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FEDERAL EMERGENCY MANAGEMENT AGENCY

Washington, D.C. 20472

May 15, 1981

Mr. Brian K. Grimes
Director, Division of Emergency Preparedness
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Grimes:

This responds to your request of March 23, 1981, that the Federal Emergency Management Agency (FEMA) provide comments on the State and local plans and preparedness relative to Three Mile Island (TMI-1) in Pennsylvania.

What follows is a preliminary judgment pending formal State submission of plans, conduct of a joint exercise and of a public meeting in accordance with 44 CFR 350.

The current editions of State and county plans, as reviewed by the FEMA Region III Regional Assistance Committee (RAC), represent a significant improvement over previous versions as covered in its December 24, 1980, Interim Report. Intensive effort on the part of the Pennsylvania Emergency Management Agency has gone into the upgrading of State and county plans.

Specific deficiencies as keyed to the standards of NUREG-0654/FEMA-REP-1, Revision 1 are noted in the enclosed RAC review.

We will be in a better position to comment on the adequacy of the site specific TMI-1 preparedness following the joint exercise.

Sincerely yours,

John E. Dickey
John E. Dickey

John E. Dickey
Director, Radiological Emergency
Preparedness Division, Population
Preparedness Office

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Enclosure



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REVIEW OF PENNSYLVANIA REP PLANNING

SITE-SPECIFIC TO THREE MILE ISLAND FIXED NUCLEAR FACILITY

This report is based on a Regional Assistance Committee review of the latest Pennsylvania state and county plans site-specific to Three Mile Island Fixed Nuclear Facility and provides an analysis of the current status of state and local planning prior to FEMA's formal findings in accordance with 44 CFR 350.

The February 23, 1981 edition of Annex E, "Fixed Nuclear Facility Incidents" to the Commonwealth of Pennsylvania Disaster Operations Plan was reviewed. This state plan is current, and supercedes all previous versions of Annex E. The five risk county plans which were reviewed are those of York, Dauphin, Cumberland, Lancaster, and Lebanon Counties. These plans were completed in draft form in April, 1981, and state and county plans are still in draft status at this time.

Discussion

The format of this report follows the planning standards of NUREG-0654/FEMA REP 1, Rev. 1, upon which this analysis is based. The highlights of this analysis are as follows:

- A. Assignment of Responsibility: State plan covers state organizations well, including interface with counties. Federal and private agencies (e.g., Red Cross) are not mentioned in this planning standard, which is a deficiency. County plans have planning gaps to be met in this area; i.e., there are still many procedures and details not presently incorporated into the plans.
- C. Emergency Response Support and Resources: State and county organizations covered well. State plan still needs to provide more details for federal support requirements at state level.
- D. Emergency Classification System: Both state and county plans use a standard classification and action level system, which is adequate.
- E. Notification Methods and Procedures: County plans do not provide for adequate notification and warning of the public prior to the installation and functioning of the licensee's proposed siren system.
- F. Emergency Communications: The back-up communications role of Dauphin County for the state needs further development particularly in establishing procedures.
- G. Public Education and Information: Closer coordination between state and counties is needed for developing handout materials, and counties need to better insure availability of information to transients.
- H. Emergency Facilities and Equipment: Emergency facilities are adequate, emergency equipment kits are deficient in scope and quantity.
- I. Accident Assessment: This standard has been adequately met.

J. Protective Response: The state still needs to fully analyze and incorporate, where appropriate, the licensee's evacuation route and time study into its planning. Counties still need to complete unfinished municipal coordination planning.

K. Radiological Exposure Control: State planning needs to be modified to allow for much greater predistribution of dosimetry equipment. County planning needs to be modified to allow for emergency worker decontamination monitoring closer to their work stations.

L. Medical and Public Health Support: State and county planning is adequate.

M. Recovery and Reentry Planning and Postaccident Operations: State and county planning is adequate.

N. Exercises and Drills: County plans need to develop radiological monitoring drills and improved communications drills.

O. Radiological Emergency Response Training: County plans need to include radiological monitoring training and improved emergency worker training in general concerning dosimetry considerations. There is also a need for both state and county planning to provide for an annual retraining program.

P. Development, Periodic Review, and Distribution of Emergency Plans: The state needs to update its duty officer and EOC procedures. County plans need to identify and list supporting procedures in much greater detail than is presently evident.

The current editions of state and county plans represent a significant improvement over previous versions reviewed for the December 24, 1980 Interim Report. Intensive effort on the part of the Pennsylvania Emergency Management Agency has gone into the upgrading of state and county plans.

County plans, including necessary municipal plans, however, do not reflect the degree of development and completeness found in Annex E. Additional effort in the areas of procedures and coordination with responsible municipalities is necessary.

While important issues relative to NUREG-0654 have been identified, the plans provide an adequate planning base for the exercising of response capabilities.

A. ASSIGNMENT OF RESPONSIBILITY

Planning Standard

Primary responsibilities for emergency response by the nuclear facility licensee, and by state and local organizations within the Emergency Planning Zones have been assigned, the emergency responsibilities of the various supporting organizations have been specifically established, and each principal response organization has staff to respond and to augment its initial response on a continuous basis.

State Plans

The February 23, 1981 State Plan (Annex E of the DOP) meets the assignment of responsibility requirements of NUREG-0654 for state and county organizations, from a state level perspective. Specifically, the Governor retains overall directional authority over state emergency response organizations, while the Pennsylvania Emergency Management Agency (PEMA) is charged with overall responsibility for the planning and coordination of state and county level response for fixed nuclear facility incidents. PEMA's authority is derived from the Pennsylvania Emergency Management Service Act 323 of 1978.

Regulations promulgated pursuant to Act 323 (Emergency Responsibilities of Department and Agencies, 4. PA. Code, Section 3.2 st. seq. as approved April 1980) identify 20 state agencies and departments with response and/or support roles for a radiological emergency relative to fixed nuclear facilities; 19 of which also have state Emergency Operations Center (EOC) responsibilities. This is reflected clearly in the state plan, and represents a significant improvement over previous versions of Annex E. In previous versions, Annex E referenced the much broader DOP, which did not adequately define state agency concepts of operations and responsibilities pertinent to fixed nuclear facility incidents.

Facility responsibilities and concepts of operations are dealt with adequately in the state plan.

Conspicuously absent in the concept of operations and responsibilities sections of the state plan are federal agencies (Federal Radiological Monitoring Assistance Plan (FRMAP)) and private agencies, e.g., Red Cross.

Both groups are actually intrinsic to the state's response scheme, and as such should definitely be included in these parts of the state plan. It should be noted, however, that federal and Red Cross roles are covered in other parts of the state plan which deal with the specific roles these groups are expected to perform.

The state plan assigns authority for directing emergency response to the state agency heads for their respective organizations, and at the county and municipal levels to the respective elected officials. The Governor's and PEMA's authority were mentioned previously. County level government is also given sufficient authority to act in behalf of PEMA, should communications be interrupted. This last point is a significant improvement over previous versions of Annex E.

The state plan provided for 24-hour emergency response capability of all key response organizations, on both an initial and continuing basis. Written agreements between the state, other support organizations, and other states (Maryland) are included in draft form. They are consistent with the plan's concept of operations, and will be acceptable once signed. The agreement between the state and Red Cross is signed and acceptable. This represents a positive change from the previous version of Annex E.

County Plans

All five county plans adequately identified individuals in authority, by title, to take charge of emergency response. The Governor is the official responsible for the decision to evacuate; the County Commissioners are responsible for their respective counties' decision making; and the county emergency management coordinator for all response organization coordination within their respective counties.

However, the five risk county plans are written in such a way that they do not always provide a clear understanding of assigned responsibilities and organization interrelationships (concept of operations) between all response organizations falling under county planning jurisdiction.

All five county plans recognize assignments of responsibility at the federal, state, county and municipal levels, but they are presented in a sketchy and inconsistent fashion. The only reference to the federal role in the scheme of things was found in a block diagram type interrelationships chart. No mention at all was found of the licensee's role in either the responsibilities or concept of operations sections. This is felt to be a particular problem in the case of Dauphin County, due to its unique role as being the parent county. During normal operations, Dauphin County and PEMA both receive direct notification by the licensee at all four action levels. The other four counties are notified directly only during a general emergency. Should communication channels breakdown between the licensee and PEMA, Dauphin County will assume PEMA's notification role in relation to the other four risk counties.

Also not adequately covered in the responsibilities and concept of operations sections of all five county plans was the Red Cross. The Red Cross is responsible for operating and providing services at the mass care centers. This raises questions as to the level of coordination which exists between the county governments and the responsible Red Cross chapters.

All five county plans assign significant responsibilities to the municipalities in such areas as evacuation, security, training of volunteers, reentry and in general providing for a coordinated and consistent municipal plan. However, there is no mention of municipalities in the concept of operations sections of the county plans. Furthermore, many municipal plans are still under development and are not available to FEMA for review. Many of the municipal plans which were submitted as part of the county plans were found to be lacking in important procedural details and content. There seems to have been very little progress at the county/municipal interface level of planning.

All five counties demonstrated 24-hour emergency response capability through their communications centers and EOCs. They all have adequate legal authority to fulfill their assigned responsibilities.

Letters of agreement between the risk counties and support organizations are provided; but many which are necessary are still in the process of being negotiated.

In summary, all five county plans have not shown an adequate level of planning concerning overall assignments of responsibility and the interrelationships of all emergency response organizations. It is quite possible that the levels of preparedness and response capabilities of the counties exceeds that which is indicated in the county plans. The June 2 TMI exercise should shed more light on this last issue.

C. EMERGENCY RESPONSE SUPPORT AND RESOURCES

Planning Standard

Arrangements for requesting and effectively using assistance resources have been made, arrangements to accommodate state and local staff at the licensee's near-site Emergency Operations Facility have been made, and other organizations capable of augmenting the planned response have been identified.

State and County Plans

In general, the state has indicated in its plan the ability to man the licensee's EOF with qualified BRP liaison personnel who will assist BRP Headquarters to assess any radiological accident. BRP Headquarters will make the state assessment, not the licensee, unless there is insufficient time to do so; then the licensee will provide the assessment. The state plan also provides for the NRC on-site assessment to be given equal weight with that of the state. The state will also make use of federal FRMAP capabilities in its assessment functions, when appropriate.

The state plan has made some progress in incorporating the federal response capability into its operations planning. The BRP logistician is the state official with the responsibility of calling for federal assistance through FRMAP at Brooklawn National Laboratory. The logistician will first check with the licensee before calling on FRMAP, so that the request will be coordinated. This is a positive change from the previous version of Annex E, where both parties seemed to function independently in calling IRAP.

The BRP plan identifies the federal FRMAP resources expected, describes their respective responsibilities, and includes their expected time frames for arrival at TMI in an emergency response situation. This, too, is a positive change.

The state plan identifies the State Department of General Services with having the responsibility for providing facilities and communications support for federal response organizations. This is a positive change from the previous version of Annex E, where no specific responsibility was assigned in this area. However, the state plan still does not give any indication of what specific facilities and communications are being planned for. This last area constitutes a deficiency, however, the federal response organizations themselves are partly to blame for this for not actively identifying their own needs.

The state plan clearly states that BRP will rely on its in-house laboratory capabilities as will the State Department of Agriculture for the ingestion pathway, for analysis of samples. There are no unmet needs in this area; and consequently no need for identifying other support organizations and their capabilities in this area.

The five county plans have relatively little applicability towards this planning standard, in that the state is responsible for assessment, radiological monitoring, and interfacing with federal response organizations. County plans indicate that county personnel will be made available, upon request, to assist state personnel when needed. There is also a provision for the County Extension Agent to operate from the county's EOC. This is adequate, since the state has not identified any unmet needs in this area.

Unlike the state Plan, the five county plans do rely heavily on private organizations, e.g., Red Cross, RACES, etc., municipal service personnel (some of whom are volunteers), other counties (support), and school districts. Some required agreements are still under development, making it difficult to determine the actual level of resource support available in the counties.

D. EMERGENCY CLASSIFICATION SYSTEM

Planning Standard

A standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee, and state and local response plans call for reliance on information provided by facility licensees for determinations of minimum initial offsite response measures.

State and County Plans

The state and county plans have adopted a standard emergency classification and action level system consistent with one another, the licensee's plan, and Appendix 1 of NUREG-0654. This scheme is incorporated throughout the planned emergency response activities.

This represents a positive change over previous planning, where particularly the county plans were inconsistent with one another and this standard is now adequately met.

E. NOTIFICATION METHODS AND PROCEDURES

Planning Standard

Procedures have been established for notification, by the licensee of state and local response organizations and for notification of emergency personnel by all response organizations; the content of initial and followup messages to response organizations and the public has been established; and means to provide early notification and clear instruction to the populace within the plume exposure pathway Emergency Planning Zone have been established.

State and County Plans

Adequate initial notification procedures have been established between the licensee and the state and five risk counties. Both PEMA and the parent, i.e. Dauphin, county will be notified at all four incident classification levels. All five risk counties will be notified by PEMA at the various classification levels with direct notification by the licensee at the General Emergency level. The state and county plans also provide for Dauphin County to assume the primary role of coordination with the remaining risk counties should PEMA's communications fail.

Notification of emergency response personnel will take place, for the most part, through the use of telephone fan-out systems. This is not considered a deficiency as such personnel should be notified prior to any general public announcement and thus there should not be any unusual demand on the telephone system. However, most key personnel at the county level can be reached by alternative methods such as pagers, mobile radios and emergency services communications. In some cases, the procedures for notifying emergency response personnel at the state and municipal levels need to be expanded upon, including alternates for key personnel at the municipal level.

The present method of notifying the public calls for the use of existing siren systems, and of police and fire vehicles equipped with public address systems. This mode is considered inadequate in that many of the municipal plans do not contain predesignated routes and delineate the resources needed to insure this can be accomplished. Along with these deficiencies, it is generally assumed that the present notification system would require greater than 15 minutes to notify the populace within 5 miles of the plant and 45 minutes for the entire Plume Exposure EPZ. The licensee has proposed to complete, by July 1, 1981, an enhanced outdoor warning system adequate to meet Appendix 4, N-0654 guidelines utilizing the attention alert signal of 3 to 5 minutes steady duration. These sirens will be supplemented through the use of emergency vehicles equipped with public address systems, where necessary.

It is reasonable to assume that adequate warning will be provided when the proposed system is complete. However, a complete testing of the system from a mechanical and administrative standpoint will be essential.

E. NOTIFICATION METHODS AND PROCEDURES

State and County Plans (cont'd)

The current emergency public information messages prepared for announcement over the EBS system by the respective risk courties are deficient only in terms of a lack of provision for information as to the specific nature of the problem(s) at the facility and the consequences to the public if recommended protective actions are not followed. This is expected to be accomplished on an ad hoc basis as the information is known and the need perceived during an incident. Additional "fine-tuning" of the messages should also be accomplished in order to provide clearer more precise instructions to the public.

F. EMERGENCY COMMUNICATIONS

Planning Standard

Provisions exist for prompt communications among principal response organizations to emergency personnel and to the public.

State and County Plans

The principle means of initial contact between primary response organizations and emergency personnel is by telephone. The State EOC, BRP headquarters, and the five risk county EOCs maintain a 24-hour communication capability. BRP and the five counties provide for 24-hour notification at their EOCs, while the State EOC can be operated 24-hours-a-day but is dependent upon a duty officer for notification. An alternative method of notifying the state is through the Dauphin County EOC (operational on a 24-hour basis). This alternative means has not been sufficiently developed in that procedures would have to be established to notify all state and county agencies. Dauphin radio communications with the other risk counties needs to be formalized.

State and county communications planned for use include emergency services networks (i.e. police, fire and ambulance networks) and other emergency systems (such as teletypes and radios). These systems, utilized on a day-to-day basis will be supplemented by the respective county's Radio Amateur Civil Emergency Services (RACES), which will use their own equipment. These volunteer services will serve as a backup to commercial telephone by providing alternative communications to schools, other counties, municipalities and mass care centers. Letters of agreement and implementable plans are still being sought by FEMA for inclusion in the various county plans in order to ensure agreement and coordination among the parties involved.

The full-scale exercise, scheduled for June 2, should demonstrate whether or not the existing systems meet the requirements of Pennsylvania's Fixed Nuclear Facility Planning.

The primary communications link between PEMA, adjacent states and federal agencies will be via commercial telephone lines and Civil Defense National Teletype System (CDNATS) and Civil Defense National Voice System (CDNAVS) which interfaces with FEMA, Region III. Backup communications will be via Civil Defense National Radio System (CDNARS), which also interfaces with FEMA, Region III.

Communication between state off-site monitoring teams and the near-site EOF are to be via radio. However, it is unclear whether this radio system is capable now of direct communication with the EOF or does it have to be relayed through BRP Headquarters over dedicated telephone to the EOF. This is an important item to be exercised on June 2 since the BRP team captain is to be located at the EOC and capability of the communication system is critical to accident assessment.

As stated under planning Standard E, expanded procedures for notification of emergency response personnel at the state, county and municipal level need to be reviewed by FEMA. Also, the PEMA Duty Officer SOP for FNF must be updated to include all response organizations. Since alerting procedures were not demonstrated during the last exercise, it is crucial to be shown on June 2.

F. EMERGENCY COMMUNICATIONS

State and County Plans (cont'd)

Both the state and the five county plans call for periodic testing of the entire emergency communications system and the county plans call for testing of the public warning system once it is in place.

G. PUBLIC EDUCATION AND INFORMATION

Planning Standard

Information is made available to the public on a periodic basis on how they will be notified and what their initial actions should be in an emergency (e.g., listening to a local broadcast station and remaining indoors), the principal points of contact with the news media for dissemination of information during an emergency (including the physical location or locations) are established in advance, and procedures for coordinated dissemination of information to the public are established.

State and County Plans

Neither the current state nor the five county pre-emergency public information brochures independently provide all elements of the information sought in NUREG-0654/FEMA REP-1, element G.l.a.-d. Thus, only if the state and county material (in the case of York County, municipal instructions as well) were distributed in a coordinated manner or the pamphlets were combined would the present brochures be adequate.

Provisions need to be made to assure that emergency information is provided to transients. Motel, hotel and park managers, as well as employers, must be made aware of their responsibility to provide the necessary information to their guests and employees.

The proposed public information programs and public education programs set out in the state and county plans are still under development. If implemented they would exceed the requirements of this planning standard.

The PEMA public information officer will be the state spokesman, under the authority of the Governor's Press Secretary. This clears up some of the confusion on this point from the previous version of Annex E.

Both the state and counties have planned to establish points of contact with the news media for dissemination of information during an emergency. However, the actual physical locations have not been established at this time.

H. EMERGENCY FACILITIES AND EQUIPMENT

Planning Standard

Adequate emergency facilities and equipment to support the emergency response are provided and maintained.

State and County Plans

The lead offsite organizations, state and county levels, all have established emergency operations centers (EOC). Staffing of these EOCs is projected to provide for 24-hour operations and timely notification. The emergency response staffs include representatives of the major response organizations and are to coordinate the activities of their respective organizations which may either be directed from the EOC's or from some other locations.

The lead EOC's planned for use are:

State Level: State EOC, Commonwealth and Forster Streets, Harrisburg, PA
State Control Area EOC, Rt. 522 School Ent., Selinsgrove, PA

Dauphin County: County EOC, Front and Market Streets, Harrisburg, PA

Cumberland County: County EOC, S. Hanover Street, Carlisle, PA

Lancaster County: County EOC, 50 North Duke Street, Lancaster, PA

Lebanon County: County EOC, 400 South Eighth Street, Lebanon, PA

York County: County EOC, East Market Street, York, PA

These EOCs were developed for use by the respective level of government during emergencies to include nuclear attack. Each have trained staff, communications, emergency generator, fuel supply, etc. to meet FEMA's EOC criteria. The EOC's are all occupied on a day-to-day basis by the Emergency Management Staff of the State or the county they serve and at county level they are all utilized as the counties central dispatching for fire, police, and ambulance emergency services. The EOCs and the respective emergency response staffs have been consistently activated to the level required to deal with the consequences of disaster emergencies and have operated for 24-hour periods over extended periods of times to include the two week period during the TMI-2 incident in 1979.

In addition to the State EOCs at Harrisburg, which coordinates the Commonwealth's emergency response, and at Selinsgrove, which coordinates the hosting preparations, several state agencies have headquarters operation centers which either support the emergency response team at the main EOC or direct the activities of their agencies coordinating such action through their representative at there EOCs. Among these headquarters operations centers are:

Bureau of Radiation Protection/Department of Environmental Resources
14th Floor of Fulton Building, Harrisburg.

State Department of Agriculture, the Agriculture Building in Harrisburg.

H. EMERGENCY FACILITIES AND EQUIPMENT

State and County Plans (cont'd)

State Police Headquarters, 1800 Elmerton Avenue, First Floor, Harrisburg.

National Guard Headquarters, Fort Indian Town Gap.

State Department of Health, Health, Welfare Building, Harrisburg.

The Bureau of Radiation Protection has the primary role for offsite radiological monitoring for the commonwealth and shall serve both state and county level decision makers through the PEMA coordinating channels. The BRP will dispatch two monitoring teams for a TMI incident and maintains field monitoring equipment at three locations; Harrisburg, Pittsburgh, and Wernersville, Pennsylvania. Three sets of equipment are maintained at each of these locations. BRP maintains an inventory of this equipment, inspects it and keeps it calibrated in accordance with existing requirements.

The licensee's emergency operating facility (EOF) will receive all field monitoring readings and environmental sampling results generated by the state, licensee and federal agencies. BRP headquarters will be the central receiving point for state level monitoring and will interface by radio and/or dedicated telephone with the licensee EOF and the DOE FRMAP headquarters at Capital City Airport when it is established.

Activation of emergency response staffs at state and county EOCs and headquarters operations centers are generally dependent upon telephone. Cascading fan-out systems have been designed to enhance the timeliness of this process. Some procedures still need to be developed and reviewed at state agency level and at municipal government level. Notification drills of all response members should result in correcting any deficiencies to include familiarization of the procedures, maintaining currency of telephone numbers and increasing the proficiency through training. (See Planning Standard E).

Current inventories of radiological monitoring equipment to support emergency personnel monitoring and monitoring of public by the county level government shows there is insufficient quantities of needed equipment on hand to allow for predistribution where it is recommended and planned for. To meet the requirement for geiger counters (CDV-700) and self-reading dosimeters (CDV-730) an adequate number are stored at PEMA Supply Depot in Fort Indian Town Gap. There are insufficient thermoluminescence dosimeters (TLD) for permanent record dosimetry of emergency workers. PEMA is in the process of securing them. (See Planning Standard K).

Preparedness to mobilize for a fixed nuclear facility incident at TMI has not progressed to a point that emergency personnel kits for emergency workers have been established. Items that would make up such a kit are still being collected which precludes such packaging. The only respiratory protection equipment or protective clothing under present consideration is that of the National Guard. Current planning adequately describes quantities needed and predistribution points for KI and dosimetry. Equipment presently available is to be expediently distributed upon activation of emergency workers. Predistribution of KI, personnel dosimetry equipment, instruction on equipment, respiratory protection and protective clothing should be in place at least to the operational level of the emergency workers response organizations before this standard can be considered adequately met. (See Planning Standard K).

I. ACCIDENT ASSESSMENT

Planning Standard

Adequate methods, systems and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use.

State Plans

The Bureau of Radiation Protection which is within the State Department of Environmental Resources is specifically assigned the role of Accident Assessment for the Commonwealth of Pennsylvania. This is to include: the interface with the licensee and the federal agencies at the Licensee's Emergency Operations Facility; providing a 24-hour headquarters operating center at the Fulton Building in Harrisburg; liaison personnel at the state level EOC in Harrisburg; and off-site field monitoring within the plume exposure Emergency Planning Zone.

BRP has two mobile two-man radiological monitoring teams with sufficient equipment, vehicles and two way radio maintained in a ready to act and use status. The equipment available and planned for use is designed to adequately measure airborne radiiodine under field conditions. Locations where readings are to be made around and in the plume exposure zone of TMI have been predesignated. The familiarity of the mobile teams with the predesignated location, their ability to operate the equipment, and the radio communications to BRP headquarters operation center were adequately demonstrated during the July 16, 1980 exercise. The personnel for these monitoring teams live in the Harrisburg area and based on the July 16, 1980 exercise, their response time appeared adequate.

The BRP monitoring team captain will operate out of the near-site EOF and share the monitoring teams reading with the licensee as well as BRP headquarters in Harrisburg. When DOE is operational in the field, its representative at this EOF will share its findings with the licensee and BRP. A joint assessment will be sought through these processes. The adequacy of the communications capability and the interface planned for the near-site EOF has not been demonstrated and was not included in the July 16 exercise.

A full scale exercise is scheduled for June 2, 1981, which will test the interface between the licensee and BRP exercising the capabilities and procedures in the assessment and monitoring of actual or potential offsite consequences of a radiological condition.

BRP and the licensee will coordinate on the call for assistance from DOE for offsite radiological monitoring assistance. Based upon communications between BRP and DOE the estimate response time, size of response team and general requirement to support the federal response team. (See Standard C.)

DOE capability is planned for to provide tracking the airborne radioactive plume from the air and to operate a computer record of all known and estimated dose commitment for periodic estimation of total population exposure. (See Standard M.)

This standard has been adequately met.

J. PROTECTIVE RESPONSE

Planning Standard

A range of protective actions have been developed for the plume exposure pathway EPZ for emergency workers and the public. Guidelines for the choice of protective actions during an emergency, consistent with federal guidance, are developed and in place, and protective actions for the ingestion exposure pathway EPZ appropriate to the locale have been developed.

State and Local Plans

Sheltering, evacuation, and access control are the protective actions planned for in the TMI site-specific planning.

State Plans

In general, the state planning is adequate to show the decision process and means to direct or recommend protective actions. Protective actions are to be based upon EPA Protective Action Guides (PAGs) for plume exposures and HHS/FDA Guides for food and animal feeds. Commonwealth planning takes into account consideration of protective action well in advance of the PAGs. Implementation of protective action is generally a county level function with PEMA and other state agencies in coordination with PEMA providing support requirement.

Although the Concept of Operations and the general means of providing such support are covered for the various agencies in present state planning and the more detailed procedures are provided for PEMA, the State Department of Health, and Agriculture and the Bureau of Radiation Protection, the expressed implementing procedures of the Department of Military Affairs, State Police and State Department of Transportation need to be reviewed to completely assess the state support and coordination with the primary roles. Other state agencies do not significantly impact upon the ability of the counties to carry out protective actions.

The State Department of Agriculture Plan (Appendix 7) and the BRP (Appendix 8) deal adequately with protective measures for the ingestion pathway. The maps for food, crops and dairy facilities, etc., which are necessary to support these plans will be reviewed on-site during the June exercise.

PEMA is presently studying the Parsons Brinkerhoff Quade & Douglas, Inc. Study to incorporate in the decision process for determining the best choice of protective action. A portion of the Standard is met by the present use of the study by PEMA in assessing its planning and decision process.

The location of traffic control points is being reconsidered as a result of the Parsons Brinkerhoff Study. The present traffic control locations reflect considerable coordination and based on current assessment are the best locations for such traffic control points. County and municipal plans currently available provide for manning of these predetermined locations.

Security and controlling access to evacuated areas and coordination of these functions is the responsibility of the Police Service to include State Police and Municipal Police augmented as required by the National Guard. More detailed

consideration of this matter and access control during evacuation to insure traffic does not enter the EPZ during the evacuation is necessary. These areas of concern will be specifically addressed in review of the State Police and National Guard procedures.

Provision for the use of radioprotective drugs, establishing a decision process and predistribution plan has been adequately met. A supply has not been secured. The decision to use liquid KI is under consideration. Liquid KI would drastically affect the present planning as self administration would not be as feasible and therefore additional procedures would have to be developed and a delay in administering drug would have to be recognized.

Regardless of the type of KI secured, the Commonwealth has decided not to provide KI to the general public, but plans to implement protective actions such as sheltering or evacuation to protect the general public from radioactive iodine.

County Plans

Each risk county plan recognizes that Accident Assessment and technical advice shall be the purview of the Bureau of Radiation Protection and that recommendation and direction of protective action shall come through PEMA channels. Risk county roles are to implement the protective action.

Some operational maps are still under development. PEMA is producing some of these maps for the five risk counties. The state produced area wide map is enclosed in each county plan and depicts the plume exposure EPZ and major evacuation routes with their estimated capacity and time estimates for those links. The counties have produced individual county maps as part of a public information brochure to direct and control the public to reception centers or to mass care centers.

Transient population notification is expected to be accomplished by the same means as the general population. At present no system or method has been prescribed to ensure that employers, park managers, hotel/motel managers, etc., recognize the responsibility to inform their guests and employees of what they are to do when action is called for during an incident. When this deficiency is corrected and an adequate outdoor warning system is installed and operational, notification of transients will be considered adequate.

The means for protecting those persons confined in an institution has been considered in each county plan and appears adequate. Regarding non-institutionally confined persons, some municipal plans have not been developed and some of those developed have not prepared a list of home bound persons who may need transportation assistance within their jurisdictions. There is reasonable assurance based upon county planning and municipal plans accomplished, that this special population group is under careful consideration and it is only a matter of time before such lists are compiled and ready for use.

The means of relocation of the general population is addressed in the county plans. Personal owned vehicles are assumed to carry the bulk of the evacuated population; school buses are to carry school children if circumstances dictate; persons without transportation are to be transported by mass transit bus service and returning school buses. Institutionalized persons in nursing homes, hospitals,

prisons are to be transported by vehicles specifically identified for this need; and mobility impaired persons not under institutional care are to be transported by vehicles assigned by municipal fire companies in coordination with municipal EMA coordinator. Coordination of these functions is covered at the county level. However, implementation plans such as district and individual school plans and municipal plans are still under development, and thus require ad-hoc management at this time.

Relocation centers and mass care centers have been designated and their locations are 10 miles or more beyond the plume exposure EPZ. Registration of the population using these centers will be on standard forms with the information provided to the respective county EOCs every two hours.

The means for dealing with potential impediments (e.g., seasonal impassability of routes) of evacuation routes are covered at county level by dispatchers in county EOCs who have the day-to-day responsibility to call for such service assistance for police. The counties maintain a resource manual of additional resources which may be called into service when and if service assistance is not available. Assistance then can be sought from the Department of Transportation and the National Guard through coordination with PEMA. There is no specific snow removal plan set out in the radiological emergency response planning. The Parson Brinkerhoff Study assessed additional time necessary to effect evacuation for snow conditions. County assessment, in their situation reports to PEMA during an incident, would provide progress on mobilization and clearance of impediments to evacuation routes. This information would then be taken into account in the protective action decisions.

Radiological monitoring is to be accomplished at mass care centers following procedures provided in the county level plans by linemen trained as radiological monitors. Any discovered contamination shall be reported immediately to BRP through EMA channels. This appears adequate when training is assured for the radiological monitors.

K. RADIOLOGICAL EXPOSURE CONTROL

Planning Standard

Means for controlling radiological exposures, in an emergency, are established for emergency workers. The means for controlling radiological exposure shall include exposure guidelines consistent with EPA Emergency Worker and Lifesaving Activity Protective Action Guides.

State and County Plans

The state plan sets the basic framework for providing a means of controlling radiological exposures. Each emergency worker is supposed to be issued two selfreading and 1 TLD dosimeter (total of three), which from a safety standpoint sounds good. However, since the state plan now requires PEMA to distribute thousands of dosimeters per site to affected state workers and counties, and county plans require the counties to then distribute these dosimeters (once received) to county and municipal emergency response workers, the planning is burdensome. The state plan does not yet contain detailed procedures for this site-specific distribution plan; thus it is very difficult to assess if distribution of all dosimeters to state and risk county personnel could be accomplished within three hours as called for in the state plan. It could literally take hours under this scheme for emergency workers to receive their dosimetry equipment.

County plans have dosimetry distribution plans for their emergency workers. Based on inventories of on hand equipment at county level a severe shortfall of such equipment is shown to include: CDV 742 (0-200R dosimeter), CDV 730s (0-20R dosimeter) or CDV 138 (0-200MR dosimeters) and TLDs (permanent record thermoluminescent Dosimeters). The state maintains its supply of dosimeters and Geiger counter equipment in bulk storage at Fort Indiantown Gap, Pennsylvania, for emergency distribution to TMI risk county emergency workers and state emergency workers. This bulk storage is under control of PEMA which appears to have an adequate supply for the TMI planning area of CDV 742s and CDV 730s but does not now have sufficient TLDs. Predistribution of these state stocked items is not considered because statewide, with other plants operating in the state, a much larger quantity of this equipment would be required. Regardless, PEMA feels most strongly that dosimetry equipment should be predistributed (most importantly TLDs and CDV 730s) to at least the emergency worker organization level, state and local, site-specific to each operating plant.

The counties are also reliant on PEMA for the distribution of additional CDV-700 geiger counters needed for decontamination monitoring at the county level. This distribution problem is not considered as severe as in personnel dosimetry. It is reasonable that CDV-700s can be distributed within 12-hour period, which should be sufficient.

The state/BRP expects to know if there is a possibility of contamination based on the core inventory released long before it could be reported that members of the public have been affected by mass care monitoring. All population leaving the area would then be directed to be screened and if such contamination were wide spread federal assistance will be sought through DOE and FEMA.

The timeframes for the reading of selfreading dosimeters by emergency workers, at least every 30 minutes, is adequate in both state and county plans.

State and county plans require that emergency workers seek replacement after receiving a dose of 15-20R. It is up to elected officials in their respective jurisdictions to authorize emergency workers, if needed, to exceed the 25R PAGs for emergency workers. BRP will not recommend this, just explain the consequences. A state level decision has already apparently been made to automatically permit emergency workers to exceed the general public PAGs of 5R. It is now necessary that BRP explain to all emergency workers in advance the potential for a higher cancer risk from this decision. County plans do outline good decision criteria for elected officials to use in authorizing emergency workers to exceed the 25R PAG; i.e., for lifesaving activities, etc. However, how or when the potential consequences of this will be explained to emergency workers is not provided nor are there considerations to first solicit volunteers, or workers over 45 years of age.

State and county plans have set a level of .05mR/hr above background as the trigger point for requiring decontamination. This is adequate.

Counties are responsible for providing decontamination monitoring services and facilities for the public and emergency workers under their jurisdiction. All five county plans provide for decontamination of the public, and emergency workers. This is to be done at each mass care center which is to have 1 or 2 trained personnel (primarily fireman) in decontamination monitoring. Risk counties should further modify their plans to establish separate decontamination points for emergency workers primarily to be located closer to the risk work areas, such as the county EOC or permit organizational decontamination. Pre-assignment of trained personnel for this function should be provided in the county plans.

L. MEDICAL AND PUBLIC HEALTH SUPPORT

Planning Standard

Arrangements are made for medical services for contaminated injured individuals.

State and County Plans

The state and five county plans all contain a list of the primary and support hospitals that will be relied upon to handle contaminated injured individuals in the event of a radiological emergency. The Pennsylvania DOH prepared this list for county use.

The Pennsylvania Department of Health, Division of Emergency Health Services offers a course to provide emergency medical technicians with basic instructions concerning radiation and its characteristics, initial treatment, triage and transfer of patients.

Arrangements for transportation of radiation victims has been identified.

M. RECOVERY AND REENTRY PLANNING AND POSTACCIDENT OPERATIONS

Planning Standard

General plans for recovery and reentry are developed.

State and County Plans

The Pennsylvania Department of Environmental Resources BRP, is assigned the primary responsibility for the recommendation to relax protective measures and the Governor retains authority to allow reentry. Included in the decision process is the assessment of radiological exposure through evaluating dose records and estimating total population exposure.

PEMA has the responsibility of notifying state agencies and counties to prepare for reentry; the governor will notify the public; and PEMA will coordinate the reentry operation. It is assumed that normal notification systems will be used to notify emergency workers. For recovery, PEMA will coordinate supporting operations upon recommendation from DER to relax protection actions.

DER and BRP will rely on the U.S. DOE to estimate total population exposure, based on information supplied to DOE by DER and other support state and federal agencies. The methodology for this assessment to total population exposure is not included in the state plan; however, it is assumed that DOE does have adequate methodology for providing this support.

The supporting requirement for reentry are outlined in each county plan. It is reasonable to assume that PEMA and the county EMAs can coordinate a reentry program through the agency and response organizational network developed through preparation and affecting evacuation. Therefore, the general planning presently accomplished adequately meets this standard.

N. EXERCISES AND DRILLS

Planning Standard

Periodic exercises are (will be) conducted to evaluate major portions of emergency response capabilities, periodic drills are (will be) conducted to develop and maintain key skills, and deficiencies identified as a result of exercises or drills are (will be) corrected.

State and County Plans

The state plan adequately addresses the requirements for exercises and drills, as specified in NUREG-0654. This represents a positive change from the previous version, in that it is made clear that PEMA will ensure that all necessary planning modifications are made resulting from deficiencies uncovered by exercises and drills.

The five county plans are generally well tied in with the state plan in meeting the requirements of this planning standard, with one exception. The county plans attempt to address the requirement for radiological monitoring drills by stating that radiological monitoring is a state responsibility. However, decontamination monitoring teams certainly fall under the purview of radiological monitoring, and these personnel come from the counties. Therefore, these personnel should be included in radiological monitoring drills when conducted by the state, or have their own drills when the state conducts its exercises and drills at other sites. This deficiency must be rectified before county plans can be considered adequate in this area. See related comment under planning standard O, regarding the training needs required in this area.

An area that requires some clarification is the scope of the counties communications drills. A communications drill should demonstrate the sufficiency of the notification process down to emergency response personnel. At the county level, this involves a combination of radio contact and fairly extensive commercial telephone cascade listings. All these links should be routinely tested as part of a properly conducted communications drill. The county plans as written imply that the telephone contacts will not be tested. Whatever the case may be, FEMA intends to work, through PEMA, to assure that the county plans clearly reflect this approach. It should also be pointed out that this is the only way to insure that all telephone numbers and contacts remain current, and that the notification and follow-up message contents are understood by all response parties.

O. RADIOLOGICAL EMERGENCY RESPONSE TRAINING

Planning Standard

Radiological emergency response training is provided to those who may be called on to assist in an emergency.

State and County Plans

PEMA is assigned the responsibility of coordinating Radiological Emergency Response training at both the state and county levels. Some courses will be given by PEMA and the Pennsylvania Department of Health. There is a major reliance on FEMA sponsored courses, with participation at all levels (state, county, municipal). Many of the courses have not yet been initiated; however, the scope of the courses should be adequate when implemented.

Although plans call for retraining emergency response personnel, there is a need to ensure that this retraining be accomplished on an annual basis.

Currently, county level plans do not specifically include decontamination monitors in required drills (see previous comment under N), nor do they reference the need for training in this area. Another area that should be considered is a short course on low level radiation, dosimetry, and decontamination for emergency workers at local level. Some courses exist that include this; however, because of the size of the potential audience, this could be addressed separately.

A need is now apparent for a county oriented course to familiarize emergency workers and decontamination monitors with their roles and dosimetry considerations relative to their functions.

Pennsylvania has not coordinated the prioritizing and registering of state and county agency participants in FEMA sponsored courses. As a result, Pennsylvania has been slow to fill their allocations and has lost some assigned spaces this fiscal year.

P. RESPONSIBILITY FOR THE PLANNING EFFORT: DEVELOPMENT, PERIODIC REVIEW AND DISTRIBUTION OF EMERGENCY PLANS

Planning Standard

Responsibilities for plan development and review and for distribution of emergency plans are established, and planners are properly trained.

State Plans

The state has adequately designated by organization, title and responsibility its Radiological Emergency Response planning structure. The state has addressed the training needs of its planning personnel and the method for incorporating exercise critique results into plans should be stated.

The Director of PEMA is responsible for reproducing revisions to the State Disaster Operation Plans and distributing according to the published distribution list.

Currently, a detailed listing of supporting plans and their sources are contained in the State's plan and Appendix 18 has a listing by title of implementing procedures and SOPs. This list does not appear complete, and FEMA will seek SOPs from the eleven other State Agencies and the Red Cross in its review. However, it should be noted that the predominate response roles are covered in the agencies procedures now shown in Annex E and/or listed in Appendix 18.

A schedule for update is not provided in the Plan and the staff duty officer procedures and the EOC operation center procedure are not current to Annex E as revised. Planning has been very fluid up to this point and with the extra efforts being made to modify planning at both state and county it is recognized that such other documents have fallen behind. After the June 2nd exercise FEMA will work with PEMA on a schedule where such supporting plans and Annex E may be updated or corrected based on the lessons learned from the exercise and the recently modified plans.

County Plans

County plans appear to adequately meet county responsibilities, but the supporting procedures for such organizations as Red Cross, State Police, USDA Extension Service, school plans and municipal plans, are not covered for the emergency response personnel coordinating with the county staff at county level.

Although the response individual should have such procedures, the County Plan should list them. Compatability of these procedures should be determined by the county and reviewed by FEMA.

The county EMA coordinators are responsible for maintaining the currency of their response plans and distributing the changes accordingly.