

Georgia Power Company
Route 2, Box 299A
Waynesboro, Georgia 30830
Telephone 404 554-9961
404 724-8114

Southern Company Services, Inc.
Post Office Box 2625
Birmingham, Alabama 35202
Telephone 205 870-6011



Vogle Project

August 14, 1985

Director of Nuclear Reactor Regulation
Attention: Ms. Elinor G. Adensam, Chief
Licensing Branch #4
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

File: X7BC35

Log: GN-642

REF: GENERIC LETTER 85-02, DATED 4/17/85

NRC DOCKET NUMBERS 50-424 AND 50-425
CONSTRUCTION PERMIT NUMBERS CPPR-108 AND CPPR-109
VOGTLE ELECTRIC GENERATING PLANT - UNITS 1 AND 2
RESPONSE TO GENERIC LETTER 85-02

Dear Mr. Denton:

Attached is the VEGP response to the referenced letter. Enclosures 1 and 2 of the referenced letter are addressed on a point by point basis listing first the NRC position followed by the VEGP position.

If your staff requires any additional information, please do not hesitate to contact me.

Sincerely,

J. A. Bailey
Project Licensing Manager

JAB/caa
Enclosure

xc: D. O. Foster	G. Bockhold, Jr
R. A. Thomas	T. Johnson (w/o att.)
J. E. Joiner, Esquire	D. C. Teper (w/o att.)
B. W. Churchill, Esquire	L. Fowler
M. A. Miller	W. C. Ramsey
B. Jones, Esquire (w/o att.)	Vogle Project File
L. T. Gucwa	

0205m

8508200161 850814
PDR ADOCK 05000424
G PDR

A 058
11

VEGP RESPONSE TO GENERIC LETTER 85-02

1.a. PREVENTION AND DETECTION OF LOOSE PARTS (INSPECTIONS)

Staff Recommended Action

Visual inspections should be performed on the steam generator secondary side in the vicinity of the tube sheet, both along the entire periphery of the tube bundle and along the tube lane, for purposes of identifying loose parts or foreign objects on the tubesheet, and external damage to peripheral tubes just above the tubesheet. An appropriate optical device should be used (e.g., mini-TV camera, fiber optics). Loose parts or foreign objects which are found should be removed from the steam generators. Tubes observed to have visual damage should be eddy current inspected and plugged if found to be defective.

These visual inspections should be performed: (1) for all steam generators at each plant at the next planned outage for eddy current testing, (2) after any secondary side modifications, or repairs to steam generator internals, and (3) where eddy current indications are found in the free span portion of peripheral tubes, unless it has been established that the indication did not result from damage by a loose part or foreign object.

For PWR OL applicants, such inspections should be part of the preservice inspection.

For steam generator models where certain segments of the peripheral region can be shown not to be accessible to an appropriate optical device, licensees and applicants should implement alternative actions to address these inaccessible areas, as appropriate.

Licensees should take appropriate precautions to minimize the potential for corrosion while the tube bundle is exposed to air. The presence of chemical species, such as sulfur, may aggravate this potential, and may make exposure to the atmosphere inadvisable until appropriate remedial measures are taken.

RESPONSE

The VEGP steam generators will be given a post construction visual examination to ensure: 1) cleanliness, 2) there are no loose parts or foreign objects, and 3) the physical integrity of the steam generators and internals. Visual inspections will be made after any secondary modifications or repairs to the internals of the steam generators and when eddy current indications may be the result of damage from a loose part or foreign object. A fiberscope or a mini-TV camera will be used for the visual inspection. Should the visual inspection or the eddy current inspection results indicate the presence of a foreign object or loose part, a special search and retrieval effort will be conducted. If tube damage is detected during a visual inspection which had not been previously recorded, an eddy current inspection will be performed. If the tube is found to be defective, the tube will be repaired or plugged. All examinations and documentation will be done in accordance with written procedures.

Precautions taken to minimize the potential for corrosion while the tube bundle is exposed to air are as follows:

VEGP plans no long term steam generator layup under dry conditions. When maintenance or inspection is required on the secondary side of the steam generators, the steam generators will be drained hot under nitrogen atmosphere. After cooling, the nitrogen purge will be lifted and the maintenance/inspection will begin. Then, wet layup conditions will be established for corrosion protection during outages. Prior to heatup to full power, the bulk water in the steam generators will normally be brought into power operation specifications by draining and refilling or by feeding and bleeding.

1.b. PREVENTION AND DETECTION OF LOOSE PARTS (QUALITY ASSURANCE)

Staff Recommended Action

Quality Assurance/Quality Control procedures for steam generators should be reviewed and revised as necessary to ensure that an effective system exists to preclude introduction of foreign objects into either the primary or secondary side of the steam generator whenever it is opened (e.g., for maintenance, sludge lancing, repairs, inspection operations, modifications). As a minimum, such procedures should include:

(1) detailed accountability procedures for all tools and equipment used during an operation, (2) appropriate controls on foreign objects, such as eye glasses and film badges, (3) cleanliness requirements, and (4) accountability procedures for components and parts removed from the internals of major components (e.g., reassembly of cut and removed components).

RESPONSE

Procedures will be written to ensure that foreign objects are not introduced into either the primary or secondary side of the VEGP steam generators. These procedures will address accountability for tools and equipment, controls for foreign objects, such as glasses and film badges, cleanliness requirements, and accountability for components and parts removed from the steam generators.

2.a. INSERVICE INSPECTION PROGRAM (FULL LENGTH TUBE INSPECTION)

Staff Recommended Action

The Standard Technical Specifications (STS) and Regulatory Guide 1.83, Part C.2.f, currently define a U-tube inspection as meaning an inspection of the steam generator tube from the point of entry on the hot-leg side completely around the U-bend to the top support of the cold-leg side.

The staff recommends that tube inspections should include an inspection of the entire length of the tube (tube end to tube end) including the hot-leg side, U-bend, and cold-leg side.

This recommended action does not mean that the hot-leg inspection sample and the cold-leg inspection sample should necessarily involve the same tubes. That is, it does not preclude making separate entries from the hot and cold-leg sides to meet the minimum sampling requirements for inspection.

Consistent with the current STS requirement, supplemental sample inspections (after the initial 3% sample) under this staff recommended action may be limited to a partial length inspection provided the inspection includes those portions of the tube length where degradation was found during initial sampling.

RESPONSE

As part of the Model "F" design, the VEGP steam generator tubes are thermally treated incol 600 which have been hydraulically expanded into the tubesheets. With a Secondary Water Chemistry Program, tube degradation should be minimal and the intent of the inservice inspections should be to confirm tube integrity. On this basis, it is the VEGP position that the Standard Technical Specifications (NUREG-0452) definition of a U-tube inspection is satisfactory.

2.b. INSERVICE INSPECTION PROGRAM (INSPECTION INTERVAL)

Staff Recommended Action

The maximum allowable time between eddy inspections of an individual steam generator should be limited in a manner consistent with Section 4.4.5.3 of the Standard Technical Specifications, and in addition should not extend beyond 72 months.

RESPONSE

Utilities with the model "F" steam generators and commitments to a Secondary Water Chemistry Program should not be limited to 72 month maximum eddy current inspection intervals for each individual steam generator. The Standard Technical Specifications requirements are sufficient for utilities with this equipment and commitments to a Secondary Water Chemistry Program.

3.a. SECONDARY WATER CHEMISTRY PROGRAM

Staff Recommended Action

Licensees and applicants should have a secondary water chemistry program (SWCP) to minimize steam generator tube degradation.

The specific plant program should incorporate the secondary water chemistry guidelines in SGOG Special Report EPRI-NP-2704, "PWR Secondary Water Chemistry Guidelines," October 1982, and should address measures taken to minimize steam generator corrosion, including materials selection, chemistry limits, and control methods. In addition, the specific plant procedures should include progressively more stringent corrective actions for out-of-specification water chemistry conditions. These corrective actions should include power reductions and shutdowns, as appropriate, when excessively corrosive conditions exist. Specific functional individuals should be identified as having the responsibility/authority to interpret plant water chemistry information and initiate appropriate plant actions to adjust chemistry, as necessary.

The referenced SGOG guidelines above were prepared by the Steam Generator Owners Group Water Chemistry Guidelines Committee and represent a consensus opinion of a significant portion of the industry for state-of-the-art secondary water chemistry control.

RESPONSE

The VEGP Water Chemistry Program, as described in Section 10.3.5 of the VEGP FSAR, addresses measures taken to minimize steam generator corrosion, including materials selection, chemistry limits, and control methods. In general, the action levels for abnormal conditions will be consistent with action levels described in the Steam Generator Owners Group special report EPRI-NP-2704, "PWR Secondary Water Chemistry Guidelines," October, 1982. The action levels described in Section 10.3.5 of the VEGP FSAR will be incorporated into plant procedures which delineate progressively more stringent corrective action for out-of-specification water chemistry conditions. These procedures also include power reductions and shutdowns as appropriate and require chemistry hold points on startups.

Specific individuals will be assigned functional responsibility/authority to interpret plant water chemistry information and initiate appropriate plant actions to adjust chemistry as necessary.

3.b. CONDENSER INSERVICE INSPECTION PROGRAM

Staff Recommended Action

Licensees should implement a condenser inservice inspection program. The program should be defined in plant specific safety-related procedures and include:

1. Procedures to implement a condenser inservice inspection program that will be initiated if condenser leakage is of such a magnitude that a power reduction corrective action is required more than once per three month period; and
2. Identification and location of leakage source(s), either water or air;
3. Methods of repair of leakage;

4. Methodology for determining the cause(s) of leakage;
5. A preventive maintenance program.

RESPONSE

The VEGP Secondary Water Chemistry Program will include a comprehensive inspection program developed to ensure condenser integrity. This program will include a visual inspection of the condenser every refueling outage, waterbox inspection for tube leaks during plant operation, and component inspection for oxygen leaks during plant operation. These waterbox inspections and component inspections will be performed as necessary to diagnose and trouble shoot abnormal chemistry levels.

Since a comprehensive inspection program for the condenser will be developed as an integral part of the VEGP Secondary Water Chemistry Program, condenser inspections need not be included in the VEGP Inservice Inspection Program.

4. PRIMARY TO SECONDARY LEAKAGE LIMIT

Staff Recommended Action

All PWRs that have Technical Specifications limits for primary to secondary leakage rates which are less restrictive than the Standard Technical Specifications (STS) limits should implement the STS limits.

RESPONSE

The VEGP Technical Specifications will implement the Standard Technical Specifications (NUREG-0452) leakage rate for primary to secondary leakage in the steam generators.

5. COOLANT IODINE ACTIVITY LIMIT

Staff Recommended Action

PWRs that have Technical Specifications limits and surveillance for coolant iodine activity that are less restrictive than the Standard Technical Specification (STS) should implement the STS limits. Those plants identified above that also have low head high pressure safety injection pumps should either: (1) implement iodine limits which are 20% of the STS values, or (2) implement reactor coolant pump trip criteria which will ensure that if offsite power is retained, no loss of forced reactor coolant system flow will occur for steam generator tube rupture events up to and including the design basis double-ended break of a single steam generator tube, and implement iodine limits consistent with the STS.

RESPONSE

The VEGP Technical Specification limits for coolant iodine activity will be identical to the limits provided in the Standard Technical Specifications (NUREG-0452). The recommended actions for plants that have low head high pressure safety injection pumps are not applicable to VEGP.

6. SAFETY INJECTION SIGNAL RESET

Staff Recommended Action

The control logic associated with the safety injection pump suction flow path should be reviewed and modified as necessary, by licensees, to minimize the loss of safety function associated with safety injection reset during an SGTR event. Automatic switchover of safety injection pump suction from the boric acid storage tanks (BAST) to the refueling water storage tanks should be evaluated with respect to whether the switchover should be made on the basis of low BAST level alone without consideration of the condition of the SI signal.

RESPONSE

The VEGP control circuits are arranged such that an emergency low level signal from both level channels causes the suction of the charging pumps to be transferred from the volume control tank to the refueling water storage tank. This is done independently of any SI condition. During the injection phase, the safety injection pumps take suction from the refueling water storage tank. Suction is not taken from the boric acid storage tank.

REQUEST FOR INFORMATION CONCERNING CATEGORY C-2

STEAM GENERATOR TUBE INSPECTIONS

Information Requested

The enclosed draft NUREG-0844 Section 2.2.1.2 describes certain limitations which the staff believes to be inherent in the present Technical Specification steam generator ISI requirements pertaining to Category C-2 inspection results. Licensees and applicants are requested to provide a description of their current policy and actions relative to this issue and any recommendations they have concerning how existing Technical Specification steam generator ISI requirements pertaining to Category C-2 inspection results could be improved to better ensure that adequate inspections will be performed. This description should include a response to the following questions:

1. What factors do, or would, the licensee or applicant consider in determining (a) whether additional tubes should be inspected beyond what is required by the Technical Specifications, (b) whether all steam generators should be included in the inspection program, and (c) when the steam generators should be reinspected.
2. To what extent do these factors include consideration of the degradation mechanism itself and its potential for causing a tube to be vulnerable to rupture during severe transients or postulated accident before rupture or leakage of that tube occurs during normal operation.

RESPONSE

It is the VEGP position that present inspection requirements are adequate for plants with our design and commitments. The VEGP steam generators are Model "F" design which include the latest innovations to minimize tube degradation as well as commitment to the Secondary Water Chemistry Program. Because of the major improvements and changes made to VEGP, we do not expect to experience any abnormal tube degradation and feel that the present sampling requirements are sufficient to confirm tube integrity.