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 FACIL: 50-389 St. Lucie Plant, Unit 2, Florida Power & Light Co. 05000389  
 AUTH. NAME: WOODY, C. O. AUTHOR AFFILIATION: Florida Power & Light Co.  
 RECIP. NAME: THADANI, A. C. RECIPIENT AFFILIATION: PWR Project Directorate 8

SUBJECT: Documents 860327 telcon response re asymmetries in steam generator tube plugging in C-E large break LOCA analysis, per 860131 submitted & 860310 request for approval.

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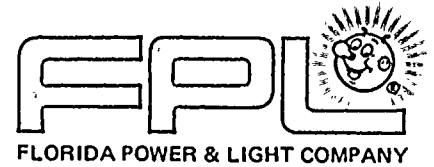
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Office of Nuclear Reactor Regulation  
Attention: Mr. Ashok C. Thadani, Director  
PWR Project Directorate #8  
Division of PWR Licensing - B  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555


Dear Mr. Thadani:

Re: St. Lucie Unit 2  
Docket No. 50-389  
C-E Large Break LOCA Analysis

By letter dated January 31, 1986 (L-86-37), Florida Power & Light Company (FPL) submitted the results of the latest large-break LOCA analysis for St. Lucie Unit 2. On March 10, 1986 (L-86-81), FPL requested NRC staff approval of the new analysis.

By telephone conference on March 27, 1986, FPL, with the assistance of our NSSS vendor, responded to an NRC staff question about how asymmetries in steam generator tube plugging were addressed in the analysis. The attached written response documents the information that we provided during the telephone conference.

Very truly yours,

  
C. O. Woody  
Group Vice President  
Nuclear Energy

COW/MAS/gp

Attachment:

cc: Dr. J. Nelson Grace, USNRC, Region II  
Harold F. Reis, Esquire, Newman & Holtzinger

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## ATTACHMENT

**NRC Request:** The large break LOCA analysis for St. Lucie Unit 2 assumed 1250 plugged tubes per steam generator. Was asymmetric steam generator tube plugging considered? If so, justify how the symmetric tube plugging analysis accommodates unequal plugging between the generators.

**Response:** The large break LOCA analysis of Reference 1 assumed 1250 plugged tubes per steam generator. However, asymmetric steam generator tube plugging was considered and it was concluded that the symmetric tube plugging analysis implicitly covers unequal plugging between generators, provided no more than 1250 tubes are plugged in either steam generator. The basis for this conclusion is as follows:

Tube plugging affects primarily the refill/reflood portion of the large break LOCA transient. Steam generator tube plugging will have no significant effect on the blowdown portion of the transient. The main impact of steam generator tube plugging is to increase the resistance to flow passing through the primary side of the steam generator, thereby inhibiting steam venting from the core outlet plenum to the break. This reduces the refill/reflood rates and increases the peak cladding temperature. With regard to this effect, plugging fewer than 1250 tubes in either or both steam generators will reduce the flow resistance and will improve the refill/reflood rates. Consequently, a reduction in the number of plugged tubes in either steam generator will reduce the peak cladding temperature relative to the analysis results with 1250 plugged tubes in each generator (Reference 1).

**Reference 1:** Letter L-86-37 from C. O. Woody (FPL) to F. J. Miraglia (NRC), "C-E Large Break LOCA Analysis," January 31, 1986.