



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

FEB 29 1980

MEMORANDUM FOR: Harold R. Denton, Director
Office of Nuclear Reactor Regulation

FROM: Robert J. Budnitz, Director
Office of Nuclear Regulatory Research

SUBJECT: RESEARCH INFORMATION LETTER # 82 -- THREE MILE ISLAND
TELEPHONE SURVEY: PRELIMINARY REPORT ON PROCEDURES AND
FINDINGS, AND THE SOCIAL AND ECONOMIC EFFECTS OF THE
ACCIDENT AT THREE MILE ISLAND: FINDINGS TO DATE

This memorandum transmits the results to date¹ of research on the socio-economic effects of the accident at the Three Mile Island nuclear power station. This work was performed by Mountain West Research, Inc., under the direction of the Environmental Effects Research Branch of RES, in response to a request from your office. It is part of a broader study aimed at assessing the socioeconomic impacts of nuclear power station construction and operation, and improving the methodology for forecasting these impacts as part of the licensing process required under NEPA.

The research on the socioeconomic effects of the accident at Three Mile Island was conducted as a case study. An important part of the case study was a telephone survey of Three Mile Island area residents. The objective of the household telephone survey was to obtain primary data about the behavior of people in the Three Mile Island area during and after the accident, focusing particularly on the extent of evacuation, cost of the accident to local households, social and psychological effects of the accident, the process by which residents received information concerning the accident, and changes in general attitudes.

The survey of approximately 1500 households was conducted by telephone during July and August, 1979. The sampling strategy used in the survey was a randomized quota sample of respondents distributed as follows: 450 households within a 5-mile radius of the Three Mile Island station, 350 households within a 5-10 mile ring around the station, 200 households within a 10-15 mile ring, and 31 households in each of 12 locations situated 25, 35, 45, and 55 miles from the Three Mile Island station in directions running east, west,

¹Three Mile Island Telephone Survey: Preliminary Report on Procedures and Findings, NUREG/CR-1093, and The Social and Economic Effects of the Accident at Three Mile Island: Findings to Date, NUREG/CR-1215

north and south.² It was determined from preliminary field research that the majority of impacts from the accident occurred within a 15-mile radius of the station, and the sampling strategy was designed to generalize reliably about socioeconomic impacts in this area. The survey was designed to yield estimates of the extent and magnitude of various impacts, and to enable researchers to relate these to background factors such as age, income, family status, occupation, and attitudes. Beyond 15 miles, the sampling strategy was designed primarily to give estimates of impacts and to differentiate these impacts by distance and direction from the Three Mile Island nuclear power station.

The study of the social and economic effects of the accident relied heavily on data obtained from the household telephone survey, but also utilized data from studies and surveys of TMI area residents done by other researchers and additional primary data collected during extended field research by Mountain West. The State of Pennsylvania was a principal source of data for general employment and income effects, effects on local production, economic impacts in selected economic sectors, as well as other key variables.

The study identified and analyzed the effects of the accident on the South Central Pennsylvania economy, South Central Pennsylvania institutions, and individuals in the South Central Pennsylvania area during the emergency period (March 28, 1979 through April 11, 1979) and the post-emergency period (April 12, 1979 through September 30, 1979). The study also identified potential longer term effects of the accident, whether or not they were present during the emergency or post-emergency periods.

Results

Direct economic effects during the emergency period included interrupted local production and reduced local income and employment. Net economic losses to the population located within 15 miles of the station were estimated to be \$9 million. This figure represents lost pay of workers, evacuation related outlays, and loss of business income. Mean expense for households which evacuated was found to be \$198. The economic sectors which were affected most by the accident were agriculture and tourism. Negative direct economic impacts were of relatively short duration; following the immediate period of the emergency, economic activity returned to normal. The one significant impact still remaining is uncertainty about the future cost of electric power and the potential negative implications of this for economic development in the area.

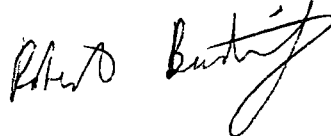
The major effect of the accident on local institutions was a strain on the emergency response network in the area. The fact that a formal emergency was not declared created considerable uncertainty among those concerned with public safety regarding relative responsibilities.

²See Figure 1

The major impact on individual behavior was the evacuation. Approximately 144,000 people, about 39 percent of the population within 15 miles of the plant, left the area in response to the emergency according to the Mountain West Telephone Survey data. Estimates of the extent of evacuation found by other surveys are somewhat larger. Those who left the area travelled an average of 100 miles, were absent an average of 5 days, and for the most part stayed with friends or relatives.

The results of the study will be useful to your staff in the preparation of testimony for the licensing process. The RES technical contact for this work is Dr. Clark Prichard, Environmental Effects Research Branch (427-4358).

Robert J. Budnitz, Director
Office of Nuclear Regulatory Research



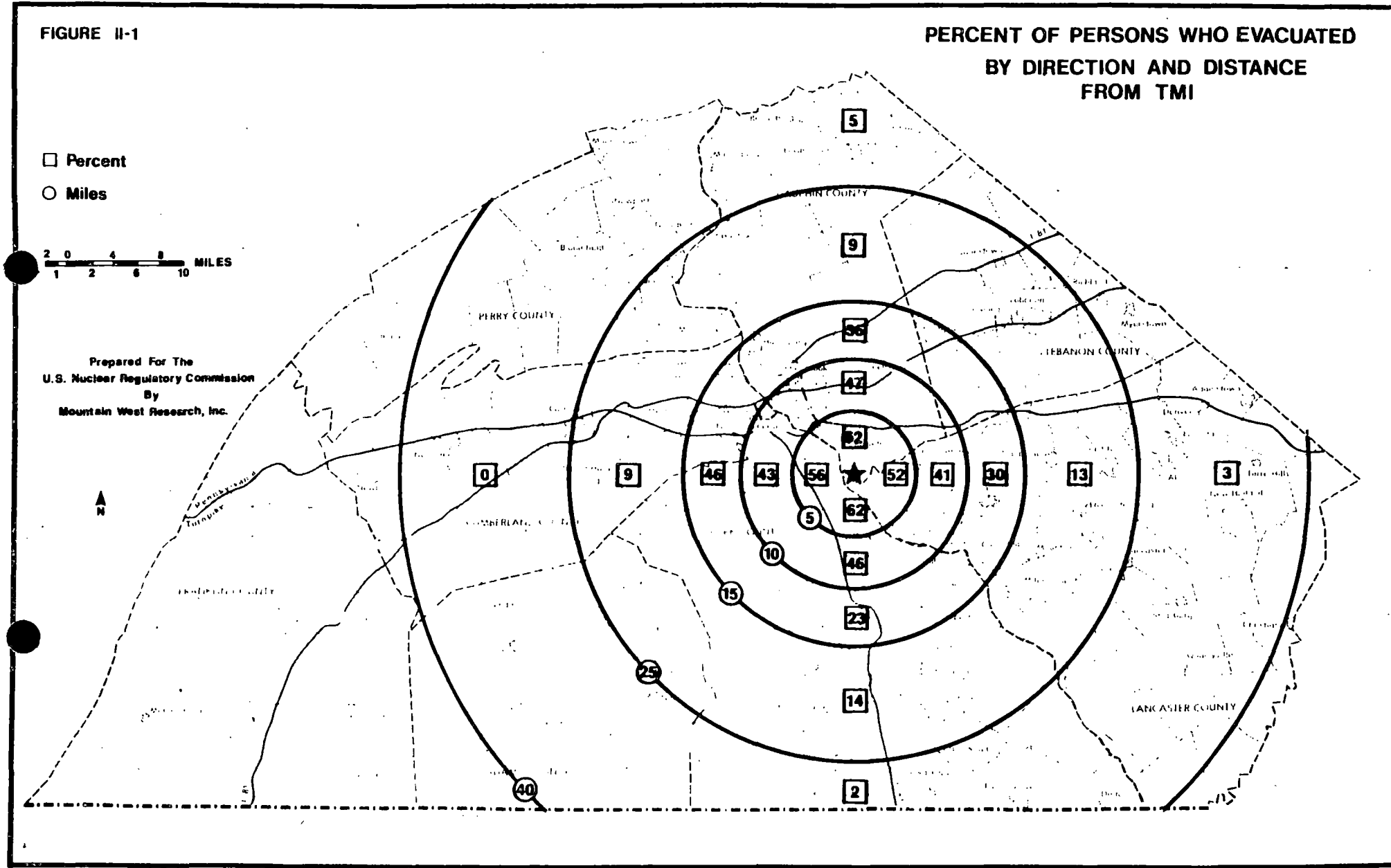
Enclosures:

1. NUREG/CR-1093
2. NUREG/CR-1215
3. Figure 1

FIGURE 1

FIGURE II-1

PERCENT OF PERSONS WHO EVACUATED
BY DIRECTION AND DISTANCE
FROM TMI



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3. Figure 1

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