

# The Light company

Houston Lighting & Power

P.O. Box 1700 Houston, Texas 77001 (713) 228-9211

February 16, 1990

ST-HL-AE-3350

File No.: G3.3

10CFR50.54(f)

U. S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, DC 20555

South Texas Project Electric Generating Station  
Units 1 and 2  
Docket Nos. STN 50-498, STN 50-499  
Response to NRC IE Bulletin 89-003,  
"Potential Loss of Required Shutdown Margin  
During Refueling Operations"

NRC IE Bulletin 89-003, received November 28, 1989, has been reviewed by Houston Lighting & Power Company (HL&P) to address potential loss of required shutdown margin during refueling operations at the South Texas Project Electric Generating Station (STPEGS). HL&P has concluded that sufficient precautions will be in place to ensure against loss of required shutdown margin during movement and placement of highly reactive fuel during refueling operations. This conclusion is supported by the attached responses to the actions requested by the Bulletin.

If there are any questions, please contact Mr. P. L. Walker at (512) 972-8392 or myself at (512) 972-7138.



S. L. Rosen  
Vice President  
Nuclear Engineering and  
Construction

SIR/PLW/nl

Attachments: Responses to IE Bulletin 89-003 Requested Actions

9002230016 900216  
FDR ADOCK 05000498  
Q PDC

A1/036.N11

A Subsidiary of Houston Industries Incorporated

1/1  
IE29

Houston Lighting & Power Company  
South Texas Project Electric Generating Station

ST-HL-AE-3350  
File No.: G3.3  
Page 2

cc:

Regional Administrator, Region IV  
Nuclear Regulatory Commission  
611 Ryan Plaza Drive, Suite 1000  
Arlington, TX 76011

George Dick, Project Manager  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

J. I. Tapia  
Senior Resident Inspector  
c/o U. S. Nuclear Regulatory  
Commission  
P. O. Box 910  
Bay City, TX 77414

J. R. Newman, Esquire  
Newman & Holtzinger, P.C.  
1615 L Street, N.W.  
Washington, DC 20036

D. E. Ward/R. P. Verret  
Central Power & Light Company  
P. O. Box 2121  
Corpus Christi, TX 78403

J. C. Lanier  
Director of Generation  
City of Austin Electric Utility  
721 Barton Springs Road  
Austin, TX 78704

R. J. Costello/M. T. Hardt  
City Public Service Board  
P. O. Box 1771  
San Antonio, TX 78296

Rufus S. Scott  
Associate General Counsel  
Houston Lighting & Power Company  
P. O. Box 61867  
Houston, TX 77208

INPO  
Records Center  
1100 Circle 75 Parkway  
Atlanta, CA 30339-3064

Dr. Joseph M. Hendrie  
50 Bellport Lane  
Bellport, NY 11713

D. K. Lacker  
Bureau of Radiation Control  
Texas Department of Health  
1100 West 49th Street  
Austin, TX 78704

Revised 12/15/89

L4/NRC/

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

In the Matter	)	
	)	
Houston Lighting & Power	)	Docket Nos. 50-498
Company, et al.,	)	50-499
	)	
South Texas Project	)	
Units 1 and 2	)	

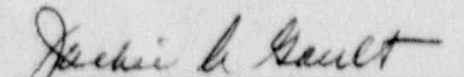
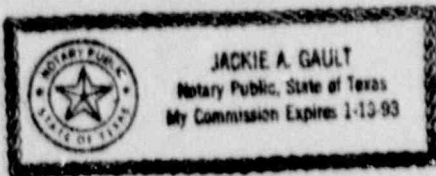
AFFIDAVIT

S. L. Rosen being duly sworn, hereby deposes and says that he is Vice President, Nuclear Engineering and Construction, of Houston Lighting & Power Company; that he is duly authorized to sign and file with the Nuclear Regulatory Commission the attached response to NRC Bulletin 89-003; is familiar with the content thereof; and that the matters set forth therein are true and correct to the best of his knowledge and belief.



S. L. Rosen  
Vice President, Nuclear Engineering  
and Construction

Subscribed and sworn to before me, a Notary Public in and for The State of Texas this 16<sup>th</sup> day of FEBRUARY, 1990.



Notary Public in and for the  
State of Texas

ATTACHMENT

Page 1 of 2

Responses to IE Bulletin 89-003 Requested Actions

- 1) Assure that any intermediate fuel assembly configuration (including control rods) intended to be used during refueling is identified and evaluated to maintain sufficient refueling boron concentration to result in a minimum shutdown margin of approximately 5%.

Response

Guidelines have been provided by Westinghouse that are to be followed when placing fuel assemblies in intermediate locations. Implementation of these controls over fuel assembly configuration will ensure that a minimum shutdown margin of approximately 5% is maintained.

- 2) Assure that fuel loading procedures only allow those intermediate fuel assembly configurations that do not violate the allowable shutdown margin and that these procedures are strictly adhered to.

Response

A fuel assembly is preferentially placed in its location in the final fuel loading configuration except when temporarily stored along the baffle or when used to construct temporary "boxes". When temporarily stored along the baffle, an assembly must be separated from the nearest single assembly by a minimum of one assembly width, and from the nearest cluster of assemblies by a minimum of two assembly widths. This requirement is provided in procedure OPOPO8-FH-0009, "Core Refueling".

Guidelines for boxing have been provided by Westinghouse which will not allow intermediate fuel assembly configurations to violate the allowable shutdown margin. Procedure OPOPO8-FH-0009, "Core Refueling", will incorporate these guidelines in instructions for forming temporary boxes which preclude configurations that are more reactive than those analyzed. These instructions will limit the boxing methods to: 1) using the assembly loading guide; 2) using configurations in which all the assemblies are in their final core locations; and 3) using dummy assemblies to form the box.

A licensed Senior Reactor Operator designated as Core Loading Supervisor is responsible for approving any intermediate configurations utilizing these guidelines.

STPEGS-specific guidelines that provide greater flexibility may be provided by Westinghouse at a later date. Further revisions to the procedure will provide clear direction on permissible assembly configurations.

ATTACHMENT

Page 2 of 2

- 3) Assure that the staff responsible for refueling operations is trained in the procedures recommended in Item 2 above and understand the potential consequences of violating these procedures. This training should include the fundamental aspects of criticality control with higher enriched fuel assemblies.

Response

Prior to fuel movement for the next refueling at STPEGS a shift briefing will be provided to the staff responsible for refueling operations on the procedural requirements of OPOP08-FH-0009. This briefing will address revisions and limits and precautions stated in OPOP08-FH-0009. OPOP08-FH-0009 will include in the precautions the potential consequences relative to shutdown margin of violating the procedural requirements. Training on the procedure will subsequently be included in operator requalification training.