



Point Beach Nuclear Plant
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NPL 97-0329

10 CFR 50.12
10 CFR 50 Appendix R

June 5, 1997

Document Control Desk
U.S. NUCLEAR REGULATORY COMMISSION
Mail Station P1-137
Washington, DC 20555

Gentlemen:

DOCKETS 50-266 AND 50-301
REQUEST FOR EXEMPTION FROM
10 CFR 50 APPENDIX R, SECTION III.J
SELF-CONTAINED EMERGENCY LIGHTING
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

In accordance with the requirements of 10 CFR 50.12, Wisconsin Power Company, the licensee for Point Beach Nuclear Plant, Units 1 and 2, requests an exemption for the emergency lighting requirement of 10 CFR 50 Appendix R, Section III.J to allow use of hand-held portable lights for access and egress routes in particular plant buildings exterior to the main power block. The basis of this request for exemption is discussed in Attachment 1.

Please contact us if there are any questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'Douglas F. Johnson'.

Douglas F. Johnson
Manager-Regulatory Services and Licensing

Attachment

cc: NRC Resident Inspector
NRC Regional Administrator

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Exemption Request for Access and Egress Routes for Outside Plant Areas

Requirement

In accordance with operating license condition 3.H of DPR-24 and DPR-27, Point Beach Nuclear Plant (PBNP) Units 1 and 2 are required to comply with the emergency lighting requirements of Section III. J of 10 CFR 50, Appendix R, which states that:

"Emergency lighting units with at least an 8-hour battery power supply shall be provided in all areas needed for operation of safe shutdown equipment and in access and egress routes thereto."

Exemption Requested

An exemption is requested from Section III.J of Appendix R to 10 CFR 50 to allow hand-held portable lighting units to be used as the emergency lighting units for access and egress routes between the main plant and the exterior support buildings.

Discussion

In accordance with the current Appendix R safe shutdown analysis, manual actions may be required in the following buildings outside the main power block, dependent upon the location of the fire in the main plant and the plant systems required for safe shutdown.

- Diesel Generator Building
- 13.8 KV Switchgear Building
- Service Water and Fire Pump House
- Fuel Oil Pump House
- Gas Turbine Building

With respect to the access and egress routes to these exterior buildings, the plant design has not provided for the eight-hour battery-powered emergency lights prescribed by Section III.J. However, portable hand-held lighting units are available to operators performing post-fire shutdown tasks to illuminate their access / egress routes to these exterior buildings. These hand-held units are administratively controlled and maintained near the main control room; readily accessible for the operators who may be assigned to transit to the exterior buildings to conduct manual actions. These hand-held units are specifically dedicated for operator use in outside plant areas during plant fires. A monthly inventory check is performed to ensure the hand-held portable lights are operable. As demonstrated in the evaluation below, there is reasonable basis for an exemption to this requirement.

Evaluation

Wisconsin Electric has evaluated the use of hand-held portable lighting units for access and egress routes to exterior plant buildings. The evaluation has determined that these measures provide a level of lighting equivalent to that required by Section III.J of 10 CFR 50 Appendix R.

Figure 1 shows the layout of the main power block (Primary Auxiliary Building and Turbine Building) and the exterior buildings where manual actions may be required for certain Appendix R fire scenarios. These exterior buildings include:

- Diesel Generator Building
- 13.8 KV Switchgear Building
- Service Water and Fire Pump House
- Fuel Oil Pump House
- Gas Turbine Building

Lighting for the access and egress routes to these exterior buildings from the main power block will be supplied by hand-held portable lighting units rather than the 8-hour battery-powered emergency lights prescribed by Section III.J. The safe shutdown analysis requires no operator actions on these exterior access/egress routes. Therefore, the only function of the emergency hand-held portable lighting is to support safe personnel transit to the exterior buildings. As described below, manual actions in the exterior buildings of the plant will depend on the location of the fire and the system required for safe shutdown:

Diesel Generator Building. The actions in the Diesel Generator Building may involve manually starting and loading Emergency Diesel Generators G03 and G04.

13.8 KV Switchgear Building. The actions in the 13.8 KV Switchgear Building may involve opening breakers to mitigate spurious operations and closing breakers to power safe shutdown equipment.

Service Water and Fire Pump House. The actions in the Service Water and Fire Pump House may involve local starting of the diesel fire pump as an alternative source of water to the turbine-driven AFW Pump bearings in the event the fire pump does not automatically start and the normal service water supply is disabled by a postulated fire.

Fuel Oil Pump House. Based on the current Appendix R safe shutdown analysis, the actions in the Fuel Oil Pump House may involve aligning supplemental fuel oil to the diesel generators G01 or G02. However, we are presently evaluating the safe shutdown analysis to eliminate the need for manual actions in this building. We intend to eliminate the need to enter this building to perform manual actions for safe shutdown. This access/egress route is included in our exemption request in the event that the subsequent safe shutdown analysis will require access to this building.

Gas Turbine Building. The actions in the Gas Turbine Building may involve manually starting and loading the gas turbine generator (G05).

The access and egress routes have been walked down and there are no obstructions or tripping hazards in the route of travel that might not be revealed with the beam of a hand-held flashlight. The access and egress routes are along normally-traveled and paved plant roadways surrounding the main plant structure as shown in the attached figure. These roadways are normally maintained clear of obstructions and snow removal is routinely provided.

The portable lighting designated for use in outside areas can provide a level of lighting equivalent to that of a fixed system, and will not hamper completion of operator actions in the outside buildings. In addition, portable lighting provides greater flexibility than a fixed lighting system for purposes of transiting to an exterior building.

AC-powered lighting systems may be available to supplement the hand-held lights. The Gas Turbine Building is provided exterior lighting, including a fixture over the building entrance. This lighting is powered from an auxiliary diesel that is automatically started when normal AC power to the building is lost. Also, security lighting may be available to supply background lighting for outside areas if normal AC power is available during the fire.

Portable hand-held lighting units are available to the operators performing the post-fire shutdown tasks. These portable hand-held lighting units are part of a monthly surveillance program to ensure equipment required for safe shutdown is available. These hand-held units are dedicated for operator use and are maintained readily-accessible to the control room operators who may be required to transit to exterior buildings.

It is, therefore, Wisconsin Electric's position that a level of lighting equivalent to Section III.J of Appendix R to 10 CFR 50 is provided by the hand-held portable units for exterior plant areas. The addition of 8-hour battery-powered lighting units for complete coverage of the access and egress routes in the outside areas would not significantly enhance the level of safety.

Applicable Special Circumstances

Wisconsin Electric has determined that the requested exemption conforms to the applicable exemption criteria of 10 CFR 50.12 (a). There are no prohibitions of law to preclude the activities that would be authorized by the requested exemption, and the requested exemption, if granted, would have no impact on the common defense and security. Additionally, the requested exemption does not present an undue risk to the public health and safety since an equivalent level of lighting as required by Section III.J of Appendix R is provided as described above.

Special circumstances are applicable to the requested exemption in accordance with 10 CFR 50.12 (a) (2) (ii) in that application of the regulation for these particular circumstances is not necessary to achieve the underlying purpose of the rule. Section III.J of 10 CFR 50, Appendix R specifies self-contained emergency lighting units with at least 8-hour battery power to provide lighting for access and egress routes and operation of safe shutdown equipment. The underlying purpose of the rule is satisfied by the requested exemption since use of hand-held portable lighting units for outside access/egress as described above provides a level of lighting that is equivalent to that required by Section III.J of 10 CFR 50, Appendix R. Thus, the completion of a modification to satisfy the method specified by Appendix R would not provide additional benefit.

Additional special circumstances are applicable to the requested exemption in accordance with 10 CFR 50.12 (a)(2)(iii) in that the application of the regulation would represent an unwarranted burden on Wisconsin Electric resources and the cost may be in excess of those incurred by other utilities similarly situated as Point Beach. The implementation of outdoor battery-powered lighting units would result in expenditure of engineering, construction, and plant resources for their installation, maintenance, and operation. The associated costs would include: engineering and installation of additional lighting units and supporting structures, and increased surveillance and maintenance of the additional lighting units. The costs associated with the modification to provide additional battery-powered lighting units would represent an unwarranted burden on Wisconsin Electric resources considering the negligible safety benefit and the alternative lighting method as described above. Additionally, other nuclear plants, which Wisconsin Electric believes are similarly situated as Point Beach, have been granted comparable exemptions by the NRC. These exemptions include:

Beaver Valley Power Station, Unit 1, exemption dated July 27, 1987

Calvert Cliffs Nuclear Power Plant, Units 1 and 2, exemption dated August 22, 1990

H.B. Robinson Steam Electric Plant, Unit 2, exemption dated October 8, 1992

In conclusion, Wisconsin Electric considers that special circumstances in accordance with 10 CFR 50.12 (a) (2) (ii) are present to justify the requested exemption. The completion of an additional modification to satisfy the emergency lighting requirements for the areas presented in this request is not necessary to satisfy the underlying purpose of the rule. The hand-held portable lighting units in the outside access/egress areas provide sufficient light to complete manual actions required for post-fire safe shutdown as required by Section III.J of 10 CFR 50, Appendix R. Additionally, the completion of modifications to satisfy the requirements of Appendix R of 10 CFR 50 in these areas represents an unwarranted burden on Wisconsin Electric resources while providing negligible safety benefit.

Figure 1

Plant Layout of Outside Buildings and Access/Egress Routes

