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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 THE REQUIREMENTS OF 10 CFR 50,
APPENDIX R, SECTION III FOR THE AUXILIARY FEEDWATER PUMP ROOM
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

In accordance with the requirements of 10 CFR 50.12, Wisconsin Electric Power Company, the licensee for Point Beach Nuclear Plant, Units 1 and 2, requests exemption from the separation requirements of 10 CFR 50, Appendix R, Section III.G.2.b for new cable trays installed in the auxiliary feedwater pump room in support of the diesel generator addition project. The bases for this request for exemption is discussed in Attachment 1.

In order to justify this new room configuration, Wisconsin Electric is submitting a request for exemption in lieu of performing a fire hazards evaluation and 10 CFR 50.59 evaluation in accordance with guidance discussed in Generic Letter 86-10. We, however, reserve the right to use the generic letter approach to justify future modifications.

Please contact us if there are any questions.

Sincerely,

A handwritten signature in cursive script, appearing to read 'Bob Link', is written over the typed name.

Bob Link
Vice President
Nuclear Power

Enclosures

cc: NRC Regional Administrator, Region III
NRC Resident Inspector

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ATTACHMENT 1

FIRE AREA A23, AUXILIARY FEEDWATER PUMP ROOM REQUEST FOR EXEMPTION

REQUEST FOR EXEMPTION

Wisconsin Electric requests an exemption from the requirements of Section III.G.2.b of Appendix R to 10 CFR 50 for Fire Area A23. This section of Appendix R states the following:

"Separation of cables and equipment and associated non-safety circuits of redundant trains by a horizontal distance of more than 20 feet with no intervening combustibles or fire hazards. In addition, fire detectors and an automatic fire suppression system shall be installed in the fire area."

Wisconsin Electric requests exemption from the above requirements for three separate configurations within Fire Area A23. First, the auxiliary feedwater pumps in the fire area are located approximately 14 feet apart on center, contrary to the twenty-foot horizontal separation requirement. Second, intervening combustibles, in the form of cables in cable trays, are located within the separation space between redundant trains of Appendix R safe shutdown components. Third, a conduit containing one channel of safe shutdown instrumentation is located approximately sixteen feet from the redundant channel of safe shutdown instrumentation, contrary to the twenty-foot horizontal separation requirement.

The majority of cable trays in this fire area run in the east-west direction, parallel to the safe shutdown cables and equipment in the room. Cable trays that traverse the intervening space in the north-south direction will be covered with metal tray covers to minimize the potential for fire spread across this space.

The following information provides a description of the configuration of safe shutdown components and fire protection features in Fire Area A23 that forms the technical basis for this exemption request.

FIRE AREA A23 SAFE SHUTDOWN EQUIPMENT:

1. Two steam-driven (1P-029 and 2P-029) and two motor-driven (P-038A and P-038B) auxiliary feedwater pumps
2. Local control panels for the "A" and "B" divisions of the motor-driven auxiliary feedwater pumps and the service water pumps

3. Redundant CVCS system charging pump power and local control cables
4. Instrumentation cables supplying indication of required shutdown parameters
5. Redundant Residual Heat Removal (RHR) and Component Cooling Water (CCW) pump cables
6. Alternate local instrumentation equipment and cabling
7. Emergency AC power and DC control cables

The arrangement of required hot shutdown components is shown in Attachment 2.

CONFIGURATION OF SAFE SHUTDOWN EQUIPMENT IN FIRE AREA A23:

Auxiliary Feedwater System

There are two steam-driven and two motor-driven auxiliary feedwater pumps located in Fire Area A23. The two steam-driven auxiliary feedwater pumps are unit specific, but each pump can supply feedwater to either steam generator for the associated unit. The steam admission valves for the two steam-driven auxiliary feedwater pumps are located outside of Fire Area A23. The two motor-driven auxiliary feedwater pumps can be aligned to supply feedwater to either unit. A total of two auxiliary feedwater pumps is required for the safe shutdown of both units with any one auxiliary feedwater pump providing sufficient flow to one unit to maintain hot shutdown conditions. Therefore, fire damage to three of the four auxiliary feedwater pumps would be required to deprive either unit of its required supply of feedwater.

Each of the four auxiliary feedwater pumps is located in the western portion of the auxiliary feedwater pump room. Each pump is separated from the other pumps by full height, partial length, twelve-inch thick, concrete missile barrier walls. The pumps and associated power cables are installed approximately fourteen feet apart on center. The horizontal separation distance between nonadjacent auxiliary feedwater pumps is 29 feet as shown in Attachment 2. Cables in the area of the pumps on the west side of the room are routed in open cable trays and conduit approximately sixteen feet off the floor. These open cable trays present an intervening combustible. However, no open cable trays traverse the space between pump cubicles in the north-south direction on the west side of the room, preventing a combustible pathway from being established between pump cubicles. This separation, combined with the automatic suppression and detection, was considered satisfactory to meet Appendix R requirements by the NRC staff in a previous July 3, 1985 exemption granted for this fire area.

Service Water System (SW)

One service water pump is adequate to satisfy hot shutdown requirements, and two pumps are required to achieve cold shutdown at Point Beach. Power and local control cables for the three division "A" and three division "B" service water pumps are routed in cable trays (1EC01, FR02, FU01, and FV03) horizontally in the east-west direction in Fire Area A23. The minimum separation between the cables for each division is 22 feet as shown in Attachment 2.

Local control panels N01 and N02, for the "A" and "B" divisions of service water pumps and the motor-driven auxiliary feedwater pumps, are located on the east wall of Fire Area A23 at a height of approximately five feet from the floor as shown in Attachment 3. The lowest cable tray at the east wall is located at a height of eight feet, six inches. Cable tray elevations are provided in Attachment 4. The control room is decoupled from affected circuits at these local control panels. These redundant division panels are separated by a horizontal distance of approximately 31 feet. Wisconsin Electric considers the existing separation distance to satisfy Appendix R requirements.

Additionally, the 480-volt, alternate shutdown system installed at Point Beach Nuclear Plant allows for the operation of two service water pumps independent of Fire Area A23 in the event the normal power and local control cables are damaged by a fire in this room. This arrangement satisfies the requirements of Section III.G.3 of Appendix R to 10 CFR 50.

Chemical Volume and Control System (CVCS)

One CVCS charging pump is required to achieve hot shutdown for each unit. Redundant divisions of CVCS system charging pump power and local control cables for each unit are located in Fire Area A23 as shown in Attachment 3. The power cables penetrate the ceiling to the switchgear mounted on the floor above and are routed in conduit to the auxiliary building. The minimum horizontal separation distance between the redundant divisions of power cables is eleven feet. The conduits containing power cables for one division of charging pumps for each unit are wrapped, using fire barrier material with a one-hour fire rating to ensure that they are protected from a fire in the fire area. This arrangement satisfies the requirements of Section III.G.2.c of Appendix R to 10 CFR 50.

Additionally, the 480-volt, alternate shutdown system installed at Point Beach Nuclear Plant allows for the operation of one CVCS charging pump for each unit, independent of Fire Area A23, in the event the normal power and local control cables for this system are damaged by a fire in this room. Therefore, the CVCS system does not need to be considered in this request for exemption.

Plant Instrumentation

Multiple channels of instrumentation cables that provide indication of necessary shutdown parameters for each unit are routed through Fire Area A23. A minimum of one channel of safe shutdown instrumentation per unit meets the separation criteria of Section III.G.2.b of Appendix R, with four exceptions.

First, two redundant channels of power cables for safe shutdown instrumentation are routed horizontally in cable trays (FR02 and FU01) in the east-west direction in Fire Area A23. The minimum horizontal separation between the cables for each channel is 22 feet (shown in Attachment 2), with intervening combustibles as described in the "Cable Separation in Fire Area A23" section of this exemption request.

Second, a conduit (D01-2) containing power cables for one channel of safe shutdown instrumentation is located along the east wall of the fire area, separated by a horizontal distance of approximately sixteen feet from the other required instrumentation cables in cable tray FU01. The conduit is also located in the separation space between cable trays FR02 and FU01. However, the conduit actually in the fire area is only four feet in length. The conduit penetrates the ceiling of Fire Area A23 and runs vertically a distance of approximately two feet along the east wall of the room. The conduit then exits the room through the east wall fire barrier. This configuration is shown in Attachment 5. There are no intervening combustibles that expose this conduit and allow a combustible pathway between alternate instrumentation channels.

Third, a conduit (2C205) containing power cables for the Unit 2, red channel of safe shutdown instrumentation enters the fire area through the west wall of the fire area in the cubicle containing auxiliary feedwater pump P-38A. This conduit is then routed in the north-south direction along the west wall through the P-38A cubicle into the 1P-029 cubicle. This routing places the conduit approximately twenty feet from the redundant channel of safe shutdown instrumentation in cable tray FU01. This routing also places the conduit within the separation space between cable trays FR02 and FU01. However, the conduit is located within the confines of the pump cubicles. Each of these pump cubicles is separated from the other by full height, partial length, twelve-inch thick, concrete missile barrier walls. There are no intervening combustibles in the north-south direction near the pump cubicles that would allow a combustible pathway between alternate instrumentation channels. This configuration is shown in Attachment 6. Wisconsin Electric believes that this separation, combined with a lack of intervening combustibles and the cubicle walls will minimize the possibility of a fire spreading in the north-south direction, maintaining the separation between redundant safe shutdown instrumentation channels.

Fourth, a conduit (1S079) associated with the Unit 1, yellow channel of safe shutdown instrumentation does not currently meet the twenty-foot horizontal separation requirements of Section III.G.2.b of Appendix R. This conduit is located within approximately four feet of the closest redundant channel of instrumentation (Unit 1, red channel in cable tray FP04) in the southeast corner of the fire area. This configuration is shown in Attachment 7. There are no intervening combustibles in the vicinity that would allow a combustible pathway between these channels. However, instead of requesting exemption for this existing configuration, Wisconsin Electric intends to modify this configuration by either rerouting the conduit in the fire area to ensure that twenty-foot horizontal separation is provided between redundant instrumentation channels or providing an equivalent means of separation.

Residual Heat Removal (RHR) and Component Cooling Water (CCW) Systems

Cables associated with the RHR and CCW systems are routed through Fire Area A23. However, this equipment is only required for the plant to achieve cold shutdown conditions within 72 hours. Repair procedures and materials are provided should these systems be damaged by a fire in Fire Area A23, in accordance with the requirements of Section III.G.1.b of Appendix R.

Additionally, the 480-volt, alternate shutdown system installed at Point Beach Nuclear Plant allows for the operation of RHR and CCW pumps independent of Fire Area A23 in the event the normal power and local control cables for these systems are damaged by a fire in this room. Therefore, these systems required for cold shutdown need not be considered in this request for exemption.

Miscellaneous Safe Shutdown Cables and Equipment

A number of other safe shutdown cables related to emergency AC power and DC control cables are also located in Fire Area A23. However, these cables are either not required for a fire in this fire area or manual actions are identified in existing Abnormal Operating Procedures to mitigate the consequences of damage or loss of these cables in the event of a fire.

Cable Separation in Fire Area A23

Redundant safe shutdown cables in the Fire Area A23 are installed in both open cable trays and conduit. The redundant open cable trays are installed between thirteen and sixteen feet above the floor and within three feet of the ceiling. The open cable trays represent an intervening combustible within the twenty foot horizontal separation space between safe shutdown cables and equipment in the room. However, the majority of cable trays in this space run in the east-west direction, parallel to safe

shutdown cables and equipment. This cable tray arrangement does not provide a combustible pathway for fire to spread across the separation space between redundant safe shutdown cables and equipment in Fire Area A23.

Four cable trays have been added to Fire Area A23 subsequent to approval of the existing exemption for Fire Area A23, as part of the Diesel Generator Addition Project. The existing exemption was granted by the NRC staff on July 3, 1985. The four cable trays are GC01-GC02, GW01-GW03, GN01-GN03, and GG01-GG04. Three of the cable trays, GW01-GW03, GN01-GN03, and GG01-GG04, are routed horizontally in the north-south direction between redundant divisions of Appendix R safe shutdown components, as shown on Attachment 2. These three cable trays present an intervening combustible between redundant divisions of Appendix R safe shutdown components. GC01-GC02, the remaining cable tray, is also routed in the north-south direction, but only extends approximately ten feet from the north wall of the room. Therefore, cable tray GC01-GC02 does not present an intervening combustible between redundant divisions of Appendix R safe shutdown components and does not need to be considered in this request for exemption.

Two of the three cable trays, GN01-GN03 and GW01-GW03, are routed directly above the three-hour, fire-rated tunnel which passes through Fire Area A23. Therefore, these cable trays are shielded by the tunnel from a floor-based exposure fire. Only the GG01-GG04 cable tray would be exposed to a floor-based exposure fire. The impact of these cable trays as an intervening combustible within the separation zone between the redundant divisions of Appendix R safe shutdown components is minimized through the installation of the following features:

1. Installation of sheet metal covers on the top and bottom of cable tray GC01-GC02, and installation of sheet metal covers on the top of cable trays GN01-GN03 and GW01-GW03
2. Installation of a single layer of ceramic fiber blanket on top of the cables under the sheet metal covers
3. Installation of cable tray fire breaks at each end of the enclosed trays to prevent a fire from entering the enclosed section of tray

The use of these features is similar to an approach taken to minimize the exposure of intervening combustibles between the Unit 1 and Unit 2 portions of the cable spreading room (Fire Area A30). This approach has been previously reviewed and approved in conjunction with the Appendix R exemption request for the cable spreading room. This exemption request was granted by the NRC Staff by letter dated July 3, 1985. Additionally, the use of metal cable tray covers is recognized by the NRC Staff in Generic Letters 83-33 and 86-10 as a method of retarding fire propagation

along grouped cables in cable trays that present an intervening combustible between redundant trains.

COMBUSTIBLE MATERIAL AND FUEL LOADING IN FIRE AREA A23:

The Point Beach Nuclear Power Plant Fire Protection Program categorizes fire hazards and combustible loading throughout the plant based not only on the amount of combustibles but also on the type and severity of fire these combustibles present in the space. This approach recognizes that quantification of average combustible loading alone can be misleading in assessing the level of fire hazard because combustibles are seldom, if ever, evenly distributed throughout an area or burn with the same heat release rate. For this reason, Point Beach Nuclear Plant categorizes combustible loading as low, moderate, or high and the fire hazard as light, ordinary or extra hazard. These categories are based on standard fire protection engineering practice recognized by the National Fire Protection Association (NFPA) and Factory Mutual Engineering Corporation (FMEC).

The combustible loading in Fire Area A23 is comprised of combustible cable jacketing material in open cable trays and the small quantity of lubricating oil contained in each of the auxiliary feedwater pumps.

This combustible loading/fire hazard for Fire Area A23 is classified as a moderate/ordinary hazard. An area with a moderate combustible loading is defined, by this program, as having, on average, greater than ten pounds per square foot and less than or equal to 25 pounds per square foot of combustible material. This translates to between 100,000 BTU/ft² and 200,000 BTU/ft² of net floor area.

The fire protection features installed at Point Beach are considered adequate to satisfy the fire protection design objectives for the expected fire exposure presented in this area.

FIRE PROTECTION FEATURES FOR FIRE AREA A23:

The auxiliary feedwater pump room is separated from the rest of the plant with three-hour rated fire walls. A three-hour fire rated passage tunnel separates the two portions of the room to a height of 7.5 feet and provides access from the Unit 1 turbine building to the Unit 2 turbine building on the plant's eight-foot elevation. All penetrations in the auxiliary feedwater pump room, and between the passage tunnel and the auxiliary feedwater pump room are provided with three-hour fire rated assemblies (ie., doors, dampers, and penetration seals).

The auxiliary feedwater pump room is provided with a fire detection system comprised of cross-zoned photoelectric smoke detectors and rate compensating thermal detectors. These two forms of detectors provide diverse methods of fire detection in the fire area. The fire area is also provided with an automatic fire suppression system.

Additionally, one, 1-1/2 inch hose reel is located inside, on the north side of Fire Area A23. Two additional hose reels are located just outside the fire area. The auxiliary feedwater pump room is located on the eight-foot elevation in the center of the turbine hall below the Control Room. Therefore, fire brigade response is expected to be quick and effective, preventing a fire from spreading between redundant divisions of safe shutdown components.

SUMMARY:

An exemption to the requirements of Section III.G.2.b of Appendix R for Fire Area A23 should be granted for the following reasons:

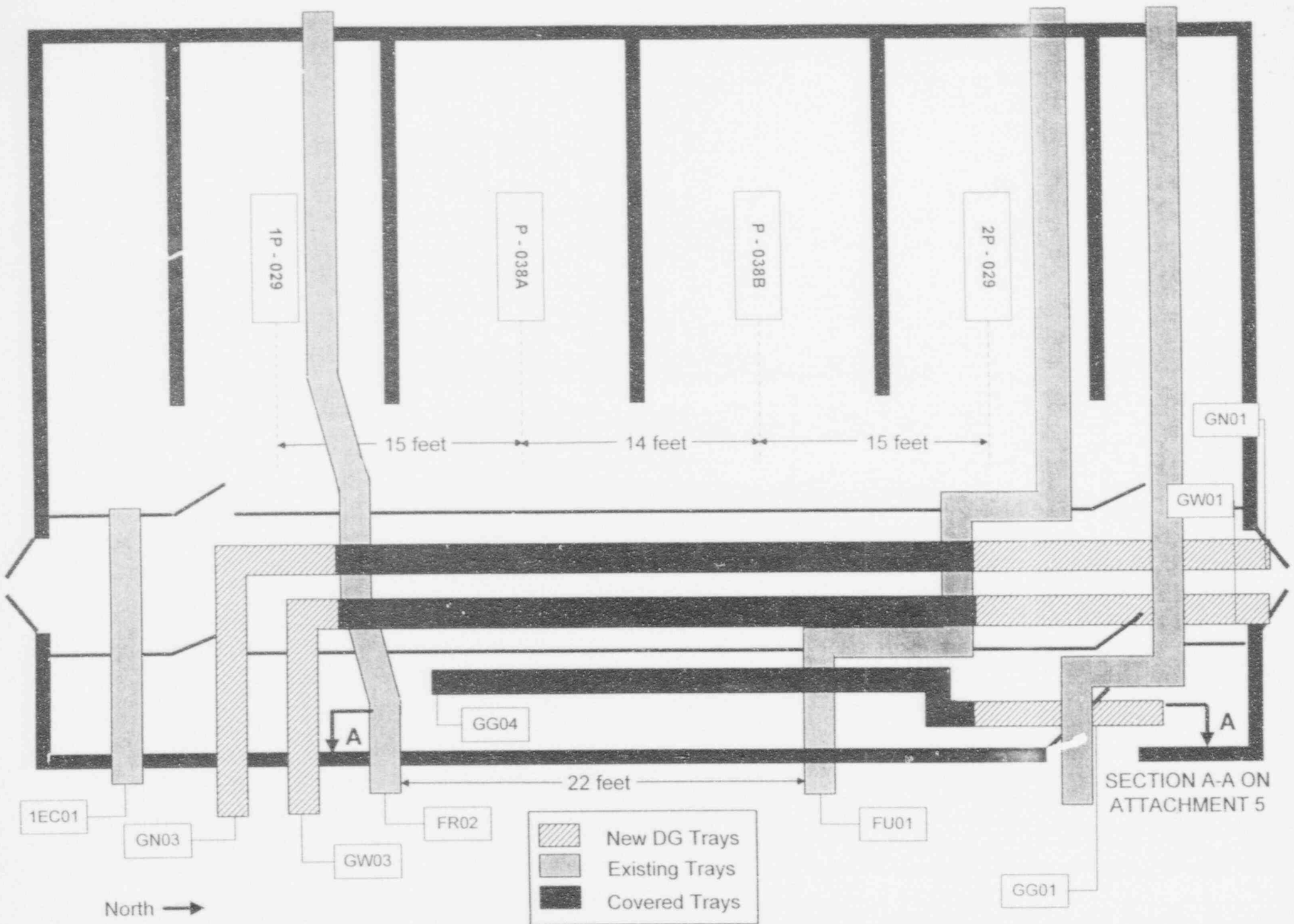
1. The separation distance between auxiliary feedwater pumps is fourteen feet on center and greater than twenty-nine feet between non-adjacent pumps. Any two of the four auxiliary feedwater pumps can provide sufficient flow to both units to maintain hot shutdown conditions.
2. Open cable trays representing intervening combustibles are routed parallel to safe shutdown cables and equipment in the separation space between auxiliary feedwater pumps. However, no open cable trays are routed in the north-south direction that would allow a combustible pathway between auxiliary feedwater pumps.
3. Two of the three cable trays installed as part of the Diesel Generator Addition Project are routed on top of the 3-hour, fire-rated tunnel in the 20-foot separation zone between redundant safe shutdown components. These two trays would be shielded by the tunnel from an exposure fire.
4. The cable trays installed in the north-south direction, between redundant divisions of Appendix R safe shutdown components, are provided with metal cable tray covers on the top and bottom to totally enclose the cables for the entire length between redundant divisions of safe shutdown components. Cable tray fire breaks are installed at each end to prevent a fire in the tray from entering the enclosed section of tray. In addition, a single layer of ceramic fiber blanket has been placed on top of the cables in the enclosed trays. This arrangement is similar to an arrangement previously accepted for intervening cable trays in the cable spreading room.

5. Fire Area A23 is provided with a diverse fire detection system and an automatic fire suppression system. These systems are designed to quickly detect and extinguish a fire before it can spread to or propagate along any cable trays.
6. Transient combustible materials and hot work activities at Point Beach are procedurally controlled, reducing the likelihood of a transient combustible or hotwork initiated exposure fire.
7. Hose stations are installed in and near Fire Area A23. Additionally, fire brigade response is expected to be quick and effective because of the location of this fire area in the plant.

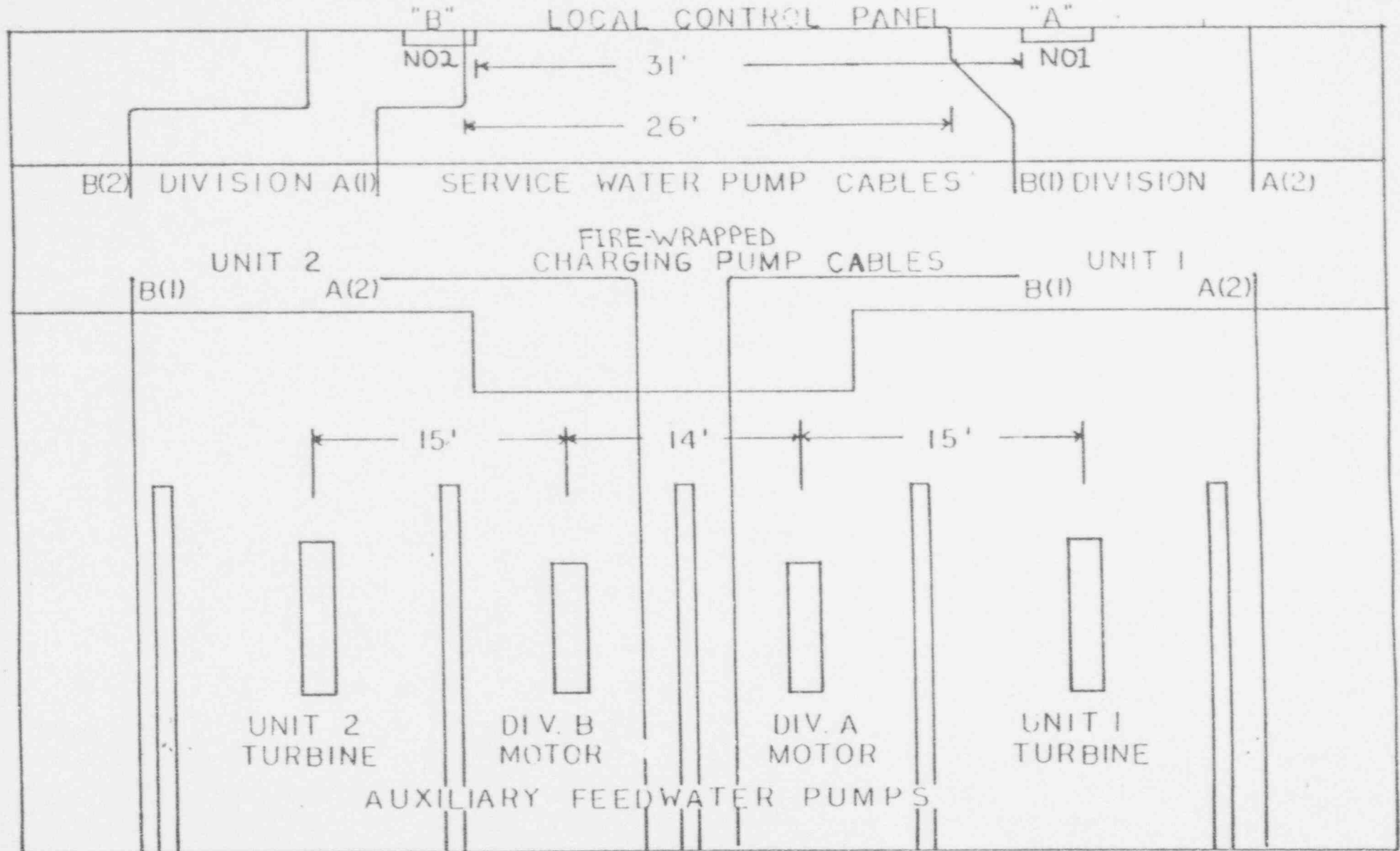
CONCLUSION:

Based on the above evaluation, Wisconsin Electric believes that the configuration of Fire Area A23 provides a level of fire protection equivalent to the technical requirements of Section III.G.2.b of Appendix R, and therefore, the exemption should be granted.

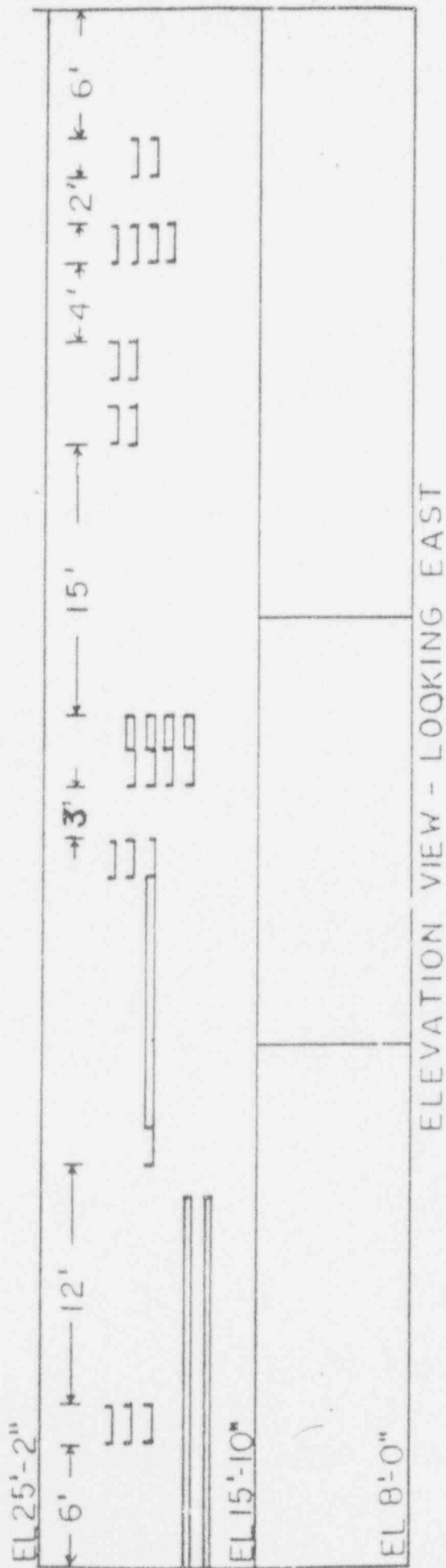
Attachment 2



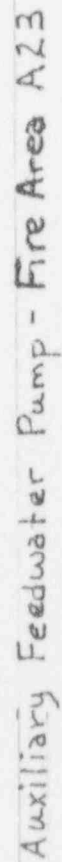
ATTACHMENT 3



ATTACHMENT 4



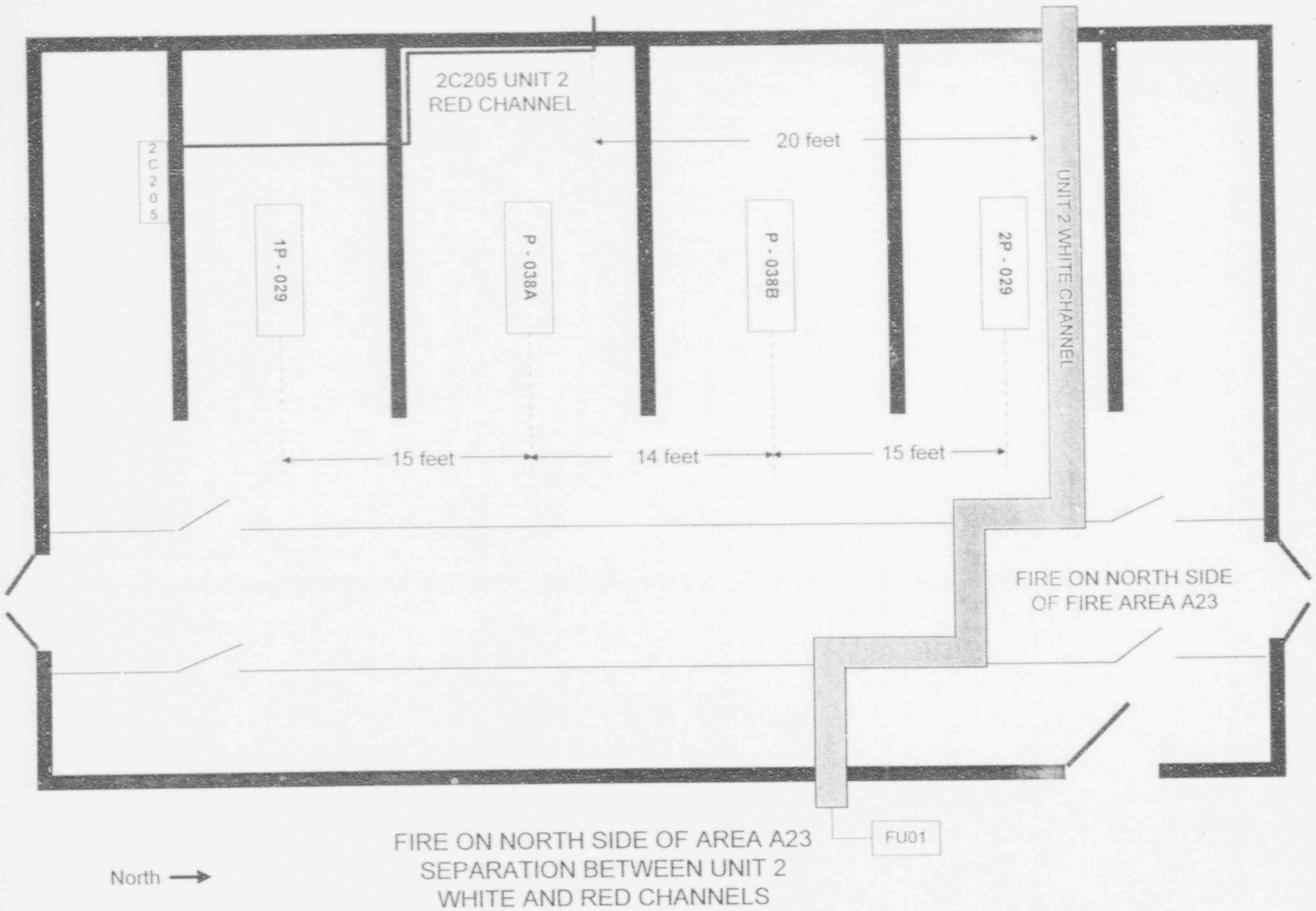
FU01 Tray



Elevation 8'-0" Looking East

Section A-A

Attachment 6



Attachment 7

