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 TAYLOR, J. Ofc of the Executive Director for Operations

SUBJECT: Informs of objection to FPL "Request for Exemption-Special Use of Thermo-Lag Fire Barriers in Outdoor Fire Area" re requirments of 10CFR50 App R.

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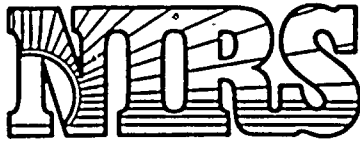
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DOCKET 50-250
50-251

August 3, 1994

Mr. James Taylor
Executive Director for Operations
U.S. Nuclear Regulatory Commission
Mail Stop 17 G21
One White Flint North
11555 Rockville Pike
Rockville, MD 20852-2738

Sir:

The purpose of this letter is to formally inform your office of the vigorous objection to Florida Power and Light's "Request for Exemption- Special Use of Thermo-Lag Fire Barriers in Outdoor Fire Area" as it pertains to 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.

1) FPL's unique outdoor installation of essential power, control, and instrumentation cables used for safe shutdown capability constitutes an increased vulnerability to fire and other hazards and failure to adequately protect these essential cables constitutes an undue risk to public safety.

Contrary to FPL's basic premise for exemption that there is no outdoor fire hazard postulated that can significantly challenge Thermo-Lag 330-1 fire barriers for essential cables and conduits used to assure safe shutdown capability or that both in-situ and transient combustibles can be controlled so as not to challenge Thermo-Lag fire barriers, NIRS enters the contention that precisely because these fire barriers are installed on essential cables outside of buildings and containment they represent an elevated risk due to potential fire hazards presently located at the plant complex as well as to potential external hazards that could enter the plant.

FPL bases its request on an application of the D.C. Circuit Court of Appeals Connecticut Light case citing in the words of the court "if the company can prove that another method works as well as one of the three stipulated by the NRC, in light of the identified fire hazards at its plant, it may continue to employ that method." Connecticut Light, 673 F.2d at 534. FPL further bases their exemption request on the analyses of in-situ combustibles within 50 or more feet of fire barriers and relatively small quantities of transient combustibles as might be presented through work details (painting solvents). FPL further states that the basis of their

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exemption request focuses on fire barriers not being subject to fire damage from stratified gases or ceiling jet layers that can occur from indoor fires.

NIRS' contends that FPL analyses ignores that the fire barriers are vulnerable to significant fire hazards that currently exist on-site through the potential rupture, spillage, transport, and ignition of large on-site transient combustibles in fuel storage bunkers as associated with natural disasters (tornadoes, hurricanes, lightning), and other external hazards as could be presented by example of an air plane crash on-site or human motivated sabotage. NIRS, therefore, contends that FPL has not presented sufficient postulated hazard analyses (PHA) to support the current request for a thirty minute rating of its Thermo-Lag 330-1 fire barriers through exemption from requirements of 10 CFR 50 Appendix R.

It is of additional concern to NIRS that FPL did not make a sufficient presentation of these hazard analyses to NRC to warrant the granting of the previous exemption in waiving requirement of detection and suppression equipment for the one hour fire barriers currently installed out of doors, as required under 10 CFR 50 Appendix R.

2) Presence of Large Quantities of Potentially Transient Combustibles From Fuel Oil Fired Turkey Point Units 1 & 2 As Based On the Hurricane Andrew Experience.

Turkey Point Units 3 and 4 are in relatively close proximity to Turkey Point Units 1 and 2 which are fuel oil fired units. According to documentation prepared by Institute for Nuclear Power Operations and the U.S. Nuclear Regulatory Commission's "Report on the Effect of Hurricane Andrew on the Turkey Point Nuclear Generating Station from August 20-30, 1992," on the morning of August 24, 1992, as a result of a wind generated missile, a metering tank containing Bunker C fuel oil for Unit 1 was punctured at the 25' level resulting in "a large fuel oil spill" approximating 105,000 gallons of fuel oil. The hurricane force winds then transported this combustible fuel oil over a wide area within the entire complex, including the Unit 4 Diesel Generator Building. It is NIRS' concern that this spill and transport represents a very large and documented source of transient combustibles that exists on site that is not accounted for in the FPL exemption request. An additional source of potential transient combustibles exists as the fuel oil storage tank for Unit 3 Emergency Diesel Generators is also not protected from missiles.

Furthermore, NIRS knows of no effort on the part of FPL to evaluate the fire hazard posed by the accidental or intentional rupture of the bunker fuel oil tanks for Units 1 and 2 and the diesel fuel storage tank for Turkey Point Unit 3 emergency diesel generators.

3) No Confidence in the Uniformity of Installation Practices and Certification of Installation of Thermo-Lag 330-1 Fire Barriers at Turkey Point Based on Experiences of Misapplications and Application Problems at River Bend, Grand Gulf, WPN-2, and Fermi-2.

Based on a NRC report of fact finding on River Bend Station (October 31, 1991), installation and construction deficiencies in the Thermo-Lag fire barriers included insufficient thickness of the material on both one hour and three hour barriers, misinstallation of the material where ANCO, the subcontractor trained by TSI, removed stress skin and ribs from the material. The NRC report additionally noted that Thermo-Lag on floor-mounted conduits was "severely deteriorated" due to water exposure which caused the trowel-grade material to wash out of the seams leaving an opening for accelerated flame passage. The NRC Trip Report further identified that the thickness of the ready-for-use fire barrier panels, whose manufacturer specifications for

the one hour rated barrier required 0.5 inches, actually varied between 0.35 and 0.875 inches. NIRS believes this report to have direct bearing on the FPL exemption request in part because 1) the large volumes of unique out of doors applications of Thermo-Lag exposed to high humidity and rain at Turkey Point and, 2) documentation of improper installation and certification of deficient fire barrier materials.

The Washington Public Power Supply WPN-2 station noted in an LER dated 10/28/93 additional installation deficiencies were discovered. As the LER describes, "The probable causes of these electrical separation deficiencies were less than adequate field installation procedures and as-built feedback into design drawings."

Grand Gulf on July 27, 1994, filed an LER documented improperly installed Thermo-Lag where the licensee was unable to determine if the improper installation "presents a significant condition at this time."

A July 15, 1994 filing of a 10 CFR Part 21 Report of Significant Safety Hazard by Detroit Edison for Thermo-Lag 330-1 installations at the Fermi-2 nuclear power station makes industry installation, training, and supervision practices, as well as certification of installations even more dubious. While removing Thermo-Lag, Detroit Edison discovered shoddy Thermo-Lag installation work that involved instances of 'insufficient thickness' of the material, improper or missing structural supports (treated wood), inadequate penetration seals leaving cable ends exposed, and inadequate fastening of Thermo-Lag panels to support structures. Of particular note, Thermal Sciences, Inc. had trained the subcontractor who installed the fire barriers, supervised the job, and certified by letter that installation had been completed according to the manufacturer's specification.

4) No Confidence in Licensees Analyses and Responses To NRC Warnings Pertaining to Deficiencies Identified with Thermo-Lag 330-1 Fire Barriers.

As early as March 25, 1987, as documented by a River Bend Licensee Event Report, NRC and licensees have been aware of improper installation practices of Thermo-Lag fire barriers that have rendered the fire barriers inoperable. Subsequent NRC Information Notices and Bulletins, and a Generic Letter have warned the licensees of numerous deficiencies with the fire barrier. NRC further required the licensees to inspect their fire barriers and respond to a Request for Additional Information (RAI), as pursuant to 10 CFR 50.54(f), stating specific as-installed parameters as related to the resolution of the Thermo-Lag deficiencies.

It is of significant concern that a number of licensees in the RAI responses did not accurately depict important safety parameters of as-installed Thermo-Lag fire barriers at respective plants. These inaccuracies serve to seriously undermine confidence that any of the licensees were able to accurately depict parameters of as-is installed fire barriers.

Detroit Edison's response, February 11, 1994, did not, and from NIRS' position could not, accurately depict the as-is installed barrier parameters until the aforementioned barriers were destroyed as a process of removal. Upon removal of the Thermo-Lag barriers, Detroit Edison discovered numerous improper installation practices and deficiencies that had been present since 1988 when the plant received its operation license from NRC. Upon public revelation of these deficiencies, Detroit Edison then filed a Part 21 Report of Significant Safety Hazard.

Grand Gulf's response to the RAI, February 14, 1994, similarly failed to report conduit and pull box containing power cables for emergency switchgear and battery room ventilation fans with improperly installed Thermo-Lag. Grand Gulf subsequently filed a LER on July 27,

1994 identifying this deficiency and is still assessing whether the condition "presents a significant condition at this time."

Additional examples underscore the NIRS lack of confidence that the licensees, including FPL, can either accurately assess the installation practices used at the plants or depend upon certification documentation to assure that installation meets even manufacturer specifications.

In conclusion, NRC and industry fire testing of carefully assembled and installed Thermo-Lag fire barriers have demonstrated that the supposed 1 hour rated barrier lasts roughly 20 minutes. Departure from the use of pristine Thermo-Lag samples and carefully controlled installations and testing procedures can lead to even quicker burn through times.

For all of the above stated contentions, NIRS formally objects to FPL being granted an exemption from requirements of 10 CFR 50 Appendix R for as installed Thermo-Lag 330-1 fire barriers in special use applications as it presents undue risk to public safety.

Sincerely,



Paul Gunter, Director
Reactor Watchdog Project
Nuclear Information and Resource Service

cc: OI

OIG

Honorable John Dingel