



Natural Terrain Credited as Vehicle Barrier System

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Introduction

During a recent Security Baseline inspection, the NRC identified a violation related to a licensee's vehicle barrier system (VBS). What makes this issue somewhat unique is the fact that this facility relies on natural terrain as a VBS, in addition to manmade structures.

Regulatory Requirements

- 10 CFR 73.55(e) requires licensees to identify and analyze site-specific conditions to determine the specific use, type, function, and placement of physical barriers needed to satisfy the physical protection program design requirements of § 73.55(b).
- 10 CFR 73.55(e)(10)(i)(C) requires licensees to provide periodic surveillance and observation of vehicle barriers and barrier systems adequate to detect indications of tampering and degradation or to otherwise ensure that each vehicle barrier and barrier system is able to satisfy the intended function.

Regulatory Guidance

- Licensees that seek more specific guidance should also refer to both NUREG/CR-4250 “Vehicle Barriers: Emphasis on Natural Features,” and NUREG/CR-6190-V2-R1 “Protection Against Malevolent use of Vehicles at Nuclear Power Plants: Vehicle Barrier System Selection Guidance.”

Barrier Types

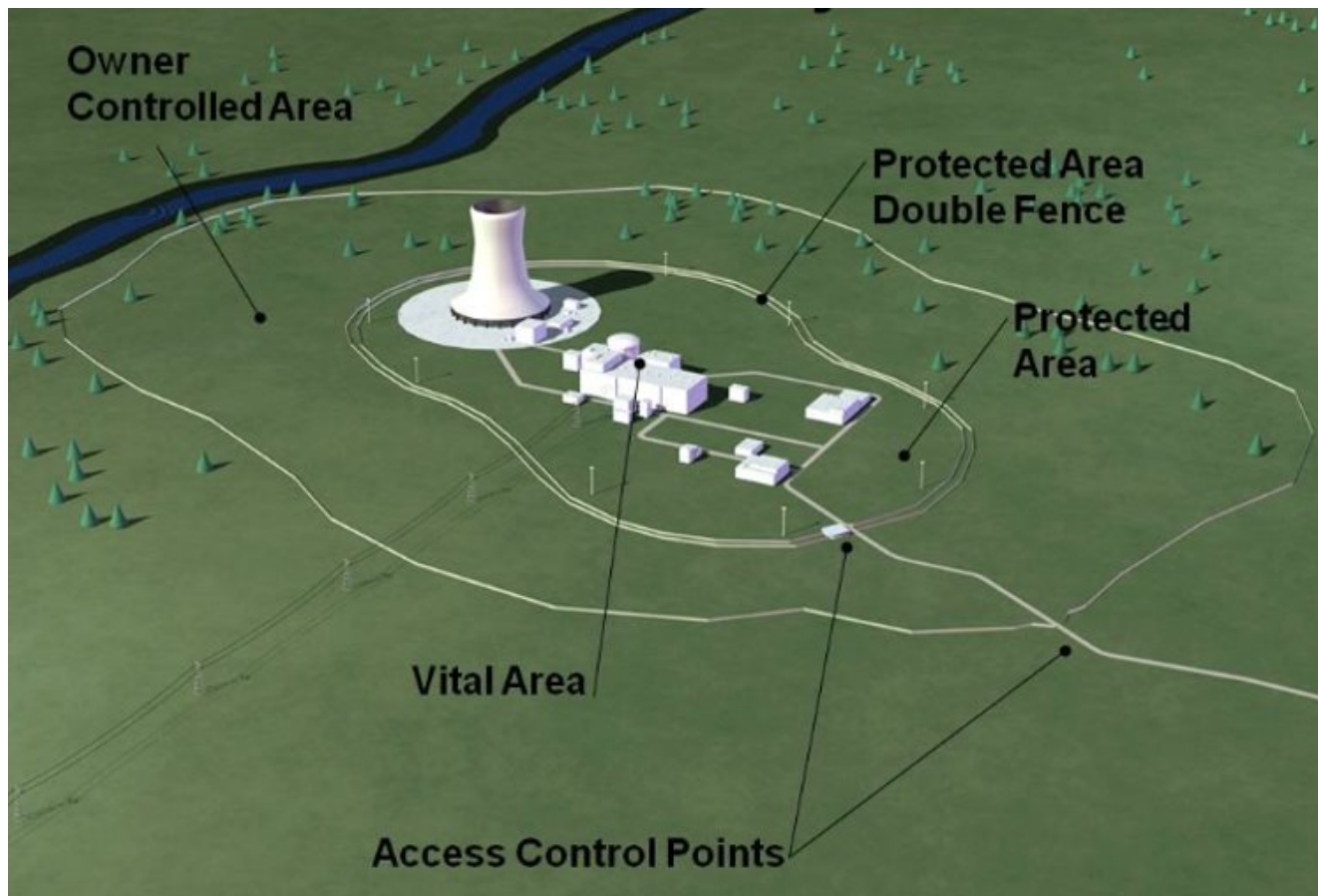
Passive VBS

- Natural terrain features such as steep cliffs and large rocks, alone or in combination with man-made structures or barriers, provided the overall effectiveness of the barrier at any point can stop the forward motion of the design basis land vehicle (DBV).

Active VBS

- Manmade/Operational structures that allow access by vehicles to locations inside the VBS which are capable of stopping the forward motion of the DBV.

VBS Barriers



Trust but verify!



Factoring in Weather





Natural Terrain Features

Natural terrain features include, but are not limited to:

- Berms
- Rocks
- Trees and other foliage
- Water features
- Sand and gravel

In Summary

When natural terrain features degrade, it could lead to violation on the part of the licensee if the features no longer meet the requirements for a physical barrier. Licensees must **continue to assess** natural terrain features to ensure they do not degrade or erode over time and do not represent exploitable conditions.



Questions?

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