UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

September 14, 1995

Board Notification 95-14

MEMORANDUM TO: The Chairman
Commissioner Rogers
Atomic Safety and Licensing Board
and All Parties

FROM: Steven A. Varga, Director
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

SUBJECT: SUPPLEMENTAL INFORMATION POTENTIALLY RELEVANT AND MATERIAL TO BOARD PROCEEDING IN THE MATTER OF VOGTLE ELECTRIC GENERATING PLANT, UNITS 1 AND 2

In conformance with the Commission's policy on notification of the Commission and the Licensing Board of new, relevant, and material information, this memorandum calls attention to the information discussed below.

The Board has pending before it a contention challenging the application of Georgia Power Company (GPC) to authorize Southern Nuclear Operating Company, Inc. (Southern Nuclear), a subsidiary of The Southern Company, to operate the Vogtle Electric Generating Plant, Units 1 and 2. One of the issues involves an allegation that GPC made false statements to the NRC about diesel generator (DG) testing and reliability after the March 20, 1990, Site Area Emergency.

Among the bases for the allegation of false statements is a concern regarding high dew point temperature measurements obtained in 1990 for the DG air system. Discussions of this concern during the hearing have included reviews of current and past procedures for controlling DG air quality. In Section 4.C of NRC Inspection Report (IR) Numbers 50-424/95-17 and 50-425/95-17, dated August 9, 1995 (Enclosure 1), an NRC Resident Inspector noted that there was a high dew point measurement on July 13, 1995, on a DG-1B air receiver tank for which the electrical switch for it's air dryer was found to be in the off position. Licensee actions resulting from this event include procedural revisions and a design change.

Also, in an inspection of DG records between May 1994 and August 1995 to determine if moisture content has been a problem for the pneumatic control system, an NRC Regional inspector noted that water was evident in an air start system gage line on two occasions. On both occasions, the control air system dew points were within specifications. The inspector concluded that DG reliability was not impacted. This inspection is documented in IR 50-424/95-20 and 50-425/95-20, issued September 6, 1995 (Enclosure 2).

Contact: Darl S. Hood, NRR
415-3049

9509140178

NOD

This information is being brought to the attention of the Commission, the Licensing Board and All Parties, as it may be relevant and material to issues pending before the Commission and Licensing Board.

Docket Nos. 50-424-OLA-3 and
50-425-OLA-3

Enclosures:
1. IR 50-424/95-17, 50-425/95-17
2. IR 50-424/95-20, 50-425/95-20

cc w/encl:
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This information is being brought to the attention of the Commission, the Licensing Board and All Parties, as it may be relevant and material to issues pending before the Commission and Licensing Board.

Docket Nos. 50-424-OLA-3 and
50-425-OLA-3

Enclosures:
1. IR 50-424/95-17, 50-425/95-17
2. IR 50-424/95-20, 50-425/95-20

cc w/encl:
See next page

Board Notification 95-14 **Dated** September 14, 1995

cc:
J. Taylor, EDO
J. Milhoan, DEDR
H. Thompson, DEDS
G. Tracy, EDO (Region II Plants)
W. Russell, NRR/F. Miraglia, NRR
R. Zimmerman, NRR
A. Thadani, NRR
D. Crutchfield, NRR
T. Martin, RI
S. Ebneter, RII
J. Martin, RIII
J. Callan, RIV
K. Perkins, Field Office, RIV
L. Chandler, OGC
OGC (3)
C. Cater, SECY (3)
J. Cordes (A), OCAA
ACRS (4)
R. Ingram, NRR
S. Varga, NRR
J. Zwolinski, NRR
D. Matthews, NRR
D. Hood, NRR
E. Tomlinson, NRR
R. Hoefling, OGC
M. Young, OGC
C. Barth, OGC
J. Rutberg, OGC
J. Goldberg, OGC
L. Robinson, RII
R. Crlenjak, RII
P. Skinner, RII
E. Merschoff, RII
C. Evans, RII
J. Lieberman, OE
R. Pedersen, OE
J. Gray, OE
D. Murphy, OI

cc:

Mr. J. A. Bailey
Manager - Licensing
Georgia Power Company
P. O. Box 1295
Birmingham, Alabama 35201

Mr. J. B. Beasley
General Manager, Vogtle Electric
Generating Plant
P. O. Box 1600
Waynesboro, Georgia 30830

Regional Administrator, Region II
U. S. Nuclear Regulatory Commission
101 Marietta Street, NW., Suite 2900
Atlanta, Georgia 30323

Office of Planning and Budget
Room 615B
270 Washington Street, SW.
Atlanta, Georgia 30334

Office of the County Commissioner
Burke County Commission
Waynesboro, Georgia 30830

Mr. J. D. Woodard
Senior Vice President
Georgia Power Company
P. O. Box 1295
Birmingham, Alabama 35201

Mr. C. K. McCoy
Vice President - Nuclear
Vogtle Project
Georgia Power Company
P. O. Box 1295
Birmingham, Alabama 35201

Harold Reheis, Director
Department of Natural Resources
205 Butler Street, SE. Suite 1252
Atlanta, Georgia 30334

Attorney General
Law Department
132 Judicial Building
Atlanta, Georgia 30334

Mr. Ernie Toupin
Manager of Nuclear Operations
Oglethorpe Power Corporation
2100 East Exchange Place
Tucker, Georgia 30085-1349

Charles A. Patrizia, Esquire
Paul, Hastings, Janofsky & Walker
12th Floor
1050 Connecticut Avenue, NW.
Washington, DC 20036

Arthur H. Domby, Esquire
Troutman Sanders
NationsBank Plaza
600 Peachtree Street, NE.
Suite 5200
Atlanta, Georgia 30308-2216

Resident Inspector
U.S. Nuclear Regulatory Commission
8805 River Road
Waynesboro, Georgia 30830

BOARD NOTIFICATION NO. 95-14

GEORGIA POWER COMPANY, *et al.*
(Vogtle Electric Generating Plant, Units 1 and 2)
Docket Nos. 50-424-OLA-3, 50-425-OLA-3

Peter B. Bloch, Chairman
Administrative Judge
Atomic Safety and Licensing Board
Mail Stop: T-3 F23
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Thomas D. Murphy
Administrative Judge
Atomic Safety and Licensing Board
Mail Stop: T-3 F23
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dr. James H. Carpenter
Administrative Judge
933 Green Point Drive
Oyster Point
Sunset Beach, NC 28468

Dr. James H. Carpenter
Administrative Judge
Atomic Safety and Licensing Board
Mail Stop: T-3 F23
U.S. Nuclear Regulatory Commission
Washington, Dc 20555

James E. Joiner
John Lamberski, Esq.
Arthur H. Domby, Esq.
Trautman Sanders
NationsBank Building, Suite 5200
600 Peachtree Street, NE
Atlanta, GA 30308

David R. Lewis, Esq.
Ernest Blake, Esq.
Shaw, Pittman, Potts and Trowbridge
2300 N Street, NW
Washington, DC 20037

Steven A. Westby
191 Peachtree Tower
Suite 900
191 Peachtree Street, N.E.
Atlanta, GA 30303

Michael D. Kohn, Esq.
Stephen M. Kohn, Esq.
Kohn, Kohn and Calapinto, P.C.
517 Florida Avenue, NW
Washington, DC 20001

Office of Commission Appellate Adjudication
Mail Stop: O-16 G15
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Adjudicatory File (2)
Atomic Safety and Licensing Board Panel
Mail Stop: T-3 F23
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Atomic Safety and Licensing Board Panel
Mail Stop: T-3 F23
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Office of the Secretary (2)
Attn: Docketing and Service Branch
Mail Stop: O-16 G15
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Director, Environmental Protection Division
Department of Natural Resources
205 Butler St., S.E.
Suite 1252
Atlanta, GA 30334

Bruce H. Morris
Finestone, Morris, & Wildstein
Suite 2540 Tower Place
3340 Peachtree Road, N.E.
Atlanta, GA 30326

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W., SUITE 2900
ATLANTA, GEORGIA 30323-0199

August 9, 1995

Georgia Power Company
ATTN: Mr. C. K. McCoy
Vice President
Vogtle Electric Generating Plant
P. O. Box 1295
Birmingham, AL 35201

SUBJECT: NRC INSPECTION REPORT NOS. 50-424/95-17 AND 50-425/95-17

Gentlemen:

This refers to the inspection conducted by B. Bonser of this office on June 18 through July 15, 1995. 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 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 purpose of the inspection was to determine whether activities authorized by the license were conducted safely and in accordance with NRC requirements.

Within the scope of the inspection, no violations or deviations were identified.

In accordance with 10 CFR 2.790(a), a copy of this letter and its enclosure will be placed in the NRC Public Document Room.

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

Sincerely,

R. V. Crlenjak

R. V. Crlenjak, Chief
Reactor Projects Branch 3
Division of Reactor Projects

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

Enclosure: NRC Inspection Report

cc w/encl: (See page 2)

 3pp.

cc w/encl:
J. D. Woodard
Senior Vice President
Georgia Power Company
P. O. Box 1295
Birmingham, AL 35201

J. B. Beasley
General Manager, Plant Vogtle
Georgia Power Company
P. O. Box 1600
Waynesboro, GA 30830

J. A. Bailey
Manager-Licensing
Georgia Power Company
P. O. Box 1295
Birmingham, AL 35201

Nancy G. Cowles, Counsel
Office of the Consumer's
Utility Council
84 Peachtree Street, NW, Suite 201
Atlanta, GA 30303-2318

Office of Planning and Budget
Room 615B
270 Washington Street, SW
Atlanta, GA 30334

Office of the County Commissioner
Burke County Commission
Waynesboro, GA 30830

Harold Reheis, Director
Department of Natural Resources
205 Butler Street, SE, Suite 1252
Atlanta, GA 30334

Thomas Hill, Manager
Radioactive Materials Program
Department of Natural Resources
4244 International Parkway
Suite 114
Atlanta, GA 30354

Attorney General
Law Department
132 Judicial Building
Atlanta, GA 30334

cc w/encl: (Cont'd page 3)

cc w/encl: (Continued)

Ernie Toupin
Manager of Nuclear Operations
Oglethorpe Power Corporation
2100 E. Exchange Place
Tucker, GA 30085-1349

Charles A. Patrizia, Esq.
Paul, Hastings, Janofsky & Walker
12th Floor
1050 Connecticut Avenue, NW
Washington, D. C. 20036

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W., SUITE 2900
ATLANTA, GEORGIA 30323-0199

Report Nos.: 50-424/95-17 and 50-425/95-17

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 18 through July 15, 1995

Inspector: _____ 8/7/95
B. R. Bonser, Senior Resident Inspector Date Signed

_____ 8/7/95
P. C. Hopkins, Resident Inspector Date Signed

_____ 8/7/95
M. T. Widmann, Resident Inspector Date Signed

Approved by: _____ 8/7/95
P. Skinner, Chief Date Signed
Reactor Projects Section 3B
Division of Reactor Projects

SUMMARY

Scope: This routine, inspection entailed inspection in the following areas: plant operations, surveillance, maintenance, plant support, onsite engineering, and follow-up. Backshift inspections were performed on June 18-20, 22, 25-28, 1995; and on July 9-11, 1995.

Results: Three non-cited violations were identified.

Maintenance:

- One non-cited violation was identified. The licensee identified a missed Technical Specification (TS) surveillance for the Unit 2 nuclear service cooling water (NSCW) train A transfer pump 8. The quarterly surveillance procedure 14801, NSCW Transfer Pump Inservice Test, was

ENCLOSURE

procedure 14801, NSCW Transfer Pump Inservice Test, was missed due to the wrong surveillance train being signed off as successfully completed. The surveillance was missed due to personnel error (paragraph 3b).

- The inspectors concluded that the decision to replace the residual heat removal pump 2B pump seal package was an example of conservative decision making by the licensee based on the measured seal leakage and the potential for pump degradation. Maintenance activities were conducted in a well planned, safe, and effective manner (paragraph 4b).

Engineering:

- The emergency diesel generators (DG) continued to experience voltage regulator problems. On June 28, a shorted transformer in a 1A DG voltage regulator transformer resulted in erratic voltage control. The licensee formed a critique team to evaluate all the recent voltage regulator problems (paragraph 8).

Plant Support:

- The second non-cited violation addressed inadequate control of hand tools by the licensee in and around the spent fuel pool (SFP) during work associated with the change out of SFP purification filters (paragraph 6b).

- A strength in ALARA practices was identified. Health physics planning of the SFP purification filter replacement activity resulted in a significantly lower total accumulated dose than the previous filter replacement (paragraph 6b).

- The third non-cited violation involved inadequate personnel monitoring and an unplanned exposure from a hot particle. A radwaste operator received an unplanned exposure of 10.3 rem to the skin resulting from inadequate personnel monitoring after exiting the Alternate Radwaste Building. The hot particle was not detected until the operator was leaving site at the end of shift (paragraph 6c).

REPORT DETAILS

1. Persons Contacted

Licensee Employees

*J. Beasley, General Manager Nuclear Plant
S. Bradley, Reactor Engineering Supervisor
*W. Burmeister, Manager Engineering Support
*C. Christiansen, SAER Supervisor
C. Coursey, Maintenance Superintendent
*R. Dorman, Manager Training and Emergency Preparedness
*J. Gasser, Manager Operations
*M. Griffis, Manager Plant Modifications
T. Hargis, Maintenance Superintendent
M. Hobbs, I&C Superintendent
*K. Holmes, Manager Maintenance
*D. Huyck, Manager Nuclear Security
*W. Kitchens, Assistant General Manager Plant Support
I. Kochery, Health Physics Superintendent
*R. LeGrand, Manager Health Physics and Chemistry
G. McCarley, ISEG Supervisor
T. Parton, Health Physics Superintendent
*M. Sheibani, Nuclear Safety and Compliance Supervisor
*M. Slivka, ISEG Supervisor
*C. Stinespring, Manager Plant Administration
*J. Swartzwelder, Manager Outage and Planning
*C. Tippins, Nuclear Specialist, NSAC
R. Waters, Material Supervisor, Plant Administration

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

Oglethorpe Power Company Representative

T. Mozingo, Site Representative

NRC Inspectors

*B. Bonser, Senior Resident Inspector
*P. Hopkins, Resident Inspector
*M. Widmann, Resident Inspector

*Attended Exit Interview

An alphabetical list of abbreviations and acronyms is located in the last paragraph of the inspection report.

ENCLOSURE

2. Plant Operations (71707) (40500)

a. General

The inspection staff reviewed plant operations throughout the reporting period to verify conformance with regulatory requirements, TSs, and administrative controls. Control logs, shift supervisors' logs, shift relief records, LCO status logs, night orders, standing orders, and clearance logs were routinely reviewed. Discussions were conducted with plant operations, maintenance, chemistry, health physics, engineering support and technical support personnel. Daily plant status meetings were routinely attended.

Activities within the control room were monitored during shifts and shift changes. Actions observed were conducted as required by the licensee's procedures. The complement of licensed personnel on each shift met or exceeded the minimum required by TS. Direct observations were conducted of control room panels, instrumentation and recorder traces important to safety. Operating parameters were verified to be within TS limits.

Plant tours were taken during the reporting period on a routine basis. They included, but were not limited to the auxiliary building, control building, electrical equipment rooms, cable spreading rooms, NSCW towers, DG buildings, AFW buildings, MSIV rooms, turbine building and the low voltage switchyard. During plant tours housekeeping and equipment status were observed.

b. Unit 1 Summary

The unit operated at full power throughout the inspection period.

c. Unit 2 Summary

The unit operated at full power throughout the inspection period.

No violations or deviations were identified.

3. Surveillance Observation (61726)

a. General

Surveillance tests were reviewed by the inspectors to verify procedural and performance adequacy. The completed tests were examined for necessary test prerequisites, instructions, acceptance criteria, technical content, data collection, independent verification where required, handling of deficiencies, and review of completed work. The tests witnessed, in whole or in

part, were inspected to determine that approved procedures were available, equipment was calibrated, prerequisites were met, tests were conducted according to procedure, test results were acceptable, and system restoration was completed.

The inspectors witnessed or reviewed the following surveillance activities:

SURVEILLANCE NO.	TITLE
14005-1	Shutdown Margin and Keff Calculations
14410-1	Control Rod Operability Test
14445-1	Special Conditions Surveillances - Quarterly Power Tilt Ratio and Deviation
14505-2	MFIV Partial Valve Stroke Loop 4
14649-2	SSPS Slave Relay K746 - Post LOCA Containment Purge
14675-2	SSPS Slave Relay K748 Train B Test CVI
14705-1	Boron Injection Flow Rate Verification
14804-1	Safety Injection Pump Inservice and Response Time Test
14805-2	Residual Heat Exchanger Systems and Check Valve IST and Response Time Test

The inspectors did not identify any problems or concerns during the observation of these surveillance activities.

b. Unit 2 NSCW Train A Transfer Pump 8 Missed Surveillance

On June 26, 1995, an engineering review of IST data identified that a Unit 2 NSCW train A transfer pump 8 quarterly surveillance test, procedure 14801, NSCW Transfer Pump Inservice Test, was missed due to the wrong train being signed off as successfully completed. TS 3.7.5, Ultimate Heat Sink, requires the NSCW transfer pumps be tested quarterly.

Unit 2 NSCW train A transfer pump 8 quarterly surveillance was last performed on January 9, with transfer pump 7 being completed January 31, 1995. Transfer pumps 7 and 8 surveillances were scheduled to be performed March 28 and April 3, 1995, respectively. NSCW train B transfer pump 7 was successfully completed on March 30, 1995. The NSCW transfer pump 8

surveillance was not completed, but was signed off as complete on April 3, when a Unit 2 USS reviewed previous control room log entries and erroneously determined that the surveillance was satisfied.

A review of USS control room log entries indicated an incomplete entry on March 30. The entry stated that surveillance procedure 14801, pump 7, was completed satisfactorily, but made no reference to the applicable train. On April 3, after review of surveillance records the USS made a log entry stating that transfer pump A was completed satisfactorily and referenced the March 30 log entry. No pump number (i.e., 7 or 8) was referenced in that log entry. Subsequently, the NSCW pump surveillance task sheet was signed off for train A pump 8 as being successfully completed. Upon discovery of the missed TS surveillance the licensee successfully performed the NSCW train A transfer pump 8 surveillance on June 26, 1995.

The inspector concluded that the NSCW transfer pump surveillance was missed due to personnel error. The error occurred due to confusion over NSCW train A and B, and pumps 7 and 8 system designations, and incomplete log entries by the RO and USS. NSCW train A pump 8 is located in the train B tower, conversely, NSCW train B pump 7 is located in the train A tower. The safety significance was minimal in that the missed surveillance was performed and found to be satisfactory giving assurance that the NSCW transfer pump was operable.

This licensee-identified and corrected violation is being treated as a Non-Cited Violation, consistent with Section VII of the NRC Enforcement Policy. Therefore, this event is identified as NCV 50-425/95-17-01, Failure to Perform Unit 2 NSCW Transfer Pump TS Surveillance.

c. SSPS and Reactor Trip Breaker Operability Test

On June 25, the inspector observed successful performance of surveillance procedure 14420, Solid State Protection System Train A Operability Test, on Unit 2. After completion of the Unit 2 surveillance, the licensee was preparing to perform the same procedure on Unit 1 train A, when the operators identified that the surveillance had been revised for Unit 1 to include a reactor trip breaker test. There had been no prior communication to the operations shift that the safety related operability test was significantly revised. Performance of the SSPS operability test required the train A reactor trip bypass breaker to be closed. TS 3.3.1, Reactor Trip System Instrumentation, allows one train to be bypassed for up to two hours for surveillance testing. The operability test normally takes approximately 45 to 60 minutes to perform. The revision of procedure 14420 to include the

reactor trip breaker test would add approximately 30 to 45 minutes resulting in a challenge for the shift to complete the surveillance within the two hour limit. The test was postponed until an additional procedural review could be performed.

On July 10, a new revision was generated by the procedures group to address concerns identified by the operations shift. Steps were revised to reduce the amount of time the bypass breaker was closed. On July 14, the revised surveillance was completed successfully in approximately one and a half hours.

The inspector concluded that the decision to defer the surveillance on July 10 was conservative given the uncertainty of the shift to be able to perform the surveillance within the allowed time limit. The inspector also concluded that operations management's dissemination of the safety related surveillance without prior operating shift feedback was an example of poor communications between management and the operating shifts.

d. ECCS Flow Path Verification Observation

On June 22, the inspector observed performance of surveillance procedure 14460, ECCS Flow Path Verification. The procedure was performed to verify that ECCS piping is full of water by venting the ECCS pump casings and discharge piping high points. As part of the surveillance, ECCS flow path valve lineups are also verified.

During the venting portion of the surveillance, one high point in the SI header piping to the RCS cold leg header was identified as having a slight gaseous air pocket. The licensee concluded that the quantity of gas identified was not significant enough to question the operability of the safety related equipment associated with the piping. Based on comments by the inspector, the license revised the procedural guidance to address concerns that operators did not have sufficient guidance on venting success criteria.

The inspector reviewed surveillances completed during the past year. Several administrative inconsistencies were identified. Operators performing the venting portion of the procedure were required to initial the surveillance sheet when the venting was complete. If the pump was running, the procedure stated the operator could "N/A" the step for venting the valve or pump casing vent (it is not necessary to vent an operating pump or train due to trapped gases being swept out of the pump casing and associated piping). However, based on the inspector's review of previously performed surveillances, several instances were identified where operators signed an operating pump as being vented. The steps

should have been "N/A'd." The licensee has committed to addressing the administrative inconsistency.

One non-cited violation was identified.

4. Maintenance Observation (62703)

a. General

Maintenance activities were observed or reviewed during the reporting period to verify that work was conducted in accordance with approved procedures, TSs, and applicable industry codes and standards. Activities, procedures, and work orders were examined to verify proper authorization to begin work, fire hazard provisions, cleanliness, and exposure controls, proper return of equipment to service, and adherence to limiting conditions for operation were met.

The inspectors witnessed or reviewed the following maintenance activities:

MWO NOS.	WORK DESCRIPTION
19500854	Battery Charger 1DD1CB PM - Relay Troubleshoot
19501125	NSCW Train A PM - LT-1600
19501662	SFP Pump #2 - Replace Inner/Outer Pump Shaft Seals
19502044	DG 1A Voltage Regulator Replacement
29501149	2HV-1668B NSCW A Train Bypass Return Valve Troubleshoot
29501616	2-LV-1955 ACCW Surge Tank Makeup Valve - 36 Month PM
29501815	Troubleshoot SGFPT B Low Pressure Stop Valve 2XV-5367
29501863	Repair alarm on 2AB15 Switchgear for NSCW Fan #2.
29501902	Remove Excitation Limiter on DG 2A - Phase I
29501911	DG 2B Voltage Regulator 1 and 2 - Obtain Waveforms Under No Load and Loaded Conditions

The inspectors did not identify any problems or concerns during the observation of these maintenance activities.

b. Unit 2 RHR Train B Pump Seal Replacement

On June 20, the licensee identified that the Unit 2 train B RHR pump had a mechanical seal leak. On June 21, the inspectors observed measurement of pump seal leakage at approximately 113 cc/hr. The licensee discussed this issue with the pump vendor who stated that normal leakage acceptance criteria was < 50 cc/hr. The vendor considered catastrophic failure imminent at or above 500 cc/min. On June 28, based on vendor recommendations, the licensee replaced the seal package. The licensee entered TS 3.5.2, ECCS Subsystems, a 72 hour LCO.

The inspectors observed the removal and replacement of the RHR 2B pump seal. The leaking pump seal package was placed in the hot tool room after removal. The inspectors observed disassembly of the mechanical seal package to determine the root cause(s) for the leakage. No readily observable cause was identified.

Before the maintenance activity the inspectors reviewed clearance 29500296, that tagged, drained, and isolated the RHR system. The inspectors also reviewed the fill and vent procedure T-OPER-95-001, Train B RHR Operational Guidance During Seal Replacement, that established administrative controls to maintain containment integrity and RHR train A pressure boundaries, and provided fill and vent guidance following the seal replacement. The inspector also reviewed the functional test plan associated with the Unit 2 train B pump work.

On June 29, the mechanical seal replacement was completed, the pump successfully tested per surveillance procedure 14805-2, RHR Pump and Check Valve IST, and the LCO exited.

The inspectors concluded that the decision to replace the RHR 2B pump seal package was an example of conservative decision making by the licensee based on the leakage measured and the potential pump degradation. The inspectors concluded that the clearance, fill and vent procedure, and functional test were adequately written to control the necessary maintenance and operational activities without jeopardizing the operable train of RHR. Maintenance activities were conducted in a well planned, safe, and effective manner. The inspectors did not identify any concerns during the review and observation of the pump seal replacement work.

c. Diesel Generator Air Start Dryer Maintenance

On July 13, the inspector observed DG 1B air start dryer maintenance on air dryers #1 and #2. Procedure SCL-00166, DG Air Start Dryer Maintenance, provided instructions to perform air start dryer dew point temperature measurements. The air dryers are checked every 28 days to verify their capability to remove moisture from air being charged to the associated air receivers and to verify that the air currently stored in the air receiver tanks is within the dew point temperature acceptance criteria of 32 to 50 °F. Air receiver #1 dew point was measured outside the acceptable range at 72.9 °F. Confirmatory second and third tests performed by I&C measured results indicated 72.8 and 71.2 °F dew points. Air receiver #2 dew point was measured within the acceptable dew point range at 39.9 °F. The #1 air compressor, air dryer, and air receiver tank were declared inoperable at the time of discovery. No TS action statement was entered due to air dryer #2 being operable. TS require only one train of starting air to be operable to supply starting air to the DG.

A review of the outside operator round sheets for July 12 (procedure 11882, Outside Area Round Sheets) indicated that air dryer #1 was found in the off position. With the dryer off, charging of air to the receiver tank would bypass the air dryer and could result in out-of-tolerance dew point temperatures for starting air. The licensee took prompt corrective action to address the as found condition of the starting air dryer. On the evening shift of July 13, Operations performed a bleed and feed on air receiver tank #1 to replace the air and reduce the dew point. On the morning of July 14, procedure SCL-00166 was reperformed on air receiver #1. The dew point temperature measured an acceptable reading of 47.1 °F. Additional licensee actions to address the as found condition of the DG air dryer included revision of procedure 11882 to verify that control power was available to the dryer, and the on/off switch was verified depressed to the "on" position. A switch cover plate was also installed over the on/off switch to prevent inadvertent bumping of the switch to the off position.

The inspector reviewed procedure SCL-00166 during the performance of the dew point measurements. The I&C technicians performed the procedure in accordance with the instructions. The technicians used the dew point instrumentation designated in the procedure. Instruments were properly calibrated. Upon identification of the out-of-tolerance dew point on the #1 air dryer the technicians initiated a MWO in accordance with procedural guidance. During the review, the inspector identified a minor figure discrepancy in the procedure versus the field setup. The licensee addressed the discrepancy.

The inspector concluded that procedure SCL-00166 provided adequate guidance to the technicians to perform the dew point measurement and provided additional instruction in the event moisture is identified or the dew point temperature is outside the acceptance criteria. The inspector also concluded that the licensee's actions were prompt and effective to prevent recurrence of this condition when the out-of-tolerance dew point condition was identified. As part of the air dryer maintenance review, on July 11, the inspector observed the blowdown of the air receiver tanks in accordance with operator rounds procedure 11882. The blowdown was performed to verify that no moisture was in the air receiver tanks. Moisture in the air receiver tanks would affect the quality of starting air for the DGs. No abnormalities were identified during the observation.

No violations or deviations were identified.

5. Onsite Engineering (37551)

During the inspection period, the inspectors assessed the effectiveness of onsite engineering processes by reviewing engineering evaluations, root cause determinations, modifications, and engineering testing. The inspectors also reviewed DCs to determine whether the licensee was appropriately documenting problems and implementing corrective actions.

No violations or deviations were identified.

6. Plant Support (71750)

a. General

Plant support activities were observed and reviewed to ensure that licensee programs were implemented in conformance with facility policies and procedures and in compliance with regulatory requirements. Activities reviewed included radiological controls, physical security, emergency preparedness, and fire protection.

b. Spent Fuel Pool Observations - Zone II Area Control of Tools

On July 7, the inspector observed housekeeping work associated with the change out of SFP purification filters in the fuel handling building. At the completion of the SFP filter work the inspector observed decontamination personnel cleaning the work area. The work required removal of lead shielding, herculite, disassembly of scaffolding, and removal of debris.

Work in and around the SFP is controlled by administrative procedure 00254-C, Plant Housekeeping/Material Condition Program, that states the SFP, cask loading pit, fuel transfer canal, and new fuel storage pit areas are designated as Zone II. Zone II

areas are restricted and require the control of materials, equipment, and tools. Materials, equipment, and tools entering a Zone II area are to be made fail safe and documented on procedure 00254-C inventory log sheets when entering and leaving the Zone II area. Zone II areas also require a debris prevention monitor assigned to the work activity to ensure the items entering the Zone II area are fail safe and are properly documented. On July 7, the inspector observed several loose hand tools inside the Zone II designated area at the cask loading pit and new fuel storage pit that were not documented in accordance with procedure 00254-C, and that a debris prevention monitor was not present during the work activity.

The inspector also observed decontamination personnel exhibiting poor work practices during the cleanup activity. VEGP Health and Safety Manual requires personnel working in and around the SFP to don life preservers. Two workers were observed in the new fuel storage pit without life preservers. In addition, during the work activity, the same workers were observed to be jumping across the cask loading pit canal. The clean up work required them to carry lead shielding from the new fuel storage pit across the cask loading pit canal to be checked by HP personnel for contamination. Although there is an access bridge available to be placed across the cask loading pit canal to make crossing safe, the workers were jumping the canal.

The inspector informed the licensee of the observations at the SFP. The license took prompt corrective action. The workers were stopped by licensee management and were requested to fill out the appropriate documentation. Based on the inspector's discussions with management, the workers were counseled on the requirements of procedure 00254-C and safe work practices.

The inspector concluded, based on discussions with licensee management and the personnel involved, that the uncontrolled tools entered the Zone II area due to personnel error. A similar finding was reported by SAER in November 1994. A review by the inspector of corrective actions developed from that finding addressed the Zone II tool issue and should have prevented recurrence. Based on the observations of July 7, the licensee conducted a RCCA to determine if the lack of control of tools in Zone II areas was programmatic. Based on the RCCA results, additional recommendations and enhancements to the SAER findings were made to aid workers in complying with the requirements of housekeeping procedure 00254-C.

This violation of the Zone II procedure was of minor safety significance because the loss of controls of tools did not result in an adverse condition that degraded safety related equipment. However, the control of materials, equipment and tools in these

locations can be potentially safety significant. The July 12 SFP activities resulted in a violation of administrative procedure 00254-C, Plant Housekeeping/Material Condition Program. This failure constitutes a violation of minor significance and is being treated as a Non-Cited Violation, consistent with Section IV of the NRC Enforcement Policy. Therefore, this event is identified as NCV 50-424,425/95-17-02, Failure to Control Tools in a Zone II Designated Area.

The inspector also reviewed the SFP filter changeout work from an ALARA standpoint. During replacement of the SFP purification filters on March 23, 1994, the total accumulated dose for the work was 628 mrem. The total accumulated dose for same work activity on July 5 and 6, 1995, was 171 mrem. The inspector reviewed the reasons for the significant reduction in dose. Several individual work activities were changed to reduce the total exposure. These activities included: a lead shield wall was constructed around the transfer drum that housed the irradiated filter to protect the workers while securing the lid and ring on the drum; a high speed impact wrench was used to speed up tightening of the drum lid ring bolts versus a manual wrench; transportation of the drums from the SFP via a shipping cask using the railroad bay crane versus a hand cart enabled workers to move five filters simultaneously. Although the average dose rate was higher for the July 1995 activity, 3.75 mrem/hr versus 1.81 mrem/hr for March 1994, the workers received significantly less dose due to the improved work methods to change out the SFP filters. The inspector concluded that the HP recommendations to achieve lower exposure were highly effective and a strength in ALARA practices.

c. Unplanned Radwaste Operator Exposure

On the morning of July 6, a radwaste operator exiting the PESB at the end of shift alarmed the portal monitor. The subsequent examination by HP personnel detected a hot particle on his left hand. The particle was determined to be Co-60. This resulted in an estimated 10.3 rem unplanned exposure to the skin.

During the previous night shift the operator had made two entries into the ARB RCA to process liquid radwaste. Upon each exit of the ARB the operator used a frisker to perform a whole body frisk instead of using the available IPM-8 personnel monitor and the Gamma Portal monitor located at the ARB RCA exit point. In addition, when the operator logged off his RWP at the HP control point, the operator failed to use the monitors located there. The hot particle was not detected until the operator was leaving the plant protected area at the end of the night shift. Had the appropriate monitors been used, the contamination could have been detected sooner, reducing the personnel exposure and the threat of contaminating clean areas.

The dose assessment performed by HP was based on the isotope present in the particle, Co-60, the assumption that the personnel contamination occurred when the radwaste operator initially entered the ARB contaminated area to begin water processing, and the assumption that the exposure continued the entire time until the personnel decontamination was complete. The ARB activity began at 11:34 p.m. on July 5, and was completed at 7:10 a.m. on July 6. Based on these assumptions the licensee determined the dose to be 10.3 rem to the skin. NRC HP staff reviewed the licensee's dose assessment and found it accurate.

Initial follow up actions by HP on the morning of July 6 included a contamination survey of the clean area in the ARB. After more review of this incident with the radwaste operator when he returned to work on the evening of July 6, additional contamination surveys were made in the PEO briefing area and adjacent mens room. The surveys detected no contamination.

Procedure 00930-C, Radiation and Contamination Control, section 5.4.2, states "A full whole body frisk shall be performed by all personnel when exiting the RCA access control point or at other areas designated by HP. Whole body monitors should be used as primary means of surveying when provided." The monitors at the ARB were operable and available, but were not utilized. In addition, the monitors at the HP control point were also not utilized. The gamma portal and IPM whole body monitors are in place to ensure thorough, consistent and efficient personnel monitoring is performed. In this case, use of available monitors did not occur and an unnecessary exposure took place. A similar event took place in the ARB on March 20, 1994. In this previous case, a radwaste operator did not utilize the monitors available in the ARB or at the HP control point and a hot particle was detected at the gamma portal monitor at the PESB. Following the incident in 1994, Operations management directed that the monitors available in the ARB must be used if available. If not, monitoring must be immediately performed at the HP control point.

The licensee took prompt and appropriate corrective action in response to this event. The inspector concluded that this event was significant in that a hot particle went undetected through an RCA exit monitoring point and was not detected until exiting the PA. Although no dose limits were exceeded the potential dose received was unnecessary. This licensee-identified and corrected violation is being treated as a Non-Cited Violation, consistent with Section VII of the NRC Enforcement Policy. Therefore this event is identified as NCV 50-424,425/95-17-03, Unplanned Radwaste Operator Exposure.

d. Self Contained Breathing Apparatus (SCBA) Review

The inspectors verified that the licensee maintained operable SCBA equipment with spare oxygen containers available for emergency use in the control room. Personnel were properly trained and qualified to utilize the SCBA equipment. Other emergency equipment, food and supplies were stocked and available.

Two non-cited violations were identified.

7. Fire Brigade Review (64704)

The inspectors reviewed fire brigade training and manning. The fire brigade is made up of the onshift operations crew and staffed consistently on all shifts. Most other activities would not take priority over response to a fire. The inspectors identified no concerns.

No violations or deviations were identified.

8. Follow-up (92903)

The following item was reviewed using licensee reports, inspections, record reviews, and discussions with licensee personnel, as appropriate:

(Open) IFI 424,425/95-13-02, Follow-up to Diesel Generator Voltage Regulator Reliability Problems

On June 28, during performance of procedure 14980, DG Operability Test, for the 1A DG, with the DG idling to stabilize engine temperatures, the low voltage annunciator alarmed. Voltage had dropped to about 3000 volts. The operator raised voltage to 4000 volts but could not raise it higher. After lowering and raising the voltage several times, the voltage regulator appeared to operate normally and the test was completed successfully.

The licensee believed the erratic voltage control was the result of corrosion buildup on the voltage regulator potentiometer. The licensee had evaluated and concluded from previous similar occurrences that corrosion on the voltage regulator potentiometer windings caused the erratic voltage control. The licensee incorporated raising and lowering DG voltage through a range of voltages in the DG surveillance procedure as a precautionary measure to minimize the potential for corrosion buildup. The DG operator and the system engineer concluded that the cause of this voltage anomaly was also due to corrosion in the potentiometer. The inspectors reviewed the procedure revision to cycle the potentiometer and concluded that it was not preconditioning the surveillance since it was performed after the DG had met the starting requirements including voltage.

During the afternoon of June 28, with DG 1A shutdown the control room received a DG 1A generator trouble alarm. Investigation revealed that the cause of the alarm was the field ground detector. The DG was declared inoperable since there was no immediately apparent reason for the alarm and it was unusual for this alarm to occur with the DG idle.

The licensee's troubleshooting that evening determined that a winding to winding short had occurred in a transformer (T3 transformer) in DG 1A voltage regulator #2. Early on June 29, following satisfactory testing of DG 1A on the redundant voltage regulator, the DG was declared operable on voltage regulator #1 only.

Due to the nature of this failure and the repetitive problems with the DG voltage regulators, the licensee formed a critique team to evaluate all the recent voltage regulator problems. At the end of the inspection period the critique was still in progress. The inspectors will continue to follow and assess the licensee's resolution of this chronic problem as part of the follow-up to IFI 424,425/95-13-02, Follow-up to Diesel Generator Voltage Regulator Reliability Problems.

No violations or deviations were identified.

9. Exit Meeting

The inspection scope and findings were summarized on July 17, with those persons indicated in paragraph 1. The inspector described the areas inspected and discussed in detail the inspection findings. No dissenting comments were received from the licensee. The licensee did not identify as proprietary any of the material provided to or reviewed by the inspectors during the inspection.

Item No.	Status	Description and Reference
IFI 424,425/ 95-13-02	Open	Follow-up to Diesel Generator Voltage Regulator Reliability Problems (paragraph 8)
NCV 50-425/ 95-17-01	Closed	Failure to Perform Unit 2 NSCW Transfer Pump TS Surveillance (paragraph 3b)
NCV 50-424,425/ 95-17-02	Closed	Failure to Control Tools in a Zone II Designated Area (paragraph 6b)
NCV 50-424,425/ 95-17-03	Closed	Unplanned Radwaste Operator Exposure (paragraph 6c)

10. Abbreviations

ACCW	- Auxiliary Component Cooling Water
AFW	- Auxiliary Feedwater System
ALARA	- As Low As Reasonably Achievable
ARB	- Alternate Radwaste Building
cc/hr	- Cubic Centimeter per Hour
cc/min	- Cubic Centimeter per Minute
CFR	- Code of Federal Regulations
Co-60	- Cobalt-60
CVI	- Containment Ventilation Isolation
DC	- Deficiency Card
DG	- Diesel Generator
ECCS	- Emergency Core Cooling System
°F	- Degrees Fahrenheit
HP	- Health Physics
I&C	- Instrumentation and Controls
IFI	- Inspector Followup Item
IPM	- Individual Personnel Monitor
ISEG	- Independent Safety Engineering Group
IST	- Inservice Test
LCO	- Limiting Condition for Operation
LOCA	- Loss of Coolant Accident
MFIV	- Main Feedwater Isolation Valve
mrem	- One Thousandth of a Roentgen Equivalent Man
mrem/hr	- One Thousandth of a Roentgen Equivalent Man per Hour
MSIV	- Main Steam Isolation Valve
MWO	- Maintenance Work Order
N/A	- Not Applicable
NCV	- Non-Cited Violation
NPF	- Nuclear Power Facility
NRC	- Nuclear Regulatory Commission
NSAC	- Nuclear Safety and Compliance
NSCW	- Nuclear Service Cooling Water System
PA	- Protected Area
PEO	- Plant Equipment Operator
PESB	- Plant Employee Security Building
PM	- Preventive Maintenance
RCA	- Radiation Controlled Area
RCCA	- Root Cause and Corrective Action
RCS	- Reactor Coolant System
rem	- Roentgen Equivalent Man
RHR	- Residual Heat Removal System
RO	- Reactor Operator
RWP	- Radiation Work Permit
SAER	- Safety Audit And Engineering Review
SCBA	- Self Contained Breathing Apparatus
SFP	- Spent Fuel Pool
SGFPT	- Steam Generator Feedwater Pump Turbine
SI	- Safety Injection

SSPS	- Solid State Protection System
TS	- Technical Specifications
USS	- Unit Shift Supervisor
VEGP	- Vogtle Electric Generating Plant
VIO	- Violation
<	- Less Than

ENCLOSURE

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W., SUITE 2900
ATLANTA, GEORGIA 30323-0199

September 6, 1995

Georgia Power Company
ATTN: Mr. C. K. McCoy
Vice President
Vogtle Electric Generating Plant
P. O. Box 1295
Birmingham, AL 35201

SUBJECT: NRC INSPECTION REPORT NO. 50-424/95-20 AND 50-425/95-20

Gentlemen:

This refers to the inspection conducted by R. Moore of this office on August 21-24, 1995. 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 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 purpose of the inspection was to determine whether activities authorized by the license were conducted safely and in accordance with NRC requirements.

Within the scope of the inspection, violations or deviations were not identified.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be placed in the NRC Public Document Room.

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

Sincerely,

Charles A. Casto, Chief
Engineering Branch
Division of Reactor Safety

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

Enclosure: NRC Inspection Report

cc w/encl: (See page 2)

9509180236

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W., SUITE 2900
ATLANTA, GEORGIA 30323-0199

Report Nos.: 50-424/95-20 and 50-425/95-20

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: Alvin W. Vogtle Nuclear Plant Units 1 and 2

Inspection Conducted: August 21-24, 1995

Inspector: _____ 8/31/95
R. Moore Date Signed

Approved by: _____ 9-6-95
M. Shymlock, Chief Date Signed
Plant Systems Section
Engineering Branch
Division of Reactor Safety

SUMMARY

Scope:

This routine, announced inspection was conducted in the area of electrical maintenance (IP 62705). The inspection reviewed the Emergency Diesel Generator (EDG) maintenance and performance between May, 1994, and August, 1995 focussing on potential air quality concerns of the pneumatic protection and control system.

Results:

In the area inspected, violations or deviations were not identified.

Although water was evident on two occasions during this period in several of the 250 psi gage lines of the EDGs' air start system, EDG reliability was not impacted.

Enclosure

REPORT DETAILS

1.0 Persons Contacted

*W. Burmeister, Engineering Support Manager
*C. Christensen, Safety Audit and Engineering Review Supervisor
*M. Hobbs, Instrumentation and Controls Superintendent
*P. Kochery, Plant Modifications and Maintenance Engineering Supervisor
*J. Liasser, Operations Manager
*L. Noblett, Instrumentation and Controls Foreman
*M. Sheibani, Nuclear Safety and Compliance Supervisor
K. Stokes, Systems Engineer
*C. Tippins, Nuclear Specialist

Other licensee employees contacted during this inspection included engineers, technicians, craftsmen, and administrative personnel.

NRC Personnel

C. Ogle, Senior Resident Inspector
*M. Widmann, Resident Inspector
*R. Crlenjak, Branch Chief, Division of Reactor Projects, RII

*Attended exit meeting

Abbreviations and acronyms are listed in paragraph 4.

2.0 Electrical Maintenance (62705)

2.1 Background

In March 1990 and May, 1990, EDGs 1A and 1B experienced failures or problems attributable to malfunctions of the pneumatic protection and control system. This was a 60 psi system supplied via a pressure regulator from the 250 psi air start system. The root cause of the failures was determined to be improper, intermittent operation of the Calcon Jacket Water sensors. Additional failure contributors were system air leaks and inconsistent instrument calibration technique. Moisture content of the pneumatic control system was evaluated as a possible contributor due to air dryer performance problems; however, it was concluded that this was not a contributor to the EDG failures or problems. This issue was reviewed in May, 1994 (NRC Inspection Report Nos.: 50-424,425/94-12).

The purpose of this inspection was to review EDG operating history, maintenance, component calibrations, air quality monitoring, and indications of water in the system to determine if pneumatic control system moisture content has been a problem since 1994. In particular, the review was to determine if EDG reliability had been impacted by existing air quality conditions since 1994. Evidence of moisture problems would include EDG failures or problems attributable to control system malfunctions, EDG component malfunctions due to corrosion or dirt on ports or moving parts, or chronic out of tolerance dew point conditions with identified moisture in the 60 psi system.

2.2 EDG Equipment History

The inspector reviewed maintenance work orders (MWOs) and deficiency cards (DCs) from May, 1994 through August, 1995, to determine if equipment history indicated a problem with pneumatic control system air quality. Indicators would include malfunctions of EDG components due to dirt, corrosion, moisture, or particulate on component internals, or EDG failures attributable to malfunctions of the pneumatic protection and control system. The MWOs included documentation of extensive inspections and tests performed in conjunction with the vender during the Unit 1, September, 1994 and Unit 2, February, 1995, refueling outages. The pneumatic protection and control system was functionally tested during these outages. The following MWOs were reviewed:

29403289	29403281	19401372	19401373
19401346	29500127	19400514	19401023
19401333	29403285	29403290	29403288
19402311	19400515	29501359	19400497
19401015	19400496	29403291	29401466
19400490	29401467	19400474	

Eleven of the MWOs replaced malfunctioning EDG components. These malfunctions were primarily due to mechanical failure of the switch, sensor, or gage. There were no indications of dirt, corrosion, moisture, or particulate on component internals. The MWOs did not indicate that air quality was a problem with the pneumatic protection and control system.

The following EDG related DCs were reviewed:

C00029618	C00028110	C00028839	C00029581
C00028152	C00029118	C00030044	C00028604
C00029356	C00029616	C00028728	C00029575
C00029583	C00028785	C00029580	C00029693
C00029649			

Four of the DCs were related to pneumatic control system components. The related cause determinations did not indicate that air quality was a contributor to the component malfunction. The inspector concluded that the EDG related DCs reviewed indicated that air quality of the EDG pneumatic protection and control system was not a problem.

2.3 Water in the 250 psi Gage Line

Discussion with the licensee indicated that a small amount of water was noted by a vender in a Unit 2, 250 psi air start system gage line in February, 1995. The water was noted at the vent/test connection between the gage isolation valve and the gage when the test connection cap was removed. This test connection is located upstream of the pressure regulator which supplies 60 psi air for the protection and control system. Physically, the tubing is approximately five feet above the regulator and filter and within the engine control panel enclosure.

This is a dead ended tubing run connecting the gage to the 250 psi portion of the system. Due to its location, the tubing run is not subject to the routine operational flow dynamics of the system. The vender observation was not noted in the vender's documentation of the inspection and test activities in the MWOs (MWOs 29403281 and 29403289). The system engineer indicated that the vender verbally communicated the observation and did not identify a concern related to the water in the gage line.

An NRC inspector observed the licensee perform a moisture check of the 250 psi gage line portion of all EDGs on August 18, 1995. This check was documented on MWOs 29502167 and 19502428. No moisture was evident in the Unit 2 EDG air start gage lines. Moisture was evident on the Unit 1 EDGs' gage lines. Less than 0.5 milliliters (ml) was recovered from EDG 1A right and left bank gage lines. Approximately 1.6 ml was recovered from EDG 1B right bank gage line. The licensee immediately performed a dew point analysis of the 250 psi portion at the receivers and the 60 psi portion within the engine control panel. All dew points were within the tolerance specified by the applicable procedure. The following dew points were determined:

EDG 1A:	Receiver	46.6 °F
	Engine control panel	16.6°F
EDG 1B:	Receiver	46.7 °F
	Engine control panel	22.4 °F

The dew point values indicated that the gage line water was not indicative of high moisture content of the protection and control air system.

The licensee performed gage line moisture checks again on the Unit 1 EDGs on August 22, 1995. One to two drops of water were noted on the EDG 1B right bank 250 psi gage line. Due to the limited venting of the gage line on August 18, 1995, the inspector concluded that the drops were residual water. At that time, venting was limited due to possible impact on EDG operability resulting from depressurizing the air start line. Additionally, on August 22, 1995, the licensee performed a moisture check on the 60 psi control air system within the engine control panels. No moisture was detected at the 60 psi gage line or the filter drain which was the system low point. The control panel internal temperature was measured at 93.4 °F and was maintained above 50 °F by a strip heater.

The inspector noted that although moisture was evident in the Unit 2 EDG gage line in February, 1995, there was no moisture evident in August, 1995 at the same location. With the exception of the residual moisture on the EDG 1B, no moisture was evident on the Unit 1 EDGs four days after the water was initially removed. As discussed in paragraph 2.5, there were three occasions since February, 1995, in which the dew point exceeded the specified 50 °F tolerance on Unit 2 EDGs' 250 psi air start systems. Based on the above information the probability was low that

the gage line water was the result of condensation within the 250 psi air system. The system was rarely vented from the gage line location because routine gage calibrations were performed after the system was depressurized for functional testing. Therefore the water could have been in the gage line for an indeterminate time period.

2.4 Calibration

The inspector reviewed the licensee's calibration activity for control system components and pressure gages to determine if these included mechanisms capable of introducing water into the air system. The Calcon Pressure Switch Calibration Procedure, 22983-C, revision 3, specified the use of an air supplied variable pressure source for calibration of the switches. The pressure gage calibration procedure, Bourdon Tube-Type Indicator Calibration Procedure, 22705-C, revision 4, did not specify that the variable pressure source for gage calibration should be air or hydraulic. This is the procedure used for calibration of the 250 psi gages. The inspector concluded that the gage calibration activity provided a potential mechanism for introduction of water into the system.

The licensee's Instrumentation and Control (I&C) staff indicated that the introduction of water into the system via calibration was unlikely because fundamental craft knowledge dictated that air or gas was to be used for air system gage calibration. The MWOs which documented the previous calibrations of these gages listed the measuring and test equipment standards used but did not identify the type of variable pressure source used. The procedures also did not specify that connection tubing should be blown dry prior to use on an air system. Although this also would be considered fundamental craft knowledge, the inspector noted an example in which this action was omitted and resulted in an inaccurate dew point analysis. An analysis performed on September 28, 1994 (MWO 19400085) on the EDG 1B receivers identified a incorrect out-of-tolerance condition due to water in the tubing and test assembly.

2.5 Dew Point Analysis

The inspector reviewed the result of the monthly dew point analyses and observed the performance of the analysis on the EDG 1A receivers. Procedure SCL-00166, EDG Air Start Dryer Maintenance, revision 6, provided guidance for the analysis and established the 50°F dew point tolerance limit. There were five occurrences of an out-of-tolerance measurement between 1994, and August, 1995.

EDG 1A	May 3, 1995
EDG 1B	July 14, 1995
EDG 2A	March 18, 1995 and July 9, 1995
EDG 2B	March 5, 1995

The associated MWOs documented that the required moisture checks were performed and actions were taken to return the dew point within the

specified tolerance. On several of the occurrences a dew point analysis was performed on the 60 psi control air system in addition to the 250 psi air start system. Although the 250 psi system dew point value was above the 50 °F tolerance specification, the dew point in the 60 psi system was within the tolerance specification. The inspector noted that there was no direct correlation between the dates of the discovered out-of-tolerance condition and the date the water was noted in the 250 psi gage line test connection. Observation of dew point analysis demonstrated the craft adhered to the procedure and was familiar with the test equipment.

2.6 Conclusion

For the time period between May, 1994, and August, 1995, this inspection identified no EDG failures or problems attributable to malfunction of the pneumatic control and protection system. There has been no EDG component failures in which moisture or air quality was identified as a contributor to the failure or malfunction. There were two occasions in which a small amount of water was noted in the 250 psi air start system at the gage line test connection. The source of this water introduction into the system was indeterminate The inspector determined that an adverse system condition did not exist due to potential moisture content since 1994. In addition, as determined by this inspection, EDG reliability has not been impacted by air quality conditions of the pneumatic protection and control system.

3.0 Exit Meeting

The inspection scope and results were summarized on August 24, 1995, with those persons indicated in paragraph 1. The inspector described the areas inspected and discussed in detail the inspection results. Proprietary information is not contained in this report. Dissenting comments were not received from the licensee.

4.0 Abbreviations and Acronyms

DC	Deficiency card
EDG	Emergency Diesel Generator
°F	Degrees Fahrenheit
I&C	Instrumentation and Controls
MWO	Maintenance Work Order
psi	pounds per square inch