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SUBJECT: Forwards response to 931220 RAI re GL 92-08, "Thermo-Lag 330-1 Fire Barriers." I
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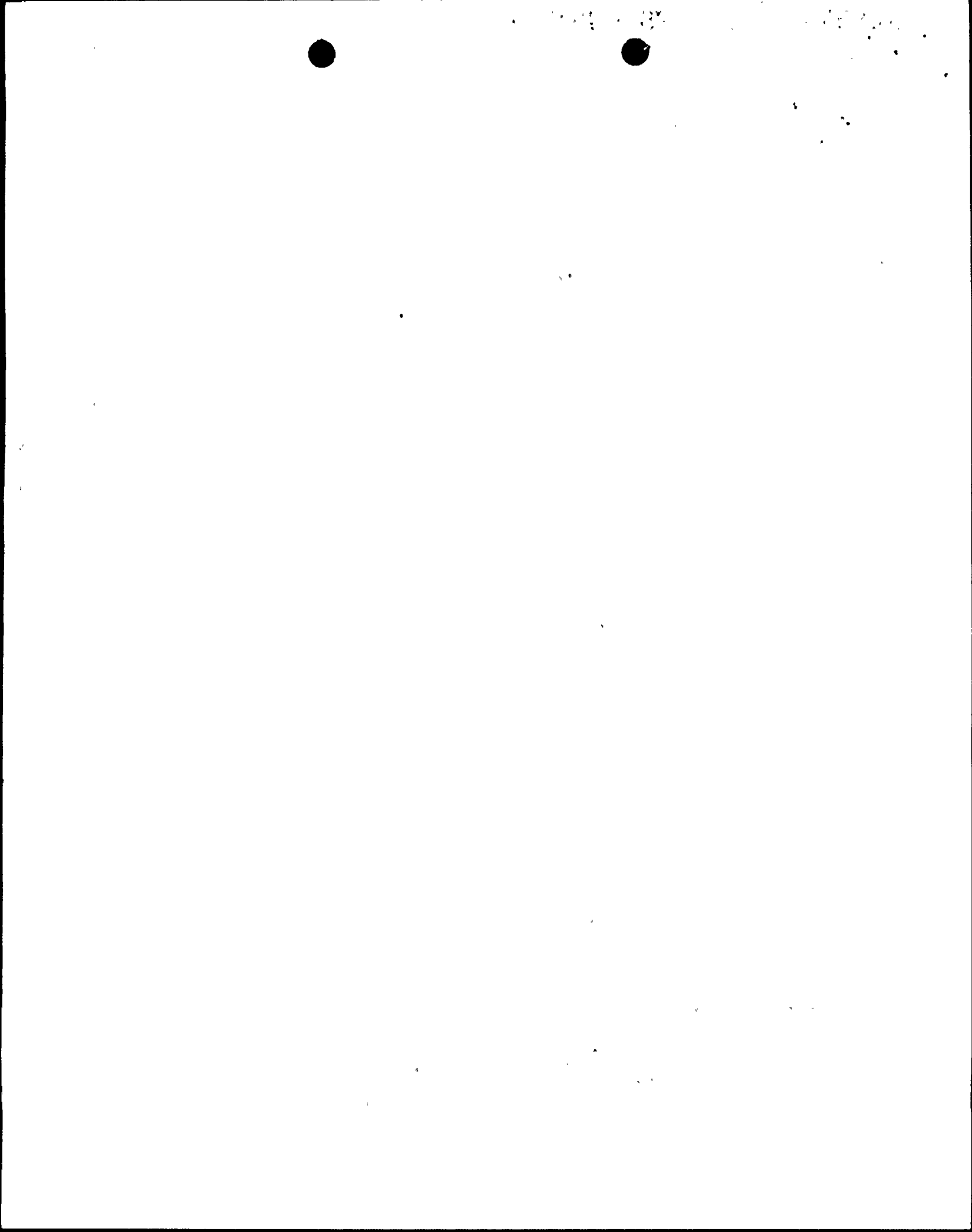
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L-94-24
10 CFR 50.54(f)

Mr. L. J. Callan
Acting Associate Director for Projects
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Mail Stop 14H22
Washington, D.C. 20555

Re: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
Response to Request for Additional
Information - Generic Letter 92-08
Thermo-Lag 330-1 Fire Barriers

A request for additional information regarding Generic Letter (GL) 92-08, "Thermo-Lag 330-1 Fire Barriers" was issued by the NRC on December 20, 1993, to help insure timely resolution of the fire barrier issues at Turkey Point Units 3 and 4.

In accordance with the NRC request, Florida Power and Light Company (FPL) provides the attached response relative to the Turkey Point Plant. The attached information is provided pursuant to the requirements of Section 182a of the Atomic Energy Act of 1954, as amended, and 10 CFR 50.54(f).

Should there be any questions concerning this response, please contact us.

Very truly yours,

T. F. Plunkett
Vice President
Turkey Point Plant

TFP/OIH

Attachment

cc: Stewart D. Ebnetter, Regional Administrator, Region II, USNRC
Document Control Desk, USNRC, Washington, D. C. 20555
T. P. Johnson, Senior Resident Inspector, USNRC

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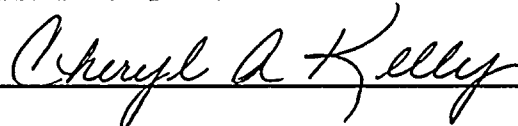
T. F. Plunkett being first duly sworn, deposes and says:

That he is Vice President, Turkey Point Plant, of Florida Power and Light Company, the Licensee herein;

That he has executed the foregoing document; that the statements made in this document are true and correct to the best of his knowledge, information and belief, and that he is authorized to execute the document on behalf of said Licensee.


_____ T. F. Plunkett

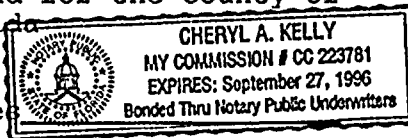
Subscribed and sworn to before me this
7 day of FEB, 1994.



Name of Notary Public (Type or Print)

NOTARY PUBLIC, in and for the County of
Dade, State of Florida

My Commission expires
Commission No. _____



T. F. Plunkett is personally known to me.



ATTACHMENT

RESPONSE TO NRC REQUEST FOR
ADDITIONAL INFORMATION REGARDING GENERIC LETTER 92-08
"THERMO-LAG 330-1 FIRE BARRIERS"

BACKGROUND

The NRC began a review of the Thermo-Lag 330-1 fire barrier system fire endurance and ampacity derating test reports, installation procedures, and as-built configurations after receiving reports from Gulf States Utilities about failed qualification tests and installation problems. The NRC later conducted a series of fire tests of 1-hour and 3-hour Thermo-Lag prefabricated panels to assess the fire performance of these panels. The results of these fire barrier tests raised additional concerns about the ability of the Thermo-Lag 330-1 fire barriers to provide a level of fire protection in accordance with their specified fire-resistance ratings.

As a result of these concerns, the NRC initially issued Information Notice (IN) 92-46 (Reference 1) and Bulletins 92-01 and 92-01, Supplement 1, (Reference 2). Later the NRC issued Generic Letter 92-08 (Reference 3) to document the principal areas of concern that the NRC had regarding the qualification and application of Thermo-Lag 330-1. Generic Letter 92-08 requested a written response from all Operating or Construction Permit licensees under the requirements of 10 CFR 50.54(f). Under Generic Letter 92-08, each licensee was required to provide technical/licensing information to the NRC, which addressed the qualification, application and configuration of 1-hour and 3-hour Thermo-Lag 330-1 fire barrier systems installed at each licensed facility to meet the requirements of 10 CFR 50.48.

In response to Generic Letter 92-08, FPL provided its response contained in Attachment 1 to its correspondence L-93-75, dated April 6, 1993 (Reference 4). In the FPL response to Generic Letter 92-08, specific plant resolution of the Thermo-Lag concerns was deferred until after completion of a NUMARC coordinated testing program. The NUMARC test results were to be used to determine any required plant configuration modifications. Subsequently, in early December, the NRC became concerned that the scope of the NUMARC testing would not be sufficient to resolve all Thermo-Lag barrier issues identified in Generic Letter 92-08.

In response to these growing NRC concerns, the NRC requested additional information to supplement their Generic Letter 92-08 requests; this Request for Additional Information Regarding Generic Letter 92-08 was contained within the NRC's correspondence of December 20, 1993 (Reference 5). This evaluation will serve to supplement FPL's initial response to NRC Generic Letter 92-08 and respond to the NRC request for additional information by providing additional details of the qualification and application of Thermo-Lag 330-1 fire barriers at Turkey Point Units 3 and 4.

APPROACH FOR RESOLUTION

In an effort to resolve those issues raised by the NRC Bulletin 92-01 and Generic Letter 92-08, FPL has developed a performance-based approach for evaluation of Thermo-Lag fire barriers. This approach uses a detailed engineering analysis to evaluate whether the Turkey Point plant meets the objectives of 10 CFR 50, Appendix R. This performance-based approach will use the combined results of area-by-area fire modeling, postulated fire hazards analysis, industry-wide NUMARC and/or other relevant fire barrier testing, probabilistic safety assessment, and planned plant modifications, where necessary, to demonstrate the continued ability of FPL's nuclear facilities to achieve and maintain safe shutdown conditions associated with a fire emergency.

FPL also continues to work closely with NUMARC in developing the Thermo-Lag program. Based on our assessment of the current and anticipated NUMARC initiatives in combination with the performance-based approach FPL has developed, this combined approach provides a sound technical basis for resolving the issues associated with Bulletin 92-01 and Generic Letter 92-08 in a timely and cost effective manner. Our response to the NRC's Request for Additional Information should be viewed in consideration of this approach.

RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION

NRC REQUESTED INFORMATION - ITEM I.B.1

Describe the Thermo-Lag 330-1 barriers installed in the plant to

- a. meet 10 CFR 50.48 or Appendix R to 10 CFR Part 50,
- b. support an exemption from Appendix R,
- c. achieve physical independence of electrical systems,
- d. meet a condition of the plant operating license,
- e. satisfy licensing commitments.

The descriptions should include the following information: the intended purpose and fire rating of the barrier (for example, 3-hour fire barrier, 1-hour fire barrier, radiant energy heat shield), and the type and dimension of the barrier (for example, 8-ft by 10-ft wall, 4-ft by 3-ft by 2-ft equipment enclosure, 36-inch-wide cable tray, or 3-inch-diameter conduit).

FPL RESPONSE - ITEM I.B.1

Turkey Point Units 3 and 4 were licensed to operate prior to January 1, 1979 and are required to meet 10 CFR 50.48 and 10 CFR 50, Appendix R, Sections III.G, J and O. Thermo-Lag 330-1 material was used for raceway fire-proofing to meet the separation requirements of 10 CFR 50, Appendix R, Section III.G.

The information contained in the following response to the Items in I.B was carefully developed as described below:

1. First, raceways listed in the Turkey Point Safe Shutdown Analysis were reviewed along with information from other approved engineering documentation. From those reviews 1-hour and 3-hour barrier requirements were extracted. The resulting information was used as the master listing for the information presented.
2. No cable tray fire barriers are required, and no radiant energy shields are constructed with Thermo-Lag at the Turkey Point plant. The conduit that is wrapped within containment is constructed using a 1-hour fire barrier design, which has been tabulated under the response to Item I.B.2 with 1-hour conduit wrap. However, the requirements for fire protection design inside containment need only meet 10 CFR 50, Appendix R, Section III G.2.f for radiant energy shields.
3. Conduits are protected with 1 and 3-hour rated fire barriers to meet the Appendix R, III.G.2 requirements. Conduits of the following diameters are protected by pre-formed Thermo-Lag conduit wraps: 3/4", 1", 1-1/2", 2", 3", and 4".
4. Electrical pull and terminal boxes are used to meet III.G.2 requirements. The 1-hour rated Thermo-Lag material is used to build enclosures around these electrical boxes, which have the following dimensions (dimensions are arranged height x width x length in inches):

6 x 6 x 828	24 x 24 x 12
6 x 6 x 1080	24 x 24 x 6
8 x 36 x 8	24 x 24 x 8
12 x 10 x 6	24 x 24 x 12
12 x 12 x 6	30 x 24 x 10
12 x 24 x 48	30 x 36 x 6
12 x 40 x 12	36 x 24 x 8
16 x 12 x 6	36 x 30 x 12
18 x 24 x 12	36 x 30 x 8
20 x 16 x 6	36 x 30 x 16
20 x 16 x 8	36 x 36 x 12
20 x 20 x 6	36 x 36 x 16
20 x 36 x 6	48 x 36 x 16
24 x 20 x 8	48 x 48 x 24

5. In addition to the 1-hour barriers identified above, various 3-hour Thermo-Lag fire barriers are installed. 3-hour rated Thermo-Lag material was used to build enclosures around this group of electrical boxes, which have the following dimensions (dimensions are arranged height x width x length in inches):

24 x 24 x 8	24 x 20 x 8
24 x 20 x 12	36 x 30 x 8

6. Thermo-Lag was used to seal three concrete wall openings (Opening 061W-H001/ 063W-H001: 2'-4" wide by 1'-7" high; and Opening 062W-H001: 1'-6" wide by 1'-6" high) to prevent the spread of fire from one fire area to another. These barriers are 3-hour rated barriers.
7. Thermo-Lag was used to seal wall penetrations where several reach-

rod hand wheels for manual valves extend through concrete walls. It has been estimated that the total amount of Thermo-Lag is 10 square feet per unit for a total of ≤ 20 square feet. These barriers are 3-hour rated barriers.

NRC REQUESTED INFORMATION - ITEM I.B.2

For the total population of Thermo-Lag fire barriers described under Item I.B.1, submit an approximation of:

- a. For cable tray barriers: the total linear feet and square feet of 1-hour barriers and the total linear feet and square feet of 3-hour barriers.
- b. For conduit barriers: the total linear feet of 1-hour barriers and the total linear feet of 3-hour barriers.
- c. For all other fire barriers: the total square feet of 1-hour barriers and the total square feet of 3-hour barriers.
- d. For all other barriers and radiant energy heat shields: the total linear or square feet of 1-hour barriers and the total linear or square feet of 3-hour barriers, as appropriate for the barrier configuration or type.

FPL RESPONSE - ITEM I.B.2.

Based on a review of controlled engineering drawings, the following approximate amounts of Thermo-Lag fire barriers described under Item I.B.1 were identified:

BARRIER TYPE	1-HOUR LF	1-HOUR SqFt	3-HOUR LF	3-HOUR SqFt
Trays	N/A	N/A	N/A	N/A
Conduits	14,608 (Note 1)	N/A	602	N/A
Banked Conduits (Incl. w/conduits)	341 (Ref. 6)	N/A	N/A	N/A
Terminal & Pull Box Barriers	N/A	1,287	N/A	116
Radiant Heat Shields	N/A	N/A	N/A	N/A
Walls & Ceilings	N/A	N/A	N/A	≤ 38

NOTES : (1) The quantity of banked conduits (341 linear feet) has been included within the overall number of linear feet of conduit (i.e., 14,608 linear feet). (2) "N/A" in the above tabulation stands for Not Applicable.

NRC REQUESTED INFORMATION - ITEM II.B.1

State whether or not you have obtained and verified each of the aforementioned parameters for each Thermo-Lag barrier installed in the plant. If not, discuss the parameters you have not obtained or verified. Retain detailed information on site for NRC audit where the aforementioned parameters are known.

FPL RESPONSE - ITEM II.B.1

FPL has initiated a review of engineering and quality records as the first option in an effort to obtain information that will help to verify how Thermo-Lag was installed and inspected. If appropriate, information from installation records, such as, plant modification process sheets and quality control records will be used in evaluations for the fire rating of our Thermo-Lag installations. If our records are not sufficient to allow an adequate verification, we will pursue other options that are appropriate for developing information for use in fire rating evaluations. We expect to finalize this verification effort after the anticipated release of the NUMARC Application Guide. A final listing of the critical design and installation parameters will be provided to us when the NUMARC Phase II testing is complete and the NUMARC Application Guide is finalized. At that time we will undertake the task of completing our evaluation of the fire rating of our Thermo-Lag installations by using NUMARC's Application Guide. A review and verification of critical parameters for Thermo-Lag installed at Turkey Point will be performed as part of that evaluation.

FPL does not intend to exceed the tested time rating (as determined by NUMARC testing) found for each barrier using the 325 °F raceway temperature acceptance criteria. It is not FPLs intention to rely on further cable functionally testing to justify particular cable configurations. To the extent that fire test results are satisfactory on the basis of temperature, as provided in the NRC draft test and acceptance criteria, we do not believe the listed cable performance parameters need be considered further.

In response to the question of chemical testing of the Thermo-Lag material, FPL does not consider this necessary for the following reasons : (1) chemical testing performed by NUMARC on a wide variety of age samples has not yet revealed significant variations in chemical composition, and (2) it is our understanding that industry and NRC audits of Thermal Science, Inc. have not found any significant deficiencies in the vendors industrial quality assurance program.

FPL continues to work closely with NUMARC in developing the Thermo-Lag program. Based on our assessment of the current and anticipated NUMARC initiatives in combination with the performance-based approach FPL has developed, we are anticipating that these efforts will be sufficient to resolve the Thermo-Lag fire barrier issues identified in Generic Letter 92-08 for the Turkey Point plant.

NRC REQUESTED INFORMATION - ITEM II.B.2

For any parameter that is not known or has not been verified, describe how you will evaluate the in-plant barrier for acceptability.

FPL RESPONSE - ITEM II.B.2

FPL has installed Thermo-Lag barriers in the Turkey Point plant in accordance with standard vendor recommended installation practices. Additionally, FPL has worked closely with NUMARC in developing the Thermo-Lag program. A final listing of the critical design parameters will be provided to us when the NUMARC Phase II testing is complete and the NUMARC Application Guide is finalized. At that time we will undertake the task of completing our evaluations for the fire rating of our Thermo-Lag installations. A review and verification of critical parameters for Thermo-Lag installed at Turkey Point will be performed as part of that evaluation.

NRC REQUESTED INFORMATION - ITEM II.B.3

To evaluate NUMARC's application guidance, an understanding of the types and extent of the unknown parameters is needed. Describe the type and extent of the unknown parameters at your plant in this context.

FPL RESPONSE - ITEM II.B.3.

The Application Guide which will be provided by NUMARC can be utilized with just about any type of installation and any type of construction technique. However, the more that is known about an installation, the fewer conservatisms will need to be applied when evaluating a specific installation. A complete listing of the critical design features will be provided when the NUMARC Phase II testing is completed and the Application Guide is finalized. At that time we will undertake the task of determining the fire rating of our Thermo-Lag installations. This process may require us to perform more detailed inspections to determine specific installation parameters (critical design features) in order to better evaluate our raceway fire barriers. Performing detailed walkdowns of fire barriers prior to a complete list of the critical design features may necessitate doing the walkdowns twice, and this is considered to be non-productive. Thus, we intend to wait for the NUMARC results before verifying the installation parameters.

NRC REQUESTED INFORMATION - ITEM III.B.1

Describe the barriers discussed under Item I.B.1 that you have determined will not be bounded by the NUMARC test program.

FPL RESPONSE - ITEM III.B.1

In addition to the individual raceway (i.e., conduit and pull/terminal boxes) sections protected with Thermo-Lag 330-1 fire barriers, which are bounded by the NUMARC test configurations, there are several sections of 'banked' conduits protected with Thermo-Lag. The necessity to have 'banked' conduit runs was created during the 1990-1991 Dual Unit Outage during which conduit sections required to be protected were routed in closer proximity than were addressed by standard Thermo-Lag installation practices due to physical plant limitations.

For cases where individual pre-formed Thermo-Lag sections could not be installed on multiple conduits running close together and side-by-

side, .1-hour Thermo-Lag pre-formed straight or conduit half-sections were installed on the outer-most conduits and straight sections of Thermo-Lag boards were installed on the top and bottom of conduit runs. Vendor instructions were used for installation of the joints (pre-buttered) of the top and bottom panels. Where space was available, a section of Thermo-Lag was fitted between conduits within the banked enclosure.

NRC REQUESTED INFORMATION - ITEM III.B.2

Describe the plant-specific corrective action program or plan you expect to use to evaluate the fire barrier configurations particular to the plant. This description should include a discussion of the evaluations and the tests being considered to resolve the fire barrier issues identified in GL 92-08 and to demonstrate the adequacy of existing in-plant barriers.

FPL RESPONSE - ITEM III.B.2

In an effort to resolve those issues raised by the NRC Bulletin 92-01 and Generic Letter 92-08, FPL has developed a performance-based approach for evaluation of Thermo-Lag fire barriers, thereby, demonstrating the continued ability of the Turkey Point plant to achieve and maintain safe shutdown conditions associated with fire emergencies. The performance-based approach will use detailed engineering analyses to evaluate whether the Turkey Point plant meets the objectives of 10 CFR 50, Appendix R. This approach uses area-by-area fire modeling, postulated fire hazards analyses, industry-wide NUMARC and/or other relevant fire barrier testing, and probabilistic safety assessment. It should be noted that the performance-based approach will evaluate the special characteristics of outdoor areas with respect to fire hazards. Appropriate plant modifications will be made, where necessary : (1) to facilitate operations/ maintenance activities; (2) reduce risk based on probabilistic safety assessment identified sensitive areas; and (3) where the performance-based approach shows a change is necessary.

The output of the FPL approach including any required modifications will ensure that one train of systems necessary to achieve and maintain safe shutdown will remain free from fire damage. In this regard, the approach is consistent with Appendix R objectives and uses an alternate performance-based approach to the 1-hour and 3-hour rated fire barriers.

NRC REQUESTED INFORMATION - ITEM III.B.3

If a plant-specific fire endurance test program is anticipated, describe the following:

- a. Anticipated test specimens.
- b. Test methodology and acceptance criteria including cable functionality.

FPL RESPONSE - ITEM III.B.3

No specific plant testing is anticipated at this time. The testing which is being performed by NUMARC appears to encompass the

installations and installation techniques utilized at the Turkey Point Facility, with the possible exception of banked conduits. It must be understood that we have not seen detailed test reports or the NUMARC Application Guide. The present NUMARC schedule will provide the test reports and the implementation guidelines by April 15, 1994. It will then take some time to arrive at an understanding of all the available information. After this we should be able to provide the NRC with a response on potential plant-specific testing within 90 days of the receipt of the NUMARC test results, which would be early in the third quarter of 1994.

NRC REQUESTED INFORMATION - ITEM IV.B.1

For the barriers described under Item I.B.1, describe those that you have determined will fall within the scope of the NUMARC program for ampacity derating, those that will not be bounded by the NUMARC program, and those for which ampacity derating does not apply.

FPL RESPONSE - ITEM IV.B.1

All Turkey Point raceways containing power cables and protected by Thermo-Lag barriers fall within the scope of the NUMARC program for ampacity derating. Conduits requiring protection with Thermo-Lag 330-1, for both one and three hour fire rated categories, and containing power cables at Turkey Point have been evaluated. After applying a 10% derating factor (based on TSI/ITL ampacity derating tests, as discussed in our April 6, 1993 response to GL 92-08) for all Thermo-Lag enclosed conduits, the remaining worst case ampacity derating margin is 55%. This provides a substantial margin over the circuit's ampacity requirements. NUMARC and the NRC are working on an acceptable test methodology. When the testing is completed and accepted by the NRC, FPL will evaluate the results relative to each application of Thermo-Lag at Turkey Point.

NRC REQUESTED INFORMATION - ITEM IV.B.2

For the barriers you have determined fall within the scope of the NUMARC program, describe what additional testing or evaluation you will need to perform to derive valid ampacity derating factors.

FPL RESPONSE - ITEM IV.B.2

All Turkey Point raceways containing power cables protected by Thermo-Lag barriers fall within the scope of the NUMARC program for ampacity derating. Because FPL calculations have demonstrated the availability of substantial margins over circuit ampacity requirements (i.e., the worst case ampacity derating margin is 55%), no additional testing or further evaluation is anticipated.

NRC REQUESTED INFORMATION - ITEM IV.B.3

For the barrier configurations that you have determined will not be bounded by the NUMARC test program, describe your plan for evaluating whether or not the ampacity derating test relied upon for the ampacity derating factors used for those electrical components protected by Thermo-Lag 330-1 (for protecting the safe-shutdown capability from fire or to achieve physical independence of electrical systems) are

correct and applicable to the plant design. Describe all corrective actions need and submit the schedule for completing such actions.

FPL RESPONSE - ITEM IV.B.3

All Turkey Point raceways containing power cables protected by Thermo-Lag barriers fall within the scope of the NUMARC program for ampacity derating. Because of the availability of substantial margins over circuit ampacity requirements (i.e., the worst case ampacity derating margin is 55%) shown in FPL calculations, no additional testing or further evaluation is anticipated.

NRC REQUESTED INFORMATION - ITEM IV.B.4

In the event that the NUMARC fire barrier tests indicate the need to upgrade existing in-plant barriers or to replace existing Thermo-Lag barriers with another fire barrier system, describe the alternative actions you will take (and the schedule for performing those actions) to confirm that the ampacity derating factors were derived by valid tests and are applicable to the modified plant design.

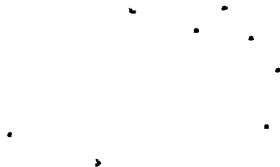
FPL RESPONSE - ITEM IV.B.4

Florida Power & Light Company has no plans to replace the present raceway fire barrier material with another type. Specific ampacity derating testing will be included in the testing being performed by NUMARC that will add additional thicknesses of Thermo-Lag. Due to the low thermal resistance of Thermo-Lag in the non-fire application, a substantially different ampacity derating is not anticipated. However, as identified in the previous correspondence, ampacity margins at Turkey Point Units 3 and 4 using design and construction criteria, are sufficiently large to encompass proposed ampacity derating well over that presently tested.

NRC REQUESTED INFORMATION - ITEM V.B

Describe the specific alternatives available to you for achieving compliance with NRC fire protection requirements in plant areas that contain Thermo-Lag fire barriers. Examples of possible alternatives to Thermo-Lag based upgrades include the following:

1. Upgrade existing in-plant barriers using other materials.
2. Replace Thermo-Lag barriers with other fire barrier materials or systems.
3. Reroute cables or relocate other protected components.
4. Qualify 3-hour barriers as 1-hour barriers and install detection and suppression systems to satisfy NRC fire protection requirements.



EPL RESPONSE - ITEM V.B

Prior to beginning an evaluation for the Turkey Point Units 3 & 4, FPL conducted a review of the Thermo-Lag enclosed circuits. It has been determined that some of the Thermo-Lag enclosed circuits at the Turkey Point Plant no longer require special protection because of the additional redundant equipment installed during the 1990-91 Dual Unit Emergency Power System (EPS) enhancement outage.

Therefore, in each fire area, a reanalysis of the Thermo-Lag enclosed circuits has been performed to Appendix R safe shutdown requirements. All cables necessary to achieve and maintain safe shutdown were identified. By a systematic review of each circuit, a determination was then made of whether the Thermo-Lag enclosed circuits are required. For the required Thermo-Lag enclosed circuits, the FPL approach described below is utilized.

FPL's performance-based approach to Thermo-Lag resolution has three parts that will allow us to evaluate the acceptability of fire barrier configurations installed at the Turkey Point plant:

1) OUTDOOR FIRE AREA ANALYSIS :

For the outdoor fire barrier installations, FPL proposes that these fire barriers be qualified to meet the requirements for a 30-minute fire barrier. The open plant layout and its heat dissipation characteristics lend themselves to such a consideration. NUMARC testing in conjunction with the NUMARC Application Guide will be used to rate barriers at the Turkey Point plant.

2) POSTULATED HAZARDS ANALYSES :

The postulated hazards analyses (PHA) will be based on both fire modeling analyses and a traditional fire hazards evaluation.

a) Fire Modeling - Indoor fire areas are analyzed by the FPL-developed, area-by-area, plant-specific fire model to assure that the plant-specific combustible loadings will not jeopardize the reduced fire barrier ratings derived from test results. This will ensure protection of at least one train of safe shutdown equipment.

b) Traditional Fire Hazards Evaluation - This evaluation will utilize the traditional methodology of estimating heat generation and heat removal per the NFPA Fire Protection Handbook as a check for consistency.

3) PROBABILISTIC SAFETY ASSESSMENT :

The Probabilistic Safety Assessment (PSA) for the indoor and outdoor fire areas will be used to further evaluate if the installed fire barriers provide adequate reactor safety.

Any fire barrier configurations proven to be inadequate by the above analyses will be modified as appropriate.

The output of the FPL approach including any required modifications will ensure that one train of systems necessary to achieve and maintain safe shutdown will remain free from fire damage. In this regard, the approach is consistent with Appendix R objectives and uses an alternate performance-based approach to the 1-hour and 3-hour rated fire barriers.

NRC REQUESTED INFORMATION - ITEM VI.B

Submit an integrated schedule that addresses the overall corrective action schedule for the plant. At a minimum, the schedule should address the following aspects for the plant:

1. implementation and completion of corrective actions and fire barrier upgrades for fire barrier configurations within the scope of the NUMARC program,
2. implementation and completion of plant-specific analyses, testing, or alternative actions for fire barrier outside the scope of the NUMARC program.

FPL RESPONSE - ITEM VI.B

FPL has been actively pursuing a resolution of the Thermo-Lag problem since the first quarter of 1993. Those activities that have been completed to date include the following:

1. FPL has been closely supporting NUMARC in the development of Thermo-Lag testing program.
2. FPL has recently completed a reevaluation of circuits that are required to be protected. This evaluation has demonstrated that fewer circuits require Thermo-Lag than previously evaluated, and therefore the magnitude of the Thermo-Lag issue has been substantially reduced.
3. As described in Item V.B, a strategic plan has been developed for the overall resolution of Thermo-Lag concerns. Within the scope of this plan, a computer based fire model is nearing completion. Preliminary fire hazards evaluations have been completed on a majority of the areas that require fire barrier protection, and these evaluations have shown favorable results.

Because the NUMARC test results and Application Guide have not been received in a final form at this time, it is premature to provide a complete integrated schedule for resolution at this time. However, it is possible to identify those activities that are presently scheduled and to identify when a more detailed schedule can be provided in light of the NUMARC test results :

1. FPL intends to submit its performance-based approach for resolution of the Thermo-Lag issue for NRC approval in the second quarter of 1994. It is FPL's intention to meet with the NRC to discuss this approach.
2. NUMARC is scheduled to issue the results of its testing program on

April 15, 1994. Following receipt of this information, FPL will review the information for applicability to PTN installations. Evaluations will be performed comparing the FPL installations to the NUMARC testing so that appropriate fire ratings for the FPL installations can be established. It is anticipated that these evaluations will be completed during the third quarter of 1994 after receipt of the NUMARC test results.

3. At the present time, FPL is performing postulated fire hazards analyses on an area by area basis. Completion of the postulated fire hazards analyses is anticipated by the end of the third quarter of 1994.
4. Probabilistic Safety Assessment is being performed on the indoor and outdoor fire areas to further evaluate the adequacy of installed fire barriers. This work is scheduled to be completed in the fourth quarter of 1994.
5. An engineering schedule will be developed to evaluate differences between the FPL installation and the NUMARC testing following completion of the postulated hazards analyses. For areas that require upgrade, an engineering estimate and schedule will be developed. This engineering estimate will then be used to develop a construction estimate, which must then receive review and approval by the plant review board. It is estimated that this process will take approximately 90 days to accomplish from receipt of the NUMARC test results. Accordingly, additional scheduling information regarding any plant modifications required will be provided to NRC early in the third quarter of 1994.

NRC REQUESTED INFORMATION - ITEM VII.

Describe the sources of the information provided in response to this request for information (for example, from plant drawing, quality assurance documentation, walkdown or inspections) and how the accuracy and validity of the information was verified.

FPL RESPONSE - ITEM VII.

The majority of information contained in this request that describes the plant's configuration is from plant controlled design documents and drawings. The remaining information about the plant was obtained from plant walkdowns. All plant information has been independently verified.

8.0 REFERENCES

1. NRC Information Notice 92-46, "Thermo-Lag Fire Barrier Material Special Review Team Findings, Current Fire Endurance Tests, and Ampacity Calculation Errors," dated June 23, 1992.
2. NRC Bulletin 92-01, "Failure of Thermo-Lag 330 Fire Barrier System to Maintain Cabling in Wide Cable Trays and Small Conduits Free from Fire Damage," dated June 24, 1992; and Bulletin 92-01, Supplement 1, "Failure of Thermo-Lag 330-1 Fire Barrier System to Perform Its Specified Fire Endurance Function," dated August 28, 1992.
3. NRC Generic Letter 92-08, "Thermo-Lag 330-1 Fire Barriers," dated December 17, 1992.
4. FPL letter to the NRC L-93-75, "Response to Generic Letter 92-08, Thermo-Lag 330-1 Fire Barriers," dated April 6, 1993.
5. NRC letter to FPL, "Request for Additional Information Regarding Generic Letter 92-08, 'Thermo-Lag 330-1 Fire Barriers,' Pursuant to 10 CFR 50.54(f) -Turkey Point Units 3 & 4," dated December 20, 1993.
6. FPL internal letter JPNS-PTN-92-0882, T.P. Heisterman to A.T. Zielonka, "Turkey Points 3 & 4, Thermo-Lag 330-1 Inspection / Walkdown," dated August 14, 1992.