

7/9/76

Dockets Nos. 50-250.
and 50-251

Florida Power and Light Company
ATTN: Dr. Robert E. Uhrig
Vice President
P. O. Box 013100
Miami, Florida 33101

Gentlemen:

The Commission has issued the enclosed Amendment No. 19 to Facility Operating License No. DPR-31 and Amendment No. 18 to Facility Operating License No. DPR-41 for the Turkey Point Nuclear Generating Units No. 3 and No. 4. These amendments consist of changes to the Technical Specifications in response to your applications dated June 22 and June 24, 1976, and related filings dated August 23, 1974, January 10, 1975, January 2, April 8, May 25, June 23, and 24, and July 8, 1976.

These amendments consist of a license amendment and Technical Specifications change authorizing the transfer of byproduct and special nuclear material between each of the Turkey Point Units.

Copies of the Safety Evaluation and the Federal Register Notice are also enclosed.

Sincerely,

George Lear, Chief
Operating Reactors Branch #3
Division of Operating Reactors

Enclosures:

1. Amendment No. 19 to License DPR-31
2. Amendment No. 18 to License DPR-41
3. Safety Evaluation
4. Federal Register Notice

cc: See next page

SEE PREVIOUS YELLOW FOR CONCURRENCE CHAIN*

OFFICE →	ORB#	<i>[Handwritten initials]</i>	OELD	ORB#	
SURNAME →	CParrish	DElliott:kmb	<i>J. GROSSBERG</i>	GLear	
DATE →	6/29/76	7/9/76	7/9/76	7/9/76	

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Florida Power & Light Company. - -

cc:

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S. E. First National Bank Building
Miami, Florida 33131



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

FLORIDA POWER AND LIGHT COMPANY

DOCKET NO. 50-250

TURKEY POINT NUCLEAR GENERATING UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

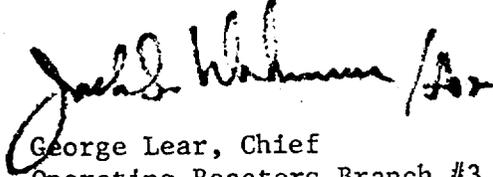
Amendment No. 19
License No. DPR-31

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The applications for amendment by Florida Power and Light Company (the licensee) dated June 22, 1976 and June 24, 1976, and related filings dated August 23, 1974, January 10, 1975, January 2, April 8, May 25, June 23 and June 24, and July 8, 1976 comply with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations; and
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by a change to the Technical Specifications as indicated in the attachment to this license amendment and Facility Operating License No. DPR-31, as amended is hereby further amended by replacing in its entirety paragraph 2.F. thereof with the following:

"F. Pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of Turkey Point Units Nos. 3 and 4."

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in dark ink, appearing to read "George Lear", with a stylized flourish at the end.

George Lear, Chief
Operating Reactors Branch #3
Division of Operating Reactors

Attachment:
Changes to the
Technical Specifications

Dated: July 9, 1976

ATTACHMENT TO LICENSE AMENDMENT NO. 19

TO THE TECHNICAL SPECIFICATIONS

FACILITY OPERATING LICENSE NO. DPR-31

DOCKET NO. 50-250

Replace page ii with the attached revised page.
Add pages 3.12-1 and B-3.12-1.

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3.12 CASK HANDLING

Applicability

Applies to limitations during cask handling.

Objective

To minimize the possibility of an accident during cask handling operations that would affect the health and safety of the public.

Specifications

During cask handling operations:

- (1) The spent fuel cask shall not be moved into the spent fuel pit until all the spent fuel in the pit has decayed for a minimum of one thousand (1,000) hours.
- (2) Only a single element cask may be moved into the spent fuel pit.
- (3) A fuel assembly shall not be removed from the spent fuel pit in a shipping cask until it has decayed for a minimum of one hundred twenty (120) days.

B.3.12 BASIS FOR LIMITING CONDITIONS FOR OPERATION, CASK HANDLING

Limiting spent fuel decay time to a minimum of 1,000 hours prior to moving a spent fuel cask into the spent fuel pit will ensure that potential offsite doses are a fraction of 10 CFR Part 100 limits should a dropped cask strike the stored fuel assemblies.

The restriction to allow only a single element cask to be moved into the spent fuel pit will ensure the maintenance of water inventory in the unlikely event of an uncontrolled cask descent. Use of a single element cask which nominally weighs about twenty-five tons will also increase crane safety margins by about a factor of four.

Requiring that spent fuel decay time be at least 120 days prior to moving a fuel assembly outside the fuel storage pit in a shipping cask will ensure that potential offsite doses are a fraction of 10 CFR 100 limits should a dropped cask and ruptured fuel assembly release activity directly to the atmosphere.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20565

FLORIDA POWER AND LIGHT COMPANY

DOCKET NO. 50-251

TURKEY POINT NUCLEAR GENERATING UNIT 4

AMENDMENT TO FACILITY OPERATING LICENSE

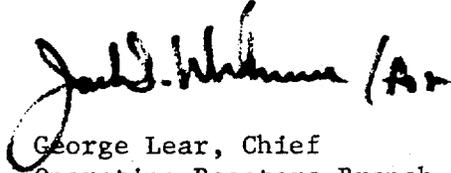
Amendment No. 18
License No. DPR-41

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The applications for amendment by Florida Power and Light Company (the licensee) dated June 22, 1976 and June 24, 1976, and related filings dated August 23, 1974, January 10, 1975, January 2, April 8, May 25, June 23 and June 24, and July 8, 1976, comply with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations; and
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by a change to the Technical Specifications as indicated in the attachment to this license amendment and Facility Operating License No. DPR-41, as amended, is hereby further amended by replacing in its entirety paragraph 2.F. thereof with the following:

"F. Pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of Turkey Point Units No. 3 and No. 4."

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read "George Lear", with a stylized flourish at the end.

George Lear, Chief
Operating Reactors Branch #3
Division of Operating Reactors

Attachment:
Changes to the
Technical Specifications

Date of Issuance: July 9, 1976

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ATTACHMENT TO LICENSE AMENDMENT NO. 18

TO THE TECHNICAL SPECIFICATIONS

FACILITY OPERATING LICENSE NO. DPR-41

DOCKET NO. 50-251

Replace page ii with the attached revised page.
Add pages 3.12-1 and B.3.12-1.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENTS NO. 19 AND NO. 18 TO LICENSES DPR-31 AND DPR-41

FLORIDA POWER AND LIGHT COMPANY

TURKEY POINT NUCLEAR GENERATING UNITS NO. 3 AND NO. 4

DOCKETS NOS. 50-250 AND 50-251

Introduction

By letter dated June 22, 1976, Florida Power and Light Company (FPL) requested amendments to the Facility Operating Licenses Nos. DPR-31 and DPR-41 for Turkey Point Nuclear Generating Units No. 3 and No. 4. The proposed amendments would allow the transfer of byproduct and special nuclear material between each of the two Turkey Point Units. FPL requested the licenses amendments in order to transfer spent fuel assemblies between the two spent fuel storage pools. The transfer operation between the two pools will require the use of a spent fuel cask and the cask handling crane.

We have been reviewing the use of the Turkey Point cask handling crane as part of a generic review of the cask handling system at all operating nuclear power stations. As part of our generic review we requested, on July 30, 1974 and November 28, 1975, that FPL provide us with analysis and other relevant information needed to determine the possible damage in the event of a fuel cask drop caused by a system failure. We also asked that FPL consider appropriate design or procedural modifications to reduce the probability of occurrence and consequences of a cask drop accident. FPL responded to our request by letters dated August 23, 1974, January 10, 1975, January 2, April 8, May 25, June 23 and June 24, and July 8, 1976.

In their letter of April 8, 1976, FPL proposed a Technical Specification change which would specify minimum frequencies for the testing of the cask crane interlock system. This requested Technical Specification change has been processed separately. In their letter of June 24, 1976, FPL proposed limiting conditions for operation (LCO's) which would limit the fuel cask weight and would specify a minimum decay period for stored spent fuel assemblies before a transfer cask may be moved into the spent fuel pool. These proposed LCO's have been included in this license amendment package.

Discussion

Condition 2.F. of each of the operating licenses for the Turkey Point Units Nos. 3 and 4 presently reads as follows: "Pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility." The term "facility" as described in the license, refers to the applicable unit. The possession by one unit of byproduct and special nuclear material produced by operation of the other unit, or facility, is therefore not specifically allowed as a condition of the licenses.

FPL proposed this license amendment because they wish to have the operational ability to store the spent fuel assemblies from one Turkey Point Unit in the other Unit's spent fuel storage pool. In authorizing this license amendment we not only considered the hazards considerations associated with the storage of spent fuel in either pool but also the hazards considerations associated with the transfer of fuel from one Unit's spent fuel pool to the other Unit's spent fuel pool.

Evaluation

A. Fuel Assembly Storage

Turkey Point Units No. 3 and No. 4 each have separate spent fuel storage pools. Both the pools and the fuel storage racks are of identical design. There are no significant differences between the fuel assemblies used in each Turkey Point reactor or stored in each pool. The stored fuel assemblies in each pool have no significant differences in design and have similar fuel loadings and fuel burnups.

The proposed license amendment does not alter the amount of reactor fuel which can be received, used and possessed by FPL for operation of the Turkey Point Units. The proposed license amendment does not alter the presently allowed amounts of reactor fuel which may be stored in each fuel storage pool. The limitations for reactor fuel storage remain governed by the amounts described in the joint Final Safety Analysis Report (FSAR) for the Turkey Point Units Nos. 3 and 4. Moreover, since we find that the storage of spent fuel from both Units in either spent fuel pool does not result in any condition for which the pool is not designed, we conclude that the storage of spent fuel from both Units in either spent fuel pool is acceptable.

B. Integrity of Spent Fuel Storage Pool

The ability of the spent fuel storage pool to maintain an adequate water level following damage to the pool floor resulting from a free fall drop of a spent fuel shipping cask was considered by FPL in the Turkey Point Plant Unit No. 3 and No. 4 FSAR. The Turkey Point spent fuel storage pool rests on compacted rock which has an extremely low permeability. FPL reports in the FSAR that loss of water, from the spent fuel storage pool through an area of this compacted rock equal to the pool floor area, with a fuel pool head of water is less than 1 gallon per minute. Therefore, if the cask should drop while being handled over the storage pool and damage to a portion of the pool floor should result, leakage from the fuel pool would be insignificant when compared to the makeup capacity of the Spent Fuel Pool Cooling System. The staff agreed with FPL in their postulated result of an accidental fuel cask drop into the spent fuel pool and discussed their concurrence in the staff Safety Evaluation of March 15, 1972.

FPL reanalyzed the cask drop in the pool as part of their internal safety analysis for the proposed transfer of fuel between the spent fuel storage pools. FPL assumed fuel was being transferred in a one fuel assembly cask (nominal weight 25 tons) and the cask experienced a free fall drop from a distance two feet above the pool surface (41 feet above ground level). FPL concluded that the concrete slab in the bottom of the pool would remain elastic during impact and that cracks would not develop from the structural response of the slab. Therefore, the staff's evaluation of a cask drop accident as discussed in our Safety Evaluation of March 15, 1972, remains valid.

To assure that a cask is not used in the pool which differs significantly from the cask assumed in the safety analysis, a requirement has been included in the Technical Specifications that states that only a single fuel assembly cask (nominal weight 25 tons) can be used in the spent fuel storage pool. We find this change to the Technical Specifications acceptable.

C. Cask Movements and Path of Travel

The path of travel of the spent fuel cask is simplified by the uncomplicated building arrangement. The cask will initially be positioned in the cask washdown area, directly east of the cask laydown area in the spent fuel pool. The cask is moved into the spent fuel building through an L-shaped hatchway in the wall and roof. The operation required to move the spent fuel cask into the spent fuel storage pool involves; (1) a 50 foot vertical lift, (2) a horizontal movement over the spent fuel storage pool wall, clearing the top of the wall by 6 inches, and (3) lowering the cask into its laydown area in the pool. Removal of the cask from the pool is accomplished by reversing these steps. A loaded cask outside the

storage pool can be either loaded on a cask transporter for offsite shipment or can be moved by the cask handling crane to the other fuel storage pool. When spent fuel assemblies are moved between the two spent fuel pools using a shipping cask and the spent fuel handling crane, FPL will administratively limit the height of the cask to approximately one foot above ground level. FPL has committed to include in their procedures the requirement that control power to the hoist be deenergized after the cask has been elevated to the proper height.

D. Integrity of Critical Safety Systems and Equipment

FPL and the NRC staff examined the movement of the spent fuel shipping cask as it is moved from cask laydown area in one spent fuel storage pool to the cask laydown area in the other pool. Each pipe and electrical duct in the path of cask travel was examined to determine: (1) if the pipe or duct is adequately protected from a cask drop or tip accident or (2) if rupture of the pipe (all electrical ducts are protected) would jeopardize the reactors ability to safely reach a cold shutdown condition.

Our evaluation identified that if a cask were dropped in the cask washdown area outside the pool as it was being moved over the spent fuel storage pool wall, the falling cask could conceivably rupture the supply and return lines to the spent fuel pool heat exchangers. Based on our review, this possibility represents the worst case effect in terms of immediate impact on plant safety. To minimize the effect of rupturing these lines, FPL will adopt procedures, when the cask is handled near the pool, which will align the component cooling water system in such a manner that the loss of component cooling water will be limited to non-essential equipment. This alignment of components is possible because the component cooling water system for each Turkey Point Unit can be split into two isolated parts with each part using one-half of a split surge tank. We agree with FPL's conclusion that the rupture of any non-protected pipe along the path of cask travel, including the component cooling water lines described above, would not prevent the safe shutdown of an operating reactor.

FPL also examined each buried electrical duct and pipe to determine if it was adequately protected. The electrical ducts are constructed of reinforced concrete and are covered by a 4 inch concrete slab plus 2 feet 11 inches of earth. The buried pipes are covered by at least 5 feet 3 inches of earth and some pipes are also covered with a four inch concrete slab. Based on our evaluation we have concluded that the buried pipes and electrical ducts along the path of cask transfer are adequately protected against damage from a dropped or tipped nominal 25 ton shipping cask.

E. Crane and Cask Handling System

FPL has performed their analysis of the cask handling system assuming a nominal 25 ton single fuel assembly shipping cask. The shipping cask will be moved by the presently installed 105 ton cask handling crane. Since the capability of the crane far exceeds the load which will be lifted, considerable safety margins exist. These margins minimize the possibility of a cask drop. The critical structural element during the lift of the shipping cask has been identified to be the cask trunnions and lifting yoke. FPL analyzed the load applied to the trunnions and lifting yoke assuming the sudden application of the crane brakes while the cask is being lowered at its maximum speed. This analysis showed that a sufficient margin of safety exists between the static plus dynamic loads and the allowable ultimate yield stress.

We have reviewed an outline of FPL's planned cask handling crane test and inspection procedures which will be completed prior to cask movement. We have concluded that FPL has adopted procedures which minimize the possibility of a cask drop accident.

F. Radiological Accident Analyses

1. Tipped and Dropped Cask in Fuel Pool

In their submittal of June 24, 1976, FPL proposed, in response to our request, a Technical Specification change that specify a minimum period (1000 hours) for the decay of stored spent fuel before a shipping cask may be moved into the spent fuel storage pool. This change was requested by the staff to assure that in the event a shipping cask were dropped in the storage pool and fell on stored fuel assemblies the resulting release of activity past the facility boundary would not be unacceptable. Since the Technical Specifications prohibit the movement of a shipping cask over the stored fuel, such an accident could only result from the dropped cask tipping during its fall.

Our independent review of the tipped cask accident determined that even if all of the fuel rods were damaged in all of the fuel elements upon which a tipped cask could impact, a 1000 hour fuel decay period will assure that the resultant doses at the site boundary are within the calculated doses (17 Rem) for the design basis fuel handling accident accepted by the NRC staff in their Safety Evaluation dated March 15, 1972. The inclusion of the required fuel decay period in the Technical Specifications will maintain the consequences of any conceivable fuel handling accident within previously determined acceptable limits.

2. Dropped Cask Outside of Fuel Pool

We evaluated the potential consequences of a fuel handling accident in which it is postulated that a shipping cask containing one fuel assembly with a 1370 hour (approximately 57 days) decay period was dropped during transfer. In performing this evaluation we made the conservative assumptions that the cask failed, all the fuel pins ruptured and the gap activity of halogens and noble gases is released in a single puff to the atmosphere. We concluded, based on our evaluation, that the offsite doses resulting from such an accident would be equivalent to the calculated doses for the design basis fuel handling accident accepted by the NRC staff in their Safety Evaluation dated March 15, 1972. In accordance with FPL's commitment contained in their letter of July 8, 1976, Technical Specification 3.12(3) prohibits the movement of any fuel assembly out of the spent fuel pool in the spent fuel cask that has less than a 120 day (vs. 57 days) decay period. Therefore, the doses at the site boundary for this postulated case would be much less (under 1.6 Rem) and thus well within the calculated doses (17 Rem) for the design basis fuel handling accident accepted in the staff's Safety Evaluation dated March 15, 1972; and thus are acceptable. Even if all gaseous fission product activity were released as a result of an accident, the site boundary dose would still be only some 16 Rem to the thyroid and thus the consequences are acceptable.

G. Shipping Cask Heat Load

FPL plans to use the National Lead Institute cask NLI 1/2 to transfer fuel between the two spent fuel storage pools. This cask is designed for a dry transport of one PWR fuel assembly having a heat rate of 10.63 kW.

By letter dated July 8, 1976, FPL has committed to using this cask only for assemblies having calculated heat rates of 10.6 kW or less and to performing a cask heat up test using a least decayed spent fuel assembly. To assure that assemblies having heat rates no greater than 10.6 kW are loaded into the cask, Technical Specification 3.12(3) prohibits FPL from loading the cask with any assembly that has less than a 120 day decay period. Our review of the information submitted by FPL indicates that the calculated heat rates are correct for the assumed 120 day decay period; and thus, the shipping cask heat load is acceptable.

Summary

Based on our review we have determined that the proposed movement of spent fuel assemblies between the spent fuel storage pools at each Turkey Point facility is acceptable because: (1) the fuel assemblies can be safely mixed and stored in either storage pool, (2) the spent fuel pool will not be damaged from a dropped spent fuel shipping cask,

(3) the movement of the cask will not jeopardize any equipment necessary for the safe shutdown of the reactor, and (4) procedures have been adopted which will limit the possibility of a cask drop accident. Moreover, we have determined that the proposed license amendment and Technical Specification changes do not increase the probability or consequences of an accident previously considered and do not decrease a margin of safety. In addition, we have determined that the consequences of any new accidents postulated in this safety evaluation are not greater than consequences determined for similar previously considered accidents and are within previously determined acceptable limits. Therefore, we conclude that the proposed license amendment and Technical Specification changes are acceptable.

Environmental Consideration

We have determined that the amendments do not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendments involve an action which are insignificant from the standpoint of environmental impact and pursuant to 10 CFR §51.5(d)(4) that an environmental statement, negative declaration, or environmental impact appraisal need not be prepared in connection with the issuance of these amendments.

Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the changes do not involve a significant increase in the probability or consequences of accidents previously considered and do not involve a significant decrease in a safety margin, the changes do not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Dated: **July 9, 1976**

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKETS NOS. 50-250 AND 50-251

FLORIDA POWER AND LIGHT COMPANY

NOTICE OF ISSUANCE OF AMENDMENTS TO FACILITY
OPERATING LICENSES

Notice is hereby given that the U.S. Nuclear Regulatory Commission (the Commission) has issued Amendments No. 19 and No. 18 to Facility Operating Licenses Nos. DPR-31 and DPR-41, respectively, issued to Florida Power and Light Company which revised Technical Specifications for operation of the Turkey Point Nuclear Generating Units No. 3 and No. 4, located in Dade County, Florida. The amendments are effective as of their date of issuance.

The amendments consist of a license amendment and Technical Specifications change authorizing the transfer of byproduct and special nuclear material between each of the Turkey Point Units.

The applications for these amendments comply with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the licenses amendments. Prior public notice of these amendments was not required since the amendments do not involve a significant hazards consideration.

The Commission has determined that the issuance of these amendments will not result in any significant environmental impact and that pursuant

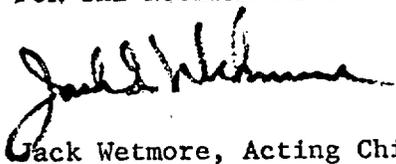
to 10 CFR §51.5(d)(4) an environmental statement, negative declaration or environmental impact appraisal need not be prepared in connection with issuance of these amendments.

For further details with respect to this action, see (1) the applications for amendments dated June 22 and June 24, 1976, and related filings dated August 23, 1974, January 10, 1975, January 2, April 8, May 25, June 23 and June 24, and July 8, 1976, (2) Amendments No. 19 and No. 18 to Licenses Nos. DPR-31 and DPR-41, and (3) the Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C., and at the Environmental & Urban Affairs Library, Florida International University, Miami, Florida 33199.

A copy of items (2) and (3) may be obtained upon request addressed to the U.S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland, this 9th day of July, 1976.

FOR THE NUCLEAR REGULATORY COMMISSION



Jack Wetmore, Acting Chief
Operating Reactors Branch #3
Division of Operating Reactors