TROUTMAN, SANDERS, LOCKERMAN & ASHMORE

ATTORNEYS AT LAW CANDLER BUILDING. SUITE 1400 127 PEACHTREE STREET, N.E. ATLANTA.GEORGIA 30043 404 / 658 - 8000 CABLE: MAESTRO

JESSE P. SCHAUDIES, JR.

October 3, 1985

Mr. Bradley Jones USNRC Region II Suite 3100 101 Mariatta Street Atlanta, Georgia 30303

> Re: McNally, et al. v. Georgia Power Company Department of Labor Case No. 85-ERA-27

Dear Mr. Jones:

I have been working with Chuck Whitney in the abovecaptioned case and we have prepared the enclosed Petition and supporting brief that we want to file in this case by next Monday. Chuck has asked that I submit a copy of it to you so that you can review it and comment if you have any questions or if we have inadvertently mischaracterized anything. If there is any comment you would like to make, please call Chuck at his Augusta office at (404) 724-4267. If for some reason Chuck is unavailable, please feel free to call me.

yours. Jesse P. Schaudies

JPS/jdm Enclosures cc: Mr. Bruno Urhlich Charles W. Whitney, Esq.

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WRITER'S DIRECT DIAL NUMBER

& P. Harris



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

DEC 2 4 1985

Georgia Power Company ATTN: Mr. R. J. Kelly Executive Vice President P. O. Box 4545 Atlanta, GA 30302

Gentlemen:

SUBJECT: REPORT NOS. 50-424/85-53 AND 50-425/85-38

On November 18-22, 1985, NRC inspected activities authorized by NRC Construction Permit Nos. CPPR-108 and CPPR-109 for your Vogtle facility. At the conclusion of the inspection, the findings were discussed with those members of your staff identified in the enclosed inspection report.

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

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

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

Sincerely,

Heyl. (A. enc /fr

Virgil L. Brownlee, Chief Reactor Projects Branch 2 Division of Reactor Projects

Enclosure: Inspection Report Nos. 50-424/85-53 and 50-425/85-28

8512310219 PDR

cc w/encl:

R. E. Conway, Senior Vice President Nuclear Power

D. O. Foster, Vice President

- and General Manager Vogtle Project
- H. H. Gregory, III, General

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Manager, Vogtle Nuclear Construction G. Bockhold, Jr., Vogtle

- Plant Manager L. T. Gucwa, Chief Nuclear Engineer
- cc w/encl: (Continued See page 2)

cc w/encl: (Continued) Ruble A. Thomas, Vice President-Licensing Vogtle Project Ed Groover, Quality Assurance Site Manager C. W. Hayes, QA Manager J. T. Beckham, Vice President & General Manager - Operations J. A. Bailey, Project Licensing Manager George F. Trowbridge, Esq. Shaw, Pittman, Potts and Trowbridge Bruce W. Churchill, Esq. Shaw, Pittman, Potts and Trowbridge Ernest L. Blake, Jr., Esq. Shaw, Pittman, Potts and Trowbridge James E. Joiner, Troutman, Sanders, Lockerman and Ashmore James G. Ledbetter, Commissioner Department of Human Resources Charles H. Badger, Office of Planning and Budget, Management **Review Division** Deppish Kirkland, III, Counsel Office of the Consumer's Utility Council Douglas C. Teper, Georgians Against Nuclear Energy Laurie Fowler, Esq., Legal Environmental Assistance Foundation Tim Johnson, Executive Director Campaign for a Prosperous Georgia Morton B. Margulies, Esq., Chairman Administrative Judge, Atomic Safety and Licensing Board Panel Dr. Oscar H. Paris. Administrative Judge Atomic Safety and Licensing Board Panel Gustave A. Linenberger, Jr., Administrative Judge, Atomic Safety and Licensing Board Panel Billie Pirner Garde, Citizens Clinic Director, Government

Accountability Project

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

Report Nos.: 50-424/85-53 and 50-425/85-38

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

Docket Nos.: 50-424 and 50-425

License Nos.: CPPR-108 and CPPR-109

Facility Name: Vogtle 1 and 2

Inspection Conducted: November 18-22, 1985

12/23/85 Date Signed Inspector: Approved by 12-12-3/85 T. E. Conlon, Section Chief Engineering Branch Division of Reactor Safety

SUMMARY

Scope: This routine, unannounced inspection entailed 37 inspector-hours on site in the areas of structural concrete, post tensioning activities, and employee concerns in civil construction.

Results: No violations or deviations were identified.

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REPORT DETAILS

1. Persons Contacted

Licensee Employees

*R. E. Conway, Senior Vice President
*D. O. Foster, General Manager Vogtle Project
*M. H. Googe, Project Construction Manager
*E. D. Groover, QA Site Manager
*R. C. Harbin, Manager, Quality Control
*P. Ciccanes, Regulatory Compliance Specialist
*G. A. McCarley, Project Compliance Coordinator

Other licensee employees contacted included construction craftsmen, engineers, and technicians.

NRC Resident Inspector

*R. J. Schepens

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on November 22, 1985, with those persons indicated in paragraph 1 above. 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 materials provided to or reviewed by the inspector during this inspection.

3. Licensee Action on Previous Enforcement Matters

This subject was not addressed in the inspection.

4. Unresolved Items

Unresolved items were not identified during the inspection.

5. Independent Inspection Effort

Construction Progress

The inspector conducted a general inspection of the soils and concrete testing laboratory, concrete structures, ongoing concrete curing operations and backfill operations to observe construction progress and construction activities.

Within the areas examined, no violations or deviations were identified.

6. Containment, Structural Concrete (47054) - Unit 2

The inspector observed preparation for the final concrete placement of the Unit 2 containment dome. The placement was scheduled for November 22, 1985, but had to be rescheduled for November 26, 1985, due to adverse weather resulting from Hurricane Kate. Acceptance criteria examined by the inspector appeared in the following documents:

- Specification X2APO1, Placing, Finishing and Curing Concrete
- Procedure CD-T-02, Concrete Quality Control
- FSAR Sections 3, 12, and 17.

Observations showed that the area was being properly cleaned, that reinforcing steel was properly installed, and that equipment was being installed to allow proper placement of the concrete. Examination of the concrete testing laboratory and batch plant showed that the calibration of the batch plant and testing equipment were current and that they were in good working order. Discussions with QC inspectors and craft personnel concerning preparation for the dome placement indicated that they were aware of the specification and procedure requirements for the preparation and placement of the concrete pour for the dome.

Within the areas examined, no violations or deviations were identified.

7. Containment (Post-Tensioning) Observation of Work (47063) Unit 1

The inspector observed the stressing of horizontal tendon numbers 127, 129, and 139. Acceptance criteria examined by the inspector appear in the following documents:

- Specification X2AF04 Rev. 3, Containment Post Tensioning System
- VSL Field Instruction Manual for Installation of Post-Tensioning System, Rev. 10
- Drawing PT-11.2-1, Horizontal Tendons, Unit 1
- Drawing P1372.23, Horizontal Tendon Stressing Data

Observations included checking calibration of the stressing rams, witnessing measurement of elongation of the tendon strands, seating measurements, lift off pressure, and cutting of wire strands following completion of stressing activities. Observations and review of stressing data showed that the stressing operations were being conducted in accordance with requirements and that the operations were being monitored by quality control inspectors. Discussions with craft and quality control personnel and responsible engineers indicated they understood the requirements for the stressing operations.

Within the areas examined, no violations or deviations were identified.

8. Containment (Post-Tensions) Review of Quality Records (47065) - Unit 1

The inspector examined quality records relating to post-tensioning activities for horizontal tendons in the Unit 1 containment. Acceptance criteria examined by the inspector appear in the documents listed in paragraph 7. Records examined were for horizontal tendon numbers 2, 3, 4, 9, 13, 14, 15, 19 and 20. Records examined included; tendon installation reports, quality control checklists, stressing reports, and tendon greasing reports.

Review of these records showed that the tendons were installed in accordance with specification requirements and that problems encountered during stressing operations were being identified and properly addressed.

Within the areas examined, no violations or deviations were identified.

9. Employee Concerns, Discussions, and Findings

The following employee concerns were reviewed:

- a. Backfilling Against North Wall of Control Building
 - (1) Concern

The north wall of the control building (an exterior wall at level D) was backfilled before it cured. As a result, there was a lot of honeycombing on the wall.

(2) Discussion

The inspector examined drawings of the control building, walked down the exterior and interior of the control building, discussed placement of concrete and backfill activities in the control building with quality control inspectors and engineers and examined records relating to backfill and concrete placement for the control building.

Review of drawings showed that the exterior wall on the north side of the control building begins at level.B at elevation 180 and not at the D level as stated in the concern. Discussions with QC inspectors and engineers and examination of records disclosed the backfill was placed against the north wall of the control building before the specified time. This was identified by a quality control inspector in Deviation Report CD-1762 dated February 17, 1982. This deviation report stated that backfill was placed against the north wall of the control building to elevation 196 which was contrary to requirements that no backfill be placed above elevation 186 before placement of the level A concrete slab which ties into the north wall at elevation 200. This problem was submitted for engineering review and as a result the backfill was removed. Analysis by design engineers showed that no structural damage was done to the north control building wall. A walkdown of the control building by the inspector showed no evidence of any adverse cracking or structural damage.

Placement of the backfill against the wall would not cause honeycomb in the concrete because by the time the forms were removed, the concrete would have hardened to the point where the backfill could not have had any affect on the concrete surface. Research of the literature and experience has shown that honeycomb is caused by inadequate vibration near the outer face of the walls where the reinforcing steel interferes with the flow of the plastic concrete.

(3) Findings

Investigations showed that backfill was placed against the north wall of the control building before the specified time. This was identified and investigated by the licensee. The backfill was removed and the structure was evaluated to determine if the backfill had caused any structural damage. The analysis showed no structural damage due to the placement of the backfill. A walkdown of the structure by the inspector disclosed no evidence of structural damage. Backfill against the walls would not cause honeycomb or defects in the concrete because the concrete would have been in a hardened state by the time the forms were removed. No problems with the quality of the concrete were substantiated.

- b. Falsification of Soil Density Tests
 - (1) Concern

Soil density test results had been falsified. Proctor tests were run on the soil compaction which was done at the site. Proctor tests are tests to determine soil density and moisture and these test were done on the compacted soil for the power block. Individuals involved in this matter manipulated the test results to indicate that they were acceptable. Results are too good to be true in that results are too perfect.

(2) Discussion

The inspector examined Bechtel Specification X2APO1, "Earthwork and Related Site Activities", and Georgia Power Company procedure CD-T-O1, "Earthwork Quality Control", and reviewed proctor and field density test data on compaction of soil material in the power block from 1978 through 1980. The inspector also interviewed seven quality control inspectors that were involved in inspection of compaction of backfill in the power block.

Review of specification X2APO1 and procedure CD-T-O1 showed that the required field compaction of the backfill is specified in terms of percent of maximum dry density as determined from the laboratory modified proctor test (ASTM D-1557). In performance of the laboratory proctor test (ASTM D-1557), soil samples are compacted at varying moisture contents in a steel mold of known volume using a specified compacting effort. The purpose of the test is to determine the maximum soil density and the corresponding optimum moisture content at which this maximum density can be obtained. The test results are presented as a plot of the dry density versus moisture content. Connection of the plotted points results in a curve shaped line. A line to the curve peak from the vertical axis containing density values in pounds per cubic foot represents the maximum dry density for that material and a vertical line from the peak of the curve to the horizontal axis containing water content values in percent of dry weight represents the optimum moisture content at which the maximum dry density is obtained. Specification X2APO1 requires that soil in the power block to be compacted to an average of 97 percent of the maximum dry density determined by the laboratory proctor test. The specification also requires that the moisture content of the soil at the time of compaction be within minus thee percent or plus two percent of the optimum moisture content determined by the laboratory proctor test.

Procedure CD-T-O1 details the method for quality control testing of Category I backfill to assure the backfill is compacted to the density and moisture limits determined by the laboratory proctor test. The testing is performed by quality control (QC) soil inspectors using field density (sand cone) tests (ASTM D-1556). The results of the field density tests and the soil samples collected in performance of the field density tests are sent to the soils laboratory by the QC field inspectors. In the soils lab, laboratory technicians test the soil samples and calculate the results of the field density tests. The field density test results are determined by comparing the density of the in-place soil (determined by sand cone method) with the laboratory proctor results and computing the percent compaction (field density divided by proctor density) of the in-place backfill material. Review of the field density test data from 1978 through 1980 showed that, for the most part, the power block backfill was compacted to a density of 97 to 107 percent of the maximum density decormined by the laboratory proctor. Some of the field density tests showed that backfill was compacted to 93 to 96 percent of the maximum proctor density. These low test results were identified and addressed by the licensee. Review of the data

indicated that the results were reasonable and normal for the compacted effort being used to compact the backfill (compacted with a ten ton vibratory roller).

Interviews with the seven quality control inspectors disclosed no evidence of manipulation or falsification of soil test data. Two inspectors indicated that they heard one individual would sometimes round a decimal up (e.g., 96.5 to 97.0) to make a test appear better, but that they had never witnessed or actually seen the individual do this. Review of test data by this inspector showed no evidence where decimals had been rounded up. All seven inspectors stated that they had no knowledge of any falsification of test data and indicated that they were satisfied with the quality of the compaction of the backfill.

In addition to the investigation of compaction of soil material in the power block during this inspection to satisfy the stated concern, this NRC inspector and two other NRC inspectors from the Region II office have examined controls on backfill activities during routine inspections conducted from 1978 through 1985. During these inspections, controlling specifications and procedures were reviewed, work activities were observed and records were examined to verify that backfill activities were being conducted in accordance with NRC requirements. During these visits, the inspectors also discussed quality control of backfill activities with civil quality control inspectors to verify that quality control inspectors understood the specification requirements and that these requirements were being implemented. During these inspections, several minor violations regarding control cf moisture content were identified. The licensee was responsive in addressing and correcting these items. During one of these inspections conducted on November 16-18, 1979, this NRC inspector was informed by the Georgia Power Company QA supervisor that a severe storm on November 2, 1979, had aggravated ongoing moisture problems and eroded part of the backfill. Because the applicant failed to report the deficient condition to the backfill as required by 10 CFR 50.55(e), a Notice of Violation was issued. Subsequently a Confirmation of Action letter dated November 15, 1979, from NRC Region II to Georgia Power was issued in which it was understood that Georgia Power would not continue with backfill placement in or around the power block area or concrete placement on affected structures without concurrence of NRC. Meetings were held with the applicant at the site and at the Office of Nuclear Reactor Regulation (NRR) in Bethesda, Maryland regarding measures to be taken to correct the backfill. Corrective measures included testing to determine the extent of defective backfill, removal of defective backfill and foundation slabs, installation of drainage facilities and a dewatering system and application of gunite (sand cement mixture) on slopes to prevent additional erosion problems.

The NRC inspectors observed the corrective measures take correct the backfill and examined records documenting corrective measures during several onsite inspections. Re these inspections showed that the backfill was properly r and that measures were taken to prevent future erosion pro

Reviews of backfill activities were also performed by Geot-Engineers from the NRC office of Nuclear Reactor Regulation These reviews resulted in some concerns being raised by a Geotechnical Engineer regarding the density of the comp backfill in the power block. To satisfy these concerns, representative of the Category I backfill were taken by licensee and tested by both an independent testing labora the licensee's testing laboratory. The sampling and test these samples were witnessed and reviewed by NRC inspec Comparison of the test results from the two laboratories i that the methodology being used by the licensee to contr compaction of the backfill was reasonable and correct. addition to the laturatory tests, the licensee hired a d. company to perform in-place standard penetration tests (existing backfill to verify that the density of the backfi design requirements. These standard penetration tests we by driving a two-foot eight-inch long cylindrical tube (c sampling spoon) having a two-inch outside diameter and a three-eight inch inside diameter into the existing backfi this method, the sampling spoon, which is attached to dri is driven into the soil by blows of a 140-pound hammer f from a height of 30 inches and impacting on a driving c attached to the drill rods. Each blow count is accompli raising the cylindrical shaped hammer, which has a cente that allows it to be raised along the shaft attached to t collar, with a rope to a height of 30 inches and then allo hammer to free fall and strike the drive collar. After sampling spoon has penetrated six inches into the soil. penetration test is started and the number of blows requ produce the next one foot of penetration is recorded. over 50 blows per foot is considered very dense. Review penetration data showed the following range of blow count: backfill: 0-10 feet, 32- 131 blows with a conservative a. 50 blows; 10 to 30 feet, 62-200 blows with a conservative of 100 blows; 30 to 80 feet, 100 to 200 blows with a cons average value of 150 blows. Results of the confirmatory by the independent laboratory and the standard penetratic indicated that the recorded density values accurately ref in-place density and compaction of the backfill.

Review of NRC inspection reports also showed that a si concern was identified in 1981. This concern indicated results from backfill proctor analyses were altered to in that failing tests complied with specification requirement concern was investigated by an NRC Region II inspector and an Ni investigator during the period of May 18 to August 7, 1981. Results of this investigation, documented in NRC report number 50-424/81-09 and 50-425/81-09 dated October 22, 1981, indicate: there was no evidence that test data was being altered to indica failing tests meet requirements.

(3) Findings

Review of records and discussions with civil quality control inspectors failed to show any evidence that backfill records we falsified. Additional independent confirmatory testing of the backfill by independent organizations confirmed that the methodology being used and that the in-place density of the backfill met specification requirements. The concern was not substantiated.