

March 20, 1980

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
)
METROPOLITAN EDISON COMPANY) Docket No. 50-289
) (Restart)
(Three Mile Island Nuclear)
Station, Unit No. 1))

LICENSEE'S RESPONSE TO SHOLLY INTERROGATORY
(FIRST SET) NO. 08-006

INTERROGATORY NO. 08-006

Identify specifically, based upon guidance contained in NUREG-0396, how the Emergency Plan considers the impact on emergency planning of Class 9 accidents.

RESPONSE

The following response is drafted in the context of Licensee's Emergency Plan and relates solely to the Emergency Plan. The TMI Unit 1 Emergency Plan was developed to ensure that all emergency situations are handled logically and efficiently. The Emergency Plan is designed to cover the entire spectrum of emergencies from in-plant, localized emergencies to major emergencies involving action by offsite emergency response agencies and organizations (Emergency Plan § 4.3.1). This necessarily includes consideration of potential Class 9 accidents.

The response to any potential emergency can be analyzed in terms of accident assessment, notification, and protective and/or corrective actions. In order to perform these functions success-

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fully, an emergency plan should describe the emergency classification scheme to be used, the manpower response to emergencies (including organizational structures), the emergency facilities and equipment that can be brought to bear in the event of an emergency, and the training to be relied upon to assure implementation of the plan. As described below, in dealing with these factors Licensee's Emergency Plan includes consideration of the potential for Class 9 accidents.

(a) Accident Assessment -- Accident assessment consists of identification, classification, and monitoring.

The instruments to be relied upon for accident identification are described in the Emergency Plan at § 4.4.3.2 and Table 7. For more severe accidents, including consideration of Class 9 accidents, the additional instrumentation recommended by the Lessons Learned Task Force will be used to aid in accident identification. This includes such instruments as extended range radiation monitors, in-core thermocouples, and wide-range reactor outlet temperature measurement. Reliance on such instrumentation for accident identification evidences the consideration given in the Emergency Plan to all accidents including potential Class 9 accidents.

Licensee has adopted the accident classification system described in NUREG-0610, Draft Emergency Action Level Guidelines for Nuclear Power Plants, September 1979 (Emergency Plan § 4.4.1). A particular goal of this classification system, and the emergency action level criteria that trigger the classifications,

is to achieve an early readiness status on the part of emergency response personnel and organizations. This goal of prompt response mobilization recognizes that for certain highly unlikely accidents, including Class 9 accidents, quick protective actions may be necessary.

In addition, many of the specific emergency action levels listed in the Emergency Plan are likely to be exceeded only during a Class 9 accident. E.g., Emergency Plan §§ 4.4.1.2.2, 4.4.1.2.10, 4.4.1.3.4 & 4.4.1.3.7. Moreover, the "Example PWR Sequences" listed in NUREG-0610, at page 15, illustrate possible General Emergency initiating events involving potential Class 9 accidents.

Similarly, the accident monitoring capabilities described in the Emergency Plan illustrate a consideration of potential severe accidents, including Class 9 accidents. Such monitoring capabilities include instrumentation for inadequate core cooling, high-range effluent radiation monitors, and in-plant iodine instrumentation (Emergency Plan § 4.7.6.1.7).

(b) Notification -- Following declaration of an Unusual Event, Alert, General or Site Emergency, plant personnel are to notify appropriate offsite agencies (Emergency Plan § 4.6.1.2.2). In addition, Licensee's offsite and onsite emergency support organizations are to be notified and activated in varying degrees depending on the severity of the accident (Emergency Plan § 4.6.1.3). In order to assure a means of effecting these notifications, Licensee has provided a reliable communications system

that is routinely used and tested (Emergency Plan § 4.7.5). Consideration of serious accidents, including potential Class 9 accidents, is reflected both in the promptness with which these notifications are to be made and in the installation of communications hardware for these notifications.

State and local agencies are responsible for notifying the population-at-risk in the event of an emergency (Emergency Plan § 4.6.6.1). The means available for such notifications, as well as the geographic extent of such notifications (i.e., within the 10-mile EPZ), evidence a consideration of potential Class 9 accidents.

(c) Protective and/or Corrective Actions -- Under the Emergency Plan, Licensee is responsible for onsite protective and/or corrective measures (Emergency Plan §§ 4.6.3, 4.6.4.1.1, 4.6.4.2 & 4.6.4.3.1), while state and local agencies are responsible for offsite protective measures (Emergency Plan §§ 4.6.4.1.2 & 4.6.4.3.2). Both Licensee's Emergency Plan and the plans of state and county agencies have adopted the 10- and 50-mile Emergency Planning Zones ("EPZ's") recommended in NUREG-0396 as the planning basis within which detailed plans for protective action have been developed (Emergency Plan § 4.2.1.5). The geographic extent of these EPZ's is based on a consideration of potential Class 9 accident consequences. In addition, as a voluntary matter the five affected counties have developed 20-mile evacuation plans.

As reported in NUREG-0396 (p. 16):

After reviewing the potential consequences associated with [the more severe design basis accidents and the accident spectrum analyzed in the Reactor Safety Study], it was the consensus of the Task Force that emergency plans could be based upon a generic distance out to which predetermined actions would provide dose savings for any such accidents. Beyond this generic distance it was concluded that actions could be taken on an ad hoc basis using the same considerations that went into the initial action determinations.

The generic distances specified in NUREG-0396 were a radius of about 10 miles for the plume exposure pathway and a radius of about 50 miles for the ingestion exposure pathway. The Task Force further concluded that the recommended EPZ's were "sufficient to scope the areas in which planning for the initiation of predetermined protective action is warranted for any given nuclear power plant" (NUREG-0396 at p. 24).^{*/} See also NUREG-0654 at pp. 9-10.

^{*/} The basis for this conclusion is described in detail in Appendix I to NUREG-0396. This analysis is summarized in the text of the report as follows (pp. 16-17):

The [10-mile] EPZ recommended is of sufficient size to provide dose savings to the population in areas where the projected dose from design basis accidents could be expected to exceed the applicable PAGs under unfavorable atmospheric conditions. As illustrated in Appendix I, consequences of less severe Class 9 accidents would not exceed the PAG levels outside the recommended [10-mile] EPZ distance. In addition, the [10-mile] EPZ is of sufficient size to provide for substantial reduction in early severe health effects (injuries or deaths) in the event of the more severe Class 9 accidents.