St. Lucie Unit 1
Extended Power Uprate
Licensing Report

Attachment 5
Appendix B

Additional Codes and Methods

This coversheet plus 2 pages

APPENDIX B
ADDITIONAL CODES AND METHODS

In addition to the codes and methods listed in Appendix A of this LR, numerous analytical codes and methods were used to support the Extended Power Uprate (EPU). These have been reviewed against the codes and methods currently described in the UFSAR. The information presented below represents the set of key codes used that do not currently reside in the UFSAR as well as their associated application. All of these codes/methods have been determined by Florida Power & Light to be appropriate for use in their respective applications.

Table B-1
Additional Codes and Methods

CODE	APPLICATION
AUTORLBLOCA	The AUTORLBLOCA code is used for generation of ranged parameter values, transient input, transient runs and general output documentation.
CAFTA	The Computer Assisted Fault Tree Analysis (CAFTA) code is used in the modeling, development and maintenance of fault tree models.
CENTS	This code was used to perform Nuclear Steam Supply System (NSSS) modeling.
CHECWORKS SFA	This code was used to determine Flow Accelerated Corrosion (FAC).
FLOOD3 Mod2	This code was used to calculate Mass and Energy (M&E) releases from postulated Reactor Coolant System (RCS) pipe ruptures.
GOTHIC	This code was used for various applications including determining Shield Building annulus pressure, Emergency Core Cooling ventilation reviews and Refueling Water Tank temperatures.
HRA	HRA Calculator is a software tool designed to facilitate a standardized approach to human reliability analysis (HRA).
MAAP	The Modular Accident Analyses Program (MAAP) simulates plant response to severe accidents given a set of initiating events and operator actions. This code is used to support development of the St. Lucie Probabilistic Risk Analysis (PRA).
MCNP5	MCNP5 was the principal method used for the criticality analysis of the fuel pool storage racks.
NSSSPlus	This code was used to generate Performance Capability Working Group (PCWG) design sheets.
ORIGEN2.1	This code was used to support the determination of core inventory nuclides.
ORIGEN2.2.1	This code is used to calculate EPU core inventory.
PIPESTRESS	This code was used to perform pipe stress analysis.

Table B-1 (Continued)
Additional Codes and Methods

CODE	APPLICATION
PITRUST-PC	This code was used to obtain local pipe stresses in accordance with Welding Research Council (WRC) No. 107 at trunnions and branch pipe exits.
RADTRAD-NAI	This code was used to perform Alternate Source Term (AST) dose consequence analysis.
RELAP5	This code was used to determine forcing functions for the Power Operated Relief Valve (PORV) opening event.
RODEX2-2A	This code was used to determine the burnup-dependent initial fuel rod conditions.
STEHAM-PC	This code was used to determine forcing functions for a main steam isolation valve (MSIV) closure event and a turbine stop valve (TSV) closure fluid transient event.
WATHAM-PC	This code was used to determine forcing functions for the feedwater regulating valve, isolation closure and feedwater pump trip events.