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SAFEGUARDS INFORMATION
(DECONTROLLED IF DETACHED FROM DRAWINGS SK-SC-94-0579-C001 & -C002)

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Southern Nuclear Operating Company
the southern electric system

February 21, 1995

10 CFR 50.4

Docket Numbers: 50-348
50-364

Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Joseph M. Farley Nuclear Plant (FNP)
Protection Against Malevolent Use of Vehicles At Nuclear Power Plants

Gentlemen:

In accordance with the requirements of amendments to the 10 CFR 73 final rule entitled "Protection Against Malevolent Use of Vehicles at Nuclear Power Plants," a summary description of Southern Nuclear Operating Company's proposed method of compliance for FNP is submitted for your information. The vehicle control measures outlined in the enclosure will protect against the use of a land vehicle as a means of transportation to gain unauthorized proximity to vital areas, and fully meet the Commission's design goals and criteria for protection against a land vehicle bomb. Per 10 CFR 50.4(b)(4), the signed original and three copies are being provided to the NRC Document Control Desk in Washington, DC, and two copies are being provided to the NRC Region II Office.

The design details contained in the summary description include the anchored jersey design presented in NUREG/CR-6190. It is understood that this design is still under review by the NRC and the USACE, and modifications to this design may be necessary to increase its effectiveness. If the NRC/USACE determines that the NUREG/CR-6190 presented design is not acceptable, then additional actions may be necessary to address the revised design. Depending on the procurement and installation schedule, any required changes to the jersey barrier design may affect the final installation and compliance date of February 29, 1996, for the vehicle barrier system.

Drawings SK-SC-94-0579-C001 and SK-SC-94-0579-C002 in the enclosure contain safeguards information as defined by 10 CFR 73.21, and in accordance with Section 147 of the Atomic Energy Act of 1954, as amended, should not be placed in the NRC public document room. The information categorized as safeguards information is appropriately designated.

Respectfully submitted,

Dave Morey

Enclosure and cc: See next page.
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Enclosure: "Proposed Vehicle Control Measures Summary Description and Vehicle Bomb Comparison Results" and the attached drawings listed below

- SK-SC-94-0579-C001 **(Safeguards Information)**
- SK-SC-94-0579-C002 **(Safeguards Information)**
- SK-SC-94-0579-C003
- SK-SC-94-0579-C004
- SK-SC-94-0579-C005

cc: Nuclear Regulatory Commission, Washington, DC
Document Control Desk (three {3} copies) **(contains safeguards information)**

Nuclear Regulatory Commission, Washington, DC
Mr. B. L. Siegel (cover letter only)

Nuclear Regulatory Commission, Region II
Mr. S. D. Ebneter, Regional Administrator) (two {2} copies) **(contains safeguards information)**
Mr. T. M. Ross, Senior Resident Inspector (cover letter only)

ENCLOSURE

FARLEY NUCLEAR PLANT
PROPOSED VEHICLE CONTROL MEASURES SUMMARY
DESCRIPTION AND VEHICLE BOMB COMPARISON RESULTS

FARLEY NUCLEAR PLANT
PROPOSED VEHICLE CONTROL MEASURES SUMMARY
DESCRIPTION AND VEHICLE BOMB COMPARISON RESULTS

I. GENERAL

By Federal Register dated August 1, 1994, the Nuclear Regulatory Commission (NRC) issued rule changes to 10 CFR Part 73 to provide "Protection Against Malevolent Use of Vehicles at Nuclear Power Plants." These rule changes amend physical protection regulations for operating nuclear power reactors and supersede previous actions taken by licensees to develop and implement a plan to respond to Generic Letter 89-07 and associated regulations.

The design basis threat for radiological sabotage now includes (1) the use of a land vehicle to transport personnel and hand-carried equipment to the proximity of vital areas, and (2) a bomb in the proximity of vital areas. The amendments require licensees to install vehicle control measures, including a vehicle barrier system (VBS), to protect the plant's vital areas, equipment, and systems against the malevolent use of a land vehicle.

Licensees are required to submit to the NRC a summary description of the proposed vehicle control measures and the results of the vehicle bomb comparison for complying with the rule by February 28, 1995. Full implementation of the modifications is required by February 29, 1996.

II. PROPOSED VEHICLE CONTROL MEASURES SUMMARY DESCRIPTION

A. DESCRIPTION SUMMARY

Attached drawings SK-SC-94-0579-C001 and SK-SC-94-0579-C002 (which both contain safeguards information) provide the general arrangements of the plant's major buildings and structures, which include all vital areas, equipment, and systems. These drawings show the maximum obtainable approach speed at each segment of the proposed VBS.

These drawings are the bases for evaluating the security features of the plant's protective boundaries, the requirement and purpose of individual access points to the plant's protected areas, access to the structures and equipment for routine maintenance activities, operational requirements of plant structures and equipment, traffic flow inside and outside of the plant's protected boundaries, and other physical and topographical features of the plant site.

B. DESCRIPTION OF VBS SYSTEM

The proposed VBS incorporates many of the existing plant structures into its design scheme. The major structures/components included in the design are a large reinforced concrete building (Low Level Radwaste Storage Building); very substantial structural steel buildings with steel or pre-cast, pre-stressed concrete sidings (Turbine Building,

PROPOSED VEHICLE CONTROL MEASURES SUMMARY DESCRIPTION
AND VEHICLE BOMB COMPARISON RESULTS (CONTINUED)

Secondary Access Point, and Service Building); deep open sumps for circulating water pumps; main circulating water mechanical cooling towers; wide, deep, and open circulating water canals; a large water storage tank founded on an elevated reinforced concrete mat; and a large, open water storage pond with a steep shoreline that has large diameter rip-raps on the banks.

A combination of several types of active and passive barriers is used in the proposed VBS 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 installation and maintenance costs.

C. VBS SYSTEM PASSIVE VEHICLE BARRIERS

1. Anchored Jersey barriers as detailed in Attachment 5.

2. Steel bollard barriers (fixed) as detailed in Attachment 5.

D. VBS SYSTEM ACTIVE VEHICLE BARRIERS

1. Removable steel bollard barriers as detailed in Attachment 5. (These barriers will be used where access to certain areas is needed on an infrequent basis for maintenance activities.)

2. Commercially available, manually operated, crash tested, flush mounted steel barriers meeting the requirements of the Design Basis Threat and Design Basis Vehicle. (These manually operated model NMSB VII barriers manufactured by Nasatka will be used singularly or in tandem as required by access roadway clearances.)

E. UNDERGROUND STRUCTURES

All deeply embedded and underground structures outside of the proposed VBS that may house vital equipment, systems, or circuits, such as service water piping, conduit runs, pull boxes, et cetera, that connect the service water intake structure with the main power block are protected by an average of approximately 8 feet or more of quality backfill. Also, because of redundancy in the design and physical separation (in excess of 20 feet) between Train "A" and Train "B" serving the service water pumps, the effects of a potential malevolent vehicle as specified in Regulatory Guide 5.68 will not prohibit the plant from performing a shutdown of both units, and maintaining both units in a safe shutdown condition. This conclusion is based on calculations which confirm that the design basis land vehicle bomb could not destroy both trains of equipment if placed directly between both trains of equipment. If detonation occurs directly over one train, then the other train is available for safe shutdown.

PROPOSED VEHICLE CONTROL MEASURES SUMMARY DESCRIPTION
AND VEHICLE BOMB COMPARISON RESULTS (CONTINUED)

F. SPECIAL CONSIDERATIONS

1. The proposed design does not require any special traffic control devices such as forcing the traffic to slow down by introducing artificial barriers in the roadway (weaving).

2. For conservatism, no credit was taken for obstruction or shielding provided by one barrier or structure on another barrier or structure.

3. Based on the results of the vehicle bomb comparative analysis, no damage control actions or additional security measures are required to protect against the design basis bomb.

III. VEHICLE BOMB COMPARISON RESULTS

The criteria contained in the revision to 10 CFR Part 73 and Regulatory Guide 5.68, dated August 1994, provide the design bases for the proposed VBS.

Per the guidelines specified in References 2 & 3 and the computer software furnished by the NRC, the Minimum Safe Standoff Distance (MSSD) for each Plant Farley building/structure (barrier) which houses vital equipment or systems was calculated based on the location and physical properties of that particular barrier. In calculating these MSSDs for enclosed equipment, the enclosure's (barrier's) physical characteristics, such as material properties, thickness, reinforcement configuration and arrangements (one-way or two-way), reinforcement ratios, any significant openings, and other pertinent data, were considered. Also, MSSDs were calculated for any exposed vital equipment, such as Condensate Storage Tanks. In addition, MSSDs were calculated for selected non-vital equipment desired to be protected, such as the Cask Gantry Crane and the Vent Stacks on top of the Auxiliary Buildings.

These MSSDs were superimposed on the general arrangement drawings of the plant site for evaluating where and what type of cost effective modifications to the existing plant's security features, if any, are needed in order to provide adequate protection against the malevolent use of a vehicle (as a battering ram and a moving bomb) at the plant site. The MSSDs are shown on attached drawings SK-SC-94-0579-C001 and SK-SC-94-0579-C002 (which both contain safeguards information).

After reviewing the composite drawings in detail and considering all of the requirements for plant operation such as physical security, traffic flow, routine maintenance, delivery of material, personnel access, and cost effectiveness, a VBS was designed that complies with the guidance of Regulatory Guide 5.68 and NUREG/CR-6190, and is completely outside all MSSDs and Protected Area boundaries.

PROPOSED VEHICLE CONTROL MEASURES SUMMARY DESCRIPTION
AND VEHICLE BOMB COMPARISON RESULTS (CONTINUED)

IV. CONCLUSION

The FNP vehicle control measures summary description required by 10 CFR 73.55(c)(7) confirms that the vehicle control measures at FNP will protect against the use of a land vehicle as a means of transportation to gain unauthorized proximity to vital areas. Also, the FNP vehicle bomb comparison required by 10 CFR 73.55(c)(8) confirms that the vehicle control measures at FNP meet the Commission's design goals and criteria for protection against a land vehicle bomb.

V. REFERENCES

1. Regulatory Guide 5.68. *Protection Against Malevolent Use of Vehicles at Nuclear Power Plants*, August 1994.

2. NUREG/CR-6190, Vol. 1, *Protection Against Malevolent Use of Vehicles at Nuclear Power Plants, Vehicle Barrier System Sitting Guidance for Blast Protection*, August 1994.

3. NUREG/CR-6190, Vol. 2, *Protection Against Malevolent Use of Vehicles at Nuclear Power Plants, Vehicle Barrier System Selection Guidance*, August 1994.

4. NUREG/CR 4250, *Barrier: Emphasis on Natural Features*, July 1985.

VI. ATTACHMENTS

1. SK-SC-94-0579-C001, General Layout - Proposed VBS **(contains safeguards information)**

2. SK-SC-94-0579-C002, Service Water Intake Structure General Layout - Proposed VBS **(contains safeguards information)**

3. SK-SC-94-0579-C003, Partial Plans - Barrier Options

4. SK-SC-94-0579-C004, Partial Plans - Barrier Details

5. SK-SC-94-0579-C005, Barriers - Typical Details