UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
UNION ELECTRIC COMPANY	)	Docket No. STN 50-483 OL
	)	
(Callaway Plant, Unit 1)	)	

AFFIDAVIT OF JOHN W. BAER
ON REED CONTENTION 11
(REENTRY/RECOVERY RADIATION STANDARDS)

County of Dauphin	)	
	)	ss:
Commonwealth of Pennsylvania	)	

JOHN W. BAER, being duly sworn, deposes and says as follows:

1. I am an emergency planning specialist with the Emergency Planning Department of Energy Consultants, Inc., which provides nuclear emergency planning services to utilities, industry, state and local governments. My business address is 2101 North Front Street, Harrisburg, Pennsylvania 17110. I have reviewed the Missouri Nuclear Accident Plan - Callaway ("State Plan") and the local offsite radiological emergency response plans for the Callaway Plant. In 1983 I have been assigned to Union Electric Company to assist in the revision of state and local offsite plans to meet the technical

comments provided from the FEMA review to date. A summary of my professional qualifications and experience is attached hereto as Exhibit "A".

2. This affidavit responds to Reed Contention 11, which asserts, generally, that offsite plans fail to specify a standard of radioactive contamination that will lead to reentry/recovery decisions. I have personal knowledge of the matters stated herein and believe them to be true and correct.

3. NUREG-0654 planning criterion M.1 provides that state and local organizations shall develop general plans and procedures for reentry and recovery which describe the means by which decisions to relax protective measures are reached.

4. There is currently no available Federal guidance which suggests action levels for reentry and recovery. Federal guidance on this subject is under development, but it is not expected to suggest specific radiation levels for reentry. Rather, it is expected to provide decision-making guidelines that will lead to an orderly decision-making process for reentry.

5. It is generally accepted by radiological emergency planners that NUREG-0654 planning criterion M.1 requires plans to:

a. Identify who has the responsibility to decide when and where reentry will be allowed.

b. Establish criteria by which the reentry decision will be made.

c. Provide for an orderly reentry decision making process.

d. Provide for communication to the public of the reentry decision.

e. Assign responsibilities for supporting the reentry phase of the emergency.

6. ANNEX L, Section II of the local radiological emergency response plans provide the following criteria for relaxation of protective measures:

A. The Presiding Judges/Mayor, will determine when protective actions can be modified or discontinued, based on the following guidelines:

1. Releases from the Plant to the environment must be under control or have ceased; the potential for further uncontrolled releases has ended; and Callaway Plant has terminated the emergency condition.

2. Surveys have shown that residual radioactivity, if present in evacuated areas, will not result in excessive radiation doses.

B. Relaxation of protective measures will depend heavily upon recommendations and information from the Bureau of Radiological Health (BRH) and Callaway Plant.

C. Routine reoccupancy of evacuated areas may begin when radiation and contamination levels in the areas:

1. Diminish to occupancy standards established by BRH, and

2. As a consequence of the incident, will not result in a projected dose to members of the general population greater than 1 rem whole

body and 5 rem thyroid, which are the lower values of the State Protective Action Guides (PAG) ranges for the general population.

D. Earlier reoccupancy of an evacuated area may be permitted on an individual case basis, as determined by the Presiding Judges/Mayor, when the remaining radiation exposure risk is outweighed by the necessity for the person(s) to return to the area (for example, returning to provide crucial care for livestock).

7. ANNEX B of the Missouri Nuclear Accident Plan establishes the protection factors and protective action guides that will be the basis for formulating protective action decisions for the general public.

8. Attachment 1 to ANNEX B establishes the following criteria that will be used by BRH in recommending relaxation of protective measures and reentry to an affected area if there has been an evacuation:

C. Based on information developed by BRH, facility and federal radiological assessment personnel, BRH will make a recommendation to the Director, SEMA and the Presiding Judge/Mayor of the affected local governments (through SEMA) for the relaxation of protective measures. Separate recommendations may be made for the plume exposure pathway and for the ingestion exposure pathway EPZ's. A recommendation for relaxation of protective measures will be based in part on the following considerations:

1. Comparison of existing radiation levels with those that led to the initiation of protective actions (action levels for recovery/reentry are currently under development by the EPA and will be incorporated into the criteria when developed).

2. Facility conditions and potential for further release of radiological materials.

3. The continued social and economic cost of maintaining protective measures when compared to corresponding health risks to the public. The significance of protective measures will decrease as the released nuclides are eliminated due to decontamination, dispersal, or decay.

4. In the event of evacuation, the time required for state and local emergency response organizations to organize resources for the orderly reentry of the general public into the affected areas.

9. ANNEX L of the local plans and ANNEX B of the State Plan both indicate that projected dose rate levels in the State Protective Action Guides will be considered as a factor in the reentry decision process. The local plans stipulate that projected dose rates for the general population will not exceed 1 rem whole body or 5 rem thyroid (the lower values of the PAG radiation levels for the general population) when the reentry decision is made.

10. The plans cite additional factors besides radiation levels that will affect the reentry decision. These additional factors include:

a. Plant conditions. Stability of plant conditions will be assessed to assure that there is no potential for further, uncontrolled releases of radiation to the environment.

b. Residual contamination. Continued environmental monitoring will be conducted by the state and utility to assure that residual contamination will not result in excess exposure to the population.

c. Preparedness. Time and resources required to support an orderly reentry (such as traffic control, public transportation, security) will be considered.

d. Costs. The social and economic costs of maintaining protective measures will be balanced with the corresponding health risks to the public.

11. The reentry decision process defined in the offsite plans allow a degree of flexibility in the decision process which is preferable to exclusive reliance on a rigid radiation standard. The decision process includes a range of factors that balance the risk to public health and safety with the costs and disruption of an evacuation. This process is consistent with current EPA guidance on protective actions for nuclear incidents. The decision process for initiating protective actions is less flexible because of the immediate and precautionary nature of the decision. More time is available to decision makers in the reentry decision process; therefore, a range of factors in addition to projected dose rates can be considered. A ~~rigid radiation standard could be~~

misleading and fails to consider such factors as plant stability and the potential for further uncontrolled radiation releases.

12. The reentry decision process described in the offsite plans for the Callaway Plant complies with the planning criteria of NUREG-0654 and is consistent with current federal guidance on the subject (which, as I stated above, does not specify action levels). The plans assign responsibility to a designated decision maker, establish the criteria by which the decision will be made, and provide for recommendations to the reentry decision maker from qualified health physics personnel. The plans establish guidelines for an orderly reentry decision process which meets the intent of current federal standards and guidance. Attachment 1 to ANNEX B of the State Plan indicates that any new federal guidance will be incorporated into the reentry decision criteria when it becomes available.

John W. Baer

Subscribed and sworn to before me
this 13th day of May, 1983.

Frances B. Anthony
Notary Public

My Commission expires _____.

NOTARY PUBLIC
My Commission Expires September 25, 1983
Harrisburg, Pa. Dauphin County

John W. Baer

Education

1970 — Graduate Level Study
American University
Washington, D.C.

1966 — Bachelor of Science - Political Science
Western Maryland College
Westminster, Maryland

Experience

1981 to Present — Energy Consultants, Inc.
Harrisburg, Pennsylvania

Planning/Training Specialist. Develop On-Site Radiological Emergency Response Plan for Arizona Public Service Company, Phoenix, Arizona. Assist with development of Off-Site Radiological Emergency Response Plans for State and local governments. Developed and sought agreements for Louisiana State Agency emergency procedures in support of the Louisiana Power and Light Company's Waterford 3 Nuclear Power Station. Development of lesson plans for training of State, county and local personnel in support of Radiological Emergency Response Plans. Assisted with development of lesson plans for offsite emergency response training for Rochester Gas and Electric and Louisiana Power and Light. Conduct training of State, county and local emergency response personnel in support of Radiological Emergency Response Plans.

1978 to 1980 — Southcentral Regional Planning Council
Harrisburg, Pennsylvania

Director. Directed an eight county planning and evaluation program for the Commonwealth of Pennsylvania. Assisted local communities and governments in planning and development of communications systems and automated information systems for use in criminal justice system and in support of emergency response organizations. Developed and revised training courses in Data Analysis for use by Planning and Operational

personnel at the State and local government level. Assisted with delivery of six thirty-five hour training sessions for Criminal Justice personnel from a ten State region. Developed and conducted practical group exercises for course participants.

1973 to 1978 — Southcentral Regional Planning Council
Harrisburg, Pennsylvania

Planner. Assisted local communities and governments in planning and development of a range of Criminal Justice Programs and of Criminal Justice System Communications and Automated Information Systems.

1971 to 1973 — Lord Fairfax Planning District Commission
Front Royal, Virginia

Planner. Performed general planning tasks, including Criminal Justice and Emergency Response Planning for a five county region of Northern Virginia.

1966 to 1968 — U.S. Department of Defense
Fort Meade, Maryland

Security Specialist.