

SEP 15 1981

Anne Merck-Abeles, President
SAPL
Seacoast Anti-Pollution League
5 Market Street
Portsmouth, New Hampshire 03801



REFERENCES:

- (1) SEABROOK STATION EVACUATION ANALYSIS, FINAL REPORT, JULY 1980
Alan M. Voorhees & Associates
- (2) EVACUATION RISK - AN EVALUATION
EPA-52/6-74-002, U.S. ENVIRONMENTAL PROTECTION AGENCY, PAGE 45

Dear Ms. Merck-Abeles:

This is in reply to your August 1, 1981 letter which requests reconsideration of my July 15, 1981 denial of your June 30, 1980 request for institution of a proceeding on evacuation feasibility for the Seabrook EPZ.

Your letter stated that the following staff conclusion was in error since the Seabrook analysis performed for FEMA (1) assumed that effective local preparedness plans were in effect:

"evacuation times estimated for the Seabrook site (provided by FEMA)... are based only on currently available communications, notification systems and traffic management capabilities..."

The staff based their conclusion on the following quote from page 50 of the FEMA contractor's study:

"For each of the evacuation scenarios carried through the analysis, the forecast traffic volumes were assigned to the system of evacuation routes. In the absence of a detailed local plan for the management of evacuation traffic, a number of assumptions must be made in order to reflect the conditions, reasonable attainable with available local management resources. Therefore, for the purposes of this analysis, it was assumed that overall, traffic facilities would be operated in a relatively normal fashion. That is to say that few instances of special traffic management capability were assumed."

It is obvious that "special traffic management" may result in evacuation times below those predicted by the FEMA contractor's model.

In addition, you stated:

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"The 'current' situation is that there is no effective plan. FEMA clearly states that 'in the absence of effective preparedness planning, the evacuation time estimates given in this report are invalid.' Hence, the 6.2 hour time frame is invalid."

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NRC requires that State and local emergency preparedness plans be in place for the area within 10 miles of a site before it will be licensed to operate. These plans will be reviewed by FEMA for acceptability during the operating license review for Seabrook. Since in-place emergency plans will be required, use of the FEMA figures which assume in-place plans was appropriate in my decision.

Finally, you stated:

"The valid maximum time frame according to FEMA for the "current" situation in which there is little or no traffic control secured by local plans is nearly fifteen hours. At both the beginning and the end of the FEMA study it is stated that an evacuation in which traffic control is generally ineffective, total evacuation times will range from ten hours thirty minutes to fourteen hours forty minutes."

However, the FEMA contractor's report on page 3 states:

"In a Summer Sunday evacuation, a substantial portion of all evacuating population is delayed by traffic congestion. In the beach area, this delay ranges up to a maximum of 4 hours 15 minutes. Most of the traffic caught in congestion is within 5 miles of the Seabrook Station, with a substantial portion within direct sight of the plant. The behavior of drivers under these conditions of delay and proximity to the Seabrook Station can only be guessed. However, any breakdown in orderly evacuation traffic flow will result in evacuation times greater than those estimated. For an evacuation in which traffic control is generally ineffective, total evacuation times will range from 10 hours 30 minutes to 14 hours 40 minutes."

The 10 and 14 hour evacuation time estimates are based on the FEMA contractor's hypothesis that the evacuating drivers will behave in an abnormal way and disrupt the evacuation. The staff has found no data to support this hypothesis. In fact an EPA study (2) found:

"Based on the Disaster Research Center report, Images of Disaster Behavior, peoples' behavior during an emergency is characterized by:

1. The idea that people will panic in the face of great threat or danger is very widespread. However, it is not borne out in reality. Insofar as wild flight is concerned, the opposite behavioral pattern in most disasters is far more likely. People will often stay in a potentially threatening situation rather than move out of it. This really should be expected. Human beings have very strong tendencies to continue on-going lines of behavior in preference to initiating new courses of action.

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2. Just as the panic image of disaster behavior is generally incorrect, so is the view that disasters leave victims dazed and disoriented both at time of impact and in the recovery period. Those who experienced disasters are not immobilized by even the most catastrophic of events. They are neither devoid of initiative nor passively dependant or expectant that others, especially relief and welfare workers, will take care of them and their disaster created needs. In fact, disaster victims sometimes insist on acting on their own even contrary to the expressed advice of the public authorities and formal agencies.

The EPA Report (at page 47) goes on to say:

"Although the studies done by the Disaster Research Center and others have dispelled the myths associated with peoples' behavior during a disaster, if the causative agent of the incident were radiation, would peoples' reactions be substantially different? The conclusion drawn by many is that because radiation is largely an unknown quantity, imperceptible to the ordinary senses, inherently, the fear of the unknown and its consequences would cause a different behavior pattern--perhaps similar to popular notions. This would, inturn, have a dramatic effect on evacuation involving a release of radioactivity.

"Dr. Russell R. Dynes, Co-Director of the Disaster Research Center, was asked if he thought people would react differently--panic--because of a radiation threat. Dr. Dynes' reply was that there has been an overemphasis placed on the qualitative difference between radiation and other threats by both public officials and anti-nuclear groups, 'What was assumed was that the nuclear advent represented some new juncture in human history and, therefore, it would evoke and demand a quite different level of human behavior.' Dr. Dynes continued, 'As I read history, there is not reason to suggest that because of the presence of a new 'order' of threat that human behavior would disintegrate into 'uncivilized' behavior.'

"The summation of Dr. Dyes' reply is that there is not reason to expect that people will react any differently because the disaster agent is radiation than they would for a flood, fire, or any other type of causative agent. This 'normal' behavior is amply documented and does not include panic."

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In view of the above responses to your concerns, I have determined that reconsideration of my July 15, 1981 denial of your June 30, 1981 request for a proceeding on evacuation feasibility for the Seabrook EPZ is not warranted. I reiterate that my decision of July 15th was not intended to finally resolve the adequacy of emergency preparedness for the Seabrook Station. The emergency preparedness issue will be addressed in the operating license review for Seabrook and parties to the operating license proceeding will have, of course, the opportunity to raise emergency planning issues. Accordingly, as I indicated in my July 15th decision, I do not believe it is appropriate to institute an additional proceeding now to consider such issues apart from the operating license proceeding.

Sincerely,

Original Signed by
H. R. Denton

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

cc: See next page

SEE PREVIOUS CONCURRENCE

devoid of initiative nor passively dependent or expectant that others, especially relief and welfare workers, will take care of them and their disaster created needs. In fact, disaster victims sometimes insist on acting on their own even contrary to the expressed advice of the public authorities and formal agencies.

Although the studies done by the Disaster Research Center and others have dispelled the myths associated with peoples' behavior during a disaster, if the causative agent of the incident were radiation, would peoples' reactions be substantially different? The conclusion drawn by many is that because radiation is largely an unknown quantity, imperceptible to the ordinary senses, inherently, the fear of the unknown and its consequences would cause a different behavior pattern--perhaps similar to popular notions. This would, in turn, have a dramatic effect on evacuation involving a release of radioactivity.

Dr. Russell R. Dynes, Co-Director of the Disaster Research Center, was asked if he thought people would react differently--panic--because of a radiation threat. Dr. Dynes' reply was that there has been an over-emphasis placed on the qualitative difference between radiation and other threats by both public officials and anti-nuclear groups, "What was assumed was that the nuclear event represented some new juncture in human history and, therefore, it would evoke and demand a quite different level of human behavior." Dr. Dynes continued, "As I read history, there is not reason to suggest that because of the presence of a new 'order' of threat that human behavior would disintegrate into 'uncivilized' behavior."

The summation of Dr. Dynes' reply is that there is not reason to expect that people will react any differently because the disaster agent is radiation than they would for a flood, fire, or any other type of causative agent. This "normal" behavior is amply documented and does not include panic."

In view of the above responses to your concerns, I have determined that reconsideration of my July 15, 1981 denial of your June 30, 1981 request for a hearing on evacuation feasibility for the Seabrook EPZ is not warranted.

Sincerely,

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

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*subject to
editorial
changes*

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*D. Grimes
9/14/81
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9/2/81*

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