PECO ENERGY COMPANY

PEACH BOTTOM ATOMIC POWER STATION

UNITS 2 AND 3

EXEMPTION REQUEST FOR 10 CFR PART 50 APPENDIX R

"FIRE PROTECTION FOR OPERATING NUCLEAR POWER PLANTS"

SECTION III.F

"AUTOMATIC FIRE DETECTION"

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1.0 SUMMARY

PECO Energy Company (PECO Energy), through a self-initiated review of the Fire Protection Program at Peach Bottom Atomic Power Station (PBAPS), has found that certain fire zones in three (3) fire areas do not contain automatic fire detection systems although they do contain safety related (SR) and/or safe shutdown (SSD) systems or components. Under certain circumstances, automatic fire detection is required by 10 CFR 50 Appendix R, Section III. F, "Automatic Fire Detection," which provides that:

- Automatic fire detection systems shall be installed in all areas of the plant that contain or present an exposure fire hazard to safe shutdown or safety related systems or components.

This submittal requests exemptions that are of three types but are repeated. Collectively, these requests do not adversely impact plant safety because each exemption does not impact plant safety and the exemptions do not interact synergistically.

The first type involves fire zones where no credible exposure fire hazard exists because the only combustible material present is cable insulation contained within conduit (all of which meet flame retardant standards similar to those in IEEE Standard-383 [1974]) or lubricating oil contained in enclosed pumps, valves or in double walled, welded pipe.

The second type involves fire zones that contain a low amount of fixed combustibles but are protected by a defense-in-depth program, including automatic fire suppression systems, which ensure that a fire will not prevent essential plant safety functions from being performed. The addition of automatic fire detection systems would add little in the way of benefit for a substantial expense.

Finally, the third type involves fire zones which contain turbine lube oil storage tanks. These fire zones are provided with automatically activated suppression systems. A fire in this fire zone would result in operation of the automatic suppression system in a time frame such that there would be no benefit from the addition of an automatic fire detection system.

PECO Energy requests an exemption from the provisions of 10 CFR 50 Appendix R, Section III.F, for portions of several fire zones within three (3) fire areas at PBAPS, Units 2 and 3. Specifically, an exemption is requested from the requirement to install automatic fire detection systems as required by 10 CFR 50 Appendix R, Section III.F, for eight (8) fire zones in Fire Area 50 (the common Turbine Building), two (2) fire zones within Fire Area 6S (a portion of the Unit 2 Reactor Building) and two (2) fire zones within Fire Area 13N (a portion of the Unit 3 Reactor Building). These zones contain SR and/or SSD systems or components. Although these zones do not contain automatic fire detection systems, they either do not contain any in-situ combustible materials (other than cable insulation within conduit) or do contain automatic fire suppression systems which alarm in the Main Control Room, thereby, providing the function of a comparable warning system to initiate Fire Brigade response.

This request includes information to support a finding of compliance within the exemption criteria in 10 CFR 50.12, including special circumstances for the purposes of 10 CFR 50.12(a)(2). This exemption request demonstrates that the current configuration of SR and SSD Systems, Structures and Components (SSCs) and the associated fire protection features provide an acceptable level of fire protection and the installation of automatic fire detection would not provide a measurable improvement in this protection. Currently available fire protection features ensure that the necessary functions of the SR and SSD equipment will be maintained in the event of a fire and that the operability of the SR and SSD SSCs is unaffected by the lack of additional fire detection in the identified fire areas. Accordingly, a grant of this exemption will continue to assure a level of fire protection commensurate with the hazards for the subject fire areas, will not result in undue risk to the public health and safety, and does not affect the common defense and security. Under these circumstances, the exemption criteria and the evaluation provided below show that installation of automatic fire detection in these fire areas and respective fire zones in accordance with 10 CFR 50 Appendix R, Section III.F; 1) would not increase the level of fire protection currently at PBAPS and therefore, would not serve the underlying purpose of the Rule and, 2) would result in costs significantly in excess of those contemplated when the Rule was adopted.

2.0 BACKGROUND

PBAPS Unit 2 was licensed to operate in October 1973 (License Number DPR-44), and Unit 3 was licensed to operate in July 1974 (License Number DPR-56). PBAPS, like all plants licensed to operate before January 1, 1979, without a prior NRC approved Safety Evaluation Report covering fire detection, was required to comply with 10 CFR 50.48 (b) and 10 CFR 50 Appendix R.

In 1983, the PBAPS plant was modified to meet the requirements of 10 CFR 50 Appendix R, Section III.F, by adding automatic fire detection in several areas of the plant that contained or presented exposure fire hazards to SR or SSD equipment. Exemptions from the requirements of 10 CFR 50 Appendix R, Section III.F, were requested and granted for PBAPS for the off-gas pipe tunnels located in Fire Area 50, fire zones 130 & 131 (rooms 18 & 19) and several other areas of the plant. The exemptions were requested by PECO Energy, formerly Philadelphia Electric Company, in letters issued to the NRC on May 27, 1983, and September 16, 1983, and were granted by the NRC on March 13, 1985, and November 14, 1986. These exemptions were based on the absence of fixed combustibles other than cable in conduit, restricted accessibility to the room, barriers surrounding the area, and low combustible loading in the adjacent fire areas. However, exemptions were neither requested nor granted for the portions of the fire areas addressed herein because none were believed necessary at that time.

During a recent self-initiated review of the elements of the fire protection program related to a proposed modification to the Reactor Protection System (RPS) for PBAPS Unit 2, a PECO Energy fire protection engineer discovered that a portion of the Unit 2 RPS located within the Turbine Building was not protected by an automatic fire detection system. In response to this finding, PECO conducted a comprehensive review and identified additional fire areas/fire

zones/rooms that required further consideration regarding compliance with the requirements of 10 CFR 50 Appendix R, Section III.F. The identified fire zones and rooms within the identified fire areas that do not contain automatic fire detection systems are the subject of this exemption request. Attachment 7.1 lists the fire zones and provides a summary of information related to this exemption request.

3.0 SPECIFIC EXEMPTION REQUESTED

10 CFR 50 Appendix R, Section III.F, requires that automatic fire detection systems shall be installed in all areas of the plant that contain or present an exposure fire hazard to SR or SSD systems or components. This exemption request, which includes eight (8) fire zones in fire area 50 (the common area between both Turbine Buildings), two (2) fire zones within Fire Area 6S (a portion of the Unit 2 Reactor Building), and two (2) fire zones within Fire Area 13N (a portion of the Unit 3 Reactor Building), seeks exemption from the requirement to provide automatic fire detection systems. Section 5.0 and Attachment 7.1 herein describe each specific fire zone and the associated SR and/or SSD systems or components.

4.0 SATISFACTION OF EXEMPTION CRITERIA

Exemptions from NRC requirements are authorized by 10 CFR 50.12. An exemption may be granted by the NRC if it is authorized by law; will not present an undue risk to public health and safety; is consistent with the common defense and security; and is supported by one or more of the special circumstances in 10 CFR 50.12(a)(2). The exemptions requested here are authorized by law because they involve only 10 CFR 50 Appendix R, do not affect the common defense and security and will not present an undue risk to public health and safety for the reasons discussed herein. Special circumstance 10 CFR 50.12(a)(2)(ii) is present because the application of the regulation would not serve the underlying purpose of the Rule. Additionally, compliance would result in costs that are significantly in excess of those contemplated when the regulation was adopted and would result in negligible improvement in plant safety. In summary, this exemption request is based on the following major elements which satisfy 10 CFR 50 Appendix R, III.F, and the special circumstance criteria of 10 CFR 50.12.

- The operability of the SR and SSD SSCs is unaffected by the lack of automatic fire detection.
- A sufficient level of fire protection features exist to ensure protection of SR and SSD equipment is maintained to minimize damage to SR and SSD systems and components.
- Rooms identified that contain SR or SSD systems or components have adequate protection for the hazard contained or present in the fire zone including automatic fire suppression with automatic annunciation in the Main Control Room.
- Certain of the fire zones have a negligible in-situ exposure fire hazard.
- The fire zones and rooms that are adjacent to these exemption fire zones and rooms contain either only a negligible fixed exposure fire hazard or have automatic fire suppression with automatic annunciation in the Main Control Room and, therefore, do not present an exposure fire hazard.

- The installation of automatic fire detection systems in these fire zones would impose a significant cost which is in excess of that contemplated when the regulation was adopted. The total estimated cost to achieve compliance is $4.9 Million.

Specific details on the applicability of the above special circumstances for the areas are discussed in Section 5. For the reasons discussed, the NRCs criteria for issuance of this exemption are satisfied and the exemption should be granted.

5.0 FIRE PROTECTION EVALUATION

Fire protection is provided at PBAPS using the "defense-in-depth" philosophy as established by Appendix A to Branch Technical Position APCSB 9.5-1, "Guidelines for Fire Protection for Nuclear Power Plants Docketed Prior to July 1, 1976." The Fire Protection Program for PBAPS is part of the Updated Final Safety Analysis Report (UFSAR) for PBAPS Units 2 and 3 and includes the Fire Hazards Analysis (FHA). The objectives of this fire protection philosophy are:

1. Prevent fires from starting;
2. Rapidly detect and suppress fires that do occur, thereby limiting their damage; and
3. Design plant systems such that essential plant functions will not be damaged from the effects of fires.

An overview of PBAPS's implementation of this philosophy is summarized below. Applications of these principles to the fire areas / fire zones for which exemptions are sought are contained in the discussions of the specific exemption requests.

5.0.1 Fire Protection Administrative Controls

To meet the first objective of the defense-in-depth philosophy, the prevention of fires at PBAPS is accomplished by the implementation of and adherence to comprehensive fire protection administrative controls. PECO Energy maintains a strong program of administrative controls for fire protection activities with particular attention focused on effective housekeeping, control and inspection of fire barriers and penetrations. Control is also focused on hot work processes, transient combustible materials, chemicals and combustible liquids and transient ignition sources within the plant. Work that could introduce an ignition source is strictly controlled and compensatory actions are required and implemented to preclude and/or mitigate the possibility of ignition of combustibles within the work area.

5.0.2 Fire Detection And Fire Suppression

To meet the second objective of the defense-in-depth philosophy, fires can be rapidly detected and suppressed at PBAPS by utilizing automatic fire detection and automatic and manual fire suppression capabilities.

- **Fire Detection System**
  The fire detection system is provided with both heat and smoke detection capability. The design of the fire detection system follows the guidance of the National Fire Protection Association (NFPA) 72E, 1984. This Class B system was installed using a two-wire system with a resistor between the wires at the end of the circuit. Each system is electronically supervised to detect ground faults, circuit breaks, and back-up power failure. Audible fire alarms are distinctly different from other operational alarms. Heat and smoke detection is accomplished by the appropriate detector installed in plant areas where fire potential exists and in most areas containing safety-related equipment. Actuation of a detector causes alarm and annunciation in the Main Control Room and, as required, actuates automatic systems and/or manual suppression activities.

- **Fire Suppression System**
  Fire extinguishing capability is provided at PBAPS by using automatic and manual water systems, automatic and manual carbon dioxide systems, hose stations, fire hydrants, and portable fire extinguishers. Systems and components have been selected, designed, and installed based on the magnitude of the hazard in the area and the characteristics of the equipment they protect.

  The source of water for the fire protection distribution system is the Conowingo Pond which, for fire protection purposes, has an unlimited capacity. Two vertical-shaft, centrifugal fire pumps, each capable of supplying 100% of the required system demand, take suction from this pond. To assure availability, one pump is electric-motor driven, and the other is diesel-engine driven. The pumps are located in the circulating water pump structure which is separated from other plant buildings and structures. The yard fire main loop encircles the power block with cross-connects through the Unit 2 and Unit 3 Turbine Building.

- **Manual Fire Fighting**
  Manual fire fighting at PBAPS is performed by the Shift Fire Brigade comprised of a Fire Brigade Leader and a minimum of four (4) Fire Brigade members. Fire Brigade members are qualified by the completion of classroom training, passing a physical examination, operational certification with respiratory protection devices and completion of Fire Brigade initial live fire-ground training. The leader must be qualified as a Fire Brigade member and receives additional advanced training on fire incident command. Annual re-qualification is required for all Brigade members. This re-qualification includes additional classroom and live fire-ground training at the PECO Energy Fire Academy. The PECO Energy Fire Academy is Emergency Management Accreditation and Certification System (EMACS) certified (1994). Objective evidence of the fire fighting capabilities and effectiveness is discussed below.

  The Fire Brigade Leader (Incident Commander) and brigade members do not include those individuals who have operational responsibility for performing manual actions associated with the safe shutdown of the plant during a fire emergency.

The Fire Brigade is knowledgeable of the physical arrangement of the site. To aid the Fire Brigade Leader and Brigade members, PECO Energy maintains detailed pre-fire strategy plans (PF procedures) which provide identification of doorways to each plant fire zone and a detailed map of each zone. Access routes that involve locked doors are specifically identified in the strategies, with appropriate precautions and methods for access identified. The PF maps also include the location of fire fighting equipment, fire and safety hazards, and important plant equipment. Written descriptions accompany each map which list information important to successfully combat a fire such as hazards, tactics, ventilation, construction information, and available suppression equipment. A Class II standpipe system is installed throughout the plant, and portable fire extinguishers are available to assist the Brigade in fire fighting activities.

Upon being alerted to a fire at PBAPS, Control Room personnel, via Off Normal (ON) procedures, utilize pre-fire strategy plans. These procedures are designed to provide fire fighting guidance to plant personnel in the event of a fire. Operations personnel are provided guidance on the decision to initiate safe shutdown. If reactor shutdown is required, fire area specific Fire Guide (T-300 series, TRIP) procedures are entered. The Fire Guides are used in conjunction with plant operating procedures to achieve safe shutdown. The specific safe shutdown methodologies, including instructions for manual actions and repairs, are detailed in the Fire Guide procedures. The fire fighting pre-fire strategy plans, Fire Guides and operating procedures, when used in combination, provide the Control Room and Fire Brigade personnel with a comprehensive plan and methodology for mitigating the consequences of a fire in the plant.

During the PBAPS Individual Plant Evaluation for External Events (IPEEE) Fire Risk Analysis, an evaluation of Fire Brigade response times to plant areas was performed. The results of the evaluation showed that the Fire Brigade is routinely able to respond to a fire in any plant area and initiate fire suppression activities within 10 minutes of notification. Fire extinguishment was established to occur within 30 minutes of fire notification.

Historically, NRC Inspection Reports have recognized the effectiveness of the PBAPS Fire Brigade in controlling and extinguishing fire and the PBAPS pre-fire strategy plans in providing fire area data. The history of fire protection inspections and audits at PBAPS shows that PECO Energy's responsiveness and overall control and performance of the PBAPS Fire Protection Program has been very good. This trend of continued good performance is reflected in the consistent positive evaluations during NRC Systematic Assessment of Licensee Performance (SALP) evaluations.

5.0.3 Design of Plant Systems

To meet the third objective of the defense-in-depth philosophy, plant systems at PBAPS are designed such that essential plant functions will not be damaged from the effects of fire. At PBAPS, fire protection has evolved appropriately in concert with changes in fire protection for nuclear power plants. PBAPS conforms with the intent of General Design Criteria for Nuclear Power Plants, as specified in 10 CFR 50 Appendix A. Specifically, for fire protection, PBAPS

conforms with Appendix A to Branch Technical Position APCSB 9.5-1, "Guidelines for Fire Protection for Nuclear Power Plants Docketed Prior to July 1, 1976." Structures, systems and components important to safety are designed and located to minimize the probability and consequences of fires, including separation to meet the requirements of 10 CFR 50, Appendix R, Section III.G, "Fire Protection of Safe Shutdown Capability." Noncombustible and heat resistant materials are used wherever practical throughout the plant, particularly in locations such as the Reactor Building and Main Control Room. In addition to general design of plant systems, cable/raceway protection by isolation between rooms and by walls, floor/ceiling assemblies is used to protect redundant trains of safety systems. Together, the installed fire protection systems and the manual fire fighting capability ensures that the plant can be safely shut down in the event of a fire within any fire area in the plant. Fire detection and fire suppression systems of appropriate capacity and capability are provided as discussed in the previous sections.

5.0.4 Defense-In-Depth Summary

The primary objective at PBAPS for the Fire Protection Program is to minimize both the probability and consequences of postulated fires.

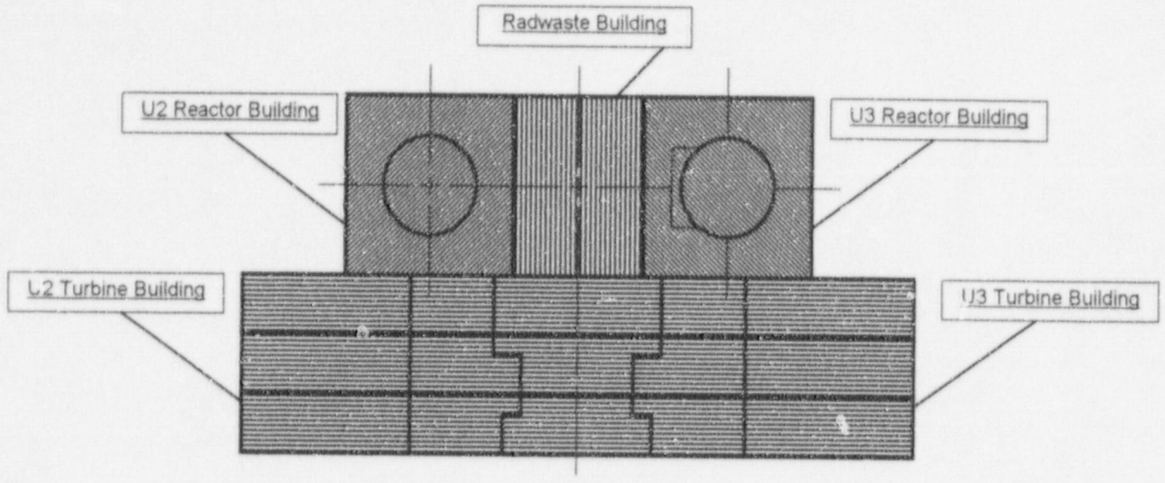
The PBAPS defense-in-depth program is well established and aimed at achieving an adequate balance with the three fundamental objectives of preventing fires from starting, detecting them quickly and suppressing them, and incorporating strong fire protection controls within the design/ modification process to ensure a fire will not prevent essential plant safety functions from being performed.

The balance of defense-in-depth that PBAPS has established with program implementation of the three enabling objectives and primary objective provides a high degree of safety. These fire protection features and characteristics are presented for each fire area / fire zone and room that is identified within this exemption request.

5.0.5 SR/SSD Exemption Areas at PBAPS

The SR/SSD areas (22 Rooms) for which an exemption is requested are presented in Section 5.0.8 & 5.0.9 and tabulated in Attachment 7.1. For the portions of the Turbine Buildings and Reactor Buildings included in the scope of this request, PECO Energy has concluded that the fire hazard in these areas that contain SR or SSD equipment does not present a credible exposure fire hazard and PECO Energy has concluded that installation of automatic fire detection is not warranted and that special circumstances exist that support granting an exemption.

An evaluation for each of these areas is provided in Sections 5.1 through 5.6 and the diagram below shows the location of the major buildings located at PBAPS.



The fire areas in the Turbine Building, the Unit 2 and the Unit 3 Reactor Buildings are further divided into fire zones and rooms that were evaluated for SR/SSD considerations. The Turbine Building is common between Unit 2 and Unit 3 and has been evaluated as one fire area, Fire Area 50. Within Fire Area 50 are several fire zones which are made up of one or more rooms which are included in this exemption request. The Unit 2 Reactor Building is separated into several fire areas, including Fire Area 6S. Two rooms within Fire Area 6S are included in this exemption request. The Unit 3 Reactor Building is separated into several fire areas, including Fire Area 13N. Two rooms within Fire Area 13N are included in this exemption request.

Sections 5.0.8 & 5.0.9 and Attachment 7.1 provides a listing of the fire areas, fire zones, the specific room number, the SR or SSD systems or components contained within the rooms, the SSD method relied upon by the SSD analysis, the fire protection systems contained in each room, and the fire hazard present in each room. The following descriptions of fire zones and respective rooms that contain SR/SSD SSCs include a detailed discussion that focuses on the fire protection features, such as the existing sprinklers, fire barriers and safety equipment, and the characteristics of the exposure fire hazard to ensure that sufficient protection from an exposure fire is present.

5.0.6 Common Fire Area Features at PBAPS

Each fire area at PBAPS has several common fire protection features. They have been analyzed in the Fire Protection Program Fire Hazard Analysis and the IPEEE. Applications of these analyses show that:

- All cables contained within the fire areas subject to this exemption request meet flame retardant standards similar to the flame retardant rating specified in the Institute of Electrical and Electronic Engineer (IEEE) Standard-383 1974, "IEEE Standard for Type Test of Class 1E Electric Cables, Field Splices, and Connections for Nuclear Power Generating Stations"

and, therefore, will (1) not propagate fire and are self-extinguishing, and (2) not ignite or contribute to fire growth without a direct external flame source.

- In addition, the Fire-Induced Vulnerability Evaluation (FIVE) Methodologies developed by the Electric Power Research Institute (EPRI) has concluded that it is highly unlikely for IEEE-383 1974 qualified cable to self-ignite in the absence of an exposure fire. Therefore, the installed cable is not considered a credible exposure fire hazard within this analysis and rooms that contain only cable as a source of an exposure fire which could affect SR or SSD systems or components were not further evaluated.

- Within the fire zones, specific exposure fire hazards that may be considered credible have been evaluated during the specification and design of the installed suppression system. The suppression systems have been designed to actuate quickly and minimize the exposure fire hazard, and provide early warning for the Fire Brigade without the use of a separate automatic fire detection system. The addition of an automatic detection system would not substantially shorten the time of notification of a fire for Fire Brigade response.

- Several fire zones within the scope of this exemption request have a combustible loading that is either negligible, limited in magnitude and duration, or lacking concentration and/or continuity. Therefore, additional fire detection in these fire zones would not enhance the level of fire protection or overall plant safety because of the limited fire growth capabilities over time and the response of the Fire Brigade.

- Administrative controls are in place that directly preclude, minimize and/or limit the use of transient combustible materials and the use of ignition sources. These include control of ignition sources, material hazards and establishing compensatory measures th are appropriate for the transient hazard.

- Several fire zones within the scope of this exemption request contain combus es, principally lubricating oil that is contained in double walled, welded pipe and in stainless steel oil tanks. These and other fire hazards that are credible are already protected by automatic suppression with an associated automatic Main Control Room annunciation, which would actuate rapidly in the event of a fire. Therefore, the installation of an indepen fire detection system in these fire zones would provide no noticeable difference in notification and response of the Fire Brigade.

5.0.7 Combustible Loading Classification

The classification of the fire loading in an area is based on the methodology discussed in the NFPA Fire Protection Handbook, 17th Edition, Section 6, Chapter 6. The results of the studies show that the loading in an area can be classified as low, moderate, or high, defined by the fire loading (BTU/Ft^2) of the area. For application at PBAPS, the fire loading limits corresponding to these NFPA classifications have been lowered to provide conservatism between the classification of combustible loading within an area, and the fire resistance rating of the surrounding fire barriers. The classifications are defined as follows:

Low: The combustible loading of an area is classified as "Low" if it does not exceed an average of 60,000 BTU/Ft^2 of floor area. This loading corresponds to a fire severity of 45 minutes using the standard time-temperature curve, ASTM E-119. By comparison, NFPA classification of the combustible loading in an area as "Low" identifies the area as having a fire severity below that which could be expected to be contained within a 1-hour fire resistance rated enclosure.

Moderate: The combustible loading of an area is classified as "Moderate" if it exceeds an average of 60,000 BTU/Ft^2 but does not exceed an average of 140,000 BTU/Ft^2 of floor area. This loading corresponds to a fire severity of 1 hour, 45 minutes using the standard time-temperature curve, ASTM E-119. By comparison NFPA classification of the combustible loading in an area as "Moderate" identifies the area as having a fire severity below that which could be expected to be contained within a 2-hour fire resistance rated enclosure.

High: The combustible loading of an area is classified as "High" if it exceeds an average of 140,000 BTU/Ft^2 of floor area. This loading corresponds to a fire severity in excess of 1 hour, 45 minutes using the standard time-temperature curve, ASTM E-119. By comparison NFPA classification of the combustible loading in an area as "High" identifies the area as having a fire below that which could be expected to be contained within a 3-hour fire resistance rated enclosure.

5.0.8 Overview of Fire Zones

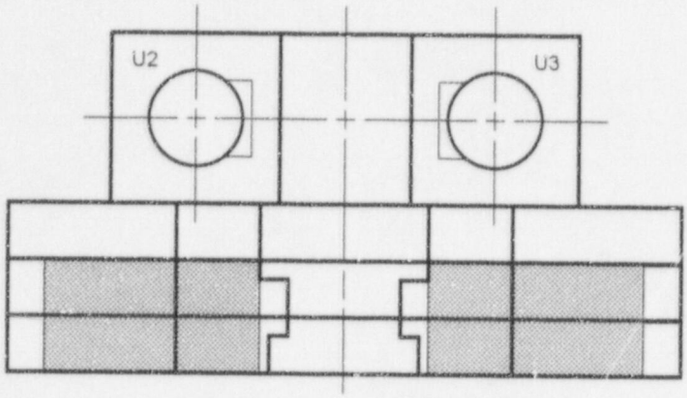
Exemptions are being requested for twelve (12) fire zones. PECO Energy recognizes that, as a result, the exemption request appears to be extensive. However, a review of these requested exemptions shows that they neither individually nor collectively adversely affect the ability to safely shut down the plant in the event of a fire. This conclusion is based on the common circumstances that either the combustible loadings are "Low", where the combustible material is primarily fire retardant cable insulation, or the detection function is provided by alarms on sprinklers which are expected to respond to a fire in a time comparable to the response time of detectors for those types of fires. These commonalities (i.e., fire protection elements), are summarized in Section 5.0.9 and Table 1.0 below. They show that the lack of an exposure fire

hazard in each zone and the lack of synergistic interactions between fire protection situations in different zones support the application of the exemption analyses to several zones.

5.0.9 Table 1.0 Overview of Fire Zones

Section	Description	In-Situ (Fixed) Combustibles	Important Fire Protection Elements
5.1	Condenser Bays Fire Zones 50-78W & 50-78V	♦ Turbine lube oil in double-walled pipe ♦ Low combustible loading	➢ Effective administrative controls ➢ Automatic sprinkler alarms gives prompt warning
5.2	Equipment Hatchway & Adjoining Equipment Rooms, Fire Zone 50-78B	♦ Fire retardant cable insulation ♦ Sealed oil units ♦ Low combustible loading	➢ Effective administrative controls ➢ No unprotected fire initiators / ignition sources ➢ Automatic sprinkler alarms gives prompt warning
5.3	Main Turbine Lube Oil Storage Tank Rooms, Fire Zones 50-88 & 50-89	♦ Turbine lube oil	➢ Effective administrative controls ➢ Automatic sprinkler alarms gives prompt warning ➢ Additional alarms and safety features
5.4	Reactor Feedwater Turbine Area Corridors, Fire Zone 50-78A	♦ Fire retardant cable insulation ♦ Oil in pumps ♦ Low combustible loading	➢ Effective administrative controls ➢ Automatic sprinkler alarms gives prompt warning ➢ Measures to control/contain spills
5.5	Steam Jet Air Ejector Room, Fire Zone 50-78EE Feedwater Heater Room, Fire Zone 50-99	♦ Fire retardant cable insulation in conduit ♦ Low combustible loading	➢ Effective administrative controls ➢ No unprotected fire initiators / ignition sources
5.6	Reactor Water Cleanup System Equipment, Fire Zones 6S-42, 6S-5M, 13N-36 and 13N-13M	♦ Fire retardant cable in conduit ♦ Low combustible loading	➢ Effective administrative controls ➢ No unprotected fire initiators / ignition sources

5.1 Unit 2 and Unit 3 Condenser Bay, Fire Zones 50-78W and 50-78V



Unit 2 Turbine Building
El. 91'-6"→163'-0"
Fire Zone 50-78W, Room
22, 223 & 138

Unit 3 Turbine Building
El. 91'-6"→163'-0"
Fire Zone 50-78V, Room
181,272

5.1.1 Fire Zone(s) Defense In Depth:

The fire zone and specific rooms discussed in Section 5.1 have the following fire protection characteristics and features that provide defense-in-depth protection:

Prevent Fires from Starting:

- The primary in-situ combustible loading is cable insulation.
- No uncontrolled transient combustibles are permitted in these rooms.
- There are no fire initiators/ignition sources within these rooms that are unprotected.
- All electrical equipment is ground and fault protected.

Detect and Suppress Fires that Do Occur:

- There are no unprotected special fire hazards.
- There is general area automatic detection by smoke/heat detectors in adjacent areas.
- There is general area automatic wet pipe sprinkler protection for each room.
- Sprinkler actuation alarms in the MCR.
- Manual fire fighting activities is provided by the Fire Brigade.

Design of Plant Systems:

- The ability to safely shutdown the plant would not be impacted from a fire resulting in a loss of the SR/SSD cable and/or instrumentation located in these areas.
- Cable trays have horizontal and vertical separation from any adjacent fire exposures.
- MCCs and electrical cabinets are sealed and enclosed and are not considered an ignition source.
- The lube oil piping is double wall and welded to contain the hazard. This is standard industry and fire protection practice and has a good safety record.
- Fire barriers are utilized to protect SR/SSD systems, structures and components.

5.1.2 Fire Zone Description:

These fire zones are located on several elevations of the Unit 2 and 3 Turbine Buildings and are configured similarly for each unit. Fire Zones 78W (Unit 2) and 78V (Unit 3) each have three (3) rooms that are the subject of this exemption request.

Fire Zone 78W (Unit 2): The Condenser Pit (Room 22, Elevation 102'-0"), the Moisture Separator Area (Room 138, Elevation 116'-0"), and the Unit 2 Piping Area (Room 223, Elevation 135'-0") are located in fire zone 78W. The overall area of Fire Zone 50-78W is approximately 34,371 sq. ft. in floor area and approximately 2,062,260 cu. ft. in volume (ceiling height approximately~60 ft.).

Fire Zone 78V (Unit 3): The Moisture Separator Area (Room 181, Elevation 116'-0") and the Unit 3 Piping Area (Room 272, Elevation 135'-0") are located in Fire Zone 78V. Fire Zone 78V has approximately 34,371 sq. ft. in floor area and approximately 1,306,098 cu. ft. in volume (ceiling height approximately~38 ft.).

5.1.2.1 Fire Zone 50-78W (Room 22)

Unit 2 Condenser Pit is located on the 102'-0" elevation of the Turbine Building and represents approximately 4,407 sq. ft. of the overall floor area. The floor, north, south, west and east barrier walls are all constructed of noncombustible materials. The ceiling is open to the Moisture Separator Area. Access to this area is via vertical ladders on the north and south sides of the room.

5.1.2.2 Fire Zone 50-78W (Room 138)

Unit 2 Moisture Separator Area is located on the 116'-0" elevation of the Turbine Building and represents approximately 6,882 sq. ft. of the overall floor area. There is no north wall and the east, south, ceiling and partial height west wall are all constructed of noncombustible materials. Access is via two vertical ladders on the north end and a fire rated door assembly in the southwest corner. In order to mitigate the effects of a postulated HELB there is a grated/screened opening above the door.

5.1.2.3 Fire Zone 50-78W (Room 223)

The Unit 2 Pipe Area is located on the 135'-0" elevation of the Turbine Building and represents approximately 5,434 sq. ft. of the overall floor area with an approximate volume of 146,718 cu. ft. (ceiling height ~26.5 ft.). There is no east wall and the floor, north, south, west walls and ceiling are all constructed of noncombustible materials. The area is open to the Unit 2 Condenser Bay and the Moisture Separator areas. Access to this area is via fire rated door assemblies in the southeast and northeast corners.

5.1.2.4 Fire Zone 50-78V (Room 181)

The Unit 3 Moisture Separator Area is located on the 116'-0" elevation of the Turbine Building and represents approximately 6,882 sq. ft. of the overall floor area with an approximate volume of 337,218 cu. ft. (ceiling height ~49 ft.). There is no south wall and the floor, north, east and partial west walls are all constructed of noncombustible materials. The ceiling is also constructed of noncombustible materials but consists of two large hatches and a large open area to the turbine deck above. Access is via two vertical ladders on the south end and a fire rated door assembly in the southwest corner. In order to mitigate the effects of a postulated HELB there is a grated/ screened opening above the door.

5.1.2.5 Fire Zone 50-78V (Room 272)

The Unit 3 Pipe Area is located on the 135'-0" elevation of the Turbine Building and represents approximately 5,564 sq. ft. of the overall floor area with an approximate volume of 151,228 cu. ft. (ceiling height ~26.5 ft.). There is no east wall and the floor, north, south, west walls and ceiling are all constructed of noncombustible materials. The area is open to the Unit 3 Condensers and the Moisture Separator areas. Access to this area is via fire rated door assemblies in the northeast and southeast corners.

5.1.3 Use of Zone/Room & Ventilation:

5.1.3.1 Fire Zone 50-78W (Rooms 22, 138 & 223)

These are locked high radiation rooms. Plant equipment located in this area includes the Unit 2 West Condensers, Moisture Separators and the Piping Area. Ventilation for this elevation is provided by the Unit 2 and 3 Turbine Building Air Handling Systems which provide approximately 14 air changes per hour. The Fire Brigade pre-fire strategy defines the actions to be taken to mitigate the effects of smoke and hot gases in this area.

5.1.3.2 Fire Zone 50-78V (Rooms 181 & 272)

These are locked high radiation rooms. Plant equipment located in this area includes the Unit 3 West Condenser Pit, Moisture Separators, Condenser Assemblies and the Piping Area. Ventilation for this elevation is provided by the Unit 2 and 3 Turbine Building Air Handling Systems which provide approximately 14 air changes per hour. The Fire Brigade pre-fire strategy defines the actions to be taken to mitigate the effects of smoke and hot gases in this area.

5.1.4 Fire Loading & Fire Initiator Information:

The rooms contain combustibles in the form of electrical cable insulation and oil. The combustible loading in each room is considered "Low" as discussed in Section 5.0.1.1. There are no uncontrolled transient combustibles permitted and no credible ignition sources/fire initiators that are unprotected and located in these rooms. All electrical cables are rated to or equivalent to

IEEE 383-1974 for flame spread purposes and are therefore not considered as credible sources of fire ignition or sources of propagation.

5.1.5 Fire Barriers & Adjacent Fire Exposures:

The substantial construction features of the adjacent walls, floor and ceiling assembly would not be challenged by a fire in these areas and the automatic wet pipe sprinkler system located on each level would control the exposure. There are no unprotected adjacent fire exposures that would be considered a threat to these rooms.

5.1.6 Fire Detection & Suppression Capability:

There is automatic wet pipe sprinkler protection for each of these rooms in the Turbine Building. This same automatic sprinkler system protects the turbine lube oil piping that is routed throughout these areas. The automatic wet pipe sprinkler system would provide alarm indication to the MCR as a result of actuation due to the postulated fire in the zone.

Manual fire fighting capability is initiated with a manual or automatic alarm to the MCR. The Fire Brigade is dispatched to extinguish the fire using guidance provided in the area specific pre-fire strategy plans. Active and passive ventilation paths exist to mitigate the effects of smoke and hot gases that may accumulate and there are no physical obstructions to access the rooms. Several hose stations for manual fire fighting are available in the Turbine Building adjacent to these rooms, which are capable of providing an effective hose stream into each area. Hand-held fire extinguishers and 350 lb. chemical hose carts are available for use by the Fire Brigade.

5.1.7 Safety Train Information:

There is no Appendix R SSD equipment or components located within these rooms, however the rooms contain SR/SSD cable in trays and conduit.

The SR/SSD cable in trays and conduit are located in the Condenser Pit Area and the Piping Area. Safety Related Reactor Protection System (RPS), Primary Containment Isolation System (PCIS) and SSD cable in conduit and trays are located in the Piping Area. The Moisture Separator Area also contains cable trays with off-site power cable.

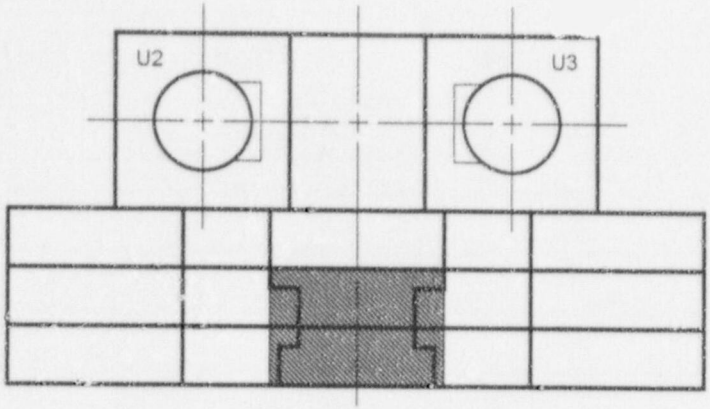
5.1.8 Fire Zone(s) Plant Risk from Fire:

There is no exposure fire hazard that presents a new or credible vulnerability to plant systems or equipment that would impact the plant fire risk profile. There are no exposure fire hazards adjacent to these rooms that are unprotected and there is no impact on the ability to achieve safe shutdown per the plant safe shutdown analysis as a result of a fire in these areas.

5.1.9 Fire Zone(s) Conclusion:

The fire zones and specific rooms discussed in Section 5.1 have an existing level of defense-in-depth appropriate for the fire hazard. The addition of an automatic fire detection system in these rooms would not significantly improve the response time, the level of fire safety, or the risk profile to SR and/or SSD systems. This is due to the size of the anticipated fire and the existence of an automatic wet pipe sprinkler system which provides alarm functions. Therefore, an exemption from 10 CFR 50 Appendix R, Section III.F, is warranted for these fire zones and rooms based on an adequate level of defense-in-depth which provides reasonable assurance that should a fire occur, it would be detected and controlled while limiting damage to important plant equipment.

5.2 Unit 2 and Unit 3 Equipment Hatchway and Adjoining Equipment Rooms, Fire Zone 50-78B



U2/U3 Turbine Building
El. 116'-0"→ 165'-0"
Fire Zone 50-78B, Rooms 135,184,185,229,274 228 & 429

5.2.1 Fire Zone(s) Defense In Depth:

The fire zone and specific rooms discussed in Section 5.2 have the following fire protection characteristics and features that provide defense-in-depth protection:

Prevent Fires from Starting:

- The primary in-situ combustible loading is cable insulation.
- No uncontrolled transient combustibles are permitted in these rooms.
- There are no fire initiators/ignition sources within these rooms that are unprotected.
- All electrical equipment is ground and fault protected.

Detect and Suppress Fires that Do Occur:

- There are no unprotected special fire hazards.
- The hydrogen seal oil units are protected by automatic deluge systems.
- There is general area automatic detection by smoke/heat detectors in adjacent areas.
- There is general area manual pre-action sprinkler protection for the 116'-0" and 135'-0" elevations.
- Manual fire fighting activities provided by the Fire Brigade.

Design of Plant Systems:

- The ability to safely shutdown the plant would not be impacted from a fire resulting in a loss of SSD cable in these rooms.
- Cable trays have horizontal and vertical separation from any adjacent fire exposures.
- MCCs and electrical cabinets are enclosed and are not considered an ignition source to external materials.

5.2.2 Fire Zone Description 50-78B:

This fire zone is located on several elevations of the Turbine Building common areas for Units 2 and 3. Fire Zone 78B has seven (7) rooms identified herein and include; the General Storage & Hydrogen Seal Equipment Areas (Rooms 185, 135 & 184 Elevation 116'-0"), the Laydown Area (Room 185, Elevation 116'-0"), the Generator Equipment Areas (Rooms 229 & 274, Elevation 135'-0"), the Laydown Area which surrounds the open hatch (Room 228, Elevation 135'-0"), and the Laydown Area (Room 429, Elevation 165'-0") which is directly open to the Turbine Build ceiling.

These areas are all directly communicating via the main equipment hatch, from the 116'-0" elevation to the 165'-0" elevation and extend to the ceiling/roof deck (234'-0" elevation) of the Turbine Building. These are open rooms accounting for approximately 51,445 sq. ft. of floor area and a significant volume. The ceiling heights are at a minimum 19 ft. between floor 116'-0" to 135'-0" and 135'-0" to 165'-0"; and approximately 65 ft. from 165'-0" to the underside of the roof.

5.2.2.1 Fire Zone 50- 78B (Rooms 135, 184 & 185)

This General Storage & Hydrogen Seal Equipment area is located on the 116'-0" elevation of the Turbine Building common area, with approximately 12,822 sq. ft. in floor area. The adjacent rooms contain the 13.8KV switchgear and Lab rooms for both units. These adjacent rooms are separate fire zones and are provided with an automatic fire detection system and are exclusive of this exemption request. The floor, walls and ceiling are all constructed of noncombustible materials.

5.2.2.2 Fire Zone 50-78B (Rooms 228, 229 & 274)

This is the Laydown Area and the Generator Equipment Area that is located on the 135'-0" elevation of the Turbine Building. The room is approximately 15,286 sq. ft. in floor area. The floor, walls and ceiling are all constructed of noncombustible materials.

5.2.2.3 Fire Zone 50-78B (Room 429)

This is the Laydown Area located on the 165'-0" elevation of the Turbine Building. The room is approximately 17,860 sq. ft. in floor area. This room includes the common area between the turbine generators and the main equipment hatch. The floor, walls and ceiling are all constructed of noncombustible materials. The west wall is a rated barrier credited for Appendix R.

5.2.3 Use of Zone/Room & Ventilation:

5.2.3.1 Fire Zone 50-78B (Rooms 135, 184 & 185)

Plant equipment that is located on this elevation includes; the hydrogen seal oil units, the generator stator coolers, two 6-ton carbon dioxide storage tanks, Turbine Building cooling water pumps, back-up air compressors, and Emergency Service Water chemistry treatment injection skids. The equipment is located respectively for each unit on either side of the equipment hatch/laydown area.

Ventilation for this elevation is provided by the Unit 2 and 3 Turbine Building Air Handling Systems which provide approximately 14 air changes per hour. The Fire Brigade pre-fire strategy defines the actions to be taken to mitigate the effects of smoke and hot gases in this area.

5.2.3.2 Fire Zone 50-78B (Rooms 228, 229 & 274)

Plant equipment that is located on this elevation includes; a 480V load center in each room, iso-phase bus coolers, the main generator bus for each unit, and instrumentation racks, MCCs, condenser water box scavenging pumps and the two 2-ton carbon dioxide storage tanks for the generator purge system.

Ventilation for this elevation is provided by the Unit 2 and 3 Turbine Building Air Handling Systems which provide approximately 14 air changes per hour. The Fire Brigade pre-fire strategy defines the actions to be taken to mitigate the effects of smoke and hot gases in this area.

5.2.3.3 Fire Zone 50- 78B (Room 429)

Plant equipment located in this room on the 165'-0" elevation includes; several MCCs and several turbine bearing lift pumps for each unit located near the east wall for each Unit. A small maintenance office is also located on the east wall.

Ventilation for this elevation is provided by the Unit 2 and 3 Turbine Building Air Handling Systems which provide approximately 14 air changes per hour. The Fire Brigade pre-fire strategy defines the actions to be taken to mitigate the effects of smoke and hot gases in this area.

5.2.4 Fire Loading & Fire Initiator Information:

The rooms contain combustibles in the form of electrical cable insulation and oil. The combustible loading in each room is considered "Low" as discussed in Section 5.0.1.1. There are no uncontrolled transient combustibles permitted and no credible ignition sources/fire initiators that are unprotected and located in these rooms. All electrical cables are rated to or equivalent to IEEE 383-1974 for flame spread purposes and are therefore not considered a credible fire ignition or source of propagation.

The hydrogen seal oil unit hazard located on the 116'-0" elevation is protected by an automatic deluge system utilizing heat actuating devices and a dike to contain spills. The MCCs and electrical cabinets on the 116'-0" and 135'-0" are enclosed and sealed at the top and bottom with fire rated sealant material and are not considered a credible ignition source.

5.2.5 Fire Barriers & Adjacent Fire Exposures:

The substantial construction features of the adjacent walls, floor and ceiling assembly would not be challenged by a fire in these areas and the automatic wet pipe sprinkler system located on each level, except 165'-0", would control the exposure. There are no adjacent fire exposures that are unprotected and would be considered a threat to the rooms.

5.2.6 Fire Detection & Suppression Capability:

There is currently manual pre-action sprinkler protection for the 116'-0" and the 135'-0" elevations of these areas of the Turbine Building. As part of the IPEEE commitments, the suppression system will be upgraded to an automatic wet pipe sprinkler protection system for the 116'-0" and the 135'-0" elevations. The project is scheduled to be completed prior to the restart from the next Unit 3 refueling outage scheduled for October 1999. The automatic wet pipe sprinkler system would provide alarm indication to the MCR as a result of actuation due to the postulated fire in the zone.

Manual fire fighting is initiated with a manual alarm to the MCR. The Fire Brigade is dispatched to extinguish the fire using guidance provided in the area specific pre-fire strategy plans. Active and passive ventilation paths exist to mitigate the effects of smoke and hot gases that may accumulate and there are no physical obstructions to access the rooms. Several hose stations for manual fire fighting are available in the Turbine and Reactor Buildings adjacent to these rooms, which are capable of providing an effective hose stream into each area. Hand-held fire extinguishers, 350 lb. chemical hose carts and two carbon dioxide hose reels on the turbine deck are available for use by the Fire Brigade.

5.2.7 Safety Train Information:

There is no Appendix R SSD equipment or components located within the room. The SR/SSD related cable in trays and conduit on the 116'-0" elevation traverse this fire zone near the perimeter of the equipment hatch. The trays and conduit are at an elevation of approximately 125'-0" to 128'-0" and 131'-0" at various points. These rooms also contain cables that provide offsite power to the onsite power distribution system that will become SSD equipment when the SSD analysis is revised as part of the project to resolve Thermo-Lag. This revision is scheduled to be completed prior to the restart from the next Unit 3 refueling outage scheduled for October 1999.

At the 135'-0" elevation, the SR/SSD related cable in tray and conduit are located at approximately column line 19-20 M and runs west adjacent to the perimeter of the equipment hatch, past the 480V load centers and MCCs, to approximately column line 20 M then turns north

and south along the switchgear room wall. To the north it runs approximately to column line 21-22 M and to the south it runs to approximately column line 19 M.

At the 165'-0" elevation, the SR/SSD related cable trays and conduit are located at approximately column line 18-20 M with several conduits at approximately column line 21 M. The trays run a distance of approximately 40 ft. to the MCCs and are located approximately 28 ft. from the turbine generator.

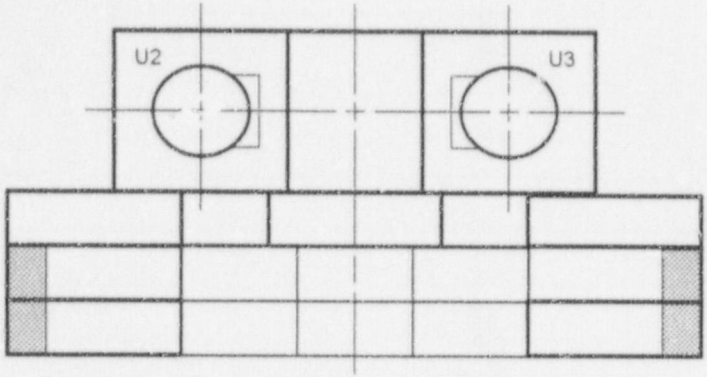
5.2.8 Fire Zone(s) Plant Risk from Fire:

There is no exposure fire hazard that presents a new or credible vulnerability to plant systems or equipment that would impact the plant fire risk profile. There are no exposure fire hazards adjacent to these rooms that are unprotected and there is no impact on the ability to achieve safe shutdown per the plant safe shutdown analysis as a result of a fire in these areas.

5.2.9 Fire Zone(s) Conclusion:

The fire zones and specific rooms discussed in Section 5.2 have an existing level of defense-in-depth appropriate for the fire hazard. The addition of an automatic fire detection system in these rooms would not significantly improve the response time, the level of fire safety or, the risk profile to SR and/or SSD systems. This is due to the size of the anticipated fire and the existence of special hazard protection, a general area automatic wet pipe sprinkler system both of which provide alarm functions. Therefore, an exemption from 10 CFR 50 Appendix R, Section III.F, is warranted for these fire zones and rooms based on an adequate level of defense-in-depth which provides reasonable assurance that should a fire occur, it would not go undetected nor damage important plant equipment.

5.3 Unit 2 and Unit 3 Main Turbine Lube Oil Storage Tank Rooms, Fire Zones 50-88 & 50-89



5.3.1 Fire Zone(s) Defense in Depth:

The fire zones and specific rooms discussed in Section 5.3 have the following fire protection characteristics and features that provide defense-in-depth protection.

Prevent Fire From Starting:

- There are no unprotected fire initiators/ignition sources.
- All electrical equipment is ground and fault protected.
- Uncontrolled transient combustibles are not permitted in these rooms.

Detect and Suppress Fires that Due Occur:

- There is automatic wet pipe sprinkler protection throughout the rooms.
- There are no special hazards that require automatic detection system.
- There is standard protection to control and contain an oil spill.

Design of Plant Systems:

- The ability to safely shut down the plant would not be impacted from a fire resulting in a loss of SR/SSD instruments and cable in these rooms.
- The oil storage tanks have fire protection safety equipment and high level alarms that:
  - * Transmit an alarm to the Main Control Room that requires pre-defined operator action, and
  - * Stop oil transfer activities.
- Non-combustible hydraulic fluids are utilized in the EHC System.

5.3.2 Fire Zone Description:

Fire Zone 50-88 & 50-89 (Rooms 139 & 179): The Unit 2 and 3 Main Turbine Lube Oil Storage Tank Room is located on the 116'-0" elevation of each Turbine Building. Each room is approximately 2,736 sq. ft. in floor area and approximately 46,512 cu. ft. in volume (ceiling height ~17 ft.). The floor, walls and ceiling are all constructed of noncombustible materials.

Fire Zone 50-88 (Room 139, Unit 2): The east and west walls of room 139 have rated access door assemblies. There is also a non-rated rolling steel door assembly in the south wall of room 139 that leads to the exterior of the building. In order to mitigate the effects of a postulated HELB there is a grated/screened opening above the door in the northwest corner.

Fire Zone 50-88 (Room 179, Unit 3): The east and west walls of room 179 have rated access door assemblies. There is also a non-rated rolling steel door assembly on the north wall of room 179 that leads to the exterior of the building. In order to mitigate the effects of a postulated HELB there is a grated/screened opening above the door in the northwest corner.

5.3.3 Use of Zone/Room & Ventilation:

Each room contains the three Turbine Lube Oil Tanks and the associated transfer pumps, the turbine Electric Hydraulic Control (EHC) pumps and cooler assemblies, SR/SSD components, main instrument racks, non-safety related power and lighting panels. The turbine lube oil tanks and transfer pumps are within a storage tank compartment that has an enclosure dike 3'-6" high designed to hold the contents of one tank, approximately 20,000 gallons, from the postulated spill. The oil storage tanks have fire protection safety equipment and high level alarms that are transmitted to the Main Control Room that require pre-defined operator action and stops oil transfer activities. The EHC pumps and coolers are also within a compartment that has a 0'-6" high dike designed to retain a spill of hydraulic fluid.

Ventilation for this elevation is provided by the Unit 2 and 3 Turbine Building Air Handling Systems which provide approximately 14 air changes per hour. The Fire Brigade pre-fire strategy defines the actions to be taken to mitigate the effects of smoke and hot gases in this area.

5.3.4 Fire Loading & Fire Initiator Information:

The primary combustible in these rooms is lubricating oils with minimal amount of electrical cable insulation. The open cable trays run east and west adjacent to the south and north walls along the perimeter of the lube oil storage tank dike for each room. The combustible loading in each room is considered "High" as discussed in Section 5.0.1.1. All electrical equipment is ground and fault protected and the hydraulic fluid utilized in the EHC is non-combustible. There are no uncontrolled transient combustibles permitted and no credible unprotected ignition sources/fire initiators that are located in these rooms. All electrical cable is rated to or equivalent to IEEE 383-1974 for flame spread purposes and is therefore not considered as a credible fire ignition or source of propagation.

5.3.5 Fire Barriers & Adjacent Fire Exposures:

The substantial construction features of the walls, floor and ceiling assemblies would not be challenged by a fire in these areas. All of the barriers in these rooms will be upgraded to rated barriers as a result of a commitment made by the IPEEE fire risk analysis. Each room is enclosed with access doors to the adjacent corridor and there are no adjacent fire exposures that would be considered a threat to these rooms. The automatic wet pipe sprinkler system will be modified to protect the HELB opening in the barrier. Barrier review and upgrade is scheduled to be completed prior to the restart from the next Unit 3 refueling outage scheduled for October 1999.

5.3.6 Fire Detection & Suppression Capability:

There is an automatic wet pipe sprinkler system in each of these rooms. The automatic wet pipe sprinkler system provides protection for the oil and cable tray hazards. Manual fire fighting activities would be initiated by a manual or automatic alarm to the MCR.

The automatic wet pipe sprinkler system would actuate quickly as a result of an oil based fire and would thereby notify the MCR and control the exposure fire. Due to the size of the anticipated fire, addition of automatic detection in these fire areas will not significantly improve Fire Brigade response time over the existing fire protection features currently provided. This is due to the ability of the sprinklers to actuate quickly, initiate an alarm and control the fire until the arrival of the Fire Brigade.

The Fire Brigade is dispatched to extinguish the fire using guidance provided in the area specific pre-fire strategy plans. Active and passive ventilation paths exist to mitigate the effects of smoke and hot gases that may accumulate and there are no physical obstructions to access the rooms. Several hose stations for manual fire fighting are available in the Turbine Building adjacent to these rooms, which are capable of providing an effective hose stream into each area. Hand-held fire extinguishers and 350 lb. chemical foam carts are available for use by the Fire Brigade.

5.3.7 Safety Train Information:

There is no Appendix R SSD equipment or components located within this room, however the lube oil storage rooms both contain SR/SSD cable in tray and/or conduit. The SSD cable in room 139 utilize both conduit and existing ladder type tray to traverse the ceiling from the point of entry on the north wall to the instrument racks located on the south wall.

The SSD cables in room 179 are enclosed in conduit as they traverse the ceiling from the entry point to the south wall instrument racks. RPS instruments and associated cables in trays are routed in both rooms and the tray in room 179 also contains off-site power cables that are ground and fault protected.

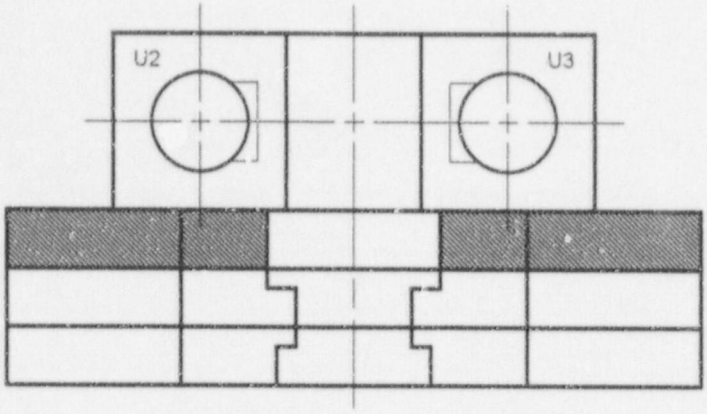
5.3.8 Fire Zone(s) Plant Risk from Fire:

There is no exposure fire hazard that presents a new or credible vulnerability to plant systems or equipment that would impact the plant fire risk profile. There are no exposure fire hazards adjacent to these rooms that are unprotected and there is no impact on the ability to achieve safe shutdown per the plant safe shutdown analysis as result of a fire in these areas.

5.3.9 Fire Zone(s) Conclusion:

The fire zones and specific rooms discussed in Section 5.3 have an existing level of defense-in-depth appropriate for the fire hazard. The addition of an automatic fire detection system in these rooms would not significantly improve the response time, the level of fire safety or risk profile to SR and/or SSD systems. This is due to the size of the anticipated fire and the existence of an automatic sprinkler system which provides alarm functions. Therefore, an exemption from 10 CFR 50 Appendix R, Section III.F is warranted for these fire zones and rooms based on an adequate level of defense-in-depth which provides reasonable assurance that should a fire occur, it would not go undetected nor damage important plant equipment.

5.4 Unit 2 and Unit 3 Reactor Feedwater Turbine Area Corridors, Fire Zone 50-78A



Unit 2 Turbine Building
El. 165'-0"
Partial Fire Zone 50-78A, Room 414

Unit 3 Turbine Building
El. 165'-0"
Partial Fire Zone 50-78A, Room 457

5.4.1 Fire Zone(s) Defense in Depth:

The fire zones and specific rooms discussed in Section 5.4 have the following fire protection characteristics and features that provide defense-in-depth protection.

Prevent Fire From Starting:

- There are no unprotected fire initiators/ignition sources.
- All electrical equipment is ground and fault protected.
- Uncontrolled transient combustibles are not permitted in these rooms.

Detect and Suppress Fires that Due Occur:

- There is automatic sprinkler protection throughout the rooms.
- There are no special hazards that require automatic detection system.
- There is standard protection to control and contain an oil spill.

Design of Plant Systems:

- The ability to safely shut down the plant would not be impacted from a fire resulting in a loss of SR/SSD cable in these rooms.
- Cable trays have horizontal and vertical separation from any adjacent fire exposures.
- The reactor feed pump turbine and pump are protected with high temperature alarms.

5.4.2 Fire Zone Description:

5.4.2.1 Fire Zone 50-78A (Room 414)

This feedwater/turbine area access corridor is located on the 165'-0" elevation of the Unit 2 Turbine Building. It is approximately 8,155 sq. ft. in floor area and approximately 228,340 cu. ft. in volume (ceiling height 28 ft.). It is further subdivided into functional compartments (fire zones) for specific pieces of equipment. The floor, walls and ceiling are all constructed of noncombustible materials and the access is via an open hallway on the north end and open stairwell on the south end. Access to the Reactor Building is through the west wall via an airlock assembly.

5.4.2.1 Fire Zone 50-78A (Room 457)

This feedwater/turbine area access corridor is located on the 165'-0" elevation of the Unit 3 Turbine Building. It is approximately 8,155 sq. ft. in floor area and approximately 228,340 cu. ft. in volume (ceiling height 28 ft.). It is further subdivided into functional compartments (fire zones) for specific pieces of equipment. The floor, walls and ceiling are all constructed of noncombustible materials and the access is via an open hallway on the north end and open stairwell on the south end. Access to the Reactor Building is through the west wall via an airlock assembly.

5.4.3 Use of Zone/Room & Ventilation:

Each area provides access to non-safety related Reactor Feed Pump (RFP) A, B & C and their associate Turbines (RFPT), 480V Switch Gear units, Motor Control Centers, Drywell Chiller A, B, & C, Control Room Chillers, Drywell & Control Room Chiller Circulating Water Pump Systems and an overhead crane system. The reactor feed pump turbine and pump equipment are protected with high temperature alarms. Though identified as separate fire zones, the non-safety related individual enclosures for the Feedwater Heater A5, B5 & C5 are not separated from the main corridor by rated construction. The corridors also provide access to the hydrogen injection stations and its welded supply piping that enters the Turbine Building through the north wall of Unit 3 and traverses both rooms to terminate at the respective Unit 2 and 3 injection assembles.

Area ventilation is provided by the Turbine Building Air Handling System. The pre-fire strategy plan defines the actions to be taken to mitigate the effects of smoke and hot gases in these areas.

5.4.4 Fire Loading & Fire Initiator Information:

These fire zones contain combustibles in the form of electrical cable insulation and oil. The combustible loading for each room is considered "Low" as discussed in Section 5.0.1.1. There are no uncontrolled transient combustibles permitted and no credible ignition sources/fire initiators that are unprotected and located in these rooms. There is oil contained within the turbine reactor feedwater pumps located approximately 15 ft. from the cable trays in the corridor.

All electrical cable is rated to or equivalent to IEEE 383-1974 for flame spread purposes and is therefore not considered as a credible fire ignition or source of propagation. All electrical equipment is ground, fault protected and sealed.

The electrical cable insulation in each room is in a stack of open ladder type trays that traverse the corridor at an elevation below the ceiling and adjacent to the west side of the corridor from the Main Control Room complex wall to the first Feedwater heater room. These cable trays have horizontal and vertical separation from any adjacent fire exposures.

5.4.5 Fire Barriers & Adjacent Fire Exposures:

The substantial construction features of the walls, floor and ceiling assembly would not be challenged by a fire in these areas and there is no adjacent fire exposures that would be considered a threat to these areas. The wall sections adjacent to the Reactor Building, Main Control Room and Turbine Building are rated barriers. The south wall of Unit 2 and the north wall of Unit 3 are non-rated barriers. The Reactor Building and Main Control Room complex walls are rated barriers credited for Appendix R. The barriers to the adjacent cubicles and rooms along the corridor are all constructed of non-combustible materials. The reactor feed pump turbine cubicles are open to their respective feed pump rooms. Both the turbine and pump rooms have a berm at the doorway to control spills.

5.4.6 Fire Detection & Suppression Capability:

There is an automatic wet pipe sprinkler system throughout these areas. The wet pipe sprinkler system protects both this and open adjacent cubicles that contain the reactor feed pump turbine room and related pump rooms. Manual fire fighting activities would be initiated by a manual or automatic alarm to the MCR.

The automatic wet pipe sprinkler system would actuate quickly in the event of an oil based fire to notify the MCR and control the exposure fire. Due to the size of the anticipated fire, addition of automatic detection in these fire areas will not significantly improve Fire Brigade response time over the existing fire protection features currently provided. This is due to the ability of the sprinklers to actuate quickly, initiating an alarm and controlling the fire until the arrival of the Fire Brigade.

The Fire Brigade is dispatched to extinguish the fire using guidance provided in the area specific pre-fire strategy plans. Active and passive ventilation paths exist to mitigate the effects of smoke and hot gases that may accumulate and there are no physical obstructions to access the rooms. Several hose stations for manual fire fighting are available in the Turbine Building adjacent to these fire zones, which are capable of providing an effective hose stream into each area. Hand-held fire extinguishers and 350 lb. chemical foam carts are available in each unit with an extra 100 ft. of hose, at each hose station, for use by the Fire Brigade.

5.4.7 Safety Train Information:

There is no Appendix R SSD equipment or components located within these rooms, however the rooms contain SR/SSD cable in tray and/or conduit. The SR/SSD cable and conduit are located between the Main Control Room complex wall and the B5 and C5 Feedwater heater rooms respectively. They run parallel to the feedwater heater rooms on the west side of the corridor respectively and exit the area approximately 40 ft from the 480V load centers.

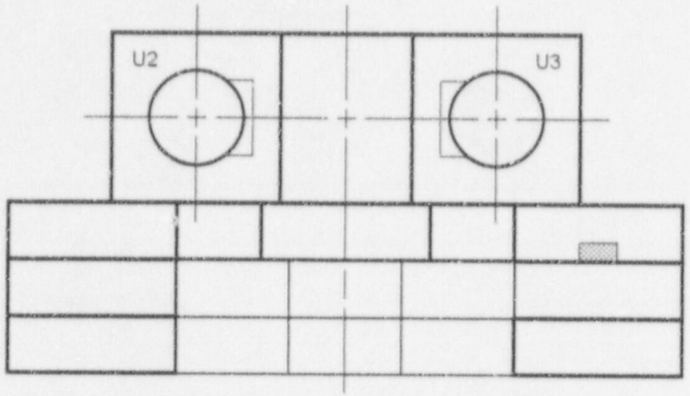
5.4.8 Fire Zone(s) Plant Risk from Fire:

There is no exposure fire hazard that presents a new or credible vulnerability to plant systems or equipment that would impact the plant fire risk profile. There are no exposure fire hazards adjacent to these rooms that are unprotected and there is no impact on the activities to achieve safe shutdown per the plant safe shutdown analysis as a result of a fire in these areas.

5.4.9 Fire Zone(s) Conclusion:

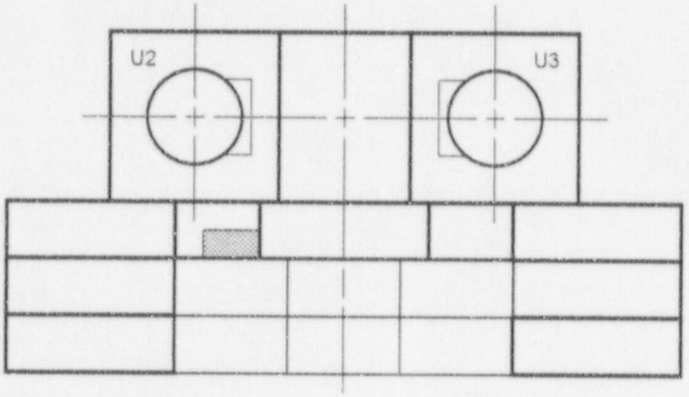
The fire zones and specific rooms discussed in Section 5.4 have an existing level of defense-in-depth appropriate for the fire hazard. The addition of an automatic fire detection system in these rooms would not significantly improve the response time, the level of fire safety or risk profile to SR and/or SSD systems. This is due to the size of the anticipated fire and the existence of an automatic sprinkler system which provides alarm functions. Therefore, an exemption from 10 CFR 50 Appendix R, Section III.F, is warranted for these fire zones and rooms based on an adequate level of defense-in-depth which provides reasonable assurance that should a fire occur, it would not go undetected nor damage important plant equipment.

5.5 Unit 3 Air Ejector Gland Seal Condenser Room, Fire Zone 50-78EE



Unit 2	Unit 3 Turbine Building
None	El. 116'-0" Fire Zone 50-78EE Room 177

Unit 2 Feedwater Heater Room, Fire Zone 50-99



Unit 2 Turbine Building	Unit 3
El. 135'-0" Fire Zone 50-99 Room 222	None

5.5.1 Fire Zone(s) Defense In Depth:

The fire zones and specific rooms discussed in Section 5.5 have the following fire protection characteristics and features that provide defense-in-depth protection:

Prevent Fires from Starting:

- There is no in-situ combustible loading other than cable insulation.
- No uncontrolled transient combustibles are permitted in these rooms.
- There are no fire initiators/ignition sources within these rooms.

Detect and Suppress Fires that Do Occur:

- There are no special fire hazards that require automatic detection and/or suppression.
- There is general area automatic detection by smoke/heat detectors in adjacent areas.
- There is general area automatic sprinkler protection in the adjacent piping area outside the Feedwater Heater room in the Turbine Building.
- Manual fire fighting activities provided by the Fire Brigade.

Design of Plant Systems:

- The ability to safely shut down the plant would not be impacted from a fire resulting in a loss of SSD cable in these rooms.

5.5.2 Fire Zone Description:

5.5.2.1 Fire Zone 50-99 (Room 222)

The Feedwater Heater room for Unit 2 is located on the 135'-0" elevation of the Turbine Building. The room is approximately 1,219 sq. ft. in floor area and approximately 15,847 cu. ft. in volume (ceiling height ~13 ft.). The floor, walls and ceiling are all constructed of noncombustible materials. The south wall is a removable shield wall and the north wall is a rated barrier credited for Appendix R. The west wall has a non-rated door with louvers and the south wall has a non-rated door that provides access into this room.

5.5.2.2 Fire Zone 50-78EE (Room 177)

The Air Ejector Gland Seal Condenser room for Unit 3 is located on the 116'-0" elevation of the Turbine Building. The room is approximately 980 sq. ft. in floor area and approximately 9,800 cu. ft. in volume (ceiling height ~10 ft.). The floor, walls and ceiling are all constructed of noncombustible materials. The west wall has a non-rated access door that is louvered.

5.5.3 Use of Zone/Room & Ventilation:

5.5.3.1 Fire Zone 50-78EE (Room 177)

This room is a locked high radiation area and contains an Air Ejector Gland Seal Condenser assembly. Plant equipment that is located in this room includes a steam driven Steam Jet Air Ejector and a steam packing exhauster. The door is louvered for room ventilation and the Turbine Building ventilation system provides additional pathways.

5.5.3.2 Fire Zone 50-99 (Room 222)

This room is a locked high radiation area and contains the C3 and C4 Feedwater Heaters. Plant equipment that is located in this room includes the feedwater heaters and several MOVs. The door in the west wall is louvered for room ventilation and the Turbine Building ventilation system provides additional pathways.

5.5.4 Fire Loading & Fire Initiator Information:

The rooms contain combustibles in the form of electrical cable insulation. The combustible loading in each room is considered "Low" as discussed in Section 5.0. There are no uncontrolled transient combustibles permitted and no credible ignition sources/fire initiators that are unprotected and located in these rooms. All electrical cable is rated to or equivalent to IEEE 383-1974 for flame spread purposes and is therefore not considered as a credible fire ignition or source of propagation.

5.5.4.1 Fire Zone 50-78EE (Room 177)

The combustibles are in an open cable tray that is on the northeast section of the room at approximately the 131'-0" elevation.

5.5.4.2 Fire Zone 50-99 (Room 222)

The combustibles are in three open vertical cable trays that are against the north wall and run the length of the wall.

5.5.5 Fire Barriers & Adjacent Fire Exposures:

The substantial construction features of the walls, floor and ceiling assembly would not be challenged by a fire in these areas. The Air Ejector Gland Seal Condenser and the Feedwater Heater rooms are enclosed except for the access doors to the corridor, stairway or an adjacent room. There are no adjacent fire exposures that would be considered a threat to the rooms.

5.5.6 Fire Detection & Suppression Capability:

There is no automatic fire detection or automatic fire suppression within these rooms. However, there is automatic smoke detection in the corridor area adjacent to each of these rooms and automatic wet pipe sprinkler protection in the adjacent piping area outside the feedwater heater room in the Turbine Building.

Manual fire fighting capability is initiated with a manual or automatic alarm to the MCR. The Fire Brigade is dispatched to extinguish the fire using guidance provided in the area specific pre-fire strategy plans. Active and passive ventilation paths exist to mitigate the effects of smoke and hot gases that may accumulate and there are no physical obstructions to access the rooms other than radiological concerns. Several hose stations for manual fire fighting are available in the Turbine and Reactor Buildings adjacent to these rooms, which are capable of providing an effective hose stream into each area. Hand-held fire extinguishers and 350 lb. chemical hose carts are available for use by the Fire Brigade.

5.5.7 Safety Train Information:

There is no Appendix R SSD equipment or components located within the room, however, the Air Ejector Gland Seal Condenser and the Feedwater Heater rooms all contain SR/SSD cable in tray and/or conduit. The Steam Jet Air Ejector room currently contains one conduit with SSD cable. The Feedwater Heater room contains SSD cable in a tray.

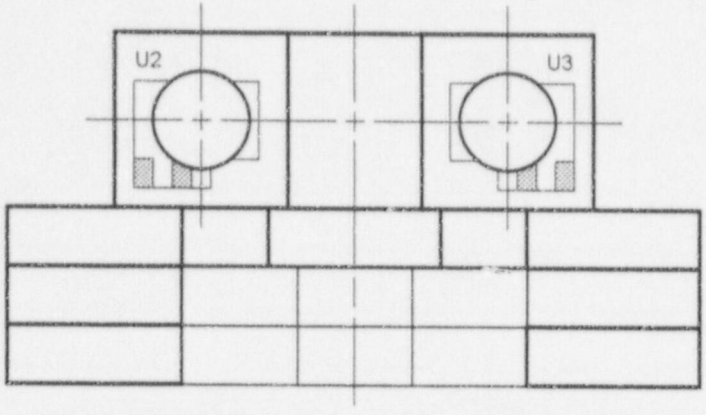
5.5.8 Fire Zone(s) Plant Risk from Fire:

There is no exposure fire hazard that presents a new or credible vulnerability to plant systems or equipment that would impact the plant fire risk profile. There are no exposure fire hazards adjacent to these rooms that are unprotected and there is no impact to achieve safe shutdown per the plant safe shutdown analysis as a result of a fire in these areas.

5.5.9 Fire Zone(s) Conclusion:

The fire zones and specific rooms discussed in Section 5.5 have an existing level of defense-in-depth appropriate for the fire hazard with no in-situ combustible loading. The addition of an automatic fire detection system in these rooms would not significantly improve the response time, the level of fire safety or risk profile to SR and/or SSD systems. Therefore, an exemption from 10 CFR 50 Appendix R, Section III.F, is warranted for these fire zones and rooms based on an adequate level of defense-in-depth which provides reasonable assurance that should a fire occur, it would not go undetected nor damage important plant equipment.

5.6 Unit 2 and Unit 3 Reactor Building Rooms Containing Reactor Water Cleanup System Equipment, Fire Zones 6S-42, 6S-5M, 13N-36 and 13N-13M



Unit 2 Reactor Building
El. 165'-0"
Fir e Zones 6S-42 and 6S-5M
Rooms 408 & 410

Unit 3 Reactor Building
El. 165'-0"
Fire Zones 13N-36/13M
Rooms 449 & 452

5.6.1 Fire Zone(s) Defense In Depth:

The fire zones and specific rooms discussed in Section 5.6 have the following fire protection characteristics and features that provide defense-in-depth protection:

Prevent Fires from Starting:

- There is no in-situ combustible loading other than cable insulation within conduits.
- No uncontrolled transient combustibles are permitted in these rooms.
- There are no fire initiators/ignition sources within these rooms. All electrical equipment is ground and fault protected.

Detect and Suppress Fires that Do Occur:

- There are no special fire hazards that require automatic detection and/or suppression.
- There is general area automatic detection by smoke/heat detectors in adjacent areas on the 165'-0" elevation.
- Manual fire fighting activities provided by the Fire Brigade.

Design of Plant Systems:

- The ability to safely shut down the plant would not be impacted from a fire resulting in a loss of SSD cable in these rooms.

5.6.2 Fire Zone Description:

5.6.2.1 Fire Zones 6S-5M & 13N-13M (Rooms 410 & 452)

The Clean-Up Backwash Transfer Pump rooms are located on the 165'-0" elevation of the Unit 2 and 3 Reactor Buildings. The rooms are small with approximately 135 sq. ft. in floor area and 2,025 cu. ft. in volume (ceiling height ~15 ft.). The floor of each room is a rated barrier credited for Appendix R and the walls and ceiling are all constructed of noncombustible materials. The east walls of both rooms have non-rated access doors into the rooms and the west walls are shield walls with non-rated doors leading into the cleanup backwash receiving tank rooms.

5.6.2.2 Fire Zones 6S-42 & 13N-36 (Rooms 408 & 449)

These rooms are for the Unit 2 and Unit 3 Non-Regenerative Heat Exchangers that are located on the 165'-0" elevation of the Reactor Buildings. These rooms are approximately 392 sq. ft. in floor area and 4,704 cu. ft. in volume (ceiling height ~12 ft.). The floor, walls and ceiling are all constructed of noncombustible materials. The south wall of room 408 and the north wall of room 449 have non-rated access doors that lead directly from the room to the adjacent corridor.

5.6.3 Use of Zone/Room & Ventilation:

5.6.3.1 Fire Zones 6S-5M & 13N-13M (Rooms 410 & 452)

These are the Unit 2 and 3 Clean-Up Backwash Transfer Pump rooms. Plant equipment located in these rooms include the Clean-Up Backwash Transfer Pumps. The lubricating oil in these pump units is negligible and not considered a contributor to the combustible loading. In addition to the pump there are three MOVs and several solenoid valves located in the rooms. The backwash pump is a component of the Reactor Water Cleanup (RWCU) System and is not classified as safety related. The rooms are locked high radiation areas with ventilation provided by the Reactor Building Ventilation System.

5.6.3.2 Fire Zones 6S-42 & 13N-36 (Rooms 408 & 449)

These rooms are the Non-Regenerative horizontal Heat Exchanger rooms for Unit 2 and 3. Plant equipment located in these rooms includes a non-regenerative horizontal heat exchanger which is a component of the Reactor Water Cleanup System and consists of a multiple shell and tube heat exchanger connected in series. The RWCU system is classified as a non-safety related system and primarily consists of power generation system components. The rooms are locked high radiation areas with ventilation provided by the Reactor Building Ventilation System.

5.6.4 Fire Loading & Fire Initiator Information:

There are no combustibles in these rooms. The corridor outside the Clean-Up Backwash Transfer Pump room for Unit 2 is a designated "transient combustible free zone".

Fire initiators/potential ignition sources for these rooms include the electrical motors for each Clean-Up Backwash Transfer Pump. There are no initiators/ignition sources for the Non-Regenerative Heat Exchanger rooms. All electrical equipment is ground and fault protected.

5.6.5 Fire Barriers & Adjacent Fire Exposures:

Due to the lack of combustibles and the substantial construction features of the walls, floor and ceiling assembly, the structures would not be challenged by a fire in these rooms. The Clean-Up Backwash Transfer Pump and the Non-Regenerative Heat Exchanger rooms are enclosed except for access doors to the corridor. There are no adjacent fire exposures that would be considered a threat to the rooms.

5.6.6 Fire Detection & Suppression Capability:

There is no automatic fire detection or automatic fire suppression for these rooms. However, there is automatic smoke/heat detection throughout the 165'-0" elevation of each Reactor Building at the ceiling level.

Manual fire fighting capability is initiated with a manual or automatic alarm to the MCR. The Fire Brigade is dispatched to extinguish the fire using guidance provided in the area specific pre-fire strategy plans. Active and passive ventilation paths exist to mitigate the effects of smoke and hot gases that may accumulate and there are no obstructions to access the rooms. Several hose stations for manual fire fighting are available in the Reactor Buildings adjacent to these rooms which are capable of covering the entire area. Hand-held fire extinguishers and 350 lb. chemical hose carts are available for the Fire Brigade.

5.6.7 Safety Train Information:

The RWCU Non-Regenerative Heat Exchanger and the Backwash Transfer Pump rooms all contain SSD cable in conduit. The RWCU Non-Regenerative Heat Exchanger rooms also contain a SSD signal converter instrument. The Backwash Transfer Pump rooms contain SSD valves used for RWCU letdown operation.

5.6.8 Fire Zone(s) Plant Risk from Fire:

There is no exposure fire hazard that presents a new or credible vulnerability to plant systems or equipment that would impact the plant fire risk profile. There are no exposure fire hazards adjacent to these rooms that are unprotected and there is no impact to achieve safe shutdown per the plant safe shutdown analysis.

5.6.9 Fire Zone(s) Conclusion:

The fire zones and specific rooms discussed in Section 5.6 have an existing level of defense-in-depth appropriate for the fire hazard with no in-situ combustible loading except cable insulation within conduit. The addition of an automatic fire detection system in these rooms would not significantly improve the response time, the level of fire safety or risk profile to SR and/or SSD systems. Therefore, an exemption from 10 CFR 50 Appendix R, Section III.F, is warranted for these fire zones and rooms based on an adequate level of defense-in-depth which provides reasonable assurance that a fire would not start, go undetected nor damage important plant equipment.

6.0 CONCLUSION

In each of the fire areas discussed above are several fire zones containing rooms that contain SR and/or SSD equipment with various functions. The lack of fire detection has no impact on the capability of the SR or SSD equipment to perform its design function. A sufficient level of fire protection features exists, in the event of a fire in any location in the plant, to ensure protection of SR and SSD equipment is maintained and SSD is achieved.

Each specific room within the subject fire areas either contains low combustible loading or has automatic fire suppression with automatic fire detection devices such that additional fire detection would provide negligible benefit and improvement in plant safety. In the event of a fire in a specific room, a sufficient level of fire protection features exists to ensure the SR and SSD equipment is maintained. In all cases, the SSD method relied upon in the FHA is fully available to assure safe shutdown capability of the plant without fire detection in the subject room. The cost to install automatic fire detection systems in the three (3) fire areas has been estimated to be $4.9 Million. This cost is significant and does not provide for a corresponding increase in plant safety as expected by the Rule when originally adopted.

Special circumstances specified in 10 CFR 50.12 have been demonstrated such that an exemption from the requirements of 10 CFR 50 Appendix R, Section III.F, should be granted.

7.0 ATTACHMENT I

7.1 Fire Zones, Rooms and SR/SSD Equipment

SUB-AREA	FIRE AREA-ZONE	ROOM	DESCRIPTION	SR/SSD COMPONENT FUNCTION	SSD METHODS PROTECTED (*)	FIRE PROTECTION SYSTEMS (**)	FIRE HAZARD	ESTIMATED COST OF DETECTION SYSTEM
Unit 2 and Unit 3 Condenser Bay Section 5.1								
Unit 2	50-78W	22	CONDENSER PIT	SSD cable in conduit.	U2:AC U3:AC	Automatic Sprinkler	Cable Insulation	$204,369
Unit 2	50-78W	138	MOIST SEP AREA	RPS & SSD cable in conduit & tray. Offsite power cables in tray.	U2:AC U3:AC	Automatic Sprinkler	Cable Insulation	$317,137
Unit 2	50-78W	223	MOIST SEP AREA	RPS & PCIS instruments, RPS, PCIS & SSD cables in conduits & tray. Offsite power cables in tray.	U2:AC U3:AC	Automatic Sprinkler	Cable Insulation	$266,553
Unit 3	50-78V	181	MOIST SEP AREA	RPS & SSD cable in conduit & tray.	U2:AC U3:AC	Automatic Sprinkler	Cable Insulation	$317,137
Unit 3	50-78V	272	MOIST SEP AREA	RPS & PCIS instruments, RPS, PCIS & SSD cables in conduits & tray. Offsite power cables in tray.	U2: AC U3: AC	Automatic Sprinkler	Cable Insulation	$266,553
Cost Subtotal								$1,371,749
Main Equipment Hatchway and Adjourning Equipment Section 5.2								
	50-78B	135	GEN. STATOR, CLR & H2 EQUIP	SSD cable in tray. Offsite power cables in tray.	U2:AC U3:AC	Automatic Sprinkler	Cable Insulation Lube Oil	$95,723
	50-78B	184	GEN. STATOR, CLR & H2 EQUIP	SSD cable in conduit.	U2:AC U3:AC	Automatic Sprinkler	Cable Insulation Lube Oil	$95,723
	50-78B	185	LAYDOWN AREA	SSD flow instrument for HP Service Water. SSD cable in conduit and tray.	U2:AC U3:AC	Automatic Sprinkler	Cable Insulation	$359,492
	50-78B	228	LAYDOWN AREA	SSD power inverter. RPS cables in conduit. SSD cables in conduit and tray.	U2:AC U3:AC	Automatic Sprinkler	Cable Insulation	$499,600
	50-78B	229	GENERATOR EQ AREA	SSD cables in conduit and tray RPS instruments and cable in conduit.	U2:AC U3:AC	Automatic Sprinkler	Cable Insulation	$93,125
	50-78B	274	GENERATOR EQ AREA	SSD cables in conduit and tray RPS instruments and cable in conduit.	U2:AC U3:AC	Automatic Sprinkler	Cable Insulation	$759,910
	50-78B	429	LAYDOWN AREAS	SSD cable in conduit and tray. Offsite power cable in tray.	U2:AC U3:AC		Cable Insulation	$759,910
Cost Subtotal								$2,663,483

Note: SR - Safety Related, SSD - Fire Safe Shutdown, RPS - Reactor Protection System , PCIS - Primary Containment Isolation System

* - Letters A, B, C and D denote the Safe Shutdown Method available for a particular Fire Zone as described in detail in the Fire Protection Program.

**- All areas are accessible with hose stations and portable fire extinguishers

SUB-AREA	FIRE AREA-ZONE	ROOM	DESCRIPTION	SR/SSD COMPONENT FUNCTION	SSD METHODS PROTECTED (*)	FIRE PROTECTION SYSTEMS (**)	FIRE HAZARD	ESTIMATED COST OF DETECTION SYSTEM
Main Turbine Lube Oil Storage Section 5.3								
Unit 2	50-88	139	T. LUBE OIL STOR	RPS instruments and cable in conduit.	U2:AC U3:AC	Automatic Sprinkler	Cable Insulation Lube Oil	$71,220
Unit 3	50-89	179	T. LUBE OIL STOR	RPS instruments and cable in conduit. SSD cable in conduit and tray. Offsite power cable in tray.	U2:AC U3:AC	Automatic Sprinkler	Cable Insulation Lube Oil	$71,245
RFPT Area Corridors Section 5.4								
Unit 2	50-78A	414	RFPT CORRIDOR	SSD cable in conduit and tray.	U2:AC U3:AC	Automatic Sprinkler	Cable Insulation Lube Oil	$307,393
Unit 3	50-78A	457	RFPT CORRIDOR	SSD cable in tray.	U2:AC U3:AC	Automatic Sprinkler	Cable Insulation Lube Oil	$307,393
3B SJAE Room Section 5.5								
	50-78EE	177	3B SJAE ROOM	SSD cable in conduit.	U2: AC U3: AC		Cable Insulation	$22,444
Unit 2 Feedwater Htx Room Section 5.5								
	50-99	222	FEEDWATER HEATER	SSD cable in tray.	U2:AC U3:AC		Cable Insulation	$29,715
Unit 2 Rx Building Rooms Section 5.6								
	6S-5M	410	RWCU BACKWASH TANK TRANSFER PUMP	3 SSD cables in conduit and SSD valves for RWCU dump to RW or Main Condenser	U2: B U3: BC		None	$18,256
	6S-42	408	RWCU NON-REGENERATIVE HT EXCHANGER	SSD cable in conduit and SSD signal converter instrument	U2: B U3: BC		None	$14,981
Unit3 Rx Building Rooms Section 5.6								
	13N-13M	452	RWCU BACKWASH TANK TRANSFER PUMP	3 SSD cables in conduit and SSD valves for RWCU dump to RW or Main Condenser	U2: A U3: A		None	$18,256
	13N-36	449	RWCU NON-REGENERATIVE HT EXCHANGER	SSD cable in conduit and SSD signal converter instrument	U2:A U3: A		None	$14,981

Note: SR - Safety Related, SSD - Fire Safe Shutdown, RPS - Reactor Protection System , PCIS - Primary Containment Isolation System

* - Letters A, B, C and D denote the Safe Shutdown Method available for a particular Fire Zone as described in detail in the Fire Protection Program.

**- All areas are accessible with hose stations and portable fire extinguishers