level inquiry" for the fifth time in the agency's 15-year history.

A week ago, a truck backed into a transformer pole and cut off electricity to the plant. When a backup diesel generator failed to start automatically to provide power to the Unit 1 reactor, Georgia Power Co. declared a site area emergency, the second-highest NRC classification for nuclear incidents and the first one in the state.

The leader of the NRC investigative team, Alfred E. Chaffee, said in a Monday news conference at Plant Vogtle that investigators will try to determine what effect the loss of electricity had on the reactor's cooling system.

The team also will investigate the problems Georgia Power had in notifying county and state emergency officials. The notifica-

Please see **VOGTLE, D6** ▶

THE ATLANTA CONSTITUTION

Metro & State

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TUESDAY, MARCH 27, 1990

05-15-90

PC

DATE: March 27, 1990
RE: **Vehicles In Perimeter Area**
FROM: G. Bockhold, Jr.
TO: Site Personnel

Due to the recent plant event of March 20, 1990, the following shall be implemented immediately:

All vehicles within the Perimeter Area (PA) in which the driver does not have rearview visibility OR that are larger than a pickup truck, are required to have a flagman at all times when the vehicle is backing up.

Additional policies/procedures on this issue will be forthcoming.

