

May 13, 1982

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

In the Matter of	)	
	)	
LOUISIANA POWER & LIGHT COMPANY	)	Docket No. 50-382
	)	
(Waterford Steam Electric Station,	)	
Unit 3)	)	

ANSWERS OF ROBERT G. AZZARELLO  
TO BOARD QUESTIONS

Q1. If there is a transient initiated by loss of feedwater and condensate systems followed by a failure of emergency feedwater system for an extended period, do the emergency plan implementing procedures define an emergency classification? (Tr. 3069-73)

A1. Upon initiation of a total loss of feedwater (LOF), the remaining Steam Generator water inventory would allow approximately 10 - 15 minutes before a dry-out condition would occur. This unlikely condition would then be defined as a "loss of core heat-sink". The emergency plan implementing procedures establishes an action level for the General Emergency category which addresses a "loss of core heatsink, such that a core melt sequence is in progress, or imminent". The Waterford 3 action level scheme employs a conservative philosophy to immediately declare the highest emergency classification for which an action level has

been exceeded, without having previously declared a lower classification. Operators would declare a General Emergency immediately upon recognition that a "loss of core heatsink" condition has occurred.

Q2(a). Do the example initiating conditions for emergency classifications in Appendix 1 of NUREG-0654 include concentrations of particular fission products in the containment atmosphere? (Tr. 3075)

A2(a). The guidelines do not address that condition exactly, and not for specific isotopes. However, there are some related example initiating conditions in Appendix 1:

ALERT - Initiating Condition 12: "Fuel damage accident with release of radioactivity to containment or fuel handling building."

SITE AREA EMERGENCY - Initiating Condition 2: "Degraded core with possible loss of coolable geometry (indicators should include instrumentation to detect inadequate core cooling, coolant activity and/or containment radioactivity levels)."

SITE AREA EMERGENCY - Initiating Condition 10: "Major damage to spent fuel in containment or fuel handling building (e.g., large object damages fuel or water loss below fuel level)."

SITE AREA EMERGENCY - Initiating Condition 13  
a & b:

a. "Effluent monitors detect levels corresponding to greater than 50 mr/hr for 1/2 hour or greater than 500 mr/hr W.B. for two minutes (or five times these levels to the thyroid) at the site boundary for adverse meteorology."

b. "These dose rates are projected based on other plant parameters (e.g., radiation level in containment with leak rate appropriate for existing containment pressure) or are measured in the environs."

GENERAL EMERGENCY - Initiating Condition 1  
a & b:

a. "Effluent monitors detect levels corresponding to 1 rem/hr W.B. or 5 rem/hr thyroid at the site boundary under actual meteorological conditions."

b. "These dose rates are projected based on other plant parameters (e.g., radiation levels in containment with leak rate appropriate for existing containment pressure with some confirmation from effluent monitors) or are measured in the environs."

Q2(b). Does Waterford 3 have the capability to sample the atmosphere in the containment to determine the concentration of various fission products such as Iodine 131 and Xenon 133 and so forth? (Tr. 3075-78)

A2(b). Waterford 3 will have the capability to obtain containment atmosphere samples for iodine, particulate, and radioactive gas analysis. Grab samples will be taken for laboratory analysis. Results of the laboratory analysis do not define an emergency classification. However, the emergency plan implementing procedures provide that when the gross radiation level monitors in containment exceed preset limits, emergency classifications are declared.

Q3. Will core exit temperature trigger a declaration of an emergency at Waterford 3? (Tr. 3088)

A3. A high core exit temperature condition would be detected by two separate safety grade instrumentation systems. The Core Protection Calculators of the Reactor Protective System utilize a reactor hot leg temperature signal as one input to derive a Departure from Nucleate Boiling Ratio (DNBR). A high core exit temperature condition would result in exceeding the DNBR safety limit. The RCS Subcooling Margin Monitors perform a pressure/

temperature correlation by comparing reactor hot leg temperature to saturation temperature for the existing RCS pressure. A high core exit temperature condition would result in a loss of RCS Subcooling Margin. The Waterford 3 emergency plan implementing procedures utilize safety grade instrumentation to the extent possible to trigger declaration of an emergency condition. Action levels have been established for the Unusual Event category based on either exceeding the DNBR safety limit or a loss of RCS Subcooling Margin.

*Robert G. Azzarello*

ROBERT G. AZZARELLO

SUBSCRIBED AND SWORN to before me, a Notary Public in  
and for the STATE OF LOUISIANA and the PARISH OF ORLEANS this  
13th day of MAY, 1982.

*[Signature]*  
NOTARY PUBLIC

MY COMMISSION EXPIRES:

WITH LIFE

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

In the Matter of	)	
	)	
LOUISIANA POWER & LIGHT COMPANY	)	Docket No. 50-382
	)	
(Waterford Steam Electric	)	
Station, Unit 3)	)	

SERVICE LIST

Sheldon J. Wolfe, Esquire  
Administrative Judge  
Chairman, Atomic Safety and  
Licensing Board  
U.S. Nuclear Regulatory  
Commission  
Washington, D.C. 20555

Dr. Harry Foreman  
Administrative Judge  
Director, Center for  
Population Studies  
Box 395, Mayo  
University of Minnesota  
Minneapolis, Minnesota 55455

Dr. Walter H. Jordan  
Administrative Judge  
881 West Outer Drive  
Oak Ridge, Tennessee 37830

Sherwin E. Turk, Esquire (4)  
Office of the Executive  
Legal Director  
U.S. Nuclear Regulatory  
Commission  
Washington, D.C. 20555

Lyman L. Jones, Jr., Esquire  
Post Office Box 9216  
Metairie, Louisiana 70055

Luke B. Fontana, Esquire  
824 Esplanade Avenue  
New Orleans, Louisiana 70116

Atomic Safety and Licensing  
Board Panel  
U.S. Nuclear Regulatory  
Commission  
Washington, D.C. 20555

Atomic Safety and Licensing  
Appeal Board Panel  
U.S. Nuclear Regulatory  
Commission  
Washington, D.C. 20555

Docketing & Service Section (3)  
Office of the Secretary  
U.S. Nuclear Regulatory  
Commission  
Washington, D.C. 20555