FPL

FLORIDA POWER & LIGHT COMPANY

November 29, 1982
L-82-519

Reliability and Risk Assessment Branch
Attention: Adel El-Bassioni
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. El-Bassioni:

Re: The National Reliability Evaluation Program
(NREP) Procedures Guide (NUREG/CR-2815); Comments

Florida Power & Light Company has reviewed NUREG/CR-2815 on the subject topic referenced in the Federal Register on October 25, 1982 (47 FR 47343), and herein provides comments related thereto.

General

The subject NUREG's scope is limited as per section 1.2, yet the models conceived are expected to be general enough to include external events. There would appear thereby to be a conflict in scoping.

Section 1.2

The NRC staff decision to limit the scope of NREP to the determination of core damage frequencies appears well thought out. As the uncertainties associated with state of the art consequence modeling are too large to form the basis for any rational, regulatory decision making, limitation to core damage frequencies is strongly supported.

Section 2.0

No formal Quality Assurance requirements are placed on the PRA analysis. Past PRA's have been criticized in this area (WASH-1400). In addition, the type of NRC review is not specified. Will FPL be required to furnish all documents consulted for the NREP and/or retain contact with the analyst for a specified period in order to answer NRC questions? Past experience has shown that the PRA teams tend to disperse some time after the initial draft is written. A fault tree can be difficult to review without ready access to the analyst responsible.

Section 3.4.3

The type of "realistic" analyses should be specified. If one plant chooses to use conservative assumptions and another chooses realistic assumptions, interplant comparisons will not be possible.

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Section 3.4.5

Since operating data review is common to all plants, the NRC staff should develop a document (updated yearly) which includes all appropriate information. This would avoid each PRA group's having to repeatedly formulate operating data.

Section 4.2.3

Considerable controversy exists on a value to assign to Reactor Protection System unavailability. The procedures guide should identify acceptable generic values and plant specific values.

Section 4.3.1.4.2.a

The guide suggests that procedural events modeling be done first with screening probabilities and then with values obtained from a more detailed analysis for the dominant human errors. To avoid redundant analysis, the guide should state that the screening probabilities be used when the generic quantification is performed and the more detailed analysis values used when the plant specific sequence quantification is performed.

Section 4.3.1.4.2.b

Regarding post-event cognitive modeling, inconsistency exists regarding potential operator recovery actions for failed or mispositioned components. On page 23, it is stated that these actions should not be included in the fault trees. However, on page 38 it is stated that cognitive errors associated with the recovery of systems are identified either in the event tree or at the top most level of the fault trees.

Section 4.3.2.1

How much and what kind of documentation is required to support the more realistic analysis?

Section 5.2

This double quantification (baseline and plant specific) is costly. When using code SETS, for example, it is convenient to use truncation techniques based on probability considerations to obtain cut sets and quantification. The NREP will require this to be done twice.

Section 5.5

The appendix section H.5 is missing.

Section 5.5.2

It is not believed that the sole use of gamma distribution for the specified frequency distribution is justified.

Section 5.6.4

Same comment as for Section 5.5.2.

Section 6.0

Same comment as for Section 5.2.

Section 6.1.4

It is felt that the NRC should place a limitation on the order of the cut set (number of terms per cut set) or the truncation probability value (i.e. 10^{-6} or 10^{-7}).

Section 6.5.3

If fault tree linking is used, a system-function tree results. Frontline and support systems are combined into a large fault tree. The cut sets that results are those which fail the system function. Individual system cut sets are not obtained. If the fault tree linking method is used, the top 20 contributors, for example, to the system-function failure can be obtained.
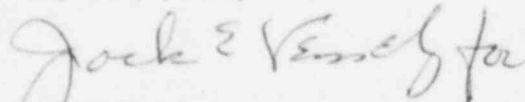
Section 6.5.4

If truncation is used, many high order cut sets are eliminated based on cut set size or probability. Unless the room location is specifically identified on the fault tree, this sensitivity study will not be useful.

Section 7.1

If fault tree linking is used, cut sets of frontline and support systems are not available without additional work. Therefore, Section 7.1 (i) (c) should be deleted.

Very truly yours,

Robert E. Uhrig
Vice President
Advanced Systems & Technology

REU/DAC/cab

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