

Northern States Power Company

Monticello Nuclear Generating Plant 2807 West Hwy 75 Monticello, Minnesota 55362-9637

SAFEGUARDS INFORMATION

February 23, 1995

NT

10 CFR Part 73.55(c)

Director of Nuclear Reactor Regulation U S Nuclear Regulatory Commission Attn: Document Control Desk Washington, DC 20555

> MONTICELLO NUCLEAR GENERATING PLANT Docket No. 50-263 License No. DPR-22

Submittal of Vehicle Barrier System Summary Description

Effective August 31, 1994 the NRC amended its physical protection regulations for operating nuclear power reactors. The amendments modify the design basis threat of radiological sabotage to include the use of a land vehicle by adversaries for transporting personnel and their hand-carried equipment to the proximity of vital areas and to include a land vehicle bomb. The amendments also require the installation of vehicle control measures, including vehicle barrier systems, to protect against the malevolent use of a land vehicle.

The purpose of this letter is to transmit the enclosed summary description of the Monticello vehicle barrier system (VBS) as required by 10CFR73.55(c)(9)(i). Additionally, this letter confirms that the Monticello VBS design will fully meet the requirements of 10CFR73.55(c)(7) and (c)(8)(i) and that the VBS will be installed by February 29, 1996 as required by 10CFR73.55(c)(9)(ii).

The enclosure contains Safeguards information which should not be placed in the Public Document Room. If you have any questions or comments please call Mel Opstad on 612-295-1653.

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Enclosure - Summary Description Monticello Vehicle Barrier System

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- c: (with Safeguards Attachment) Security Superintendent, Monticello
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ENCLOSURE February 23, 1995 Page 1 of 5

SAFEGUARDS INFORMATION

SUMMARY DESCRIPTION MONTICELLO VEHICLE BARRIER SYSTEM

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ENCLOSURE February 24, 1995 Page 2 of 5

SAFEGUARDS INFORMATION

EXECUTIVE SUMMARY

The vehicle barrier system (VBS) design for the Monticello Nuclear Generating Plant will fully meet the requirements of 10CFR73.55(c)(7) and (c)(8)(i). The VBS is comprised of active and passive barriers. The Mississippi river and existing buildings serve as portions of the passive barrier.

PASSIVE BARRIERS

The passive barrier system will use a combination of the following:

- Jersey Barriers installed to meet the design requirements of NUREG/CR-6190 Volume 2, Revision 1 or Super Barriers to meet the requirements of GPU Nuclear drawing 3E-SK-S-107 as approved by the NRC letter to NEI dated February 16, 1995. (NSP is aware the NRC is currently re-evaluating the Jersey Barrier design described in Revision 1 due to questions concerning the ability of the barrier to stop the design basis vehicle at approach angles greater than 25 degrees.)
- 2. Bollard/Cable barriers installed to meet the requirements of the alternate cable design as submitted by Sargent and Lundy & Southern Company Services and approved by the NRC letter to NEI dated 1-25-95. The Bollard/Cable barriers will be installed at locations outside the calculated (safe) stand-off distances to allow for vehicle penetration which varies from approximately 8 feet to 27 feet depending on the number of cables used and the bollard spacing. There is no portion of the VBS where the penetration would be within the calculated (safe) standoff distance.
- The Mississippi River and two existing plant buildings.

The VBS will utilize the Mississippi River on the north side of the plant as a "natural" passive barrier.

Warehouse No. 5 on the southeast corner and the guardhouse on the south will also serve as part of the passive barrier.

The location of the proposed VBS is shown on Attachment 2. This figure shows a general layout of the Bollard/Cable and Jersey Barrier system being used at Monticello. The proposed passive barriers will be located a minimum of 8 feet outside the existing outer protected area fence. The final location of the barriers may vary slightly from what is shown on Attachment 2, however, the requirements of NUREG/CR-6190 Volume 1, Revision 1 and Volume 2, Revision 1 will be met.

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ENCLOSURE February 24, 1995 Page 3 of 5

SAFEGUARDS INFORMATION

Removable Passive Barriers to Allow Infrequent Access

Removable Jersey Barriers or Super Barriers in-line with the Bollard/Cable barriers will be installed in three locations to allow infrequent access for maintenance vehicles. The design of these access points will meet the requirements of NUREG/CR-6190 Volume 2, Revision 1 or the GPU Nuclear drawing 3E-SK-S-107. These access points will be located:

- * on the river service road on the north side of the site
- * north of Warehouse No 5 on the east side of the site
- * on the west side of the site

ACTIVE BARRIERS

Main North/South Vehicle Gate

The existing main outer vehicle gate will be removed and replaced with a DELTA model SC3000S power operated cantilever gate. The manufacturer has provided a Certificate of Conformance stating the SC3000S gate will stop a vehicle which is within the weight and velocity characteristics as defined in the NUREG/CR-6190 Volume 2, Revision 1, Section 3.3 and will meet or exceed the maximum parameters of the design basis vehicle threat and protection criteria found in Regulatory Guide 5.68.

Secondary Vehicle Gates

The secondary East/West vehicle gate, the Turbine Building railroad access gate, and Reactor Building railroad access gate will be DELTA Model TT212E manual lift gates. The manufacturer has provided a Certificate of Conformance stating the TT212E gate will stop a vehicle which is within the weight and velocity characteristics as defined in the NUREG/CR-6190 Volume 2, Revision 1, Section 3.3 and will meet or exceed the maximum parameters of the design basis vehicle threat and protection criteria found in Regulatory Guide 5.68.

LAND VEHICLE BOMB COMPARISON

In accordance with the guidelines of NUREG/CR-6190 Volume 1, Revision 1, the minimum safe stand-off distances between the buildings housing vital equipment and the design basis bomb threat were determined for the Monticello Nuclear Generating Plant. The table in Attachment 1 shows the results of this analysis.

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ENCLOSURE February 23, 1995 Page 4 of 5

SAFEGUARDS INFORMATION

Attachment 1, lists the affected plant vital area buildings, exterior wall construction characteristics and the calculated (safe) stand-off distances. All vital equipment required for safe shutdown is protected by buildings or enclosures capable of withstanding an impact from a tornado missile. The calculated (safe) stand-off distances are either the minimum safe stand-off distance from the tables included in NUREG/CR-6190 Volume 1, Revision 1, or the actual plant stand-off distances which were verified as acceptable using the FACEDAP computer program.

The bomb comparison analysis shows that the building walls, together with the actual stand-off distance (which is in all cases greater than the calculated safe stand-off distance), will provide acceptable protection for the systems and components contained within the buildings against the effects of a design basis bomb at the proposed vehicle barrier.

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ENCLOSURE February 23, 1995 Page 5 of 5

SAFEGUARDS INFORMATION

ATTACHMENTS:

- Attachment 1, Table showing calculated (safe) stand-off distances to each vital area building, minimum actual distances from the proposed VBS to the various vital area buildings, and wall thickness/reinforcement information.
- 2. Attachment 2, Site Plan showing location and type of proposed vehicle barriers, location of vital area buildings, and the minimum actual distance from vital area buildings to the proposed VBS. General location and type of proposed active barriers are also shown on this drawing.

REFERENCES:

- Final rule revising 10 CFR Part 73 "Protection Against Malevolent Use of Vehicles at Nuclear Power Plants" as published in the Federal Register Vol. 59 No. 146 Monday August 1, 1994.
- Letter dated July 21, 1994 from Ledyard B. Marsh, U.S. NRC, to Roger O. Anderson, NSP Co. titled "Characteristics of Design Basis Vehicle".
- Reg Guide 5.68 dated August 1994 "Protection Against Malevolent Use of Vehicles at Nuclear Power Plants".
- NUREG/CR-6190 "Protection Against Malevolent Use of Vehicles at Nuclear Power Plants, Vehicle Barrier System Siting Guidance for Blast Protection" Volume 1, Revision 1 (published 12/1/94).
- NUREG/CR-6190 "Protection Against Malevolent Use of Vehicles at Nuclear Power Plants, Vehicle Barrier System Selection Guidance" Volume 2, Revision 1 (published 12/1/94).
- 6. NEI letter dated February 16, 1995 to NEI Administrative Points of Contact titled "Supplemental Information on the Use of the Jersey Barrier Design of NUREG/CR-6190, Vol. 2, Rev. 1, to Meet Security Requirements to Protect Against Malevolent Use of Vehicles." (It is noted that this letter transmitted the February 16, 1995 letter from the NRC to NEI that approved the Super Barrier design as given in GPU Nuclear drawing 3E-SK-S-170.)
- 7. NEI letter dated January 26, 1995 to Attendees NEI Workshop on Barriers (December 6-7, 1994) titled "Supplemental Passive Barrier System Designs to Meet Security Requirements to Protect Against Malevolent Use of Vehicles." (It is noted that this letter transmitted the January 25, 1995 letter from he NRC to NEI that approved the alternate cable design for the Bollard/Cable barrier as submitted by Sargent and Lundy & Southern Company Services.)

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