



Federal Emergency Management Agency

Washington, D.C. 20472

31 AUG 1982

MEMORANDUM TO: Brian Grimes
Director
Division of Emergency Preparedness
U.S. Nuclear Regulatory Commission

FROM: *Richard W. Krimm*
Richard W. Krimm
Assistant Associate Director
Office of Natural and Technological
Hazards

50-387

SUBJECT: Supplemental Interim Finding on Offsite Emergency Preparedness at Susquehanna Steam Electric Station

The purpose of this memorandum is to transmit the Federal Emergency Management Agency (FEMA) Interim Finding on the Susquehanna Steam Electric Station, Pennsylvania. On October 23, 1981, FEMA submitted an "Interim Finding" that outlined the status of the plan reviews by the Regional Assistance Committee (RAC) and did not include a bottom line statement as to their adequacy. FEMA's finding is now based on a review of the State and county plans and the results of the "Full Scale Joint Exercise" held on March 18, 1982. The following material is attached:

1. Memo entitled "Interim Findings on State Planning and Preparedness for the Susquehanna Nuclear Power Plant; Regional Assistance Committee Observations and Recommendations - Susquehanna Exercise" from Regional Director, FEMA Region III, to the Associate Director for State and Local Programs and Support, dated August 2, 1982, with the following attachments:
 - A. Interim Findings on State Planning and Preparedness for the Susquehanna Nuclear Power Plant (18 pages), and
 - B. Regional Assistance Committee-Region III, Observations and Recommendations, Susquehanna Steam Electric Station Exercise, March 18, 1982 (30 pages).
2. Memo entitled "Interim Findings on Risk County Planning for the Susquehanna Nuclear Power Plant" from Acting Regional Director, FEMA, Region III, to the Chief, Technological Hazards Division, Office of Natural and Technological Hazards, dated December 22, 1981.
3. Letter to the Director Pennsylvania Emergency Management Agency from Director, FEMA, Region III, dated August 25, 1982, regarding implementation of corrective actions.

The FEMA Interim Finding, as stated by the Regional Director, FEMA, Region III, states (page 18 of Interim Findings on State Planning and Preparedness for the Susquehanna Nuclear Power Plant-attachment 1-A):

"Based on the foregoing evaluation, FEMA Region III feels that the Pennsylvania Radiological Emergency Response Plans site-specific to the Susquehanna Steam Electric Station, along with the exercise conducted on March 18, 1982 have demonstrated that the plans and preparedness capability of the State, county and municipal governments is adequate to maintain the health and safety of the public in the vicinity of Susquehanna in that there is reasonable assurance that appropriate protective measures can and would be taken offsite in the event of a radiological accident."

FEMA Region III has been in contact with the Pennsylvania Emergency Management Agency (PEMA) staff regarding corrective actions associated with the deficiencies identified in the plan review and exercise evaluation. The attached letter from FEMA Region III to PEMA (attachment 3) confirms agreements reached between the agencies regarding scheduling and implementation of corrective actions. These corrective actions should serve to improve the overall capability to implement their emergency plans. However, the following items should be conditions placed on the approval of offsite preparedness at the Susquehanna Steam Electric Station.

1. The State of Pennsylvania should obtain a supply of KI adequate to fulfill the existing plan or develop a contingency plan that reflects their inability to obtain supplies to support the existing plan (due to FEMA Region III by October 1, 1982).
2. The State of Pennsylvania should obtain adequate supplies of CDV-730 dosimeters and TLD's to implement the existing plan or revise the plan accordingly.
3. State and county plans should be modified as necessary to account for the abandonment of the field EOC concept (due to FEMA Region III by October 31, 1982).
4. The adequacy of the public alerting and notification system must be verified as called for in the FEMA/Nuclear Regulatory Commission (NRC) joint criteria as stated in NUREG-0654/FEMA-REP-1, REV.1.

In summary, corrections of all deficiencies noted in the plan review and exercise evaluation have been completed or are scheduled for completion by early January 1983 at the latest.

If I can be of any further assistance on this matter, please contact me or Vernon Adler at 287-0200.

Attachments
as stated



Federal Emergency Management Agency

Region III 6th & Walnut Streets Philadelphia, Pennsylvania 19106

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AUG 2 1982

MEMORANDUM FOR: Lee Thomas
Associate Director
State and Local Programs and Support

FROM: *[Signature]* John Wm. Brucker
Regional Director

SUBJECT: Interim Findings on State Planning and Preparedness for
the Susquehanna Nuclear Power Plant; Regional Assistance
Committee Observations and Recommendations - Susquehanna
Exercise

Attached are FEMA Region III's interim evaluation and statement of adequacy regarding state-level planning and preparedness, site specific to the Susquehanna facility. Also attached are the RAC observations and recommendations regarding the Susquehanna exercise held March 18, 1982. If you have any questions or comments, please contact Jim Asher of my staff.

Attachments
Interim Findings
Exercise Report

ATTACHMENT 1

Interim Findings on State Planning and Preparedness
for the Susquehanna Nuclear Power Plant

I. Introduction

On December 22, 1981 Region III presented its "Interim Findings on Risk County Planning for the Susquehanna Nuclear Power Plant." As indicated by the title, this was a partial finding, as it examined only planning at the county level. For reasons that were explained in that report, we considered a full review of state planning and preparedness to be premature at that time. The purpose of this report is to complete our interim findings by evaluating both planning at the State level, and preparedness at the state, county, and municipal levels, site-specific to the Susquehanna facility.

This interim finding is based on the following materials:

1. Commonwealth of Pennsylvania, Disaster Operations Plan, Annex E, "Fixed Nuclear Facility Incidents," November, 1981.
2. Interim Findings on Risk County Planning for the Susquehanna Nuclear Power Plant in Pennsylvania, December 22, 1981.
3. Review of Pennsylvania REP Planning Site Specific to Three Mile Island Fixed Nuclear Facility, May 14, 1981.
4. Formal Evaluation of the Commonwealth of Pennsylvania's and Risk Counties' Plans and Preparedness, Site Specific to Three Mile Island Nuclear Station, May 24, 1982.
5. Regional Assistance Committee, Region III - Observations and Recommendations of the Susquehanna Steam Electric Station March 18, 1982 Exercise.

This report is intended to be a continuation of our December 22, 1981 interim risk county findings. Basic information, such as facility description and general background, was provided in Section I of that report and will not be repeated here.

II. Evaluation

As stated previously, this report will evaluate radiological emergency planning, site-specific to Susquehanna, at the state level only. This evaluation has been based extensively on our previous interim and formal evaluations of Pennsylvania's Radiological Emergency Response Planning (RERP), site-specific to Three Mile Island (TMI).

A. Plans

The State plans are issued under the authority of and in accordance with the provisions of the Pennsylvania Emergency Services Act of 1978, P.L. 1332.

Pennsylvania's RERP is an annex (Annex E) to the State's Disaster Operations Plan. As such, there is recognition of the interrelationship between radiological emergency planning, and planning for other natural and man-made disasters. The state's overall emergency planning effort is based on the premise that similarities among the various types of disasters/emergencies require standardization of procedures and practices to the greatest extent possible.

Annex E is organized into a Basic Plan and 24 appendices. The generic Basic Plan provides a framework for State-level response to a radiological incident occurring at any of the State's fixed nuclear facilities. The appendices deal with such topics as Site Characteristics, Maps, Emergency Action Level Guidelines, as well as subject areas, such as Notification Procedures, Protective Response, Communications, etc. Where appropriate, the appendices include attachments which provide specific information regarding each facility. Supporting plans to Annex E include the host and risk county plans as well as the implementing procedures of the various State agencies.

One reason for our delay in evaluating State-level plans was to await the State's completion of procedures to establish a field or "forward" EOC at a pre-designated location near the facility. Although they did develop an SOP prior to the March 18, 1982 exercise, the State has since decided to drop this concept. The November, 1981 version of Annex E, reviewed here, contains a number of references to this concept, and will require revision accordingly. Planning conflicts caused by this change are noted in the following evaluation.

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 November, 1981 version of annex E 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 et seq. as approved April 1980) identify 22 state agencies and departments with response and/or support roles for a radiological emergency relative to fixed nuclear facilities; 21 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.

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

American Red Cross activities have been added to the Concept of Operations while a new section - Federal Government Support - has been included in the Basic Plan. This partially corrects deficiencies contained in the previous version of Annex E (dated February 23, 1981), and noted in our Interim Findings regarding TMI. However, the Federal Government support role is still not described in Section VI, Concept of Operations and neither Federal nor volunteer agencies are included in Section VII, Responsibilities. While the responsibilities of Federal and volunteer agencies are, perhaps, not delineated fully in all the pertinent sections of the Basic Plan, they nonetheless appear to be adequately described overall.

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 provides for 24-hour emergency response capability of all key response organizations, on both an initial and continuing basis. Written agreements are included as follows: between Pennsylvania and the operators of the Susquehanna Steam Electric Station (and operators of all other facilities, except for the Limerick Generating Station); between Pennsylvania and the states of Maryland, Ohio, West Virginia, New Jersey, and Delaware; between Pennsylvania and the American Red Cross. All agreements are signed and are consistent with the plan's Concept of Operations.

This planning standard has essentially been met.

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 (EOF) have been made,

and other organizations capable of augmenting the planned response have been identified.

State Plan

The state plan specifies that the licensee's EOF will be manned by qualified Bureau of Radiation Protection (BRP) liaison personnel who will assist BRP Headquarters in assessing radiological accidents. 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 Radiological Monitoring and Assessment Plan (FRMAP) capabilities in its assessment functions, when appropriate.

Although the Basic Plan portion of Annex E briefly describes Federal Government support (including FRMAP, NRC, and FEMA), Appendix 12, which is the BRP plan, provides more detailed information regarding this subject. The BRP logistician is the state official with the responsibility of calling for federal assistance through FRMAP at Brookhaven National Laboratory. The logistician will first check with the licensee before calling on FRMAP, so that the request will be coordinated. The BRP plan also identifies the federal FRMAP resources expected, describes their respective responsibilities, and includes their estimated travel times to Susquehanna (and all other Pennsylvania facilities) in an emergency response situation.

Appendix 24 of the state plan ("Support to the Federal Government Response Personnel") details the responsibilities of state and county agencies and provides a general summary of federal government support requirements. Site-specific arrangements are still in the process of being formulated to accommodate federal government response personnel and equipment. As was mentioned in the Interim Findings, this is an area that requires coordination between the federal government and the Commonwealth of Pennsylvania. Thus, the burden of responsibility for addressing the issue cannot be totally placed on the shoulders of the State.

The state plan clearly states that BRP will rely on its in-house laboratory capabilities for analysis of samples. There are no unmet needs in this area; therefore, no other support organizations are identified.

This planning standard is adequate.

D. Emergency Classification System

Planning Standard

A standard emergency classification and action level scheme, the basis of which includes 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 Plan

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

This planning standard is adequate.

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 Plan

Adequate initial notification procedures have been established between the licensee and the state and two risk counties. Both PEMA and the "parent," i.e. Luzerne, county will be notified at all four incident classification levels. Both 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 Plan also specifies that the "parent" county assume PEMA's notification and coordination role with BRP and other 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.

PEMA is the lead state agency for overall coordination of alert and notification of the public. Alert is primarily by means of a siren system activated from the risk county EOCs. PEMA, however, determines the specific time for siren activation, based on recommendations from BRP.

Notification is by EBS messages initiated by the risk counties and broadcast immediately after the alert. PEMA also initiates a public notification message at that time via the National Oceanic and

Atmospheric Administration Weather Radio Stations.

State plans establish minimum testing requirements for the risk counties' alert/notification systems.

This planning standard is adequate.

F. Emergency Communications

Planning Standard

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

State Plan

The State EOC, BRP Headquarters, and the risk counties maintain a 24-hour communication capability. BRP and the counties provide for 24-hour notification at their EOCs, while the State EOC can be operated 24 hours per day, but is dependent upon a duty officer for notification.

The commercial telephone system is the primary means of emergency communications for response coordination. There are two existing dedicated telephone lines linking the facility with BRP, and BRP with the State EOC. Upon the occurrence of an incident, dedicated lines will be installed, as necessary, to supplant the commercial lines as the primary means. State and county communications plans also include use of emergency services networks (i.e. police, fire, and ambulance) and other systems (such as teletypes and radio systems) which are used on a day-to-day basis.

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.

The State's decision to drop the concept of a field EOC has resulted in the need to revise the State's communications plans. The current version of Annex E states that, following the initial notification of an incident occurring at Susquehanna, at the Alert level or higher, PEMA will activate a field EOC to serve as the primary point for continuing communications and coordination. Dedicated phone lines are to provide direct communication between the field EOC and the facility, the EOF, BRP, and all State and risk county EOCs. Furthermore, PEMA's mobile communications van is to move to the field EOC location to provide communication support to field operations. Until the plans are revised to show how these communication functions will be provided without the establishment of the field EOC, this planning element is inadequate.

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 Plan

The State plan contains programs for the development and dissemination of public information and public education materials. Although the programs themselves exceed the requirements of this planning standard, the initial material developed for the purpose did not satisfactorily meet NUREG-0654/FEMA REP-1, Element G.l.a.-d. However, revised emergency information has been prepared consisting of material prepared by PEMA, as well as site-specific information for each of the plume zone counties. FEMA National has indicated that the product is an improvement over previous material.

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.

This standard has been adequately met.

H. Emergency Facilities and Equipment

Planning Standard

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

State Plan

The Pennsylvania Emergency Management Agency, the lead offsite State organization, has established Emergency Operations Centers at their Headquarters, and at three area offices in the eastern, central, and western portions of the State. 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 EOCs or from some other locations.

The EOCs planned for use during an incident at Susquehanna are:

State EOC - PEMA Headquarters, Commonwealth and Forster Sts.,
Harrisburg, PA

PEMA Eastern Area EOC - Hamburg Center, Hamburg, PA

These EOCs were developed for use by the State during emergencies to include nuclear attack. Each have trained staff, communications, emergency generator, fuel supply, etc. to meet FEMA's EOC criteria. The EOCs are all occupied on a day-to-day basis by PEMA emergency management staff. 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 incident in 1979.

In addition to the State EOC at Harrisburg, which coordinates the Commonwealth's emergency response, and the Eastern Area EOC, 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 the Area 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.

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 Susquehanna 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 EOCs and headquarters operations centers are generally dependent upon telephone. Cascading fan-out systems have been designed to enhance the timeliness of this process.

State plans call for each state-level emergency worker to be supplied with a dosimetry-KI kit. The number of such kits (and dosimeter chargers) required by each state agency responding to an incident at Susquehanna has been determined. The kits have not been developed, however, because the component items have not been obtained. Also, the plan specifies that the required number of kits are to be stored (for Susquehanna) at the Eastern Area EOC. In the event of an incident, PEMA is to transport the equipment to the field EOC for distribution to the various agencies. This distribution scheme will have to be modified, now that the State has decided not to establish a field EOC.

PEMA is also responsible for supplying the required number of Dosimetry-KI kits for use by county, municipal and volunteer emergency workers, to be predistributed to the county Emergency Management Agencies. Again, a lack of component items has resulted in a severe shortage of the total number of kits needed for four facilities. PEMA has determined that the following additional resources are needed: CD V-730 Dosimeters - 5,054; TLDs - 11,184. The State has requested FEMA to provide, or arrange for the provision of these items. It remains under consideration by FEMA National at this time.

The State also has not obtained the number of doses of Potassium Iodide (KI) needed for predistribution, as determined by the State and county plans. This subject will be discussed further under Planning Standard K.

Protective clothing and respiratory equipment are not currently envisioned for use by emergency workers. Besides dosimetry and KI, double clothing (i.e. personal rain gear - head cover, boots, rain coat and gloves) is the only other form of radiation exposure control proposed for emergency response personnel.

More precise information would have been preferred regarding other equipment such as communications equipment, emergency and mass care supplies. However, this comment does not reflect on the overall capability of the State and counties to respond to an incident at Susquehanna.

This planning standard has not been adequately met.

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 EOF; 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 radioiodine under field conditions. Locations where readings are to be made around and in the plume exposure zone of Susquehanna have been predesignated.

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.

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 plans estimate response time, size of response team and general requirements needed to support the federal response team. (See Standard C.)

The plans rely on DOE capability to provide tracking the airborne radioactive plume from the air and to operate a computer record of all known and estimated dose projections 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 Plans

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

The state plans, along with the attendant implementing procedures, provide an adequate framework for recommending, directing, and carrying out protective actions, which 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.

The State Department of Agriculture and the BRP deal adequately with protective measures for the ingestion pathway. The plan includes maps for food, crops and dairy facilities, etc., which are necessary to support these measures.

Evacuation time estimates for Susquehanna were prepared by HMM Associates and are included in the State Plan as part of Annex E, Appendix 9. Evacuation time estimates were developed for three different time periods (normal weekday, night, weekend) during both dry conditions and rain/snow. Also considered were more severe conditions - flooding, icing, and winter storm.

Pennsylvania has decided not to provide KI to the general public, planning instead to implement protective actions such as sheltering and/or evacuation to protect against radioactive iodine. Plans for the provision of KI tablets to emergency workers, and establishing a decision process as to its use have been met. However, the problem of an inadequate supply will be discussed under Planning Standard K.

Although detailed procedures are provided for PEMA, BRP, and the State Departments of Health and Agriculture, Annex E does not provide such detail for the State Police, Department of Military Affairs (National Guard), and the State Department of Transportation, which are responsible for providing support and coordination of the Access Control and Security functions. Although this is not considered to be a major deficiency, the plans should provide more specific information regarding the procedures of these organizations.

This planning standard has essentially been met.

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 Plans

The State plan establishes the basic framework for providing a means of controlling radiological exposures. Each emergency worker is supposed to be issued a Dosimetry-KI kit consisting of two self-reading and one TLD dosimeters, plus a fourteen day supply of KI in tablet form. The issue of predistribution of these kits, and the lack of an adequate supply of dosimeters was discussed under Planning Standard H. The provision of KI also remains an open area. As noted under Planning Standard J, the State's plans for providing and using KI in tablet form appear adequate. However, an adequate supply of KI tablets has not been obtained. This is complicated by the State's recent decision to use liquid KI (an initial order for a small quantity has been placed) as a stopgap measure, until FEMA-supplied KI in tablet form becomes available to the State. The use of liquid KI will affect present planning as self-administration is not feasible, which will result in a delay in administering the drug. Also, the State has not yet determined a storage and distribution plan for the liquid KI. Additional procedures to address these concerns will have to be developed before this planning standard can be considered adequate.

The plans call for decontamination of State and Federal emergency workers and equipment to be provided by the counties.

State plans have established a time frame of at least once every 30 minutes for the reading of self-reading dosimeters by emergency workers. The trigger point for requiring decontamination has been set at a dose rate of .05mR/HR above background. Both are adequate.

The PAG dose established for the general public is 5R, and for emergency workers 25R. The State has made a decision to permit emergency workers to exceed this dose under certain conditions. Although, on the whole, the guidelines established to allow emergency workers to exceed the 25 rem PAG are fairly comprehensive, it would have been preferred that BRP explain to emergency workers that this can result in an increased risk of cancer as well as the risk of genetic defects to any future children. Individuals over 45 years of age should also be sought first as volunteers. This information is especially important to the elected officials at the county and municipal levels, as the plans allow them to authorize the excess dose for emergency workers, and it is unlikely that they will possess a knowledge of health physics to allow them full understanding of what they are authorizing.

This planning standard has not been adequately met.

L. Medical and Public Health Support

Planning Standard

Arrangements are made for medical services for contaminated injured individuals.

State Plans

The State plan contains lists, site specific to each nuclear facility, of primary and support medical facilities 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.

This planning standard is adequate.

M. Recovery and Reentry Planning and Postaccident Operations

Planning Standard

General plans for recovery and reentry are developed.

State Plans

The Pennsylvania Department of Environmental Resources, Bureau of Radiation Protection, 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 requirements 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.

This planning standard has been adequately met.

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 Plan

The State plan adequately addresses the requirements for exercises and drills, as specified in NUREG-0654/FEMA-REP-1. PEMA is responsible for ensuring that all necessary planning modifications, resulting from deficiencies uncovered by exercises and drills, are made.

This standard is adequate.

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 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). Although some of the courses have not been initiated, the scope of the courses should be adequate when implemented.

Although plans call for retraining emergency response personnel, the State plan does not require retraining on an annual basis. This is not considered a major deficiency but the State plan should be revised to provide for annual retraining of State level emergency staff.

This planning standard has essentially been met.

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 established the training needs of its planning personnel and addressed the need for incorporating exercise critique results into plans.

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

The plan contains listings of both supporting plans and implementing procedures for many of the State organizations, to the extent that the predominate response roles are covered.

This planning standard is essentially adequate.

B. Capability

1. Application of Plans

A full-scale, joint exercise was held on March 18, 1982. Participants included the Commonwealth of Pennsylvania, the two risk counties (Columbia and Luzerne), four municipalities, and the utility. Accompanying this report is the "Regional Assistance Committee, Region III - Observations and Recommendations, Susquehanna Steam Electric Station Exercise." This section will provide a summary and evaluation of that report.

Notification and alerting of emergency staff, and activation of the EOCs generally occurred promptly and according to plan at all levels of government. The one problem noted was at Berwick Borough, where the Emergency Management Coordinator (EMC) encountered problems notifying his staff.

Alert and notification of the public, despite a large amount of simulation, was adequately demonstrated at the State and county levels. Some problems with route alerting were noted at the municipal level - these involved either timing (commenced early) or use of incorrect/inappropriate message.

PEMA successfully demonstrated its ability to establish a field or "forward" EOC at a State college near the facility. After a prompt activation, the direction and control functions were transferred to this facility from PEMA's Headquarters EOC in Harrisburg.

Generally, good coordination was displayed between PEMA and the other jurisdictions, except regarding facility status. Several observers at different jurisdictional levels noted a lack of incoming information concerning the conditions at the plant. Partial responsibility for

this problem lies with the Bureau of Radiation Protection (BRP), where it was noted that on-site conditions should have been more closely monitored. The problem was compounded by less than optimum coordination/information exchange between BRP and PEMA. As a result, PEMA was not able to keep the counties and municipalities as informed about facility status as the latter would have preferred. This was noted in the report as a problem with potentially serious consequences.

In the area of Accident Assessment, BRP demonstrated good coordination with the facility, and the field monitoring teams showed competency in collecting samples. BRP's recommendations to PEMA regarding evacuation and distribution of KI were appropriate for the given conditions.

Provision of KI is a PEMA responsibility. Due to the State's limited supply, noted in the evaluation section of this report, PEMA had to simulate obtaining the necessary quantity of KI from an Illinois laboratory. Transportation and distribution to the county EOCs was also simulated. The resulting problems and confusion demonstrated that this procedure is not a workable alternative to the planned predistribution procedure, whereby sufficient KI is stored at the Area EOC, for State staff use, and at the county EOCs for use by emergency workers at the local level.

Distribution of dosimetry and dose-record forms by the two counties proceeded more smoothly. This was accomplished during the Alert phase.

Following BRP's recommendation, PEMA coordinated the evacuation decision with the two risk counties and the Governor's office according to plan. PEMA also coordinated the activation of the sirens and EBS to coincide. The counties and municipalities generally demonstrated that they could implement the evacuation in a satisfactory manner. This includes arranging for evacuation of hospitals and nursing homes, identifying and arranging transportation of invalids, and providing buses to transport those without other means.

PEMA's forward EOC information staff proved very capable in performing all aspects of public information. The county and municipal PIOs also demonstrated adequate capabilities.

The scenario for the exercise did not involve a demonstration of the recovery and reentry capabilities of the State and counties - this function should be tested during a future exercise.

Although the RAC report cites a number of problems, examination reveals most of these to be relatively minor in nature. We feel that the report justifies a conclusion that, while there is room for improvement, the participants did demonstrate an overall capability and degree of preparedness that is adequate to protect the public.

2. Resources

Generally, the exercise demonstrated that adequate manpower resources exist to respond to an incident at Susquehanna. Only one location (a municipal EOC) failed to demonstrate full staffing capability. Various resources were actually utilized during the exercise (communications equipment, dosimetry, radiation monitoring equipment, etc.) while other material (buses, ambulances, KI, TLDs) was obtained in a simulated manner. The exercise confirmed the material shortage problems discussed under the plan evaluation section of this report, i.e. - the nonavailability of KI and TLDs for emergency workers. The procedures used for obtaining these unmet needs were demonstrated to be insufficient for a fast-breaking event at Susquehanna.

C. Support Activity

1. Training Programs

Appendix 19 of Annex E and the various risk county plans address the subject of training. A brief description of the courses is included along with a basic summary of what the specific course is designed to accomplish, who is sponsoring the course and the number of students expected to attend during any given year. In many cases, the frequency of the sessions (how often a particular course is scheduled to be offered) is ambiguous.

2. Drills and Exercises

Appendix 20 of Annex E and the various county plans deal with drills and exercises. Both the scope and purpose of the drills and exercises is discussed along with the timetable for accomplishing them.

D. Deficiencies

The following items are considered major deficiencies in State-level planning and/or resources:

1. The State's decision to drop the field EOC concept has resulted in the need to revise the plans accordingly. Specifically, two planning areas are significantly affected:
 - a. Planning Standard F, Emergency Communications - current plans identify the field EOC as the primary point for continuing communications and coordination, with dedicated phone lines to provide direct communication between PEMA and all emergency response organizations.
 - b. Planning Standard H, Emergency Facilities and Equipment - current plans identify the field EOC as the distribution point for transferring Dosimetry-KI kits to State-level emergency workers.

2. The State plan calls for predistribution of Dosimetry-KI kits for the protection of State, county and municipal emergency workers. As noted, these plans have not been fulfilled because of a significant shortage of the required dosimetry (particularly TLDs) and KI. Also noted is the inadequacy of PEMA's alternate procedure, demonstrated during exercises, of attempting to obtain these items in the necessary quantities after an incident begins. This procedure has not proved satisfactory even in simulation. The State has begun to obtain a supply of liquid KI, but this action alone will not resolve the problem. In fact, the issue is further complicated because the use of liquid KI conflicts with present planning (which calls for the use of KI in tablet form) as it does not allow for self-administration.

The following minor problems should be addressed by the State, but are not considered serious enough to impair response to an incident at Susquehanna:

1. The Federal Government Support role should be described in Section VI of the basic plan. Both Federal and volunteer agencies (i.e. Red Cross) should be included in Section VII.
2. More specific information should be provided regarding the procedures of the State Police, Department of Military Affairs, and Department of Transportation concerning their roles in support of Protective Response.
3. The plans should provide for the counseling of emergency workers on the increased risks of exceeding the recommended doses.

III. Summary

Based on the foregoing evaluation, FEMA Region III feels that the Pennsylvania Radiological Emergency Response Plans site-specific to the Susquehanna Steam Electric Station, along with the exercise conducted on March 18, 1982 have demonstrated that the plans and preparedness capability of the State, county and municipal governments is adequate to maintain the health and safety of the public in the vicinity of Susquehanna in that there is reasonable assurance that appropriate protective measures can and would be taken offsite in the event of a radiological accident. However, the following items should be conditions placed on the approval of the Pennsylvania/Susquehanna package:

- The State should obtain a supply of KI and TLDs adequate to fulfill the identified needs. Plans for predistribution of Dosimetry-KI kits should be modified, if necessary, to accommodate the use of liquid KI.
- State and county plans should be modified as necessary to account for the abandonment of the field EOC concept.

Regional Assistance Committee - Region III
Observations and Recommendations

Susquehanna Steam Electric Station Exercise
March 18, 1982

A. NOTIFICATION AND ALERTING

1. State Forward EOC

Notification of the Pennsylvania Emergency Management Agency (PEMA) appeared to take place in a timely manner and according to the State emergency plan (Annex E) at the various classification levels. The message, along with appropriate instructions, when necessary, was passed on by PEMA to the County and PEMA Area EOCs through dedicated lines. A written copy of the message was then sent to the Harrisburg EOC through a teleprinter (through telephone lines) for transmittal to the Area and County EOCs over the PEMA teletype system. There appeared to be some delay in the "hard copy" of the message reaching subordinates but this was offset by the telephone hookup.

Alerting and activation of the State EOC occurred in a prompt manner. Partial activation of the Harrisburg EOC occurred at 0845, with full mobilization ordered at 0930. All staff (PEMA and other State agencies) were briefed on the situation upon their arrival, with movement from Harrisburg to the Forward EOC at Bloomsburg State College at 1030. Arrival at the Nelson Field House was at 1230 and the Forward EOC assumed control from Harrisburg at 1330.

2. PEMA Eastern Area EOC

The Eastern Area Director was notified at home by the duty officer at PEMA office in Harrisburg. Upon arrival at the Hamburg EOC he initiated the logging and display process to be continued during the exercise. Subsequent alerting of response organizations and support county EOCs was timely and conducted in a professional manner. Certain dedicated telephones are pre-programmed to provide immediate dialing to response organizations. Commercial telephones were the primary means of communication, however RACES established and maintained contact with support county EOCs. The TTY system was also tested during the exercise.

3. Columbia County

The state notified the County Emergency Management Coordinator (EMC) at 2036 hours the night prior to the exercise at his home. He then notified the County Commissioners via telephone, informing them of the utility's status. Officials and staff were notified via telephone and placed on standby after the Alert call was received from PEMA via a dedicated line. Municipalities were notified by the EMC's administrative assistant who rigidly followed a flip-chart index of "call-down" procedures. Schools were notified via commercial telephone.

ATTACHMENT 1-B

The same notification procedures were used during the Site Emergency. The EOC staff was fully assembled within 20 minutes. Upon arriving at the EOC staff members reviewed their plans and communicated via telephone to their departmental contacts. The telephones at the operations table dropped out of the ceiling. Three telephones were actually hooked up but the EOC had a 100 line capability.

Due to the fact that the County demonstrated a strong call-back capability, at times, messages were not verified by PEMA. Also, when checking between counties, Columbia County could not get verification that the two host playing counties were notified of the Alert. (They were notified at 0900 by PEMA but this was not confirmed until 0945.)

4. Luzerne County

On Wednesday, March 17, at 2030 hours, the County dispatcher was called by PEMA notifying them of an unusual event at the facility. At 2034 and 2036 respectively, Civil Defense Director Townsend and Executive Director Wint were notified at home of this message. At 0806 on March 18, a message was received by the County dispatcher from PEMA that the exercise was resuming at the Unusual Event stage.

By 0800 on the morning of March 18, the Director, Executive Director, and Operations Officer were present at the EOC facility, for the purpose of the exercise. At 0855 PEMA notified the dispatcher that the utility declared an Alert at 0834. The Operations Officer, in conjunction with two dispatchers, notified via commercial telephone all EOC group chiefs to report to the EOC. By 0949, notification of EOC staff, risk municipalities, schools, hospitals, fire, police, ambulances, bus companies, and Red Cross was completed. Actually, by 0930, all EOC staff except for RADEF officers and engineering group chief had reported to EOC facility.

At 0935, PEMA called the County dispatcher to notify that the PEMA Harrisburg EOC was mobilized. At 0956 Butler Township reported in that they had notified all their staff. At 1135 PEMA notified the County EOC that a bus left Harrisburg at 1043 and was enroute to the PEMA Forward EOC. No estimated time of arrival was given, or estimated time of Forward EOC activation. At 1345 PEMA informed Luzerne County EOC that the Forward EOC was operational at 1330 hours.

At 1419 PEMA informed Luzerne County EOC that a Site Emergency was declared at 1408. At 1519 PEMA informed Luzerne County that the Governor declared a Proclamation of disaster at 1500 hours. Luzerne County notified the municipalities of this 1555. At 1803 PEMA informed Luzerne County EOC that General Emergency was declared at 1759.

5. Berwick Borough

Messages to Berwick from Columbia County were sent primarily by telephone to the EMC's regular number. Verification of these messages was typically by voice recognition. However, in a few cases where Berwick deemed the messages of greater importance, additional verification was obtained by telephone and/or radio call-back (e.g., when the order to evacuate was given). Noti-

fication of Unusual Event was received (at the EMC's home phone) 2035 Wednesday; Alert at 0923 on Thursday; Site Emergency 1428; General Emergency 1810; order to evacuate 1941.

Notification of EOC staff was a major problem. Twelve minutes after the Alert message was received, the state controller had to remind the EMC that notification of the call list was in order. In making the calls, many problems were encountered, e.g., busy signals, people not there, people at work rather than home. The EMC understandably did not want to call people away from work for an exercise rather than a real emergency, but he failed to demonstrate even a capability to get in touch with them. In some cases, people were never reached from the EOC.

6. Butler Township

Butler Township received the following notification of emergency levels and protective actions: 0920 Alert message received via police radio; 0921 telephone verification; 1430 Site Emergency message received via police radio; 1431 RACES verification; 1813 General Emergency message received via RACES; 1814 verification by police radio; 1842 Evacuation declared.

Calls to EOC staff members and emergency workers, Township Supervisors, nursing homes, schools, job corps center and mutual aid took approximately 30 minutes after Alert and 15 minutes after General Emergency declarations.

7. Shickshinny Borough

The Emergency Operations Center for the Borough of Shickshinny, Pennsylvania was located in the Municipal Building on West Union Street in Shickshinny. Designated officials were on duty prior to RAC observer's arrival at 0800; the EOC was fully activated at approximately 0930 in response to the 0850 computerized phone message from PP&L at the Susquehanna facility alerting the EOC to the Unusual Event status. The above message was verified by a call-back on the police radio linked to the Luzerne County EOC. The next communication with the County was a notification of the Alert status coming at 0913 via telephone line from the County.

Notification of officials and emergency workers needed to complement the existing staff was executed following the Site Emergency status at 1423 hours. The prepared call-down list was utilized with all personnel being contacted and instructed as to what actions to take.

8. South Centre Township

At 0925 the South Centre Township EMC received word via radio of the Alert status through the County. The EMC at that time was at the school and telephoned the President of the Board of Supervisors. The President of the Board contacted the other supervisors via telephone.

Police and fire emergency workers were notified (simulation) via telephone. However, those emergency workers responsible for the route alerting team for

for Sector 7 were actually contacted and responded to the EOC. Once route alerting and the traffic control point were activated, communications between the EOC and the emergency workers were handled through use of hand held 2-way radios. From the EOC, notification appeared to be adequate.

9. Notification and Alerting of the Public

Actual sounding of the sirens to alert the public was not performed in the exercise. Sounding was simulated to occur at 0645 hours. The two County EMCs explained to the RAC observers the process to be used. The two EMCs did coordinate with each other via telephone concerning the simulated sounding.

Actual transmission of test messages to include an appropriate notification over the Emergency Broadcast System (EBS) also was not performed in the exercise. Instead, the weekly "tone" test of the EBS was to be performed at the time when a notification message would have been given but this was not verified by the RAC observers.

Columbia and Luzerne Counties simulated use of the EBS system at four (4) different times under guidance from PEMA (1435, message to put livestock on stored feed; 1550 closing of shopping centers, places of employment etc.; 1555 Governor's proclamation of Disaster Emergency; 1848 Governor's recommendation to evacuate EPZ). Message flow went from PEMA to the EMC to the PIO to the EBS station. Coordination in use of the EBS system appeared to be excellent.

Route alerting of residents to supplement the siren warning system is a municipal responsibility. All four of the participating municipalities performed a field demonstration of their route alerting procedures on a limited basis. The following observations of these demonstrations can be made:

1. Berwick Borough - The EMC initially ordered route alerting immediately upon notification of "General Emergency." This order had to be cancelled by the state controller's intervention because it was premature. Later, at the correct time, Berwick did a complete test of their route alerting scheme, dispatching all five fire company teams. The Federal observer viewed the team from the Reliance Fire Company (Sector 3). The team had a complete set of procedures and a route map in a notebook permanently attached to the dashboard of their fire truck. The company captain appeared to be well informed of his responsibilities and the observer was impressed by the serious and professional attitude of the entire route alerting team. The team was ordered to begin their route at 0650, which was reasonably consistent with the scenario events at that time. The entire route was run at a realistic speed (7-10 mph), taking 40 minutes to complete (about 5 minutes was spent in mid-route waiting to pick up a reporter who rode in the cab of the fire truck, apparently with the mayor's permission - her presence disrupted the demonstration and distracted the crew). This demonstration appeared to be successful.

2. Butler Township - Because the exercise events proceeded much faster than in the advance scenario, the Butler Township route alerting demonstration was not observed in the field. However, a review of events in the EOC indicates that one team was dispatched at about 1845. The team returned at 1910. A message for residents to turn on their radios to a local radio station and not the area EBS station (due to terrain blocking signals from the EBS station in some areas) would have been broadcast. The Butler Township demonstration appears to have been satisfactorily performed.
3. Shickshinny Borough - Route alerting commenced prematurely at 1815. The emergency plan calls for route alerting to be performed by the fire department and originally the demonstration was to have been done by the fire chief and his crew. However, the fire crew was involved in a real emergency at the time route alerting commenced, so a policeman in a PA-equipped police car ran the route. This was a good demonstration of backup plans and capability. The policeman would have "broadcast" a notice that evacuation had been ordered and that residents should turn on their radios. This was an erroneous message, given the status of the exercise at the time. The Federal observer noted that the policeman travelled at about 5 mph, completing his route in about 15 minutes. Although realistically done, the demonstration was marred by the premature dispatch and erroneous message.

The EOC staff expressed concern about the lack of siren testing and the location of the siren. Apparently, the siren is between two buildings which block out almost 180° of siren coverage. Also, the siren has yet to be connected, due to some problem with radio connection from the power plant.

4. South Centre Township - The Township dispatched one fire department route alerting team, which travelled along its normal route. The demonstration commenced at 1815, again quite premature. It appears that this error can be attributed to two reasons. First, there was a misunderstanding over the message from the County to prepare for route alerting. Second, the checklist used by the Township indicates that route alerting should be dispatched at General Emergency. The message to be broadcast was that residents should turn on their radios to an EBS station and that residents without transportation should report to one of two pickup points. This message was not consistent with the status of the exercise events. The route took 35 minutes to complete. Again, premature dispatch and an inconsistent message damaged an otherwise realistic simulation.

RECOMMENDATIONS - NOTIFICATION AND ALERTING

1. PEMA and Columbia County should improve procedures for message verification. Too often PEMA did not respond to the county's request for information.
2. Berwick Borough should undertake periodic drills to practice internal notification to assure that all EOC personnel can be alerted in a timely fashion.

3. Municipal emergency plans should be revised, if necessary, to clearly indicate the timing of route alerting and to indicate the messages to be broadcast by alerting teams. This is especially needed in South Centre Township where the checklist contains erroneous information.
4. The adequacy of the siren placement in Shickskinny Borough and its capability to alert the populace should be investigated. If necessary, a better location should be found and utilized.
5. Future exercises must include actual sounding of the siren system coupled with actual transmission of an EBS message in order to demonstrate effective coordination and proper use of those systems.

B. DIRECTION AND CONTROL

1. State Forward EOC

The Nelson Field House was an excellent facility for the coordination of an emergency at the Susquehanna Steam Electric Station. Pre-established telephone lines were in existence in both the operations area and the media center, thus it took a relatively short period of time to activate the various extensions.

Security was the responsibility of the campus police (Bloomsburg State College). Demonstration of security was spotty throughout the day. Guards were established at the various entrances to the building and were aware that only those with badges or clearances were to be admitted to the EOC. However, it was observed that at various times during the day, either a security person had left his/her post or people without proper identification were allowed entrance and were moving around unchallenged.

Internal information exchange appeared to be more than adequate. All messages were routed through the operations staff and then sent through a message center for copying, logging and distribution. A status board was in evidence and maintained current. There were also numerous maps displaying information such as access and traffic control points, evacuation routes, reception and mass care centers, monitoring points, etc.

Staffing of the Forward EOC was more than adequate with personnel rotation based on two 12 hour shifts. It is apparent that there would be no difficulty in dealing with a long-running emergency.

Public official support and participation was not apparent during the exercise other than the simulated role the Governor played in declaring a "state of emergency" and directing the evacuation to begin.

On the whole, coordination was adequate to deal with an emergency response, however improvements could be made in certain areas. State agencies were seated in an oval in the gymnasium with telephones available for each functional area. When significant events occurred, the individuals were briefed orally. This seemed to present some problems in that acoustics were bad and

in some areas it was difficult to hear. When the "General Emergency" message came into PEMA there appeared to be no formal announcement to the staff. Many people were eating dinner in the lobby at the time, including the on-scene commander of the State Police. By not receiving the notification of General Emergency, this resulted in a delay in establishing traffic control points.

It often appeared that the operations staff was too involved in moving around the EOC trying to coordinate the State response. Obviously, their motives are good; however since all critical information is to flow through operations (both incoming and outgoing), if there is no one at their desk, the system will bog down. It was observed that, in some instances, their telephone extension rang and no one was there to answer it.

Coordination between the Forward EOC and other jurisdictions appeared to function smoothly in most cases. All state agencies were in constant contact with the County and PEMA Area EOCs in order to determine unmet needs and identify any other problems. There did not appear to be close enough contact between the Forward EOC and BRP as to conditions at the plant throughout the day. This lack of information at all levels could lead to uncertainty which, if transferred to the public, could result in rash decisions leading to tragic occurrences.

Decision-making appeared to be authoritative in nature based on the facts at hand and discussed and coordinated with all critical jurisdictions.

Emergency plans were in evidence and it was observed that various agencies consulted them periodically throughout the day.

2. PEMA Eastern Area EOC

The Area EOC Director was in charge. The Pennsylvania Game Commission representative was designated Operations Officer. This arrangement worked within the Area EOC without difficulty. The PEMA Forward EOC appeared to have a reluctance to communicate directly with the Operations Officer and wanted to talk to the Director. This was not a serious problem and in a "real" situation would have been resolved with time.

The EOC facilities are more than adequate. Emergency plans were available and were used. Each agency is provided telephones and a folder with needed information, i.e. telephone numbers, copy of the SOP for Eastern Area Operations Center, County maps showing reception center and mass care centers, etc.

3. BRP

The Bureau of Radiation Protection (BRP) was well prepared for the drill in terms of layout of work stations, communications equipment, displays, and forms for recording and analyzing data. A difficulty was that not all the "players" were familiar with the new equipment and procedures to be used. As a result, equipment was sometimes misused and displays were not always kept up. Another difficulty is that the trend of data at the plant boundary and elsewhere was not available for visual inspection at critical moments.

The exercise involved participation by BRP staff for more than 12 hours; with so much happening during that time, the staff was not always aware of events in adjacent parts of the BRP office. Periodic staff briefings, which could have remedied this problem, were not observed.

4. EOF

The EOF was adequate for its intended function. However, since this is an interim facility it is not possible to evaluate it as the permanent facility. If the permanent EOF is similarly designed it should be adequate. Security appeared adequate.

Internal information exchange was very good. Display boards and maps were plentiful, useful and utilized to the utmost. Several clerical people were specifically assigned to update displays and/or communications log books (this comment applies to the EOF and PP&L in general).

The BRP nuclear engineer was aided by displays but did not keep a log of activities. Information exchange overall was adequate. One minor exception was that it was 25 minutes from the time that the State engineer was notified of the Governor's evacuation order until the announcement was made in the EOF. It could not be determined if this was because PP&L was not notified by the State engineer or if PP&L just did not make a quick announcement (this is not considered a major point).

One State engineer/representative was sent to the EOF. The State did not exercise shift rotation - one person arrived at 1215 and was present until drill termination at approximately 2030. This individual did state that backup personnel were available in Harrisburg if they had been needed.

State coordination with the utility appeared to be excellent. There was cooperation in making decisions regarding protective action recommendations, although independent action was also displayed.

The State representative appeared to know the State emergency plan and procedures.

5. Columbia County

The EOC was adequate except for one major deficiency - the facility was too small. The operations room was located in a hallway, with tables and telephones fitting to accommodate. Adjacent rooms would appear to be more suitable for operational use. (They were being used for other county purposes but were originally part of the emergency management function.)

Tight security was effected immediately after the Alert notification was received. Observers did not have to present identification upon arrival at 0745. Security remained tight throughout the exercise as the guard remained at the main entrance. An access door to the back of the operations room could easily be opened from the inside to allow individuals in. When this occurred, they were told to report to the security guard.

Maps depicting evacuation and population areas, county roads, hospitals and a bulletin status board were in the EOC. The walls of the operation and communications room housed this information. Plotting of necessary bulletin information was too limited and often not plotted promptly. Operations staff could not determine the status of operations by simply scanning the bulletin board.

In most cases, a 24 hour staffing pattern was demonstrated. Personnel information, along with telephone numbers, was posted in the EOC according to 12 hour shifts. One deficiency surfaced in the staff - the RADEF officer did not have sufficient proper training. He recently (1 day earlier) completed reading up on his duties and responsibilities. It is understood that he was the back-up and that the primary RADEF officer was not available for the exercise.

Information in the EOC came in exclusively over telephones. There was a dedicated line to PEMA and an assortment of numbers to reach municipalities and agencies. All information taken over the telephone (by 2 people) was committed to paper on a message form. Messages leaving the EOC went out via the telephone and RACES network, which was aided by a computer connected with Berwick Borough. At times there were mechanical problems with the messages, (i.e., using the backs of forms, forgetting the signature of the originator of the message) but overall, message flow at the operations table followed the EOC basic concepts of operation.

One of three county commissioners were present during the exercise. She actively participated by briefing the press and receiving up-to-date information from the EMC.

The EMC demonstrated a firm command of the county emergency plan. He often briefed his operators but did not "meddle" in their responsibilities. He left much of the decision-making to his experts and coordinated very effectively. Centralized direction and control took place in a face to face atmosphere with the operators.

Coordination and information exchange with the municipalities was done over the phone. At times individual agency messages were confusing (see Exposure Control) but were often straightened out due to the call-back procedure of the EMC.

Emergency plans were available for use on the operations table.

6. Luzerne County

The EOC facility was adequate in terms of space and security. There were some problems, however, regarding internal information exchange. The status board, which was prominently displayed, was not kept current. This was due primarily from not having a specific individual responsible for covering this function. Present on the walls of the main working area of the EOC were plume zone, evacuation, and sector maps of Luzerne County. Staffing was adequate and provided complete coverage, and personnel lists indicated

that there were designated back-ups for all positions. This would be sufficient to allow for 24 hour staffing rotation, on a twelve hour basis.

The Chairman of the County Commissioners was present in the Court House Building, but did not appear to play any role in the exercise play.

The Operations Officer was the EOC official who ran the EOC operation. He exhibited excellent decision-making, and coordinated the actions of his staff well. There was also a good level of coordination between the County and risk municipalities. The Director of Civil Defense, however, showed a propensity for periodically trying to usurp the delegated operational authority of the Operations Officer.

Coordination with PEMA was poor during the exercise. PEMA was very slow, in many cases, in responding to County requests. PEMA did not supply informative updates of facility status to the County, and therefore the County never did have a good idea of what the conditions really were at the plant. The last radiation monitoring data received from PEMA by the County was at 1300 hours.

Related to the above comments, the information content of some of PEMA's messages was sparse. For instance, the message for putting farm animals on stored feed did not indicate the distance involved. It took the County over an hour to receive clarification.

7. Berwick Borough

The EOC is on the third floor of City Hall, together with the office of the Emergency Management Agency. The room is fairly spacious; however, the arrangement of tables in the room provided little elbow room, especially for the communications officer. In this exercise, an additional space problem was created by trying out of a computer-based communications system. In actual use, this system might be placed in an adjoining room; but that would create a different problem of obstructed message flow between the communications room and the EMC. Modular telephones were installed with short cords across the floor rather than long cords run up the wall and hung from the ceiling, creating a possible problem of tripping and disconnecting of the telephones. Except for the telephones of the EMC and Communications Officer, the other telephones (only 1 for every 2 desks) were tied into the regular office phones and switchboard elsewhere in the building. Control of the telephones is supposed to be transferred to the EOC when activated, but this did not happen. Therefore the EOC was ringing all day with routine business calls, potentially highly disruptive of emergency operations. There is no clock installed in the EOC. Though there are an adjoining bathroom and kitchen, they are not well equipped.

Security at the EOC is weak. The security officer actually arrived after lunch rather than coming in at the Alert stage. A check-in table was set up on the second floor to control access to third floor and show media to the public information room off a second floor corridor. However, the security officer was lax about checking identification and signing people in. In

some cases doing it only long after-the-fact. Media were actually allowed free access into the EOC. Despite the PIO's room on the second floor, it is not apparent that media could actually be prevented access to third floor. There is, for example, off of the second floor side corridor, an unused back stairway to third floor not locked or otherwise blocked by security.

Maps and information displays at the EOC are present, but of limited usefulness because of their size and position. Though an ad hoc emergency message "board" (poster paper) was taped up, the felt-tip printing used was too small to be easily read. Also the displays were on a wall to which half of the EOC staff had their backs turned.

Messages into the EOC came primarily by telephone to the EMC's regular office number (with an extension in the EOC). The EMC usually answered calls himself, except when away from his desk, when calls were taken by the communications officer. After the communications officer arrived (1042), he set up forms and procedures for the taking and logging of messages. However, prior to his arrival, messages were taken by the EMC on the nearest available notepad, in shorthand, to be later transcribed to the message forms. One key message taken that way - the Alert notification - got misplaced on the EMC's desk for several minutes prior to notification of the EOC staff.

Even when better message-taking procedures were in-place, information exchange among the EOC staff was primarily by voice repetition of messages. The posted message board was not used after early afternoon.

Staffing of the EOC is weak, particularly for 24 hour operations. Shift lists exist for two shifts; but on both shifts there are key positions vacant, especially on the second shift. Most critical is the absence of a Transportation Services officer for either shift. The staff who actually showed up at the EOC were a mixture of primary staff and deputies from both shifts. In many cases there are no backup people in case a primary staff and/or deputy are unavailable. In contrast, the staffing of emergency workers (police, fire, amateur radio) appeared to be adequate.

Support by elected officials appears good. Though they played little actual role in the exercise events, the mayor, and in his absence, the vice president of the Borough Council, staffed the EOC during the Site Emergency, and other officials stopped by briefly to see the happenings.

Management decision-making at the EOC is inadequate. The Director frequently displayed a misunderstanding of the plan requirements. At key points in the exercise (e.g., notifying the EOC staff or rescinding premature messages), the State Controller told the Director what action to take. At other key moments, the actual direction of the decision-making came from the communications officer, who was more informed of plan requirements and appropriate actions.

Throughout the exercise, there was intervention by the state controller much more frequently than should have been necessary. In some cases (as those noted above) his action was clearly called for in order to keep the exercise

on the right track. In other cases, however, the appropriateness of his intervention is more questionable. For example, he twice explained messages about which the EMC was confused, rather than let him play out clarification of the message on his own. The controller also short-circuited verification of the order to evacuate, when in fact the response time to verify the message would have been an important element of play.

Communication and coordination with emergency workers was good. Both the communications officer and the fire officer at the EOC had 2-way radios to communicate with radio volunteers at the police/fire department communication center and accompanying police at the traffic control points. Communication with the county was good, via both telephone lines and radio. There were, however, problems of coordinating some details of the emergency response.

8. Butler Township

The EOC used in the exercise is on Drums-Conyningham Road in Butler Township. The EOC is in the EPZ, but normally the fire station, which is outside the EPZ, would be used as the EOC. The currently unoccupied top floor of the facility would be used. Workspace at the EOC was adequate. Appropriate security was provided.

Information exchange between the principals appeared to be adequate. Information exchange could be improved if the Township followed their plan a bit more rigorously in having each person in charge of a functional area maintain a record of his dispatches. The need for this improvement was recognized by the Director of the Butler Township Emergency Management Office.

All messages received by the EOC were logged in and all messages to the Luzerne County EOC were logged out. Messages to emergency response organizations, institutions, schools, etc. were not as rigorously logged.

A map with route alerting zones, traffic control points, schools, nursing homes, homes of invalids was displayed. A map of evacuation routes was displayed. A map of bus assembly and pick-up points was displayed, but later covered with a Pennsylvania road map. A sector map of the EPZ was not displayed.

A status board with alert status was displayed but it was not in the room in which EOC operations were conducted. A status board with route alerting and traffic control point status was displayed. It is recommended that the same be displayed for bus transportation.

There was adequate staffing of the EOC from Alert to General Emergency. The Township appears to be able to maintain a 24 hour rotation despite the fact that they did not follow their planned rotation.

The Police Chief and the Deputy Director for Emergency Management are capable of providing back-up to the Director in Butler Township if necessary.

None of the Township Supervisors participated in the exercise, but the Director stated that 2 of the 3 supervisors would participate in case of an emergency because they are bus drivers.

There appeared to be very conscientious coordination between the Township and the County. The County regularly contacted the Township on unmet needs and responded when an unmet need was identified by the Township.

Township personnel understood and used their emergency plans.

9. Shickshinny Borough

The Shickshinny Borough EOC operates from the police department's office. The EOC facility is well lit, sufficiently roomy and adequate for the operation. All emergency personnel are within 200 feet of the EOC headquarters. The fire station is across the street, ambulances are dispatched from the rear of the municipal building, RACES operators are in an adjoining room. Two telephones are presently connected with two published telephone numbers. A police radio was also used for communication with the County EOC, however there was no backup radio to use in case of equipment malfunction. Maps showing evacuation routes, complete 5 and 10 mile EPZs, route alerting routes (zones), pick up points and other pertinent information were posted and very visible. A status board was present and continually updated. The logging of incoming information appeared somewhat confusing to observers, however the EOC staff knew how to use it and kept it well documented with any incoming and outgoing communications. Security at the entrance was adequate, every player knew the other players and any outsider was scrutinized. There was, however, no log-in, log-out book; something which was needed. In general the EOC facility and the information flow was adequate for the emergency response.

Initial 24 hour staffing was well exhibited due to the fact that all major staff personnel lived close to the headquarters. Continued 24 hour operations could be a problem not necessarily because of lack of personnel but because the EOC coordinator was the only person who could effectively run the operation. The problem here is simply lack of training and time for preparation (2+ weeks). The complete staff, except for 3 persons, were on a volunteer status. The mayor of Shickshinny was the designated PIO; this system operated well, however, the mayor was very excitable so the potential for inaccurate press releases existed. No other elected officials took any role in the exercise although they were present at the municipal building if they were needed.

It was apparent that the plan had been studied and followed very well. The coordinator was on top of most all situations, performing exceptionally well considering the amount of time for preparation and the fact that this was a first run for the facility. Intervention by the State controller was limited with only minor suggestions made.

10. South Centre Township

The South Centre Township EOC is located in the Township Municipal Building at 6260 4th Street, Limeridge, Pennsylvania. The center consists of one large room (approximately 18'x30') directly off the police office. One telephone is located at the police chief's desk, and one was located in the EOC. A poster board was taped to the wall to log emergency messages and update of events and a Township road map was hung showing the 7 alert sectors, the traffic control and pickup points. Space appeared adequate to accommodate key personnel. One person was assigned as security officer to monitor visitors entering and leaving the EOC. For the exercise, no identification badges or cards were distributed.

All key personnel appeared to have sufficient back-up in case an incident would be long term. 12 hour shifts would be implemented in the event an emergency goes beyond 24 hours.

For this exercise, all three supervisors were contacted at the Alert stage. Two of the three supervisors responded to the EOC. The remaining supervisor was working and responded at 1700 hours. One public official actively participated in the exercise serving as the communications officer. No problems occurred in coordination and management within the EOC. Major decisions concerning the contacting of staff and the implementation of route alerting, etc. were made by the EMC.

A copy of the Township emergency plan, a checklist of items to be implemented during the various stages, duties of the key personnel, and a copy of the County plan were readily accessible in the EOC.

RECOMMENDATIONS - DIRECTION AND CONTROL

6. PEMA should obtain a portable PA system for use in making announcements to the EOC staff at the Nelson Fieldhouse.
7. At the PEMA Forward EOC at least one operations staff member should remain at his desk at all times in order to ensure that the flow of information, etc. moves in as efficient a manner as possible.
8. BRP and PEMA should maintain a steady dialogue as to the status of the plant so that all jurisdictions are clear where they stand. A lack of information could lead to unsubstantiated rumors, independent and ill-founded decisions, etc.
9. The BRP should use preprinted tabular forms to record the many bits of source term data and environmental monitoring data it receives, and to show how such data changes with time at critical points in space and through space. Each line of the form might usefully include the following data: time of measurement; the place, such as the plant boundary or stack; the data, such as Ci/sec or mr/hr; the data source; the time the data was received by BRP; and an entry number.

Each monitoring location should have its own column (or a complete form if needed). Some of these forms should be kept next to the chronological log used at the "red phone" line to the plant, and perhaps cross-referenced in the log by entry number, but the data should not be "buried" in that chronological log. Additional forms should be kept near the radio used to maintain contact with the BRP's field monitoring teams. Most important, use of these forms should be drilled between exercises, possibly using the data available from the prior tests. These drills will result in improved locations for displays and equipment, in maximum utilization by staff, and in sharpening of staff skills.

10. The BRP Incident Manager should periodically brief the BRP staff on accident status so that the staff will be better able to relate their individual efforts to BRP efforts.
11. PEMA should provide the two risk counties with periodic (at least hourly) updates of operational and radiological information to give a complete picture of events at the plant.
12. The operations room of the Columbia County EOC should be moved to a larger area. The smallness of the room lent itself to creating a "confused" environment.
13. Access through the back door of the Columbia County EOC should not be allowed.
14. The Columbia County EOC staff should receive training in which important information should be plotted onto the bulletin board so as to ensure the maximum usefulness to EOC staff.
15. The back-up RADEF officer in Columbia County should receive complete technical training.
16. Columbia County should drill its staff in message-handling so as to eliminate confusion and duplication of information.
17. Luzerne County should designate one individual whose function is to keep the status board current.
18. Berwick Borough should pursue the desire of many of the EOC staff to shift the EOC location to an area above the police department building.
19. Berwick Borough should better position its security personnel for access control to the EOC. Security measures also should be strengthened.
20. Berwick Borough should complete its EOC staffing pattern. In the interim, the responsibilities of vacant or absent positions should be clearly delegated to existing staff.
21. The Berwick Borough EMC should be more familiar with the emergency plan and required associated decision-making.

22. Berwick Borough could benefit from addition of a secretary to the EOC staff to post messages, ferry information to the PIO, and acquire food and incidental supplies.
23. Butler Township should utilize the designated EOC (fire station) in future exercises.
24. Butler Township should secure and post an EPZ sector map and a map showing bus evacuation information.
25. Shickshinny Borough should secure a dedicated phone line or a phone line with an unpublished number for telephone communication with the Luzerne County EOC to ensure uninterrupted telephone communications.
26. A log book system should be initiated by security personnel at the Shickshinny EOC.
27. Shickshinny Borough should have a back-up for the EMC to ensure effective 24 hour operations.
28. The South Centre Township Emergency Operating Plan should be revised to include the areas of concern listed on the checklist for the various incident stages. The plan should also include the major duties of key personnel.

C. ACCIDENT ASSESSMENT

Accident assessment is primarily a function of BRP, which is responsible for analyzing data received from both the utility, with which it demonstrated adequate coordination, and from its two field monitoring teams, which displayed competent, professional performance in collecting the various samples. The Pennsylvania Bureau of Laboratories supports BRP with equipment and staff, but did not participate in the exercise.

Although BRP initially considered sheltering (at 1430), further consideration resulted in a recommendation to PEMA (at 1522) to shut down sports events, industry, etc. However, BRP suggested delaying evacuation until after 1700, when school children would have arrived home. Under the prevailing (exercise) conditions, this appears to have been a reasonable assessment.

RECOMMENDATION

29. The Bureau of Laboratories should participate in future exercises in order to demonstrate their capabilities in support of accident assessment.

D. EXPOSURE CONTROL

1. State Forward EOC

Due to a shortfall in the areas of potassium iodide (KI) and dosimetry, PEMA simulated obtaining these critical items as the exercise progressed. After determining the numbers involved, the applicable State agencies ob-

tained the necessary resources from a laboratory in Illinois and from PEMA for KI and dosimetry, respectively. Arrangements were made for transportation, pickup and distribution to other jurisdictions. In the case of KI, the Department of Health made the determination, according to the emergency plan, for administration to emergency workers.

2. PEMA Eastern Area EOC

The Eastern Area EOC in support of the support counties relayed a request for KI to the Forward EOC. There was a response which was relayed, and in fact, had been received by the support and risk counties. It should be noted that the State emergency plan indicates KI is stored at the Area EOC and is not now available.

3. BRP

The BRP recommended that KI be distributed to emergency workers at 1600. It had been recommended earlier (at 1436) for use by the BRP field staff. The big problem was that the BRP never received feedback on its recommendations about access control, sheltering, and evacuation, so that it could not update recommendations.

4. Columbia County

Dosimeters (742s) and Survey Meters (700s) were checked and zeroed by the RACES man. He had been trained individually by the EMC, and checked all instruments during the "Alert" stage. Dosimetry was distributed to the municipalities. However, confusion abounded when South Center picked up the 15 dosimeters set aside for Berwick and Berwick received 125 dosimeters set aside for South Center. (It should be noted that Berwick requested 35, South Center 73.) Two different dose record forms accompanied the dosimeters.

Decontamination of emergency workers was not demonstrated.

Procurement and distribution of KI was full of problems which appeared to be generated by the State. The county was told to await the arrival of KI. They were also informed that KI was in the EOC when the EMC asked where it was, and was told to administer it about the same time the exercise terminated.

5. Luzerne County

The County RADEF officer dispatched, around noon, dosimetry kits to Shickshinny Borough and Butler Township. Butler received 50 kits, Shickshinny 70 kits. Each kit consisted of 2 CDV 715 gamma survey meters, 1 CDV 750 dosimetry charger, and 6 CDV 742 0-200R dosimeters. There were no TLDs, KI tablets, or CDV 730 (0-20R) and CDV 138 (0-200 mr) dosimeters. Dosimetry record forms were also included.

A decontamination center for emergency workers was operated in Plymouth Township. The staff appeared to be knowledgeable of decontamination procedures, and the use of their survey meters and recording forms. Luzerne County manned 2 access and 2 traffic control points with State Police.

At 1425 hours, Luzerne County requested KI, TLDs, and 730 dosimeters from PEMA. At 1530, PEMA said that KI would arrive at Bloomsburg airport at 1700, and would be delivered to the County EOC. No mention was made of the dosimetry requested. When the Secretary of health ordered the administration of KI to emergency workers at 1930, Luzerne County had not yet "received" its KI. For the purpose of the exercise, PEMA ordered that it should be simulated that KI was received at the County EOC at 1942. It was further simulated that volunteer National Guard personnel had distributed the KI down to the municipalities by 2010.

At 1345, the County received a message from PEMA recommending that livestock be put on stored feed and sheltered. The County asked for clarification on how wide a ring this recommendation covered. They did not get clarification, after many requests, until 1500, that the zone in question was 10 miles wide. However, the County had already decided on its own to issue a press release at 1435 which defined the recommendation for stored feed and sheltering of livestock to 10 miles.

6. Berwick Borough

In response to the site emergency, Berwick requested both dosimetry and KI from the county, at 1453. Berwick expected, based on communications from the county, that both would be delivered to them. Only at 1712 did Berwick learn that dosimetry was at the county ready for Berwick to pick up. Berwick then promptly dispatched a vehicle, which picked up 125 self-reading dosimeters, returning them to the Berwick EOC at 1819. It was not until 1836 however, that some of the dosimeters were actually taken from the EOC to emergency workers. The dose record forms received with the dosimeters from the county were not distributed to the emergency workers.

Additional "radiological monitoring equipment" (10 CDV 700s) were requested from the county, with pick up simulated by Berwick.

The dispatch of a van from Berwick to pick up KI was also simulated at 1930, after almost a half-hour delay during which Berwick expected State Police to be delivering it. Return of the van to Berwick was simulated at 2012, with an indication that distribution to emergency workers would take another 15 minutes.

7. Butler Township

The police department had 2 CDV 700 survey meters already on hand and several CDV 742 dosimeters.

At 1155 hours, the county asked the Township about unmet needs - the Township requested dosimetry which was received at 1400. 50 CDV 742s were received with dose record forms. The Township simulated distribution at 1500 hours.

The Director stated that they had responsibility for decontamination of emergency workers and he knew the procedures, but there was no one assigned

to the task. When the route alerting team returned from their assignment no monitoring of the vehicle or route team was performed prior to their entry to the EOC and only their CDV 742 dosimeter was read when they entered. Decontamination is not provided for in the Township emergency plan and there is no demonstrated ability to perform it.

There were 7 planned access control points - 4 to be manned in conjunction with the State Police and 3 traffic control points to be manned solely by the Township.

The County informed Butler Township that KI was being dispatched at 1953. The Township notified the County at 2006 that KI was received. There was no simulation of distribution.

8. Shickshinny Borough

Exposure control was addressed by the EOC staff but this was probably their weakest section due to lack of training. Dosimetry use and record keeping were exhibited in compliance with the emergency plan, however the staff was unsure what the dosimeters did and how they worked. Dosimeters were picked up from the County at a designated pick up point somewhere between the two EOCs; 70 dosimeters both high and low scales, and 4 hangers were received and logged in with serial number verification. There were no TLDs used although some are on order for future use.

There were contact points within Shickshinny limits, these were well defined with instructions and location written out on 3"x5" note cards. State Police were available to assist with staffing if needed at central points. Distribution of KI from the County occurred at 1948 with simulated delivery and verification at 1959. There were no instructions to administer to staff and emergency workers.

There was a lack of knowledge on the use of KI, what it is, what it does, etc. This again is from lack of training.

9. South Centre Township

When Site Emergency was received in the South Centre Township EOC, the Township contacted the County to notify them that 73 dosimeters would be needed. At 1455 hours the County contacted the Township that the dosimeters were available for pick up at the County Courthouse. The EMC promptly dispatched the assistant chief of police. Fifteen CD 742 (0-200 R) dosimeters, a dosimeter charger and the dosimeter log sheets were transferred to the Township EOC. The Chief of Police took charge of the charging and distribution of the dosimeters and appeared to be very knowledgeable in performing those functions. Dosimeters were distributed to key personnel at the Site Emergency stage and to emergency workers at the General Emergency stage.

A problem arose when the County transmitted that the KI would be arriving at the Bloomsburg Airport, but the key Township personnel did not know what KI is. The South Centre EMC contacted the County for an explanation and received the correct information. At 1928 hours the Township simulated pick-up of the KI and at 1950 hours simulated distribution to emergency workers upon authorization by the County.

RECOMMENDATIONS - EXPOSURE CONTROL

30. A PEMA official should be assigned the task of keeping the BRP abreast of the status of implementation of protective action recommendations, perhaps with updates every 15 minutes.
31. A trained RADEF man should eliminate confusion over the distribution of dosimeters in Columbia County.
32. Some action in the scenario should generate and test decontamination procedures.
33. Procurement and predistribution of dosimetry and KI need better coordination at the State level.
34. Columbia County needs to clearly communicate to municipalities about availability and distribution of dosimetry and KI.
35. Butler Township should assign a person with the responsibility to maintain dosimetry records of all emergency personnel. It was assumed that the workers would maintain their own records.
36. Either a group in Butler Township should be given the responsibility for decontamination and be trained or the County should assume that responsibility.
37. Formal and on-the-job training is needed in dosimetry, KI, TLDs and basic radiological information in Shickshinny Borough.
38. Training of key personnel and emergency workers is needed in the function and application of KI in South Centre Township.

E. PROTECTIVE ACTIONS

1. State Forward EOC

The decision to implement an evacuation order took place as called for in the emergency plan. Upon the recommendation by BRP, PEMA contacted the risk counties for their feedback. The Governor was consulted and directed the evacuation to take place. The Forward EOC then coordinated the time for activation of the sirens and EBS as well as for the implementation of the evacuation.

2. PEMA Eastern Area EOC

The Pennsylvania State Police and Department of Environmental Resources staff maintained a stand-by support posture for the activities of those departments directed from the Forward EOC.

3. BRP

The BRP decision-making on protective action was timely and reasonable, but the BRP did not receive feedback on the status of implementation of its recommendations. This prevented active updating of recommendations based on improvements in plant conditions. Additionally, the BRP had to recommend evacuation more than once to ensure action.

4. EOF

Decision-making on sheltering and evacuation was good at the EOF, and involved cooperation in data evaluation by State and the Utility. A problem appeared in the criteria for evacuation.

5. Columbia County

Mass Care - A Federal and State observer travelled to the Columbia County mass care and decontamination exhibition center at Catawissa, Pennsylvania with a radiological monitor dispatched from the County EOC. Upon arrival at the center the three persons were not allowed to observe the physical plant being used at the center. The principal of the high school identified himself as the person in charge of the center with responsibilities for the Center's possible operation in time of emergency. The observers were kept at the Center's entrance with the principal showing the area to be used on a paper school layout. There was no knowledge on the part of the principal of the area to be used for decontamination of the population to be housed within. There was no evidence of an actual plan developed for the Center's operation, nor was the principal aware of any need for same. When questioned as to how many people were expected in the exercise to come to the Center, there was no response. When asked how many people could be kept at the Center, the answer given was 630 - the same number of the present student population. When asked about availability of food and supplies (cots and blankets, etc.) the response was that the school had approximately one week's supply of food on hand for 630 persons. All supplies and additional food would be provided by the Red Cross. While the observers were at the door of the Center, a RACES person arrived and asked where he should go for the exercise communication simulation, again the principal did not respond with any direction except an "I don't know."

Evacuation - Evacuation was recommended at 1832 and performed at 1900. Prior to this each operator was requested by the EMC to review his SOP for evacuation. Each of them checked their resources and needs. Demonstration of evacuating invalids and individuals without transportation was simulated. It was at approximately 1845 that the police operator requested his field units to man traffic control points and access control points.

6. Luzerne County

The evacuation decision was not a County function. The message to evacuate was received from PEMA at about 1834 that the Governor had ordered evacuation of the EPZ at 1900 with a coordinated notification effort at 1845. The County simulated activating sirens at 1845 and EBS three minutes later. Municipalities were notified by police radio and RACES to activate alerting systems and evacuation.

Arrangements were made to evacuate hospital and nursing home patients to facilities out of the risk zone. Notification of evacuating hospitals and nursing homes and alerting of receiving hospitals was accomplished promptly. Adequate transportation arrangements were made.

One nursing home, Butler Valley in Drums, Pennsylvania, at the perimeter of the 10 mile radius elected not to evacuate.

The County identified a sufficient number of buses to evacuate people who do not have transportation. The actual deployment of these buses was not demonstrated.

Traffic control points were identified but their actual manning was not observed. During the alert stage all construction in progress that might impede evacuation was identified and circumvented appropriately.

Mass Care - The County was satisfied that adequate mass care facilities existed.

7. Berwick Borough

Berwick's radiological emergency response plan includes lists of persons with special transportation needs and of unmet resource needs which would effect evacuation. Berwick appeared to assume in part that since the list of unmet needs was already a matter of record at the County there was no need to explicitly request those items. They did, however, after the evacuation order, request 10 survey meters, 30 buses, and a back-up ambulance. These needs were provided or simulated but coordination concerning them did not precede the evacuation order. The County did, before the evacuation order, ask if Berwick needed additional police or resources for monitoring. Other unmet needs on the list were not addressed (e.g., bullhorns, flashlights).

The order to evacuate at 1900 hours was received by Berwick at 1841. However, by the time message transmission was completed and verified, it was already past the 1845 time of EBS activation. Route alerting actually began at 1850.

Traffic control points had already been established prior to the evacuation order (here again, earlier in the afternoon, the EMC had shown confusion about just when they should be established). Once the decision to establish TCPs had been made, the implementation of the action by police, auxiliary police, and radio volunteers went smoothly.

8. Butler Township

No decision was made to shelter. The evacuation order dispatched by the Governor was received at 1842 hours. Route alerting teams were dispatched; traffic control points were manned; ambulances were dispatched to homes of invalids; all institutions in the Township were advised of the evacuation. Dispatch of buses was simulated. Transportation resources were mobilized at 2001.

Because there are only two telephone lines into the EOC, a number of requests for special assistance might deluge the EOC telephone lines. The police do have a back-up via CB channel 9 for special assistance requests.

9. Shickshinny Borough

The ability to provide protective actions was present and ready in Shickshinny, however it was only marginally exercised. Route alerting did occur following the General Emergency notification with 2 man alerting crews performing well except for some confusion as to the message to broadcast to residents. Evacuation was not exhibited in Shickshinny but they were prepared to activate. 29 buses had been acquired from the County and were held on stand-by. Lists of handicapped residents and non-ambulatory persons were present and consulted. All unmet needs and resources to comply were reported to the County (buses, radios, bullhorns). Unmet needs that were known prior to the exercise were reported in written form to the County the preceeding week. [Transportation (buses) and an officer to coordinate; communications needed a radio and an operator; police needed a stand-by radio as well as portable units.]

10. South Centre Township

South Centre Township received notification at 1807 hours that a General Emergency had been declared. At this stage, the traffic control point and the route alerting team were directed to their stations. For this exercise, one traffic control point was actually manned. Also, one pick-up point was activated. For this exercise, the pick-up point was manned by a policeman, although a volunteer with a van would have performed this function in a real situation.

RECOMMENDATIONS - PROTECTIVE AC

39. BRP and PEMA should act immediately to ensure complete feedback and should drill their procedures before the next exercise.
40. The Columbia County EMC should offer the principal an opportunity to be trained to his responsibility for the Catawissa school's use as a mass reception/decontamination center. An effort should be made to identify and train the Center Director to develop an operative plan that involves all aspects of mass care center operations including communications, registrations, radiation monitoring and personal supplies.
41. Columbia County should demonstrate a capability to evacuate persons without transportation. (A list of such individuals and invalids was furnished by the Operations Group Chief who is the Director for the Office on Aging.)
42. Better coordination between Columbia County and Berwick Borough in anticipation of evacuation is needed. From Berwick's point of view, this could mean earlier and explicit communication of unmet needs to the County.

F. COMMUNICATIONS

1. PEMA Eastern Area EOC

The PEMA Eastern Area EOC has telephone, TTY telecopier and RACES communications which were all utilized capably during the exercise.

2. BRP

The utility, on occasion, asked the BRP to repeat all data. When asked to repeat the data, BRP sometimes repeated it and sometimes just acknowledged receipt by saying "right." Either way, the utility appeared satisfied. However, in at least one case, some of the "unrepeated" data was later questioned within the BRP.

Communications between the parties are a problem. BRP was receiving calls for a while from both the EOF and the Technical Support Center, this between 1057 when the EOF was activated and the announced "last call from the TSC" at 1130. This overlap is fine for a changeover, if both EOF and TSC are aware of the overlapping calls. However, additional calls from the interim staff of the EOC were coming in to BRP on non-dedicated lines. Subsequent calls also came from the TSC as at 1217 (announcing a reactor scram at 1212). Moreover, the utility did not "provide periodic plant status updates to offsite authorities (at least every 15 minutes)" as required by NUREG-0654, Rev. 1, page 1-8, Column 2, #5. Thus, the information flow to the BRP was not well coordinated. Moreover, much of the information appears to not have reached PEMA and the Counties.

3. EOF

At 1330 hours, General Townsend from Luzerne County Civil Defense called the EOF. He stated to the utility recovery manager that the plan data given to him by PEMA indicated that the utility should escalate classification to Site Area Emergency. The Recovery Manager indicated to Townsend that the plant criteria for Site Area Emergency had definitely not been met. Townsend demanded a more detailed explanation and occupied the recovery manager for 5 minutes.

Basically it appeared that Luzerne County Civil Defense was circumventing the established communications pathway which went from BRP to PEMA to Counties.

When PEMA moved their EOC to Bloomsburg State College they never informed the EOF of that fact nor contacted the EOF to provide a telephone number. This did not present problems during the exercise but could in the future. PEMA should inform the utility of local contact when they move.

At about 1000 hours the utility called both counties and PEMA to notify of escalation to General Emergency. They called a PEMA "off-duty" number to do this as requested by the State. However, this was not an initial notification and this call resulted in several more calls before the utility was told to call the Bloomsburg EOC. The PEMA hotline should still have been active and procedures for contacting PEMA need to be changed to indicate that the "off-duty" hours contact number does not apply when PEMA has been activated all day.

4. Columbia County

Information was relayed to the municipalities via commercial telephones. Internal communication only existed when message takers did not take complete information over the telephone.

Internal face to face discussion and coordination of the various agencies was apparent when committing resources during General Emergency. The EMC controlled the operation by briefing his operators often.

Columbia County has a 24 hour operational capability.

5. Luzerne County

The County has excellent communications equipment and qualified dispatchers, RACES operators, etc. on 24 hour staffing. The police radio system dispatches police in all the County municipalities and is connected to the State Police and a national computer network.

A dedicated line is in-place between the County dispatch room and the Susquehanna plant. There is also a dedicated line between the County and the PEMA Forward EOC.

The County has a bank of eight telephone lines that usually serve courthouse offices. These are diverted by the County for use by the EOC in an emergency. The system had been worked on by the telephone company the day before the exercise and was not working properly until mid-afternoon on exercise day. A telephone company repairman was at the EOC throughout a good part of the day.

In general the County's communications system is excellent. It was utilized well during the exercise.

The content of communications from PEMA to the County appeared to have serious inadequacies. At each upgrading of status of the emergency no reason was given for the upgrade. There was little information given about the sequence of events at the plant, e.g. verification of the bomb threat, that precipitated the upgrades.

There were no updates on radiation readings at the plant or within the EPZ from 1300 until almost 1930 hours.

PEMA issued the order to administer KI to emergency workers without the KI having been delivered or without the County being advised to simulate reception.

6. Berwick Borough

Communication between Berwick and the County was primarily by telephone to the EMC's regular office number with an extension in the EOC (not a dedicated line). Notification during off-hours is by telephone to the EMC's home. The County also is supposed to have a list of back-up numbers to call if the EMC cannot be reached. In this exercise, an alternative system was tested using computers to send and receive messages via telephone lines, and make automatic hard copy. The computer system could also work via radio, except that the RACES antenna at the Berwick EOC was not operational during the exercise. Communication with emergency workers was via 2-way radio relayed

through a radio volunteer in the police/fire station. Operation of the communications gear was orderly and efficient after the communications officer took charge. Reception of messages over the telephone by the EMC was subject to misunderstanding and errors of transcription. For the most part, when there was potential for confusion, messages were clearly identified as "exercise" or "drill" messages.

7. Butler Township

Primary communications were via police radio until RACES took over as the primary communication link at 1500 hours. Back-up communications were via telephone and could be accomplished via fire department radio and CB Channel 9.

All messages between the County and Township were logged in.

Primary communications were via fire department and police department radio with telephone back-ups. CB Channel 9 also a possible back-up.

The telephone was the primary communications system to public works and bus companies.

24 hour notification was maintained through the police department.

9. South Centre Township

Communications between Columbia County and South Centre Township were accomplished by telephone and by hand held transceivers. At the Site Emergency stage the County dispatched two volunteers from the Central Columbia Amateur Radio Company. One additional back-up operator was also dispatched to the Township by the County. A problem arose in the transmitting of messages in that outgoing messages were not transmitting due to the steel construction of the building. Police radio and EBS were also monitored. All radios were located at the same table as the key personnel.

RECOMMENDATIONS - COMMUNICATIONS

46. Development of the computer based system between Berwick Borough and Columbia County should be further pursued, as it remedies many of the problems associated with voice transmission.
47. The operators from the Central Columbia Amateur Radio Company indicated that an antenna installed on the top of the municipal building would remedy the problem with transmitting messages in South Centre Township.
48. To avoid confusion, the radio operators in South Centre Township should be situated at a separate table with a supply of message sheets to jot down all pertinent information. The radio operators appeared to be confused about their responsibilities in this exercise and should be trained as to what is expected of them.

G. PUBLIC INFORMATION

1. State Forward EOC

The State Forward EOC information staff had a viable unit in operation within an hour of arrival which indicated that adequate plans had been worked out in advance.

Time schedules to meet media deadlines were excellently carried out and the State Public Information Officer exhibited exceptional capability in handling media individuals seeking information about the exercise. His staff was efficient and responsive.

The State information team is to be congratulated for the adequacy of news dissemination machinery - both literal (press releases) and electronic (TV and Radio).

Media headquarters extended courtesy to the PP&L representative whose active participation certainly helped coordinate all the efforts to publicize the exercise.

2. PEMA Eastern Area EOC

The Eastern Area EOC was not involved in initiating Public Information releases. As recipients, however, much repetition was noted in the releases especially duplication of PP&L copy and PEMA copy. It is also noted that all releases received by TTY were duplicated on the telecopier. This appears to be a wasteful use of time and equipment which should be reevaluated.

3. Columbia County

A separate room adjacent to the operations room was set aside for the PIO and press. Also, upstairs in the courthouse, space was set aside should the press desire information from the County Commissioners during the day.

The local press was admitted into the EOC only between 1700 and 1800. Press releases were prepared for the PIO by the EMC and County Commissioners. There was no interface between the State and utility to the County.

Two telephones were available for rumor control in the press/PIO room. Rumor control was simulated for this exercise.

4. Luzerne County

The County was well equipped for accommodating the media. A room adjacent to the County Commissioners Office with continuous staffing by the County PIO's assistant was in operation. The County Operations Director left the EOC several times to go to the Media Center on the second floor of the Courthouse (same building). There could have been a problem in this if the Operations Director had to respond quickly to information from the State EOC.

5. Berwick Borough

A PIO is designated as one of the EOC staff. His briefing room for the media is located on the second floor. Thus, for him to get information from the EOC either he must come upstairs, or the EOC must send messages down. He left in the afternoon before an opportunity for the observer to talk with him, hence no assessment of his actual operation is possible. For this exercise, media were allowed free access to the EOC to extensively observe and interview the staff.

6. Butler Township

The Township was not informed of any public information releases made by the State/Utility/County except when Emergency action levels were reached.

RECOMMENDATIONS - PUBLIC INFORMATION

49. The County, Utility, and PEMA should reach agreement as to the nature and timeliness of information being released to the public.

H. SCENARIO

1. State Forward EOC

The scenario was adequate to demonstrate the State's abilities. There was very little simulation at the State Forward EOC. Problems were minimal and there was no apparent evidence of prior knowledge of events.

2. Eastern Area EOC

The establishment of a Forward EOC by the State appears to create a redundant level at the Area EOC. The State plan does not specify the division of duties between the two operating functions. It is difficult to evaluate performance when there is an ill-defined standard. It would appear that the Area EOC is support for the support counties, as such, there is a lack of direct involvement of the participants. The State made efforts to introduce tasks for each of the participating agencies. The agencies responded well with written replies to the questions asked.

3. BRP

The scenario appeared to be inconsistent with the protective actions expected. As an example, the iodine release gave a dose projection which justified evacuation, but the scenario called only for sheltering so that a "referee" prevented evacuation, and thus prevented "free play."

4. EOF

Participants had to be constrained by a referee from declaring a General Emergency and recommending evacuation at about 1500 because data indicated such. The scenario did not allow this to occur at this time but the included data caused the problem.

Simulation was minimal and participants did not appear to be aware of the scenario.

5. Columbia County

There was some confusion at the Columbia County EOC concerning the use of a sub-scenario for the exercising of Berwick and Danville Schools as mass care/reception centers. The confusion resulted because to use the schools before the end of the school day the activity had to be exercised out of time sequence to the rest of the scenario.

Because of a break in the overall scenario activities, there was a point in the exercise when there was physically nothing for staff and operations personnel to do for approximately one and one half hours. The EMC directed the staff to write sample messages to each other to practice during the period of time.

The scenario did not appear to exercise decontamination procedures at the County EOC. Decontamination capability was evident but at no point was there any use made of the facility or equipment.

In addition to the lack of decontamination procedures exercised, there was a lack of information coming into the EOC concerning outside radiation levels for the County. The only reference made to radiation levels at all was a message at 0943 that was posted to read 2.5 R/hr. on the site.

It should be noted that the Columbia County EOC under the direction of the EMC did a capable and creditable job in responding to the exercise scenario. The effort on the part of Columbia County exhibited a thorough development and utilization of a comprehensive emergency plan.

6. Berwick Borough

The scenario provided an adequate test of Berwick's emergency response. It would have been better, however, to allow more time for the play of evacuation, to more fully exercise the acquisition and distribution of necessary resources. Many of the EOC staff had little to do, even in the evacuation.

7. Butler Township

The scenario demonstrated all functional areas.

The Township is dependent primarily on volunteers to participate in the emergency response organization. While the 24 hour scenario helps demonstrate the Township's 24 hour capability, it also tests the patience of the volunteers.

RECOMMENDATIONS - SCENARIO

50. "Sheltering" should be called for in a future scenario in an unambiguous way, as by some special occurrence. (An example would be a sudden catastrophic failure of a storage tank or fuel element shipping container

that would produce an "instantaneous" one time puff release. This puff release could be coupled with a strong wind that would not allow evacuation before cloud passage, and would not require evacuation after closed passage. The cloud passage might also be required to produce some rain-out contamination of pastures, automobiles, etc. This would justify immediate dispatch of the mobile lab to the site, and would also justify setting up decontamination stations.) Sheltering and evacuation could then be exercised by separate incidents, and played at different times in different directions.

51. Because of the possibility of confusion by the players, the use of out of sequence activities should be curtailed in the exercise.
52. More emphasis should be put in the scenario time schedule on evacuation, and on events that will actually test a broader range of response resources.
53. It is recommended that the length of time for the scenario be shortened to balance between demonstrating capability and accommodating volunteers. This could also help to reduce or eliminate "dead" periods in the play.



Federal Emergency Management Agency

Region III 6th & Walnut Streets Philadelphia, Pennsylvania 19106

DEC 22 1981

MEMORANDUM FOR: Vernon Adler
Chief, Technological Hazards Division
Office of Natural and Technological Hazards

FROM: *[Signature]* Robert J. Adamcik
Acting Regional Director

SUBJECT: Interim Findings on Risk County Planning for the
Susquehanna Nuclear Power Plant

Attached are FEMA Region III's interim findings on risk county planning for the
Susquehanna nuclear facility. Should you have any questions or comments on these
findings, please contact Bruce Swiren of my staff directly.

Attachment

ATTACHMENT 2

Interim Findings on Risk County Planning for the
Susquehanna Nuclear Power Plant in Pennsylvania

- I. Introduction: The Susquehanna Steam Electric Station located in Sales Township, Luzerne County, Pennsylvania, is situated about 1/2 mile away from the northern shore of the Susquehanna River. The 10 mile EPZ boundary encompasses portions of 2 risk counties, those being Luzerne and Columbia Counties. A total of 27 local municipalities are completely or partially within the EPZ boundary involving approximately 71,000 permanent residents.

Including the two risk counties, there are 20 counties falling within the 50 mile ingestion pathway. See attached map for the identification of those counties.

There are three principle offsite planning and response organizations for the Susquehanna facility: those being the State of Pennsylvania, Luzerne County and Columbia County. The overall responsibility for emergency response planning and coordination lies with the Pennsylvania Emergency Management Agency (PEMA), with the Department of Environmental Resources/Bureau of Radiation Protection (BRP) being responsible for accident assessment, radiological monitoring and technical judgments. There are also 16 other State agencies with varying levels of responsibilities in addition to those mentioned above.

In Luzerne County, the Luzerne County Civil Defense organization is responsible for overall coordination and implementation of the County's emergency response role. In Columbia County, the Columbia County Emergency Management Agency fulfills the above mentioned responsibilities. The role of both risk counties is the implementation of notification and alerting of the public and implementing protective action measures appropriate to the situation.

The materials used to form the basis for the interim findings on planning, which follows, are as follows:

- 1) August 1981 Draft Luzerne County Radiological Emergency Response Plan, with attached Municipal Plans.
- 2) August 1981 Draft Columbia County Radiological Emergency Response Plan, with attached Municipal Plans.
- 3) February 1981 Draft Annex E, State Plan for Radiological Emergencies.
- 4) December 14, 1981 RAC Review of Luzerne and Columbia County Plans.
- 5) September 29, 1981 testimony of Bruce J. Swiren to the Susquehanna ASLB on Offsite Planning concerning the Susquehanna facility.

It should be noted that the following interim finding deals only with risk county planning, not preparedness. A full scale exercise for the Susquehanna facility is scheduled for March 18, 1982, after which a more conclusive finding, including preparedness for response capability, if you will, will be made.

It should also be noted that the following interim finding on planning does not include an evaluation per se of State plans site specific to the Susquehanna facility. The reason for this is two-fold. First, an evaluation is currently underway of Pennsylvania's formal submission of plans site specific to Three Mile Island. This includes an updated version of the State Plan (Dec. 1981) which would apply in many ways to the Susquehanna facility. The results of this in-process review will be incorporated into FEMA's next findings, which will follow the March 1982 exercise. Secondly, certain aspects of the State Plan, site specific to Susquehanna, are still under development and will not be ready until February-March of 1982, thus making an interim finding on State planning premature at this point. However, the following evaluation does contain some references to State planning, in particular those areas currently under development which need to be completed before start-up.

- II. Evaluation: Insofar as ASLE testimony on the Luzerne County Plan and State Plan (February 1981 draft) have been developed and submitted; and insofar as a RAC review on the Luzerne and Columbia County Plans has been developed and submitted; the following evaluation relies upon the detail already identified in the above two documents. Included below are: identification of planning standard; rating (adequate or inadequate), the reason(s) why; and a highlighting of any significant deficiencies. Unless otherwise indicated all comments apply to both Luzerne and Columbia Counties (Risk Counties).

Planning Standard:

A. Assignment of Responsibility - Adequate

Both risk counties assign and delineate responsibilities excellently among county and municipal groups, and accurately reflect the State's responsibilities in accordance with the State Plan.

Although all necessary agreements and Support County Plans (for mass care facilities) are identified, many are still under development. This is an open area. See schedule of corrections section.

C. Emergency Response Support and Resources - Inadequate

Although the County has identified all the resources which it intends to rely upon in an emergency, there are still many agreements (REACT and RACES) and support plans still under development. See above comment and schedule of corrections section.

D. Emergency Classification System - Adequate

Both risk county plans have emergency classification systems and action level schemes in consonance with those of NUREG-0654, the State Plan, and the utility plan.

E. Notification Methods and Procedures - Adequate

Both risk counties have a 10 mile coverage siren system, good procedures for using it, a good public information system on paper, and good communications systems and procedures for using them, in interface with utility and State systems.

F. Emergency Communications - Adequate

Both risk county plans indicate that emergency communications capability exists for all response organizations, along with procedures for using them in a coordinated manner. This includes communications to the public.

G. Public Education and Information - Inadequate

Although both risk counties outline a plan in consonance with NUREG-0654, the materials to be distributed to the public are still under development. Also, the plans need to be more specific as to the methods of distribution, particularly to facilities which serve transients. See schedule of corrections section.

H. Emergency Facilities and Equipment - Inadequate

The reason for the inadequate rating is the unavailability of KI and TLDs, which both county plans provide for. Both these items are to be provided to the counties by the State. See schedule of corrections section.

I. Accident Assessment - Adequate

This is a Bureau of Radiation Protection (State) responsibility. The draft State Plan, along with the August 1981 draft BRP site specific plan for Susquehanna, indicates that the State can adequately perform this responsibility.

J. Protective Response - Inadequate

Although permanent residents of the 10 mile EPZ are provided for adequately in both county plans, the following deficiencies still exist:

- 1) Due to the unavailability of KI, emergency workers and certain institutionalized persons designated to receive KI in the county plans cannot receive such.
- 2) Planning needs to be more specific concerning notification of transients.
- 3) Planning needs to be developed more fully in the area of providing ambulance or other transportation resources to impaired or confined persons, including a clear delineation of unmet needs in this area.

See schedule of corrections section.

K. Radiological Exposure Control - Inadequate

Although both risk county plans adequately describe a distribution scheme for dosimetry and KI for emergency workers, along with correct PAC guidelines, the plans currently are unimplementable. This is because there are no TLDs available from the State, nor KI.

- L. Medical and Public Health Support - Adequate - Luzerne
Inadequate - Columbia

Both risk counties provide for medical facilities to treat injured and contaminated individuals. There does, however, currently exist a deficiency in Columbia County; that being the need to more fully develop its sources of ambulances, originating outside the EPZ, to compensate for the small number of ambulances located within the EPZ. See schedule of corrections section.

- M. Recovery and Reentry Planning and Postaccident Operations - Adequate

Planning for both counties adequately meets the requirements of NUREG-0654.

- N. Exercises and Drills - Adequate

Both risk county plans adequately provide for the full scope and schedules of exercises and drills called for in NUREG-0654 and State planning.

- O. Radiological Emergency Response Training - Adequate

Both county plans cover the areas of training needed by emergency workers, including provisions for annual retraining contingent upon courses offered by FEMA and State training sponsors.

- P. Responsibility for the Planning Effort - Adequate

The only significant open area (deficiency) in this planning standard are the several support county plans and municipal plans still under development.

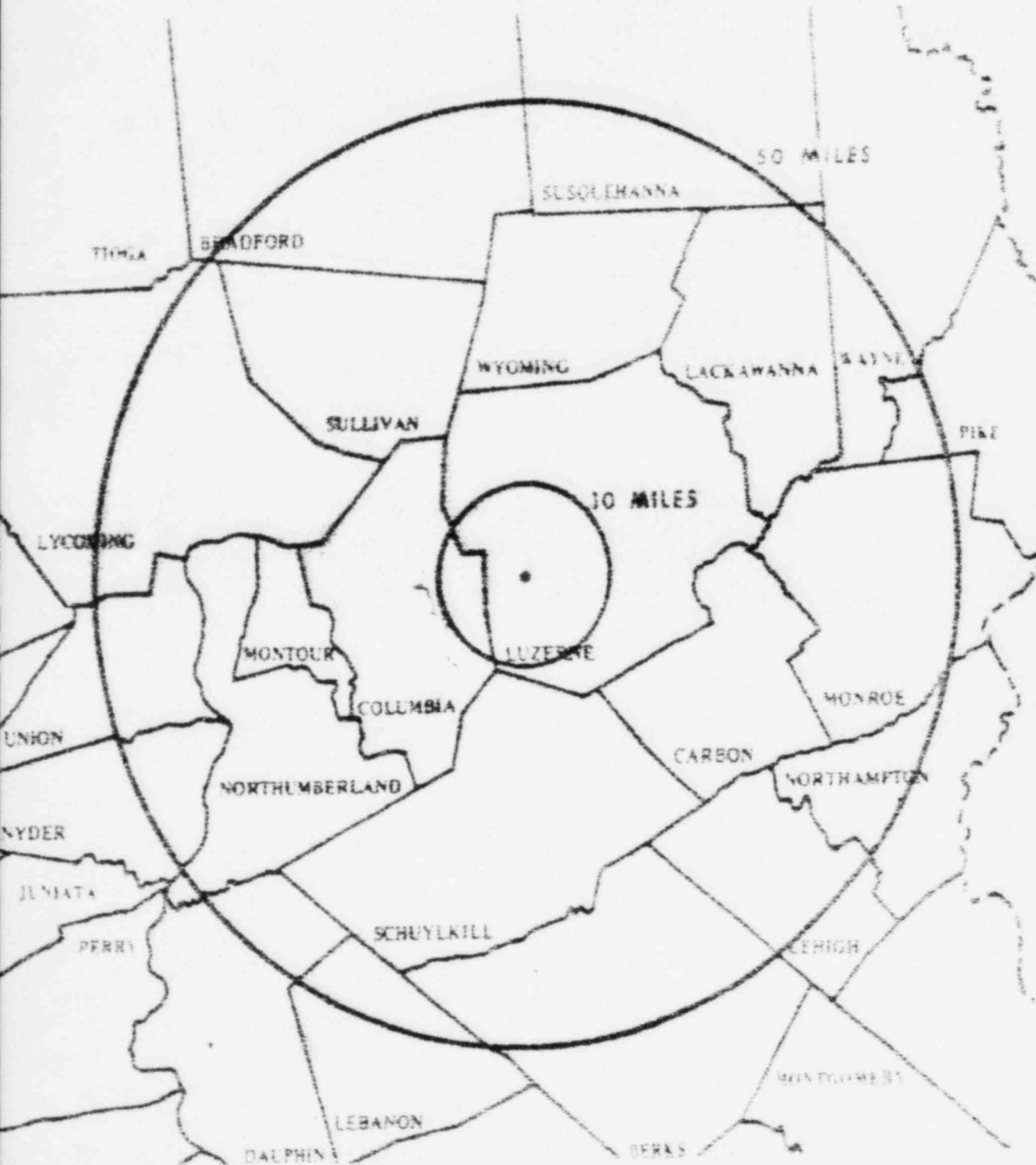
- III. Schedule of Corrections - The following deficiencies are cross referenced to the applicable planning standard of NUREG-0654 under which they apply. In some cases, due to the inherent overlap of criteria within the various NUREG planning standards, the same deficiency applies to more than one planning standard.

<u>Planning Standard(s)</u>	<u>Deficiency</u>	<u>Target Correction Date</u>
A, C, P	Still under development are Support County Plans (mass care), certain municipal plans, and written agreements with support organizations.	Before start-up
G	Still under development is the public information evacuation brochure and its subsequent distribution.	Before March 18, 1981 Full scale exercise
G, J	Plans need to be more specific concerning the distribution of above brochures to transients	Before start-up
H, J, K	State level problem concerning availability of KI and TLDs to risk counties.	Will require negotiation and follow-up.
J	Planning needs further development in delineating ambulance and other transportation resources to impaired or confined persons, including identification of unmet needs.	Before start-up
L	Columbia County needs to identify ambulance resources outside of EP2 which could be used to compensate for small number of ambulances located within EP2.	Before start-up

MAP OF RISK AREAS

SUSQUEHANNA STEAM ELECTRIC STATION

PLUME EXPOSURE PATHWAY EPZ AND
INGESTION EXPOSURE PATHWAY EPZ



Risk Counties: Columbia, Luzerne

Plume Exposure Pathway EPZ

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Federal Emergency Management Agency

Region III 6th & Walnut Streets Philadelphia, Pennsylvania 19106

AUG 25 1982

Lt. Gen. DeWitt C. Smith, Jr.
Director
Pennsylvania Emergency Management
Agency
Transportation and Safety Building
Room 8-151
Harrisburg, PA 17120

Dear General Smith:

On August 4, 1982 this office forwarded to you our Interim Findings on State-level planning, and State, county, and municipal preparation for the Susquehanna Steam Electric Station (SSES). This report was a continuation of our previous interim evaluation of risk county planning, forwarded to you by our letter of December 23, 1981. Together, these two reports constitute our complete Interim Findings regarding emergency plans and preparedness for the Susquehanna facility.

Although we determined that the current level of planning and preparation is adequate to maintain the health and safety of the public, several major and minor deficiencies were noted. It is my understanding, based on a discussion between our respective staffs, that, generally, PEMA acknowledges the noted deficiencies. The purpose of this letter is to confirm that PEMA intends to implement corrective actions as follows:

State Level Planning Deficiencies

A. Major

1. State and county plans should be modified as necessary to account for the abandonment of the Field EOC concept.

These modifications are in process and will be included in the forthcoming revision of Annex E (due in late September, 1982) and the published versions of the Columbia and Luzerne County plans (due in late October, 1982).

2. A supply of both potassium iodide (KI) and desimetry adequate to fulfill the identified needs should be obtained -
 - a. Although the State Health Department has acquired a small amount of liquid KI, this is not an indication of the State's intent to supplant the planned-for use of KI in tablet form, because of the attendant distribution problems with the liquid. Therefore, no modification of plans to accommodate the use of liquid KI will be necessary. However, the problem of obtaining an adequate supply of tablet KI remains unresolved. Pennsylvania has been unsuccessful in arranging a cooperative purchase with other states to arrive at the 275,000-unit

ATTACHMENT 3

minimum order which the only known manufacturer is willing to fill. Therefore, PEMA is depending upon FEMA/FDA to purchase and make available the KI. In the meantime, however, a workable supplemental plan should be established in order to deal with those situations for which current planning calls for KI to be distributed. As this is a potentially serious problem, we request that such a plan be developed by October 1, 1982.

- b. PEMA has already predistributed a supply of CDV-742 dosimeters in an adequate quantity to fulfill the identified needs for an incident at Susquehanna. The State does not have, and is not able to purchase, an adequate supply of CDV-730 dosimeters and thermoluminescent dosimeters (TLDs). However, PEMA has advised the utility via letter of the quantities of these devices needed, and in recent communication PEMA has been advised that the utility is exploring the possibility of purchasing these dosimeters.

3. Minor

1. The Federal Government support role should be described in Section VI of the Basic Plan; both volunteer and Federal agencies should be included in Section VII.

Because this is a relatively minor problem, it has not yet been considered in deference to more serious deficiencies. Consequently, this item will not be addressed in the forthcoming revision of Annex E, but will be corrected in the following revision, due by early January, 1983.

2. More specific information should be provided regarding the Protective Response procedures of the State Police, Department of Military Affairs, and Department of Transportation.

Same as above.

3. The plan should provide for the counseling of emergency workers regarding the increased risks of exceeding the recommended doses.

PEMA's recently-developed procedures to accomplish this will be included in the forthcoming revision of Annex E.

County Level Planning Deficiencies

1. Support county plans (mass care), certain municipal plans, and written agreements with support organizations should be developed.

These are under development and will be included in the Formal Submission, scheduled for early January, 1983.

2. The public information evacuation brochure should be developed and distributed.

The public information brochure has been written and the evacuation map prepared. Both will be distributed to the public before the public meeting, planned for late November/early December, 1982.

3. Plans should be further developed regarding ambulances and other transportation resources.

This has been accomplished with the completion of transportation plans for Luzerne and Columbia Counties and their municipalities. These plans, prepared to comply with the Atomic Safety Licensing Board requirements, were approved by this office and forwarded to National Office in June.

Regional Assistance Committee (RAC) Exercise Recommendations

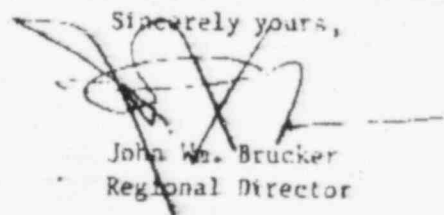
The 53 recommendations contained in the RAC report on the March 18, 1982 Susquehanna exercise are currently under consideration by PEMA. At this time, no significant contentions are foreseen in adopting these recommendations.

To summarize, corrections of all deficiencies noted in the Interim Report have been completed, or are scheduled for completion by early January, 1983 at the latest, with the exception of the following:

1. Contingency plans should be developed to compensate for the lack of an adequate stockpile of KI, to be implemented in the event of an incident at Susquehanna before such a supply is obtained and redistributed. We request that a plan be forwarded to this office by October 1, 1982.
2. The utility is considering the provision of low-range dosimeters and/or TLDs for use by emergency workers. Should the utility not provide these instruments, please advise us of your alternative plan, to be implemented until the dosimeters are obtained.

We trust this is an accurate assessment of PEMA's status regarding the correction of the deficiencies. Please inform us of any misunderstanding. If we can be of any assistance in this matter, please do not hesitate to contact me.

Sincerely yours,



John W. Brucker
Regional Director

9/3/12

Roland Storer 359EW

Please have docketed.

Robert

Shirley