UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

October 8, 1998

50-250/251

Mr. T. F. Plunkett
President - Nuclear Division
Florida Power and Light Company
P.O. Box 14000
Juno Beach, Florida 33408-0420

SUBJECT: EXEMPTION FROM CERTAIN REQUIREMENTS OF 10 CFR PART 50, APPENDIX R, FOR TURKEY POINT UNITS 3 AND 4, REGARDING FIRE BARRIERS IN OUTSIDE AREAS, EXCLUDING THE TURBINE AREA (TAC NOS. M97422 AND M97423)

Dear Mr. Plunkett:

By letter dated December 12, 1996, as supplemented by letters dated July 31, October 31, and December 17, 1997, you requested an exemption from certain requirements of 10 CFR Part 50, Appendix R, "Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979," for Turkey Point Units 3 and 4. Specifically, you requested an exemption from the requirements of Appendix R, Section III.G.2.a, for raceway fire barriers in outdoor fire zones, excluding the open turbine building. By letter dated February 24, 1998, the U.S. Nuclear Regulatory Commission (NRC) staff issued a partial exemption for fire zones 47, 54, 113, 114, 115, 116, 118, 119, 120, and 143, and denied the exemption request for fire zone 106R. The letter indicated that the staff will evaluate separately the remaining fire zones.

Subsequently, by letters dated June 2 and August 4, 1998, you submitted additional information in support of your exemption request for the remaining fire zones. Specifically, the remaining fire zones are 79-partial, 81, 84-partial, 86, 88-partial, 89-partial, and 131. On the basis of the submitted information and as discussed in the enclosed exemption and safety evaluation, the NRC staff has concluded that the proposed actions for the fire zones 79-partial, 81, 84-partial, 86, 88-partial and 89-partial provide an adequate level of fire protection. Fire zone 131 will be addressed separately.

DF01

We find that granting an exemption, with respect to the fire zones specified above, from the requirements of 10 CFR Part 50, Appendix R, Section III.G.2.a, is authorized by law, will not present an undue risk to public health and safety, and is consistent with the common defense and security, and that special circumstances described in 10 CFR 50.12(a)(2)(ii) are present. Accordingly, your request for an exemption for fire zones 79-partial, 81, 84-partial, 86, 88-partial, and 89-partial has been granted.

9810210247 981008
PDR ADOCK 05000250
F PDR

A copy of the exemption and the supporting safety evaluation are enclosed. The exemption has been forwarded to the Office of the Federal Register for publication.

Sincerely,

/s/

Frederick J. Hebdon, Director
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket Nos. 50-250 and 50-251

Enclosure: 1. Exemption
2. Safety Evaluation

cc w/encl: See next page

DISTRIBUTION:

Docket File	DDorman	LMarsh
PUBLIC	GHill (4)	PMadden
TP R/F	ACRS	TEaton
JZwolinski	FHebdon	
MBoyle	BClayton	
KJabbour	OGC	
MTschiltz, EDO	LPlisco, RII	

DOCUMENT NAME: G:\TURKEY\TP97422.917 ***SEE PREVIOUS CONCURRENCE**
To receive a copy of this document, indicate in the box: "C" = Copy without enclosures **"E"** = Copy with enclosures **"N"** = No copy ***See Previous Concurrence**

OFFICE	PM:PDII-3	C	LA:PDII-3	E	Tech Ed.*	N	SPLB*	E	OGC*	
NAME	KJabbour:cw	KJ	BClayton	BC	RSanders		LMarsh			
DATE	10/7/98		10/7/98		09/22/98		09/24/98		09/28/98	

OFFICE	D:PDII-3	C	(A)D:DRPE		(A)ADPR		D:NRR	
NAME	FHebdon		JZwolinski		BBoger		SCollins	
DATE	10/7/98		10/8/98		10/8/98		10/8/98	

OFFICIAL RECORD COPY

A copy of the exemption and the supporting safety evaluation are enclosed. The exemption has been forwarded to the Office of the Federal Register for publication.

Sincerely,

Frederick J. Hebdon

Frederick J. Hebdon, Director
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket Nos. 50-250 and 50-251

Enclosure: 1. Exemption
2. Safety Evaluation

cc w/encl: See next page

Mr. T. F. Plunkett
Florida Power and Light Company

TURKEY POINT PLANT

cc:
M. S. Ross, Attorney
Florida Power & Light Company
P.O. Box 14000
Juno Beach, FL 33408-0420

John T. Butler, Esquire
Steel, Hector and Davis
4000 Southeast Financial Center
Miami, Florida 33131-2398

Mr. Robert J. Hovey, Site
Vice President
Turkey Point Nuclear Plant
Florida Power and Light Company
9760 SW. 344th Street
Florida City, FL 33035

County Manager
Metropolitan Dade County
111 NW 1 Street, 29th Floor
Miami, Florida 33128

Senior Resident Inspector
Turkey Point Nuclear Generating
Station
U.S. Nuclear Regulatory Commission
P.O. Box 1448
Homestead, Florida 33090

Mr. William A. Passetti, Chief
Department of Health
Bureau of Radiation Control
2020 Capital Circle, SE, Bin #C21
Tallahassee, Florida 32399-1741

Mr. Joe Myers, Director
Division of Emergency Preparedness
Department of Community Affairs
2740 Centerview Drive
Tallahassee, Florida 32399-2100

Regional Administrator, Region II
U.S. Nuclear Regulatory Commission
61 Forsyth Street, SW., Suite 23T85
Atlanta, GA 30303-3415

Attorney General
Department of Legal Affairs
The Capitol
Tallahassee, Florida 32304

Plant Manager
Turkey Point Nuclear Plant
Florida Power and Light Company
9760 SW. 344th Street
Florida City, FL 33035

Mr. Gary E. Hollinger
Licensing Manager
Turkey Point Nuclear Plant
9760 SW. 344th Street
Florida City, FL 33035

Mr. Leonard D. Wert
U.S. Nuclear Regulatory Commission
61 Forsyth Street, SW., Suite 23T85
Atlanta, GA 30303-3415

Mr. John Gianfrancesco
Manager, Administrative Support and
Special Projects
Florida Power & Light Company
P. O. Box 14000
Juno Beach, Florida 33408-0420

Mr. Rajiv S. Kundalkar
Vice President - Nuclear Engineering
Florida Power & Light Company
P. O. Box 14000
Juno Beach, Florida 33408-0420

7590-01-P

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

In the Matter of	)	
	)	
FLORIDA POWER AND LIGHT COMPANY	)	Docket Nos. 50-250 and 50-251
	)	
	)	
(Turkey Point Units 3 and 4)	)	
	)	

EXEMPTION

I.

Florida Power and Light Company (the licensee) is the holder of Facility Operating License Nos. DPR-31 and DPR-41, which authorize operation of Turkey Point Units 3 and 4 (the facility) at a steady-state reactor power level not in excess of 2300 megawatts thermal. The facility is a pressurized-water reactor located at the licensee's site in Dade County, Florida. The licenses require among other things that the facility comply with all rules, regulations, and orders of the U.S. Nuclear Regulatory Commission (the Commission or NRC) now or hereafter in effect.

II.

In exemptions dated March 27, 1984, and August 12, 1987, concerning the requirements of Section III.G, Appendix R to 10 CFR Part 50, the staff approved the use of 1-hour-rated fire barriers in lieu of 3-hour barriers in certain outdoor areas at Turkey Point Units 3 and 4. In addition, the staff found that, for certain outdoor areas not protected by automatic fire detection and suppression systems, separation of cables and equipment and associated non-safety-related circuits of redundant trains by a horizontal distance of 20 feet free of intervening combustibles provided an acceptable level of fire safety.

9810210249 981008
PDR ADOCK 05000250
F PDR

On the basis of the results of the industry's Thermo-Lag fire endurance testing program, the licensee concluded that the outdoor Thermo-Lag fire barrier designs cannot achieve a 1-hour fire-resistive rating but can achieve a 30-minute fire-resistive rating when exposed to a test fire that follows the American Society for Testing and Materials E-119 standard time-temperature curve. Because of these test results, the licensee in a letter dated June 15, 1994, requested an exemption to use 30-minute fire barriers for outdoor applications in lieu of the 1-hour fire barriers previously approved; however, the exemption request was withdrawn by letter dated June 28, 1996.

In a letter dated December 12, 1996, as supplemented on July 31, October 31, and December 17, 1997, the licensee requested an exemption from the requirements pertaining to the 3-hour fire barriers required by Section III.G.2.a, Appendix R to 10 CFR Part 50, for the outdoor areas, excluding the turbine building area. The licensee requested that the NRC approve the use of 25-minute raceway fire barriers for these outdoor applications in lieu of the 1-hour fire barriers that were previously approved (refer to safety evaluations dated March 27, 1984, and August 12, 1987). This request was based on the following: (1) the fire loading and potential fire severities are low; (2) there are minimal ignition sources; (3) transient ignition sources and combustibles are controlled in these zones; and (4) manual fire fighting equipment is readily accessible to these zones.

On February 24, 1998, the staff issued a partial exemption for fire zones 47, 54, 113, 114, 115, 116, 118, 119, 120, and 143, and denied the request for fire zone 106R. In addition, the licensee was informed that the staff will be evaluating the remaining fire zones separately. Specifically, the remaining fire zones are 79-partial, 81, 84-partial, 86, 88-partial, 89-partial, and 131. Subsequently, by letters dated June 2 and August 4, 1998, the licensee submitted additional information in support of the exemption request for the remaining fire zones.

III.

The underlying purpose of Section III.G.2.a, Appendix R to 10 CFR Part 50, is to provide reasonable assurance that one safe shutdown train and associated circuits used to achieve and maintain safe shutdown are free of fire damage.

On the basis of the staff's supporting safety evaluation of the licensee's submittals, the staff concludes that the exemption from the requirements of Section III.G.2.a of Appendix R, for fire zones 79-partial, 81, 84-partial, 86, 88-partial, and 89-partial, as requested by the licensee, provides an adequate level of fire safety, and presents no undue risk to public health and safety. In addition, the staff concludes the underlying purpose of the rule is achieved. Fire zone 131 will be addressed separately.

IV.

Accordingly, the Commission has determined that, pursuant to 10 CFR 50.12(a), the exemption is authorized by law, will not present an undue risk to public health and safety, and is consistent with the common defense and security. In addition, the Commission has determined that special circumstances are present in that application of the Regulation is not necessary to achieve the underlying purpose of the rule. Therefore, the Commission hereby grants Florida Power and Light Company an exemption from the requirements of Section III.G.2.a of Appendix R to 10 CFR Part 50, as requested in its above-referenced submittals, for fire zones 79-partial, 81, 84-partial, 86, 88-partial, and 89-partial.

Pursuant to 10 CFR 51.32, the Commission has determined that granting this exemption for fire zones 79-partial, 81, 84-partial, 86, 88-partial, and 89-partial, will not have a significant effect on the quality of the human environment (63 FR 52310).

This exemption is effective upon issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Samuel J. Collins, Director
Office of Nuclear Reactor Regulation

Dated at Rockville, Maryland,
this 8th day of October 1998

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

EXEMPTION RELATED TO 10 CFR PART 50, APPENDIX R, SECTION III.G.2.a

FLORIDA POWER AND LIGHT COMPANY

TURKEY POINT UNITS 3 AND 4

DOCKET NOS. 50-250 AND 50-251

1.0 BACKGROUND

Appendix R, "Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979," to Title 10 of the Code of Federal Regulations (10 CFR) Part 50, establishes fire protection features required to satisfy General Design Criterion 3, "Fire protection," of Appendix A to 10 CFR Part 50 with respect to certain generic issues for nuclear power plants licensed to operate prior to January 1, 1979.

In exemptions from certain technical requirements of Appendix R dated March 27, 1984, and August 12, 1987, the staff approved the use of 1-hour rated fire barriers in lieu of 3-hour rated barriers in certain outdoor fire zones at Turkey Point Nuclear Plant, Units 3 and 4 (Turkey Point). In addition, the staff found, for certain outdoor areas not protected by automatic fire detection and suppression systems, separation of cables and equipment and associated non-safety circuits of redundant trains by a horizontal distance of 20 feet free of intervening combustibles as an acceptable level of fire safety. In a letter dated June 15, 1994, Florida Power and Light (FPL), the licensee, requested additional exemptions from the technical requirements of Sections III.G.2.a. and c. of Appendix R to 10 CFR Part 50 for certain outdoor fire zones. Section III.G.2.a requires that cables, equipment, and associated non-safety circuits of redundant safe shutdown trains be separated by fire barriers having a 3-hour fire rating. Where separation by 3-hour fire barriers cannot be achieved, Section III.G.2.c allows cables, equipment, and non-safety circuits of redundant trains to be separated by 1-hour fire barriers provided the area of concern is protected by automatic fire detection and suppression systems.

In a letter dated October 12, 1994, the staff issued a request for additional information (RAI) pertaining to the licensee's exemption request and the actual fire rating of the existing Thermo-Lag electrical raceway fire barriers installed in outdoor areas. By letter dated August 29, 1995, the licensee responded to the RAI.

On April 29, 1996, through May 2, 1996, the staff visited Turkey Point to independently review the licensee's exemption request. Its primary focus was on the in-situ and transient fire hazards in the fire areas and zones of concern and the potential risks they present to plant safety, and options available to mitigate the consequence of a fire and provide reasonable assurance of post-fire safe shutdown capability. During the site visit, the licensee informed the staff that it planned to revise its exemption request of June 15, 1994. The staff requested that the revised exemption request demonstrate that the fire resistive capabilities of the site-specific outdoor electrical raceway fire barrier systems and the applicable fire barrier system upgrades be supported by representative fire tests. The staff also requested that the revised exemption

request stand alone, be technically sound (its technical basis should not rely on previous submittals), and supersede the exemptions dated March 27, 1984 and August 12, 1987, for these areas. The staff documented its site visit in a memorandum of July 26, 1996, from P. Madden to S. West. In a letter dated June 28, 1996, the licensee withdrew its exemption request dated June 15, 1994, and confirmed that it would submit a revised exemption request.

In a letter dated December 12, 1996, the licensee submitted a revised exemption request and requested staff approval to use any of the following protection schemes in lieu of installing the 3-hour fire barriers required by Appendix R, Section III.G.2.a:

(1) Separation of cables and equipment and associated non-safety circuits of redundant trains west of the open turbine building structure column line A by 1-hour rated fire barriers until a horizontal distance of 20 feet is attained.

(2) Separation of cables and equipment and associated non-safety circuits of redundant trains by 25-minute rated fire barriers until a horizontal distance of 20 feet is attained.

(3) For roof top fire zones, separation of cables and equipment and associated non-safety circuits of redundant trains by 25-minute rated fire barriers until a horizontal distance of 10 feet is attained.

(4) Separation of cables and equipment and associated non-safety circuits of redundant trains by a radiant energy heat shield having a equivalent 30-minute fire rating until a horizontal distance of 20 feet is attained.

By letter dated June 16, 1997, the staff requested additional information and on July 7, 1997, met with the licensee. The RAI and meeting discussions were related to the use of the generic protection schemes and the need for specific information related to the criteria and the application of the schemes; the need for fire zone by fire zone fire hazard analyses to identify the fire protection defense-in-depth which would support the adequacy of a specific protection scheme; the need for information about the safe shutdown functions and their physical relationship within the fire zones under consideration; and the need for a technical basis to establish that the protection schemes would satisfy the underlying purpose of the regulation. The licensee submitted its response to the RAI and the technical issues discussed during the meeting of July 7, 1997, in letters dated July 31, 1997, October 31, 1997, December 17, 1997, and June 2, 1998.

In its letters dated July 31 and October 31, 1997, the licensee submitted the criteria it used to determine the adequacy of one of the generic protection schemes when applied in an outdoor fire zone (turbine building excluded). In its letter dated December 17, 1997, the licensee identified the safe shutdown functions of raceways requiring fire barrier protection in fire zones 79-partial, 81, 84-partial, 86, 88-partial, 89-partial, and 131. In its letter dated June 2, 1998, the licensee confirmed that it would not use any of the generic protection schemes to protect post-fire safe

shutdown functions in outdoor areas. Specifically, the licensee stated that if it elected to use the spacial separation or radiant energy shield protection schemes, it would submit a separate exemption request. In its letter dated August 4, 1998, the licensee forwarded supplemental information to support its exemption request.

On the basis of its submittal dated December 12, 1996, as supplemented by its letters dated July 31 and October 31, 1997, the staff in its letter dated February 24, 1998, (1) granted the licensee's exemption requests for fire zones 47, 54, 113, 114, 115, 116, 118, 119, 120, 143 and (2) denied the licensee's exemption request for fire zone 106R. This safety evaluation addresses the licensee's exemption request of December 12, 1996, as supplemented by submittals dated December 17, 1997, June 2, 1998, and August 4,1998, for fire zones 79-partial, 81, 84-partial, 86, 88-partial, 89-partial, and 131. The staff will address the licensee's requests for exemption for the turbine building in a separate safety evaluation.

2.0 EXEMPTION REQUESTED

The licensee requested exemptions from the technical requirements of Section III.G.2.a of Appendix R to 10 CFR Part 50 for fire zones 79-partial, 81, 84-partial, 86, 88-partial, 89-partial, and 131, to the extent that it requires the separation of cables and equipment and associated non-safety circuits of redundant trains by a fire barrier having a 3-hour rating. The underlying purpose of Section III.G.2 of Appendix R to 10 CFR Part 50 is to provide reasonable assurance that at least one means of achieving and maintaining safe shutdown conditions will remain available during and after any postulated fire in the plant.

3.0 EVALUATION OF EXEMPTION REQUESTS FOR OUTDOOR FIRE ZONES

3.1 General

The staff during its site visit used the following general criteria for its walkdowns of the outdoor areas:

- Review the general area and assess fire protection features (manual and automatic).
- Review the location of the fire brigade equipment.
- Review fire brigade accessibility to the area.
- Observe fire hazards and fire loadings associated with the area.
- Observe the material conditions of the plant and fire protection equipment.
- Observe the adequacy of administrative controls (note any transient combustibles).
- Review the adequacy of the fire rating of the raceway fire barriers in the area.

Based on the outdoor open configuration of the fire zones noted below, the impact a fire may have on the plant and its ability to achieve and maintain safe shutdown in the event of a fire tends to be localized to the zone of concern. During its plant site evaluation the staff observed that in the event of a fire, the hot fire gasses and smoke would vent to the atmosphere. Therefore, components required to achieve and maintain safe shutdown would not be impacted by convective heat transfer. For example, in the event of a fire in an outdoor area, a ceiling jet and hot gas layer would not develop as it would in an enclosed compartment.

In its letters of July 31 and October 31, 1997, the licensee committed to protect safe shutdown circuits located within 50 feet of major combustibles in fire zones 79-partial, 81, 84-partial, 86, 88-partial, 89-partial, and 131 with a electrical raceway fire barrier system rated for 1-hour. During its walkdowns the staff found that the major fire hazard/combustible sources located in close proximity to the Units 3 and 4 turbine buildings are as follows: Units 3 and 4 main and startup transformers; and Units 3 and 4 turbine lube oil reservoirs. The fire protection for these hazards is discussed below.

In its submittal dated December 12, 1996, the licensee committed to establish the fire resistive rating of the 25-minute and 1-hour electrical raceway fire system applications (e.g., for various conduits diameters, lateral bends, radial bends, junction boxes, and conduit bank enclosures) by tests that are representative of the installed configurations. The fire endurance and hose stream testing will be done in accordance with GL 86-10, supplement 1,"Fire Endurance Test Acceptance Criteria For Fire Barrier Systems Used to Separate Redundant Safe Shutdown Trains Within The Same Fire Area". The staff did not review the licensee's analyses for concluding that the Thermo-Lag fire barriers could achieve a 25-minute or a 1-hour fire resistance rating as part of this safety evaluation.

3.2 Fire Zone 79-partial - Area West of Unit 4 Containment

Fire Zone 79 is the outdoor grade (elevation 18'-0") zone located west of the Unit 4 containment and adjacent to the east side of the turbine building. This fire zone extends to the control building. The in-situ fire load in this zone is low. The major in-situ combustibles in this fire zone consists of cables in cable trays. The cable trays are routed through the zone located 18 to 20 feet above grade and are partially covered by the Unit 4 main steam platform which is approximately 35 feet above grade. The cables are either IEEE 383-1974 qualified or are coated with Flamastic fire retardant coatings. There are no major combustibles within 50 feet of fire zone 79 and transient combustible material is controlled by administrative controls. This program prohibits storage of combustibles in outdoor areas that contain safety related equipment or cables.

The major safe shutdown related equipment in fire zone 79 are the blowdown and instrument air valves, and the auxiliary feedwater valves. The post-fire safe shutdown functions (identified in the Appendix) are protected by a fire barrier system which has a minimum resistive rating of 25-minutes.

Fire mitigation features that are accessible to fire zone 79 consist of fire extinguishers and standpipe hose stations. Since this fire zone is an open outdoor area and the in-situ fire load is low, there is reasonable assurance that the fire would be small and the required post-fire safe shutdown functions protected by the 25-minute fire barrier system would remain free of fire damage until the fire burned itself out or it was detected by plant personnel and controlled and suppressed by the plant fire brigade.

3.3 Fire Zone 81 - Unit 4 Main and Startup Transformer, Unit 3 Lube Oil Reservoir

Fire zone 81 is the Unit 4 main and startup transformer and the Unit 3 turbine lube oil reservoir located on elevation 18'-0" north of the Unit 4 switchgear rooms. Other major equipment within this fire zone includes the turbine building cooling water heat exchangers and pumps and associated valves and piping. The Unit 4 and main startup transformers and the Unit 3 turbine lube oil reservoir combined contain 47,040 gallons of oil. The transformers are located over gravel-filled oil collection pits such that oil leakage from the various transformer components would be contained and remain in the area or channeled to a safe drainage area. The Unit 3 turbine lube oil reservoir is curbed to collect leakage and to direct oil spills to the Unit 4 startup transformer oil collection pit. The turbine lube oil reservoir (tank) is located above ground, and has a capacity of about 14,000 gallons. In addition to the oil confinement features (e.g., transformer oil collection pit and curbs) there are fixed water spray systems, installed in accordance with National Fire Protection Association (NFPA) 15, "Water Spray Systems", for the transformers and the turbine lube oil reservoir. These water spray fire control systems are actuated by thermal detectors. These fire protection systems are also supplemented by nearby fire extinguishers, manual hose stations, and fire hydrants/hose houses.

If a fire were to occur in the area of the main transformer, startup transformer, or the lube oil reservoir it would be detected by the thermal detectors. The affected thermal detectors would then actuate the appropriate water spray system to control the fire. The control room would be alerted to the fire by the alarms in the control room. The location of all the major fire hazards within this fire zone require the safe shutdown functions (identified in the Appendix) to be protected with a fire barrier system which has a minimum fire resistive rating of 1-hour. Since this fire zone is an outside area, there is reasonable assurance that the post-fire safe shutdown functions protected by the 1-hour fire barrier system will remain free of fire damage until controlled by a water spray system and extinguished by the plant fire brigade.

3.4 Fire Zone 84-partial - Unit 3 and 4 Auxiliary Feedwater Pump Area

Fire zone 84 is the Units 3 and 4 auxiliary feed water pump zone located on elevation 18'-0" north of the Unit 3 steam generator feed pump room. The major post-fire safe shutdown equipment located in this fire zone is the turbine driven auxiliary feedwater pumps, and the blowdown and instrument air valves. The post-fire safe shutdown functions (identified in the Appendix) are protected by a fire barrier system that has a minimum fire resistive rating of 25-minutes. This zone is also separated from the standby generator feed pumps by more than 50 feet.

This zone is an open outdoor area, partially covered by the Unit 3 main steam platform, which is located approximately 35 feet above grade. The zone is bounded on the east by the Unit 3 containment and on the remaining sides by chain link fencing or missile shield grating. The D.C. enclosure building is located within this zone and contains non-safety related D.C. electrical equipment.

In-situ combustible loading consists of cables in trays which pass through the zone between 13 feet and 21 feet above grade. The cables in these cable trays are coated with Flamastic fire retardant coating or have been qualified as IEEE-383-1974 fire retardant cables. Each auxiliary

feedwater pump turbine has an independent lubrication system containing approximately 24.5 gallons of lube oil and grease. This oil system is seismically designed and constructed of steel. The in-situ fire load in this area is low. There are no major combustibles within 50 feet of this fire zone and the transient combustible material is controlled by administrative controls. This program prohibits storage of combustibles in outdoor areas that contain safety related equipment or cables.

Fire mitigation features that are accessible to fire zone 84 consist of fire extinguishers and standpipe hose stations. Since this fire zone is an outdoor area and the in-situ fire load is low, there is reasonable assurance that the fire would be small and the required post-fire safe shutdown functions protected by the 25-minute fire barrier would remain free of fire damage until the fire burned itself out or it was detected by plant personnel and controlled and suppressed by the plant fire brigade.

3.5 Fire Zone 86 - Unit 3 Main and Startup Transformers

Fire zone 86 is the Unit 3 main and startup transformer zone located on pavement on elevation 18'-0" west and north of the Unit 3 switchgear rooms. The major equipment located in this fire zone are the two diesel fuel oil transfer pumps, and the Unit 3 main and startup transformers.

The Unit 3 main and startup transformers and the Unit 3 turbine lube oil reservoir combined contain 33,165 gallons of oil. The transformers are located over gravel-filled oil collection pits such that the oil leakage from the various transformer components would be contained and remain in the area or channeled to a safe drainage area. In addition to the oil confinement features (e.g., transformer oil pit and curbs) there are fixed water spray systems, installed in accordance with NFPA 15, for the transformers and the turbine lube oil reservoir. These water spray fire control systems are actuated by thermal detectors. These fire protection systems are also supplemented by nearby fire extinguishers, manual hose stations, and fire hydrants/hose houses.

If a fire were to occur in the area of the Unit 3 main transformer or startup transformer it would be detected by the thermal detectors. The affected thermal detectors would then actuate the appropriate water spray system to control the fire. The control room would be alerted to the fire by the alarms in the control room. Post-fire safe shutdown functions within the 50 foot radius of Unit 3 main and startup transformers are protected by a fire barrier system that has a minimum fire resistive rating of 1-hour. In addition, a fire barrier system that has a minimum fire resistive rating of 25-minutes is used to protect the safe shutdown functions within this fire zone that are located more than 50 feet from the Unit 3 main and startup transformers. The safe shutdown functions protected by these fire barriers are identified in the Appendix.

In addition to the automatic water spray fire control/suppression systems provided for the main and startup transformers, the fire mitigation features that are accessible to fire zone 86 consist of fire extinguishers and standpipe hose stations. This fire zone is an open outdoor area and the in-situ fire load is minimal. Therefore, there is reasonable assurance that the effects of the fire

would be minimized by the plant's fire protection features and the required post-fire safe shutdown functions protected by either a 1-hour or a 25-minute fire barrier system would remain free of fire damage until the fire was detected, controlled by a fixed fire suppression system, and extinguished by the plant fire brigade.

3.6 Fire Zone 88-partial - Unit 3 Switchgear and Emergency Diesel Generator Vestibule

Fire zone 88 is the Unit 3 ground floor vestibule area located to the northwest of the Unit 3 condensate storage tank at elevation 18'-0" and to the west of the emergency diesel generator building. This is an outdoor zone open on two sides. It contains two low pressure feedwater heaters. The post-fire safe shutdown functions (identified in the Appendix) are protected by a fire barrier system which has a minimum fire resistive rating of 25-minutes. There are no major combustibles within 50 feet of fire zone 88 and transient combustible material is controlled by administrative controls. This program prohibits storage of combustibles in outdoor areas that contain safety related equipment or cables. The in-situ combustible inventory consists primarily of cables routed in cable trays. The cables in these cable trays are coated with Flamastic fire retardant coating or have been qualified as IEEE-383-1974 fire retardant cables.

Fire mitigation features that are accessible to fire zone 88 consist of fire extinguishers and standpipe hose stations. Since this fire zone is an open outdoor area and the in-situ fire load is low, there is reasonable assurance that the fire would be small and the required post-fire safe shutdown functions protected by the 25-minute fire barrier system would remain free of fire damage until either the fire burned itself out or it was detected by plant personnel and extinguished by the plant fire brigade.

3.7 Fire Zone 89-partial - Unit 3 Condensate Storage Tank Area

Fire Zone 89 is the Unit 3 condensate storage tank area located on elevation 18'-0" near the northwest corner of the Unit 3 Containment. This fire zone is an outdoor area. The major post-fire safe shutdown equipment located in this fire zone are the steam generator pressure transmitters, steam generator blowdown isolation valves, and related equipment. The post-fire safe shutdown functions (identified in the Appendix) are protected by a fire barrier system which has a minimum fire resistive rating of 25-minutes.

The major in-situ combustibles located in this fire zone consist of cables routed in cable trays located 18 feet to 20 feet above grade level (elevation 18'-0"). The cables are either coated with Flamastic, a fire retardant coating, or are IEEE-383-1974 qualified fire retardant cables. There are no major combustibles within 50 feet of fire zone 89 and transient combustible material is controlled by administrative controls. This program prohibits storage of combustibles in outdoor areas that contain safety related equipment or cables.

Fire mitigation features that are accessible to fire zone 89 consists of fire extinguishers and standpipe hose stations. Since this fire zone is an open outdoor area and the in-situ fire load is minimal, there is reasonable assurance that the fire would be small and the required post-fire

safe shutdown functions protected by the 25-minute fire barrier system would remain free of fire damage until either the fire burned itself out or it was detected by plant personnel and extinguished by the plant fire brigade.

3.8 Fire Zone 131 - Unit 3 EDG Radiator Room

This fire zone will be evaluated separately.

4.0 CONCLUSIONS

On the basis of its evaluation and review, which included a site walkdown of the fire zones, the staff concluded the following;

a. For fire zone 79-partial, 3-hour fire-rated barriers are not needed to satisfy the underlying purpose of Section III.G.2 of Appendix R to 10 CFR Part 50 for the post-fire safe shutdown functions identified in the appendix to this safety evaluation. The licensee's request to use 25-minute fire rated barriers in lieu of 3-hour fire rated barriers for these functions presents no undue risk to public health and safety and is acceptable. Therefore, the licensee's request for exemption from the technical requirements of Section III.G.2.a. of Appendix R to 10 CFR Part 50 for fire zone 79-partial, should be granted.

b. For fire zone 81, 3-hour fire-rated barriers are not needed to satisfy the underlying purpose of Section III.G.2 of Appendix R to 10 CFR Part 50 for the post-fire safe shutdown functions identified in the appendix to this safety evaluation. The licensee's request to use 1-hour fire rated barriers in lieu of 3-hour fire rated barriers for these functions presents no undue risk to public health and safety and is acceptable. Therefore, the licensee's request for exemption from the technical requirements of Section III.G.2.a. of Appendix R to 10 CFR Part 50 for fire zone 81, should be granted.

c. For fire zone 84-partial, 3-hour fire-rated barriers are not needed to satisfy the underlying purpose of Section III.G.2 of Appendix R to 10 CFR Part 50 for the post-fire safe shutdown functions identified in the appendix to this safety evaluation. The licensee's request to use 25-minute rated barriers in lieu of 3-hour fire rated barriers for these functions presents no undue risk to public health and safety and is acceptable. Therefore, the licensee's request for exemption from the technical requirements of Section III.G.2.a. of Appendix R to 10 CFR Part 50 for fire zone 84-partial, should be granted.

d. For fire zone 86, 3-hour fire-rated barriers are not needed to satisfy the underlying purpose of Section III.G.2 of Appendix R to 10 CFR Part 50 for the post-fire safe shutdown functions identified in the appendix to this safety evaluation. The licensee's request to use (1) 1-hour rated barriers for post-fire safe shutdown functions within 50 feet of the transformers (major fire hazard/combustible) and (2) 25-minute rated fire barriers for post-fire safe shutdown functions that are more than 50 feet away from the transformers in lieu of 3-hour fire rated barriers presents no undue risk to public health

and safety and is acceptable. Therefore, the licensee's request for exemption from the technical requirements of Section III.G.2.a. of Appendix R to 10 CFR Part 50 for fire zone 86, should be granted.

e. For fire zone 88-partial, 3-hour fire-rated barriers are not needed to satisfy the underlying purpose of Section III.G.2 of Appendix R to 10 CFR Part 50 for the post-fire safe shutdown functions identified in the appendix to this safety evaluation. The licensee's request to use 25-minute rated barriers in lieu of 3-hour rated barriers for these functions presents no undue risk to public health and safety and is acceptable. Therefore, the licensee's request for exemption from the technical requirements of Section III.G.2.a. of Appendix R to 10 CFR Part 50 for fire zone 88-partial, should be granted.

f. For fire zone 89-partial, 3-hour fire-rated barriers are not needed to satisfy the underlying purpose of Section III.G.2 of Appendix R to 10 CFR Part 50 for the post-fire safe shutdown functions identified in the appendix to this safety evaluation. The licensee's request to use 25-minute rated barriers in lieu of 3-hour rated barriers for these functions presents no undue risk to public health and safety and is acceptable. Therefore, the licensee's request for exemption from the technical requirements of Section III.G.2.a. of Appendix R to 10 CFR Part 50 for fire zone 89-partial, should be granted.

g. For fire zone 131, the staff will evaluate the licensee's submittals separately.

Principal Contributors: Patrick Madden and Tanya Eaton

Date: October 8, 1998

Post-fire Safe Shutdown Functions
Turkey Point Units 3 and 4
Protected Post-Fire Safe Shutdown Functions Protected by Fire Barriers
Outdoor Fire Zones 79-partial, 81, 84-partial, 86, 88-partial, 89-partial

Fire Zone	Safe Shutdown Function
79-partial	Feedwater Supply
	Mitigate Component Cooling Water Pump spurious loading
	4 KV Bus clearing and emergency/backup power supply
	Normal Containment Cooling
	Mitigate Condensate Pump spurious loading
	Mitigate Heater Drain Pump spurious loading
	Water Pump spurious loading Mitigate Intake Cooling
	Steam Generator Level indication
	Reactor Coolant System pressure indication
	Hot Leg temperature indication
	Cold Leg temperature indication
	Main Steam Isolation
	Pressurizer relief isolation
	480V power supply
	DC Inverter Room air conditioning
81	4 KV Emergency/backup power supply
84-partial	Feedwater Supply
	Mitigate Component Cooling Water Pump spurious loading
	Component Cooling Water supply to Reactor Coolant Pump thermal barrier
	Reactor Coolant System Volume and chemistry control
	Pressurizer Auxiliary Spray Control
	4 KV Bus clearing and emergency/backup power supply
	Normal Containment cooling
	Containment instrument air supply

Fire Zone	Safe Shutdown Function
84-partial	Steam Generator pressure indication
	Reactor Coolant System pressure indication
	Cold Leg temperature indication
	Hot Leg temperature indication
	Main Steam Isolation
	Pressurizer Heating control
	Pressurizer power operated relief control
	480V power supply
	120VAC power supply
	125VDC power supply
86	Mitigate Component Cooling Water Pump spurious loading
	4 KV Bus clearing and emergency/backup power supply
	Normal Containment Cooling
	Mitigate Intake Cooling Water Pump spurious loading
	480V power supply
	125VDC power supply
88-partial	Feedwater Supply
	Mitigate Component Cooling Water Pump spurious loading
	4 KV Bus clearing and emergency/backup power supply
	Normal Containment Cooling
	Mitigate Intake Cooling Water pump spurious loading
	480V power supply
89-partial	Auxiliary Feedwater flow control valve control
	Mitigate Component Cooling Water Pump spurious loading
	Bus clearing and emergency/backup power supply
	Normal Containment cooling
	Mitigate Intake Cooling Water Pump spurious loading
	480V power supply

Pursuant to 10 CFR 51.32, the Commission has determined that granting this exemption for fire zones 79-partial, 81, 84-partial, 86, 88-partial, and 89-partial, will not have a significant effect on the quality of the human environment (63 FR 52310).

This exemption is effective upon issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/s/

Samuel J. Collins, Director
Office of Nuclear Reactor Regulation

Dated at Rockville, Maryland,
this 8th day of October 1998

To receive a copy of this document, indicate in the box: "C" = Copy without enclosures **"E"** = Copy with enclosures **"N"** = No copy **DOCUMENT NAME: G:\TURKEY\TP97422.917** ***See previous concurrence**

OFFICE	PM:PDII-3	E	LA:PDII-3	C	Tech Ed.*		SPLB*		OGC*	
NAME	KJabbour KJ		BClayton BAC				TMarsh			
DATE	10/7/98		10/7/98		09/22/97		09/24/98		09/28/98	

OFFICE	D:PD II-3	C	(A)D:DRPE		(A)ADPR		D:NRR	
NAME	FHebdon		JZwolinski		BBoger		SCollins	
DATE	10/7/98		10/8/98		10/8/98		10/8/98	

OFFICIAL RECORD COPY