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December 11, 1980

Mr. Steve Chestnut
Emergency Preparedness Licensing Branch
Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Steve:

THE SUSQUEHANNA NUCLEAR POWER STATION EMERGENCY PLAN REVIEW

Enclosed is a copy of our comments on the Susquehanna Emergency Plan dated 10/21/80. The plan is concisely written and addresses all of the required standards. It fails to provide the detail required to meet most of the supporting criteria. The licensee has established the framework for a good plan, but needs to fill in the blank spots. As a result, the plan partially satisfies most of the standards.

Yours truly,

A handwritten signature in cursive script that reads "M. Lloyd Smith".

M. Lloyd Smith
Health Physics Consultant

MLS/lml

Enclosure

cc: A. E. Desrosiers, Project Manager
F. G. Pagano, NRC
File/LB
Site File

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EMERGENCY PLAN EVALUATION REPORT
ON

EMERGENCY PLAN EVALUATION REPORT
SUSQUEHANNA STEAM ELECTRIC STATION
PENNSYLVANIA POWER AND LIGHT COMPANY

EVALUATION SUMMARY

The Susquehanna emergency plan was evaluated against the requirement in NUREG-0654.

The plan satisfied standards L, M, N. The plan partially satisfied standards H, B, C, D, E, F, G, I and J.

The plan does not satisfy the intent of the standard for standards H and K. The plan as written in substance meets the major objective in each standard but fails to be complete enough to fill the required details in the criteria.

EMERGENCY PLAN EVALUATION REPORT ON: Susquehanna

FINDINGS ON STANDARDS & CRITERIA

The second revision of the Emergency Plan issued by the Pennsylvania Power and Light Company for their Susquehanna Steam Electric Station was evaluated to determine the extent of Company compliance with the sixteen Emergency Planning standards and associated criteria in Part II of NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Response Plans and Preparedness in Support of Nuclear Power Plants."

The following evaluation report lists each standard in order followed by a summary of planning commitments, overall evaluation and comments on plan deficiencies.

A. Assignment of Responsibility (Organizational Control)

To assure that primary responsibilities for emergency response in nuclear facility operator, State and local organizations within the Emergency Planning Zones have been assigned, that the emergency responsibilities of the various supporting organizations have been specifically established, and that each principal response organization is staffed to respond and to augment its initial response on a continuous basis.

SYNOPSIS: Primary responsibilities for emergency response by the licensee have been established. Federal, State, local and private response organizations and agencies have been identified.

The On-duty shift supervisor has been designated as the Emergency Director and is empowered to unilaterally implement and administer the provisions of the Emergency Plan during an emergency until relieved by the Superintendent of Plant or a designated alternate. The Vice President-Nuclear Operations is the Recovery Manager and is in charge of overall company response including continuity of resources.

EVALUATION: The plan partially satisfies the intent of the standard.

CRITERIA ANALYSIS

- (1) The plan infers that only individuals assigned to the Technical Support Center (TSC) will either be in attendance or on call 24 hours a day (Section 1.2, Page 13). There is no statement regarding ability to provide 24 hour per day response by other company emergency personnel or the capability to provide 24 hour per day manning of communication links.
- (2) Appendix A containing "Letters of Agreement" from response organizations and agencies is not included in the plan as required by Criterion A3.

B. Onsite Emergency Organization

To assure that on-shift facility operator responsibilities for emergency response are unambiguously defined, that adequate staffing to provide initial facility accident response in key functional areas is maintained at all times,

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and timely augmentation of response capabilities is available, and that the interfaces among various onsite response activities and offsite support and response activities are specified.

SYNOPSIS: The shift supervisor is designated the Emergency Director with authority and responsibility to immediately and unilaterally initiate emergency actions including providing protective action recommendations to State and local emergency response agencies.

The onsite emergency plan staff organization for all shifts and its relationship to the duties and responsibilities of the normal shift complement have been satisfactorily addressed. Those persons responsible for functional areas of emergency response activity have been specified by title and major tasks.

Interfaces between onsite functional areas of responsibility and Company, Federal, State and local response organizations are shown in Figure 5.4.

EVALUATION: The plan partially satisfies the intent of the standard.

CRITERIA ANALYSES

- (1) A clear cut line of succession for the emergency director position and the specific conditions for higher level management assuming this function are not identified. Section 5.2.1 states only that the superintendent of Plant or a designated alternate will assume Emergency Director responsibilities. The list of "typical" alternates is unsatisfactory. A firm several step list of alternates should be identified.
- (2) The plan does not identify the Emergency Director functional responsibilities that cannot be delegated as required by Criterion B4.

C. Emergency Response Support and Resources

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

SYNOPSIS: The Susquehanna plan provides for representatives of FEMA and DER/BRP at the EOF.

EVALUATION: The licensee's plan does not satisfy Planning Standard C.

CRITERIA ANALYSES:

Criterion 1 is not satisfied. The plan fails to list by title the person who is authorized to request Federal assistance, to document the specific Federal

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resources relied upon, or to document required support for Federal response.

Criterion 2 is partially satisfied. Although the licensee has made provisions for the receipt of representatives from the Commonwealth of Pennsylvania, there is no prior preparation documentation of provisions preparation for dispatching a licensee representative to the principal offsite EOC.

Criterion 3 is not satisfied. No radiological laboratories are identified.

Criterion 4 is partially satisfied. Although supporting organizations have been identified, no letters of agreement are provided.

D. Emergency Classification System

To assure that a standard emergency classification and action level scheme is in use by the nuclear facility operator, including facility system and effluent parameters; and to assure that State and local response organizations, will rely on information provided by facility operators for determinations of initial offsite response measures.

SYNOPSIS:

The submission by the licensee partially meets the objective. They have adopted the classification scheme from NUREG-0654. They satisfy the requirement for the site, general and analysed accidents emergency initiating conditions.

EVALUATION: The plan partially satisfies the intent of the standard.

CRITERIA ANALYSES:

They fail to address the following in Alert classification:

1. Loss of function needed for cold shutdown.
2. Coolant pump seizure leading to fuel failure.
3. Ongoing Security compromise.
4. Steamline break.

They fail to address the following in the Unusual Event Classification:

1. Failure of a safety relief valve to close.
2. Loss of offsite AC power or the loss of onsite AC power generation.
3. Loss of engineered safety features.

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4. Loss of containment integrity requiring shutdown by task specification.
5. Security threat.
6. Train derailment.
7. Rapid depressurization of the secondary
8. Transportation of injured person to offsite hospital who is contaminated with radioactive material.

E. Notification Methods and Procedures

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 follow-up 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.

SYNOPSIS: The Susquehanna plan establishes procedures for the notification of response organizations, verification of messages (when appropriate) and mobilization of emergency response personnel. It references a system of prewritten messages consistent with each EAL for providing instructions on protective action for population of the plume exposure zone.

EVALUATION: The licensee's plan partially satisfies Planning Standard E.

CRITERIA ANALYSIS:

Criteria 1 and 2 are generally satisfied, although it is not clearly indicated who will notify the rail operator or the FAA to restrict access of trains and aircraft, respectively, to the plume EPZ.

Criteria 3 and 4 are not satisfied. There ought to be a standardized notification form devised that meets the requirements of NUREG-0654. Copies of the form should be available at the plant (Control Room and EOF), at the principal county EOC, and at FEMA and DEP/BRP.

Criterion 5 does not apply to the licensee.

Criterion 6 is not satisfied. There is no evidence applied that indicates that the time requirements described in NUREG-0654 for notification of the population of the plume EPZ can be achieved.

Criterion 7 is partially satisfied. Although provision is made for the broadcast of prewritten messages, there is no documentation of possible protective actions or any clear indication about the basis upon which they would be recommended.

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F. Emergency Communication

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

SYNOPSIS: The Susquehanna plan provides documentation of a reliable communication system that is tested on a routine basis.

EVALUATION: The licensee's plan partially satisfies Planning Standard F.

CRITERIA ANALYSES:

Criterion 1 is partially satisfied. The plan fails to clearly indicate that offsite authorities have facilities staffed 24 hours/day for the receipt of notification messages.

Criterion 2 is not satisfied. Although page 5-10 indicates that communication with medical support facilities is addressed in an Implementing Procedure, no satisfactory documentation exists in the plan itself.

Criterion 3 is satisfied.

G. Public Information

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.

SYNOPSIS: The Susquehanna plan addresses the dissemination of information to the public about radiological emergencies, provides for points of contact and space for the media, and provides a physical basis for timely exchange of information among designated spokespersons.

EVALUATION: The licensee's plan partially satisfies Planning Standard G.

CRITERIA ANALYSES:

Criteria 1 and 2 are partially satisfied. The plan describes means by which information will be disseminated but fails to document the content.

Criterion 3 is satisfied.

Criterion 4 is partially satisfied. No provision is made for coordinated arrangements for dealing with rumors.

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Criterion 5 is not satisfied. There is no mention in the plan of an annual seminar for the news media.

H. Emergency Facilities and Equipment

To assure that adequate emergency facilities and equipment to support the emergency response are provided.

SYNOPSIS: The plan satisfies the criteria that emergency centers be established. Discussion of these facilities is adequate except as noted under Criteria Analyses.

The plan provides for a quarterly inspection and inventory of emergency equipment and supplies. Discussion is adequate except as note under Criteria Analyses.

EVALUATION: The plan does not satisfy the intent of the Standard.

CRITERIA ANALYSES:

1. The plan does not indicate when the permanent Emergency Operations Facility (EOF) will be in service.
2. The plan fails to identify or discuss the geophysical phenomena monitors. Section 7.4.3 indicates the "natural phenomena monitors" are identified in Enclosure 7 to Appendix D of the plan. Enclosure 7 is not included in Appendix D.
3. Radiological monitors (Criterion H-5.6) are listed in Enclosure 8 of Appendix D. The listing, however, is not compatible to that given in H-5.b and fails to identify where process and effluent monitors are located.
4. The process monitoring equipment specified in Criterion H-5c has not been addressed.
5. Section 7. .2 "Fire Detection Systems" indicates these systems are identified in Enclosure 7, Appendix D. The enclosure is not in Appendix D.
6. The plan does not provide for acquisition of data from or for emergency access to offsite monitoring and analysis equipment as specified in Criterion H6-a, b, and c.
7. The plan provides for offsite radiological equipment in the plant vicinity (Enclosure 13, Appendix D) but fails to indicate where the equipment will be located.

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8. Meteorological instrumentation and procedures to satisfy criteria in Appendix 2, NUREG-0654 are not addressed (Criterion H8).
9. Section 7.1.3 establishes an Operations Support Center (OSC) but fails to discuss capacity, shielding, ventilation, supplies and equipment as specified in Criterion H9.
10. Section 8.3 establishes quarterly inspection and inventory of emergency equipment and instrumentation but fails to address the instrument calibration or adequacy of reserves.
11. Appendix C identifies emergency kit locations rather than by category as specified in Criterion H-11.
12. The plan fails to establish a central point for reception and analysis of all field monitoring data.

I. Accident Assessment

To assure the adequacy of methods, systems and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition.

SYNOPSIS: The licensee has presented a good clear description of the methods to be used in making the dose assessment. These methods are based on measured input parameter from instrumentation measuring the concentration in the release paths to the environment. The instrument response is used as input into the computer system where it is dispersed by the existing meteorological condition and the dose calculated at five distance in the plume pathway. This method is backed up by nomographs and manual calculations and field survey results. A table of instrument response and equivalent concentrations that are used as the source term information and a projection of dose to the environment based on the potential burden in containment.

EVALUATION: The plan partially satisfies the standard.

CRITERIA ANALYSES:

Criteria 4 is not addressed.

J. Protective Response

To assure that a range of protective actions is available for the plume exposure pathway for emergency workers and the public, guidelines for the choice of protective actions during an emergency, consistent with Federal guidance, are developed and in use, and that protective actions for the ingestion exposure pathway appropriate to the locale have been developed.

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SYNOPSIS: The accountability for personnel is defined, the evacuation assembly areas are defined, and protective apparel is provided. The mechanism for initiating an evacuation and authority are defined. The basis for use of protective drugs is defined.

EVALUATION: The submittal by the licensee partially satisfies the objective.

CRITERIA ANALYSIS:

1. The evacuation beyond the assembly areas is not covered as a part of the licensee plan. A map of evacuation routes for plant personnel to host areas and means of transport for site personnel should be defined.
2. Maps of population distribution in each sector within EPZ are not provided.

K. Radiological Exposure Control

To assure that means for controlling radiological exposures, in an emergency, are established for emergency workers and the affected population.

SYNOPSIS: The emergency plan provides for aid to afflicted personnel, emergency exposure control, decontamination and first aid, medical transportation and treatment, emergency exposure criteria and criteria for evacuation of the controlled zone and the exclusion area.

EVALUATION: The plan does not fully fill the requirement of the standard.

CRITERIA ANALYSIS:

Criteria 2 an onsite radiation protection program to be implemented during emergencies is not addressed.

Criteria 3a requirements for provisions for 24 hour-per-day dose measurement capability are not addressed.

Criteria 3b requirements for providing for maintaining emergency dose records are not addressed.

Criteria 5a requirements for defining the action levels where decontamination is required are not addressed.

Criteria 5b requirements for establishing means of decontaminating emergency personnel are not addressed.

L. Medical and Public Health Support

To assure that arrangements are made for medical services for contaminated individuals.

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EVALUATION: The plan satisfies the standard.

M. Recovery and Reentry Planning and Post-Accident Operation

General plans for recovery and reentry are developed.

EVALUATION: The plan satisfies the standard by providing the organization structure and management assignment by title to implement control of the emergency and reentry.

N. Exercises and Drills

To assure that periodic exercises are conducted to evaluate major portions of emergency response capabilities, that the results of exercises form the basis for corrective action for identified deficiencies and that periodic drills are conducted to develop and maintain key skills.

EVALUATION: The plan satisfies the standard by assigning the responsibility to the Supervisor of Emergency Response planning for maintaining Emergency preparedness including periodic drills and exercises at the required frequencies and type.

In addition, provisions are provided for orientation of employees in their responsibilities during emergencies.

O. Radiological Emergency Response Training

To assure that radiological emergency response training is provided to those who may be called upon to assist in an emergency.

EVALUATION: The licensee's response satisfies the standard.

P. Responsibility for the Planning Effort; Development, Periodic Review and Distribution of Emergency Plans

To assure that responsibilities for plan development, review and distribution of emergency plans are established and that planners are properly trained.

EVALUATION: The licensee plan meets the standard with the exception of the criterion requiring an independent audit of the emergency preparedness program.