



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

OFFICE OF THE  
CHAIRMAN

June 21, 1985

The Honorable Charles A. Bowsher  
Comptroller General of the United States  
General Accounting Office  
Washington, DC 20548

Dear Mr. Bowsher:

In accordance with the statutory obligation to respond to recommendations by the General Accounting Office (GAO) within 60 days of publication, we hereby submit our responses to the recommendations made by the GAO in their report, "Better Inspection Management Would Improve Oversight of Operating Nuclear Plants."

The recommendations contained in the GAO report are largely based upon a 1983 confidential survey questionnaire which was responded to by nearly 400 regional inspection personnel and utility representatives. The Commission is pleased to note that, on the basis of the questionnaire response, GAO found that the inspection program has improved since the Three Mile Island accident. The report further indicates that 80% of NRC respondents and 60% of the utility representatives believe that the NRC inspection program has been effective in ensuring that nuclear power plants are safely operated. (Utilities that rated the inspection program as ineffective in ensuring safe operation took the position that plant safety is a utility's responsibility.) Nevertheless, the GAO report does contain useful recommendations for further improvements in the effective utilization of the limited agency resources which are available for inspection activities.

In responding to the GAO recommendations, the Commission notes that many improvements in the inspection program which address GAO findings have already begun. A description of many of these initiatives was provided to GAO in staff comments on the draft report. In the final report GAO has recognized NRC's improvement initiatives and indicated that these initiatives "will satisfy the intent of GAO's related recommendations if completed." Completion of these inspection program improvements will be given a high priority by NRC. These initiatives should result in more effective and efficient management of NRC inspection activities.

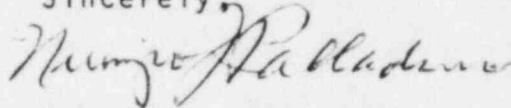
8507150234 850621  
PDR COMMS NRCC  
CORRESPONDENCE PDR

The Honorable Charles A. Bowsher

-2-

Of the eleven specific recommendations made by GAO, the staff agrees with the substance of nine of the recommendations. As described in the enclosed Responses to GAO Recommendations, the staff does not completely accept the GAO recommendations that the NRC compile a list of all INPO reports and that the Performance Appraisal Team (PAT) inspection frequency be keyed to whether or not NRC receives INPO evaluation reports.

Sincerely,

A handwritten signature in cursive script, appearing to read "Nunzio J. Palladino".

Nunzio J. Palladino

Enclosure:  
Responses to GAO Recommendations

RESPONSE TO GAO RECOMMENDATIONS

Chapter 3

The GAO stated that implementing the following recommendations would improve NRC's operating reactor inspection program.

1. GAO Recommendation:

Use information available in the inspection data base to plan and monitor inspections at specific power plants. Analyses of the various types of inspections that are (and are not) being performed, as well as the frequency of violations detected, should be included in this process.

NRC Response:

NRC agrees that inspection data can be more effectively used in planning and monitoring inspection program activities. The report observations are consistent with a December 13, 1984 report of findings by an Office of Inspection and Enforcement (IE) task group that studied IE's automated system for reporting inspection data.

The task group found that inadequacies in the current system were a major contributor to the data base not being used routinely or consistently. Near-term modifications to upgrade the system are being implemented. Long-term solutions which address the manipulation of data into accessible, periodic reports are being evaluated with the first periodic reports

expected to be available for issuance by the Fall of 1985. Concurrent with the long-term solutions will be the generation of policy and procedures for using data reports in planning and monitoring inspections on a generic and individual facility basis.

2. GAO Recommendation:

Systematically analyze licensee reports of plant events to identify trends or issues that need consideration in managing the overall inspection program.

NRC Response:

NRC agrees with this recommendation. In the final report, GAO acknowledged NRC comments on the draft report that extensive NRC programs are in place that react to safety issues identified from reviews of selected licensee event reports (LERs) and other nuclear industry reports. Further, GAO did not question the fact that NRC utilizes this information to make short-term modifications to the inspection program. However, GAO clarified that their point is "that NRC does not routinely analyze the thousands of LERs it receives over time to identify trends or patterns of events that might cause it to make more fundamental, longer-term adjustments to its inspection program priorities." NRC has recognized this problem and is taking the following action to correct it.

- o The LER system was revised in January 1983. This revision resulted in fewer, but more detailed reports. Consequently, the data base has decreased, but has become more meaningful. The job of long-term trending is, thus, made easier from a pure numbers standpoint.
- o The Office of the Analysis of Events and Operational Data (AEOD) is developing a trends and patterns program that will be useful in managing the overall inspection program. Elements of this program are as follows:
  - Automated manipulation of data from LERs submitted during the period 1981-1983 has been performed to identify trends and patterns of component failures. Circulation of this report to other NRC offices and the regions is imminent.
  - For LER data received in accordance with 10 CFR 50.73 after January 1, 1984, AEOD is performing detailed periodic trends and patterns analyses of the topics covered explicitly by the reporting requirements (e.g., ESF actuations, including all reactor scrams, safety system unavailabilities and violations of technical specifications). AEOD issued a pilot study of scrams which occurred in the first quarter of 1984 in November 1984. Reports on scrams for all of 1984 and ESF actuations for January-June 1984 will be issued for peer review shortly.

- Since many component failures by themselves will not meet the reporting requirements of 10 CFR 50.73, AEOD has also been developing a trend and pattern methodology for the Nuclear Plant Reliability Data System (NPRDS) operated by INPO. A detailed plan for implementation is currently being prepared. AEOD plans to perform extensive statistical analysis of component failure data for key components as the data accumulates. Analysis should begin in January 1986.

IE will utilize the reports generated by the AEOD trends and patterns program in managing the overall inspection program.

3. GAO Recommendation:

Formally correlate the inspection procedures with the functional areas used in annual plant assessments.

NRC Response:

NRC agrees with the GAO recommendation. Based on the results of two self-initiated studies generated in early 1983, NRC changed the inspection program in November 1983 to better align it with Systematic Assessment of Licensee Performance (SALP) functional areas. This has facilitated the use of SALP results by the regions in planning their site-specific inspection programs. However, the 1983 revision was only a first step and the need for further program changes was recognized.

The Office of Inspection and Enforcement, Division of Inspection Programs has undertaken several additional efforts to better match the SALP process with inspection activities. One involves review and revision of the operating reactor inspection program procedures to better correlate them, to the extent practical, with SALP functional areas.

Another initiative involves upgrading inspection program policy with respect to providing more explicit guidance on the scheduling of inspection resources based on the results of licensees' performance evaluation ratings in SALP functional areas. Currently, IE Manual Chapter 2515, which describes the Operating Reactors Inspection Program, provides only general guidance for inspection planning based on SALP results. The first revision to the Manual Chapter 2515 to upgrade inspection policy in this area should be issued by October 1, 1985.

4. GAO Recommendation:

Use risk-based analyses, as appropriate, to aid in evaluating overall inspection program and individual power plant priorities by identifying plant operations and inspection procedures that are most clearly related to control of public risk.

NRC Response:

We agree with the recommendation and observation in relation to the inspection program. One of the Commission goals is to explore the use of

Probability Risk Assessment (PRA) as a means to assist in prioritizing inspection activities. Trial programs for use of PRAs in inspection prioritization have been implemented at two operating reactor facilities and one facility in the preoperational testing phase. Additionally, the Office of Nuclear Regulatory Research (RES), with input from IE, has conducted research to develop approaches for applying PRA information to the inspection program. Preliminary results of these efforts indicate that site-specific PRAs, when available, may be useful in focusing inspection activities on more risk-related systems and components at that site. Also, training of NRC inspectors with respect to PRA techniques and approaches appears to have high potential for improving inspections and formal training has begun.

A final determination on the practical implementation of these efforts will be made during 1985. If determined feasible, selected inspection procedures will be revised for trial use by regional offices. Upon completion of the trial period and following analysis of regional comments, IE will modify appropriate inspection procedures as necessary to incorporate a prioritization methodology.

So far, it appears that PRA can be useful in prioritizing those IE inspection procedures which are oriented toward specific reactor systems. For example, inspection procedures used during the preoperational testing phase are organized largely by system. Hence, PRA can be used to determine which tests are most important and should be observed and evaluated through NRC inspection. Inspection procedures for operating

reactors are oriented more along functional lines, i.e., operations, maintenance, training, QA. Here, PRA may be useful in some of the procedures. For example, inspections of maintenance programs include the requirement for inspector observation of selected maintenance activities; PRA can be used to choose important activities for evaluation.

While PRA will prove useful in guiding inspectors to review important activities in conjunction with the execution of individual inspection procedures, it does not appear that present PRA reports will be helpful in prioritizing inspections among the various functional areas. Other methods will be necessary to prioritize the importance (allocate inspection resources) among such functional areas as safeguards, radiation protection and emergency preparedness.

5. GAO Recommendation:

Use the reports and analyses discussed above to prepare written inspection plans for each plant.

NRC Response:

NRC agrees that inspection plans should be prepared for each operating site. All regions now prepare site-specific inspection plans. Much of the development of these specific plans has occurred in the past several years. These plans include elements that account for plant operating experience and SALP assessments. However, detailed direction does not

currently exist for using SALP results in the development of site-specific inspection plans. Consequently, application of SALP results to revision or development of inspection plans varies considerably from one region to the next. To provide for reasonable uniformity across all regions, the Division of Inspection Programs, Office of Inspection and Enforcement has committed (at an NRC management meeting held in May, 1985) to review regional approaches and incorporate into the IE Manual a policy on the makeup and use of site-specific inspection plans. Included in the policy will be detailed direction for use of SALP results in developing inspection plans for individual sites.

Risk-based analysis, as discussed in the response to recommendation 4., above, is not yet systematically being used (in a quantitative sense) in the development of site-specific inspection plans. However, all inspection programs and procedures are aimed at ensuring that the licensee activities that are the most important to nuclear safety receive priority inspection attention. While quantitative risk analysis is not specifically factored in as yet, inspection procedures developed to review programs and safety systems are based upon experienced engineering judgment and reflect the results of field experience.

6. GAO Recommendation:

Establish and implement a policy on how NRC managers and inspectors are to monitor utilities' corrective action to evaluation findings, and recognize these evaluations in inspection plans.

NRC Response:

This recommendation applies to both INPO and utility evaluations of plant operations. As acknowledged on page 29 of the GAO report, the NRC position with respect to INPO evaluation findings appears to be consistent with the GAO position. Specifically, the report states:

"In commenting on our report, NRC stated that in accordance with its August 1982 "Coordination Plan for NRC/INPO Appraisal and Evaluation Activities," NRC's role in pursuing correction of INPO evaluation findings will generally be limited to potentially significant safety problems for which it has no other reasonable alternative to meet its regulatory responsibilities. NRC also said its policy is not to use INPO evaluation results directly to plan inspections, with the above exception, in order to encourage self-improvement by utilities. Finally, NRC said that the interface between INPO and NRC inspection activities is undergoing further evaluation. We believe this NRC position is consistent with our position discussed above."

The report goes on to note that the actual use of INPO reports by many NRC personnel (inspectors, supervisors, and managers) appears to be inconsistent with NRC's stated policy; that is, the evaluations are being used to increase inspection effort in areas where INPO evaluations identify weaknesses. NRC agrees that when the data for this report was obtained in early 1983, uncertainty existed among many NRC inspectors, supervisors, and

managers regarding the appropriate use of INPO evaluation findings. Since then, NRC has provided informal, verbal direction to remove uncertainty about the proper use of INPO evaluation findings and has coordinated with INPO to identify and correct any apparent improper use of INPO findings by NRC personnel. However, more detailed instructions to inspectors may be appropriate. The Office of Inspection and Enforcement will assess the current need for guidance in this area by September 1, 1985 and, if needed, restate this policy to inspectors.

With respect to utility self-evaluations, which it is assumed primarily refers to internal licensee QA audits, NRC agrees with the GAC position that NRC could make more effective use of its own inspection resources by monitoring and evaluating utilities' corrective actions on findings and recommendations resulting from these evaluations. This would prevent the inappropriate expenditure of inspection resources in areas of weakness already identified, and allow these resources to be applied to other areas or on the progress of licensee corrective actions in these areas. NRC inspectors currently followup on utility corrective actions through the conduct of various inspection procedures. Additionally, inspectors conduct limited inspections of utility self-evaluation programs to ensure that the corrective actions properly mitigate the associated findings such that problems are corrected and recurrence is prevented. Both inspection approaches are required to validate the effectiveness of the utilities' self-evaluation programs. However, the Office of Inspection and Enforcement is working to increase inspection focus on licensee corrective action programs. An inspection procedure will be developed that concentrates on

utility corrective action systems, including licensee management's actions resulting from self-evaluation findings with nuclear safety significance. This procedure should be in place by the end of 1985.

7. GAO Recommendation:

Compile and maintain a list of all INPO evaluation reports and those reports released by utilities to NRC.

NRC Response:

The NRC does not believe that it is necessary to compile and maintain a list of all INPO evaluation reports or other reports released by utilities except where licensees have initiated formal Regulatory Improvement Programs. These latter programs are and will be overviewed by NRC. This position is based on the following:

- o INPO provides NRC with a schedule of upcoming plant and corporate INPO evaluations. Indirectly, therefore, the NRC does have a list of all evaluations performed by INPO.
- o INPO evaluation reports are available for NRC review onsite and at the INPO office in Atlanta. NRC access to the documents at these locations has not been hindered.

- o Based upon the "Coordination Plan for NRC/INPO Appraisal and Evaluation Activities," which has been in effect since August 1982, the NRC monitors INPO activities by:
  - a. Periodic trips to the INPO offices by IE management representatives and performance appraisal team (PAT) inspectors to compare the results of recent PAT inspections with findings obtained by INPO using their most recent evaluations. The information provided by INPO consists of more detail and provides much more insight into the INPO evaluation process than could be obtained from only reading the published evaluation reports.
  - b. Periodic participation (as an observer) in an INPO evaluation by an NRC representative.

The staff has so far found the arrangements based on the Coordination Plan to be satisfactory in providing an evaluation of the INPO process and its effectiveness.

Compiling and maintaining a list of other utility reports would be a sizable task due to the great number of utility-generated reports. Since the list and the reports are available to the inspector onsite, NRC does not consider it necessary to duplicate the list at the expense of inspection resources. Selected significant reports are often duplicated and evaluated in detail by IE headquarters and regions in their respective offices.

8. GAO Recommendation:

Establish criteria for determining when the number of NRC performance appraisal team inspections should be increased or decreased in relation to NRC's success in obtaining INPO evaluation reports.

NRC Response:

The NRC does not agree that NRC performance appraisal team (PAT) inspections should be increased or decreased in relation to NRC's success in obtaining INPO evaluation reports. This position is based on the following:

- o The criteria for determining the frequency of PAT inspections and the selection of sites to be inspected are based upon the several missions of PAT: Assessment of licensee performance from a national perspective, assessment of the implementation of the inspection program by the NRC regions, and assessment of INPO effectiveness. Therefore, INPO evaluation is only one factor in determining the schedule for PAT inspections.
- o As discussed in the NRC response to the preceding recommendation, adequate methods exist for the NRC to monitor the effectiveness of INPO evaluations without increasing the number of PAT inspections or requiring that NRC obtain copies of all INPO reports. These methods include NRC accompaniment on INPO

evaluations, periodic briefings by INPO management and access to INPO reports.

#### Chapter 4

The GAO stated that implementing the following recommendations would clarify the inspection program and enhance inspection training.

1. GAO Recommendation:

Identify and revise, as may be appropriate, areas within the inspection procedures, regulations, or other NRC requirements which are ambiguous or not sufficiently clear in their use or intent.

NRC Response:

NRC agrees with this recommendation and has programs currently in progress to address this issue.

- o Inspection procedures - GAO distributed questionnaires to NRC inspection personnel in June, 1983. Responses to these questionnaires in the area of clarity of inspection procedures resulted in individual inspectors identifying, by procedure number, those inspection procedures which they felt needed substantial revision. The Division of Inspection Programs (DI) has reviewed this information and developed a list of 64 inspection procedures

that were identified by a significant number of inspectors responding to the questionnaire as needing significant revision. The current status of these inspection procedures is as follows:

- 15 have been deleted or superseded by other inspection procedures.
- 12 have been substantially revised. (All revisions include results of regions' comments.)
- 27 are in the process of being revised. (To be completed by the end of 1985.)
- 10 are being given high priority for revision. (To be completed early in 1986.)

With respect to all inspection procedures, ongoing efforts are underway to revise, upgrade, and update the entire program in accordance with guidance from the EDO. The results of the GAO survey are being utilized as an important input to this process. Newly generated or revised inspection procedures are sent to all regions and appropriate NRC offices for formal review and comment prior to issuance. This affords reviewers the opportunity to incorporate inspection experience into the procedures and to note any perceived problems. Thus, the present system for revision of existing procedures guarantees the input of all concerned

organizations. It ensures that the need for clarification of the technical content and guidance in inspection procedures is minimized.

- o Regulations and other NRC requirements - The need for review of Commission requirements for accuracy, consistency, and clarity is recognized. Actions have been initiated to address these problems. One major effort presently in progress is the review of all the regulations and elimination of those that have marginal importance to nuclear safety. The NRC's Policy and Planning Guidance for 1984 (NUREG-0885, Issue 3) states the "existing regulatory requirements that have a marginal importance to safety should be eliminated." Other statements in the same document, as well as several initiatives undertaken in recent years, indicate the NRC's commitment to the goal of improving regulation of the nuclear industry. To implement this policy and planning guidance, NRC recently initiated a program to review the risk importance of current regulatory requirements for Light Water Reactors (LWR). This program will identify current regulatory requirements which, if deleted or appropriately modified, would improve the efficiency or effectiveness of NRC's regulatory program for nuclear power plants without adversely affecting safety. Initially, this program will systematically assess the risk importance of selected current regulations in 10 CFR Part 50 and related regulatory requirements.

Also, the staff has activities in progress to address specific problems in our regulations and licensee requirements. For example, a recent licensing case involving a research reactor identified discrepancies in NRC's regulations, guidance, licensing practices, and inspection procedures for these facilities. To rectify this situation, an interoffice task group, chaired by the Office of Nuclear Materials Safety and Safeguards, was established to review safeguards-related regulations, guidance, and procedures (including inspection procedures) for all licensed facilities to identify inconsistencies and recommend changes as needed.

As a second example, the NRC staff has recognized the need for staff attention and resource commitments to Technical Specification requirements and interpretation of these requirements. In response to this need, a new organizational unit entitled the Technical Specification Review Group (TSRG) has been established within the Office of Nuclear Reactor Regulation (NRR). By this action the number of professional staff members dedicated to the preparation and review of Technical Specifications has more than doubled since October 1984, with plans to increase the size of the group further as needed. A major objective of this initiative is to achieve greater consistency in staff decisions related to Technical Specification changes for operating reactors. The TSRG will be a focal point for concurrence on all Technical Specification change requests. The

TSRG will also be responsible for maintaining support capability for Technical Specification-related matters, including maintenance and revision of the Standard Technical Specifications, interpretation of existing Technical Specifications for NRC inspectors, and advising other staff personnel reviewing license amendment requests on Technical Specification matters.

In addition, it has become increasingly clear that a concentrated effort, separate from day-to-day licensing activities, is needed to examine Technical Specifications to ensure they focus on matters of high safety significance. A major project group has been formed within NRR to reconsider the entire area of Technical Specifications including philosophy, scope, content, depth, and the process by which they are incorporated into licenses, implemented by utilities, and enforced by the NRC. The objective is to define the basis and philosophy of the Technical Specifications and to develop a methodology for incorporating that philosophy in existing Technical Specifications and Standard Technical Specifications.

By this two-pronged effort already underway, a reduction in the ambiguity of Technical Specifications should result, as well as improvement in the turnaround time for clarification of Technical Specification matters.

The GAO report also mentions problems in interpretation of Appendix R to 10 CFR 50. Appendix R contains certain specific requirements for fire protection at nuclear plants. Experience has shown that implementation of some aspects of the rule has resulted in problems of interpretation of how the regulation should be applied. To address these problems, the NRC has issued draft clarifying information and held workshops with licensees in each of the regions. In addition, the NRC staff has met with representatives of the Nuclear Utility Fire Protection Group, an industry organization representing about twenty licensees, on several occasions to discuss the requirements of Appendix R. The NRC staff has also met with individual licensees to discuss these requirements for their plants. In late 1984, the NRC formed a steering group to develop an action plan for dealing with remaining issues related to Appendix R. The steering group's plan is in the final stages of development and will be presented to the Commission for approval.

Thus, as discussed above, NRC has in place initiatives, both on a broad and specific basis, that are directed at the review of regulations and other NRC requirements as recommended by the GAO report.

2. GAO Recommendation:

Identify mandatory training courses, acceptable reasons for not attending on schedule, and maximum permissible time for rescheduling attendance at these courses.

NRC Response:

NRC has programs in place that meet the intent of this recommendation. It should be noted that this recommendation results from survey findings concerning attendance of inspectors employed prior to 1981 at courses required during the first 24 months of employment. As discussed in the report, one cause of this problem has been the heavy inspection demands placed on the regions, making it sometimes difficult to free inspectors for all required training courses. Another reason, not mentioned in the GAO report, was the availability of training at NRC's training center. To alleviate the problem of availability of training, four additional instructors have been hired. In addition, class sizes have been increased and additional courses have been scheduled and taught at the Training Center.

In April 1983, the IE Training and Qualification Manual was revised to require that a Regional Training and Qualification Journal be kept for each new inspector. Completion of the Journal and formal training courses (or equivalency examinations) constitutes minimum inspector qualification. In addition to initial inspector qualification requirements, the Journal

specifies refresher training required to maintain proficiency. The formalization of inspector qualification and use of the Qualification Journals should further assist in ensuring that all required courses are completed by new inspectors. IE reviews the status of completion of required inspector training as part of the Regional Assessment program. A recent regional audit conducted by IE training personnel indicates that there have been improvements in the completion of the required formal training.

3. GAO Recommendation:

Determine whether the existing training program meets the needs of inspectors in assuring compliance with NRC regulations at operating nuclear power plants.

NRC Response:

NRC believes that the improvements in the training program instituted over the past several years have resulted in a program which meets the intent of this recommendation. The Training and Qualification Journal discussed in the response to recommendation 2 above encompasses regulatory, administrative, and technical practices pertinent to inspector training for each area of inspection. Separate Journals have been developed for inspectors of various disciplines. These Journals require signature cards indicating completion of activities such as inspection accompaniments, familiarization with regulations, study of technical specifications, study of regulatory

guides, review of industry codes and standards, and completion of required training courses. The intent of the Journal is to assure adequate qualification of inspectors in conducting their inspections. Comprehensive use of the Journal by newly assigned inspectors, together with management attention to training, should accomplish the intent of the GAO recommendation.