



CHAIRMAN

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

Comm CORP

8005150321

April 16, 1980

The Honorable Don Clausen
United States House of Representatives
Washington, D.C. 20515

Dear Congressman Clausen:

We are pleased to respond to your letter of March 7, 1980 requesting additional information for the hearing record of the Nuclear Regulatory Commission's FY 1981 Authorization Request.

Sincerely,

A handwritten signature in cursive script, appearing to read "John F. Ahearne".

John F. Ahearne

Enclosures:
Questions and Answers
for the Record

cc: Cong. Morris Udall

QUESTION I. Experienced Personnel

In testimony, Chairman Ahearne stated "we have been experiencing some difficulty in finding sufficient numbers of qualified people to fill positions as there is also active recruiting under way by the nuclear industry." While NRC has been actively recruiting you state "we do not know at this time whether or not we will be able to bring Nuclear Reactor Regulation up to ceiling over the remainder of this fiscal year. Unfortunately, attrition has reduced these numbers."

The previous quote is a significant point in NRC's ability to implement its lessons-learned program, the resumption of licensing, as well as to meet Congress' requests.

1. How will this inability to obtain qualified manpower affect the resumption of licensing?

ANSWER.

Late in FY 1979, Congress recommended the use of temporary assistance from other Federal agencies to maintain the NRC licensing process while the recruitment and training of an additional 100 NRR positions proceeds. Our FY 1980 supplemental request includes approximately \$6 million, specifically for casework, to continue utilizing staff from other agencies to assist in license application reviews (the Personnel Loan Assistance Program).

NRR's on-board strength currently is about 100 positions below the FY 1980 authorized ceiling. We presently have commitments to 76 applicants, about half of whom already have accepted our job offers and are awaiting entrance on duty. Recruitment activities have been intensified and an expedited hiring unit has been established to support these activities. However, without relief from the recent Presidential limitation on Federal employment, our recruitment will be severely impacted.

Increased demand by industry for the same technical specialities and reluctance of individuals to relocate to Washington have made our staffing task difficult. Notwithstanding these problems and our slow start, our more recent progress shows improvement. We are increasing recruiting efforts in the local area and are considering hiring qualified people without specific nuclear experience and giving them a concentrated training program. We are applying new staff to the various tasks associated with licensing and operation of nuclear power plants just as soon as they can be hired and integrated.

The Personnel Loan Assistance Program was initiated late in FY 1979 to augment NRR staff resources in the review of nuclear power plant applications while additional personnel are being recruited and trained to replace staff reassigned

to high priority tasks associated with the Three Mile Island accident. Our FY 1980 supplemental requested \$6,020,000 to continue funding for personnel from other Government agencies, primarily DOE, through FY 1980. Additional technical assistance also has been obtained from the U.S. Geological Survey, the U.S. Army Corps of Engineers, and the Naval Surface Weapons Command.

Although some increase in available staff manpower for casework reviews is occurring as individuals return to normal assignments upon completion of special task forces and as a result of recruitment and hiring, our preliminary assessments of the staff resources associated with implementation of the Presidential Commission, the NRC Special Inquiry Group, and other studies indicate that there will be a severe shortfall of manpower for casework in FY 1980 and 1981.

Once the Commission has approved the TMI Action Plan, it will be necessary to reassess the projected schedules for completion of licensing reviews currently scheduled in FY 1980 and 1981. It will probably be necessary to continue the use of DOE contractor personnel to assist in licensing reviews through FY 1981 if significant delays in fuel loading dates in plants scheduled for late FY 1981 and FY 1982 are to be minimized. We have initiated discussions of such an extension with DOE. Extension of this program would require about \$7,000,000.

We are now tackling the difficult task of weighing the relative priorities of proposed TMI actions against our ongoing programs. In the first half of FY 1981, it is expected there will be sufficient staff manpower available to enable decisions on Operating License applications to be made at or near the expected plant fuel load dates, but it is likely that fuel load dates for some plants may be missed by a few months in the latter half of FY 1981. Our results are preliminary and we have not fully addressed the merits of the proposed implementation schedules. However, it is clear that a number of on-going and planned routine and generic activities will have to be redirected resulting in deferral to FY 1982 (for example, review of topical reports will be curtailed, except for that needed to support active licensing action; similarly, audit calculation will be restricted; activities on generic studies will be reduced, and those associated with resolution of Unresolved Safety Issues; activities in the Advanced Reactors and Standards Assistance will be reduced to minimum.)

QUESTION I.2. What is the impact of Congress' requests on NRC's resources both in terms of Direct Member requests as well as legislative requests?

ANSWER.

The current manpower system used by the NRC to track resources expended on various work activities does not have the capability to discriminate for types of Congressional inquiries. Efforts are underway, however, to acquire this capability in the future.

Based on our best estimates, in FY 1979 the NRC expended a total of approximately 49 man years of effort (professional and non-professional) related directly and indirectly to Congressional inquiries. The total impact on NRC's resources resulting from Congressional inquiries for FY 1980 is difficult to project because they will vary greatly in nature and scope. Through March 8, 1980, NRC has expended approximately 22.5 man years of effort on Congressional correspondence.

Our Congressional correspondence system indicates that roughly 1000 letters were sent to Congress during FY 1979. This system does not capture all letters sent to Congress, and specifically excludes letters of transmittal or acknowledgment.

QUESTION I.3. What impact does NRC expect this manpower problem to have on the Office of Inspection and Enforcement?

ANSWER.

We expect that the increased competition for qualified nuclear engineers will make the recruitment of reactor inspectors more difficult. By itself, however, this problem can be overcome by more aggressive recruiting. Two potentially larger problems recently have confronted us: the President's limitation on filling federal vacancies and the cost and availability of mortgage money for recently relocated personnel. Fortunately, we have had a very successful recruitment effort thus far. Therefore, our principal remaining concern is to be able to fill vacancies as they arise during the balance of the fiscal year.

QUESTION II. Improvements at the Incident Response Center.

The NRC has requested \$3 million for equipment to "improve our capability for handling emergencies at our Incident Response Center in Bethesda "

1. What types of equipment are the \$3 million expected to provide and how will this equipment assist NRC in its mission?
2. What is the staff regime at the Incident Response Center?

ANSWER.

1. The \$3 million is needed to continue upgrading the Incident Response Center's physical facilities and initiate the procurement of long lead time items. These expenditures are expected to be:

<u>Items</u>	<u>\$(000)</u>
o Uninterruptable Power Supply and Power Isolation	\$200
o Mainframe Computer	850
o Additional Space for Expanded and Upgraded Operations Center Including Duty Officer Consoles and Special Construction	1650
o Procurement of Standard Software Packages for Data Displays	250
	<u>\$2950</u>

The basic mission of the NRC no matter what role it assumes in an incident is to monitor the situation and evaluate the information and data available. It is clear that NRC needs data on some parameters to have even a basic appreciation of the significance of an incident. A nuclear data system can provide critical information about the reactor prior to the initiating event(s) and continue to generate timely information continuously during an incident. This can provide the staff with vital data to independently assess the situation, make critical recommendations to other Federal, State and local officials and keep the public properly informed. Although the initial system being considered is limited in the amount of detailed data that it will provide, even a few data points can enhance NRC's capability.

At the time of the budget submission, a detailed study of the concepts and costs for a data link had not been completed. Since that time Sandia Laboratories has started a detailed study of these requirements. A report will be presented to the Commission in April and the Commission will then decide the type of data link it needs and how that should be accomplished in light of other developments. It is clear, however, from very early information and analysis conducted by Sandia that the initial estimate of \$3 million to upgrade the Incident Response Center including the data link will not be sufficient.

2. During an incident, the NRC staff assumes a functional organization designed to provide quick and efficient management of NRC resources. An organization chart is enclosed. The Executive Management Team (EMT) is the decision making body. It is composed of individuals or their designated alternates in the following positions:

- EMT Director - Chairman, NRC
- EMT Member - Executive Director for Operations
- EMT Member - Director, IE
- EMT Member - Director, NRR (Reactor Safety) or Director, NMSS
(Other Incidents)

The EMT is supported by the following groups who report directly to the EMT:

Administrative and Logistical Support:

- Federal and State Liaison
- Public Affairs
- Congressional Affairs
- Operations Center Support and Control

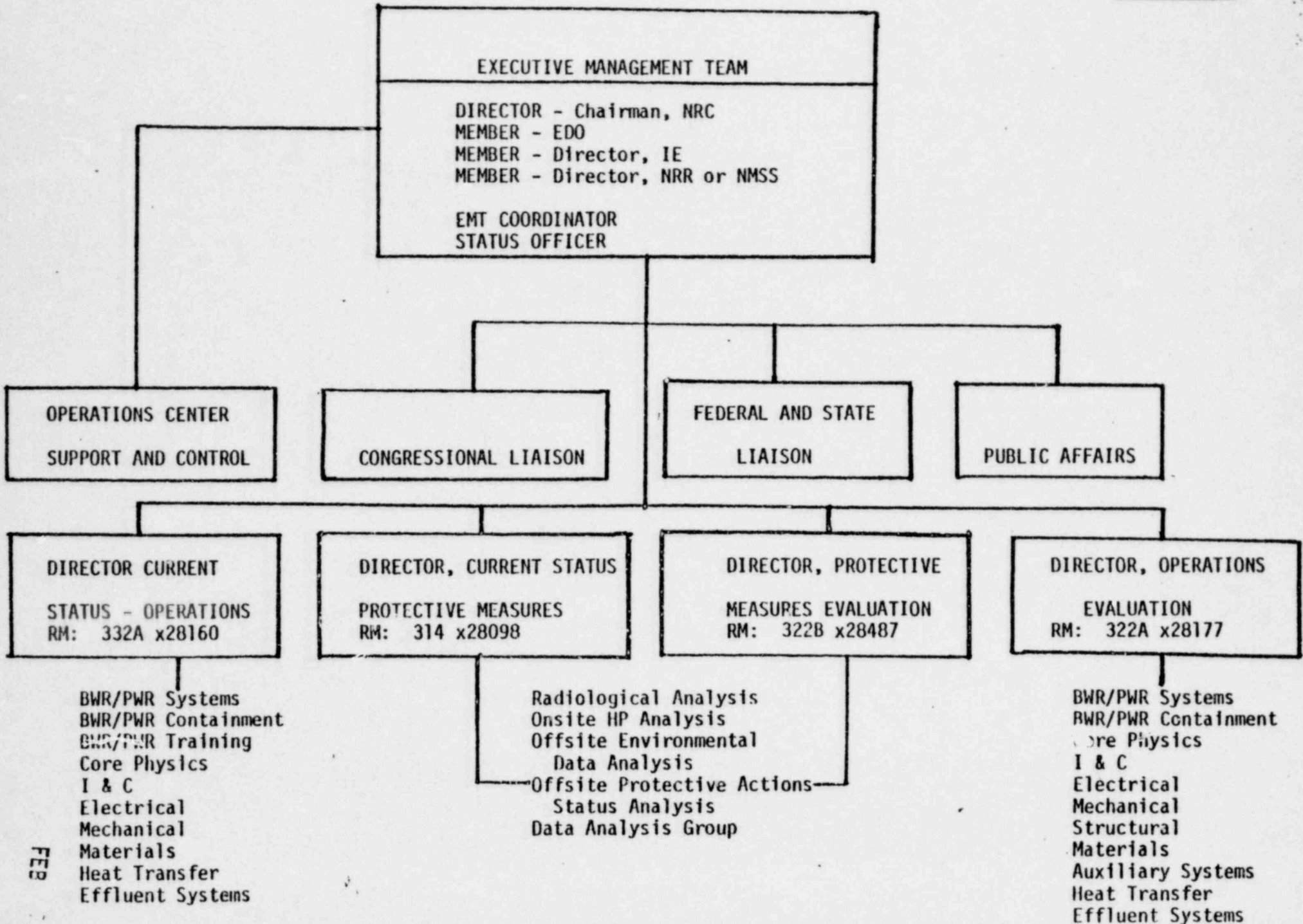
Technical Support

- Operations - Current Status
- Operations - Evaluation (Potential Problems)
- Protective Measures - Current Status
- Protective Measures - Evaluation

A more detailed description of the functions of the Incident Response program and major positions are included in the enclosed Incident Response Procedures.

ENCLOSURE I

INCIDENT RESPONSE ORGANIZATION



EEB

ENCLOSURE II

FUNCTIONAL STATEMENTS

NRC INCIDENT RESPONSE
ORGANIZATION

General

In the event of an incident, the NRC must be prepared to make quick and critical decisions to protect the public health and safety. The most important of these decisions will be:

- Recommendations for protective measures, including evacuation where appropriate.
- Orders to licensees to take specific actions.
- Augmentation of licensee management or, if necessary, assumption of control of a facility or situation.
- Requests for assistance from other organizations.

These critical decisions must be supported by independent evaluations of the best information available. The NRC must be prepared to perform all essential evaluations despite the plans of other organizations. Maintaining the ability to perform these essential evaluations will assure the NRC's capability to assist when possible, direct when necessary, and inform the public factually on all activities.

Assist

NRC must be in a position to provide assistance, which may take many forms. The NRC will, for example, provide recommendations to FEMA or to the State or local agencies concerning protective measures, particularly evacuations. As was the case at TMI, if it is perceived that field measurements are inadequate, NRC personnel will again be called upon to conduct radiological and environmental surveys. Onsite NRC personnel may have to review and approve specific emergency operating procedures which the licensee would lack authority to implement without prior NRC approval under current rules and regulations. NRC personnel in Washington should have the opportunity to review and evaluate the implications of the incident and possible alternatives in terminating the incident with maximum protection of the health and safety of the public. Any assistance based on these scenarios or any others is meaningful only if the information used is timely, accurate, and responsive to the needs of the NRC.

Direct

Given the requirement to evaluate the actions of licensees, it follows that a regulatory agency must be prepared to provide direction to that licensee if it determines that proposed actions are not in the best interests of the public. For example, a licensee may find itself in a position where it no longer has sufficient resources to manage all the problems that result after an incident. The NRC should be in a position wherein it could step in to provide broad management and technical expertise necessary to respond to such an incident or order a licensee to take appropriate actions. Such a posture requires that the NRC must be kept continually informed of plant status.

It is not intended that the NRC would exercise a direct command function of the plant under accident conditions from the remote Operations Center. The basis for this conclusion is simply the impracticality of reproducing in the Operations Center on a real-time basis, all plant control room data that would be required for effective command under accident conditions. Thus principal responsibility for command resides with each utility. However, it is recognized that under certain unusual conditions, an NRC command function might become necessary. In this regard, the principal NRC command should be established at the particular plant where full information and capability would be available to perform such a function. Activities at the Operations Center would continue to support the activities being performed at the site.

Inform

NRC is responsible for informing officials and the general public about all aspects of the incident and response activities. The NRC is also responsible for the flow of essential information among the licensee, NRC, and State and Federal agencies.

Regardless of the specific legal responsibilities of licensees and the jurisdiction of State and local agencies, it is generally perceived that NRC has a specific responsibility to provide accurate assessments since it is the principle regulatory agency. Information loops need to be maintained at a very high level of timeliness, accuracy, and sufficiency throughout the course of an incident. Exchange of information among all Federal agencies may have to be coordinated by NRC in the event that the extensive plans of FEMA do not materialize.

EMT COORDINATOR

1. Serves as the focal point for technical information and inquiries both from the EMT and to the EMT.
2. Assures that EMT receives briefing from the technical support staff elements routinely or whenever unusual information is received in order to maintain EMT awareness of the status of the situation.
3. Assures that minority viewpoints within a technical area are brought to the EMT's attention prior to decision making.
4. Advises the EMT when a decision is considered essential by the staff elements and assures that the decision is clearly understood by the staff elements.
5. Monitors staff elements to maintain overall awareness of course of incident and current staff activities and assures that EMT decisions/directives are being implemented.
6. Resolves conflicts between all technical staff directors below EMT level.
7. Uses the staff of Operations Support and Control to carry out these responsibilities.

STATUS OFFICER

1. Maintains awareness of:

- the incident status from a reactor operations and radiological perspective,
- the licensee response,
- NRC response,
- State and local response,
- other federal agency response, and/or
- industry response

in order to provide briefings and update reports to high ranking officials in NRC, other Federal agencies, the Congress, the White House, industry and to whomever else the EMT may designate, in order to relieve the EMT of this responsibility.

2. Ascertains whether commitments were made by EMT during briefings to other high ranking officials and assures that any such commitments are met.

FEDERAL AND STATE LIAISON

1. Establishes and maintains liaison with appropriate State personnel.
2. Develops and maintains information concerning those actions the State has taken or plans to take in response to the event, and briefs the EMT, as necessary.
3. Identifies major concerns of State and local officials for the EMT.
4. Maintains liaison with other Federal agencies for the purpose of providing information and status concerning the event and NRC actions, with the exception of DOE and FBI or contacts related exclusively to technical or operation support.
5. Maintains knowledge of the State organizational structure, technical capabilities and operational resources.
6. Ensures State and local emergency plan information is readily available for EMT consultation.

OPERATIONS CENTER SUPPORT
AND CONTROL

1. Provides staff assistance to EMT Coordinator to assist him in carrying out his responsibilities.
2. Provides administrative support to EMT by appointing an Executive Assistant to EMT whose functions will be to:
 - maintain the formal record of the EMT activities, actions and decisions, and
 - coordinate activities internal to EMT.
3. Assures that activation of Operations Center is carried out as required and all appropriate notifications have been made.
4. Makes recommendations to EMT coordinator regarding need for operational support from other agencies and IRAP.
5. Makes requests for other agencies for operational support and assures that these requests are acted upon in a timely and appropriate manner.
6. Manages processing requests both to and from other agencies with respect to operational support.

7. Provides overall administrative and logistical support for all NRC Operations Center activities.
8. Manages development of communications support requirements for NRC's response and assures that requirements are met.
9. Monitors the activities of the various components of the technical support staff, i.e., active working groups, their location, key personnel and specific tasks.
10. Provides general housekeeping and overall support to keep the Operations Center functioning.

TECHNICAL SUPPORT DIRECTORS (ALL)

1. Provides technical assistance to the EMT in the area assigned.
2. Periodically briefs the EMT concerning the status in his area of responsibility, makes recommendations and identifies problem areas.
3. Establishes teams necessary to assist in his assigned area. Assigns personnel and tasks for each team.
4. Monitors and coordinates the team activities to assure that there is no duplication of effort or gaps within his area of concern or among the other technical support elements.

DIRECTOR, CURRENT STATUS-PROTECTIVE MEASURES

1. Assesses the radiological and environmental data in order to develop a comprehensive understanding for the EMT of how the incident has impacted both onsite and offsite, particularly in relation to the possibility of evacuation.
2. Provides information and data obtained to Protective Measures Evaluation Teams.
3. Designates a Field Communicator to Staff Direct Line.
4. Ensures status board is maintained.

DIRECTOR, CURRENT STATUS-OPERATIONS

1. Assesses plant systems and operational parameters in order to develop a comprehensive understanding for the EMT of how the incident has affected the ability of the licensee to operate and/or shutdown the facility in a safe manner and maintain it in a safe condition.
2. Provides information and data obtained to Operations Evaluation Teams.
3. Designates a Field Communicator to staff direct line.
4. Ensures that status board is maintained.

DIRECTOR, PROTECTIVE MEASURES EVALUATION

1. Assesses and evaluates radiological and environmental data in order to develop a range of alternatives for the EMT of how future events and known and postulated plant conditions may impact the health and safety of individuals onsite and the public offsite. Particular concern and emphasis should be placed on possibility of evacuation.

2. Coordinates information and data requirements with Director, Current Status -Protective Measures.

DIRECTOR, OPERATIONS EVALUATION

1. Responsible for assessing and evaluating plant systems and operational parameters, for considering possible scenarios, and for developing a range of alternatives for the EMT's consideration based on postulated plant conditions which may effect the ability of the licensee to operate and/or shutdown the facility in a safe manner and maintain it in a safe condition.

2. Coordinates information and data requirements with Director, Current Status - Operations.

DIVISION OF SECURITY REPRESENTATIVE

Provides supplemental support to the Operation Center at East-West Towers during activation to include the following:

- a. Positions a guard at the front door of East-West Towers, Bethesda, within 15 minutes of notification, if during non-duty hours.
- b. Ensures that the double doors on the third floor are open to provide the status and evaluation teams expedient access to assigned areas.
- c. Suspends floor log-in requirement at East-West Towers during non-duty hours for NRC appropriately badged employees during the first day of the event.

QUESTION III. High Level Waste Management

In testimony Chairman Ahearne has stated "at \$12.5 million, the requested high level waste management budget for FY'81 is small in comparison, but by providing timely guidance to DOE it could significantly reduce total Federal expenditures for the development of a repository."

1. Can NRC obtain the manpower resources to assure the effective implementation of its waste management effort?

ANSWER.

If Congress appropriates the requested resources, NRC is reasonably confident that it can obtain the manpower to assure the effective implementation of our waste management effort.

QUESTION. III.2. With this level of resources, will NRC be able to achieve the waste management schedule outlined in the President's message?

ANSWER.

The level of NRC waste management resources must be increased over the next several years to meet the National Program. NRC has anticipated the schedule for the National Program by requesting an increase in our FY 1981 resources over those for FY 1980, and by programming for a continued increase through FY 1985. The rate of increase has been programmed over several years rather than one year to provide an orderly growth rate, so that we can be assured of managing the resources responsibly.

Even with this programmed growth rate, NRC may still be on the critical path for the National Program, principally because it is questionable whether there will be sufficient time for NRC to develop and provide detailed criteria and guidance to DOE, before DOE prepares and submits its site characterization plans and license application to NRC for action. Ideally, the schedule should provide for two years between completion of NRC guidance to DOE and submission by DOE of this license application. This would provide an opportunity for DOE to address in their application those critical technical issues and data required by the NRC licensing process.

Based on the orderly programmed growth in resources, NRC estimates it would complete its guidance for all activities necessary for a construction authorization by December 1985. We are not able at this time to estimate whether DOE can meet the schedule outlined in the President's message.

If adequate resources are provided when needed, the Commission believes it should be able to make a determination on a license application by DOE to receive and emplace waste by the mid-1990's. This date would be consistent with the President's schedule for commencement of repository operation.

QUESTION IV. Commission Management Study

The Commission has instituted a study of its management approaches, procedures and structure. The principal objective of the study is to identify changes in current management and decision-making methods and procedures which would "improve our ability to allocate the major part of our time to areas of principal importance."

1. Does the Commission intend to have its role in the review of export licenses included in this study?

ANSWER.

The role of the Commission in the review of export licenses, per se, will not be a principal focus of the management study. However, to the extent that discharging this statutory function reflects patterns which reflect the Commission's management approaches, procedures, and structure, it will be examined.

- QUESTION.
2. Are the Commissioners going to study the effects of NRC Commissioner requests on the utilization of manpower, its consumption of budgetary resources and its impact on the achievement of the Commission's goals?

ANSWER.

The offeror's proposal does not specifically mention this question. However, we expect that when the study is completed, some useful information on this subject will have been collected and that the contractor will use it as part of his analysis of the Commission's decision-making process.

QUESTION V. Resumption of Licensing

In testimony Chairman Ahearne has stated the NRC staff and Commission are now in the process of defining the precise subset of actions and their degree of completion that will be necessary for resuming the issuance of operating licenses. In their testimony they state "the Commission has approved a staff-recommended list of 38 new requirements that must be met before issuance of an operating license. The Commission concluded that they are necessary but that no conclusion was reached on whether they are sufficient to resume issuance of operating licenses."

1. What is impeding the Commissioners' decision to resume licensing?

ANSWER.

On February 23, 1980, the Commission authorized the staff to issue the first operating license since the TMI accident. That license, for TVA's Sequoyah Unit 1, was limited to fuel loading and zero- and low-power testing. The Commission authorized a similar license on April 10 for VEPCO's North Anna Unit 2. Several other applications are approaching a stage for Commission decision.

Before authorizing full-power operation after testing is completed in four to six months, a number of further steps must be taken. First, the plants must complete all new full-power requirements, including those on the list which the Commission approved on February 11. Second, although recommending no additional requirements, the ACRS did review the list and provide comments on several items. The staff is studying these comments and will refine the requirements in light of the ACRS advice. The Commission will then make a judgment on the sufficiency of the list. Lastly, we are working with FEMA to assure that adequate State and local government emergency plans are in place. NRC and FEMA recently issued for interim use and comment a joint report (NUREG-0654/FEMA-REP-1) which describes in one document the various criteria -- substantially upgraded from those used previously -- that emergency plans of licensees and of State and local governments should meet. Although agreeing that the proposed criteria represent a sound objective for State and local plans, FEMA recently raised serious concerns about how rapidly State and local governments can achieve this upgrading, given the significant resources required, and about NRC and FEMA ability to reach a timely judgment on the adequacy of such plans. Although total compliance with the upgraded criteria will not be required until NRC has completed its expedited rulemaking on emergency planning, for those plants ready for full-power approvals before that time, NRC and FEMA will have to make a case-by-case judgment on full-power license issuance, based on a FEMA assessment, using the criterial as a frame of reference, as to whether State and local government emergency plans provide an adequate degree of emergency protection for the public.

QUESTION V.2. What direction are the Commissioners providing to the staff on the resumption of licensing?

ANSWER.

The Commission has directed the staff not to issue licenses without approval of the Commission. The Commission has been working closely with the staff to define the new OL requirements in connection with the development of the TMI action plan, and to integrate the action plan into the NRC operating plan. The Commission has also emphasized that, as staff resources become available for casework, priority be given to review of plants nearing completion of construction. In addition, the Commission has been directing the staff's efforts to upgrade emergency preparedness for licensees, and, through FEMA, seeking similar upgrading for State and local plans.

QUESTION V.3. What is the earliest date licensing is expected to resume?

ANSWER.

We expect that all of the steps prerequisite to decisions on full-power operating licenses will be accomplished by the time the first of the new plants completes low-power testing and is ready to go on to full power, probably late this summer. However, well before then we expect to have reached a judgment on the final list of new OL requirements, and all OL applications, for which construction is expected to be completed within the next year, will be receiving the necessary degree of staff attention.

QUESTION VI. Unresolved Safety Issues

The Office of Nuclear Reactor Regulation has established an organization targeted to solve unresolved safety issues.

1. Can licensing resume prior to the resolution of these issues? If so, what mechanism is the Commission using to separate the high risk from the low risk items?

ANSWER.

Before issuing a Construction Permit or an Operating License, the NRC staff addresses in its Safety Evaluation Report all the Unresolved Safety Issues that pertain to the plant under review. The discussion of each issue includes how the issue relates to the plant and the basis for allowing construction or operation pending a final resolution of the issue.

The NRC has recently issued a license for fuel loading and low power testing for Sequoyah Unit 1. This is the first license issued by the NRC since the Three Mile Island accident. The decision to issue this fuel loading and low power testing license included a consideration of Unresolved Safety Issues. The enclosed supplement to the staff's Safety Evaluation Report for Sequoyah gives discussions of each applicable issue in Part I, Appendix C. In issuing the license, the NRC has concluded that Sequoyah Unit 1 can be operated up to 5% power with no undue risk to the health and safety of the public.

There is no differentiation amongst Unresolved Safety Issues on the basis of low or high risk. This differentiation was made during the selection of the Unresolved Safety Issues from amongst all the possible generic problems which was based in part on risk estimates as discussed in NUREG-0510, "Identification of Unresolved Safety Issues Related to Nuclear Power Plants - A Report to Congress", January 1979.

QUESTION. VI.2. What level of involvement are the Commissioners having in prioritizing the resolution of these safety issues?

ANSWER.

The Commissioners were involved directly in the selection of the 17 Unresolved Safety issues reported to Congress in the 1979 NRC Annual Report. The selection process is described in NUREG-0510, "Identification of Unresolved Safety Issues Related to Nuclear Power Plants - A Report to Congress, January 1979".

The staff has reported to the Commission periodically on the resources, schedule and progress in the resolution of these issues.

The Commission has concluded that the statutorily defined Unresolved Safety Issues must continue to receive attention and resources at approximately the same priority as the TMI issues, even if the startup of some units is delayed.

In June, 1979 the Office of Nuclear Reactor Regulation established a Task Force on Unresolved Safety Issues with responsibility for continuing the work on the generic tasks addressing these issues. This was done to minimize the impact of the temporary disruption of staff efforts caused by the Three Mile Island accident. More recently on March 19, 1980, a reorganization of the Office of Nuclear Reactor Regulation was announced that included in the Division of Safety Technology, a Generic Issues Branch to continue the work of the Task Force. The Commission considered and approved these actions.

QUESTION. VI.3. How do these Unresolved Safety Issues compare in terms of risk to those changes mandated from the lessons learned from Three Mile Island?

ANSWER.

The Commission statement in the previous answer shows the Commission's determination to give Unresolved Safety Issues a priority equivalent to those of the lessons learned from Three Mile Island.

We do not have any quantitative measures of the risk reduction potential of the Three Mile Island-related changes. Therefore, there is currently insufficient available information on which to base a detailed quantitative comparison of risks.

A risk-based characterization of about 130 Generic Issues was performed in 1978. These risk estimates were used as aids in selecting the Unresolved Safety Issues from amongst the much larger number of possible issues under consideration as discussed in NUREG 0510, "Identification of Unresolved Safety Issues Related to Nuclear Power Plants - A Report to Congress, January 1979".

A discussion of the rationale for the Three Mile Island lessons learned changes currently being implemented on operating plants is included in NUREG 0578, "TMI-2 Lessons Learned Task Force Status Report and Short-Term Recommendations", July 1979. Additional consideration is being given to risk significance in finalizing the Three Mile Island Action Plan now under review.

VT.3

Safety Evaluation Report

NUREG-0011
Supp. 1

U. S. Nuclear
Regulatory Commission

related to operation of

Office of Nuclear
Reactor Regulation

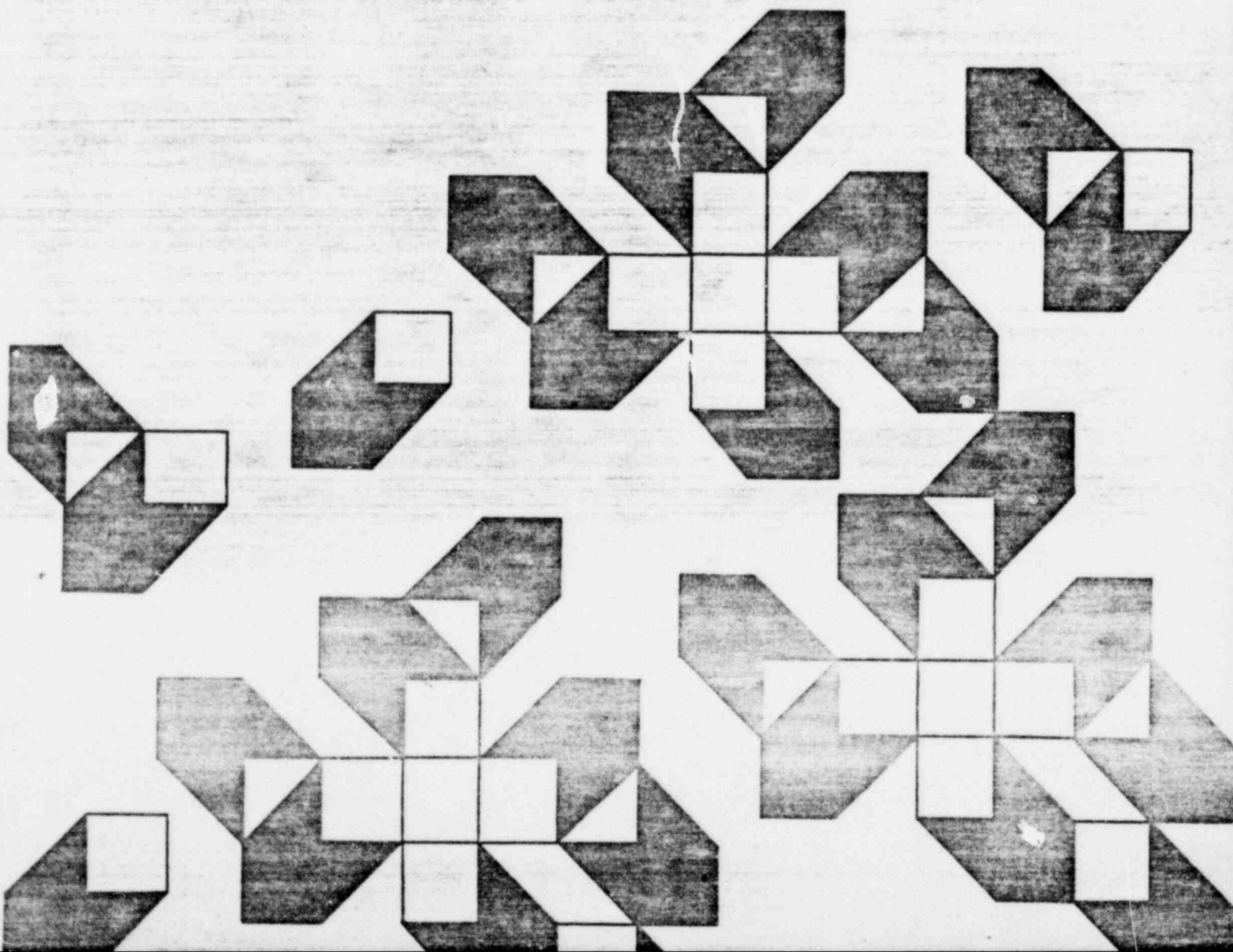
Sequoyah Nuclear Plant Units 1 and 2

Docket Nos. 50-327
50-328

Tennessee Valley Authority

February, 1980

Supplement No. 1



QUESTION VII. Improved Inspection and Enforcement Effort.

Chairman Ahearne in testimony has stated "periodic, independent inspections of licensee management control systems by the Performance Appraisal Team will result in the identification of marginal utility performance and will provide a basis for prompt corrective actions."

1. What impact has the acceleration of the Resident Inspector Program had on the availability of experienced NRC inspectors to perform these functions?

ANSWER.

Acceleration of the Resident Inspector Program has precluded full staffing of the Performance Appraisal Team (PAT). Senior resident inspectors and PAT inspectors need to possess essentially the same high qualifications and experience levels. There is a limited number of these people available. Accelerating the Resident Inspector Program has been given top priority and for that reason staffing of the PAT has suffered. The PAT is also a high priority program and will continue to receive management emphasis to staff it with qualified inspectors at the earliest possible date.

QUESTION. VII.2. What additional legislation may be needed to resolve impediments to recruiting the best available personnel?

ANSWER.

Additional legislation would focus primarily on the out-of-pocket losses which inspectors have experienced when they have relocated from the regional office to the resident sites. Inspectors anticipate that they will experience similar losses when relocating to another site or to another NRC office. In addition to the losses which have arisen because government-wide regulations do not provide full reimbursement of relocation costs, there has been the rapid rise in mortgage interest rates. This factor has had an immediate adverse affect on our ability to attract and retain highly qualified individuals for the Resident Inspector Program.

We are acting within existing authority to make the Resident Inspector Program more attractive. The staff is considering proposed legislation that would authorize the agency to provide relocation benefits more in line with the private sector. This new authority would allow us to minimize out-of-pocket financial losses which have had a negative effect on our ability to attract and retain highly qualified inspectors in the Program.

QUESTION. VII.3. What are the NRC's plans for its routine unannounced inspection program?

ANSWER.

"Unannounced" inspections are those conducted by the regional inspection staff as opposed to those carried out by the Resident Inspectors (RI) or the Performance Appraisal Team (PAT). PAT inspections, most generally, will be announced; inspections conducted by Resident Inspectors (due to the inspector's continuous presence) are not viewed as unannounced inspections.

Many, but not all region based inspections are unannounced. Current NRC practice is for the inspectors to arrive at the facility unannounced except when the inspection program requires NRC observation of certain preoperational or startup tests at reactors. During the construction phase there are a few instances requiring advance notice to the permit holder of an impending inspection such as the need to talk to certain individuals or to observe tests or construction work in progress.

At materials licensees and fuel facilities a significant portion of the inspection program (greater than 50%) is planned to be unannounced.

QUESTION VIII. TMI-2 Cleanup

In November 1979 the Commission directed the NRC staff to prepare an overall programmatic environmental impact statement on the decontamination and disposal efforts resulting from the TMI-2 accident noting that "pending its completion, immediate actions will be taken to protect the public health and safety should the need arise."

1. What pending environmental hazard does TMI-2 present to the public in its current state?

ANSWER.

We believe that action taken since the accident results in high assurance that current operation and/or the cleanup process will not pose an environmental hazard. However, the potential for releases does exist because of the krypton-85 (Kr-85) and radioactive water present in the Unit 2 sector building. The reactor building atmosphere contains approximately 57,000 Ci of Kr-85. Leakage of this Kr-85 to the environment is being precluded by maintaining the reactor building atmosphere at a slightly negative pressure (approximately -0.7 psig) with respect to the environment. This negative pressure is being maintained by continuing to cool the reactor building atmosphere with the reactor building air coolers. These air coolers were qualified for three to four hours of continuous operation in a 100 percent relative humidity environment. They have been operating nearly continuously in a high-humidity environment since March 28, 1979 without maintenance. Therefore, these fans can reasonably be expected to fail at any time. If these coolers should fail, the temperature of the reactor building atmosphere would increase and result in the reactor building atmosphere becoming positive. This positive pressure would cause uncontrolled leakage of the Kr-85. The severity of the environmental hazard due to this uncontrolled leakage would depend upon the magnitude of the building leakage and the local meteorological conditions existing during the leakage. While an uncontrolled release is considered unlikely, the dose from such a release might be greater than that from a controlled release. In either case, however, doses would be a small fraction of the 10 CFR Part 100 guidelines. For example, as calculated by the NRC staff, the offsite dose during a 30 day period due to uncontrolled leakage from the reactor building with an internal pressure of 1-2 psig at its design leak rate is 10 mrem, β and 0.12 mrem, γ (see NUREG-0662 "Environmental Assessment for Decontamination of the Three Mile Island Unit 2 Reactor Building Atmosphere").

The reactor is currently being maintained in a safe shutdown subcritical condition by boron in solution in the reactor coolant. The staff recognizes that there is a small but finite potential for recriticality of the core and is currently evaluating the potential for that consequence.

It is unlikely that recriticality would occur at TMI since our analyses (NUREG-0557 "Evaluation of Long Term Post-Accident Core Cooling of TMI-2") show that even without the presence of the control rod material in the core, criticality will not occur under any possible fuel configuration if the boron concentration in the reactor coolant is maintained above about 3000 ppm. Even so, any approach to recriticality would be monitored and detected by the nuclear instrumentation. At present, only one nuclear instrument for monitoring a potential approach to recriticality is in an operable condition. The increase in reactivity would then be reversed by injecting additional boron into the reactor coolant via the makeup

pumps. In the event a potential approach to recriticality was not detected because the currently operable neutron instrumentation is lost, the incore thermocouples and core outlet temperature sensors would detect the criticality upon generation of sensible heat. The core would then be made subcritical by injecting additional boron into the reactor coolant with the makeup pumps. This latter approach is obviously undesirable since significant heat generation in the damaged case could lead to high local temperatures.

In a November 13, 1979 submittal to the NRC, the licensee proposed to decontaminate the reactor building atmosphere by purging it to the environment under controlled conditions (i.e., favorable meteorological conditions). This action would eliminate that potential for uncontrolled releases to the environment and would permit less restrictive access to the reactor building to continue the planning for, and the cleanup of, TMI-2. In response to the licensee's proposal and the Commission's Statement of Policy of November 21, 1979, the staff has prepared an environmental assessment (NUREG-0662) for the proposed decontamination of the TMI-2 reactor building atmosphere. A copy of the staff's assessment and recommendations is enclosed for your information.

QUESTION.VIII.2. What increase in hazard both to the workers and the public will result from extensive Commission delay in consideration and approval of cleanup action?

ANSWER.

Extensive Commission delay in consideration and approval of cleanup action increases the risks of exposure to both on-site workers and the public due to uncontrolled releases of radioactive materials. On-site workers are exposed to sources of direct radiation and airborne contamination due to system leakage inside the Unit 2 auxiliary building during required maintenance, operations, and decontamination activities. These sources of radiation and exposure need to be removed through an expeditious cleanup program, including timely regulatory decisions on licensee proposed actions. As discussed above, the greater the delay in implementing the decontamination of the reactor building atmosphere, the more the members of the public will be subject to the increased potential for uncontrolled releases of Kr-85 from the reactor building. The potential for uncontrolled releases of Kr-85 can be eliminated by decontaminating the reactor building atmosphere through controlled purging of the reactor building atmosphere to the environment as recommended in NUREG-0662 "Environmental Assessment for Decontamination of the Three Mile Island Unit 2 Reactor Building Atmosphere". A discussion of alternatives for decontamination of the containment building atmosphere, including an accident analysis and an environmental impact assessment for each alternative is contained in NUREG-0662 and NUREG-0662 Addendum 2. The radiation doses associated with the recommended purging operation would be within the requirements of 10 CFR Part 20, the design objectives of 10 CFR Part 50, Appendix I and the applicable requirements of 40 CFR Part 190.10.

With regard to occupational exposures to on-site workers, on September 26, 1979 a Special Panel was appointed by the Director of the Office of Nuclear Reactor Regulation to review the Radiation Protection Program at Three Mile Island Unit 2. The Panel confirmed several management and technical deficiencies in the radiation protection program. Recent major GPU/Met-Ed commitments and actions demonstrated a major change in management attitude. The Panel concluded that exposures to personnel can be maintained as low as is reasonably achievable while limited preparatory recovery work continues, and when further needed improvements are implemented, the radiation safety program will be able to support major recovery activities. A copy of the Special Panel's report (NUREG-0640) is enclosed for your information.

QUESTION.VIII.3. What degree of Commission attention is being paid to the cleanup effort?

ANSWER.

The Commission has established a TMI Support Staff organization with members in Bethesda and at the TMI site. Presently, these are fifteen full-time professional staff members and three support staff members on duty at TMI providing round-the-clock coverage of all activities associated with the cleanup effort. The staff has also opened an office in the Middletown area to make staff members more readily available to the public and to provide a convenient place for public inspection of documents related to TMI.

The Commission directed the staff to prepare and issue for public comment an environmental assessment (NUREG-0591) on the use of the EPICOR-II filtration and demineralizing system to decontaminate intermediate-level radioactive waste water in the TMI-2 auxiliary and fuel-handling building. On October 16, 1979, the Commission issued a Memorandum and Order that directed the licensee to construct and put the EPICOR-II system into operation.

The Commission issued, on November 21, 1979, a Statement of Policy and Notice of Intent to Prepare a Programmatic Environmental Impact Statement (PEIS) on the decontamination and disposal of radioactive wastes resulting from the March 28, 1979 accident. The PEIS will be made available for comment. In conjunction with preparation of the PEIS, the staff has held public meetings in the TMI area to solicit comments on the scope of concerns that the PEIS ought to encompass.

The Commission has directed the staff to prepare an addendum to the environmental assessment (NUREG-0662) that would reference studies on the psychological impact of krypton disposal from the TMI-2 reactor building. The Commission has also directed the staff to hold two public meetings in the Middletown, Pennsylvania area, the first to explain the contents of the environmental assessment, and the second to hear comments of local residents on the environmental assessment.

Environmental Assessment for Decontamination of the Three Mile Island Unit 2 Reactor Building Atmosphere

Addendum 1

Draft NRC Staff Report
For Public Comment

TMI Support Staff

Office of
Nuclear Reactor Regulation

U.S. Nuclear Regulatory
Commission



Environmental Assessment for Decontamination of the Three Mile Island Unit 2 Reactor Building Atmosphere

Draft NRC Staff Report
For Public Comment

TMI Support Staff
Office of
Nuclear Reactor Regulation

U.S. Nuclear Regulatory
Commission



Three Mile Island, Unit 2, Radiation Protection Program

Report of the Special Panel

C. B. Meinhold, Brookhaven National Lab.
T. D. Murphy, NRC
D. R. Neely, NRC
R. L. Kathren, Battelle Pacific Northwest Lab.
B. L. Rich, Exxon Nuclear Idaho Co., Inc.
G. F. Stone, Tennessee Valley Authority
W. R. Casey, Brookhaven National Lab.

Office of
Nuclear Reactor Regulation

U.S. Nuclear Regulatory
Commission

