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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

RECEIVED CORRESPONDENCE

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of

METROPOLITAN EDISON CO.

Three Mile Island Unit One

Docket 50-289



TESTIMONY ON BEHALF OF THE ANTI-NUCLEAR GROUP REPRESENTING YORK
AND OTHER INTERVENORS ON EMERGENCY PLANNING CONCERNS

TESTIMONY OF KAI T. ERIKSON ON

EMERGENCY PLANNING FOR THE THREE MILE ISLAND AREA COMMUNITIES
IN REBUTTAL TO THE TESTIMONY OF DR. DYNES



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TESTIMONY

My name is Kai T. Erikson. I have been a Professor of Sociology and American Studies at Yale University, New Haven, Connecticut, since 1966. I received a B.A. in sociology from Reed College in 1953, and a M.A. in 1955 and a Ph.D. in 1963 from the University of Chicago. I was appointed jointly to the Department of Psychiatry and the Department of Sociology at the University of Pittsburgh in 1959, and I took a similar appointment at Emory University in 1963. I am a Fellow of the American Sociological Association and served as an elected member of its governing Council from 1974 to 1977. I am the immediate past President of the Eastern Sociological Society, and I was President of the Society for the Study of Social Problems in the year 1970-1971.

In recent years, my professional work has been increasingly focused on human crises and emergencies. Between 1973 and 1976 I did an intensive study of the Buffalo Creek disaster of 1972, and I wrote a book on the subject which in 1977 won the Sorokin Award of the American Sociological Association for the best book written in sociology during the preceding year as well as a Nomination for National Book Award. Since that time I have done a briefer study of the effects of mercury contamination on an Ojibwa Indian Band in Northwest Ontario and have written on general problems of toxic waste disposal with particular reference to the situation at the Love Canal in upstate New York. I have lectured widely on the general subject of community reaction to disaster, including the principal address to the Red Cross National Convention in Miami, Florida, in 1977. In the course of the various activities described above, I have read extensively in the literature on human disasters from both a sociological and a psychiatric standpoint.

I have recently reviewed the testimony presented to these hearings in written form by Russell R. Dynes as well as the further remarks made by him under cross examination, and I have been asked by the Intervenor to comment on that testimony.

I have known Dr. Dynes' work on human disasters and on emergency preparedness for a number of years, and I am glad to acknowledge that he is, as the Licensee claims, "an expert with respect to the general principles of emergency planning." (17, 116)

Dr. Dynes obviously assumes, however, that his general knowledge of crisis situations, derived from the 120 or 130 events studied by the Disaster Research Center at Ohio State, can be applied without reservation to the particular circumstances of the TMI area, and I contend that this assumption is unwarranted. Neither he nor his associates have studied the TMI area. Moreover, it is my impression that the Disaster Research Center has studied few, if any, crisis situations that are at all comparable to the one at issue here. Dr. Dynes has a high degree of confidence that "planning for emergencies in nuclear situations is very similar to any other type of emergency planning," (17, 170) but his main reason for thinking so is best expressed by the remark: "And my feeling is emergency planning is emergency planning is emergency planning." (17,171)

It is my opinion that planning for emergencies in human situations that involve the threat of radiation or some other form of contamination is at least potentially very different from other kinds of disaster, and I use the word "potentially" only because we have too little experience with events of this kind to say anything with real confidence. Every bit of sociological and psychiatric knowledge that I am aware of, however, would lead me to expect that

nuclear accidents should be considered a class apart -- a point I will try to clarify shortly. And until such time as Dr. Dynes or someone else equally expert in disaster research actually studies TMI or comparable situations, I would not risk my life -- or ask others to risk their lives -- on the proposition that "emergency planning is emergency planning is emergency planning."

I would like to make three general points in that regard.

First, it is my strongly held opinion that incidents involving the risk of radiation in particular or serious contamination in general are quite unlike the ordinary run of natural disasters and human accidents. Whether these events are acts of God (such as floods, storms, earthquakes) or acts of men (such as accidental explosions or deliberate bombings), the episodes themselves have a clear beginning and a clear ending. Sooner or later the flood recedes, the winds abate, the smoke clears, the bombers disappear. An "all clear" is sounded both literally and figuratively indicating that the event is over, and that, normally, is when the work of rescue begins. But when an invisible threat hangs in the air (or in the tissues of the body) for an indeterminate amount of time and survivors have no sure way of knowing how much damage has been done or is yet to be done, the incident is never quite over. This was (and is) the situation in places like Hiroshima, Minamata, Seveso, and the Love Canal, and it is, in many ways, the situation at TMI. So nuclear events are of a very different order from other events, and experience gained from the latter is unlikely to be of much help in drawing emergency plans for the former.

Second, it is my opinion that the people of the TMI area would react differently to a future nuclear emergency than would another population because

the accident of March, 1979, has changed the human environment, as it were, in which emergency plans are devised and implemented. I am aware that the psychological status of the people of the TMI area is not a subject being entertained in these hearings, but I assume that it is proper for me to note that a number of reliable studies have found noticeable levels of distress and anxiety within the local population, and I would state as a student of human nature in general and of human disasters in particular that the susceptibilities and the sensitivities found in that population will influence the manner in which people respond to future emergencies. I would expect two seemingly opposite reactions.

For one thing, I would expect a substantial proportion of the population living within a few miles of TMI to over-react in the sense that they will evacuate before a "rational" reason for doing so became apparent, that they will travel a longer distance than instructed to, and that, in general, they will respond to the heightened sense of alarm they feel internally by doing more than necessary and doing so earlier than necessary. I agree completely with Dr. Dynes that "panic" is more often observed in films than in everyday life, but I am talking here about a calculated and deliberate decision to leave the danger zone. The tendency to over-react is probably greater when radiation or some other invisible threat is involved, and the experience of March, 1979, may be a good case in point; but my opinion is that such a tendency will be greater yet for people like those of the TMI area because (a) their level of fear is greater as a result of the earlier accident, and (b) their level of trust in the authorities who would be issuing instructions and reassurances is lower because they feel that they were misinformed in the past.

1 I would expect another substantial proportion of the population

to under-react -- which, incidentally, is the form that human panic ordinarily takes. At one point in the hearings, Dr. Dynes assured the Chairman that people living in the TMI area would not be so immobilized with fear that they would fail to respond appropriately to a future emergency. I think that Dr. Dynes' comment in that regard was ill-advised, at least in part because he had testified a few moments earlier: "You see, the major problem in most types of emergencies, it is not the fact that people behave irrationally; it is to get them to do anything." (17,141) I do agree with that. Even when people have not been sensitized by earlier emergencies, one very common reaction to traumatic crises is to do nothing at all -- to become immobilized, to freeze, to go numb. That reaction has been recorded in countless studies of disaster, including some done by the Disaster Research Center. And that reaction is likely to be even more pronounced for people who have been exposed to traumatizing events in the past because the effects are often accumulative. Dr. Robert J. Lifton, an acknowledged expert on the subject and one of the most honored psychiatrists in the country, calls this condition "psychic numbing," and the idea is now well on its way to becoming an established scientific principle. It is listed in the third edition of the Diagnostic and Statistical Manual of the American Psychiatric Association, for example, as one of the major criteria for diagnosing 'post-traumatic reaction', and it is generally accepted among psychologists and psychiatrists who study human stress as a common human reaction.

Third, it is my opinion that any emergency evacuation plans that (a) rely on people taking shelter when instructed to do so or (b) rely on civilian emergency workers to remain at their posts under any circumstances run a high (and probably unacceptable) risk of failure.

In his testimony, Dr. Dynes repeated two general points again and again. The first is that people converse with their neighbors in moments of stress to "process information" and come to decisions, and the second is that final decisions about what to do are taken in family councils and are acted upon by families working together as a unit. I agree with both observations and would therefore note the following. It is probably unreasonable to suppose, as the Emergency Information pamphlet issued by PEMA appears to, that people can be counted upon to seal themselves off in their own homes and avoid the use of their telephones. The temptation to compare notes with neighbors in a crisis, whether by telephone or across the back fence or through open windows, will be hard to resist -- especially since the pamphlet urges people to evacuate in a neighbor's vehicle if other arrangements are not possible. And it is probably unreasonable to suppose, as well, that family members who find themselves away from home in a crisis will all be able to resist the temptation to join the family councils and participate in whatever emergency measures the family decides to undertake.

My severest reservation about Dr. Dynes's testimony is related to his assumption that emergency personnel of one kind or another can be counted upon to remain at their posts or to report to their posts when they are not yet sure that their families are safe. I base my opinion here on the fact that I am a professional observer of the human scene, since I am testifying as an expert; but I think it is a matter of everyday common sense, standing entirely to reason, that a large number of emergency workers will go home to their children in the event of a serious emergency no matter what commitments they have made, and that they will do so because they feel -- as is the case with parents everywhere -- that their major responsibility is to attend the needs

of their own offspring. It does not make much sense for a sociologist to testify that such behavior is instinctual, although the great majority of human biologists and psychiatrists would claim that to be the case, but it would be foolhardy for anyone to base emergency plans on the assumption that mothers and fathers will remain at their posts and do an effective job when they are uninformed about the safety of their own children. The testimony presented by the League of Women Voters of Greater York suggests to me (a) that many local coordinators do not really expect emergency personnel to be available in the event of a serious crisis and are not even sure that they can be relied upon themselves, (b) that the only fire fighters who were consulted on the matter have warned that their families come first, and (c) that the bus drivers, many of whom seem to be housewives and mothers, will be hard to reach in a crisis and harder still to persuade to report. Dr. Dynes has testified that his research center has "never really run into anybody who abandoned an important emergency job because of family conflict." (17,196) I do not know in detail where the Center has been looking, of course, but I simply do not believe that there is any evidence in the human record of emergency workers being available for duty when children are not yet safe.

Dr. Dynes also noted:

I think particularly nowadays we should be particularly careful of how we define a family. We have a tendency, I suppose, to evoke the image . . . that a family is a husband and wife and a couple of . . . small children . . . But that is typical I think of about probably fifteen percent of our population. So that -- in other words, in one sense it is a minor problem. (17,197)

Now I do not know what Dr. Dynes has in mind when he cites that fifteen percent figure, for he surely knows that more than fifteen percent of the

population lives in families of the sort he describes. But it would be easy to learn what percentage of the area's police officers and fire fighters and bus drivers are parents with children at home. Since these are three occupations that generally attract younger adults, it stands quite to reason that a fairly high proportion of all three groups will belong in that category: seventy-five to eighty percent strikes me as a sensible guess. Dr. Dynes may be right that police officers and military personnel will remain on duty no matter what the circumstances because they are trained to deal with emergencies, have a high sense of public trust, and respond well to discipline. But I do not think that the same can be said for all groups that the region is apparently counting upon in the event of a nuclear emergency. Question: "I would imagine that school buses are normally driven by housewives. Do you think that we can apply the lessons we have learned in other disasters and expect them to stay on duty?" Dr. Dynes: "Yes. That is their job, yes." (17,204) I would have answered that question quite differently, exactly because, in the last analysis, I think they would regard their real job as tending for their families.

Thank you. An abbreviated resume is attached.

Kai T. Erikson
Department of Sociology
Yale University
New Haven, Connecticut

Born in Vienna, Austria, 1931
U.S. citizen (derivative, 1937)
Married, two children

EDUCATION

1949-1950	University of California, Berkeley
1950-1953	Reed College (B.A.)
1953-1955	University of Chicago (M.A.)
1957-1963	University of Chicago (Ph.D.)

POSITIONS

1954-1955	Research Fellow, Family Study Center, University of Chicago
1955-1957	Social Science Technician, Walter Reed Army Institute of Research, Washington, D.C. (while on active duty with U.S. Army)
1959-1963	Instructor to Assistant Professor, Departments of Psychiatry and Sociology, University of Pittsburgh
1963-1966	Associate Professor, Departments of Psychiatry and Sociology, Emory University
1966-	Associate Professor to Professor, Department of Sociology and American Studies Program, Yale University
1968-1969	Fellow, Center for Advanced Study in the Behavioral Sciences, Stanford, California
1969-1973	Master, Trumbull College, Yale University (Chair, Council of Masters, 1970-1973)
1973-1974	Visiting Professor, Department of Sociology, University of New Mexico
1974-1977	Chair, American Studies Program, Yale University
1979-	Editor, <u>The Yale Review</u>

SELECTED PUBLICATIONS

Books

Wayward Puritans: A Study in the Sociology of Deviance (New York: John Wiley, 1966)

Everything in Its Path: Destruction of Community in the Buffalo Creek Flood (New York: Simon & Schuster, 1976)

English edition entitled In the Wake of the Flood (London: George Allen & Unwin, 1979)

Articles

"The Confirmation of the Delinquent," Chicago Review, Winter Issue, 1957 (with Erik H. Erikson)

"Patient Role and Social Uncertainty: A Dilemma of the Mentally Ill," Psychiatry, 20:263-274, 1957

"The Functions of Deviance in Groups," Social Problems, 7:98-107, 1959 (with Robert A. Dentler)

"Impressions of Soviet Psychiatry: Some Travel Notes," Psychiatric Communications, 5:1-12, 1962

"Notes on the Sociology of Deviance," Social Problems, 9:307-314, 1962

"A Return to Zero," American Scholar, 36:134-146, 1966

"A Comment on Disguised Observation in Sociology," Social Problems, 14:366-373, 1967

"Case Records in the Mental Hospital," in Stanton Wheeler, editor, On Record: Files and Dossiers in American Life (New York: Russell Sage, 1969) (with Daniel J. Gilbertson)

"Sociology and the Historical Perspective," American Sociologist, 5:331-338, 1970

"Sociology: That Awkward Age," Social Problems, 19:431-436, 1972

"Introduction," In Search of Common Ground: Conversations with Erik H. Erikson and Huey P. Newton (New York: Norton, 1973)

"Loss of Communitarity on Buffalo Creek," American Journal of Psychiatry, 133:302-306, 1976

SELECTED PUBLICATIONS (continued)

"On Teaching Sociology," New England Sociologist, 1:35-40, 1979

Book Reviews

American Journal of Sociology
American Scholar
American Sociological Review
Contemporary Sociology
New York Times Book Review
Transaction
Yale Law Journal

HONORS

McIver Award, American Sociological Association, 1967

Sorokin Award, American Sociological Association, 1977

PROFESSIONAL MEMBERSHIPS

American Sociological Association (Chair, Committee on Professional Ethics, 1971-1973; Council, 1974-1977; Committee on Executive Office and Budget, 1978-1981)

Society for the Study of Social Problems (President, 1970-1971)

Eastern Sociological Society (President, 1980-1981)

September 1979