CATEGORY 1

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

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50-251 Turkey Point Plant, Unit 4, Florida Power and Light C 05000251
AUTH.NAME AUTHOR AFFILIATION
HOVEY,R.O. Florida Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION
Records Management Branch (Document Control Desk)

SUBJECT: Submits addl info on classification of CB roof for NRC consideration in granting 961212 request for exemption from certain requirements of 10CFR50,App R re fire rating of raceway fire barriers on CB roof.

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L-98-259

FPL

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D. C. 20555

Subject: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
Request for Exemption -
Fire Rating of Raceway Fire Barriers
on the Control Building Roof (Fire Zone 106R)

By letter L-96-318 dated December 12, 1996, Florida Power & Light Company (FPL) requested an exemption from certain requirements of Appendix R to 10 CFR Part 50 for the Control Building roof (Fire Zone 106R). By letter dated February 24, 1998, the NRC denied FPL's request for exemption for Fire Zone 106R at Turkey Point Units 3 and 4. The NRC stated that it could not determine whether the proposed actions provide an adequate level of fire safety due to the uncertainty of the combustibility and fire classification of the Control Building roof. However, at the September 14, 1998, meeting with the NRC at the Turkey Point site, FPL indicated that additional information has been obtained to support that the built-up roofing composite is an equivalent NFPA 256 Class A construction with a negligible combustible load contribution to the subject fire zone. The purpose of this letter is to submit the additional information on the classification of the Control Building roof for NRC consideration in granting the request for exemption per FPL letter L-96-318.

By letter L-96-318, FPL proposed separation of cables and equipment and associated non-safety circuits of redundant trains by a 25-minute rated fire barrier until a horizontal distance of 10 feet is attained, with no suppression or detection provided for rooftop areas. The justification for exemption presented in L-96-318 was based on the open nature of the Control Building roof, accessibility to fire extinguishers, and hose stations and the low intervening combustible load. Although roof areas were described in the request for exemption, the unique relationship between the Control Building roof and Fire Zones 106R and 118 was not emphasized.

The Control Building roof is provided with a composition built-up "tar and gravel" covering. Fire Zone 106R represents a southwest section of the Control Building roof and is depicted on Final Safety Analysis Report Figure 9.6A-11. This section has no physical boundaries, aside from the roof itself, and was selected to designate an alternate shutdown area for the Control Room air conditioning condensing units. The remainder of the Control Building roof is included in Fire Zone 118 and contains the Computer Room and Cable Spreading Room chiller units. The DC Equipment/Inverter Room rooftop package units are located over the concrete Auxiliary Building roof. Provision to change the Turkey Point FSAR has been implemented to clarify the scope of Fire Zones 106R and 118.

The Control Building roofing was built to original plant specifications. Details shown on current plant design drawings have been validated through the plant modification process where localized rework was required to install new raceway supports. A description of the roof construction was provided in Section V.K of the request for exemption, and is repeated below:

A006
1/1

1) a Koroseal vapor barrier,
2) Flintkote roof insulation,
3) Lexsuco adhesive,
4) four layers of Ruberoid asphalt felt conforming to ASTM D226-60,
5) four layers of Ruberoid asphalt conforming to ASTM D312 Type 1, and
6) clean dry opaque 1/4" to 5/8" gravel.

A description of the roofing system was submitted to Underwriters Laboratories Inc. (UL) for review. Although they would not release test reports due to their proprietary classification, UL indicated that such systems are generically described in their Roofing Materials and Systems Directory and specifically confirmed that the Turkey Point Control Building roofing system complies with Class A requirements per ANSI/UL 790.

In addition, the Control Building roofing system is considered to be a negligible contribution to the in situ combustible load. Roofing systems are also described in National Fire Protection Association (NFPA) Standards. NFPA 203 (Guide on Roof Coverings and Roof Deck Constructions), Section 2-1 on composite built-up roof coverings states, "The finished surface could be a smooth flood coat of bitumen, or it could have gravel or slag imbedded in it. The gravel or slag surfacing acts to reflect heat, to prevent flow and cracking of the bitumen, and to improve the fire performance of the coverings." In addition, Section 5-2 on built-up coverings states, "Gravel or slag could be needed on the roofing surface for its fire resistance qualities." In this regard, the gravel on the Control Building roof would resist fire from the roof as well as to the roof.

Based on the preceding, it is concluded that the Turkey Point Control Building roofing system provides high resistance to a severe fire and meets the requirements for a UL Class A installation, and as such the combustible load contribution of the roof covering is considered negligible.

In addition, per NRC request at the September 14, 1998 meeting, a figure and listing of protected raceways on the Control Building roof are enclosed to illustrate the scope of raceway protection and the extent of coverage required. The scope of raceway protection to achieve 10-foot separation is the same as for achieving 20-foot separation between redundant safe shutdown circuits. Also, please note that Raceway 4J2103 has been added to the listing of protected raceways discussed in the September 14, 1998, meeting, and is included in Table A.

Should there be any questions, please contact us.

Very truly yours,

R. J. Hovey
Vice President
Turkey Point Plant

OIH

Enclosures

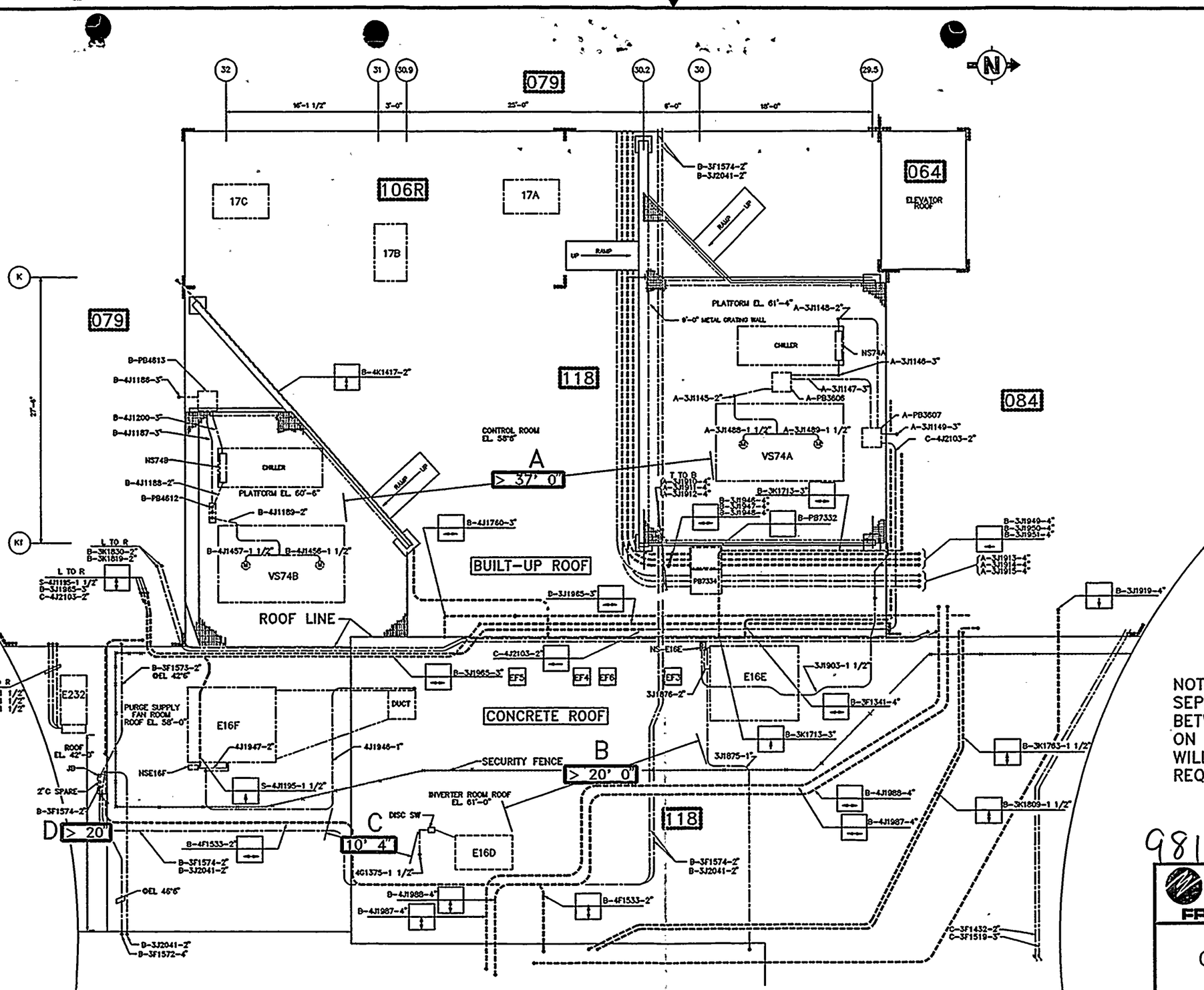
cc: Regional Administrator, Region II, USNRC
Senior Resident Inspector, USNRC, Turkey Point Plant

TABLE A

LISTING OF CONTROL BUILDING ROOF PROTECTED RACEWAYS

Raceway	Safe Shutdown Function
PB7332	LC3D-LC3H POWER FEEDER
3F1341	125V DC TO 480V LC 3D 125V DC TO 480V LC 3B 125V DC TO 4160V BUS 4B (ALT) 125V DC TO 4160V BUS 3B (NORM) 125V DC TO AFW VALVE POWER DISTRIBUTION PANEL 125V DC TO 4160V BUS 4B (NORM)
3J1946	LC3D-LC3H POWER FEEDER
3J1947	LC3D-LC3H POWER FEEDER
3J1948	LC3D-LC3H POWER FEEDER
3J1949	LC3D-LC3H POWER FEEDER
3J1950	LC3D-LC3H POWER FEEDER
3J1951	LC3D-LC3H POWER FEEDER
3J1965	LC3D-LC3H FEEDER BREAKER CONTROL LC3H BREAKER POSITION TO SEQUENCER 3B CHARGING PUMP 3C CONTROL EMERGENCY CONTAINMENT COOLER FAN 3B CONTROL LC 4H-LC 4D INCOMING BREAKER CONTROL CHARGING PUMP 4C CONTROL
3K1713	125V DC TO ALTERNATE SHUTDOWN PANEL 3C264 120V AC FROM INVERTER 3C TO POWER PANEL 3P93 120V AC FROM INVERTER CS TO POWER PANEL 3P93 AFW TURBINE TRIP & THROTTLE VALVE CONTROL
4J1760	125V DC TO EDG 3B EXCITER CABINET AFW TURBINE TRIP & THROTTLE VALVE CONTROL
4J2103	CABLE SPREAD/COMPUTER ROOM CHILLER (S74A) POWER
4K1417	125V DC TO ALTERNATE SHUTDOWN PANEL 4C264 120V AC TO POWER PANEL 4P93

REV	DATE	REVISION	BY	CH	APP	APP



PLAN
CONTROL & INVERTER ROOM ROOF

NOTES:

1. THIS DRAWING IS TO BE USED TO SHOW FIRE PROTECTION DETAILS ONLY. FOR RACEWAY DESIGN SEE DRAWING 5610-E-791, SH 1.
2. FOR INSTALLATION DETAILS OF FIRE (RACEWAY) PROTECTION MATERIAL REFER TO CONSTRUCTION SPEC. NO. 3.21 AND TSI INSTALLATION PROCEDURE MANUAL TECHNICAL NOTE 20034-1P.
3. ALL FIRE PROTECTION WRAPPING SHALL EXTEND TO BUT NOT INCLUDE FLEXIBLE RACEWAY TO MOTORS, INSTRUMENTS OR ANY DEVICE.
4. CONDUITS SHALL BE PERMANENTLY IDENTIFIED AFTER FIRE PROTECTION MATERIAL IS ATTACHED.

REFERENCE DRAWINGS:

5610-E-311	INSTALLATION & INSPECTION GUIDELINES FOR FIRE RESISTIVE/FIRE BARRIER ASSEMBLIES FOR FIRE RACEWAY PROTECTION.
5610-E-135A	RACEWAY FIRE PROTECTION WRAP EL.48'-0" AREA 8
5610-E-131A	RACEWAY FIRE PROTECTION WRAP ALL ELEVATIONS AREA 24

LEGEND:

XXXXXX 3 — DESIGNATOR FOR FIRE RACEWAY WRAP PER APPENDIX R TO 10CFR50 (FIRE RATING OF WRAP)
3 — FIRE WRAP DESIGNATOR
INDICATES DIRECTION OF WRAP
DENOTES SPECIFIC RACEWAY

000 — DENOTES FIRE ZONE

----- FIREWRAP RACEWAY
——— RACEWAY
----- FIREWRAP RACEWAY ON BUILT-UP ROOF

APERTURE CARD

Also Available on Aperture Card

NOTE:
SEPARATION OF 10' OR 20' BETWEEN REDUNDANT COMPONENTS ON THE CONTROL ROOM ROOF WILL NOT IMPACT THE FIREWRAP REQUIREMENTS OF THE RACEWAYS.

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FPL

TURKEY POINT NUCLEAR UNITS 3&4

UNITS 3 & 4
CONTROL BUILDING ROOF
PROTECTED RACEWAYS

FLORIDA POWER & LIGHT

DWG NO	SYS
FIGURE A	REV 0
SHEET	

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