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

Report Nos.: 50-424/86-136 and 50-425/86-63

Licensee: Georgia Power Company
P. O. Box 4545
Atlanta, GA 30302

Docket Nos.: 50-424 and 50-425 License Nos.: NPF-61 and CPPR-109

Facility Name: Vogtle 1 and 2

Inspection Conducted: December 16, 1986 - January 23, 1987

Inspectors: M V Sinkule for 02/03/87
H. H. Livermore, Senior Resident Inspector, Construction — Date Signed

M V Sinkule for 02/03/87
J. F. Rogge, Senior Resident Inspector, Operations — Date Signed

M V Sinkule for 02/03/87
R. J. Schepens, Resident Inspector, Operations — Date Signed

Approved By: Virgil L Brownlee 2/3/87
M. V. Sinkule, Section Chief
Division of Reactor Projects — Date Signed

SUMMARY

Scope: This routine, unannounced inspection included Resident Inspection in the following areas: allegations, fire protection, containment and safety related structures, piping systems and supports, safety related components, auxiliary systems, electrical equipment and cables, instrumentation, preoperational test program, plant operations, quality programs and administrative controls affecting quality, follow-up on previous inspection identified items, and TMI Action Items.

Results: No violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

*R. E. Conway, Senior Vice-President, Vogtle Project Director
*P. D. Rice, Vice-President, Project Engineering
R. H. Pinson, Vice-President, Project Construction
C. W. Whitney, General Manager, Project Support
W. W. Mintz, Project Completion Manager
*G. Bockhold, Jr., General Manager Nuclear Operations
E. M. Dannemiller, Technical Assistant to General Manager
*T. V. Greene, Plant Manager
*R. M. Bellamy, Plant Support Manager
*C. W. Hayes, Vogtle Quality Assurance Manager
*C. E. Belflower, Quality Assurance Site Manager - Operations
*E. D. Groover, Quality Assurance Site Manager - Construction
*W. E. Mundy, Quality Assurance Audit Supervisor
*D. M. Fiquett, Project Construction Manager - Unit 2
*B. C. Harbin, Manager Quality Control
*G. A. McCarley, Project Compliance Coordinator
*W. C. Gabbard, Regulatory Specialist
C. F. Meyer, Operations Superintendent
R. M. Odom, Plant Engineering Supervisor
C. L. Coursey, Maintenance Superintendent (Startup)
*M. A. Griffis, Maintenance Superintendent
*G. R. Frederick, Quality Assurance Engineer/Support Supervisor
R. E. Spinnatu, ISEG Supervisor
J. F. D'Amico, Nuclear Safety & Compliance Manager
W. F. Kitchens, Manager Operations
V. J. Agro, Superintendent Administration
A. L. Mosbaugh, Assistant Plant Support Manager
M. P. Craven, Nuclear Security Manager
*P. D. Rushton, Plant Training & Emergency Preparedness Manager

Other licensee employees contacted included craftsmen, technicians, supervision, engineers, inspectors, and office personnel.

Other Organizations

H. M. Handfinger, Assistant. Plant Support Manager - Bechtel
D. L. Kinnsch, Project Engineering - Bechtel
F. B. Marsh, Project Engineering Manager - Bechtel

*Attended Exit Interview

2. Exit Interviews - Units 1 & 2 (30703C)

The inspection scope and findings were summarized on January 23, 1987 with those persons indicated in paragraph 1 above. The inspector 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 three Violations, one Unresolved Item, nine Inspector Followup Items (IFI), and twelve Three Mile Island Task Followup Items left open two IFI's; and opened one unresolved Item.

The Unresolved Item identified during this inspection is:

(Open) Unresolved Item 50-424/86-136-01, "Review Inspection Results of the Licensee's Review of the Containment Combined Leak Rate Surveillance Calculation for All Penetrations & Valves subject to Type B and C tests." Paragraph 4

The following previous Inspector Followup Items remain open pending completed licensee action:

a. (Open) IFI 50-424/85-21-02, "Revision to Class 1E Battery Procedures." Paragraph 5

b. (Open) IFI 50-424/86-51-02, "Review Procedure 00301-C to Verify Incorporation of Unfettered Access for NRC Resident Inspectors." Paragraph 5

3. Licensee Action on Previous Enforcement Matters - Units 1 & 2 (92702)

(Closed) Violation 50-424/86-60-01 and (Open) 50-425/86-27-01, "Failure to Implement Adequate Design Control." This violation identified two (2) examples: The first being failure to provide the function to display pressurizer primary safety valve position indication status on plasma display per FSAR Table 7.5.2.1 and the second which identified design changes being implemented on Unit 1 via FCR's as being improperly evaluated as not applicable to Unit 2. Georgia Power Company's (GPC) response contained in Letter No. X7BG10, GN-1098, dated October 3, 1986 outlined the corrective action to be taken. Relative to the first example, the inspector has conducted a review of Change Control Package No. F10131W and completed Maintenance Work Orders 18622254, 18622255, 18622256, 18622257, 18622258, 18622259, 18622260, 18622261, & 18622278 which implemented the modification to add pressurizer primary safety valve position indication status to the plasma display module of the plant safety monitoring system on Unit 1. Relative to the second example, the inspector has conducted a review of the Project Reference Manual (PRM) Section C-4 which was revised by Change Notice CN-C4-91, dated October 22, 1986. This section which governs the

preparation, approval and issuance of design drawings was revised to clarify requirements for processing Unit 1 changes which affect the Unit 2 design. Desk Instruction X3DI08, which also was revised and issued as Revision 1 on October 31, 1986, was reviewed along with internal correspondence which documented the retraining of responsible engineering personnel. Based on the above review the inspector determined that the corrective actions have been adequately addressed and are complete for Unit 1 only. The installation of the design modification for Unit 2 to add pressurizer primary safety valve position indication status to the plasma display module of the plant safety monitoring system could not be verified as being complete at this time and will be followed up at a later date.

(Closed) Violation 50-424/86-74-01, "Failure to Achieve Appropriate Corrective Action on the Implementation of a Formalized/Controlled Training and Qualification Crane Operator Program for Operations Personnel Per QA Audit Report No. OP 11/16-86/17, Dated July 9, 1986." This violation identified a failure to achieve appropriate corrective action for the subject finding identified in QA Audit OP 11/16-86/17. The violation was attributed to a failure by auditors to issue an Audit Finding Report (AFR) to identify the weakness as required by QA Department Procedure QA-05-01. Georgia Power Company's (GPC) response contained in Letter No. X7BG10, GN-1294, dated January 6, 1987 outlined the corrective action to be taken. The inspector has reviewed Plant Procedure 11951, Rev. 3, "Fuel Handling Operator and Fuel Handling Supervisor Qualification Checklist," which was revised to include spent fuel cask crane operator training requirements and a subsequent GPC QA Audit OP 16-86/43 issued on December 10, 1986 which documented QA's followup and review of the revised procedure to verify that the appropriate corrective action had been taken. In addition, the inspector has reviewed internal correspondence documenting operations QA Audit personnel retraining in the requirements of QA Department Procedure QA-05-01 for the issuance of AFR's and in the followup process for items tracked through the QA Audit Checklist Item Card File. Based on the above review the inspector determined that the corrective actions have been adequately addressed and are complete.

(Closed) Violation 50-424/86-74-02, "Inadequate Procedure for Testing Air-Operated Valves with Bailey Controllers." This violation identified that air-operated valves (AOV's) with Bailey Controllers were not tested to assure that the valve moves to its fail-safe position on a sudden loss of instrument air pressure. The violation was attributed to a failure to include provisions in Construction Acceptance Testing (CAT) Procedure CAT-M-04 for the fast closure of air-operated valves without solenoids, (i.e., with positioners/controllers only). Georgia Power Company's (GPC) response contained in Letter No. X7BG10, GN-1294, dated January 6, 1987 outlined the corrective action to be taken. The inspector has reviewed the following corrective steps taken and results achieved by the licensee: 1.) Procedure CAT-M-04, Revision 3 (Subsection 6.5) was issued to include fast failure testing of AOV's with positioners or controllers, 2.) A review of all safety-related AOV's with positioners or controllers was performed by GPC Nuclear Operations Department which resulted in identifying nineteen

(19) AOV's requiring testing for a sudden loss of instrument air, and 3.) Maintenance Work Orders 18620704, 18620705, 18620706, 18620707, and 18620708 were written and implemented to perform fast failure testing per the revised CAT-M-04 Procedure, Subsection 6.5 for the identified safety-related AOV's with positioners or controllers. Based on the above review the inspector determined that the corrective actions have been adequately addressed and are complete.

4. Unresolved Items

Unresolved items are matters about which more information is required to determine whether they are acceptable or may involve violations or deviations. One new unresolved item identified during this inspection is discussed in Paragraph 20.b.

5. Followup on Previous Inspection Items - Units 1 & 2 (92701)

(Open) IFI 50-424/85-21-02, "Revision to Class 1E Battery Procedures." The following procedures were reviewed:

No./Rev.	Title
27915-C,2	General Battery Maintenance
28810-C,4	Class 1E Battery Service Check
28815-C,4	Class 1E Battery Performance Check
28910-C,6	Class 1E 18 Month Inspection
28911-C,4	Class 1E 7-Day Inspection
28912-C,8	Class 1E 92-Day Inspection

These procedures provide the necessary instructions to maintain the Class 1E batteries in accordance with IEEE-450,1975 and the Technical Specifications. The inspector noted that the procedures are currently under revision to incorporate changes which resulted from issuance of the Final Draft Technical Specifications.

The inspector provided the following comments to the applicant:

a. Procedure 27915-C, Further review with scheduling is necessary for the inspector to determine how this multi-use tool will be implemented, and Step 2.20 needs clarity.

b. Procedure 28815-C, Acceptance criteria is not complete to address compliance with surveillance 4.8.2.1e. and 4.8.2.1f.; provides improper guidance for handling jumpered cells. Step 4.10.12 appears to require the jumpering of a cell under load.

c. Procedure 28912-C, Step A.4.2 Intercell Resistance Checks are not compared against the correct criteria.

d. Procedure 28911-C, Procedure needs to be corrected to give direction when the pilot cells do not pass the acceptance criteria.

e. General Comments; Jumpering Controls, Equalizer Charge Procedure, Temperature Corrections and Intercell Resistance Measurements need further clarification.

(Closed) IFI 50-424/85-33-01 & 50-425/85-28-01, " Followup on Closure of Quality Concern No's. 84V396, 84V400, and 84V250." The inspector has previously reviewed the stated concerns and closed Concern No. 84V250 as documented in Inspection Report No. 50-424/85-63 and 50-425/85-41. Quality Concern No. 84V396 remained open pending review of the licensee's Assessment/Inspection Program. The inspector has conducted a review of the licensee's Assessment/Inspection Program which documents that all required actions to ensure correction of deficiencies for Unit 2 Mine Safety Appliance HVAC Equipment is complete. Quality Concern No. 84V400 remained open pending review of the HVAC contractor's closed out Corrective Action Request (CAR) No. 27. The inspector has conducted a review of the completed CAR No. 27. The inspector has no further questions regarding these Quality Concerns and therefore considers this item to be closed.

(Closed) IFI 50-424/86-09-03, "Review Licensee Resolution of Instrumentation Documentation Forwarding to the Vault During Turnover." The inspector has conducted a review of the licensee's action to identify and resolve deficiencies with regard to instrumentation documentation in the vault for turned over systems. A review was also conducted of Field Procedure Manual Procedures GD-A-48 and GD-T-31 which were revised to provide additional instructions to assure that a complete review of electrical equipment installations and inspections are performed prior to system turnover. The inspector has no further questions regarding this item and therefore considers this item to be closed.

(Closed) IFI 50-424/86-31-03, "Review Licensee Plan for Separation of Facilities and Systems Between Unit 1 Operation and Unit 2 Construction." This inspection included the review of the separation plan. The inspector was walked through the split of mechanical, electrical and security issues. Since security had received appropriate attention by the regional security inspectors it was not reviewed in detail. Mechanical systems were reviewed in detail and the inspector had no concerns. The electrical split was summarized as affecting some 2176 terminations in the Unit 2 Scope which could affect Unit 1. Only one control on these terminations existed consisting of a Standing Order to the Shift Supervisor not to approve any requests to terminate Unit 2 items unless engineering approval existed. The inspector raised the concern that this was an inadequate approach and that more positive controls should be established. The applicant reviewed and implemented an action plan that:

a. Placed all termination control cards (580 control cards) in a hold status to prevent a request being generated.

b. Provided controls in Maintenance Work Planning to prevent the development of work packages.

c. Completed the evaluation and established controls to ensure that for those Unit 2 scope circuits currently terminated do not impact the operation of Unit 1.

The inspection reviewed the results and established controls and considers this item resolved.

(Open) IFI 50-424/86-51-02, "Review Procedure 00301-C to Verify Incorporation of Unfettered Access for NRC Resident Inspectors." On January 12, 1987 the licensee issued a memo to Control Room Personnel to inform them that NRC Resident Inspectors may enter the "at the Controls Zone" without requiring permission. The Plant Manager gave a verbal commitment to the Senior Resident Inspector to have Procedure 00301-C revised to incorporate the provisions of the memo prior to 5% power.

(Closed) IFI 50-424/86-51-04, "Review Licensee Procedure Changes to 10000-C and 10006-C." Procedure 10000-C has been revised to include all four conditions. Procedure 10006-C was not revised to include a specific step to verify that a safety limit had not been exceeded, but instead Procedure 00300-C has been revised by the addition of a note to highlight that the NRC authorization would be necessary when a safety limit is violated. Additional discussions with the applicant reconfirmed the commitment to add a step to procedure 10006-C to verify that the Technical Specification Safety Limits were not exceeded as part of the review process. Procedure 10006-C was subsequently revised on 1/6/87 and resolves this concern.

(Closed) IFI 50-424/86-60-05, "Review the Inspection Status Regarding Plant Housekeeping and Cleanliness Control." These inspections were being conducted, however paperwork was not getting to the vault. The GMVNO increased awareness of the procedure. In addition, 00254-C was revised to reduce the necessity for required inspections in areas not important to safety. Compliance with this procedure will be monitored as part of the routine inspection program.

(Closed) 50-424/86-60-07, "Review Corrective Action Regarding Item #7-5 and #7-9 of Readiness Review Module 7". This item concerns the monitoring of the GPC QA Department in achieving appropriate corrective action. A review of the QA report OP21-86/50 dated January 19, 1987 was performed. Based on this review the inspector concluded that corrective action had been achieved.

(Closed) IFI 50-424/86-60-08, "Review Operations Procedure 17012-1, Annunciator Response Procedure, for Resolution of Comments." Procedure 17012-1, Rev. 1 was reviewed and the appropriate comments have been incorporated.

(Closed) IFI 50-424/86-60-11, "Review Licensee Response to Locking of Four RHR Valves Pursuant to FSAR 7.6.2.2.D." The licensee has amended the FSAR to describe that the breakers will have power removed to prevent unauthorized opening instead of the valves being locked closed. This resolves the issue from the inspection standpoint.

(Closed) IFI 50-424/86-74-03 "Review Results of Testing the Check Valves on the Feedwater Isolation Valves." This item concerned the proper testing of Model 8F-C8L-10-SS check valves. Procedure 14850-1 was revised by TCP No. 14850-1-86-1 to include a slow depressurization of the air upstream of the check valve. The results were reviewed and indicate that the check valves properly functioned.

(Closed) Unresolved Item 50-424/86-111-01, "Review Inspection Results of the Licensee's Inspection of Burn Damage on Limitorque Operator Power Leads." The completed documentation was reviewed for all operators inspected. No additional burned power leads were identified. In addition, the inspector reviewed the applicant's bases for not re-inspecting the four operators contained within encapsulation vessels. The justification basically consisted of:

a. All four power leads were inspected following termination. These type inspections identified the original deficiency.

b. All four operators underwent construction acceptance testing to demonstrate proper functioning.

c. All four operators were examined as part of the Environmental Qualification/Limitorque inspection for non-qualified wiring.

d. One of the four was included in the original engineering evaluation of the problem and did not have burn damage. (1-HV-9002B)

e. The reinspection resulting from the NRC finding did not identify any additional 1E power lead burn damage. One of the two NRC identified items had been previously evaluated by engineering (1-HV-2138 to Use-As-Is). The other operator has been repaired.

f. All four operators would require removal of the encapsulation vessel head, which would invalidate the Local Leak Rate Test and then new special gaskets and retesting would be necessary. Based on a. thru e. inspection is not merited.

Based on the above the inspector concluded that the licensee electrical installation program had been effective in assuring that proper terminations were made to correct the deficiency and that a low probability based on the re-inspection results, exists that the three remaining operators would have 1E power lead burn damage. The inspector has no further questions. This item is considered open on Unit 2 and is not closed as indicated in NRC Report 50-424/86-111.

6. Allegations - Units 1 & 2

a. Allegation RII-86-0207, Improper Use of Weld Material.

Concern

A concern stated that a CBI Superintendent gave instructions to a craft Foreman to perform a task that would have violated a weld filler material control procedure; and that a subsequent demotion of the foreman was the result of his refusal to perform the task and violate the procedure.

Discussion

A recently assigned Startup Support Group (SSG) Superintendent requested some weld rod be given to an unqualified welder for a non Q welding assignment. SSG Procedure SSG-W-001 Para. 4.3.1c states that weld rod shall be issued only to qualified welders. Although there was more than one request, the Foreman refused to provide the subject weld rod. A short time later, the Foreman was demoted. The reason given (at a later time) was that he did not construct a shelf as directed. The Foreman felt that his demotion was a result of his refusing to provide the Superintendent with weld rod. As a result, the Foreman filed a Quality Concern with GPC.

The inspector interviewed Startup Support Group personnel, reviewed procedures, and reviewed GPC Quality Concern 86V403. The inspector found that there was not any welding performed using the subject weld rod. Through interviews with SSG personnel, it was determined that there was no evidence of any other welding performed by unqualified, non-certified welders. The inspector determined that an adequate weld filler material control system was in place in the Startup Support Group System. A system to insure that only certified qualified welders were used was in place. All welders were tested at the GPC Weld Test Facility and two engineers performed surveillances to insure welder's capabilities.

GPC Quality Concerns investigation did not substantiate a knowledgeable intent on the part of the Superintendent to violate a procedural requirement or control, but it did reveal that the instruction was given without full knowledge of the procedural requirements on the part of the Superintendent. Corrective action was as follows:

1. Development of a list of specific procedures for required reading by CBI Management.

2. Remind CBI Management representatives of protected activities of bringing Quality Concerns to the attention of QCP, NRC, or management; and assurance of non-retaliatory actions on anyone's part for identifying Quality problems. This action was posted on the SSG bulletin board.

The GPC Quality Concern investigation also did not substantiate that the demotion of the Foreman was a result of his refusal to issue the weld filler material when requested by the Superintendent.

Conclusion

The allegation is correct in that a CBI Superintendent did request weld filler material to be used by a non-certified unqualified welder. The weld material was neither used nor were there any examples of non-qualified welding performed. Adequate corrective action in the form of retraining was performed. The inspector found no evidence of the Superintendent willfully and knowingly violating procedures. The act was probably one of ignorance although one would certainly expect a Superintendent to be aware of all procedures under his cognizance. The only answer to his actions appears to be one of ignorance, plus the fact that he was newly assigned and that he was initially more interested in gaining control of a group of people he considered to be out of control, and to immediately assert his leadership. Although the inspector could find no evidence to support the second part of the allegation, a summation of events seems to dictate that the Superintendent did demote the Foreman due to his refusal to obey his request, as well as his failing to make a shelf per direction, but probably mostly as part of an effort to gain control of the SSG group leadership.

Since no safety related work was involved, and no actual welding was performed, this allegation is considered closed.

7. General Construction Inspection - Units 1 & 2 (92706)

Periodic random surveillance inspections were made throughout this reporting period in the form of general type inspections in different areas of both facilities. The areas were selected on the basis of the scheduled activities and were varied to provide wide coverage. Observations were made of activities in progress to note defective items or items of noncompliance with the required codes and regulatory requirements. On these inspections, particular note was made of the presence of quality control inspectors, supervisors, and quality control evidence in the form of available process sheets, drawings, material identification, material protection, performance of tests, and housekeeping. Interviews were conducted with craft personnel, supervisors, coordinators, quality control inspectors, and others as they were available in the work areas. The inspector reviewed numerous construction deviation reports to determine if requirements were met in the areas of documentation, action to resolve, justification, and approval signatures in accordance with GPC Field Procedure No. GD-T-01.

No violations or deviations were identified.

8. Fire Prevention/Protection and Housekeeping Measures - Units 1 & 2 (42051C)

The inspector observed fire prevention/protection measures throughout the inspection period. Welders were using welding permits with fire watches and extinguishers. Post indicator valves were being maintained in the open position. Fire fighting equipment was in its designated areas throughout the plant.

The inspector reviewed and examined portions of procedures pertaining to the fire prevention/protection measures and housekeeping measures to determine whether they comply with applicable codes, standards, NRC Regulatory Guides and licensee commitments.

The inspector observed fire prevention/protection measures in work areas containing safety related equipment during the inspection period to verify the following:

- Combustible waste material and rubbish was removed from the work areas as rapidly as practicable to avoid unnecessary accumulation of combustibles,
- Flammable liquids were stored in appropriate containers and in designated areas throughout the plant,
- Cutting and welding operations in progress have been authorized by an appropriate permit, combustibles have been moved away or safely covered, and a fire watch and extinguisher was posted as required, and
- Fire protection/suppression equipment was provided and controlled in accordance with applicable requirements.

No violations or deviations were identified.

9. Structural Concrete - Unit 2 (47053C)

a. Procedure and Document Review

The inspector reviewed and examined portions of the following procedures pertaining to the placement of concrete to determine whether they comply with applicable codes, standards, NRC Regulatory Guides and licensee commitments.

-CD-T-02, Rev. 18 Concrete Quality Control
-CD-T-06, Rev. 10 Rebar and Cadweld Quality Control
-CD-T-07, Rev. 8 Embed Installation and Inspection

b. Installation Activities

The inspector witnessed portions of the concrete placement indicated below to verify the following:

(1) Forms, Embedment, and Reinforcing Steel Installation

- Forms were properly placed, secure, leak tight and clean.

- Rebar and other embedment installation was installed in accordance with construction specifications and drawings, secured, free of concrete and excessive rust, specified distance from forms, proper on-site rebar bending (where applicable) and clearances consistent with aggregate size.

(2) Delivery, Placement and Curing

- Preplacement inspection was completed and approved prior to placement utilizing a Pour Card (Procedure Exhibit CD-T-02*18).
- Construction joints were prepared as specified.
- Proper mix was specified and delivered.
- Temperature control of the mix, mating surfaces, and ambient were monitored.
- Consolidation was performed correctly.
- Testing at placement location was properly performed in accordance with the acceptance criteria and recorded on a Concrete Placement Pour Log (Procedure Exhibit CD-T-02*20).
- Adequate crew, equipment and techniques were utilized.
- Inspections during placements were conducted effectively by a sufficient number of qualified personnel.
- Curing methods and temperature was monitored.

(3) Rebar Splicing

The inspector witnessed cadwelding operations to verify the following:

- Inspections are performed during and after splicing by qualified QC inspection personnel.
- Each splice was defined by a unique number consisting of the bar size, splice type, the position, the operator's symbol, and a sequential number.
- Process and crews are qualified.
- The sequential number and the operator's symbol are marked on all completed cadwelds.

The inspector also conducted random inspections of completed cadwelds to verify the following:

- Tap hole does not contain slag, blow out, or porous metal.
- Filler metal was visible at both ends of the splice sleeve and at the tap hole in the center of the sleeve. No voids were detected at the ends of the sleeves.
- The sequential number and the operator's symbol are marked on all completed cadwelds.

No violations or deviations were identified.

10. Containment (Steel Structures and Supports) - Unit 2 (48053C)

Periodic inspections were conducted to observe containment steel and support installation activities in progress, to verify the following:

- Components were being properly handled (included bending or straightening).
- Specified clearances were being maintained.
- Edge finishes and hole sizes were within tolerances.
- Control, marking, protection and segregation were maintained during storage.
- Fit-up/alignment meets the tolerances in the specifications and drawings.

No violations or deviations were identified.

11. Safety-Related Structures (Structural Steel and Supports) - Unit 2 (48063C)

Periodic inspections were conducted to observe construction activities of safety-related structures/equipment supports for major equipment outside the containment to verify that:

- Materials and components were being properly handled to prevent damage.
- Fit-up/alignment were within tolerances in specifications and drawing requirements.
- Bolting was in accordance with specifications and procedures.
- Specified clearances from adjacent components were being met.

No violations or deviations were identified.

12. Reactor Coolant Pressure Boundary and Safety Related Piping - Unit 2 (49053C) (49063C) (37301)

Periodic inspections were conducted to observe construction activities of the Reactor Coolant Boundary and other safety-related piping installations inside and outside Containments. Verifications included but were not limited to the following:

- Material and components were being properly handled and stored in order to prevent damage.
- Fit-ups and alignments were within tolerances per specifications and drawings.
- Specified clearances from pipe to pipe and adjacent components were met.
- Piping was installed and inspected in accordance with applicable drawings, specifications, and procedures.
- Those people engaged in the activity are qualified to perform the applicable function.
- Drawing and specification changes (revisions) are being handled and used correctly.

No violations or deviations were identified.

13. Reactor Coolant Pressure Boundary and Safety Related Piping Welding - Unit 2 (55073C) (55083C)

Periodic inspections were conducted during daily plant surveillances on safety-related pipe welding at various stages of weld completion. The purpose of the inspection was to determine whether the requirements of applicable specifications, codes, standards, work performance procedures and QC procedures are being met as follows:

- Work was conducted in accordance with a process sheet which identifies the weld and its location by system, references procedures or instructions, and provides for production and QC signoffs.
- Welding procedures, detailed drawings and instructions, were readily available in the immediate work area and technically adequate for the welds being made.
- Welding procedure specification (WPS) were in accordance with the applicable Code requirements and that a Procedure Qualification Record (PQR) is referenced and exists for the type of weld being made.
- Base metals, welding filler materials, fluxes, gases, and insert materials were of the specified type and grade, have been properly inspected, tested and were traceable to test reports or certifications.
- Purge and/or shielding gas flow and composition were as specified in the welding procedure specification and that protection was provided to shield the welding operation from adverse environmental conditions.
- Weld joint geometry including pipe wall thickness was specified and that surfaces to be welded have been prepared, cleaned and inspected in accordance with applicable procedures or instructions.
- A sufficient number of adequately qualified QA and QC inspection personnel were present at the work site, commensurate with the work in progress.
- The weld area cleanliness was maintained and that pipe alignment and fit-up tolerances were within specified limits.
- Weld filler material being used was in accordance with welding specifications, unused filler material was separated from other types of material and was stored properly and that weld rod stubs were properly removed from the work location.
- That there were no evident signs of cracks, excessive heat input, sugaring, or excessive crown on welds.
- Welders were qualified to the applicable process and thickness, and that necessary controls and records were in place.

No violations or deviations were identified.

14. Reactor Vessel, Integrated Head Package, and Internals - Unit 2 (50053C and 50063C)

The Unit 2 inspections consisted of examinations of the reactor vessel with the lower internals installed and the integrated head package and the upper internals which are stored in their designated laydown area.

Inspections also determined that proper storage protection practices were in place and that entry of foreign objects and debris was prevented.

No violations or deviations were identified.

15. Safety Related Components - Units 2 (50073C)

The inspection consisted of plant tours to observe storage, handling, and protection; installation; and preventive maintenance after installation of safety-related components to determine that work is being performed in accordance with applicable codes, NRC Regulatory Guides, and licensee commitments.

During the inspection the below listed areas were inspected at various times during the inspection period to verify the following as applicable:

- Storage, environment, and protection of components were in accordance with manufacturer's instructions and/or established procedures.
- Implementation of special storage and maintenance requirements such as: rotation of motors, pumps, lubrication, insulation testing (electrical), cleanliness, etc.
- Performance of licensee/contractor surveillance activities and documentation thereof was being accomplished.
- Installation requirements were met such as: proper location, placement, orientation, alignment, mounting (torquing of bolts and expansion anchors), flow direction, tolerances, and expansion clearance.
- Appropriate stamps, tags, markings, etc. were in use to prevent oversight of required inspections, completion of tests, acceptance, and the prevention of inadvertent operation.

Safety-Related piping, valves, pumps, heat exchangers, and instrumentation were inspected in the following Unit 1 and 2 areas on a random sampling basis throughout the inspection period:

- Residual Heat Removal Pump Rooms
- Diesel Generator Building
- Auxiliary Feedwater Pumphouse
- Containment Spray Pump Rooms
- Pressurizer Rooms
- Main Coolant Pump Areas
- Steam Generator Areas
- Safety Injection Pump Rooms
- RHR and CS Containment Penetration Encapsulation Vessel Rooms

- Component Cooling Water (CCW) Heat Exchangers, Surge Tanks & Pump Rooms
- Cable Spreading Rooms
- Accumulator Tank Areas
- Chemical and Volume Control System (CVCS) Letdown Heat Exchanger Pump Room
- Battery & Charger Rooms
- Nuclear Grade Piping, Valves & Fittings Storage Areas
- Spent Fuel Pool Heat Exchanger Rooms
- Pressurizer Relief Tank Area
- CVCS Centrifugal Charging Pumps & Positive Displacement Pump Rooms
- Bottom Mounted Instrumentation (BMI) Tunnel and Seal Table Area
- BMI and Supports Under Reactor Vessel
- NSCW Tower Pump Rooms and Pipe Tunnels
- Containment, Auxiliary Building, Control Building, and Fuel Handling Building auxiliary (secondary) areas

No violations or deviations were identified.

16. Safety Related Pipe Support and Restraint Systems - Unit 2 (50090C)

Periodic random inspections were conducted during the inspection period to observe construction activities during installation of safety-related pipe supports to determine that the following work was performed in accordance with applicable codes, NRC Regulatory Guides, and licensee commitments:

- Spring hangers were provided with indicators to show the approximate "hot" or "cold" position, as appropriate.
- No deformation or forced bending was evident.
- Where pipe clamps are used to support vertical lines, shear lugs were welded to the pipe (if required by Installation Drawings) to prevent slippage.
- Sliding or rolling supports were provided with material and/or lubricants suitable for the environment and compatible with sliding contact surfaces.
- Supports are located and installed as specified.
- The surface of welds meet applicable code requirements and are free from unacceptable grooves, abrupt ridges, valleys, undercuts, cracks, discontinuities, or other indications which can be observed on the welded surface.

No violations or deviations were identified.

17. Electrical and Instrumentation Components and Systems - Unit 2 (51053C) (52153C)

Periodic inspections were conducted during the inspection period to observe safety-related electrical equipment in order to verify that the storage, installation, and preventive maintenance was accomplished in accordance with applicable codes, NRC Regulatory Guides, and licensee commitments.

During the inspection period inspections were performed on various pieces of electrical equipment during storage, installation, and cable terminating phase in order to verify the following as applicable:

- Location and alignment
- Type and size of anchor bolts
- Identification
- Segregation and identification of nonconforming items
- Location, separation and redundancy requirements
- Equipment space heating
- Cable identification
- Proper lugs used
- Condition of wire (not nicked, etc.), tightness of connection
- Bending radius not exceeded
- Cable entry to terminal point
- Separation

No violations or deviations were identified.

18. Electrical and Instrumentation Cables and Terminations - Units 1 & 2 (51063C) (52063C)

a. Raceway/Cable Installation

The inspector reviewed and examined portions of the following procedures pertaining to raceway/cable installation to determine whether they comply with applicable codes, NRC Regulatory Guides and licensee commitments.

- ED-T-02, Rev. 10 Raceway Installation
- ED-T-07, Rev. 11 Cable Installation

Periodic inspections were conducted to observe construction activities of Safety Related Raceway/Cable Installation.

In reference to the raceway installation, the following areas were inspected to verify compliance with the applicable requirements:

- Identification
- Alignment
- Bushings (Conduit)
- Grounding
- Supports and Anchorages

In reference to the cable installation the following areas were inspected to verify compliance with the applicable requirements:

- Protection from adjacent construction activities (welding, etc.)
- Coiled cable ends properly secured

- Non-terminated cable ends taped
- Cable trays, junction boxes, etc., reasonably free of debris
- Conduit capped, if no cable installed
- Cable supported
- Bend radius not exceeded
- Separation

b. Cable Terminations

The inspector reviewed and examined portions of the following procedures pertaining to cable termination to determine whether they comply with applicable codes, NRC Regulatory Guides and licensee commitments.

- ED-T-08, Rev. 9 Cable Termination

In reference to cable terminations the following areas were inspected to verify compliance with the applicable requirements.

- Cable identification
- Proper lugs used
- Condition of wire (not nicked, etc.)
- Tightness of connection
- Bending radius not exceeded
- Cable entry to terminal point
- Separation

No violations or deviations were identified.

19. Containment and Safety Related Structural Steel Welding - Unit 2 (55053C) (55063C)

Periodic inspections were conducted during daily plant surveillances on safety-related steel welding at various stages of weld completion.

The purpose of the inspection was to determine whether the requirements of applicable specifications, codes, standards, work performance procedures and QC procedures are being met as follows:

- Work was conducted in accordance with a process sheet or drawing which identifies the weld and its location by system, references, procedures or instructions, and provides for production and/or QC signoffs.
- Welding procedures, detailed drawings and instructions, were readily available in the immediate work area and technically adequate for the welds being made.
- Welding procedure specification (WPS) were in accordance with the applicable Code requirements and that a Procedure Qualification Record (PQR) is referenced and exists for the type of weld being made.
- Base metals and welding filler materials were of the specified type and grade, were properly inspected, tested, and were traceable.

- Protection was provided to shield the welding operation from adverse environmental conditions.
- Weld joint geometry including thickness was specified and that surfaces to be welded were prepared, cleaned and inspected in accordance with applicable procedures or instructions.
- A sufficient number of adequately qualified QA and QC inspection personnel commensurate with the work in progress were present at the work site.
- Weld area cleanliness was maintained and that alignment and fit-up tolerances were within specified limits.
- Weld filler material being used was in accordance with welding specifications, unused filler material was separated from other types of material and was stored and controlled properly, and stubs were properly removed from the work location.
- There were no visual signs of cracks, excessive heat input, or excessive crown on welds.
- Welders were qualified to the particular process and thickness; and that necessary controls and records were in place.

No violations or deviations were identified.

20. Preoperational Test Program Implementation/Verification - Unit 1 (70302) (71302)

The inspector reviewed the present implementation of the preoperational test program. Test program attributes inspected included review of administrative requirements, document control, documentation of major test events and deviations to procedures, operating practices, instrumentation calibrations, and correction of problems revealed by testing.

Periodic inspections were conducted of Control Room Operations to assess plant condition and conduct of shift personnel. The inspector observed that Control Room operations were being conducted in an orderly and professional manner. Shift personnel were knowledgeable of plant conditions, i.e., ongoing testing, systems/equipment in or out of service, and alarm/annunciator status. In addition, the inspector observed shift turnovers on various occasions to verify the continuity of plant testing, operational problems and other pertinent plant information during the turnovers. Control Room logs were reviewed and various entries were discussed with operations personnel.

Periodic facility tours were made to assess equipment and plant conditions, maintenance and preoperational activities in progress. Schedules for program completion and progress reports were routinely monitored. Discussions were held with responsible personnel, as they were available, to determine their knowledge of the preoperational program. The Inspector reviewed numerous operation deviation reports to determine if requirements

were met in the areas of documentation, action to resolve, justification, corrective action and approvals. Specific inspections conducted are listed below:

a. Preoperational Tests

(1) Test Witnessing (70312)

The inspector witnessed selected portions of the following preoperational test procedures as they were conducted. The inspection included attendance at briefings held by the test supervisor to observe the coordination and general knowledge of the procedure with the test participants. Overall crew performance was evaluated during testing. A preliminary review of the test results was compared to the inspector's own observations. Problems encountered during performance of the test were verified to be adequately documented, evaluated and dispositioned on a selected basis.

Procedure No.	NRC Insp. No.	Test Title	Activity Observed
1-300-02	70315	Reactor Trip System and ESFAS Process Channel and Logic Response Time Test	OT and OP Delta T Reactor Trip Process Channel and Logic Response Time Test Per Steps 6.2.4.9 Through 6.2.4.26 Containment Area Radiation High Range Monitor RE-0005 and RE-0006 Containment Isolation Phase-A Process and Logic Response Time Per Steps 6.15.6.5 Through 6.15.7.13

(2) Test Results Evaluation (70400)

The inspector reviewed the following listed preoperational test results. This review was performed to ascertain if an adequate evaluation of the test results has been performed; test data was within the established acceptance criteria, or that deviations are properly dispositioned; appropriate retesting was performed where

necessary; administrative practices were adhered to; and that appropriate review, evaluation and acceptance of the test results have been performed.

Procedure No.	NRC Insp. No.	Test Title
1-3BB-01	70435	Reactor Coolant System
1-3SF-03	70432	CRDM Initial Timing
1-300-18	70317	CRDM and Reactor Trip Breakers Response Time Test
1-3PQ-01	70440	120V Vital AC (Class 1E) System
1-3KJ-01	70441	Diesel Generator Train "A" Starting Air System
1-3GT-01	70445	Containment Air Purification and Cleanup
1-3GS-02	70442	Hydrogen Monitor and Removal System
1-3KE-04	70453	Refueling Machine

b. Preoperational Surveillance Review

During the inspection period a review of records was conducted on completed surveillance task sheets where the licensee was taking credit for the surveillance via a completed preoperational test. The purpose of this inspection was to determine whether the requirements of applicable specifications, codes, standards, work performance procedures and QC procedures are being met as follows:

- Required Test Instrumentation Was Calibrated
- Test Data Was Accurate and Complete
- Surveillance Test Documentation Was Reviewed and Test Discrepancies If Any Were Rectified
- Test Results Meet the Plant Technical Specifications
- Surveillance Test Was Completed at the Required Frequency per the Plant Technical Specification Requirements
- Preoperational Test and or Construction Acceptance Test Criteria Met the Surveillance Test Acceptance Criteria

The following surveillance task sheets were reviewed for the above noted criteria during the inspection period:

Surv. Task Sheet No.	Test Description
28210-101-120	Main Steamline Safety Valve Test
28211-101 & 102	RHR Suction Relief Valve Test
28215-101, 102, &103	Pressurizer Safety Relief Valve Test
28330-101	Integrated Leak Rate Test
28331-101 & 102	Personnel Air Lock Leak Test
28332-101	Containment Equipment Hatch-LLRT
28333-101 & 103	Escape Air Lock - LLRT
28334-101	Containment Electrical Penetrations - LLRT
28337-101 through 28339-101	Containment Penetrations - LLRT
28380-101 through 28385-101	Containment Penetrations - LLRT
28711-101 & 102	Diesel Fuel Oil Tank Cleaning
28712-101	Diesel Fuel Oil Piping Pressure Test
28916-101	Containment Type A, B & C Leakage Totalization
28920-101	Containment Spray Nozzle Flow Test

During the review process the inspector noted that Surveillance Task Sheet Number 28385-101 which was the local leak rate test for one of the RHR encapsulation vessels (penetration 36) was signed off as being performed under Pre-Op 1-300-04 with a note that there is no acceptance criteria for the encapsulation vessels' leakage. The inspect questioned the licensee to determine if the encapsulation vessels' leakage was included in the total leakage rate for the Type B & C test in Preoperational Test 1-300-04 and the applicable surveillance procedure by Technical Specifications Sections 4.6.1.1.C and 4.6.1.2.d. The licensee informed the inspector that the RHR & CS encapsulation vessels' leakage had been overlooked and was presently not included in the total leakage rate for the Type B & C test in the Preoperational Test nor the applicable surveillance test. The licensee immediately initiated a Deficiency Report (No. 1-87-331) to document this deficiency and determined that when the RHR & CS encapsulation vessels' leakage is added to the total for the rest of Type B & C leakage, the total is still below the Technical Specification LCO requirement of 0.60 La. The licensee will conduct a review of all Type B & C penetrations per FSAR Table 6.2.4-1 to verify that they are all included in the total leakage rate calculation in accordance with the applicable surveillance test procedure.

Pending the results of the licensee's review of all penetrations and valves subject to Type B & C tests to confirm incorporation into the total leakage rate calculation this item will remain unresolved and be identified as Unresolved Item 50-424/86-136-01, "Review Inspection Results of the Licensee's Review of the Containment Combined Leak Rate Surveillance Calculation for All Penetrations & Valves Subject to Type B and C Tests."

21. Three Mile Island Task Action Plan Followup - Units 1 & 2 (425401B)

This inspection consists of verification that the licensee has implemented the requirements of NUREG 0737, "Clarification of TMI Action Plan Requirements" as committed to in the facility FSAR or other appropriate documents. Verification consisted of one or more of the following attributes, as appropriate, to determine acceptability for each listed action item:

- Program or procedure established
- Personnel training or qualification
- Completion of item
- Installation of equipment
- Drawings reflect the as-built configuration
- Component tested and in service or integrated into the preoperational test program

The following documents were utilized in performing the review, as appropriate:

NUREG 0578	TMI-2 Lessons Learned Task Force Status Report
NUREG 0660	NRC Action Plan Developed as a Result of the TMI-2 Accident
NUREG 0694	TMI-Related Requirements for New Operating Licenses
NUREG 0737 and	Clarification of TMI Action Plan Requirements Supplement 1
FSAR and Amendments	Final Safety Analysis Report
NUREG 1137 and Supplements	Safety Evaluation Report

(Closed) I.B.1.2 Independent Safety Engineering Group. This item requires the establishment of an onsite independent safety engineering group (ISEG) to perform independent reviews of plant operations. FSAR Section 13.4.3 discussed conformance to this item. The SER Section 13.4.3 and SER Supplement 3 Section 13.4.3 collectively concludes that this item is acceptable. This inspection reviewed the qualifications of the membership, selected sample of monthly reports and reviewed the following administrative procedures for the ISEG:

Procedure	
NOP-18-050	Nuclear Safety and Engineering Group (NSEG) Organization Responsibilities and Training - May 6, 1986

NOI-18-100	NSEG Work Assignment Log - March 19, 1986
NOI-18-125	ISEG Outstanding Items - August 26, 1986
NOI-18-150	Screening of Operating Experience Information - August 26, 1986
NOI-18-175	Subjects Requiring Independent Reviews - August 26, 1986
NOI-18-200	Review and Evaluation of Completed Industry Experience Evaluations - August 26, 1986
NOI-18-250	Incident Reviews and Reports of Incident Evaluations - August 29, 1986
NOI-18-300	Monitoring of Plant Activities - August 26, 1986
NOI-18-850	ISEG Reports and Records - August 1, 1986

This inspection concluded that the ISEG has been established and is currently functioning at a full staffing level. It was also noteworthy that additional staff consisting of temporary contractors are reviewing Vogtle against industry NTOL experience. This item is closed for both units.

(Closed) II.E.4.2, "Containment Isolation Dependability". Positions 1 thru 5 of the TMI Action Plan state in part that: The containment isolation system design shall comply with the recommendations of Standard Review Plan Section 6.2.4 (i.e. that there be diversity in the parameters sensed for the initiation of containment isolation); all non-essential systems shall be automatically isolated by the containment isolation signal; the design of control systems for automatic containment isolation valves shall be such that resetting the isolation signal will not result in the automatic re-opening of containment isolation valves; and the containment setpoint pressure that indicates containment isolation for non-essential penetrations must be reduced to the minimum compatible with normal operating conditions.

FSAR Section 6.2.4.3 states the containment isolation system utilizes diversity in the parameters sensed for the initiation of containment isolation. The two redundant train oriented containment isolation Phase A signals (CIA-A, CIA-B) are initiated on receipt of any of the following signals:

1. Any Signal Initiating a Safety Injection
2. Containment High Radiation Signal
3. Manual Containment Isolation Activation

FSAR Table 6.2.4.1 identifies the associated line as essential or non-essential and shows the automatic isolation signal for each penetration, if applicable. Containment isolation signals automatically isolate process lines which are non-essential. This item was determined to be acceptable to the staff as documented in Section 6.2.4 of the SER.

The inspector selected a sample of valves from various systems which were designated as non-essential per FSAR Table 6.2.4.1 and reviewed their applicable P&ID & elementary diagrams to verify their design reflected automatic actuation on a containment isolation signal. Likewise the

inspector selected a sample of valves designated to be essential and reviewed their applicable P&ID elementary diagrams to verify that their design did not include automatic actuation on a containment isolation signal. The following valves were reviewed:

Valve No.	Designation	Description
1HV 7136	Non-essential	Reactor Coolant Drain Tank Pump Discharge
1HV 7126	Non-essential	Reactor Coolant Drain Tank Vent Isolation
1HV 8160	Non-essential	CVCS Letdown Isolation
1HV 8112	Non-essential	Reactor Coolant Pump Seal Water Isolation
1HV 8209	Non-essential	Pass Liquid Sample Return
1HV 8211	Non-essential	Pass Gas Sample Return
1HV 8881	Non-essential	Safety Injection Pump Accumulator Fill Isolation
1HV 8890A	Non-essential	Safety Injection System Recirc. Test Isolation
1HV 8047	Non-essential	Pressurizer Relief Tank Vent Isolation
1HV 8028	Non-essential	Pressurizer Relief Tank Primary Water Isolation
1HV 3000	Essential	Atmospheric Dump Valve
1HV 1974	Essential	ACCW Train A Return Isolation
1HV 8801A	Essential	Boron Injection Tank Discharge Isolation
1HV 8835	Essential	SIS Cold Leg Loop Inlet Header Isolation
1HV 9001B	Essential	CS Pumps to Spray Header
1HV 8809A	Essential	RHR Train A to SIS Cold Leg Isolation

Also, a review was conducted of the containment isolation logic drawing to verify initiation signals.

Dwg. No.	Title
1X6AA02-232-12	Functional Diagram Safeguard Activation System

The inspector conducted field inspections during the preoperational test program and witnessed random valve logic testing for containment isolation and reset signals. The preoperational test program was set up to test individual valve logic in their respective system preoperational test procedures. The containment isolation initiation and reset feature was tested during the integrated safeguards and load sequencing test (1-300-01) which also was witnessed by the inspector. This test confirmed the design in that containment isolation valves did actuate properly on a high containment pressure (Hi-1) signal and that containment isolation valves did not automatically re-open as a result of resetting.

A review was conducted of the plant Technical Specifications Section 3/4.3.2 Table 3.3-3 and the Vogtle Electric Generating Plant precautions, limitations and setpoints for nuclear steam supply systems to verify that the containment isolation setpoint pressure for non-essential penetrations is reduced to the minimum compatible with normal operating conditions.

In addition a review was conducted of the completed calibration and analog channel operational test surveillances for high containment pressure (Hi-1) (P-0934, P-0935, and P-0936) and containment area radiation high range monitors (RE-0005 & RE-0006).

The following surveillances were reviewed:

Surv. Task Sheet	Equipment
24587-102	Containment Pressure Protection Channel II P-936 Analog Channel Operational Test
24588-102	Containment Pressure Protection Channel II P-935 Analog Channel Operational Test
24589-102	Containment Pressure Protection Channel IV P-934 Analog Channel Operational Test
24624-101	Containment High Range Area Monitor RE-0005 Calibration
24625-101	Containment High Range Area Monitor RE-0006 Calibration
24625-102	Containment High Range Area Monitor RE-0006 Analog Channel Operational Test

Based on the above noted field inspections, completed preoperational test results review, and completed surveillance calibration and channel operational test results review the inspector finds that the requirement of NUREG 0737, Item II.E.4.2 positions 1 thru 5 has been acceptably addressed, therefore this item is considered closed.

(Closed) II.E.4.2, "Containment Isolation Dependability." Position 6 of the TMI-2 Action Plan requires that containment purge valves that do not satisfy the operability criteria set forth in Branch Technical Position CSB 6-4 or the Staff Interim Position of October 23, 1979 must be sealed closed as defined in SRP 6.2.4, Item II.3.f. during operational conditions 1, 2, 3 and 4. Furthermore, these valves must be verified to be closed at least every 31 days. Sealed closed purge isolation valves shall be under administrative control to assure that they cannot be inadvertently opened. Administrative control includes mechanical devices to seal or lock the valve closed, or to prevent power from being supplied to the valve operator.

FSAR Section 6.2.4.2.1 states that the containment purge system is designed in accordance with Branch Technical Position CSB 6-4 as described in Table 9.4.6-4. Furthermore, FSAR Subsection 9.4.6 states that the minipurge 14-inch lines may be open during normal plant operation and are provided with isolation valves capable of 5-second closure against the peak

calculated containment pressure following a LOCA. The normal purge 24-inch lines are open only during a cold shutdown condition and are provided with an isolation valve capable of 10-second closure. This item was determined to be acceptable to the staff as documented in Section 6.2.4 of the SER which states that the requirement to seal close the containment normal 24-inch preaccess purge lines during operational modes 1, 2, 3, and 4 and to verify them to be closed at least every 31 days will be included in the plant's technical specifications.

The inspector conducted a review of the Vogtle Electric Generating Plant - Unit 1 Technical Specifications limiting condition for operation 3.6.1.7 and surveillance requirements 4.6.1.7.1 and determined that they incorporated the above requirements. In addition, a review of the following operations and surveillance procedures was conducted to verify implementation of the above plant technical specification requirements.

Procedure No.	Title
11125-1, Rev. 1	Containment Purge System Alignment for Startup and Normal Alignment
14228-1, Rev. 1	Operations Monthly Surveillance Logs

The above operations alignment for startup and normal alignment procedures requires that the containment normal purge 24-inch supply and exhaust valves be closed with their associated breakers in the locked open position during operation modes 1, 2, 3, and 4. The minipurge 14-inch supply and exhaust valves are also required to be closed per normal alignment procedures thereby meeting the requirement to keep them closed to the maximum extent practicable. Based on this review the inspector finds that the requirement of NUREG-0737, Item II.E.4.2 position No. 6 has been acceptably addressed, therefore this item is considered closed.

(Closed) II.E.4.2, "Containment Isolation Dependability" position 7 of the TMI-2 Action Plan requires that the containment purge and vent isolation valves must close on a high radiation signal.

FSAR Section 6.2.4.3 states the containment purge system is automatically isolated following an abnormal release of radioactivity in the containment by either of two redundant train-oriented containment ventilation isolation signals (CVI-A, CVI-B) generated upon receipt of any of the following:

1. Any signal resulting in a safety injection.
2. Containment high area radiation.
3. Containment high radioactive air particulate.
4. Containment high radioactive gas.
5. Containment high iodine concentration.
6. Manual activation of either containment spray or containment isolation phase A.

This item was determined to be acceptable to the staff as documented in Section 6.2.4 of the SER.

The inspector conducted an inspection of the field installed condition of the containment normal and minipurge system to verify that installation is in accordance with P&ID 1X4DB213-1. This inspection verified that: 1.) The containment isolation provision for the normal and minipurge line were installed in accordance with ASME Code Section III, Class 2 requirements and N-stamped as such, 2.) The inboard and outboard containment normal and minipurge supply and exhaust isolation valves are supplied by Class 1E power from Train "A" and Train "B", respectively, and 3.) Debris screens are provided on both the supply and exhaust ducting inside containment.

The following containment normal and minipurge supply and exhaust isolation valve elementary & logic diagrams were reviewed to verify design interlocks, permissives, and automatic actuation on a containment ventilation isolation signal.

Dwg. No.	Valve Identification
1X3D-BG-B04E, Rev. 3	1HV-2626A
1X3D-BG-B04H, Rev. 3	1HV-2629A
1X3D-BG-B05Y, Rev. 3	1HY-2627
1X3D-BG-B05X, Rev. 4	1HY-2628
1X5DN022-1, Rev. 2	1HV-2626A & 1HV-2626B
1X5DN022-3, Rev. 2	1HV-2627A & 1HV-2627B

A review was conducted of the applicable portions of the following completed preoperational test procedures which tested the operation of the containment normal and minipurge supply and exhaust isolation valves to verify closure on a containment ventilation isolation signal initiated by either a containment high area radiation monitor (RE-0002 & RE-0003) or the containment vent air particulate monitor (RE-2565).

Preop No.	Test Title
1-3GT-01	Containment Air Purification and Cleanup System
1-3SD-01	Digital Radiation Monitoring System
1-3SD-02	Digital Radiation Monitoring System

A review was also conducted of Fisher Qualification Report No. FQP-11AB-7, Bechtel Log No. AX5AC03-5151-4 which documented a test conducted to verify that the containment minipurge supply & exhaust isolation valves would close within their specified closure time against the peak calculated containment pressure following a LOCA.

In addition, a review was conducted of the following completed surveillance task sheets which documented the calibration and the analog channel operational test for containment area radiation monitors (RE-0002, RE-0003), and containment vent effluent air particulate monitor (RE-2565).

Surv. Task Sheet	Equipment
24622-101	Containment Low Range Area Monitor RE-0002 Calibration
24622-102	RE-0002 Analog Channel Operational Test
24623-101	Containment Low Range Area Monitor RE-0003 Calibration
24623-102	RE-0003 Analog Channel Operational Test
24624-101	Containment Vent Effluent Air Particulate Monitor RE-2565 Calibration
24624-102	RE-2565 Analog Channel Operational Test

Based on the above noted field inspections, completed preoperational test results review, and completed surveillance calibration and channel operational test results review the inspector finds that the requirement of NUREG 0737, Item II.E.4.2 Position No. 7 has been acceptably addressed, therefore this item is considered closed.

(Closed) II.F.1.2.D, "Accident Monitoring - Containment Pressure." This item was addressed in Inspection Report No. 50-424/86-111 but remained open pending completion of preoperational test 1-3RP-03 demonstrating proper instrument performance. The inspector subsequently determined that preoperational test 1-3RP-03 alone was insufficient to close this item. Therefore, the inspector reviewed pertinent instrument calibration documents and work requests to determine the status of this TMI Action item. Based on that review this item is closed for Unit 1.

(Closed) II.F.1.2.E, "Accident Monitoring - Containment Water Level Monitor." This item was addressed in Inspection Report No. 50-424/86-111 but remained open pending completion of preoperational test 1-3RP-03 demonstrating proper instrument performance. The inspector subsequently determined that preoperational test 1-3RP-03 alone was insufficient to close this item. Therefore, the inspector reviewed pertinent instrument calibration documents and work requests to determine the status of this TMI Action item. Based on that review this item is closed for Unit 1.

(Closed) II.F.1.2.F, "Accident Monitoring - Containment Hydrogen Monitor." This item was addressed in Inspection Report No. 50-424/86-111 but remained open pending completion of the preoperational test procedures demonstrating proper system performance. A completed package of documents was reviewed by the inspector consisting of instrument calibration data sheets, acceptance test records, work requests and others as appropriate. Based on that review this item is closed for Unit 1.

(Open) II.F.2, "Instrumentation for Detection of Inadequate Core Cooling." The inspection of this item was postponed due to License Condition 2.C.(8)b. delaying implementation until June 1, 1987.

(Closed) II.K.1.5 and II.K.1.10, "Review of ESF Valves" and "Operability Status". These two items are the result of IE Bulletins No. 79-05, 79-05A, 79-06A, 79-06B, 79-08 and require reviews of all plant procedures to assure that valve positions and positioning requirements do not negate the operability of proper ESF functioning. The item also includes plant administrative controls for removing and restoring systems from service to assure operability status is known. These items are thus related to item I.C.2 "Shift Relief and Turnover" and I.C.6 "Independent Verification." In general this item is controlled through good, sound procedure development.

The inspection conducted a review of the Auxiliary Feedwater system in conjunction with those personnel responsible for procedure development. How the procedures were developed from P&ID's, FSAR, TS and other commitments, written, and maintained were examined. While every valve was not verified by the inspector, a selected sample was chosen. This item also included review and discussion of the following procedures:

00304-C	Equipment Clearance and Tagging
00308-C	Independent Verification Policy
10005-C	Operability Status Indication for Plant Safety Systems
10011-C	Operations Procedure Preparation and Review Guidelines
11601-1	Auxiliary Feedwater Systems Alignment
12000-1	Refueling Recovery (Mode 6 to Mode 5)
12001-1	Unit Heatup to Hot Shutdown (Mode 5 to 4)
12002-1	Unit Heatup to Normal Operating Temperature and Pressure (Mode 4 to Mode 3)
13610-1	Auxiliary Feedwater System
14545-1	Auxiliary Feedwater Motor Driven Monthly
15546-1	Auxiliary Feedwater Turbine-Driven Monthly

The inspector concluded based on the type of development processes involved and the end procedure results that the applicant has achieved the intent of these two items. This item is closed for both units.

(Closed) II.K.1.17, "Trip Pressurizer Level Bistable." This item requires the tripping of the low level bistable so that pressurizer low pressure will initiate safety injection. For testing purposes it is allowed to be reinstated with proper controls to assure configuration. The Vogtle design does not utilize a low level bistable, testing of the pressurizer pressure bistable is a design feature, thus this item does not have applicability. This item is closed for both units.

(Open) II.K.3.5, "Automatic Trip of Reactor Coolant Pumps During Loss-of-Coolant Accident." This item is currently under review by NRR and is not considered to be an open item. The results of the NRR review is not expected to require modifications. This item while remaining open is not considered to be a licensing restraint. This item remains open for both units.

(Closed) II.K.3.9, "Proportional Integral Derivative Controller Modification." This item requires that the derivative action feature be set to zero and prevent the power-operated relief valves (PORV) opening spuriously. This item was inspected and should have been documented in NRC Rpt 50-424/86-60. The results of that inspection determined that the derivative action had been set to zero.

(Closed) II.K.3.10, "Proposed Anticipatory Trip Modification." This item concerns the probability of a small-break loss-of-coolant accident from a stuck open power-operated relief valve if the trip setpoint was raised to limit the feature to high power ranges. FSAR Section 7.2 describes this trip and SER Section 7.2.2.5 concludes that the design is acceptable. The trip setpoint's setting is blocked by the P-9 interlock at power levels below 50%. This item is closed for both units.

(Closed) II.K.3.12, "Confirm Existence of Anticipatory Reactor Trip Upon Turbine Trip." This item concerns the requirement to have an anticipatory trip. This site has this design and no further action is required. See TMI Item II.K.3.10 above. The design has been reviewed and accepted in FSAR Section 7.2.2.6. This item is closed for both units.

(Closed) II.K.3.25, "Effect of Loss of Alternating-Current Power on Pump Seals." This item requires an analysis to determine the consequences of a loss of cooling water to the reactor coolant pumps. FSAR Section 9.2.8 discusses conformance and the staff concluded in the SER Section 15.1.5.1 that the applicant is in compliance. Procedure 1-300-01 tested the feature to sequence Auxiliary Component Cooling Water (ACCW) System on (15.5 sec) during a Loss of Offsite Power Test. Annunciator Response Procedure 17004-1, Rev 2 and Abnormal Operating Procedure 18022-1, Rev 1 were reviewed. The inspection concluded that appropriate procedures had been established to limit reactor coolant pump operation to ten minutes following a total loss of ACCW. This item is considered closed for both units.

22. Initial Fuel Loading - Unit 1 (72500) (72524)

The inspector reviewed the following initial fuel loading procedure to determine whether it is consistent with FSAR commitments, Regulatory requirements, Regulatory guidance and applicable codes and standards.

1-500-01, Rev. 2 Initial Fuel Load Test Sequence

The inspector's review verified that the procedure contained and or referenced the following key areas:

- Specific commitments contained in the FSAR, and technical specifications were included.

- Appropriate management and plant review board procedure review and approval.

- Prerequisites and initial conditions included but were not limited to the following: Establishing communications between Control Room containment and fuel handling building; system valve lineups; containment integrity; status of reactor vessel, intervals, and water level; RCS temperature and water quality; dilution flow path isolation verification; boron injection flow path operable; source range audible count rate indication available in Control Room and containment; calibration and response check of in-core and ex-core flux monitors, etc.

- Notes and precautions included but were not limited to the following: Minimum crew requirements as numbers of SRO, RO and the limits for operators; containment access requirements; tool and equipment control; minimum requirements for flux monitors including audible monitors, and minimum count rate; requirements for suspension of core loading until cause is determined if an unexpected increase in count rate occurs; minimum requirements for maintaining coolant circulation in the core, etc.

- Procedure includes step by step instructions for manipulating fuel and for recording the operations.

- Procedure requires a visual check of each assembly in each core position.

The inspection included the witnessing the loading of the first assembly into the reactor vessel.

No violations or deviations were identified.