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EISENHUT,D.G. Division of Licensing

SUBJECT: Forwards revised justification for interim operation,prior to installation of containment flame impingement shields, highlighting measures taken to provide fire protection in affected areas above & beyond present NRC requirements.

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P. O. BOX 14000, JUNO BEACH, FL 33408

FLORIDA POWER & LIGHT COMPANY

March 21, 1983
L-83-151

Office of Nuclear Reactor Regulations
Attention: Mr. Darrell G. Eisenhut, Director
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Eisenhut:

Re: St. Lucie Unit No. 2
Docket No. 50-389
Fire Protection System

In our letter L-83-99, dated February 25, 1983, FP&L provided to the NRC a detailed justification for not installing the containment flame impingement shields prior to core load. In recent conversations with your staff FP&L has made suggestions to improve on our efforts to assure safety during the time the shields will not be installed.

Attached is FP&L's revised justification for interim operation which highlights measures taken by FP&L to provide fire protection in those affected areas which goes above and beyond present staff requirements.

Should you have any questions regarding this matter, please do not hesitate to contact us.

Very truly yours,

Robert E. Uhrig
Vice President
Advanced Systems & Technology

REU/RJS/PPC/cab

B002

Attachment

cc: J. P. O'Reilly, Region II
Harold F. Reis, Esquire

ATTACHMENT

The following items will not be completed by core load. The justification below includes a description, the reason that it is not complete, the schedule for completion and the justification for operating until it is complete.

I. RCB Cable Tray Flame Impingement Shields

a. FP&L has committed to install horizontal flame impingement shields in the Reactor Containment Building on all redundant cable trays containing safe shutdown cables. These shields will be installed below the lowest tray in each stack.

b. The reason that this modification will not be completed by core load is construction/design oriented. Separating the redundant cable trays in the RCB will affect approximately two hundred cable tray supports. The work involved in completing this task includes:

(1) compilation of as-built data on two hundred affected cable tray supports;

(2) re-analysis of fifty typical tray supports (determined from (1) above to ensure that the seismic qualification of the trays is maintained.

(3) detailed design of the flame shield support frame;

(4) development of reinforcing details on an estimated 30 typical cable tray support designs needing modification; and,

(5) upgrade of drawings, issue of sketches and plant change modifications.

In addition to the effort described above, the following construction schedule constraints exist:

(1) the craft necessary to install approximately 1100 linear feet of shielding are being utilized to install other items that have been committed to be completed prior to core load (i.e., tray riser fire stops, conduit plugging, conduit wrapping, conduit seismic supports and analyses);

(2) at this stage of the project schedular windows are not available to install these shields without severe impact on the upcoming major milestone (i.e., safeguards testing, core load and initial criticality);

(3) once the core is loaded, construction activities within the RCB are going to be restricted due to cleanliness and security requirements; and,

(4) any construction between initial criticality and first refueling would create an unwarranted ALARA concern.

c. The flame shields in the RCB will be installed by the end of the first refueling.

d. Operating of the reactor prior to installing the flame impingement shields is justified for the following reasons:

(1) Administrative controls on site require a high degree of cleanliness in containment prior to plant operation. Containment surveys are performed before operation to insure all materials are removed which are not designed for in-containment. This will necessitate the removal of any potential transient combustibles before reactor operation. Because of this requirement, the probability of a transient combustible fire is minimal. In addition, FP&L will augment existing administrative procedures to require an additional final surveillance of those affected cable tray areas.

(2) Smoke detectors are located in the areas where the flame impingement shields are to be installed. The likelihood of an undetected fire is thereby reduced. In addition, the affected detectors will be tested to show operability during any unscheduled outages that may occur in the interim. (Unscheduled outages are defined as the plant being in Mode 5 for greater than 72 hours.)

(3) Hose stations are located in containment such that any location can be reached by a fire hose. In conjunction with the trained fire brigade, this reduces the possibility of a fire causing severe damage to any equipment and cables. In addition, during the interim, affected area hose stations will be checked prior to starting up from any unscheduled outages. (Unscheduled outages are defined as the plant being in Mode 5 for greater than 72 hours.)

(4) The floor areas under the cable trays contain floor drains which go to a control sump. If a liquid combustible were to be present, all but a small portion would be harmlessly drained to the sump. This reduces the likelihood of there being a large transient combustible fire. FP&L during the interim period will make sure in those affected areas that drains are free of debris which would preclude the possibility of liquid combustible build-up.

(5) All cable trays are of the solid bottom design. These sold bottom trays act as flame impingement shield for small or short duration fires. This also reduces the likelihood of a fire damaging any cables.

(6) All cables in the RCB are IEEE-383 qualified regarding flame retardation properties. In conjunction with the solid bottom trays, this essentially removes the

cable as a source of fuel for combustion in the containment. This reduces the likelihood of a fire being propagated or sustained in the containment. All safety related circuits in the affected fire area exceed the separation requirements of RG 1.75 Rev. 1. Additionally, the affected cable trays will be thoroughly checked prior to starting up from any unscheduled outages. (Unscheduled outages are defined as the plant being in Mode 5 for greater than 72 hours.)

(7) The containment contains 2.5 million cubic feet of free volume. This massive area basically categorizes the containment as an outdoor area with regard to a fire. It prevents hot gas stratification and reduces radiant heating effects thus greatly reducing the potential damage of a fire.

(8) The reactor coolant pumps have an oil collection system, which is designed to remove the combustible as a potential fire hazard in containment. With the exception of the cables, the reactor coolant pump oil system is the only other major source of in-situ combustibles in containment. In addition, the reactor coolant pump oil reservoirs are provided with a level indication and alarm in the control room which would identify to an operator that a potential fire hazard may exist. Also, FP&L will walkdown the oil collection system prior to starting up from any unscheduled outages. (Unscheduled outages are defined as the plant being in Mode 5 for greater than 72 hours).

(9) As a final measure to assure plant safety, FP&L intends to install flame retardant blankets on the bottom tray for each cable tray stack whose bottom tray contains cables needed for safe shutdown. Where the bottom tray in a rack contains no essential cables for safe shutdown, the tray will be utilized as the flame impingement shield for the safety related trays above. These flame retardant blankets will be installed prior to exceeding 5% power.

In conclusion, FP&L believes with the present equipment configurations, installed fire protection devices and the additional above and beyond measures being provided to assure plant safety, the probability of a fire in containment capable of reducing the safety of the plant is sufficiently low as to warrant delaying a difficult constuction effort to install the flame impingement shields until the end of the first refueling. In addition, FP&L also believes delay will not present an unresolved safety issue and will not pose an increased risk to the health and safety of the public.