

VPNPD-87-385 NRC-87-89

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September 8, 1987

U. S. NUCLEAR REGULATORY COMMISSION Document Control Desk Washington, D.C. 20555

PDR

Attention: Mr. David Wagner, Project Manager

Gentlemen:

DOCKET NOS. 50-266 AND 50-301 10 CFR 50 APPENDIX R, SAFE SHUTDOWN CAPABILITY POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

This is in response to U. S. NRC Region III Inspection Report Nos. 50-266/87007 (DRS) and 50-301/87007 (DRS), paragraph 2.f. which states:

"As discussed on June 26, 1987, in a telephone conversation between G. Frieling, Wisconsin Electric and J. Holmes, NRC, the licensee was requested to identify where redundant equipment, utilized for cold shutdown, is in the same fire area where the three alternatives in III.G.2 are not utilized. The licensee was requested to provide the technical evaluation for each of these areas to NRR for review. This is considered an Open Item (266/87007-04; 301/87007-04) pending review and acceptance of the licensee's submitted technical evaluations to NRR."

We have determined that the request stated above is applicable to the following equipment.

Equipment	Fire Area	Fire Zone
Residual Heat Removal Pump - Unit 1	AO1	104
Residual Heat Removal Pump - Unit 1	A01	105
Residual Heat Removal Pump - Unit 2	A01	108
Residual Heat Removal Pump - Unit 2	A01	109
Residual Heat Exchangers - Unit 1	A01	115
Residual Heat Exchangers - Unit 2	A01	119
Component Cooling Water Pumps	A01	142
Units 1 & 2		1.0
Component Cooling Water Heat Exchangers	A01	237 100
Units 1 and 2		1
Service Water Pumps Units 1 and 2	A38	552
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Enclosed are excerpted sections from the Point Beach Nuclear Plant Fire Protection Evaluation Report. Enclosure 1 contains a description of the methodology employed to perform technical evaluations, and Enclosure 2 contains technical evaluations for each of the fire zones listed above. We believe that our methodology meets the requirements of Generic Letter 86-10 and that the content of the technical evaluations meets the guidance of Section B of Appendix R.

We request your expeditious review and acceptance of the technical evaluations in Enclosure 2 so that the inspection open item can be closed. Please call us if you have any questions regarding these evaluations.

Very truly yours,

C. W. Fay Vice President Nuclear Power

Copies to NRC Regional Administrator, Region III NRC Resident Inspector Enclosure 1

5.0 Technical Evaluation of Safe Shutdown Fire Zones

5.1 Introduction

The requirements for upgrading the fire protection capability of nuclear power plants were dependent upon the guidance of Branch Technical Position BTP9.5-1, Appendix A thereto and clarification letters prior to February, 1981. Since February 1981, the requirements have been stated in 10CFR50.48 Appendix R. Many of the requirements listed specifically in Appendix R are stated in unquantified terms. The NRC has determined that the definitions of Appendix A are applicable to the requirements of Appendix R. Certain issues exist for which the defined guidance of Appendix A is incompatible with the undefined requirements of Appendix R.

The NRC staff informally issued interpretations for the following requirements on March 23, 1984.

- 1.0 Process Monitoring Instrumentation
- 2.0 Repair of Cold Shutdown Equipment
- 3.0 Fire Damage

4.0 Fire Area Boundaries

5.0 Automatic Detection and Suppression

6.0 Alternative or Dedicated Shutdown

The interpretations of the above requirements were issued formally with Generic Letter 86-10 dated April 24, 1986. The interpretations contain a definition for each requirement which will provide technical compliance with Appendix R. The adequacy of fire protection features provided must be demonstrated by a technical evaluation of each fire protection measure which is not in accordance with Appendix R, or an exemption must be requested.

Wisconsin Electric's October 26, 1983 Appendix R Safe Shutdown submittal contains an analysis which provides the basis for safe shutdown alternate to the control room. In the analyzed scenario, a minimum set of systems and components involving local control and manual operations is used to accomplish the necessary Appendix R shutdown functions. A separate updated Appendix R computer analysis is being prepared to demonstrate safe shutdown capability from either the control room or local control stations. For this analysis, a group of Fire Zones has been identified in which safe shutdown components are located. The fire protection features provided have been reviewed and a technical evaluation for each Fire Zone which contains safe shutdown equipment has been performed. Specific consideration is given to Fire Zone boundary configuration, the presence of fire detection and suppression capability and the effect on safe shutdown capability from a fire within the zone. The technical evaluations are not intended to duplicate or replace other safe shutdown analyses, but are provided to support such analyses. For these

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evaluations, safe shutdown equipment includes cable and equipment necessary to achieve hot and cold shutdown, and equipment which must be prevented from operating spuriously. The technical evaluations serve as an update of the 1977 fire protection review including a consideration of the NRC's Appendix R requirements and clarifications and the interpretations issued with Generic Letter 86-10.

5.2 Methodology

The technical evaluations provide a detailed description of the fire protection features provided for each Fire Zone containing safe shutdown equipment. In addition the safe shutdown equipment located in each Fire Zone is identified and an evaluation of the adequacy of fire protection features to assure survivability of redundant or alternate equipment is performed. Where fire protection features deviate from the measures defined by Appendix R, they have been identified and evaluated, and justification provided for their adequacy. The evaluations have been performed by Wisconsin Electric's Nuclear Systems Engineering and Analysis Section and Wisconsin Electric's System Fire Protection Group. These groups are experienced in PBNP's systems and in the application of fire protection engineering principles. Input was obtained from plant operations, maintenance and engineering personnel, plant drawings, information gathered as part of the Appendix R Safe Shutdown Analysis, and walkdowns and inspections of the Fire Zone where necessary in order to provide a thorough and accurate evaluation of each Fire Zone. Engineering judgement was applied based on knowledge, experience, applicable codes and standards, and available

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test data in reaching the conclusions and justifications. The evaluations consist of a description of each of the applicable features as follows:

- Zone Boundary Descriptions

- Zone Occupancy
- Fire Protection Features
- Exemption Requests
- Analysis

These categories are discussed in detail below.

5.2.1 Assumptions

Some basic assumptions were made in the performance of the technical evaluations. Heavy mechanical equipment such as valves, pumps, heat exchangers and piping which is water filled is assumed to survive the effects of any postulated fire and remain operable. Floor drains have been considered as passive mechanical equipment which do not generally provide a path for the spread of fire across barriers. All floor drains have been considered. Where applicable floor drains are specifically referenced in the technical evalautions. The propagation of fires is assumed to occur

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in an upward direction and horizontally via combustible pathways. It is assumed that fires will not propagate downward into other fire zones where no combustible pathway is present such as via steel ventilation ducts. Fires are considered to be passively contained where Appendix R separation criteria are satisfied such as adequate spatial separation, fire barriers or their equivalent as described in granted exemptions. The containment structures are considered to provide at least a 3 hour fire rating.

In some instances steel ventilation ducts without fire dampers penetrate a zone boundary. The boundary which is penetrated has been provided with rated penetration seals for other penetrations and doorway openings have been provided with protection. The annular space surrounding the duct has been provided with a rated penetration seal. These duct penetrations have been evaluated to determine their adequacy to resist fire propagation so that the boundary can be considered as a fire barrier. The NFPA "Fire Protection Handbook" and NFPA 90A, "Standard for the Installation of Air Conditioning and Ventilating Systems" describe the adequacy of steel ventilation ducts penetrating fire barriers to provide fire resistance in retaining fire barrier integrity where adequate fire stopping around the duct is provided. NFPA 90A requires fire dampers in ducts only where they penetrate barriers requiring a 2 hour or greater fire resistance rating. In addition, tests conducted by the Thermal Insulation Manufacturers Association at

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Underwriters Laboratories have demonstrated maintenance of fire barrier integrity for at least 1 hour where steel ducts penetrate a fire barrier without a fire damper.

Based on the available NFPA guidance and test information, an evaluation of steel ducts penetrating boundaries, without fire dampers, has been conducted. Each case is specifically identified in the Fire Zone technical evaluations. With annular spaces around ducts provided with penetration seals and considering the amount of combustible material exposing the duct penetration it has been judged that a minimum 1 hour fire resistance will be maintained to provide a fire barrier rating for the boundary identified.

5.2.2 Definitions

- Boundary refers to the physical outer limits of a Fire zone which usually constitutes walls, floor and ceiling but is not necessarily a fire barrier
- Electrical Penetration a penetration of a Fire Zone boundary which contains cables, cable trays or conduits
- Fire Area an area with boundaries which have been evaluated to provide a fire resistance rating (see Section 3.0 of this report)

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Fire Brigade - the team of plant personnel assigned to fire fighting and trained in the manual fighting of fires according to an established training program

Fire Detection - the provision of devices designed to respond to heat or products of combustion from fire and signal an alarm

Fire Door - a door and frame assembly installed to provide resistance to the spread of fire through an opening in a fire barrier in which it is installed which is listed, classified or approved for such use by a recognized testing laboratory.

Fire Rating - refers to the fire resistance endurance period of a fire barrier or component as determined by a standard fire test (refer to NFPA 251)

Fire Suppression - refers to the capability to apply fire extinguishing agents in order to control and extinguish fires. Manual fire suppression refers to equipment such as fixed hose stations, portable extinguishers or special agents which are manually applied to fires. Automatic fire suppression refers to fixed systems which automatically respond to fires and apply extinguishing agents

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such as automatic sprinklers, Halon 1301, CO₂, dry chemical or foam systems.

Fire Zone - an area with boundaries which has been designated for puposes of evaluation (see Section 3.0 of this report)

Mechanical Penetration - a penetration of a Fire Zone boundary which contains mechanical equipment such as pipes, steel, ventilation ducts or access hatches

NFPA - National Fire Protection Association

Penetration Seal - refers to the filling of a barrier penetration with materials which have been installed in a configuration that provides a fire resistance rating as supported by test

Safe Shutdown Equipment - equipment which has been determined to provide the minimum set of systems and components required to shut down the reactor as described in the PBNP Safe Shutdown Analysis

U.L. - Underwriters Laboratories Inc.

Waterspray Nozzle - a directional spray nozzle designed to provide waterspray in a specific pattern over an area

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The zone size, walls, floor and ceiling of the Fire Zone are described to identify the construction, fire rating, and protection of any wall penetrations where necessary. Door openings are identified and appropriate fire ratings described. All mechanical and electrical penetrations are evaluated to determine their ability to maintain the integrity of a fire barrier where applicable. Hatches, equipment access panels and other unique features which could affect the integrity of a fire barrier are evaluated and described. Dimensions used in describing each zone are obtained from drawings and should be considered approximate.

5.2.4 Zone Occupancy

The safe shutdown equipment located in each fire zone is identified. A description of the location of alternate or redundant equipment is provided as applicable.

The in-situ combustibles and fire hazards are evaluated and described for each Fire Zone. The fire hazard associated with the combustible loading present is based on a judgement of the type and configuration of combustibles present. Previous analyses performed at PBNP have quantified combustible loadings based upon the National Bureau of Standards (NBS) tests which were performed in the 1920's for residential and office type occupancies. Combustible loading was expressed

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in terms of the equivalent weight of wood and paper products in pounds per square foot assuming a heat release rate of approximately 8000 BTU/lb. Application of this method to actual conditions is technically obsolete as described in the sixteenth edition of the NFPA "Fire Protection Handbook". Actual conditions must consider additional parameters such as ventilation, type of enclosure walls and ceiling, and configuration of combustibles. Analytical methods to evaluate all the parameters involved are complex and currently available technology is not able to accurately predict fire severity or establish a relationship between fire load and fire resistance requirements.

The NFPA "Fire Protection Handbook" and the fourth edition of the American Iron and Steel Institute's "Fire Protection Through Modern Building Codes" discuss the concepts of fire load and fire severity with respect to the NBS tests. Some general conclusions can be reached but all are based upon a judgement of the type of combustibles present. This is consistent with the application of National Fire Protection Association standards where protection is prescribed for the <u>type</u> of hazard present not the <u>quantity</u>. Fire resistance ratings are based upon the Standard Time-Temperature Curve and provide a means of assessing the <u>relative</u> capabilities of a barrier to withstand the effects of fire. State-of-the art technology can not accurately predict actual fire conditions.

Therefore an assessment of fire protection features is a

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judgemental process which must be based upon an evaluation of the actual configuration and conditions of the compartment being evaluated. By applying the protection guidelines provided by fire protection codes and standards, an assessment of the relative adequacy of fire protection features to control fires can be made based upon the historical experience of the performance of the features. The assessment is made by personnel experienced in the application of fire protection engineering principles.

Each Fire Zone identified in the technical evaluations has been evaluated by WE nuclear systems and fire protection engineers to determine the adequacy of the level of fire protection provided. The combustible loading and level of hazard is described as "light", "moderate" or "heavy". This is a judgement based upon the actual configuration of the room and the type and location of combustibles. A comparison of the level of hazard identified in the technical evaluations and the combustible loading quantities previously calculated for PBNP which is also comparable to British fire loading studies referenced in the NFPA "Fire Protection Handbook" can be made as follows:

"Light" - less than or equal to 10 pounds per square foot (psf) "Moderate" - greater than 10 psf, less than or equal to 25 psf "Heavy" - greater than 25 psf

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The 1985 edition of NFPA 13, "Standard for the Installation of Sprinkler Systems" discusses occupancy classifications in section 1.7 with additional references and examples in the Appendix. The basic classifications used in this standard are "Light Hazard", "Ordinary Hazard" and "Extra Hazard" which are similar to the above classifications. This approach, used in the technical evaluations, does not rely on the calculation of weight of combustible load as the means of assessing level of fire hazard but more appropriately includes an evaluation of the actual room configuration by experienced personnel.

Wisconsin Electric considers this a more realistic approach to fire hazard analysis which is consistent with accepted fire protection engineering practice. Quantification of average combustible loading can be misleading in assessing level of fire hazard because combustibles are seldom, if ever, evenly distributed throughout a compartment or area and different forms of combustibles burn in vastly different manners. Other factors, such as the enclosing of combustibles in steel or other noncombustible materials such as cables in conduits or combustible liquids contained within tanks can greatly affect both ease of ignition and ability to support combustion. It is considered to be more conservative to provide protection suitable for the type of hazards present and to specifically address variables such as localized concentrations of combustibles. This approach also provides for a better means of control of transient combustibles where an evaluation of

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the type and location of transient combustibles is performed rather than allowing indiscriminate accumulations based on equivalent weights of wood products so long as a predatermined limit is not exceeded. If suitable protection for the type of combustible hazard present has been provided minor variations in the amount of the combustible present will not affect the adequacy of the protection if configuration has been considered.

This approach is also consistent with the requirements of Appendix R which conservatively specify a desired level of passive fire protection and the provision of suppression capability suitable to the type of hazard present regardless of combusable loading. This approach requires the review of experienced fire protection personnel but assures that protection is designed to fit the actual hazard present tesed on a consideration of all characteristics of a particular configuration rather than on as equivalent weight of wood.

Therefore a judgement has been made upon review of the types of hazards contained in each Fire Zone and assessment made as to the overall adequacy of the protection provided. The overall goal is to provide protection which will minimize the effects of fires in any Fire Zone, emphasizing the survivability of safe shutdown components and, as stated previously, fire protection engineering judgement is applied in determining the 'a.e! of hazard present. Applicable codes, standards and available test data are considered in the evaluation.

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Upon evaluation of the Fire Zone and the type, location and configuration of combustibles present, a judgement is made as to whether the loading is considered light, moderate or heavy. (Examples of the result of the judgement criteria for particular Fire Zones at PBNP are: light combustible loading in the Control Room, Fire Zone 326, moderate combustible loading in the Vital Switchgear Room, Fire Zone 305, and heavy combustible loading in the Diesel Generator Room, Fire Zone 308.) An assessment of potential ignition sources, ease of ignition of combustible materials and configuration is made in determining the level of hazard present. These assessments are made with the input of qualified fire protection engineers. External exposures from adjacent Fire Zones and Areas are aiso considered.

5.2.5 Fire Protection Features

A description of the fire protection features associated with each Fire Zone is provided. Fire detection, automatic suppression systems, hose lines and portable fire fighting equipment are discussed.

5.2.6 Exemption Requests

Requested exemptions from the requirements of Appendix R and their status are referenced.

An analysis section is included to address in detail specific items which have been judged to meet the requirements of Appendix R. All parameters described in the evaluation and clarifications and interpretation provided in NRC guidance documents serve as a basis for the conclusions reached. The ultimate conformance conclusions are based on the passive protection elements of spatial separation and fire barriers as specified in Appendix R as enhanced by active protection elements such as the provision of fire detection or fire suppression where necessary.

5.3 Technical Evaluations

Enclosure 2

Zone 104 Area A01 Rev. 0 Page 1

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FIRE PROTECTION TECHNICAL EVALUATION

FIRE ZONE: 104 - RESIDUAL HEAT REMOVAL PUMP ROOM

ZONE BOUNDARY DESCRIPTIONS

Zone Size

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N-S Dimension:	14'-9"		
E-W Dimension:	11'-7"		
Vert Dimension:	11'-0"		
See Drawing:	PBC-66	Sh.	2

North Wall

33" Concrete

Doors

Penetrations Electrical penetrations are unsealed. (See Analysis -Paragraph 1)

Mechanical penetrations are unsealed. (See Analysis - Paragraph 1)

One 4'x4' access opening with ladder. (See Analysis -Paragraph 1)

One 18"x18" ventilation duct without fire damper. (See Analysis - Paragraph 1)

One valve operator with 1" thick bolted and sealed steel penetration cover

East Wall

33" Concrete

Doors None

Penetrations

One 9"x18" ventilation duct without fire damper and sealed with a 3 hr. rated fire seal. (See Analysis - Paragraph 2)

South Wall

33" Concrete

Doors

None

Penetrations

One 2'x2' access opening to zone 107. (See Analysis - Paragraph 3)

One 9"x12" ventilatic luct without fire damper and unsealed. (See Analysis - Paragraph 3)

West Wall - Fire Area Boundary

36" Concrete

Doors

Penetrations None

Ceiling

36" Concrete

Penetrations None

Floor - Fire Area Boundary

Penetrations

One floor drain to sump located in zone 101. A closed drain isolation valve is provided to prevent backflow.

ZONE OCCUPANCY

SAFE SHUTDOWN EQUIPMENT

One of two Unit 1 residual heat removal pumps plus conduits containing cables for one of two Unit 1 containment sump isolation valves. (See Analysis - Paragraph 4)

COMBUSTIBLES/HAZARDS

A light combustible loading consisting of pump lubricating oil.

ZGINE EXPOSURE

Above Corridor, Fire Zone 113

Below Grade

North Valve Pit/Sump Pump Room, Fire Zone 101

East RHR Pump Room, Fire Zone 105

South Pipeway, Fire Zone 107

West Grade

FIRE PROTECTION FEATURES

Fire Detection

Photoelectric smoke detection is provided in this zone designed and installed as described in the fire detector location plan

Automatic Fire Suppression

None

Hose Lines

Hose lines are available to provide manual fire suppression capability as described in the fire emergency plans

Portable Equipment

Portable fire extinguishers, suitable for the hazards present, are available as described in the fire emergency plans

Other

Available fire brigade equipment, communications equipment locations and other manual fire fighting capabilities are described in detail in the fire emergency plans

EXEMPTION REQUESTS

Exemption from the automatic fire suppression requirements of Appendix R was requested October 26, 1983. The exemption was granted December 31, 1986.

ANALYSIS

- 1. The north wall contains: one 12"x12" mechanical penetration which contains stainless steel pipe, one 12"x12" electrical penetration which contains rigid steel conduit, one 9"x15" and one 20"x24" openings which contain solid steel ventilation ducts and one 4'x4' personnel access opening. All openings are located approximately 7 feet above the floor and there are no fixed combustibles located adjacent to the wall or in the openings. Therefore the openings are not considered to be combustible pathways or a hazard to equipment within the room.
- The 9"X18" ventilation duct is a solid steel duct. The duct is located at the ceiling and the opening around the duct is provided with a 3 hr. fire rated seal to enhance the separation of the RHR pumps.
- 3. The 2'x2' opening which is at the ceiling provides access to valve gallery zone 207. Combustibles are not located adjacent to the wall or routed through the opening. The 9"x12" ventilation duct is a solid duct without opening in the RHR pump room. Therefore the boundary protection provided by the south wall is considered to be adequate.
- 4. One RHR pump is required to achieve cold shutdown. Redundant equipment is located outside of this room. Motor operated valves, located in fire zones 106 and 107 which can be positioned manually are separated from the zone by the 33" thick concrete south wall. These valves need not be checked for spurious operation until cooldown commences. Therefore the loss of cable or equipment contained in this room will not prevent safe shutdown. We believe that the substantial concrete construction, absence of combustile pathways and the limited combustible loading of this room and adjacent rooms would present a significant impediment to the propagation of a fire for a time sufficient to confine and extinguish the fire in the room or origin.

CONCLUSION

On the basis of the above analysis, the features described in this evaluation are considered to provide fire protection for the safe shutdown equipment located in fire zone 104 which is sufficient to satisfy the technical requirements of Appendix R.



WISCONSIN POWER ELECTRIC CO. POINT BEACH NUCLEAR PLANT TECHNICAL EVALUATIONS REPORT SAFE SHUTDOWN COMPONENTS

FOR FIRE ZONE 104

Cable	Raceway	Associated	Associated
		Component	Component
			Description
ZA1323CA	1-851A	1-MOV851A	CONTAINMENT SUMP
			SUCTION
ZA1323CB	1-851A	1-MOVE JIN	CONTAINMENT SUMP
			SUCTION
ZAIBIZAA	1P10A1	1-P10A	RER PUMP, MOTOR
			DRIVEN

February, 1987

FIRE PROTECTION TECHNICAL EVALUATION

FIRE ZONE: 105 - RESIDUAL HEAT REMOVAL PUMP ROOM

ZONE BOUNDARY DESCRIPTIONS

Zone Size

N-S Dimension:	14'-9"		
E-W Dimension:	11'-7"		
Vert Dimension:	11'-0"		
See Drawing:	PBC-66	Sh.	2

North Wall

33" Concrete

Doors

Penetrations Electrical penetrations are unsealed. (See Analysis -Paragraph 1)

One 4'x&' access opening with ladder. (See Analysis - Paragraph 1)

One valve operator with 1" thick bolted and sealed steel penetration cover

East Wall - Fire Area Boundary

36" Concrete

Doors

Penetrations None

South Wall

33" Concrete

Doors None

Penetrations None

West Wall

33" Concrete

Doors None

Penetrations One 9"x18" ventilation duct without fire damper sealed with a 3 hr. rated fire seal. (See Analysis - Paragraph 2)

Ceiling

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36" Concrete

Penetrations None

Floor - Fire Area Boundary

48" Concrete

Penetrations One floor drain to sump located in zone 101. A closed drain isolation valve is provided to prevent backflow.

ZONE OCCUPANCY

SAFE SHUTDOWN EQUIPMENT

One of two Unit 1 residual heat removal pumps plus conduits containing cables for one of two Unit 1 containment sump isolation valves. (See Analysis - Paragraph 3)

COMBUSTIBLES/HAZARDS

A light combustible loading consisting of pump lubricating oil.

ZONE EXPOSURE

Above Corridor, Fire Zone 113

Below Grade

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North

Valve Pit/Sump Pump Room, Fire Zone 101

East Grade

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South

Pipeway, Fire Zone 106

West

RHR Pump Room, Fire Zone 104

FIRE PROTECTION FEATURES

Fire Detection

Photoelectric smoke detection is provided in this room designed and installed as described in the fire detector location plan

Automatic Fire Suppression None

Hose Lines

Hose lines are available to provide manual fire suppression capability as described in the fire emergency plans

Portable Equipment

Portable fire extinguishers, suitable for the hazards present, are available as described in the fire emergency plans

Other

Available fire brigade equipment, communications equipment locations, and other manual fire fighting capabilities are described in detail in the fire emergency plans

EXEMPTION REQUESTS

Exemption from the automatic fire suppression requirements of Appendix R was requested October 26, 1983. The exemption was granted December 31, 1986.

ANALYSIS

 The north wall contains: one 12"x12" electrical penetration which contains rigid steel conduit and one 4'x4' personnel

Zone 105 Area A01 Rev. 0 Page 4 above

access opening. Both openings are approximately 7 feet above the floor and fixed combustibles are not located adjacent to the wall or in the openings. Therefore, the boundary protection provided by the north wall is considered to be adequate.

- The 9"X18" ventilation duct is a solid duct. The duct is located at the ceiling and the opening around the duct is provided with a 3 hr. fire rated seal to enhance the separation of the RHR pumps.
- 3. One RHR pump is required to achieve cold shutdown. Redundant equipment is located outside of this room. Motor operated valves, located in fire zones 106 and 107 which can be positioned manually are separated from the room by the 33" thick concrete wall. These valves need not be checked for spurious operation until cooldown commences. Therefore the loss of cable or equipment contained in this room will not prevent safe shutdown.

CONCLUSION

On the basis of the above analysis, the features described in this evaluation provide fire protection for the safe shutdown equipment located in fire zone 105 which is sufficient to satisfy the technical requirements of Appendix R.



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WISCONSIN POWER ELECTRIC CO. POINT BEACE NUCLEAR PLANT TECHNICAL EVALUATIONS REPORT SAFE SHUTDOWN COMPONENTS

FOR FIRE ZONE 105

Cable		Associated Component	Associated Component Description
ZB1423CA	1-8518	1-MOV851B	CONTAINMENT SUMP SUCTION
ZB1423CB	1-8518	1-MOV851B	CONTAINMENT SUMP SUCTION
281821AA	1 P 10 B 1	1-P10B	RHR PUMP, MOTOR DRIVEN

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FIRE PROTECTION TECHNICAL EVALUATION

FIRE ZONE: 108 - RESIDUAL HEAT REMOVAL PUMP ROOM

ZONE BOUNDARY DESCRIPTIONS

Zone Size

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N-S Dimension:	14'-9"		
E-W Dimension:	11'-7"		
Vert Dimension:	11'-0"		
See Drawing:	PBC-66	Sh.	2

North Wall

33" Concrete

Doors None

Penetrations Two 2'x2' opening to zone 111. (See Analysis -Paragraph 1)

East Wall

33" Concrete

Doors

Penetrations One 9"x18" ventilation duct without fire damper sealed with a 3 hr. rated fire seal. (See Analysis - Paragraph 2)

South Wall

33" Concrete

Doors None

Penetrations Mechanical penetrations are unsealed. (See Analysis -Paragraph 3)

Electrical penetrations are unsealed. (See Analysis -Paragraph 3)

One 4'x4' access opening with ladder. (See Analysis -Paragraph 3)

One 18"x18" ventilation duct without fire damper. (See Analysis - Paragraph 3)

One valve operator with 1" thick bolted and sealed steel penetration cover

West Wall - Fire Area Boundary

36" Concrete

Doors None

Penetrations None

Ceiling

36" Concrete

Penetrations None

Floor - Fire Area Boundary

48" Concrete

Penetrations

One floor drain to sump located in zone 101. A closed drain isolation valve is provided to prevent backflow.

ZONE OCCUPANCY

SAFE SHUTDOWN EQUIPMENT One of two Unit 2 residual heat removal pumps plus conduits containing cables for one of two Unit 2 containment sump isolation valves. (See Analysis - Paragraph 4)

COMBUSTIBLES/HAZARDS

A light combustible loading consisting of pump lubricating oil.

ZONE EXPOSURE

Above Corridor, Fire Zone 113

Below Grade

North Pipeway, Fire Zone 111

East RHR Pump Room, Fire Zone 109

South Valve Pit/Sump Pump Room, Fire Zone 101

West Grade

FIRE PROTECTION FEATURES

Fire Detection

Photoelectric smoke detection is provided in this zone designed and installed as described in the fire detector location plan

Automatic Fire Suppression None

Hose Lines

Hose lines are available to provide manual fire suppression capability as described in the fire emergency plans

Portable Equipment

Portable fire extinguishers, suitable for the hazards present, are available as described in the fire emergency plans

Other

Available fire brigade equipment, communications equipment location and other manual fire fighting capabilities are described in detail in the fire emergency plans

EXEMPTION REQUESTS

Exemption from the automatic fire suppression requirements of Appendix R was requested October 26, 1983. The exemption was granted December 31, 1986.

ANALYSIS

- The 2'x2' openings in the north wall which are at the ceiling provide access to valve gallery zone 111. Combustibles are not located adjacent to the wall or routed through the openings. Therefore, the boundary protection provided by the north wall is considered to be adequate.
- 2. The 9"X18" ventilation duct is a solid steel duct. The duct is located at the ceiling and the opening around the duct is provided with a 3 hr. fire rated seal to enhance RHR pump separation.
- 3. The south wall contains one 12"x12" mechanical penetration which contains stainless steel pipe, one 12"x12" electrical penetration which contains rigid steel conduit, one 20"x24" opening which contains a solid steel ventilation duct and one 4'x4' personnel access opening. All openings are located approximately 7 feet above the floor and there are no fixed combustibles located adjacent to the wall or routed through the openings. Therefore the boundary protection provided by the south wall is considered to be adequate.
- 4. One RHR pump is required to achieve cold shutdown. Redundant equipment is located outside of this room. Motor operated valves, located in fire zones 110 and 111 which can be positioned manually are separated from the zone by the 33" thick concrete wall. These valves need not be checked for spurious operation until cooldown activity commences. Therefore the loss of cable or equipment contained in this room will not prevent safe shutdown.

CONCLUSION

On the basis of the above analysis, the features described in this evaluation provide fire protection for the safe shutdown equipment located in fire zone 108 which is sufficient to satisfy the technical requirements of Appendix R.



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WISCONSIN POWER ELECTRIC CO. POINT BEACE NUCLEAR PLANT TECHNICAL EVALUATIONS REPORT SAFE SHUTDOWN COMPONENTS

FOR FIRE ZONE 108

Cable	Esceway	Associated	Associated Component Description
ZC2323CA	2-851A	2-MOV851A	CONTAINMENT SUMP
ZC2323CB	2-851A	2-MOV851A	CONTAINMENT SUMP
ZC2B36AA	2P10A1	2-P10A	RER PUMP, MOTOR DRIVEN

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FIRE PROTECTION TECHNICAL EVALUATION

FIRE ZONE: 109 - RESIDUAL HEAT REMOVAL PUMP ROOM

ZONE BOUNDARY DESCRIPTIONS

Room Size

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N-S Dimension:	14'-9"		
E-W Dimension:	11'-7"		
Vert Dimension:	11'-0"		
See Drawing:	PBC-66	Sh.	2

North Wall

33" Concrete

Doors

Penetrations None

East Wall - Fire Area Boundary

36" Concrete

Doors None

Penetrations None

South Wall

33" Concrete

Doors None

Penetrations Electrical penetrations are unsealed. (See Analysis -Paragraph 1)
One 4'x4' access opening with ladder. (See Analysis - Paragraph 1)

One valve operator with 1" thick bolted and sealed steel penetration cover

West Wall

33" Concrete

Doors None

Penetrations One 9"x18" ventilation duct without fire damper sealed with a 3 hr. rated fire seal. (See Analysis - Paragraph 2)

Ceiling

36" Concrete

Penetrations None

Floor - Fire Area Boundary

48" Concrete

Penetrations One floor drain to sump located in zone 101. A closed drain isolation valve is provided to prevent backflow.

ZONE OCCUPANCY

SAFE SHUTDOWN EQUIPMENT One of two Unit 2 residual heat removal pumps plus conduits containing cables for one of two Unit 2 containment sump isolation valves. (See Analysis - Paragraph 3)

COMBUSTIBLES/HAZARDS

A light combustible loading consisting of pump lubricating oil.

ROOM EXPOSURE

Above Corridor, Fire Zone 113

Below Grade

North Pipeway, Fire Zone 110

East Grade

South Valve Pit/Sump Pump Room, Fire Zone 101

West

RHR Pump Room, Fire Zone 108

FIRE PROTECTION FEATURES

Fire Detection

Photoelectric smoke detection is provided in this room designed and installed as described in the fire detector location plan

Automatic Fire Suppression None

Hose Lines

Hose lines are available to provide manual fire suppression capability as described in the fire emergency plans

Portable Equipment

Portable fire extinguishers, suitable for the hazards present, are available as described in the fire emergency plans

Other

Available fire brigade equipment, communications equipment locations and other manual fire fighting capabilities are described in detail in the fire emrgency plans

EXEMPTION REQUESTS

Exemption from the automatic fire suppression requirements of Appendix R was requested October 26, 1983. The exemption was granted December 31, 1986.

ANALYSIS

- The south wall contains one 12"x12" electrical penetration which contains rigid steel conduit and one 4'x4' personnel access opening. Both openings are approximately 7 feet above the floor and fixed combustibles are not located adjacent to the wall or in the openings. Therefore, the boundary protection provided by the south wall is considered to be adequate.
- The 9"X18" ventilation duct is a solid steel duct. The duct is located at the ceiling and the opening around the duct is provided with a 3 hr. fire rated seal to enhance separation of the RHR pumps.
- 3. One RHR pump is required to achieve cold shutdown. Redundant equipment is located outside of this room. Motor operated valves, located in fire zones 110 and 111 which can be positioned manually are separated from this zone by a 33" thick concrete wall. These valves need not be checked for spurious operation until cooldown activity commences. Therefore the loss of cable or equipment contained in this zone will not prevent safe shutdown.

CONCLUSION

On the basis of the above analysis, the features described in this evaluation are considered to provide fire protection for the safe shutdown equipment located in fire zone 109 which is sufficient to satisfy the technical requirements of Appendix R.



WISCONSIN POWER ELECTRIC CO. POINT BEACE NUCLEAR PLANT TECHNICAL EVALUATIONS REPORT SAFE SHYATTAN COMPONENTS

Cable	Илсечау	Associated	Associated Component Description
2D2423GA	2-851B	2-MOV8518	CONTAINMENT SUMP
ZD2423CB	2-851B	2-40VE51B	CONTAINMENT SUMP
ZD2829AA	2P10B1	2-P10B	RHR PUMP, MOTOR

February, 1987

FIRE PROTECTION TECHNICAL EVALUATION

FIRE ZONE: 115 - RESIDUAL HEAT EXCHANGER ROOM

ZONE BOUNDARY DESCRIPTIONS

Zone Size

N-S Dimension: 24' E-W Dimension: 11' Vert Dimension: 29' See Drawing: PBC-66 Sh. 2

North Wall

30" Concrete

Doors 1 - 2'X7' open doorway

Penetrations Electrical penetrations are not sealed with rated fire seals

Mechanical penetrations are not sealed with rated fire seals

1 - 30"X12" ventilation duct without fire damper and unsealed

East Wall - Fire Area Boundary below 8' elevation

36" Concrete

Doors

Penetrations Electrical penetrations are not sealed with rated fire seals

Mechanical penetrations are not sealed with rated fire seals

South Wall - Fire Area Boundary below 8' elevation

36" Concrete

Doors

Penetrations Electrical penetrations are sealed with 3 hr. rated fire seals

Mechanical penetrations are sealed with 3 hr. rated fire seals

West Wall

30" Concrete

Doors 1 - 2'X7' open doorway

Penetrations Electrical penetrations are not sealed with rated fire seals

Mechanical penetrations are not sealed with rated fire seals

1- 24"X12" ventilation duct without fire damper and unsealed

Ceiling

24" Concrete

Penetrations

Electrical penetrations are not sealed with rated fire seals

Mechanical penetrations are not sealed with rated fire seals

2 - 5'X5' hatches fitted with concrete plugs. (See Analysis - Paragraph 1)

Floor

36" Concrete

Penetrations Electrical penetrations are not sealed with rated fire seals

Mechanical penetrations are not sealed with rated fire seals

ZONE OCCUPANCY

SAFE SHUTDOWN EQUIPMENT

Unit 1 redundant residual heat exchangers. (See Analysis -Paragraph 2)

COMBUSTIBLES/HAZARDS Very light combustible loading

EXPOSURE

Above Baric Acid Equipment Room, Fire Zone 196

Below RHR Pump Room, Fire Zone 105

North Corridor and Concensate Return, Fire Zones 113 and 142A

Boric Acid Evaporator and Valve Gallery, Fire Zones 139 and 140

South Unit 1 Facade, Fire Zone 524

West

Corridor and Holdup Tank Pump Room, Fire Zones 113 and 131

FIRE PROTECTION FEATURES

Fire Detection Noire. (See Analysis - Paragraph 3)

Automatic Fire Suppression

None

Hose Lines

Hose lines are available to provide manual fire suppression capability as described in the fire emergency plans

Portable Equipment

Portable fire extinguishers, suitable for the hazards present, are available as described in the fire emergency plans

Other

Available fire brigade equipment, communications equipment locations and other manual fire fighting capabilities are described in the fire emergency plans

EXEMPTION REQUESTS

Exemption was requested from the automatic fire suppression and the fire area boundary requirements of Appendix R for the auxiliary building April 28, 1983. The exemption was granted December 31, 1986.

ANALYSIS

- The hatches in the ceiling of the zone have concrete covers which are provided to the thickness of the ceiling and entirely fill the hatch opening. These covers are considered to be sufficient to prevent fire migration to the floor above because they are of the same construction as the concrete ceiling.
- The RHR heat exchangers which are of heavy metal construction and are filled with water are expected to survive a fire which could occur in this zone.
- 3. Fire detection is provided in adjacent fire zones 113 and 131 designed and installed as described in the fire detector location plan. Because of the small size of zone 115, the absence of hot shutdown equipment and the low combustible loading therein; the provision of automatic detection in fire zone 119 is not considered to be necessary.

CONCLUSION

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On the basis of the above analysis, the features described in this evaluation provide fire protection for the safe shutdown equipment located in fire zone 115 which is sufficient to satisfy the technical requirements of Appendix R.



WISCONSIN POWER ELECTRIC CO. POINT BEACE NUCLEAR PLANT TECHNICAL EVALUATIONS REPORT SAFE SHUTDOWN COMPONENTS

FOR FIRE ZONE 115

Cable..... Raceway.....

* 17.12

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Component

Associated..... Associated..... Component Description

NO ITEMS PRESENT

February, 1987

FIRE PROTECTION TECHNICAL EVALUATION

FIRE ZONE: 119 - RESIDUAL HEAT EXCHANGER ROOM

ZONE BOUNDARY DESCRIPTIONS

Zone Size

N-S Dimension: 24' E-W Dimension: 11' Vert Dimension: 29' See Drawing: PBC-66 Sh. 2

North Wall - Fire Area Boundary below 8' elevation

36" Concrete

Doors None

Penetrations Electrical penetrations are not sealed with rated fire seals

Mechanical penetrations are not sealed with rated fire seals

East Wall - Fire Area Boundary below 8' elevation

36" Concrete

Doors None

Penetrations Electrical penetrations are not sealed with rated fire seals

Mechanical penetrations are not sealed with rated fire seals

South Wall

Doors 1 - 2'X7' open doorway

Penetrations Electrical penetrations are not sealed with rated fire seals

Mechanical penetrations are not sealed with rated fire seals

1 - 30"X12" ventilation duct without fire damper and unsealed

West Wall

30" Concrete

Doors 1 - 2'X7' open doorway

```
Penetrations
Electrical penetrations are not sealed with rated fire
seals
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Mechanical penetrations are not sealed with rated fire seals

1- 24"X12" ventilation duct without fire damper and unsealed

Ceiling

24" Concrete

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Penetrations
```

Electrical penetrations are not sealed with rated fire seals

Mechanical penetrations are not sealed with rated fire seals

2 - 5'X5' hatches fitted with concrete plugs. (See Analysis -Paragraph 1)

Floor

36" Concrete

Penetrations

Electrical penetrations are not sealed with rated fire seals

Mechanical penetrations are not sealed with rated fire seals

ZONE OCCUPANCY

SAFE SHUTDOWN EQUIPMENT

Unit 2 redundant residual heat exchangers. (See Analysis - Paragraph 2)

COMBUSTIBLES/HAZARDS Very light combustible loading

EXPOSURE

Above Boric Acid Equipment Room, Fire Zone 196

Below RHR Pump Room, Fire Zone 109

North Unit 2 Facade, Fire Zone 596

East Boric Acid Evaporator and Valve Gallery, Fire Zones 137 and 138

South

Corridor and Condensate Return, Fire Zones 113 and 142A

West

Corridor and Holdup Tank Pump Room, Fire Zones 113 and 131

FIRE PROTECTION FEATURES

Fire Detection

None. (See Analysis - Paragraph 3)

Automatic Fire Suppression None

Hose Lines

Hose lines are available to provide manual fire suppression capability as described in the fire emergency plans

Portable Equipment

Portable fire extinguishers, suitable for the hazards present, are available as described in the fire emergency plans

Other

Available fire brigade equipment, communications equipment locations and other manual fire fighting capabilities are described in the fire emergency plans

EXEMPTION REQUESTS

Exemption was requested from the automatic fire suppression and the fire area boundary requirements of Appendix R for the auxiliary building April 28, 1983. The exemption was granted December 31, 1986.

ANALYSIS

- The hatches in the ceiling of the zone have concrete covers which are provided to the thickness of the ceiling and entirely fill the hatch opening. These covers are considered to be sufficient to prevent fire migration to the floor above because they are of the same construction as the concrete ceiling.
- The RHR heat exchangers which are of heavy metal construction and are filled with water are expected to survive a fire which could occur in this zone.
- 3. Fire detection is provided in adjacent fire zones 113 and 131 designed and installed as described in the fire detector location plan. Because of the small size of zone 119, the absence of hot shutdown equipment and the low combustible loading therein; the provision of automatic detection in fire zone 119 is not considered to be necessary.

CONCLUSION

On the basis of the above analysis, the features described in this evaluation provide fire protection for the safe shutdown equipment located in fire zone 119 which is sufficient to satisfy the technical requirements of Appendix R.



WISCONSIN POWER ELECTRIC CO. POINT BEACH NUCLEAR PLANT TECHNICAL EVALUATIONS REPORT SAFE SHUTDOWN COMPONENTS

FOR FIRE ZONE 19

retin

Raceway..... Associated..... Component

Associated..... Component Description

NO ITEMS PRESENT

February, 1987

FIRE PROTECTION TECHNICAL EVALUATION

FIRE ZONE: 142 - COMPONENT COOLING WATER PUMP ROOM

ZONE BOUNDARY DESCRIPTIONS

Zone Size

N-S Dimension:	49'-4"	and	21'-4"
E-W Dimension:	23'-2"	and	48'-0"
Vert Dimension:	16'		
See Drawing:	PBC-66	Sh.	2

North Wall

24" Concrete

Doors

(

1-8'x8' and 1-3'x7' door openings protected with waterspray nozzles designed to provide 3 hr. protection

1-6'x13' and doorless opening

Penetrations Where the room boundary is an exterior building wall;

Electrical penetrations are sealed with 3 hr. rated fire seals

Mechanical penetrations are provided with 3 hr. rated fire seals

Two 12"x24" ventilation ducts without fire dampers are sealed with 1 hr. rated fire seals (See Analysis - Paragraphs 1 and 2)

Where the room boundary is an interior building wall;

Electrical penetrations are not sealed (See Analysis - Paragraph 3)

Mechanical penetrations are not sealed (See Analysis - Paragraph 3)

Ventilation duct penetrations are not sealed (See Analysis - Paragraph 3)

East Wall - Fire Area Boundary

24" Concrete

Doors None

Penetrations Electrical penetrations are sealed with 1 hr. rated fire seals (See Analysis - Paragraph 1)

Mechanical penetrations are sealed with 1 hr. rated fire seals (See Analysis - Paragraph 1)

South Wall - Fire Area Boundary

24" Concrete

(

Doors 1-8'x8' and 1-3'x7' door openings protected with waterspray nozzles designed to provide 3 hr. protection

Penetrations Mechanical penetrations are sealed with 3 hr. rated fire seals

Electrical penetrations are sealed with 3 hr. rated fire seals

Five ventilation ducts of 48"x40", 40"x20", 30"x30", 30"x12" and 26"x16" size without fire dampers are sealed with 3 hr. rated fire seals (See Analysis - Paragraph 2)

West Wall

24" Concrete adjacent to fire zones 148 and 150. None adjacent to fire zone 142A.

Doors 1-6'x13' open doorway (See Analysis - Paragraph 3)

Penetrations Electrical penetrations are not sealed (See Analysis -Paragraph 3)

Mechanical penetrations are not sealed (See Analysis -Paragraph 3)

Ceiling

24" Concrete

Penetrations Electrical penetrations are sealed with 3 hr. rated fire seals (See Analysis - Paragraph 5)

Mechanical penetrations are sealed with 3 hr. rated fire seals (See Analysis - Paragraph 5)

One open stairway to the Monitor Tank Room 187

Floor - Fire Area Boundary

24" Concrete

ZONE OCCUPANCY

(

SAFE SHUTDOWN EQUIPMENT

Safe shutdown equipment contained in this room consists of Units 1 and 2 component cooling water pumps, power cables for Units 1 and 2 charging pumps and residual heat removal pumps cables for automatically operated valves, and cables for primary system instrumentation alternate shutdown capability. (See Analysis - Paragraph 5)

COMBUSTIBLES/HAZARDS

A moderate combustible loading consisting primarily of cable insulation

ZONE EXPOSURE

Above Monitor Tank Room, Fire Zone 187

Below None/Grade

North Motor Control Center Room, fire Zone 166

East Auxiliary Feedwater Pump Room, Fire Zone 304

South

Safety Injection Pump Room, Fire Zone 151

West

Process Steam Condensate Return Fump, Fire Zone 142A

FIRE PROTECTION FEATURES

Fire Detection

Photoelectric smoke detection is provided in this zone designed and installed as described in the fire detector location plan

Automatic Fire Suppression

Wet pipe sprinklers designed to provide .3 gpm per square foot over the sprinklered area as indicated on Drawing PBC-66 Sh. 2

Doorways are provided with fusible element waterspray nozzles designed to provide a spray pattern to cover the entire doorway based upon fire tests which demonstrated 3 hr. fire rating protection

Hose Lines

Hose lines are available to provide manual fire suppression capability as described in the fire emergency plans

Portable Equipment

Portable fire extinguishers, suitable for the hazards present, are available as described in the fire emergency plans

OTHER

Available fire brigade equipment, communications equipment locations and other manual fire fighting capabilities are described in detail in the fire emergency plans.

EXEMPTION REQUESTS

Exemption from the 20 foot horizontal separation without intervening combustibles and the total area automatic fire suppression requirements of Appendix R was requested June 30, 1982. The exemption was granted July 3, 1985.

ANALYSIS

- 1. The center section of the auxiliary building is located between the north wing and the south wing and is bordered on the east side by the control building. Each building is a separate structure with architectural gaps between adjacent walls. 3 hr. rated fire seals are installed in the adjacent control building wall. In order to prevent fire propagation between elevations of the auxiliary building through the architectural gaps, 1 hr. rated fire seals are installed in the elevation 8'-0" penetrations to provide protection for alternate shutdown cables on the 8'-0" elevation from fire propagation through the architectural gap area which is equivalent to section III, G, 2, C of Appendix R.
- The ventilation ducts which penetrate the walls are solid steel ducts which can be considered to provide a 1 hr. fire rating. This is adequate boundary protection on the basis of the protection features and occupancy of this room.
- 3. The adjacent rooms contain waste disposal equipment consisting of large tanks and small pumps. The combustible loading is very light and does not present a hazard to safe shutdown equipment contained in the component cooling water pump room.
- The ceiling is a barrier between the redundant instrument 4. cables of both units located on the 26 foot elevation and the alternate shutdown cables in the zone. The east edge of the open hatch in the ceiling is the west boundary of fire zone 142. Ceiling penetrations between the open hatch and the building east wall are sealed with 3 hr. rated fire seals. An open stairway penetrates the ceiling within the sealed area. Automatic sprinkler protection which surrounds the open stairway is installed to provide full area coverage for fire zone 142. Early warning fire detection which alarms in the control room is provided on both the 8' and 26' elevations. Although overhead intervening combustibles are present between the stairway and the subject instrument cables on both elevations, there are no intervening combustibles which pass through the stairway. If a fire were to occur on either elevation, it would be detected in its incipient stages by the early warning fire detection system. The fire brigade would then be dispatched to extinguish the fire manually. The substantial floor construction with sealed penetrations and the automatic sprinkler system on the 8' elevation would be expected to provide sufficient passive and active fire suppression until the fire was extinguished.

5. One component cooling water pump is sufficient to achieve cold shutdown of both units. Repair activity is allowed for cold shutdown systems. The water filled heavy metal section pumps are expected to withstand the effects of a postulated fire. However the motor drivers could be damaged and a spare motor is available. Dedicated spare cables are provided for component cooling water and residual heat removal pump operation. Redundant Unit 1 charging pump cables are located outside of the zone. One train of Unit 2 charging pump cables is wrapped in accordance with Appendix R, Section III G, 2, C. The automatically operated valves which are located outside of the zone can be positioned manually.

CONCLUSION

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On the basis of the above analysis and the exemption granted, the features described in this evaluation provide fire protection for the safe shutdown equipment located in fire zone 142 which is sufficient to satisfy the technical requirements of Appendix R.



WISCONSIN POWER ELECTRIC CO. POINT BEACE NUCLEAR PLANT TECENICAL EVALUATIONS REPORT SAFE SHUTDOWN COMPONENTS

Cable	Raceway	Associated	Associated
		Component	Component
			Description
1J37L	CM02	1-BCV625	REFR EX FLOW CONRTOL
			VALVE, NOV
	CN03		
	PMOA		
	FR05		
	KF02		
	JJ11		
	JJ12		
	JJ13		
	JJ14		
	JJ15		
	JJ16		
	JJ17		
	JJ18		
	-	1. HOWERS	DED BY BI OU CONSECU
17360	GH02	1-004024	KHK HA FLOW CONTROL
	CNOS		VALVE, AUV
	CN03		
	PROS		
	FRUD		
	1111		
	3.11.2		
	1113		
	1.114		
	1.115		
	3316		
	JJ17		
	JJ18		
2327JA	RC02	2-MOV1299	EXCESS LETDOWN
	FV14		
	FV15		
2327.JB	RC02	2-MOV1299	EXCESS LETDOWN
	PV:4		
	FV15		
			PUREA I PRODUC
2327JC	CK05	Z-MOV1299	EAGESS LEIDOWN
	CKO4		
	CK03		
	CK02		
	CK01		

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WISCONSIN POWER ELECTRIC CO. POINT BEACE NUCLEAR PLANT TECHNICAL EVALUATIONS REPORT SAFE SHUTDOWN COMPONENTS

Cable	Racevay	Associated	Associated Component Description
2327JD	CIK05 CIK04 CIK03 CIK02 CIK01	2-MOV1299	EKCESS LETDOWN
2327JE	CEK05 CEK04 CEK03 CEK02 CEK01	2-MOV1299	EXCESS LETDOWN
21420R	YA06 2C205-1	2-PT420	RCS PRESSURE TRANSMITTER(W.R.)
21420Y	¥£05	2-PT420	RCS PRESSURE TRANSMITTER(W.R.)
21426L	¥A06 2C205-1	2-1.7426	PRESSURIZER LEVEL TRANSMITTER
2.J37L	20205-1 CK02 CF03 CF04 FV1D JE05 JE04 JE03 CH04 FM04 KF02 JJ11 JJ12 JJ12 JJ13 JJ14 JJ15 JJ16 JJ17 JJ18	2-BCV625	RHR EX FLOW CONTROL VALVE, AOV

WISCONSIN POWER ELECTRIC CO. POINT BEACH NUCLEAR PLANT TECHNICAL EVALUATIONS REPORT SAFE EHUTDOWN COMPONENTS

Cable	Raceway	Associated	Associated
		Component	Component
			Description
23380	C703	2-EVC624	RER HX FLOW CONTROL
			VALVE, AOV
	FV10		
	FV11		
	FV12		
	FV13		
	FV14		
	RCO1		
	PQ08		
	JJ16		
	JJ17		
	JJ18		
2,388	CF03	2-FCV626	RER EXS BYPASS
			ISOLATION VALVE, AOV
	FV10		
	FV11		
	FV12		
	FV13		
	PV14		
	FV15		
2N4001A	20208-7	2-N40	SOURCE RANCE
			INSTRUMENT
2840018	20208-7	2-N40	SOURCE RANGE
			INSTRUMENT
2840010	20208-7	2-140	SOURCE RANGE
			INSTRUMENT
2840018	VADE	2-140	SOURCE RANGE
2040011	LAUU		INSTRUMENT
	20205-1		
	20203-2		
284.0010	¥406	2-840	SOURCE RANGE
2440010	INCO	7-H=0	TNETDIMENT
	20205-1		and a start marrie
	20205-1		
001074	FUOA	C207	ALTERNATE
D3101W	1000	6407	TNETRIMENTATION
			DARFI
	BUCC	2267	AT TERNATE
	1005	6207	MILERAIL

WISCONSIN POWER ELECTRIC CO. POINT BEACE MUCLEAR PLANT TECHNICAL EVALUATIONS REPORT SAFE SHUTDOWN COMPONENTS

Cable	Racevay	Associated	Associated
		Component	Component
			Description
			INSTRUMENTATION
			PANEL
	FU04		
WP21451G	YA-2	2-TE4318	RCS HOT LEG TEMP
			ELEM., LOOP'B'
	YAO6	2-TE451B	RCS HOT LEG TEMP.
			ELEM., LOOP'B'
WP214510	YA-2	2-TE451C	RCS COLD LEG TEMP
			ELEM., LOOP 'B'
	YAO6	2-TE451C	RCS COLD LEG TEMP.
			ELEM., LOOP 'B'
UD274516	20205-1	2-TE4518	RCS BOT LEG TEMP
#121-010	20205-2		FLEM LOOP'B'
	VADA	2-754518	RCS HOT LEG TEMP.
	,		ELEM., LOOP'B'
WP2IA51V	20205-1	2-TE451C	KCS COLD LEG TEMP.
			ELEM., LOOP 'B'
	YAD6	2-TE451C	RCS COLD LEG TEMP.
			ELEM., LOOP 'B'
ZA1323CA	JJ11	1-MOV851A	CONTAINMENT SUMP
			SUCTION
	JJ12		
	JJ13		
	JJ14		
	JJ15		
	JJ16		
	JJ17		
	JJ18		
ZA1323CB	JJ11	1-MOV851A	CONTAINMENT SUMP
			SUCTION
	JJ12		
	JJ13		
	JJ14		
	JJ15		
	JJ16		
	JJ17		
	JJ18		

WISCONSIN POWER ELECTRIC CO. POINT BEACH NUCLEAR PLANT TECHNICAL EVALUATIONS REPORT SAFE SEUTDOWN COMPONENTS

Cable	Recevey	Associated	Associated
		Component	Component
			Description
ZAIBIOAA	IFILAL	1-FILA	COWS PUMP, MOTOR
			DRIVEN
ZAIBIOAE	1F11A2	1-P11A	CCWS PUMP, MOTOR
			DRIVEN
ZA1B12AA	JJ11	1-P10A	RHR PUMP, MOTOR
			DRIVEN
	JJ12		
	JJ13		
	JJ14		
	JJ15		
	JJ16		
	JJ17		
	JJ18		
ZALYDIOZA	KF02	1-Y11	120V AC PANEL
******	0501		0000 - 135 CUS
EDIAZOCA	Quen 1	1-MOVB51B	CURIAINMENI SUMP
	TEOS		BUCITON
	TEOR		
	TEDA		
	TEOS		
	TEOG		
	JE07		
	TEOR		
	JEO9		
	JE10		
	JE11		
	JE12		
ZB1423CB	QEOI	1-MOV8518	CONTAINMENT SUMP
			SUCTION
	JE02		
	JEOS		
	JEOA		
	JE05		
	JE06		
	JE07		
	JE08		
	JE09		
	JE10		
	JE11		

WISCONSIN POWER ELECTRIC CO. POINT BEACE BUCLEAR PLANT TECHNICAL EVALUATIONS REPORT SAFE SHUTDOWN COMPONENTS

FOR FIRE ZONE 142

Cable	Racevay	Associated	Associated
			Description
	JE12		
ZB1424JA	QKO1	1-MOV7388	COWS TO RHR HIX ISOL. VALVE, OV
	JE01		
	JE13		
	JELA		
	1-738B		
ZB1424JB	QK01	1-MOV738B	CCWS TO RER HX ISOL . VALVE, MOV
	JE01		
	JE13		
	JE14		
	1-738B		
281428FA	QJ01	1-MOV+006	SWS BACKUP WATER SUPPLY TO (1-P29), MOV
	FROS		
	FR07		
	FR06		
	FR05		
	PROA		
2B1428FB	QJ01	1-MOV4006	SWS BACKUP WATER SUPPLY TO (1-P29),
			MOV
	FROB		
	FR07		
	FR06		
	FROS		
	FR04		
ZB1B20AH	1P2C-3	1852-20A	BREAKER
	JEG6		
	JEOS		
	TEOS		
	CNOA		
	CNO 3		
ZB1B2DAJ	1P2C-3	1-P2C	CHARGING PUMP, POSITIVE

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WISCONSIN POWER ELASTRIC CO. POINT BEACE NUCLEAR PLAST TECHNICAL EVALUATIONS REPORT SAFE SHUTING CONTROLOGYNTY

***FOR FIRE ZONE 142" "*

Cable	Raceway	Associated	Associated
		Component	Component
		-	Descriptics
			DISPLACEMENT
	JEO6		
	JE05		
	JEOA		
	JE03		
	1P2C-5		
ZB1B20AK	1P2C-3	1252-304	BREAKER
	JE06		
	JE05		
	JEOA		
	JE03		
	1P2C-5		
ZBIBZDAL	1930-3	1852-20A	EREARCE
	JEDE		
	JE05		
	AOAL		
	JE03		
	1P2C-5		
ZB1B20AM	1P2C-3	1852-20A	BREAKER
	30.TL		
	JEOS		
	JE04		
	J£03		
	CN04		
	CH05		
ZBIBZIAA	PROA	1-P10B	DRIVER
	CNO3		
	JEO3		
	JEDA		
	JEOS		
	JED6		
	.72:07		
	.2508		
	TEUS		
	.783.0		
	JE11		
	121.7		
2818238A		1-P11B	CONS THAP, MOTOR

WISCONSIN POWER ELECTRIC CO. POINT BEACE NUCLEAR PLANT TECHNICAL EVALUATIONS REPORT SAFE SHUTDOWN COMPONENTS

Cable	Recever	Associated	Associated
		Component	Component
			Description
			DRIVEN
ZB1B23BE		1-P11B	COWS PUMP, MOTOR DRIVEN
ZB1B23CA	FR04	1-B42	480V MOTOR CONTROL CENTER BUS
		1852-230	SAFEGUARD MCC-1842 BREAKER
	FR05		
	FR06		
	FR07		
ZB1NB004A	PHO 4	1-MOV2020	AFW PUMP (1-F29) STEAM SUPPLY VALVE, MOV
ZBINBOC4B	FMO4	1-MOV2020	AFW PUMP (1-F29) STEAM SUPPLY VALVE, MOV
2C23211BC	CK05	2-LCV112B	RWET ISOLATION VALVE, SUPPLY TO FUMP.MOV
	CEOA		
	CEOS		
	CK02		
	CIK01		
ZC2321FC	JQ05	2-MOV852A	RER INJECTION ISOLATION VALVE, MOV
	3004		
	JQ03		
	JQ02		
	3001		
	CJ01		
2C2323CA	RC02	2-MOVESIA	CONTAINMENT SUMP
	RC01		
	FQOB		
	FQ09		
ZC2323CB	RC02	2-MOV851A	CONTAINMENT SUMP
	RC01		

WISCONSIN POWER ELECTRIC CO POINT BEACH NUCLEAR PLANT TECHNICAL EVALUATIONS REPORT SATT SENTIOWN COMPONENTS

Cable	Raceway	Associated	Associated
		component	Component
			Description
	FQOB		
	PQOD		
20232300	JQ05	2-MOV851A	CONTAINMENT SUMP
	JQ04		
	JQ03		
	3002		
	JQ01		
	CJ01		
ZC2324JC	JQ05	2-MOV738A	CCWS TO RER HX
			ISOLATION VALVE, NOV
	JQOA		
	JQ03		
	JQ02		
	JQ01		
	CJ01		
ZCZ3Z4MC	2005	2-MOV700	RER/RCS BOUNDARY
			ISOLATION VALVE, MOV
	JQOA		
	JQ03		
	JQ02		
	3001		
	CJ01		
20232530	CK05	2-1 001120	VCT SOLATION VALVE
	0000	E DUTALEN	SUPPLY TO PIMP HOU
	CEDA		
	CEOS		
	CR 0.9		
	CROS		
	UKU1		
202325JE	CEOS	2-LCV112C	VCT ISOLATION VALVE.
			SUPPLY TO FUKP. MOV
	CEOA		
	CK03		
	CK02		
	(701		
20283444	2P11A1	2-P11A	COWS PUMP
ZC2B34AB	2P11A2	2-F11A	COWS PUMP

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WISCONSIN POWER MARCINIC CO. FOINT BEACE MUCLEAR PLANT TECHNICAL FWALUALI WS REPORT SAFE SHUTDOWN COMPONENTS

Cable	Raceway	Associated	Associated
		Component	Component
			Description
2C2B36A	F004	2-P10A	RER PUMP, MOTOR
			DRIVEN
	1001		
	3001		
	F002		
	P003		
	F0014		
	F005		
	F006		
	F007		
	FOOR		
	F009		
2C2B37AG	J.711	2-P2A	CHARGING PUMP.
			RUELTIVE
			DISFLACEMENT
	3312		0 2 0 2 3 Million 100 1
	1,113		
	JJ14		
and the	3315		
	JJ16		
	RC01		
11.	RC02		
18 8			
ZC. DATAH	P.CO2	2852-37A	BREAKER
	RCOL		
	FOOIS		
	F007		
	1006		
	*205		
	FQ0A		
	¥Q03		
	J001		
	CR01		
ZC2B37AJ	2P2A-4	18313A-28337A	CHARCING PUMP
			CROSSTIE PANEL
	PQ02	23337A-18313A	CHASPING FUMP
			CROSSTIP PANEL
	PQ03	28337A-18313A	CHARGING PUMP
			CROSSTIE PANEL
	FOOA		
	FQ05		
	JJ12		
WISCONSIN POWER ELECTRIC CO. POINT BEACH NUCLEAR PLANT TECHNICAL EVALUATIONS REPORT SAFE SEUTDOWN COMPONENTS

FOR FIRE ZONE 142

Cable	Racevay	Associated	Associated
		Component	Component
			Description
	JJ11		
ZC2B37AK	RC02	2B52-37A	BREAKER
	RC01		
	FQC8		
	FQ07		
	FQ06		
	FQ05		
	FQOA		
	FQ03		
	FQ02		
	2P2A-4		
2C2B37AL	RC02	2B52-37A	BREAKER
	RC01		
	FQOB		
	FQ07		
	FQ06		
	FQ05		
	FQOA		
	FQ03		
	FQ02		
	2P2A-4		
ZC2B37AM	RC02	2852-37A	BREAKER
	RC01		
	FQ08		
	FQ07		
	FQ06		
	FQ05		
	FQ04		
	PQ03		
	JQ01		
	CK01		
ZC2B37BG	JJ11	2-P2B	CHARGING PUMP,
			POSITIVE
			DISPLACEMENT
	JJ12		
	JJ13		
	JJ14		
	JJ15		
	JJ16		
	RC01		

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WISCONSIN POWER ELECTRIC CO. POINT BEACH NUCLEAR PLANT TECHNICAL EVALUATIONS REPORT SAFE SHUTDOWN COMPONENTS

Cable	Racoway	Associated	Associated
		Component	Component
			Description
	RC02		
ZC2B37BH	RC02	2B52-37B	BREAKER
	RCOL		
	FQ08		
	FQ07		
	PQ06		
	FQ05		
	FQ04		
	PQ03		
	JQ01		
	CK01		
ZC2B37BJ	2P2B-4	1B313B-2B337B	CHARGING PUMP
			CROSSTIE PANEL
	FQ02	2B337B-1B313B	CHARGING PUMP
			CROSSTIE PANEL
	FQ03	2B337B-1B313B	CHARGING PUMP
			CROSSTIE PANEL
	PQCA		
	PQ05		
	JJ12		
	JJ11		
ZC2B37BK	RCP2	2B52-37B	BREAKER
	R.01		
	FQOB		
	FQ07		
	FQ06		
	FQ03		
	PQOA		
	FQ03		
	FQ02		
	2P2B-4		
			555 JFF5
ZC2B37BL	RC02	2852-37B	BKEALER
	RC01		
	PQOB		
	PQ07		
	PQ06		
	PQ05		
	PQOA		
	FQ03		
	PQ02		

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WISCONSIN POWER ELECTRIC CO. POINT BEACE NUCLEAR PLANT TECHNICAL EVALUATIONS REPORT SAFE SEUTDOWN COMPONENTS

FOR FIRE ZONE 142

Cable	Raceway	Associated	Associated
		Component	Component
			Description
	2P2B-4		
90083786	8002	2852-37B	BREAKER
LULDS / Bri	RC01		
	FOOR		
	F007		
	PQ06		
	FQ05		
	FQ04		
	PQ03		
	JQ01		
	CW01		
ZC2B38BA	FUOA	2-832	480V MOTOR CONTROL
			CENTER
		2B52-38B	SAFEGUARD MCC-2832
			BREAKER
	FU05		
	FU06		
ZC2B38CA	FT03	2-B31	480V MOTOR CONTROL
			CENTER BUS
		2B52-38C	MCC 2B31 BREAKER
ZC2J136A	CK01	2-PCV431	PRESSURIZER POWER
			OFER. RELIEF VALVE,
	CT 0.2		AUV
	CE03		
	CEOA		
	CEOS		
ZC2J148B	CK01	2-CV200A	LETDOWN ORIF. BLOCK
			VALVE, AOV
	C1K02		
	СКОЗ		
	CROA		
	CK05		
ZC2J148C	CK01	2-CV200A	LETDOWN ORIF. BLOCK
			VALVE, AOV
	CK02		
	CK03		
	CK04		

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WISCONSIN POWER ELECTRIC CO. POINT BEACE NUCLEAR PLANT TECHNICAL EVALUATIONS REPORT SAFE SEUTDOWN COMPONENTS

Cabla	Raceway	Associated	Associated
		Component	Component
			Description
	CK05		
ZC2J148G	FQ01	2-CV200A	LETDOWN ORIF. BLOCK
			VALVE, AV
	FQ02		
	FQ03		
	FQ04		
	PQ-1		
ZC2J1498	CIK01	2-CV200B	LETDOWN ORIF. BLOCK
			VALVE, AOV
	CIK02		
	CK03		
	CK04		
	CK05		
ZC2J149C	CK01	2-CV2008	LETDOWN ORIF. BLOCK
			VALVE, AOV
	CX02		
	CK03		
	CKOA		
	CROS		
	GRUD		
200 11 400	8001	0.000000	PERALBI ADTE BLACK
20201=30	FQUI	2-072000	LEIDOWN ORIF. BLOCK
	8000		VALVE, AUV
	FQ02		
	FQ03		
	PQOA		
	PQ-1		
ZC2J130B	CIKO1	2-CV200C	LETDOWN ORIF. BLOCK
			VALVE, AOV
	CK02		
	CROS		
	CIKOA		
	CK05		
2C2J150C	CK01	2-CV200C	LETDOWN ORIF. BLOCK
			VALVE, AOV
	CK02		
	CK03		
	CKOA		
	CK05		

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WISCONSIN POWER ELECTRIC CO. POINT BEACH NUCLEAR PLANT TECHNICAL EVALUATIONS REPORT SAFE SHUTDOWN COMPONENTS

FOR FIRE ZONE 142

Cable	Raceway	Associated	Associated
			Description
2C2J130G	FQ01	£ -CV200C	LETDOWN ORIF. BLOCK VALVE, AOV
	FQ02		
	P004	PQ03	
	FO-1		
	14.1		
2C2NA005A	FT03	2-MOV2019	AFW PUMP (2-P29) STEAM SUPPLY VALVE, MOV
	22019A		
ZC2NA005B	PT03	2-MOV2019	AFW PUMP (2-P29)
			STEAM SUPPLY VALVE,
	220104		MOV
	220194		
2C2NC005E	CK01	2-074002	APW PUMP
			RECIRCULATION
			(2-P29), AOV
	CK02		
	CK03		
	FU04		
	PT03		
	22020B		
202800058	CE01	2-004002	APU PIND
		2 01002	RECIRCULATION
			(2-P29), AOV
	CK02		
	CK03		
	FUOA		
	FT03		
	22019A		
70949904	OPOL	2-0000518	CONTATINENT CITUD
LUZAZJUK	FV10	2-1010310	CORTRIBUERT DOLL
	FV11		
	PV12		
	FV13		
	FV14		
	FV15		
ZD2423CB	QP01	2-MOV8518	CONTAINMENT SUMP

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WISCONSIN POWER ELECTRIC CO. POINT BEACH NUCLEAR PLANT TECHNICAL EVALUATIONS REPORT SAFE SHUTDOWN COMPONENTS

Cable	Raceway	Associated	Associated
		Component	Component
			Description
	FV10		
	PV11		
	FV12		
	FV13		
	FV14		
	FV15		
ZD2424JA	QF01	2-MOV738B	CCWS TO RHR HX
			ISOLATION VALVE, MOV
	FV10		
	FV11		
	FV12		
	FV13		
	FV14		
	PV15		
		A MAN75505	ACUE DA BED EV
ZD2424JB	QF01	2-MOV/38B	CONS TO KAK AA
	10110		ISOLATION FALVE, NOV
	FVID		
	FVII 9		
	FV12		
	PULA		
	PV15		
2D2427MA	0601	2-MOVA006	SWS BACKUP WATER
			SUPPLY TO 2-P29, MOV
	FV10		
	FV09		
	FVOR		
	FV07		
ZD2427MB	QG01	2-MOV4006	SWS BACKUP WATER
			SUPPLY TO 2-P29, MOV
	FV10		
	FV09		
	FVOB		
	FV07		
ZD2828AA	2NP2C1	2-P2C	CHARGING PUMP,
			POSITIVE
			DISPLACEMENT
	FV07		
	FVOB		

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WISCONSIN POWER ELECTRIC CO. POINT BEACH NUCLEAR PLANT TECHNICAL EVALUATIONS REPORT SAFE SHUTDOWN COMPONENTS

FOR FIRE ZONE 142

Cable	Raceway	Associated	Associated
		Component	Component
			Description
	F709		
	CF03		
ZD2B2BAB	FV07	2-P2C	CHARGING PUMP,
			POSITIVE
			DISPLACEMENT
	2MP2C1		
ZD2B2BAC	PV-3	2-P2C	CHARGING PUMP,
			POSITIVE
			DISPLACEMENT
	FVOR		
	FV09		
	CF04		
	CF03		
ZD2B2BAF	CF03	2-P2C	CHARGING PUMP,
			POSITIVE
			DISPLACEMENT
	FV09		
	FVOS		
	FV07		
	2MP2C1		
ZD2B28BA	2P11B1	2-P11B	CCWS PUMP
ZD2B28BB	2P11B2	2-P11B	CCWS PUMP
ZD2B29AA	FV07	2-P10B	RER PUMP, MOTOR
			DRIVEN
	FVOB		
	FV09		
	PV10		
	FV11		
	FV12		
	PV13		
	FV14		
	FV15		
		0.040	LACK MOTOR CONTROL
ZD2B32CA	FW03	Z-B42	ABOY NOIOK CONIKOL
			CARROLLARD MCC. 25/2
		2852-320	BALEUUARD MUU-2842

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VISCONSIN POWER ELECTRIC CO. POINT BEACE NUCLEAR PLANT TECHNICAL EVALUATIONS REPORT SAFE SHUTDOWN COMPONENTS

Cable	Racevay	Associated	Associated
			Description
	Q601		
ZD2NB004A	PW03	2-MOV2020	APW PUMP (2-P29) Steam Supply Valve, Mov
	22020A		
ZD2NB004B	FM03	2-MOV2020	AFW PUMP (2-P29) STEAM SUPPLY VALVE, MOV
	22020A		
ZE13212HA	5280	1832128	LOCAL CONTACTOR
	FOUS		
	JQ01		
	JQ02		
	JQ03		
	JQOA		
	JQ05		
2E23211MA	F006	MOV3930	VALVE
	FU05		
	PUOA		
ZE23211MB	FU06	MOV3930	VALVE
	FUOS		
	FUOA		
752321180	CE05	MOV3030	VALVE
6663631100	CIKOA	1017770	
	CK03		
	CK02		
	CIKO 1		
ZE2328CA	FU06	M0V4022	APW SUPPLY HEADER VALVE (P38A), MOV
	FU05		
	P004		
ZE2328CB	FUO6	MOV4022	AFW SUPPLY HEADER VALVE (P38A), MOV
	FUOS		
	FUOA		

WISCONSIN POWER ELECTRIC CO. POINT BEACH NUCLEAR PLANT TECHNICAL EVALUATIONS REPORT SAFE SHUTDOWN COMPONENTS

Cable	Raceway	Associated	Associated
		Component	Component
			Description
2E2328CC	C1K.0.5	MOV4022	APW SUPPLY HEADER
			VALVE (P38A), MOV
	CEOA		
	CK03		
	CK02		
	CK01		
7523944	FU04	2832128	LOCAL CONTACTOR
	FUOS		
	FUO6		
25283204	F001	811	ABOY MOTOR CONTROL
66666 0 / GPS		200	CENTER BUS
	2002		Cantan Doo
	PQ02		
	PQ05		
	FQUA		
	FQ05		
	FQ06		
	PQU7		
	FQ08		
	FQ09		
ZF14210MA	FR09	MOV3931	FUEL OIL TO DAY TANK
			VALVE
	FROD		
	FR07		
	FROS		
	FR05		
	FR04		
	FR01		
ZF14210MB	FR09	MOV3931	FUEL OIL TO DAY TANK
			VALVE
	FROS		
	FR.07		
	FROS		
	FR05		
	FROA		
	FR01		
2F1428CA	0,301	MOV4021	AFW SUPPLY HEADER
			VALVE (P38B), MOV
	FROS		

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WISCONSIN POWER ELECTRIC CO. POINT BEACE NUCLEAR PLANT TECHNICAL EVALUATIONS REPORT SAFE SHUTDOWN COMPONENTS

Cable	Raceway	Associated	Associated
		Component	Component
			Description
	FR07		
	FROS		
	FR05		
	PR04		
ZF1428CB	QJ01	MOV4021	AFW SUPPLY HEADER
			VALVE (P368), MOV
	FROS		
	FR07		
	FRO:		
	FR05		
	FROA		
ZF1494A	FR04	1B4211D	LOCAL CONTACTOR
	FR05		
	FR06		
	\$377		
ZFIBZICH	FMOA	B43	480V MOTOR CONTROL
	-		CENTER
	CROA		
	JEUS		
	JEUA		
	JEUS		
	JEUG		
	JE07		
	JEUS		
	JEOA		
	JEIO		
78949864	0001	M0174.014	PUE BARGINE ULTER
FLY#FORM	4001	HOVEDIG	SHD BACKUF WAIER
			MOU
	1991 D		HUV
	PU00		
	FUOR		
	FV07		
ZF242BCB	QG01	MOV4016	SWS BACKUP WATER
			SUPPLY TO (P38B),
			MOV
	FV10		
	FV09		
	FVOB		

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WISCONSIN POWER ELECTRIC CO. POINT BEACH NUCLEAR PLANT TECHNICAL EVALUATIONS REPORT SAFE SEUTDOWN COMPONENTS

Cable	Raceway	Associated	Associated
		Component	Component
			Description
	F V07		
ZF2428FA	Q601	MOV4020	AFW SUPPLY HEADER
	FVIO		TALTE (1305), NOT
	WV09		
	FVOS		
	FV07		
2F2428FB	QG01	MOV4020	AFW SUPPLY HEADER
	PEIO		TALVE (FOOD), HOT
	FVDO		
	FVOA		
	FV07		
ZP2I420F	YA-2	2-PT420	RCS PRESSURE
			TRANSMITTER (W.R.)
	YAD6	2-PT420	RCS PRESSURE
			TRANSMITTER (W.R.)
202712564	VADA	2-19126	DDFCCIPTTPD 1 FUT
6123×200	1800	2-01420	TRANSMITTER
		2-LT426	PRESSURIZER LEVEL
			TRANSMITTER
ZP21429A	YADS	2-PCV1.30	PRESSURIZER POWER
			OPER. RELIEF
			VALVE, AOV
ZP214708	YA-2	2-LT470A	'B' STEAM GEN. LEVEL
			TRANSMITTER(W.R.)
	YA06	2 LT470A	'B' STEAM GEN. LEVEL
			TRANSMITTER(W.R.)
ZP214705	20205-1	2-LT470A	'B' STEAM GEN. LEVEL
			TRANSMITTER(W.R.)
	YAD6	2-LT470A	'B' STEAM GEN. LEVEL
			TRANSMITTER(W.R.)
ZP21483F	20205-1	2-PT483	'B' STEAM GEN.
			PRESSURE
			TRANSMITTER (W.R.)
	YA06	2-PT483	'B' STEAM GEN.

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WISCONSIN POWER ELECTRIC CO. POINT BEACH NUCLEAR PLANT TECHNICAL EVALUATIONS REPORT SAFE SHUTDOWN COMPONENTS

Cable	Raceway	Associated	Associated
		Component	Component
			Description
			PRESSURE
			TRANSMITTER(W.R.)
2P2N3043A	2PVC-R	2-W31	SOURCE RANCE
			INSTRUMENT
ZF2N3044A	2PVC-L	2-W31	SOURCE RANGE
			INSTRUMENT
2P2N3045A	2PVC-R	2-#31	SOURCE RANGE
			INSTRUMENT
ZP2N3046A	2PVC-R	2-N31	SOURCE RANGE
			INSTRUMENT
ZP2N3046B	2PVC-R	2-N31	SCURCE RANGE
			INSTRUMENT
ZP2N3047B	2PVC-R	2-N31	SOURCE RANGE
			INSTRUMENT
ZP2N3048B	2PVC-R	2-W31	SOURCE RANGE
			INSTRUMENT
ZP2N30498	2NTS-R	2-#31	SOUTRCE BANGE
	CUTO.K	5-83X	INSTRUMENT
792836568	SETC-D	9-891	CONTROL BANCE
EF ERJUJUD	THID-K	6-831	INSTRUMENT
	9890C-8	9-851	
282830318	ZPVC-R	2-835	INSTRUMENT
-			COMOR BUILD
ZPZN3052B	2PVC-F	2-#31	INSTRUMENT
ZP2Y0102A		2-111	120V AC PANEL
ZR21431A	YBO6	2-PCV431	PRESSURIZER POWER
			OPER. RELIEF VALVE,
			AOV

February, 1987

FIRE PROTECTION TECHNICAL EVALUATION

FIRE ZONE: 237 - COMPONENT COOLING WATER HEAT EXCHANGER ROOM

ZONE BOUNDARY DESCRIPTIONS

Zone Size

N-S Dimension: 78' E-W Dimension: 47' Vert Dimension: 20' See Drawing: PBC-66 Sh. 6

North Wall

1

24" Concrete

Doors

Penetrations Electrical penetrations are sealed with 3 hr. rated fire seals

Mechanical penetrations are sealed with 3 hr. rated fire seals

East Wall

24" Concrete

Doors None

Penetrations Electrical penetrations are sealed with 3 hr. rated fire seals

Mechanical penetrations are sealed with 3 hr. rated fire seals

South Wall

24" Concrete

Doors None

Penetrations Electrical penetrations are sealed with 3 hr. rated fire seals

Mechanical penetrations are sealed with 3 hr. rated fire seals

West Wall

24" Concrete

Doors 1 - 12'X13' and 1 - 3'X7' open doorways (See Analysis -Paragraph 1)

Penetrations Electrical penetrations are sealed with 3 hr. rated fire seals

Mechanical penetrations are sealed with 3 hr. rated fire seals

Two ventilation ducts of approximate 1'X1' and 1'X1' size without fire dampers (See Analysis - Paragraph 1)

Ceiling

24" Concrete

Penetrations Electrical penetrations are sealed with 3 hr. rated fire seals

Mechanical penetrations are sealed with 3 hr. rated fire seals

One 52"x60" ventilation duct without a fire damper (See Analysis - Paragraph 1)

Floor

24" Concrete

Penetrations Electrical penetrations are sealed with 3 hr. rated fire seals

Mechanical penetrations are sealed with 3 hr. rated fire seals

One 46"x60" ventilation duct without a fire damper (See Analysis - Paragraph 1)

One open stairway to the 26' elevation

ZONE OCCUPANCY

SAFE SHUTDOWN EQUIPMENT

Safe shutdown equipment located in this room consists of redundant channels of primary and secondary system instrumentation for both units, redundant motor operated steam supply valves to the turbine driven auxiliary feedwater pumps of each unit and the component cooling heat exchangers for each unit. (See Analysis - Paragraph 2)

COMBUSTIBLES/HAZARDS

Cable trays along the north, east and south walls constitute a light combustible loading.

ZONE EXPOSURE

Above Service Area, fire zone 271

Below

Monitor tank room, fire zone 187

North

Unit 2 Electrical Equipment Room, fire zone 246

East

Control Room, fire zone 326

South

Unit 1 Electrical Equipment Room, fire zone 245

West

Spent Fuel Pool Storage Building and Gas Stripper Equipment Room, fire zone 238

FIRE PROTECTION FEATURES

Fire Detection

Photoelectric smoke detection is provided in this room designed and installed as described in the fire detector location plan

Automatic Fire Suppression

Nona

Hose Lines

Hose lines are available to provide manual fire suppression capability as described in the fire emergency plans

Portable Equipment

Portable fire extinguishers, suitable for the hazards present, are available as described in the fire emergency plans

Other

Available fire brigade equipment, communications equipment locations and other manual fire fighting capabilities are described in the fire emergency plans

EXEMPTION REQUESTS

Exemption was requested from the fire barrier requirements of Appendix R April 28, 1983. The exemption was granted December 31, 1986. Exemption was requested from the horizontal separation and fire suppression requirements of Appendix R June 11, 1986. This exemption is open.

ANALYSIS

1. The north, east and south walls of this room are of 24" concrete with sealed penetrations and can be considered as fire rated walls. The ceiling is penetrated by a 52"x60" steel duct and the floor has a 46"x60" steel duct penetrating to the 26' elevation and below. An open stairwell also penetrates to the 26' elevation. The 3'X7' and 12'X13' door openings in the west wall provide access to zone 238 which is open to the roof at elevation 109'. Two 1'X1' steel ventilation ducts also penetrate the west wall. The solid steel ducts can be considered to provide a nominal 1 hour fire resistance. Because combustible loading is light in the rooms exposing the penetrations as well as in the Component Cooling Water Heat Exchanger Room, the existing configuration is considered to provide adequate boundary protection.

The redundant instrument cables enter through the floor from 2. the Monitor Tank Room Zone 187 and exit through the east wall to the Instrument Rack Room Zone 336. Cables of each train for each unit are routed in separate conduits. However, conduit separation does not meet the requirements of Appendix R. Therefore alternate shutdown instrumentation is provided on the 8' elevation as described in the October 1983 Appendix R report. Boundary separation between the 8' and 26' elevations is also considered to be adequate for room 237 which is located on the 46' elevation. Redundant motor operated steam supply valves to the turbine driven auxiliary feedwater pumps of each unit are not separated in accordance with Appendix R requirements. The valves for each unit are separated by a horizontal distance of approximately 70 feet with only one intervening overhead cable tray. The existing separation is adequate to prevent a fire in zone 237 from affecting the valves of both units. Manual operation of these valves is necessary to achieve hot shutdown on the basis that alternate shutdown procedures must be implemented. A fire in zone 237 would affect only one unit's motor operated valves and the normal electrical power supply and motor driven auxiliary feedwater pumps would be operable. Train alignment of the operable steam supply valves would not be required.

There are 4 component cooling water heat exchangers in the room. Normally one heat exchanger is used for cold shutdown of each unit. However, one heat exchanger can provide cold shutdown capability for both units over a longer period of time. The two outermost heat exchangers are separated by a center-to-center distance of 26'-6". Because of the limited combustible loading in the room, the heavy metal section of the heat exchangers and piping and the thermal capacity of the contained water are sufficient to ensure the safe shutdown capability of the system.

CONCLUSION

On the basis of the above analysis, the features described in this evaluation provide fire protection of the safe shutdown equipment located in fire zone 237 which is sufficient to satisfy the technical requirements of Appendix R.



WISCONSIN POWER ELECTRIC CO. POINT BEACE NUCLEAR PLANT TECENICAL EVALUATIONS REPORT SAFE SHUTDOWN COMPONENTS

POR FIRE ZONE 237

Cable	Racevay	Associated	Associated
		Component	Component
			Description ·
1J105A	CV03	1-9296	ISOLATION/RELIEF
			VALVE
	CVOA		
	CV05		
	CV06		
	CV07		
1J37M	1-827	1-BCV625	RHR HX FLOW CONRIOL
			VALVE, AOV
	1-827A		
1J37N	1-827	1-BCV625	RHR HX FLOW CONRTOL
			VALVE, AOV
	1-8278		
21468M	27468	2-CV2016	ATM, STM, DUMP VALVE
			(2-BX1A), AOV
21478M	YHO1	2-CV2015	ATM, STM, DUMP VALVE
			(2-HX1B), AOV
2J105A	CB02	2-7296	ISOLATION/RELIEP
	CBOA		
	CB05		
	CB06		
23378	2-827	2-BCV625	RHR HX FLOW CONTROL
			VALVE, AOV
	2-827A		
2.1371	2-827	2-BCV625	REFR EX FLOW CONTROL
			VALVE, AOV
	2-827B		
WELLASIG	15059	1-TE451B	RCS HOT LEG TEMP.
			ELEM., LOOP'B'
		1-TE451B	RCS HOT LEG TEMP
			ELEM., LOOP'B'
WE114510	15059	1-TE451C	RCS COLD LEG TEMP.
			ELEM., LOOP'B'
		1-TE451C	RCS COLD LEG TEMP.
			ELEM., LOOP'B'

WISCONSIN POWER ELECTRIC CO. POINT BEACH NUCLEAR PLANT TECHNICAL EVALUATIONS REPORT SAFE SHUTDOWN COMPONENTS

Cable	Raceway	Associated	Associated
		Component	Component
			Description
WL11450H	15033	1-TE450D	RCS HOT LEG TEMP.
			ELEM., LOOP'A'
WL11450N	15033	1-TE450A	RCS COLD LEG TEMP.
			ELEM., LOOP'A'
WP2I451G	28059	2-18451B	RCS BOT LEG TEMP.
			ELEM., LOOP'B'
		2-TE451B	RCS HOT LEG TEMP .
			ELEM., LOOP'B'
WP214510	25059	2-TE451C	RCS COLD LEG TEMP.
			ELEM. , LOOP 'B'
		2-TE451C	RCS COLD LEG TEMP.
			ELEM., LOOP 'E'
W021450E	25033	2-TE450D	RCS BOT LEG TEMP.
			ELEM., LOOP'A'
WQ2I450N	25033	2-TE450A	RCS COLD LEG TEMP.
			ELEM., LOOP'A'
ZA1B14CA		1-831	480V MOTOR CONTROL
			CENTER BUS
		1852-14C	MCC 1B31 BREAKER
ZA1NA005A	12019A	1-MOV2019	AFW PUMP (1-P29)
			STEAM SUPPLY VALVE,
			MOV
ZA1NAD05B	12019A	1-MOV2019	APW PUMP (1-P29)
			STEAM SUPPLY VALVE,
			MOV
ZAINCOOSE	12020B	1-04002	AFW PUMP
			RECIRCULATION
			(1-P29), AOV
ZAINCOD5F	12019A	1-074002	AFW PUMP
			RECIRCULATION
			(1-P29), AOV
ZBINBOOAA	12020A	1-MOV2020	AFW PUMP (1-P29)
			STEAM SUPPLY VALVE,

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WISCONSIN POWER ELECTRIC CO. POINT BEACE NUCLEAR PLANT TECHNICAL EVALUATIONS REPORT SAFE SEUTDOWN COMPONENTS

Cable	Racevey	Associated	Associated
		Component	Component
			Description
			MOV
ZB1WB004B	12020A	1-MOV2020	AFW PUMP (1-P29)
			STEAM SUPPLY VALVE,
			MOA
		2-831	ABOV MOTOR CONTROL
LULDIOUR			CENTER BUS
		2862-380	MCC 2831 BREAKER
		2852-500	
ZC2NA005A	22019A	2-MOV2019	AFW PUMP (2-P29)
			STEAM SUPPLY VALVE,
			MOV
2C2RA005B	22019A	2-MOV2019	AFW PUMP (2-P29)
			STEAM SUPPLY VALVE,
			MOV
20200052		2-CV4002	AFW PUMP
LULHOUGH			RECIRCULATION
			(2-P29), AOV
ZC2NC005F	22019A	2-04002	AFW PUMP
			RECIRCULATION
			(2-P29), AOV
ZD2NB004A	22020A	2-MOV2020	AFW FURP (2-F29)
			STEAM SUPPLY VALVE,
			MOV
2D2NR00AR	22020A	2-MOV2020	AFW FUMP (2-P29)
2.0.25000 × 8			STEAM SUPPLY VALVE,
			HOV
ZKIIAZOF	15059	1-PT420	RCS PRESSURE
			TRANSMITTER(W.R.)
		1-PT420	RCS PRESSURE
			TRANSMITTER (W.R.)
			ATH OTH DING VALUE
ZK1I468M	11468	1-042016	AIR, DIR DUR YALTE
			(1-BAIA), AUV
28114208	18059	1-LT470A	'B' STEAM GEN. LEVEL
2004 5 H / UD			TRANSMITTER (W.R.)

WISCONSIN POWER ELECTRIC CO. POINT BEACE MUCLEAR PLANT TECHNICAL EVALUATIONS REPORT SAFE SHUTDOWN COMPONENTS

FOR FIRE ZONE 237

Cable	Raceway	Associated	Associated
		Component	Component
			Description
		1-LT470A	'B' STEAM GEN. LEVEL
			TRANSMITTER(W.R.)
ZL1I420N	15033	1-PT420A	RCS PRESSURE
			TRANSMITTER(W.R.)
ZL1I460M	15033	1-LT460B	'A' STEAM GEN. LEVEL
			TRANSMITTER (W.R.)
ZL11469A	XB02	1-PT469	'A' STEAM GEN.
			PRESSURE
			TRANSMITTER (W.R.)
ZP21420F	25059	2-PT420	RCS PRESSURE
			TRANSMITTER (W.R.)
		2-97420	RCS PRISSURE
			TRANSMITTER(W.R.)
ZP214708	28059	2-LT470A	'B' STEAM GEN. LEVEL
			TRANSMITTER (W.R.)
		2-1.1470A	'B' STEAM GEN. LEVEL
			TRANSMITTER(W.R.)
2021420N	25033	2-PT420A	RCS FRESSURE
			TRANSMITTER (W.R.)
ZQ21460M	25033	2-LT460B	'A' STEAM GEN. LEVEL
			TRANSMITTER (W.R.)

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February, 1987

FIRE PROTECTION TECHNICAL EVALUATION

FIRE ZONE: 552 - SERVICE WATER PUMP ROOM

ZONE BOUNDARY DESCRIPTIONS

Zone Size

N-S Dimension: 44' E-W Dimension: 22' Vert Dimension: 22'-3" See Drawing: PBC-66 Sh. 1

North Wall

12" Concrete, metal panel, steel grating

Doors

Penetrations All penetrations are unsealed (See Analysis - Paragraph 1)

East Wall

Motor control center, metal panel, steel grating

Doors 2 - 7' X 7' fabricated steel controlled accass doors

Penetrations All penetrations are unsealed. (See Analysis - Paragraph 1)

South Wall

12" Concrete, metal panel, steel grating

Doors

Penetrations All penetrations are unsealed. (See Analysis - Paragraph 1)

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West Wall - Fire Area Boundary

12" Concrete

Doors

Penetrations All penetrations are weather sealed but not fire sealed

Ceiling - Fire Area Boundary

5" Concrete

Penetrations None

Floor - Fire Area Boundary

36" Concrete, steel grating

Penetrations Vertical pump shafts and access panels. (See Analysis -Paragraph 2)

ZONE OCCUPANCY

SAFE SHUTDOWN EQUIPMENT Six service water pumps - three per redundant train. (See Analysis - Paragraph 2)

COMBUSTIBLES/HAZARDS Combustible loading is light. The principle hazard is a potential fuel oil leak at the diesel fire pump.

EXPOSURE

Above Outdoors

Below Intake bay

Zoile 552 Area A38 Rev. 0 Page 3

North

Unit 2 Circulating Water Pumps, Fire Zone 553

East

Traveling Water Screens, Fire Zone 553

South

Unit 1 Circulating Water Pumps, Fire Zone 553

West Outdoors

FIRE PROTECTION FEATURES

Fire Detection

Photoelectric smoke detection is provided in this zone designed and installed as described in the fire detector location plan.

Automatic Fire Suppression

Automatic wet pipe sprinklers designed to provide 0.3 gpm per square foot over the entire zone.

Hose Lines

Hose lines are available to provide manual fire suppression capability as described in the fire emergency plans

Portable Equipment

Portable fire extinguishers, suitable for the hazards present, are available as described in the fire emergency plans.

Other

Available fire brigade equipment, location of suppression system manual actuating stations, communications equipment locations and other manual fire fighting capabilities are described in detail in the fire emergency plans

EXEMPTION REQUESTS

Exemption was requested from the 20 foot horizontal separation without intervening combustibles requirement of Appendix R October 26, 1983. The exemption was granted December 31, 1986.

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ANALYSIS

- 1. Top portions of the north, east, and south walls are composed of open steel grating. These walls are a security barrier of fabricated steel construction. The non-combustible wall construction and the limited combustible loading provides a significant impediment to the propagation of a fire. For this reason the non-fire-rated security walls provide adequate boundary protection for the service water pump room and fire rated penetration seals would not enhance the existing fire protection features.
- Floor penetrations are required for submergence of vertical pump inlets into the water intake bay. Several additional penetrations are provided for personnel access and temporary pump installation. All penetrations are covered with solid metal plates which eliminate combustible pathways.
- 3. The service water pumps are separated into two groups of three by a 6 foot high wall constructed of 1 hour rated cementitious panels. Two service water pumps are required to achieve cold shutdown. The pump power cables are routed through conduit in the concrete floor and intervening combustibles are not routed across the barrier. The diesel and electric motor driven fire pumps are also located on opposite sides of the barrier. Oil piping to the diesel driven fire pump is routed through the concrete floor from a storage tank located within a diked area more than 30 feet remote from the service water pump room.

CONCLUSION

On the basis of the above analysis and the granted exemption, the features described in this evaluation provide fire protection for the safe shutdown equipment located in fire zone 552 which is sufficient to satisfy the technical requirements of Appendix R.



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WISCONSIN POWER ELECTRIC CO. POINT BEACH NUCLEAR PLANT TECHNICAL EVALUATIONS REPORT SAFE SHUTDOWL COMPONENTS

Cable	Raceway	A foclated	Associated
		Component	Component
			Description
2E1310CA	SLU1	P32A	SW PUMP
ZE1B10CD	SLU3	P32A	SW PUMP
ZE1B11CA	SLVI	P32B	SW PUMP
2418.10D	SLV3	P32B	SW PORP
2E2B34BA	SLX1	F32F	SW PUMP
2E2B34BB	SI.X3	P32F	SW PUMP
ZF1B20CA	SLX2	P32C	SW PUMP
ZF1B20CD	57.X4	P32C	SW PUMP
(#28278A	SLV2	P32D	SW PUMP
ZF282788	S1.V4	P37/0	SW PUMP
ZF2B27CA	SLU2	P12E	SW PUMP
2F2827CA	SLU4	P32E	SW PUMP

