

ENCLOSURE 2

ST. LUCIE 2

DOCKET 50-389

CEN-279(L)-NP

Conservatism of the Axial Shape Index DNB  
Limiting Condition for Operation Below 30% Power

April 1984

COMBUSTION ENGINEERING, INC.  
NUCLEAR POWER SYSTEMS  
POWER SYSTEMS GROUP  
WINDSOR, CONNECTICUT 06095

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LEGAL NOTICE

This report was prepared as an account of work sponsored by Combustion Engineering, Inc. Neither Combustion Engineering nor any person acting on its behalf:

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B. Assumes any liabilities with respect to the use of, or for damages resulting from the use of, any information, apparatus, method or process disclosed in this report.



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Conservatism of the Axial Shape Index DNB.

LCO Below 30% Power

On Figure 1, the solid lines drawn in the shape of a tent represent the DNB LCO ASI vs power limits that St. Lucie Unit 2 must operate within during Cycle 1. This tent is a conservative depiction of the actual calculated values forming the DNB LCO. These calculated values were generated using computer runs by starting with the DNB SAFDL (which was 1.20 for Cycle 1) and then "backing off" as much as is necessary over each portion (positive and negative ASI) to assure that the limiting transient (eg. CEA drop, Loss of Flow) provides sufficient margin to the SAFDL when initiated from anywhere within the LCO space.

As can be seen from Figure 1, as power level drops the axial shape index permitted by the DNC LCO becomes [

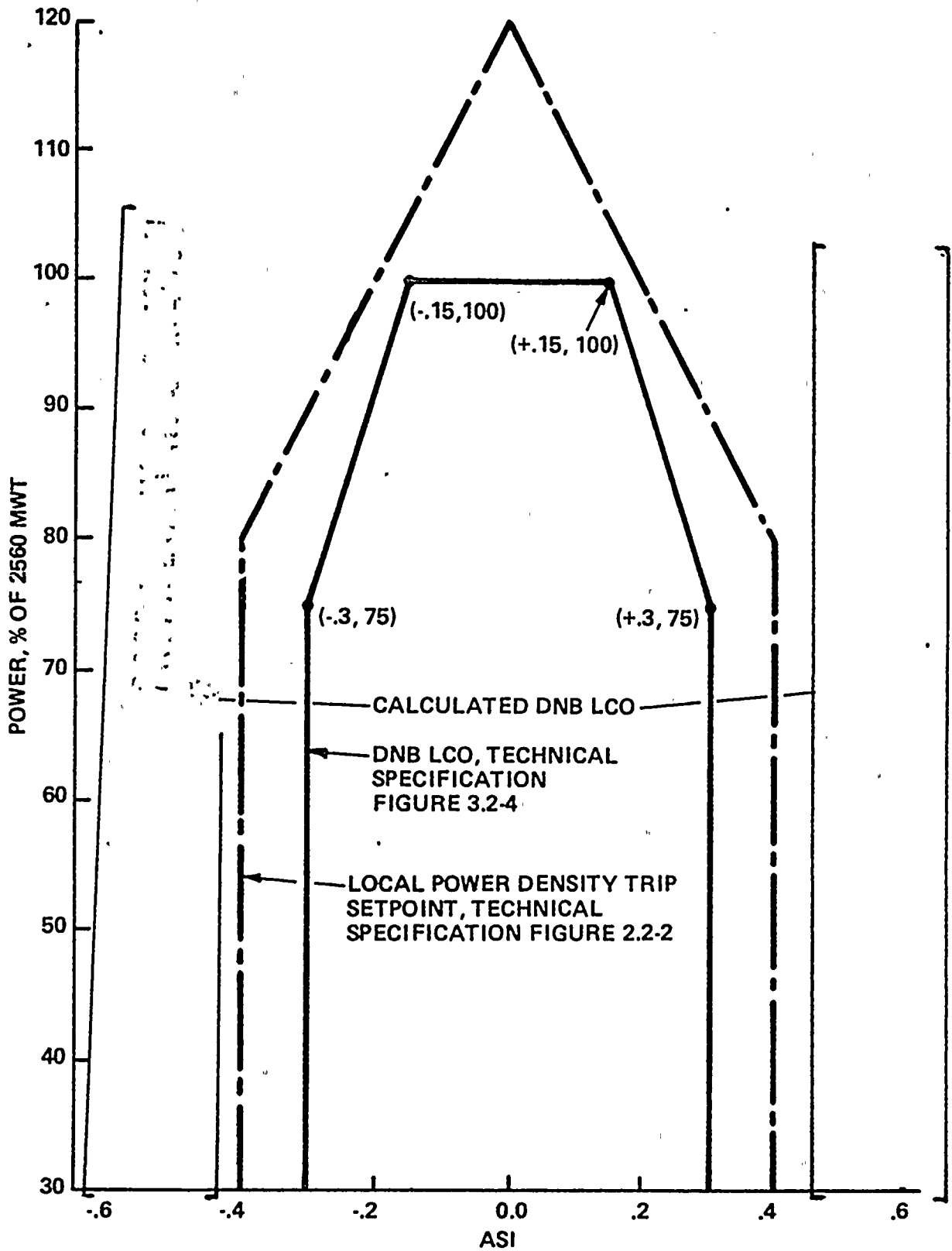
] In the figure this [ ] This was done for convenience in plotting only; in reality the [ ]

Superimposed on this Figure is the local power density (LPD) LSSS for St. Lucie 2 Cycle 1. It can be seen from the figure that the installed LSSS for local power density becomes more restrictive than the DNB LCO, at approximately 77% power i.e., [

] This fact provides the basis of the position that, conservatively, the LSSS for LPD may be treated as more limiting than the DNB LCO below 30% power.

Below are listed selected values of overpower margin for different power levels and axial shape indices.

<u>POWER</u>	<u>ASI</u>	<u>RODS</u>	<u>OVERPOWER MARGIN</u>
12%	-.3	12% PDIL	[ ]
12%	-.4	12% PDIL	
30%	-.3	30% PDIL	
30%	-.4	30% PDIL	
50%	-.3	50% PDIL	
50%	-.4	50% PDIL	



ST. LUCIE 2, CYCLE 1 - DNB LCO AND  
LOCAL POWER DENSITY TRIP vs ASI

FIGURE  
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STATE OF FLORIDA            )  
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COUNTY OF DADE            )        ss.

          J. W. Williams, Jr.          , being first duly sworn, deposes and says:

That he is           a Vice President           of Florida Power & Light Company, the Licensee herein;

That he has executed the foregoing document; that the statements made in this document are true and correct to the best of his knowledge, information, and belief, and that he is authorized to execute the document on behalf of said Licensee.

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Enclosure 1 is proprietary, and therefore, exempt from public disclosure in accordance with Section 9.5 (4) of the NRC "Rules of Practice", Title 10, Code of Federal Regulations, per Attachment 1 of the basic letter provided by Combustion Engineering, Inc.

  
\_\_\_\_\_

J. W. Williams, Jr.

Subscribed and sworn to before me this

  2   day of   MAY  , 19  84  .

  
\_\_\_\_\_

NOTARY PUBLIC, in and for the County of Dade, State of Florida.

My commission expires:   2-14-88  

NOTARY PUBLIC STATE OF FLORIDA  
MY COMMISSION EXP. FEB 14, 1988  
BONDED THRU GENERAL INS. UND.

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AFFIDAVIT PURSUANT

TO 10 CFR 2.790

Combustion Engineering, Inc.     )  
State of Connecticut            )  
County of Hartford             )    SS.:

I, P. L. McGill, depose and say that I am the Vice President, Commercial, of Combustion Engineering, Inc., duly authorized to make this affidavit, and have reviewed or caused to have reviewed the information which is identified as proprietary and referenced in the paragraph immediately below. I am submitting this affidavit in conformance with the provisions of 10 CFR 2.790 of the Commission's regulations in conjunction with the application of Florida Power & Light Company for withholding this information.

The information for which proprietary treatment is sought is contained in the following document:

CEN-279(L)-P, Conservatism of Axial Shape Index DNB Limiting Condition for Operation Below 30% Power, April 1984.

This document has been appropriately designated as proprietary.

I have personal knowledge of the criteria and procedures utilized by Combustion Engineering in designating information as a trade secret, privileged or as confidential commercial or financial information.

Pursuant to the provisions of paragraph (b) (4) of Section 2.790 of the Commission's regulations, the following is furnished for consideration by the Commission in determining whether the information sought to be withheld from public disclosure, included in the above referenced document, should be withheld.

1. The information sought to be withheld from public disclosure are the values of thermal margin calculated for the reactor core and how these values can be translated into plant operational flexibility, which is owned and has been held in confidence by Combustion Engineering.

2. The information consists of test data or other similar data concerning a process, method or component, the application of which results in a substantial competitive advantage to Combustion Engineering.

3. The information is of a type customarily held in confidence by Combustion Engineering and not customarily disclosed to the public. Combustion Engineering has a rational basis for determining the types of information customarily held in confidence by it and, in that connection, utilizes a system to determine when and whether to hold certain types of information in confidence. The details of the aforementioned system were provided to the Nuclear Regulatory Commission via letter DP-537 from F.M. Stern to Frank Schroeder dated December 2, 1974. This system was applied in determining that the subject document herein are proprietary.

4. The information is being transmitted to the Commission in confidence under the provisions of 10 CFR 2.790 with the understanding that it is to be received in confidence by the Commission.

5. The information, to the best of my knowledge and belief, is not available in public sources, and any disclosure to third parties has been made pursuant to regulatory provisions or proprietary agreements which provide for maintenance of the information in confidence.

6. Public disclosure of the information is likely to cause substantial harm to the competitive position of Combustion Engineering because:

a. A similar product is manufactured and sold by major pressurized water reactor competitors of Combustion Engineering.

b. Development of this information by C-E required thousands of manhours and tens of thousands of dollars. To the best of my knowledge and belief a competitor would have to undergo similar expense in generating equivalent information.

c. In order to acquire such information, a competitor would also require considerable time and inconvenience related to the calculation of similar thermal margin values and the translation of those values into plant operating flexibility.

d. The information required significant effort and expense to obtain the licensing approvals necessary for application of the information. Avoidance of this expense would decrease a competitor's cost in applying the information and marketing the product to which the information is applicable.

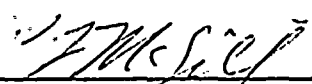
e. The information consists of values of thermal margin calculated for the reactor core and how these values can be translated into plant operational flexibility, the application of which provides a competitive economic advantage. The availability of such information to competitors would enable them to modify their product to better compete with Combustion Engineering, take marketing or other actions to improve their product's position or impair the position of Combustion Engineering's product, and avoid developing similar data and analyses in support of their processes, methods or apparatus.




f. In pricing Combustion Engineering's products and services, significant research, development, engineering, analytical, manufacturing, licensing, quality assurance and other costs and expenses must be included. The ability of Combustion Engineering's competitors to utilize such information without similar expenditure of resources may enable them to sell at prices reflecting significantly lower costs.

g. Use of the information by competitors in the international marketplace would increase their ability to market nuclear steam supply systems by reducing the costs associated with their technology development. In addition, disclosure would have an adverse economic impact on Combustion Engineering's potential for obtaining or maintaining foreign licensees.

Further the deponent sayeth not.

  
\_\_\_\_\_  
P. L. McGill  
Vice President  
Commercial

Sworn to before me  
this 19<sup>th</sup> day of April 1984

  
\_\_\_\_\_  
Notary Public  
LYDIA A. SMITH, NOTARY PUBLIC  
STATE OF CONNECTICUT No. 68542  
COMMISSION EXPIRES MARCH 31, 1989