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Research Note #1

Organizational Response to an Explosion at Medina AEC Base,

San Antonio, Texas, November 13, 1963

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## Introduction

The materials presented in this report were secured as part of a "training mission"<sup>1</sup> and should not be construed as the result of a systematic field study. The observations and statements presented are based on semistructured discussions with some of the higher eschelon personnel in each of the local organizations which were significantly involved in the incident. Because the incident was a case of potential rather than actual disaster, the research effort was deliberately limited to obtaining a general rather than a detailed picture of what had occurred. Thus, the findings are presented as hypotheses rather than conclusions.

The report includes a very brief summary of the events surrounding an explosion on November 13, 1963 at the Medina Facility of the United States Atomic Energy Commission near San Antonio, Texas. Following the description several hypotheses are presented and their significance for organizational planning for emergency conditions is discussed.

## The Event and Organizations Involved

At approximately 10: 24 a. m. on November 13. 1963, an explosion occurred at the Medina Facility outside of San Antonio. The shock waves broke and cracked windows 10 to 15 miles away in San Antonio. Other minor damage to buildings was also reported. Shortly thereafter, many persons

noticed a dust cloud described by many persons as having a mushroom shape and variously estimated to be 1, 000 to 5, 000 feet high over the Facility area. The cloud gradually dissipated and drifted away from the city of San Antonio. No contamination from radioactive materials appears to have taken place either

in the immediate area or down wind.

Organizations in the San Antonio area which were involved to any significant degree were:

San Antonio Office of Civil Defense - Under the direction of the

City Manager, SACD activated its emergency plans and continued on an emergency footing until it became clear that there was no danger to the local population. As soon as information became available, the public was notified via radio and TV that no danger existed.

San Antonio Police Department - Even before SACD could activate the Emergency Control Headquarters, police units were dispatched to the scene and assisted in traffic control.

San Antonio Fire Department - Within two minutes after the sound of an explosion was heard, the fire station nearest the base reported via radio

to Fire Department Headquarters that the blast had apparently occurred on the Medina base. Following standard procedures, extra equipment was dispatched to nearby stations on a standby basis. It was not needed and when the "all clear" was given it was returned to regular locations.

Texas Department of Public Safety - Units of this organization assisted in traffic control and monitored for radioactivity in the area around the AEC base and downwind. The findings were negative. When information from the base became available, it was put on the teletype to radio and TV stations.

AEC Medina Facility - Immediately following the blast automatic procedures for checking on radioactivity were put into operation. Within 20 to

25 minutes after the detonation, they had initial findings in hand. They were negative. They checked the three slightly injured persons who had been in the immediate area of the explosion and found no contamination. About 45 to 60 minutes after the blast, an oral report was given to newsmen and other persons who had arrived on the scene. They were told that a written report would be provided momentarily. It was made available several hours later. When the news release was handed out, newsmen were taken to the scene of the detonation

and permitted to take photographs.

Mass communications media (radio, TV and newspapers) - These organizations played a significant role in disseminating information about the explosion after it became available. During the "information vacuum" prior

to the briefing by the AEC their reports were of necessity fragmentary. One radio station reported that it was probable that a nuclear reactor had blown up. The official report given by the City Manager was carried by all radio and TV stations promptly.

#### Generalizations of Significance for Emergency Planning

1. Organizations tend to plan for recurring and obvious emergencies and by concentrating on them, they inadvertently ignore the necessity of planning for rare or unusual types of emergencies.

The manifest crisis organizations of San Antonio appear to have planned carefully for such events as natural disasters, fires, common explosions and war. These plans include closed telephone lines and special radio frequencies for intra and inter organizational communication. Similarly, the AEC Medina Facility apparently has well planned equipment and procedures for handling

emergencies on the base itself.

It appears, however, that one particular type of emergency was not anticipated or at least not sufficiently taken into account in planning interorganizational communication -- a detonation on the base which would result in radio-

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active fallout over the city of San Antonio. No foolproof mode of communication between the Medina Facility and responsible city officials had been established.

When the detonation occurred at the Medina base the telephone lines which would normally have been used to contact local officials were immediately jammed by incoming calls. Responsible local officials had no way of knowing, therefore, whether or not there was danger to the surrounding population or if assistance was needed on the base itself. As a result, personnel from the various local organizations were sent to the scene by auto with a resulting loss of time.

As it turned out, assistance was not needed; there was no danger to the population and nothing more than hurt feelings resulted. However, if the debris in the cloud had been radioactive and the prevailing winds had been moving in a different direction, the results could have been tragically different. The time loss in getting the relevant information would have been very crucial under those conditions.

2. Under certain emergency conditions the absence of information on the nature and extent of a disaster combined with an anticipation that such information will soon be available tends to produce:

A. Limited utilization of standard emergency procedures

B. A hesitation to go ahead with particular courses of action which seem to be relevant for the unique emergency being faced.

The city officials of San Antonio knew almost immediately that a very large

explosion had occurred at the Medina base and that it had produced an ominous looking cloud. After waiting in vain for seven to ten minutes for a call from the base, two Civil Defense officials got into an auto and drove out to the base to secure information. The trip took approximately 25- 30 minutes. During this interval it was apparently assumed that relevant information would become available soon. While some standard emergency procedures were put into operation (e. g. - deployment of fire fighting apparatus, activating the emergency control room and attempting to ascertain wind direction and velocity) specific actions designed to cope with this particular unique emergency were delayed until information was received from the Civil Defense officials at the scene. Again, as events turned out, this inaction was probably functional but under slightly different conditions it would have been clearly dysfunctional.

For example, if during the initial time interval a precautionary announcement had been made to the public to stay indoors, then in the event the cloud had been radioactive the population would have had at least some protection.

{ Such a precautionary measure was reportedly used at Lackland Air Force Base. , 3. An organization which is undergoing change is more vulnerable to the stress of an emergency because of uncertainty concerning standard operating procedures.

The San Antonio Civil Defense organization is in the midst of designating, equipping and stocking public shelters. An up-to-date list of the shelters

that were stocked and ready for occupancy at the time was not readily available. If announcements to the public concerning shelter use had been necessary,

some unnecessary confusion and delays would have resulted.

4. Facts about the events in an emergency which in retrospect are crucial for the evaluation of organizational performance tend to become distorted in such a way so as to minimize blame which can be assigned to one's own organization.

In this incident, the "facts" which were both significant and open to differential reporting involved time; when the first oral report was given by an

AEC spokesman, when the written official news release was handed out and surprisingly, even when the blast occurred. Officials in the local organizations were critical of the slowness with which the AEC personnel made information available. Their reports of the "time lag" significantly exceeded the estimates provided by the AEC officials. Who was overestimating or underestimating

the time periods is perhaps less significant than the consistent differences which were reported.

The time of detonation was generally reported to have been at 10:24 a. m.

C. S. T. It is interesting to note, however, that an official news release from the Albuquerque office of AEC, quoted in The Light, a San Antonio newspaper, put the blast event at 10:40 C. S. T. This may, of course, have been an error in quoting the news release but if it was reported correctly it would be a further indication of the tendency on the part of AEC officials to minimize the reported length of time between the detonation and the time when the first oral report was given.

5. (note - The final generalization presented here should be seen as very tentative since the data on which it is based is somewhat limited. Since this project is focussing on organizational response to stress, no emphasis was placed on securing data on the reaction of the public to this incident. Since the

implications for organizational planning are of considerable significance, however, the tentative findings will be presented).

Previous studies of disaster have indicated rather clearly that human convergence is a universal or almost universal occurrence. Many persons come to the scene of a disaster and frequently this convergence creates serious problems for the responsible organizations. It has been suggested by a few persons, however, that such convergence may not occur when the disaster involves a nuclear detonation with its concomitant radioactive hazard. This would seem to be an important issue for Civil Defense planning.

A major feature of this incident was the convergence of many persons around the Medina Facility shortly after the blast. Apparently hundreds of persons got into automobiles and drove to the AEC base. This convergence occurred under the following conditions:

A. The base had been operated by the AEC for over two years and it was apparently general knowledge that nuclear materials were stored and handled there. In March of 1963, the area manager of the San Antonio office

of the AEC released a six page statement entitled, "To Residents of the Area", in which repeated reference is made to the handling of radioactive materials. The statement points out clearly that although the probability is low, an explosion or fire could spread radioactive materials in the air. It is not known, of course, how widely this information had been disseminated but it is probably safe to assume that it was fairly common knowledge. In addition to the March news release, it should be noted that over 650 persons are employed at the Facility and it is likely that they served as information carriers in this matter.



B. It may be assumed that most of the persons approaching the

area noticed the large dust cloud above the base. According to the reports we have, many of those who saw the cloud described it as having a mushroom shape.

C. During the initial information vacuum, a period of one hour before all radio and TV stations were notified by the City Manager that there was no danger from radioactive fallout, the following is reported to have taken place: one radio station reported, about 30 minutes after the blast, that it was probable that a nuclear reactor had exploded; about 45 minutes after the detonation another radio station reported that there was no danger from radioactive materials. Other detail regarding what the public was told is lacking.

It would appear then that during the first 30 to 45 minutes after the explosion, many persons who knew that nuclear materials were on the base and who also saw the dust cloud and had heard nothing to indicate that danger from radioactive fallout was absent still converged ~ the ~ where potential danger

from fallout~s the greatest.

If this conclusion is correct, planning for this type of emergency and similar conditions in war time would need to be adjusted accordingly. Before any change in plans is made, however, it is suggested that some carefully designed and executed research on the public reaction to this event be carried out. Our analysis of the available literature indicates that no previous event is nearly

as comparable to conditions of nuclear war as is this one. Public response to this event would seem, therefore, to warrant special attention.