

50-483
50-486



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

AUG 13 1992

Mr. Donald F. Schnell
Senior Vice President - Nuclear
Union Electric Company
P.O. Box 149
St. Louis MO 63166

Dear Mr. Schnell:

I would like to thank Union Electric Company for its voluntary participation in an experiment sponsored by the U. S. Nuclear Regulatory Commission (NRC) and conducted by Westinghouse Science and Technology Center (STC), and the Westinghouse subcontractor, Seer Systems, Inc.

The research project has as its overall objective to develop and test a computer model of operator problem-solving and decisionmaking during emergencies. The computer model is called Cognitive Environment Simulation (CES). The emphasis of the research program is to try to understand and model the cognitive or thinking processes of operators (e.g., plant monitoring, situation assessment, and decisionmaking) when trying to handle novel and challenging events. The premise is that some very unlikely event complications might arise requiring reasoning and decision-making on the part of the operating team (including the STA and eventually the TSC) that is beyond existing training and procedures to adequately handle the event. The overall goal of the CES research project is to develop a simulation tool that can be used to anticipate plausible operator responses in cognitively challenging events and clarify the factors that influence crew performance, as input to human performance and human reliability analyses.

The specific purpose of the simulator exercises at Callaway is to collect information on how actual crews respond to cognitively challenging events. The goal is to examine to what extent CES can be used to understand and model operator response to challenging events. In addition, the operator performance data will provide valuable information on crew dynamics and decision-making in challenging events. The results of the study are expected to extend available knowledge of how actual operators respond to cognitively challenging events, as well as improve CES performance.

I understand that Union Electric is in the process of reaching an agreement with Westinghouse STC concerning the conduct of the research project.

Dr. Paul Lewis, the NRC contract monitor, will view the videotapes at Westinghouse STC in Pittsburgh. The observation of Callaway crews during simulated exercises is being conducted for research purposes, and the results are not intended to be used in regulatory appraisal, or as a basis for enforcement actions directed toward Callaway staff, particular crews, or individual operators. Nevertheless, should the NRC observe during the course of this research project any actions by the licensee or any of its personnel

DF03 1/0

9209170091 920813
PDR ADOCK 05000483
P PDR

NRC FILE CENTER COPY

AUG 13 1992

Mr. Donald F. Schnell

2

that require action to protect the public health and safety, nothing in this letter or prior agreements precludes the NRC from taking such action. The videotapes or the transcripts of the videotapes or the survey will only be provided to NRC should the need arise in carrying out its regulatory responsibilities to protect the public health and safety.

The results of the research project may be presented at professional conferences and/or published in professional journals, subject to prior approval by me.

Please contact me if you have further questions.

Sincerely,

Brian W. Sheron, Director
Division of Systems Research
Office of Nuclear Regulatory Research

cc: See attached list

Distribution:

RES Circ/Chron

DSR Chron

HFB r/f

PLewis

JKramer

FCoffman

JMurphy

BSheron

RHall

JHannon

BBoger

JLieberman

RWharton

JWachtel

Public Document Room

Docket File

>Previously concurred

HFB:DSR	HFB:DSR	HFB:DSR	DD:DSR	OGC	OE
*PLewis	*JKramer	FCoffman	*JMurphy	*MPSiemien	*JLieberman
7/10/92	7/10/92	7/10/92	7/17/92	7/20/92	7/20/92
NRR	NRR	MRR	D:DSR		
*RWharton	*JHannon	*JRoe	BSheron		
7/20/92	7/23/92	7/27/92	8/13/92		

PLewis2. CESUE.5; TLB 7/31/92; ko 8/10/92

Mr. D. F. Schnell
Union Electric Company

Callaway Plant
Unit No. 1

cc:

Cermak Fletcher Associates
18225 Flower Hill Way #A
Gaithersburg, Maryland 20879-5334

Gerald Charnoff, Esq.
Thomas A. Baxter, Esq.
Law, Pittman, Potts & Trowbridge
2300 N. Street, N.W.
Washington, D.C. 20037

Mr. T. P. Sharkey
Supervising Engineer,
Site Licensing
Union Electric Company
Post Office Box 620
Fulton, Missouri 65251

U.S. Nuclear Regulatory Commission
Resident Inspectors Office
RR#1
Steedman, Missouri 65077

Mr. Alan C. Passwater, Manager
Licensing and Fuels
Union Electric Company
Post Office Box 149
St. Louis, Missouri 63166

Manager - Electric Department
Missouri Public Service Commission
301 W. High
Post Office Box 360
Jefferson City, Missouri 65102

Regional Administrator
U.S. NRC, Region III
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Mr. Ronald A. Kucera, Deputy Director
Department of Natural Resources
P.O. Box 176
Jefferson City, Missouri 65102

Mr. Bart D. Withers
President and Chief
Executive Officer
Wolf Creek Nuclear Operating
Corporation
P.O. Box 411
Burlington, Kansas 66839

Mr. Dan I. Bolef, President
Kay Drey, Representative
Board of Directors Coalition
for the Environment
6267 Delmar Boulevard
University City, Missouri 65130

Mr. Harry Pople
Seer Systems, Inc.
4620 Henry Street
Pittsburgh, PA 15213

Dr. Emilie M. Roth
Westinghouse Science & Technology
Center
1310 Beulah Road
Pittsburgh, PA 15235