

Attachment 2

Duke Power Company  
Oconee Nuclear Station

Oconee Unit 1 Cycle 8  
Reload Report

Remove Pages

IV  
-  
7-2  
7-3

Insert Pages

IV  
V  
7-2  
7-3

Attachment 3

Duke Power Company  
Oconee Nuclear Station

Description of Work Scope Planned  
for Justification for  
Use of FLECSET

The FLECSET code incorporates the FLECHT-SEASET test data for the prediction of reflooding heat transfer rates and quench time for cosine as well as skewed power shapes. Use of this code for large break LOCA analysis, in which allowable LOCA kw/ft limits are determined will be justified in the following manner:

1. Reflood heat transfer coefficients obtained from benchmarks using the FLECSET code will be compared with existing experimental data <sup>1,2</sup> to demonstrate conservatism in the FLECSET code.
2. A listing of the FLECSET code will be provided and corresponding user guidance. A sample case will be provided to illustrate the application of the FLECSET code.
3. For each of the core elevations at which a LOCA kw/ft limit is specified (2,4,6,8 and 10 ft) the following information will be provided:
  - a. Using the FLECSET code, reflood heat transfer coefficients vs. transient time will be calculated and compared to previously generated reflood heat transfer coefficients vs. transient time based on the methodology reported in BAW-10104, Rev. 3.
  - b. The key parameter for the above comparisons will be conserved whenever possible, such as, system pressure, inlet subcooling, initial cladding temperature, flooding rates equivalent peak power and power shapes.
4. An explanation of the extrapolation of information to the 2 and 4 foot elevations for use in FLECSET will be provided, since the experimental data are based on the core mid-plane and core exit regions. Reflood heat transfer predictions at the 2 foot core elevation are significantly greater using FLECSET than the FLECHT predictions in BAW10104.

This work will be performed to justify the use of FLECSET as a compensating model to the NUREG-0630 cladding rupture models in support of regaining 0.5 kw/ft at the lower core elevations. Cladding temperature at the 2 foot elevation vs. time will be compared utilizing the FLECSET and FLECHT codes.

#### References:

1. N. Lee, S. Wong, H. C. Yeh, and L. E. Hochreiter, "PWR FLECHT SEASET Unblocked Bundle, Forced and Gravity Reflood Task Data Evaluation and Analysis Report", NUREG/CR-2256 (EPRI NI-2013 or WCAP-9891), November, 1981
2. G. P. Lilly, H. C. Yeh, C. E. Dodge, and S. Wong, "PWR FLECHT Skewed Profile Low Flooding Rate Test Series Evaluation Report", NRC-2, NRC-EPRI Cooperative Research and Development Report, W, November 1977.