



UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

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RESOURCES AND ECONOMIC
DEVELOPMENT DIVISION

MAY 21 1975

Mr. Lee V. Gossick
Executive Director for Operations
Nuclear Regulatory Commission

Dear Mr. Gossick:

We have completed a survey of the Nuclear Regulatory Commission's program for the development of nuclear standards. We also briefly looked at information prepared and used by other Commission staffs in the management of their regulatory activities. As a result of our work we have noted several matters which warrant your attention.

OPPORTUNITIES FOR IMPROVEMENTS
IN THE ADMINISTRATION OF
NUCLEAR STANDARDS DEVELOPMENT PROGRAM

In May 1972 the Directorate of Regulatory Standards was established under the Director of Regulation in the Atomic Energy Commission to consolidate all standards development activities and to concentrate technical staff effort on such activities. In January 1975 the Directorate became the Office of Standards Development (OSD) under the new Commission. OSD's goal is to protect the health and safety of the public and the environment, and also to speed up the licensing process.

We found that there was a need to (1) improve the priority system for the development of standards; (2) establish comprehensive standards development project files; and (3) develop a systematic approach to the evaluation of existing nuclear standards.

Need to improve
priority system for
standards development

Many nuclear standards are urgently needed. OSD generally follows several criteria in deciding which nuclear standards should be developed first. Listed in descending order of

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importance they are:

- (1) The standard will address a critical safety need.
- (2) Need for standard has been demonstrated from inspection and licensing experiences.
- (3) Standard would result in a more efficient licensing review process.
- (4) Request for standard made by licensing and inspection officials.

The application of these criteria has resulted in priority designations which provide little guidance in choosing the most urgent projects when OSD is faced with unexpected workload demands which require reallocation of its resources.

OSD uses broad priority designations to classify its nuclear standards development projects. OSD officials told us that the number of nuclear standards needed is so large that OSD's efforts are almost totally devoted to the development of standards which should have already been developed. Therefore, almost all of its projects are defined as urgently needed. As of January 31, 1975, all OSD projects except one had been classified as urgently needed, as follows:

- A+ Project demands special attention and takes precedence over others - 7
- A The standard is urgently needed - 152
- B The standard is urgently needed but the project should not take precedence over A+ and A projects - 54
- C The state of the art does not permit full development of the project - 1

In addition, there were 26 other projects which had not yet been assigned a priority designation.

Once a project is started, its priority designation usually does not affect the effort devoted to its development. OSD officials told us that when OSD manpower must be reallocated to permit more effort on certain projects, priority B projects will be delayed first. However, because the overwhelming majority of projects had been designated as priority A, OSD personnel had to decide subjectively which top priority projects would be delayed in deference to other top priority projects.

In May 1974, in an effort to improve its system for developing standards, OSD began to identify those standards which needed to be developed so that a complete set of standards would exist in a particular area, such as light water reactors. As of January 31, 1975, the seven branches in OSD had identified such standards for their respective areas and had drafted development programs. An OSD official told us that the drafts were being reviewed by other Commission staffs, and would also be discussed with the American National Standards Institute in July 1975. When all needs have been identified, OSD plans to establish a comprehensive standards development program. This program is scheduled for completion during fiscal year 1976.

OSD's efforts to develop a systematic approach to identifying the need for standards are incomplete as a comprehensive standards development plan. Their efforts do not include establishment of definitive criteria for use in selecting from among all needs identified those standards which should be developed first. An OSD official told us that the plan would follow the general criteria and broad priority designations in selecting standards needing development. He stated that if the plan has to be revised to accommodate the development of fewer standards, some type of definitive criteria would be advantageous in selecting those which should be developed first.

Need for comprehensive
standards development
project files

Throughout its development a standard undergoes numerous reviews and evaluations from both within and without the Commission. All pertinent information considered by the OSD staff in the development of a standard is not collected within a single file to expedite research into the development of, and the Commission's support for such standard. A single file would facilitate any review or consideration for revising a standard. Without such files additional time and effort must be spent in locating and reviewing several files and discussing standards with individuals familiar with them to identify all the considerations going into their development.

During OSD's consideration of standards, its staff analyzes the reviews and comments of (1) private professional organizations, which provide standards-setting services, (2) the Commission's other staff organizations which will be affected by the standard, and (3) other interested groups and individuals.

In October 1974 OSD instituted a procedure to assist in searches for significant correspondence involved in the development of standards. Under this procedure, OSD maintains a log which identifies all significant correspondence relating to each standard and the subject file in which the correspondence is maintained at the Commission's central files. The subject matter files also contain correspondence generated by the Commission's other staffs.

While OSD's new procedures provide for easier identification of correspondence, they do not provide for a timely review of the development of standards because all supporting information cannot be promptly identified and made available from a single source. OSD officials agreed that a comprehensive standards development project file would be a valuable management tool. One OSD branch was developing procedures for establishing such files.

Adequacy of standards
should be evaluated

An important measure of a standard's value is its usefulness in improving the effectiveness of (1) evaluations of license applications and (2) the inspections of licensees' procedures and operations. Therefore, the value of standards generally cannot be determined until they are used by the Commission staffs in carrying out their licensing and inspection activities. The experience gained in applying them should enable the Commission staffs to evaluate standards and to comment on the need for any modifications.

While a standard is under development the Commission's licensing and inspection staffs have the opportunity to review and comment on it; however, there is no formal program for systematically evaluating and informing OSD of the results of trying to implement standards as guides or regulations. Consequently, OSD cannot assure itself that issued standards are resulting in improvements to the regulatory program. The licensing and inspection staffs can, of course, comment to OSD on the usefulness of any existing standards in carrying out their responsibilities. However, this effort is informal so there is little assurance that even the most crucial or sensitive standards are being adequately evaluated by Commission staffs.

OSD and other Commission officials agree that there should be a method of providing OSD with the results of systematic evaluations of the most crucial or sensitive standards. OSD officials also agree that they could select these standards for evaluation at the time they are issued. OSD officials believe that standards should be evaluated as to how well they serve

their intended purposes, and that a feedback system, judiciously applied, could provide OSD with valuable insight into the effectiveness of its standards development program.

Conclusions

A comprehensive standards development plan is a necessary prerequisite for the achievement of OSD's objectives. Such a plan should be based not only on a systematic approach to identifying the need for standards, but also on a priority system for standards development which includes definitive criteria for use in selecting from among all needs identified those standards which should be developed first.

All information generated during a standard's development should be identified and available in a timely manner from a single source. A comprehensive standards development project files system offers such advantages.

Problems encountered in applying standards as guides and regulations should be comprehensively and systematically identified for the OSD staff so that corrective actions can be taken. The OSD staff should develop and implement procedures for identifying crucial and sensitive standards and for systematic evaluation of such standards.

Recommendations

We recommend that the Executive Director for Operations direct OSD to establish:

- an improved priority system for standards development which includes definitive criteria for use in selecting from among all needs those standards which should be developed first;
- procedures for preparing and maintaining a comprehensive standards development project files system; and
- procedures for identifying the most crucial or sensitive standards being developed and for systematic evaluation of such standards.

In commenting on the above matters, the Acting Director, OSD, indicated basic agreement. However, he stopped short of agreeing to establish standards development project files, noting that he planned to see how the current correspondence log might be expanded to identify more of the correspondence and reports related to specific standards. In commenting on this same matter, the Director

of the Office of Management Information and Program Control (OMIPC) recommended that a central file system similar to the one used for the licensing of nuclear power plants be established for standards development projects.

REGULATORY PROJECTS MANAGEMENT
INFORMATION SYSTEM

Until about 2½ years ago there was no way to determine the scheduled or current status of regulatory projects. At that time the Chairman of the Atomic Energy Commission requested that a system be established to provide information on certain regulatory and licensee activities to officials and staff responsible for regulatory and reactor safety research functions.

The system that was established includes a series of ten management reports--Status Summary Reports--which contain all approved target dates for each project milestone and summary statements on milestone slippages. In addition, computer reports on projects contain approved milestone target dates, along with estimated completion dates for each milestone. The computer reports are more current than the Status Summary Reports because changes are made as approved whereas changes to Status Summary Reports are not made until the end of a reporting period. The Status Summary Report changes are made, for the most part, manually by the OMIPC staff with assistance from program personnel.

Various Commission officials told us that the Status Summary Reports should be computerized to a greater extent and that the involvement of professional staff in updating work schedules--critical path networks--should be eliminated. The former Director, OSD, told us that the computer should be used to prepare the reports if it could provide all the necessary data for users and was less costly than manual preparation. He and other OSD officials felt that the network format was not necessary. While agreeing that the greatest possible computerization was needed, some officials felt that the network format was the best method of presenting project development information. Without it they claimed it would be more difficult to visualize project development.

The Director, OMIPC, told us that Status Summary Reports are manually prepared in large part because he believes:

--The cost of computer preparation of the reports in their present network format would greatly exceed the cost of manual preparation.

--Manually prepared reports are more acceptable to management officials than computer prepared listings.

--Manual updating serves to reinforce to project managers the need to meet established work schedules and provides an opportunity to review and make last minute changes to schedules.

OMIPC has reviewed several computer systems in attempting to find one which can produce a work schedule in a network format. So far OMIPC has not found such a system.

How useful are the Status Summary Reports?

Because management officials responsible for controlling regulatory projects are made aware of their projects' status through other parts of the information system (for example, schedule changes and computerized progress reports), we inquired about the usefulness of the Status Summary Reports, particularly with reference to their frequency.

The general reaction of Commission officials was that the Status Summary Reports provide management officials with valuable information with which to monitor and control projects. Some officials, however, stated that since the status of some projects usually does not change significantly during a month, the purpose of the reports--providing management officials with current information on each project--could be achieved with less frequent reporting. For example, information needed to monitor projects could be provided in monthly computer reports with less frequent updating of projects' critical path networks.

The Director, OMIPC, stated that less frequent summary reports would not meet the needs of the Commissioners and other management officials. These officials review, on an exception basis, all projects that have major slippages, delays or other problems. In order to identify problem projects, program personnel must develop the status of all projects. These problem projects are reviewed by management officials during monthly and bimonthly management review meetings.

Several officials told us that they used information that was more detailed and timely than Status Summary Reports to identify problem projects. For example, one official stated that progress reports on fuels and materials projects were used to control such projects. Another official noted that by the time Status Summary Reports are updated it may be 3 to 4 weeks after a project change has been approved and made to the work schedule.

In December 1974, Pacific Northwest Laboratories issued a report on its review of the Regulatory Management Information System. In reference to the Status Summary Reports, the report concluded that manual preparation should be minimized, and if no computer system is available, alternate approaches should be taken to automate the reporting process. We agree with this view.

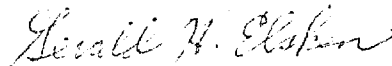
In commenting on manual versus automated preparation, the Acting Director, OSD, agreed that the OSD scheduling should become more computerized as its scheduling needs and responsibilities increase.

The Director, OMIPC, noted that any information system, manual or computerized, requires that information be verified by professional staff; therefore, a substantial reduction of professional staff time in the preparation of Status Summary Reports can not be realized. The Director believes that, within these reports, the network format is the best way of showing the interrelationship of project activities. He noted that the results of the Pacific Northwest Laboratories study of the Regulatory Management Information System are under review and that OMIPC is developing a plan to resolve the problems identified by the study.

At this time we are discontinuing our work on the Commission's management information system because of the temporary nature of the present organizational structure, and the likelihood that changes will be made to the management information system. We plan to review OMIPC's disposition of the findings and recommendations in the Pacific Northwest Laboratories report to assist us in determining whether any further audit work is needed.

We appreciate the courtesy and cooperation extended to our representatives during their work, and we would like to be informed of any actions taken on our recommendations.

Sincerely yours,



Gerald H. Elskén
Assistant Director