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C. K. McCoy
Vice President, Nuclear
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Georgia Power
the southern electric system

February 23, 1995

LCV-0433-E

Docket Nos. 50-424
50-425

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

Ladies and Gentlemen:

VOGTLE ELECTRIC GENERATING PLANT
Proposed Method of Compliance for Protection Against
Malevolent Use of Vehicles at Nuclear Power Plants

In accordance with 10 CFR 50.4 and the amendments to 10 CFR Part 73, Georgia Power Company submits three copies of the summary description of the proposed vehicle control measures as required by 10 CFR 73.55(c)(7) and the results of the vehicle bomb comparison as required by 10 CFR 73.55 (c)(8) for Vogtle Electric Generating Plant (VEGP). Two copies of this entire submittal are also being provided to the NRC Region II office.

The enclosed information describes the VEGP compliance method to the amendments encompassing requirements for "Protection Against Malevolent Use of Vehicles at Nuclear Power Plants." This compliance method assures vehicle control measures are accomplished with the design and installation of an active and passive vehicle barrier system that fully meets the design requirements of the revised design basis threat rule.

The enclosed summary description includes the anchored jersey barrier design presented in NUREG/CR-6190. It is understood that this design is still under review by the NRC and the United States Army Corps of Engineers (USACE) and design modifications may be necessary to increase its effectiveness as a passive barrier. If the NRC/USACE determines that the present NUREG/CR-6190 jersey barrier design is unacceptable, then additional

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THIS DOCUMENT CONTAINS SAFEGUARD INFORMATION IN ACCORDANCE WITH 10 CFR 73.21, UNAUTHORIZED DISCLOSURE OF CONTENTS IS SUBJECT TO CIVIL AND CRIMINAL SANCTIONS.
Name Amy F. Hartman Date 2-23-95
Title Sr. Engineer Organization SNC-NEL

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actions may be necessary to incorporate an enhanced design at VEGP where applicable. Depending on the impact to the VBS procurement and installation schedule caused by significant changes in the jersey barrier design requirements, any deviation from meeting the VBS final installation and compliance deadline of February 29, 1996, will be appropriately communicated to the NRC.

Drawing AX1D08SA010 is the only document contained in this submittal that has been categorized as safeguards information and therefore it should be withheld from public disclosure in accordance with 10 CFR 73.21.

Should you have any questions about this subject, please contact this office.

Sincerely,

C. K. McCoy

CKM/AFS/afs

Enclosures:
"Proposed Vehicle Control Measures Summary Description and Vehicle Bomb Comparison"
Attached Drawings -
AX1D08SA010- "Security Facilities Layout, VBS & Safe Standoff Distance" ***(SGI)***
AX1D08SA011- "Security Facilities Layout, VBS, Partial Plan"
AX1D08SA012- "Security Facilities Layout, VBS, Partial Plan"

xc: Southern Nuclear Operating Company
Mr. B. R. Quick (w all)

Georgia Power Company
Mr. J. B. Beasley, Jr. (w/o drawings)
Mr. M. Sheibani (w/o drawings)
NORMS (w/o drawings)

U. S. Nuclear Regulatory Commission
Mr. S. D. Ebneter, Regional Administrator (w/2 copies-all)
Mr. D. S. Hood, Licensing Project Manager, NRR (w/o drawings)
Mr. B. R. Bonser, Senior Resident Inspector, Vogtle (w/o drawings)

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VOGTLE ELECTRIC GENERATING PLANT

Proposed Vehicle Control Measures Summary Description and
Vehicle Bomb Comparison Results

I. BACKGROUND:

By Federal Register dated August 1, 1994, the Nuclear Regulatory Commission (NRC) issued a final rule change to 10 CFR Part 73 to require "Protection Against Malevolent Use of a Vehicle at Nuclear Power Plants". This rule change amends physical protection regulations for operating nuclear power reactors and supersedes previous actions taken by licensees in response to Generic Letter 89-07, "Nuclear Power Reactor Safeguards Contingency Planning for Surface Vehicle Bombs," dated April 28, 1989, and it's associated regulations.

This amended rule revised the design basis threat to include the malevolent use of a land vehicle for purposes of transporting people, hand carried equipment, and/or a vehicle bomb to the proximity of vital areas, for purposes of radiological sabotage. The amendments require licensees to install vehicle control measures, including a vehicle barrier system (VBS), to protect the plant's vital areas, vital equipment and systems from the malevolent use of a land vehicle in this manner.

Licensees are required to submit to the NRC a response summarizing their proposed modifications for rule compliance within 180 days after the rule's effective date of August 31, 1994. Therefore a response to the NRC is required by the end of February 1995, and implementation of the modifications and rule compliance is required by February 29, 1996, which is 18 months from the effective date of the rule.

The enclosed summary description confirms that the vehicle control measures, including vehicle control barriers, required by 10 CFR 73.55(c)(7) will protect against the use of a land vehicle as a means of transportation to gain unauthorized proximity to vital areas. Also, the land vehicle bomb comparison, required by 10 CFR 73.55(c)(8), shows that the vehicle control measures proposed will provide adequate protection against a land vehicle bomb.

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II. PROPOSAL SUMMARY:

A. Methodology and Description Summary

Protection against the malevolent use of a four wheeled land vehicle as a mode of transportation of people and/or weapons into the vicinity of vital equipment, or as a land based vehicle bomb used to penetrate the protected area and gain unauthorized access to a PA or VA is accomplished at VEGP by installing a continuous barrier that encompasses the vital and protected areas of the plant. The continuous barrier consists of passive barriers with one active barrier for PA vehicle access.

Guidance used to locate the vehicle barrier system and selection of the specific barrier types was Regulatory Guide 5.68, Volumes 1 and 2 of NUREG/CR-6190, and NEI supplemental barrier system designs. The screening criteria in volume 1 of NUREG/CR-6190 and the computer software furnished by the Nuclear Regulatory Commission (NRC) was used to determine the minimum safe standoff distance (MSSD). Except for two locations, the initial screening criteria produced acceptable results. A more refined analysis was required for these two locations. After determination of the MSSD, the vehicle barrier system was located outside of the required MSSD envelope. The active and passive barrier types were then selected using the guidance in Volume 2 of NUREG/CR-6190 and also incorporates vehicle barrier types previously reviewed and approved by the NRC staff subsequent to the publish date of NUREG/CR-6190. The resulting vehicle barrier system design and installation will provide the necessary security features at VEGP in order to meet the new requirements for protection from the malevolent use of a land vehicle as a bomb, or as a means of transporting people and/or weapons in order to gain unauthorized access or proximity to vital areas for purposes of radiological sabotage.

B. Description of Vehicle Barrier System:

The attached design drawings have been created to show a general arrangement of VEGP's major buildings and structures that house vital equipment and

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systems. These drawings provide the basis for evaluating the VBS design and the security features of VEGP's protected area boundary and its combined ability to protect against the design basis threat land vehicle bomb. These drawings have incorporated the location and types of protected area individual access points; the location and access to vital area structures, systems and equipment; the operational requirements of these structures, systems and equipment; traffic flow inside and outside VEGP's protected area boundary; and other physical and topographical features of the plant site.

The proposed VBS for Vogtle consists of passive and active barriers located outside the protected area either adjacent to or integrated into the existing nuisance fence. Where possible, existing structures such as the Administration Building and the Receiving Warehouse and Loading Dock are incorporated into the VBS design. These buildings are constructed using siding made from precast concrete panels. The remaining portions of the VBS are designed to resist the maximum kinetic energy achieved by the design basis vehicle. A combination of several types of active and passive barriers are used in the proposed VEGP VBS design in order to optimize the design effectiveness, including environmental and aesthetic aspects of the system and, at the same time, to minimize the overall initial and long term maintenance cost. Drawings AX1D08SA010 through AX1D08SA012 show the general layout and partial plans for the VBS at VEGP and should be referenced when reviewing the individual barrier descriptions below.

C. Vehicle Barriers System - Passive Barriers Used:

1. Cable barrier system - Most of the VBS will be protected by use of a cable barrier system. This system was designed by using the alternate design submitted by the Nuclear Energy Institute (NEI) to the NRC on January 3, 1995. This method was later found to be acceptable by the United States Army Corps of Engineers and the NRC as documented in the NRC letter to NEI dated January 25, 1995. The design consists of attaching steel cable to an embedded post for anchorage. Due to the site specific parameters of the soil, the post and foundation are being designed to ensure its performance will be within the design envelope of the barrier design. This design is scheduled for

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completion in spring of 1995. The additional standoff distance required due to the stretch of the cable was calculated using the method provided by NEI.

2. Fixed steel bollards - At areas where personnel egress is required or where another type barrier is impractical, fixed steel bollards will be installed. The design is based on the details provided in NUREG/CR-6190, Volume 2.

3. Anchored, precast concrete Jersey barriers - Precast concrete Jersey barriers will be installed in the corners of the plant, short runs where cabling is impractical, and around the Plant Entry and Security building. The design is based on the details provided in NUREG/CR-6190, Volume 2. These barriers will be anchored into a suitable foundation.

D. Vehicle Barrier System - Active Barriers Used:

1. Removable bollard barriers - These barriers are used where minimum access is needed for operational and maintenance activities. The design for this barrier is based on the alternate design submitted by NEI to the NRC on January 3, 1995. This method was later found to be acceptable by the United States Army Corps of Engineers and the NRC as documented in NRC letter to NEI dated January 25, 1995. An embedded sleeve will be placed in the foundation for installing a removable post.

2. Nasatka Maximum Security Barrier Model (NMSB) VIIa - This barrier is a commercially available, hydraulically operated barrier with manual backup. This model type has been crash tested and certified to the requirements of the design basis threat and design basis vehicle. The barrier is manufactured by Nasatka Barrier, Inc. and will be installed near the main gate of the perimeter fence.

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E. Special Considerations:

1. There are no deeply embedded or underground structures, systems or components located outside of the proposed VBS at VEGP that require protection from the design basis threat land vehicle bomb.

2. The proposed VBS design for VEGP does not require any special considerations, such as forcing the traffic to slow down by introducing artificial barriers in the path of the vehicle (i.e., weaving), or other traffic control devices.

3. For conservatism, no credit has been taken for the obstruction or shielding provided by one barrier or structure on another barrier or structure.

4. Based upon the results of the vehicle bomb comparative analysis no damage control actions or additional security measures, other than the proposed VBS discussed herein, are required to protect against the design basis land vehicle bomb.

III. VEHICLE BOMB COMPARISON RESULTS:

Title 10 of the Code of Federal Regulations, Chapter I, Part 73 and U. S. Nuclear Regulatory Guide 5.68, "Protection Against Malevolent Use of Vehicles at Nuclear Power Plants," are the design bases for the proposed VBS. Using the guidelines specified in Volumes 1 and 2 of NUREG/CR-6190 and the computer software furnished by the NRC, "Facility and Component Explosive Damage Assessment Program (FACEDAP) version 1.2", the minimum safe standoff distance (MSSD) for each building/structure housing vital equipment or systems at VEGP was calculated. Since all VEGP structures housing vital equipment or systems are designed to withstand seismic loads and are constructed from reinforced concrete, the criteria specified for heavy equipment in section 5 of NUREG/CR-6190, Volume 1 was used for the MSSD. These MSSDs were then verified by using the proper design parameters for each structure, and comparing the results to the minimum standoff distances provided in Tables 4.1 through 4.6 of NUREG/CR-6190, Volume 1 and the FACEDAP program. Likewise, the MSSD for all tanks was determined to be bounded by the 100 feet as allowed in section 5 of NUREG/CR-6190, Volume 1.

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When comparing the MSSDs with the proposed location of the VBS, it was determined that all MSSDs were within the envelope of the VBS (including cable stretch), except two. These structures required a more detailed analysis. Therefore, the FACEDAP program was utilized. Physical characteristics of these structures were input into the FACEDAP and a lesser MSSD was found to be acceptable. A summary of the MSSDs for VEGP vital areas is shown on drawing AX1D08SA010. These MSSDs were superimposed on the general arrangement drawings of the plant site in order to evaluate the location of the VBS. In addition, superimposing the MSSDs on the general arrangement drawings helped to determine the most cost effective modifications required to the existing plant's security features in order to provide adequate protection against the design basis threat land vehicle bomb. After reviewing the composite drawings in detail, and considering all the requirements for the plant operation; such as physical security, traffic flow, routine maintenance, delivery of material, personnel access, and cost effectiveness; the VBS was designed to meet the requirements of the 10 CFR 73.55 amendments and comply with the guidance of Regulatory Guide 5.68 and NUREG/CR-6190.

IV. CONCLUSIONS:

As shown on attached drawings AX1D08SA010 through AX1D08SA012, the location and physical features of the proposed VBS encompass the required MSSDs for each vital area, equipment or system. Therefore, the proposed vehicle control measures and vehicle bomb comparison results for VEGP meet the requirements of the 10 CFR 73.55 amendments and as outlined in Regulatory Guide 5.68.

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