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Evaluation and Proposed Improvements to Effectiveness of U.S. Nuclear Regulatory Commission Generic Communications

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ABSTRACT

This report describes an evaluation of NRC generic communications with industry concerning safety related issues of commercial nuclear power plants. The analysis builds on the findings presented in the 1986 Office of Analysis and Evaluation of Operational Data (AEOD) Special Study Report, "An Overview of Nuclear Power Plant Operating Experience Feedback Programs" (AEOD/S602). The primary objective of the report is to present practical recommendations for improving NRC's documents and generic communications system. The report is based upon a systematic review and evaluation of NRC and industry operating experience documents. It also includes an analysis of interviews with licensee personnel at five utilities and their nuclear power plants. NRC regional and headquarters managers and staff were also interviewed for the study. NRC and licensee personnel interviewed are generally satisfied with the current NRC-industry communications system; however, several problems and potential solutions to those problems are identified in this study. The report makes seven major recommendations for improvement in the effectiveness of NRC-industry generic communications about nuclear power plant operating experience.

EXECUTIVE SUMMARY

The primary objective of this study is to present recommendations for the improvement of NRC generic communications with industry to help prevent the recurrence of significant safety problems in commercial nuclear power plants. To form the basis for these recommendations, Pacific Northwest Laboratory (PNL) and the Battelle Human Affairs Research Centers (HARC) have: (1) reviewed past methods for communicating safety significant operating experience to industry, (2) uncovered problems and described successes with the present system of NRC generic communications, (3) identified and evaluated methods for improving NRC generic communications, and (4) developed recommendations for improving the system of NRC generic communications.

The PNL/HARC research team interviewed personnel, collected, reviewed, and analyzed information from five utilities and one nuclear power plant under each utility, and from NRC headquarters and regional personnel. Interviews were administered between January and May 1987.

The report is organized into four sections: (1) section one introduces the background, objective, and scope of the analysis; (2) the project description section discusses the methodology of the study including sections on the evaluation of NRC documents, the sample of respondents, questionnaire development and administration, and analysis of data; (3) the findings section describes respondent opinions about current problems and successes of NRC generic communications and summarizes the generic communication improvements suggested by NRC and licensee interviewers; and (4) the final section outlines the major recommendations for improving NRC generic communication based on analysis of documents and responses from NRC and licensee personnel.

Generally NRC and licensee respondents are satisfied with the current communications system; however, several problems and potential solutions to those problems are identified. After analysis of NRC documents and interview data, the following seven principal recommendations are made to improve NRC-industry generic communications about safety-related issues:

- (1) Clarify NRC expectations of industry and of NRC regional staff regarding use, tracking, and action on information notices.
- (2) Reduce the number of information notices by raising the threshold of safety significance for them and by making them bulletins when warranted.
- (3) Provide more information on the safety significance of the issues in NRC generic communications and on approaches to resolve the issues.
- (4) Contact utilities earlier regarding issues to be addressed by bulletins and information notices.

- (5) Expand informal channels of communication among NRC headquarters, NRC regions, and licensees.
- (6) Do not make major revisions in the existing NRC generic communication documents; do not consolidate bulletins, information notices, and generic letters into one information document and continue publication of the Power Reactor Events Report and Licensee Events Report.
- (7) Develop an electronic communication network to send NRC documents to licensees and incorporate the Generic Communications Index (GCI) into such a system.

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1.0 INTRODUCTION

1.1 Background

Commercial nuclear power plant (NPP) licensees and applicants currently receive a variety of generic communications. Two types of generic communication issued by the U.S. Nuclear Regulatory Commission (NRC) are information notices (INs) (about 100 per year) and bulletins (IBs) (usually less than 10 a year and lately less than five). Information notices, although not requiring specific actions, are intended to bring the recipients' attention to a problem in order to enable them to determine its applicability to their facilities and operations. Bulletins do not constitute a continuing requirement but are designed to provide rapid interim solution to a serious safety problem. With a bulletin the recipient is required to perform specific actions and provide a written response to the NRC.

Nuclear power plant licensees also receive generic communications from other organizations both within and outside of the NRC. These include such items as the generic letters (GLs) from the NRC Office of Nuclear Reactor Regulation (NRR), Power Reactor Events (PRE) reports from the NRC Office for Analysis and Evaluation of Operational Data (AEOD), Institute of Nuclear Power Operations (INPO) Significant Event Reports (SERs), INPO Significant Operating Experience Reports (SOERs) and INPO operations and maintenance reminders and advisory letters and reports on equipment and design deficiencies from the equipment suppliers, nuclear steam supply system (NSSS) vendors and the architect-engineering (A-E) firms.

As a consequence of the lessons learned from the Three Mile Island (TMI) accident, the NRC issued requirements for NPP licensees to implement an operating experience (OE) function to improve overall safety performance. The former NRC Office of Inspection and Enforcement (IE) determined in 1986 that there was a need to assess and improve the current methods for disseminating operating experience information to licensees on significant safety problems and for following up on such communications. This determination was based on previous research and observations which showed that the effectiveness of current generic communications is quite variable. Despite the post TMI OE requirements, there are incidents and accidents at nuclear plants which appear to be recurrences of similar problems previously addressed by NRC generic communications. "An Overview of Nuclear Power Plant Operating Experience Feedback Programs," the May 9, 1986 report by the NRC (AEOD/S602), identified communications problems between NRC and various nuclear power plants. The extent and type of interaction between the NRC staff and the licensees in attempting to assess the applicability of the generic communication items to particular plants also brought into question the effectiveness of these NRC communications.

1.2 Objective

To address these problems the NRC identified four goals for the improvement of the generic communications. The first is to assure that the licensees can readily discern the relationship of previous events to their own plants. Second, the licensee should be provided with the information needed to adequately evaluate the problem and define appropriate corrective actions for their plant. Third, the communication system must also assure that adequate and proper information is supplied so that whatever and whenever corrective actions are undertaken they provide continuing solutions so that a recurrence is prevented. Finally, the communications system should allow for tracking the effectiveness of licensee programs with minimal effort by NRC.

The objective of this project is to assist in achieving these four goals by developing practical recommendations for the improvement in the generic communications program to help prevent the recurrence of significant safety problems in commercial nuclear power plants.

To form the basis for these recommendations, Pacific Northwest Laboratory (PNL) and the Battelle Human Affairs Research Centers (HARC) have: (1) reviewed past methods for communicating safety significant information to licensees and applicants, (2) uncovered problems with the present system of NRC generic communications, (3) identified and evaluated methods for improving NRC generic communications, and (4) developed recommendations for improving the system of NRC generic communications.

The PNL/HARC research team interviewed personnel, collected, reviewed, and analyzed information from five utilities and one associated nuclear power plant (NPP) site for each utility and from NRC headquarters and regional offices. Interview protocols for NRC regional personnel, key NRC headquarters personnel, and for respondents at the five utility headquarters and five NPP sites were administered by two person research teams between January and May 1987.

1.3 Limitations of the Analysis

This study is limited to the review and evaluation of NRC and industry generic communications documents; interviewing NRC headquarters respondents; interviewing NRC regional staff and resident inspectors; and visiting five licensee corporate headquarters and their NPP sites to discuss NRC and industry generic communications programs. Because of the limited number of sites and limited number of respondents this analysis should not be considered a statistically reliable representation of NRC or licensee views. A case study approach was considered most cost effective for eliciting practical solutions to the communications problems. A consequence of this type of approach is that the survey size was necessarily small and in an effort to gain diversity in the sample, the

approach may have under-represented subgroups of the sample with greater responsibility for and knowledge of the generic communications process. The quantitative findings presented in this report and other conclusions should be read with these limitations in mind.

1.4 Outline of the Report

The report is organized into three sections: (1) the project description discusses the methodology of the study including sections on the evaluation of NRC documents, the sample of respondents, questionnaire development and administration, and analysis of data; (2) the findings section describes respondent opinions about current problems and successes of NRC generic communications and summarizes the generic communication improvements suggested by NRC and licensee interviewers; and (3) the final section outlines the major recommendations for improving NRC generic communication based on analysis of documents and responses from NRC and licensee personnel.

2.0 PROJECT DESCRIPTION

The research consisted of a systematic review and evaluation of NRC and industry documents and interviews with NRC and industry respondents regarding generic communications about NPP safety issues. Both of these project elements led to the development of recommendations to improve NRC generic communications discussed in Section 4.0.

2.1 Review of Selected NRC and Industry Documents

The first task of the study was to systematically review and evaluate NRC and industry NPP safety issue documents. A sample of NRC documents from such offices as the Office of Inspection and Enforcement (IE) (on April 13, 1987 IE was incorporated into other NRC offices), the Office of Nuclear Reactor Regulation (NRR), and the Office for Analysis and Evaluation of Operational Data (AEOD) were reviewed to: (1) develop an understanding of the types of technical problems addressed by these documents, (2) to review the present NRC manner of communicating NPP safety issues to licensees, and (3) to identify communications problems and potential improvements. Previous research on the topic was reviewed including NUREG-0839, "A Survey by Senior NRC Management to Obtain Viewpoints on the Safety Impact of Regulatory Activities from Representative Utilities Operating and Constructing Nuclear Power Plants" and AEOD/S602 "An Overview of Nuclear Power Plant Operating Experience Feedback Programs." Statutory, regulatory, and IE manual requirements and restrictions on the NRC generic communications were also reviewed to develop an awareness of restraints on proposed improvements and to set a framework for recommended changes.

The major types of generic communications reviewed and evaluated were:

- (1) Bulletins and Information Notices for 1985 and 1986 and selected previous years,
- (2) A sample of Generic Letters from NRR for 1985 and 1986 and selected letters from previous years back to 1981,
- (3) AEOD Power Reactor Events reports for 1985 and 1986,
- (4) Institute for Nuclear Power Operations (INPO) Significant Events Reports,
- (5) INPO Significant Operating Experience Reports,
- (6) INPO Operations and Maintenance Reminders, and
- (7) Advisory letters and reports on equipment and design deficiencies from equipment suppliers, nuclear steam supply system (NSS) vendors and architect-engineering (A-E) firms.

The non-NRC documents were reviewed with no recommendation for their improvement in mind. These were reviewed as related documents whose effectiveness may interact with those issued by NRC and also serve as a basis for comparison of effectiveness of alternative methods of generic communications.

A list of problems, potential improvements, and good communications practices were formulated from the review of NRC and industry documents. These observations were used as a basis for several questions used in the interview protocols for NRC and industry respondents. Conclusions from the systematic review of documents also contributed to the final recommendations for improvements in the NRC generic communications system.

2.2 Survey of NRC Generic Communication

In order to identify the general concerns with the current NRC-licensee communication process (e.g. bulletins, information notices, generic letters and other NRC documents about NPP safety issues) and to develop recommendations for improvements to the system, interviews were conducted with a wide range of NRC and industry personnel. The process of carrying out this data collection effort and analyzing the information obtained is described below.

2.2.1 Methodology

Interviews with personnel at NRC headquarters, all NRC regional offices, and five licensee corporate and plant facilities was selected as the preferred survey strategy for this study. This approach allowed for in-depth discussion of issues, problems, and solutions regarding NRC generic communications. The major focus of the study was to elicit observations from NRC and licensee personnel about current NRC generic communication practices and how to improve them. The open-ended face-to-face interviews lasted from one to two hours per respondent. All interviews were done by trained interviewing teams in a confidential setting during regular working hours.

The project was explained to each respondent and the following statement was read before each interview:

A recent analysis by AEOD staff (AEOD/S602) indicated that operating experience information provided by the NRC to licensees is being used only to a limited extent at many plants. Based on issues raised in this report, I and E has undertaken this project in order to identify specific ways to improve the effectiveness of communications from NRC to utilities and plants, focusing on I and E Bulletins and Notices. We will be conducting site visits to one utility and an associated plant in each region to determine how the NRC information is processed and used and to elicit suggestions for

improvement. We are also conducting interviews with key NRC staff, both in the regions and at headquarters. Thus, we are interested in your perspectives on areas that could be improved and mechanisms that potentially could be developed for such improvement.

No new regulatory requirements are anticipated for utilities as a result of this study. All responses are confidential; reporting of results will be in aggregate form only.

Definition of communication: a system for sending and receiving messages; the exchange of messages.

A special effort was made to explain that all responses were confidential and that no individual or organization would be explicitly associated with any quote or finding.

The five NPP sites and utilities were selected based on the following factors: NRC region, plant size, number of plants within the overall utility, plant age, reactor type, and different sites selected for the AEOD survey. Respondents within each of the five licensee organizations were selected by title and responsibility with the assistance of a key contact person at each utility headquarters. Utility headquarters staff responsible for NRC, INPO, and commercial communications on safety issues and operating experience were selected from the five licensees. NPP management and staff such as operations superintendent, shift supervisor, training manager, maintenance manager, lead maintenance engineer, technical services manager, and reactor engineer were selected for interviews. The selection of licensees was done in consultation with the NRC. After initial contact by the NRC and agreement to participate in the study, the PNL/HARC project team scheduled the site visits. Five utilities and an associated plant of each utility comprised the industry sample. The NRC sample included headquarters management and staff across a wide range of divisions with special emphasis on departments with responsibilities for generic communications. It also included key personnel dealing with generic communications in all five regional NRC offices.

2.2.2 Protocol Development

Interview protocols or guides for NRC headquarters, regional personnel, licensee corporate and NPP managers and staff were drafted and reviewed by NRC and licensee personnel. The draft protocols were revised and formatted with a common core of questions asked all respondents and a special section designed for each group of interviewees. The common core (see Appendix A, NRC and Industry Protocols) which formed the basis of each protocol included: (1) questions concerning the current process of providing safety information through bulletins, information notices, and generic letters to identify their strengths and weaknesses, (2) questions

eliciting suggestions for improvements to the current NRC communications system, and (3) questions requesting reaction to proposals for changes in the system. This core of questions was used to obtain comparable information from all respondents. The special sections on the protocol included detailed questions on the process for responding to NRC generic communications. Questions about individual staff roles and experience with NRC communications were also incorporated in the utility and plant protocols.

2.2.3 Interviews and Site Visits

Two-person site-visit teams conducted interviews at NRC offices, utility headquarters, and NPP facilities. Generally both team members were present at each interview. However, interviews were conducted by only one team member when necessary to accommodate the scheduling needs of the respondents. In all but one instance the site visits to the NRC regional offices and to the licensee facilities in a given region were coordinated and conducted by the same site-visit team. In general, interviews with NRC regional staff were carried out the first day of the trip, followed by interviews at utility headquarters, and finally interviews at the plant site.

A total of 15 NRC headquarters staff and 23 NRC regional staff (approximately 5 from each region), were interviewed. Several staff with director-level responsibilities for operational data assessment and communication were included in the sample. The regional office personnel interviewed were primarily from the Reactor Projects and Reactor Safety divisions. Several NRC resident inspectors were also interviewed.

A total of 44 industry personnel were interviewed. Of these, 11 were utility headquarters personnel with direct responsibilities for NRC communications or operating experience feedback programs, 8 were nuclear power plant personnel involved in processing or reviewing all NRC communications, and 25 were plant staff with a specific but limited involvement in responding to NRC communications. Licensee corporate headquarters staff were primarily located in the licensing and nuclear assurance departments; however, in a few instances they were in technical engineering sections. Most (about two-thirds) had been in their current position for one to two years; the remaining third had been in their current jobs for three to five years. The plant staff with central involvement in tracking communications were located in the nuclear assurance or operating sections (over one-third), in technical services (over one-third), or in operations (one-fourth). Over a third had been in their position for less than two years; the remaining two-thirds had been in their current job for three to six years. Most (three-fourths) had been with their utility for over 10 years. The plant staff with more limited involvement were spread across a wide range of departments, primarily operations, training, and maintenance, with a few from nuclear assurance sections, from technical services or engineering, from health

physics and from procedures. Approximately half had been in their current jobs for two years or less, with about one-quarter with three to five years and one-quarter with six to eight years experience in their positions. A majority of the NPP respondents had been with the utility for over 10 years.

2.2.4 Data Reduction and Analysis

For analysis purposes the respondents were divided into five groups: NRC headquarters, NRC regions, utility headquarters, plant management (comprised of personnel with responsibilities for reviewing and distributing all NRC communications) and plant staff (comprised of staff with limited involvement with NRC communications). A content analysis of the responses to the protocols was carried out within each group in order to categorize the information provided in the interviews. This is discussed in Section 3.0, "Findings." For two sets of questions where a structured response format was used, the data were coded and numerically analyzed (see Figures 1 through 19 in Section 3.0, "Findings."). The analysis focuses on comparing the responses of the five groups to identify the extent of similarities and differences in perceptions of current problems with NRC generic communications and in identifying suggestions for improvements to the system.

3.0 FINDINGS

The findings section briefly describes the NRC-industry generic communications process, reports perceived NRC-industry generic communications problems and successes, and summarizes suggested improvements in NRC-industry generic communications.

The extent and nature of problems with the NRC generic communications system, categories of suggested improvement, and response to suggested changes in the current generic communication system were analyzed to help develop recommendations for improvement in the NRC-licensee communication system.

3.1 NRC-Industry Generic Communications Process

The process of handling NRC generic communications varies among different utilities, but all have a systematic screening and distribution system. Licensee corporate headquarters, often located away from the NPP, is generally responsible for coordinating the official bulletin responses to the NRC, but at most of the utilities visited the lead responsibility for determining the response to generic communications is at the NPP level. At three of the utilities, it was unusual to have corporate involvement with notices. Typically, corporate level resources are utilized when assistance is requested from the NPP. There was only one utility where overall responsibility for the response was at the corporate level. This also was the only utility with the operating experience program within the licensing and regulatory department.

All utilities screen communications for relevance and assignment to an appropriate technical lead when actions are under consideration. This is generally an individual review process, but some of the utilities use a standing committee, sometimes the operating assessment review committee, for this function. Most plants have a standard distribution list for all communications. After an initial logging and screening of documents, they are usually forwarded to the appropriate utility corporate staffs and NPP personnel. The documents are again screened and evaluated by corporate and by NPP staffs for relevance to their plant(s). Some utilities screen centrally with a small number of people reviewing the information to determine significance, relevance to plant, and priority. At minimum, receipt of all communications is documented. More typically a computerized tracking system for the screening and response decisions is utilized. Whenever actions are planned in response to a document, they are tracked on a regular basis at all plants.

This screening and response to generic communication is highly selective at some utilities, with only a limited amount of the material circulated outside a small group that does the initial reviews. Consequently plant operators, radiation protection personnel, trades personnel, and other staff often see only a relatively small portion of the documents

available at the utility. These people will notice changes to their facilities that are initiated as a result of operating experiences, but may not be aware of the specifics of the experience or reason for the changes.

At three utilities there had been changes in the process in the past two years. In all cases the changes involved increased resources devoted to the screening, tracking, and action system. The most extensive revision was the centering of responsibility at the corporate rather than NPP level at one utility in order to assure greater availability of corporate level technical assistance. At another utility, where the operating assessment function had been added to an existing corporate position, there were plans to separate the role and expand plant-level involvement because of the time needed for carrying out the work. At a third plant the computerized tracking system for communications had been significantly improved.

Generally middle management at the NPP and utility headquarters determine the appropriate actions to be taken with regard to operating experience documents from NRC. Independent assessment groups are also utilized to broaden the perspective used in the assessment process. The research team was invited to observe one assessment group meeting at one utility to gain an understanding of how an independent assessment committee functions. The quality of the screening and assessment of NRC documents seemed good in all of the sampled utilities but generally seemed highly dependent on the few people assessing the data to identify what is pertinent and important to the licensee's operations.

The primary sources of information (shown in Diagram 1) about operating experience and communications systems found in the utilities were generally the same as reported in AEOD's 1986 study, "An Overview of Nuclear Power Plant Operating Experience Feedback Programs" (see AEOD, p. 14).

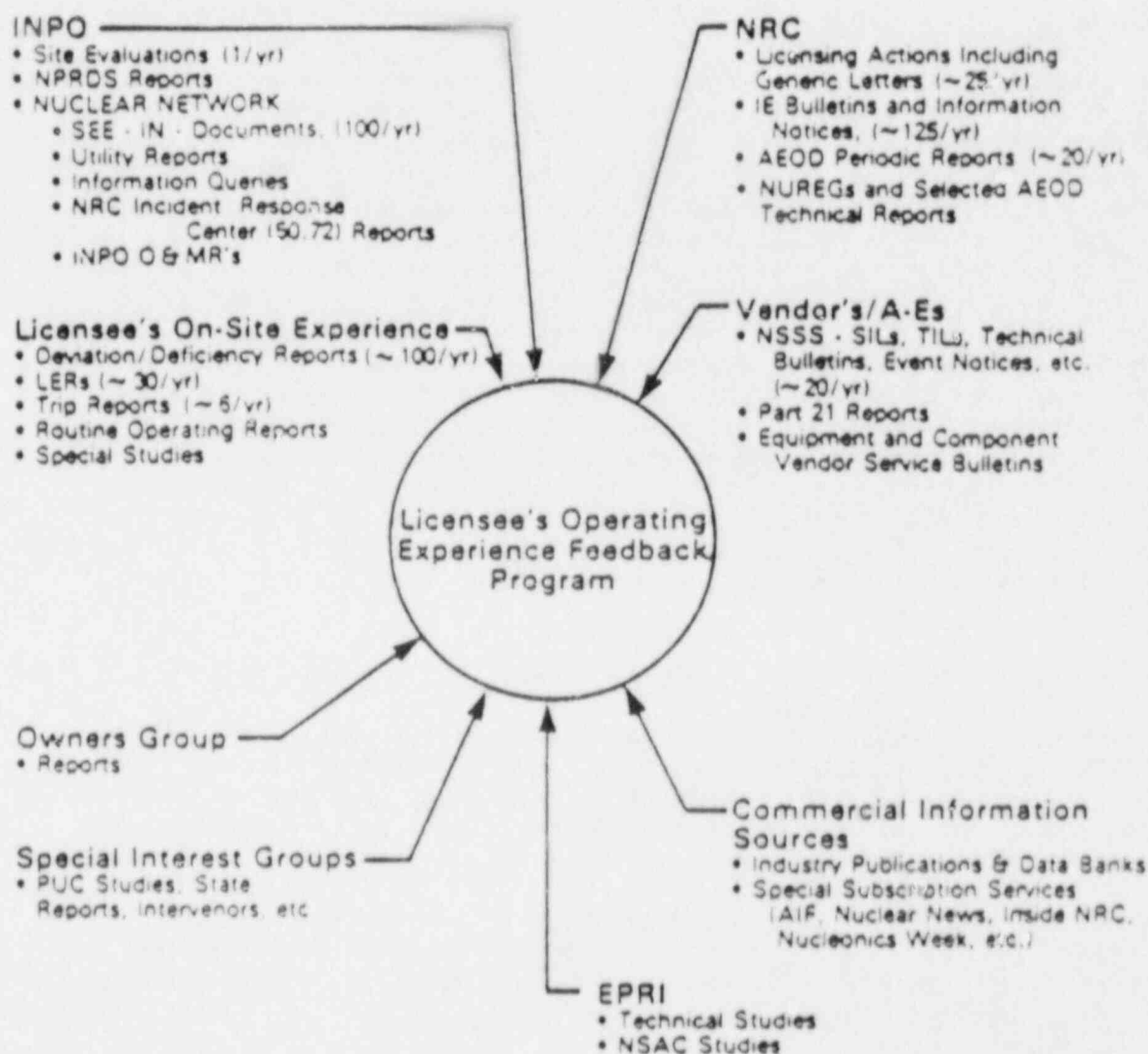
According to the AEOD study, only a few operating experience documents are determined to be relevant at each NPP:

Ten to 20 percent of the industry-wide feedback from the NRC, INPO and the vendor is determined to be significant and applicable, and generates some action at a specific plant. Such actions generally include (a) changing the operating or maintenance procedures; (b) changing the plant design; (c) incorporating the concepts of the problem into training programs; or (d) discussing the actual sequence of events, its consequences, and lessons learned directly with the plant operating staff. (AEOD, p. 14).

The survey of industry respondents found that around 20 percent of the operating experience documents were directly relevant to the plants but that all documents were studied for direct and indirect lessons that

Diagram 1. Sources of Operating Experience Feedback Information

The following diagram shows potential sources of communications with nuclear power plants and utilities from industry and NRC.



Source: An Overview of Nuclear Power Plant Operating Experience Feedback Programs (AEOD/S602). Prepared by John L. Crooks (Lead), Program Technology Branch, Office for Analysis and Evaluation of Operational Data, U.S. Nuclear Regulatory Commission, May 9, 1986.

would help improve NPP safety performance. Analysis of respondent attitudes and the AEOD findings were consistent with respect to several observations about the NRC-industry generic communications process.

Each licensee visited in both studies had established a generic communications system intended to meet NRC requirements and to conform to existing guidance. However, existing programs vary widely in their characteristics and effectiveness. There is variability in who screens and assesses NRC documents. Sometimes upper management is involved and other times not. The systems for collecting, controlling, screening, assessing and storing information about operating experience varied considerably among the utilities in the sample. At some plants all NRC documents are sent to a centralized staff and in others the documents go to one person. The method of disseminating NRC generic communication to NPP and corporate personnel varies considerably; however, most licensees use both a computer based and hard copy distribution system. There is also variability in the distribution of documents. Some licensees make multiple copies of each incoming document and send it to a standard distribution list of utility and NPP personnel for information as well as entering it into their review process. Others enter the document into the assessment process and circulate only screened material to specific distributions dependent on the topics of interest. The quantity and depth of information from industry-wide operating experience sent to NPP personnel ranges from very little (only what seems to be directly relevant) to items of general interest. There seems to be a need for some additional guidance to help assure that licensee operating experience documents from NRC and the industry reach the correct people in a timely fashion.

3.2 NRC-Industry Generic Communications Problems and Successes

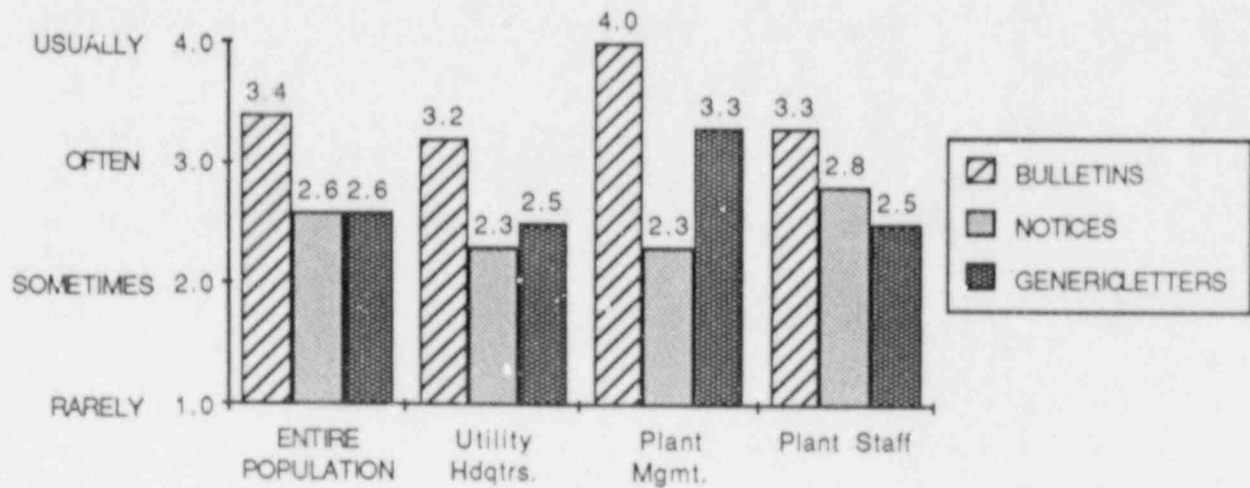
This section highlights industry and NRC respondent perceptions of the problems and successes with current NRC generic communications. There are statistical limitations inherent in this study (see Section 1.3) and there are potential problems of overgeneralizing from case studies, but several conclusions are clear.

Figures 1-7 contain histograms of the mean responses to specific questions about how well current NRC-industry generic communications is working. Major conclusions are listed below each figure. Descriptive text is provided to clarify and supplement the quantitative presentation of the findings.

Analysis of interviews and data collected from the five licensees in this study confirm several important problems found by AEOD about NPP operating experience feedback programs (see AEOD, pp. 29-30).

The number of NPP safety communications received by licensees is large and often perceived to be overwhelming and unnecessary. Many documents

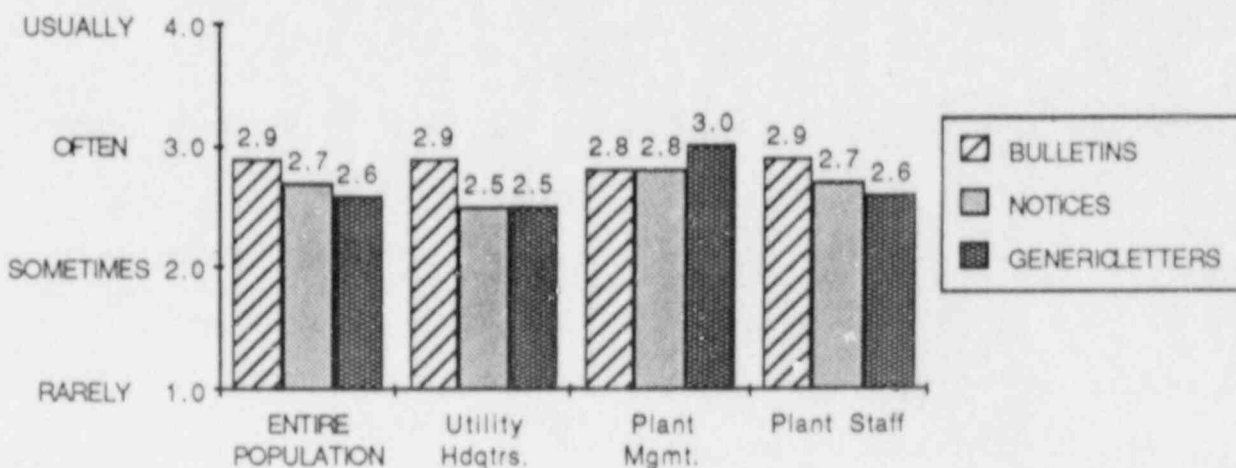
FIGURE 1. How Often do NRC Communications Cover Top Priority Safety Problems?



Note: The means are listed above the bars for each category of respondent.

This figure shows that there is a high level of agreement among industry respondents that bulletins cover high priority safety problems. There also is a view that is consistent across the subgroups of respondents that the priority of notices and generic letters is not as high as that for bulletins.

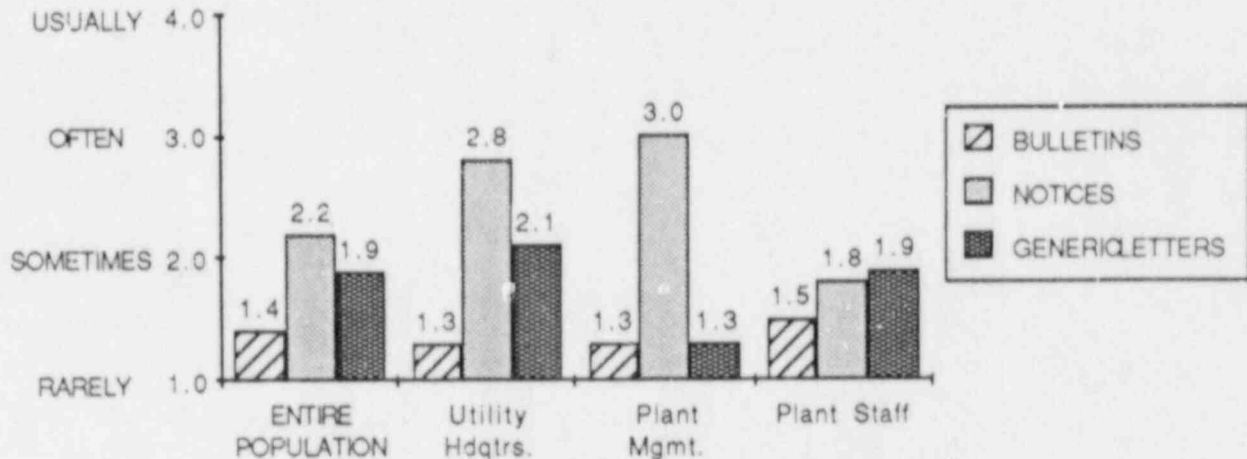
FIGURE 2. How Often are Safety Issues Covered in a Timely Manner?



Note: The means are listed above the bars for each category of respondent.

Figure 2 shows that the various forms of NRC generic communication are considered timely by the industry. Exceptions were noted by many respondents, but in general, the NRC and industry respondents feel that the issues are identified and brought to the attention of the industry in a timely way. Industry respondents find no major differences between bulletins, information notices, and generic letters in the coverage of safety issues in a timely manner. Comments from industry expressed the desire to increase time for analysis and planning of necessary modifications.

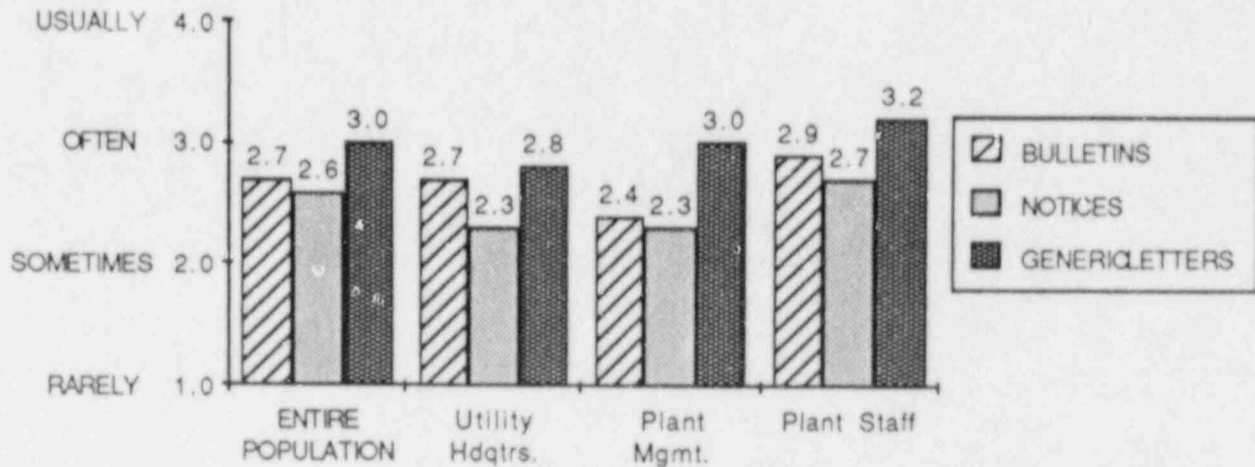
FIGURE 3. How Often are There too Many NRC Documents Annually to Give Sufficient Attention?



Note: The means are listed above the bars for each category of respondent.

Figure 3 shows satisfaction with the number of bulletins and some concern with the increasing number of information notices. Because only a few bulletins are issued each year, they were viewed by the entire population of respondents to rarely be too many in number to give sufficient attention to any particular one. Utility headquarters respondents and plant management find there are often too many information notices. This is complicated by the fact that some do not appear relevant to their plant and that there is duplication with material received from INPO and other industry sources. Respondents at utility headquarters and plant staff levels sometimes find there are too many generic letters annually to give sufficient attention. Plant staff differ with the industry management view of notices in part because many of the staff receive and review only notices that are relevant to their particular work function.

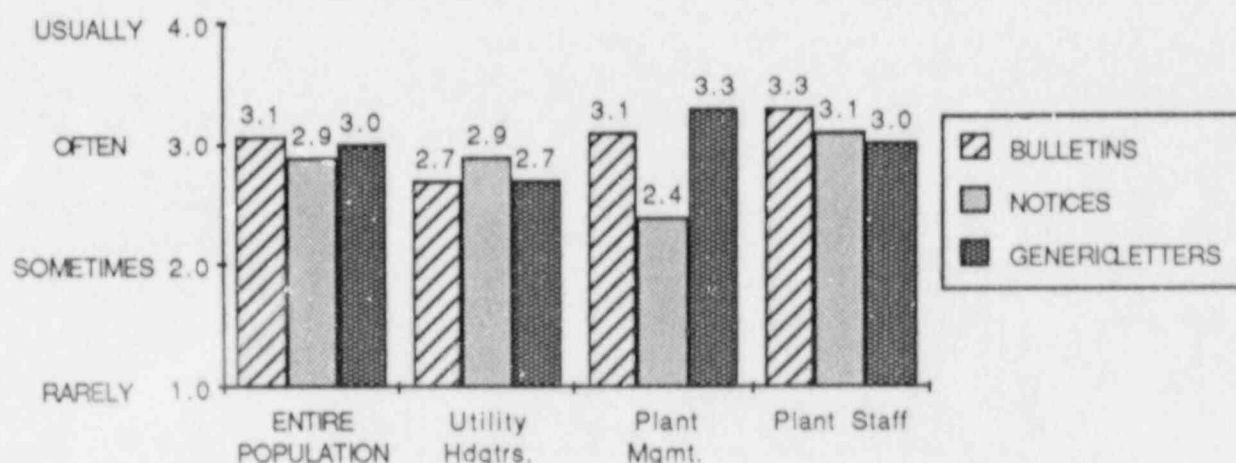
FIGURE 4. How Often are Issues Covered Relevant to the Plant?



Note: The means are listed above the bars for each category of respondent.

According to the mean responses shown in Figure 4, NRC generic communications are considered important and relevant. For the industry subgroups, bulletins, notices, and generic letters are judged to be often relevant to the plant. Generic letters are judged to be slightly more relevant than bulletins, which in turn are more relevant than notices.

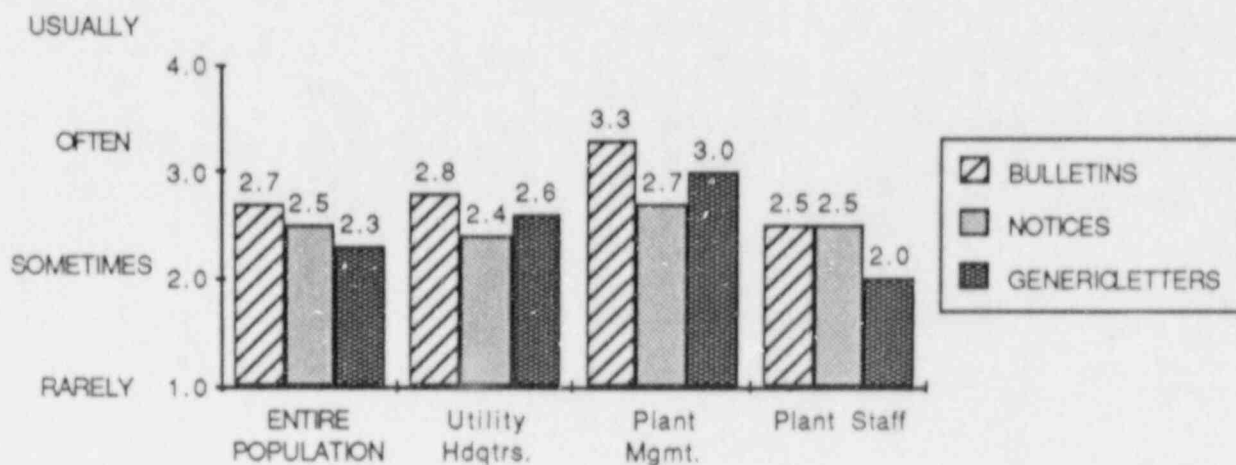
FIGURE 5. How Often can the Relevance to the Plant be Determined from Information Provided by the NRC?



Note: The means are listed above the bars for each category of respondent.

Industry respondents often find that the relevance of bulletins, information notices, and generic letters can be determined from the information provided by the NRC. Figure 5 shows that this view is consistently shared by the industry subgroups although the plant management has a somewhat more skeptical view of notices than other forms of communication. Although plant relevance can often be established, it is not clear to industry respondents and many NRC respondents what the NRC headquarters' expectations are with regard to licensee actions in response to notices.

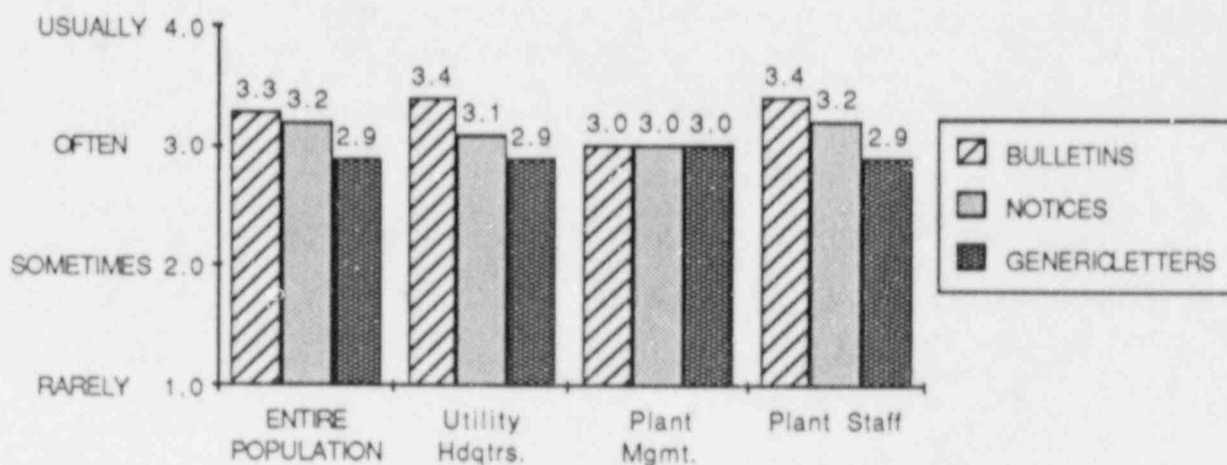
FIGURE 6. How Often are Descriptions of Actions Taken by Other Plants Helpful in Determining Appropriate Action?



Note: The means are listed above the bars for each category of respondent.

Figure 6 shows that utility headquarters and the plant management find that bulletins, notices and generic letters which describe actions taken by other plants are helpful in determining appropriate actions for their own plants. During the interviews, it was often noted that not only does the information provide useful insight into innovative ways of dealing with problems, but the information also provides insight into what is considered an acceptable solution/action by the NRC.

FIGURE 7. How Often are Issues Covered by the NRC also Covered by Other Sources?



Note: The means are listed above the bars for each category of respondent.

Respondents find a high level of duplication among sources of information as shown in Figure 7. There is widespread agreement that issues addressed in bulletins, notices, and generic letters are often covered by other sources, most notably INPO. However, the view was also expressed by both industry and NRC respondents that the interests and objectives of the various sources do not always coincide and that different perspectives and information are sometimes contained in the treatment of the same issue. Because different objectives and interests may need to be served, most respondents did not indicate that eliminating all duplication would be desirable.

are produced by many sources (see Diagram ?). Many of the documents contain little or no indication of priority of importance. Other documents contain information that overlaps with that from other sources. Licensees indicate that they must cope with vast quantities of paper, some redundant, and most of varying importance and usefulness. Many respondents feel that their review of the large number of documents from NRC, INPO, and the NSSS vendor, is overwhelming and subtracts resources from more effectively solving safety significant problems relevant to their plants.

Overlapping and redundant documents from NRC, INPO and commercial sources were cited by respondents as wasteful of resources and at times a problem. The principal overlap is between NRC and INPO documents that attempt to bring significant events and generic concerns to the attention of licensees (e.g. INs, SERs, and SOERs). Other redundant documents were found from NSSS vendors but respondents felt that some overlap was good. It gave them more information and a different perspective on safety problems and solutions. If the timing were better coordinated, the duplication would be less problematic some respondents indicated.

However, licensee respondent report that conflicting information is occasionally communicated by one or more sources. Thus, licensees have to carefully read and compare information from all sources in order to identify differences and conflicts. Licensees generally have procedures for resolving the conflict, if identified, prior to acting on the information within their organization, but this causes delay and at times unnecessary expense.

Significant time and resources of licensees are spent screening and assessing documents for which a record of review is required or is perceived to be necessary (such as NRC bulletins, information notices, and generic letters). Other NRC and industry documents that contain relevant information but no explicit requirement for action often receive little attention, (e.g. PREs and NUREGs).

3.3 Suggested Improvements to NRC-Industry Generic Communications

This section highlights industry and NRC suggestions for and reactions to suggested improvements to NRC-industry generic communications. Section 3.3.1, Data Analysis, summarizes the major suggestions for improvements in generic communications from NRC and industry respondents. Section 3.3.2 summarizes the major conclusions about improvements from the study.

3.3.1 Data Analysis

NRC and industry respondents were asked to react and comment on specific suggestions for changing the current NRC generic communications system. Figures 8 through 18 show the mean responses from interviewees to several suggestions for improving NRC documents and communications. Respondents

were asked to react to the suggested reforms through a closed-ended scale (i.e. the change would be: much better, somewhat better, not make a difference, somewhat worse or much worse). These responses were scaled statistically and transformed for the histograms (Figures 8 through 19) showing means with a range of +1 to -1 for subpopulations. Conclusions about the proposed improvements to NRC communications are elaborated below each figure.

NRC and industry personnel were also asked to make suggestions for the most important changes that could be made by NRC to improve communications with licensees. The five most often made suggestions for improvements in an open-ended discussion with respondents are summarized by each sample subpopulation below.

NRC Headquarters

- Improve identification of level of safety significance in NRC documents.
- Reduce number of NRC documents to licensees.
- Improve explanation of purpose of information notices to licensees.
- Hold workshops and meetings with licensees after issuing bulletins.
- Centralize responsibility and authority for all NRC generic communications.

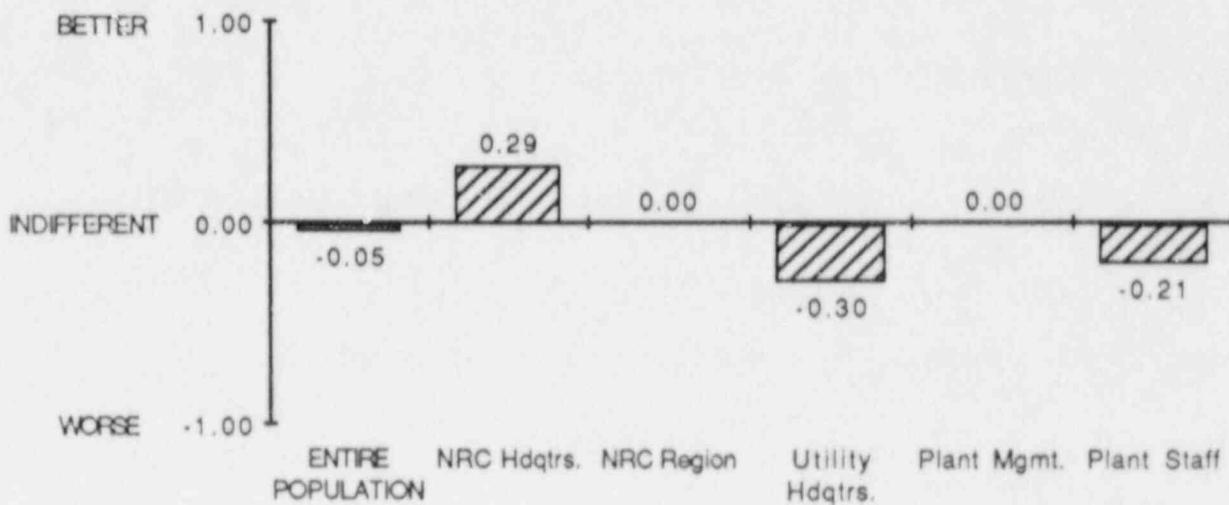
NRC Regions

- Reduce number of NRC documents to licensees.
- Establish single NRC organization to communicate with licensees about safety significant problems.
- Establish clear guidelines for NRC inspectors regarding information notices.
- Rank information notices for safety significance.
- Establish clear boundaries between information to encourage safe practices and information to require action.

Utility Headquarters

- Provide more safety significant problem experience from other nuclear power plants.

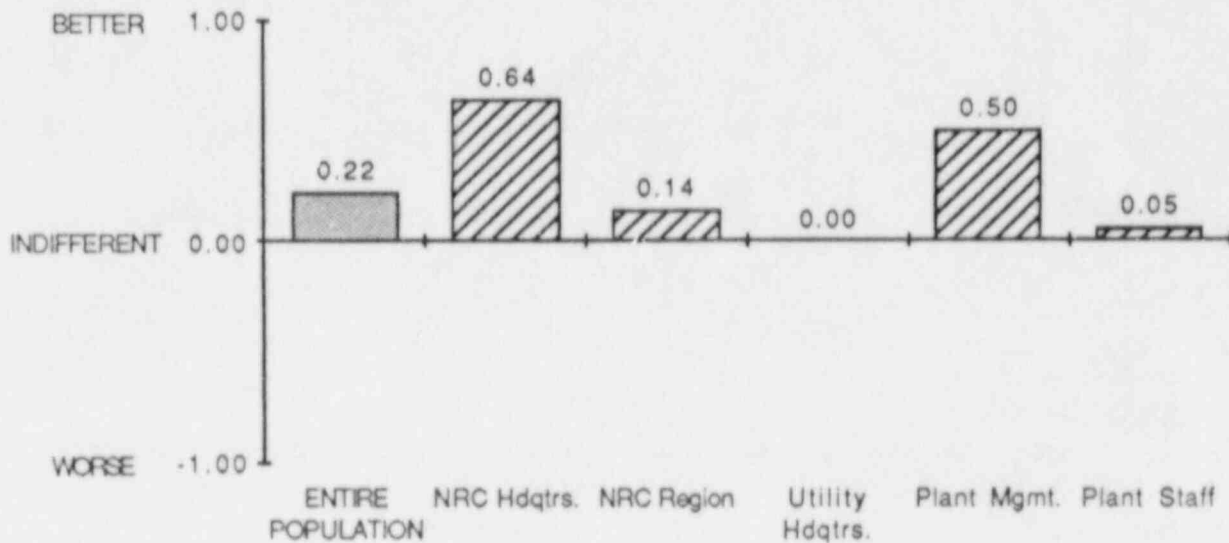
**FIGURE 8. Replace Bulletins, Notices, Generic Letters
With One NRC Information Document**



Note: The means are listed above the bars for each category of respondent.

Figure 8 shows that respondents at NRC headquarters tend to favor replacing bulletins, information notices, and generic letters with one NRC information document, but industry respondents at the corporate headquarters and plant staff members are opposed. Utility headquarters staff often expressed the concern that such a change could result in costs to the utility. NRC regional staff and plant managers are indifferent to the suggested improvement, neither supporting or opposing the idea.

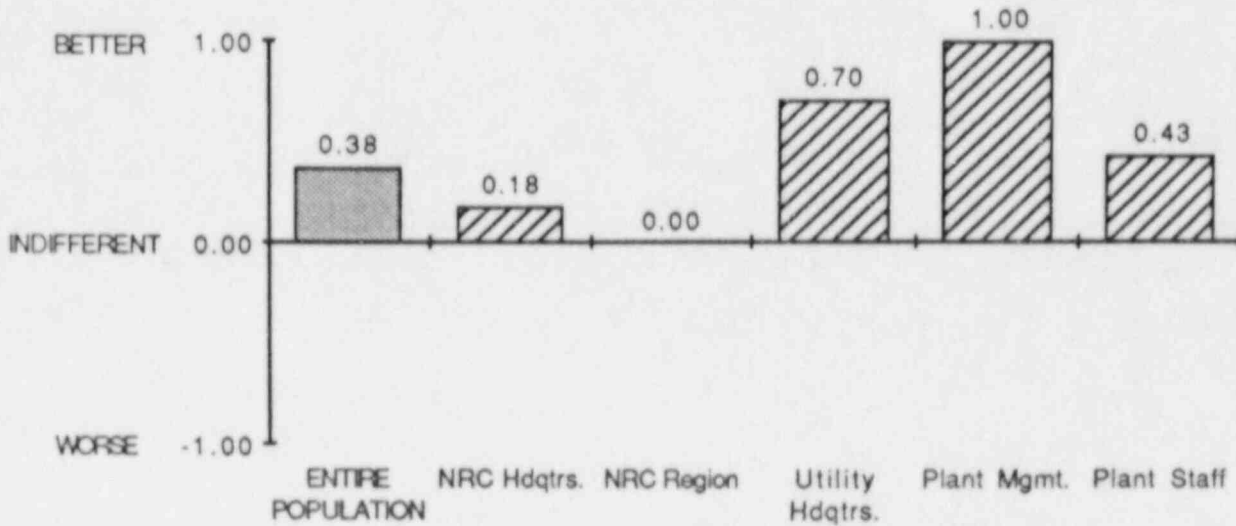
FIGURE 9. Discontinue Power Reactor Events Report



Note: The means are listed above the bars for each category of respondent.

Respondents at NRC headquarters and plant managers prefer to see the publication of Power Reactor Events Reports (PREs) discontinued, while other groups of respondents are largely indifferent as shown by the histograms in Figure 9. However, most plant training staff felt strongly that PREs were most helpful for their training programs and would like the NRC to continue publishing the reports.

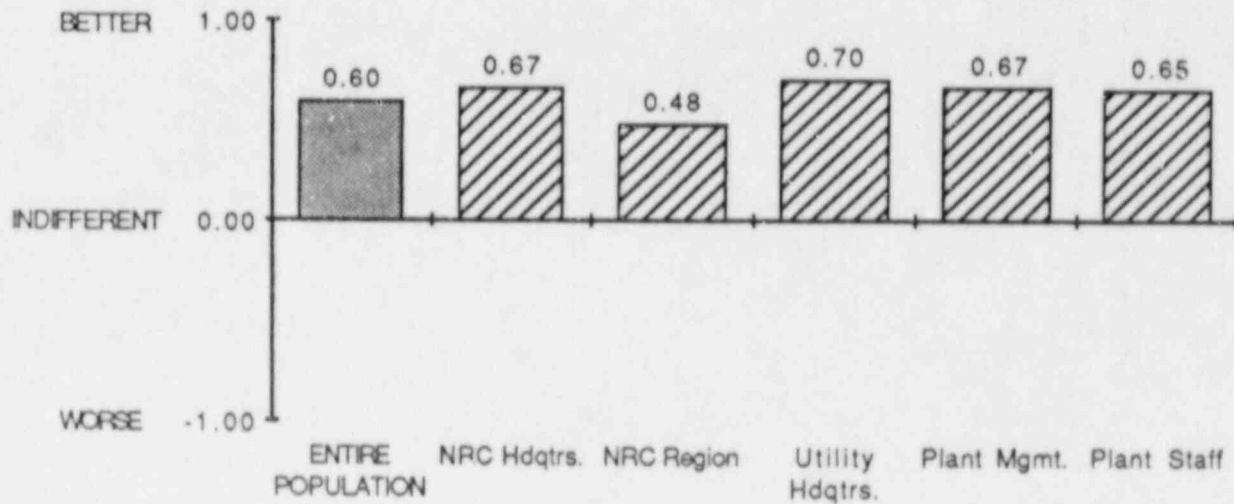
FIGURE 10. Provide Additional Information Within Document on Level of Safety Significance



Note: The means are listed above the bars for each category of respondent.

Industry respondents at all three levels prefer documents that provide additional information on level of safety significance. Plant management felt information about the level of safety significance would greatly improve the usefulness of NRC documents. NRC respondents have no strong preference about publishing more information about the level of safety significance within NRC documents. Some concern was expressed by NRC regional staff, that introducing a formal priority rating system would be cumbersome, lead to delays in getting the documents out, and be difficult to administer.

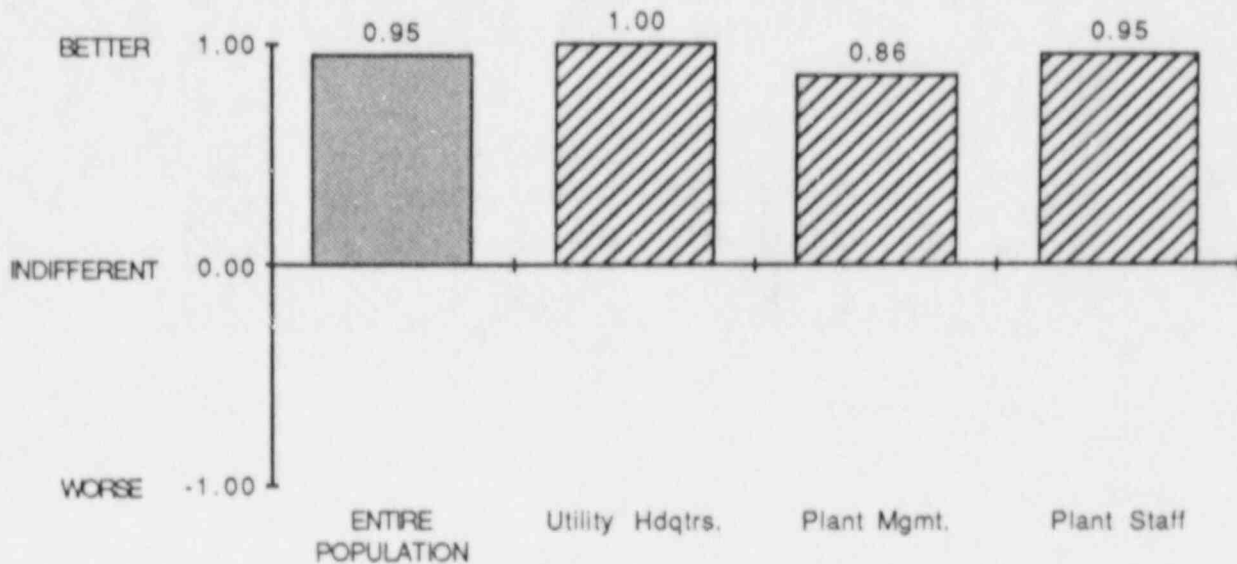
FIGURE 11. Specify Plants that Document Applies to
Within Document



Note: The means are listed above the bars for each category of respondent.

Figure 11 reveals that all respondents would like to see documents screened for the NPPs to which they apply. This is somewhat inconsistent with licensee plant management that expressed a preference for controlling the screening and codification of documents themselves. Figure 11 shows that all respondents feel that it would be easier to screen NRC documents if the documents contained more plant specific information.

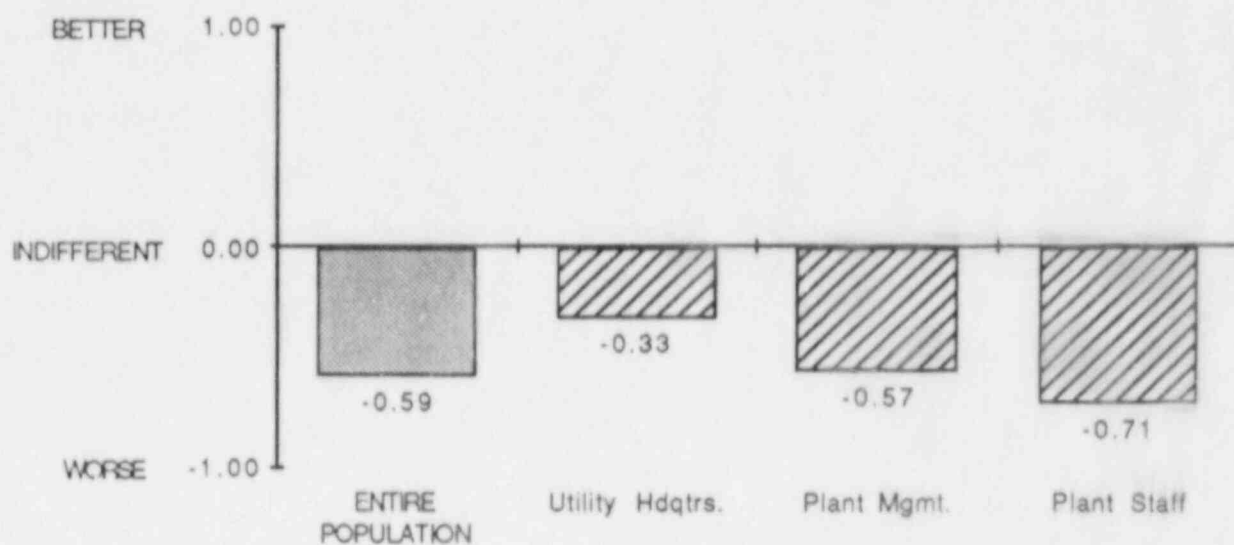
FIGURE 12. Expand Use of Figures and Diagrams*



Note: The means are listed above the bars for each category of respondent.
*This was not a specific protocol question for NRC staff.

Figure 12 clearly shows that industry respondents strongly favor the expanded use of figures and diagrams in NRC information documents. This would make it easier for licensee personnel to quickly understand the problem being discussed. More diagrams and figures are perceived to be significant improvements over the current system.

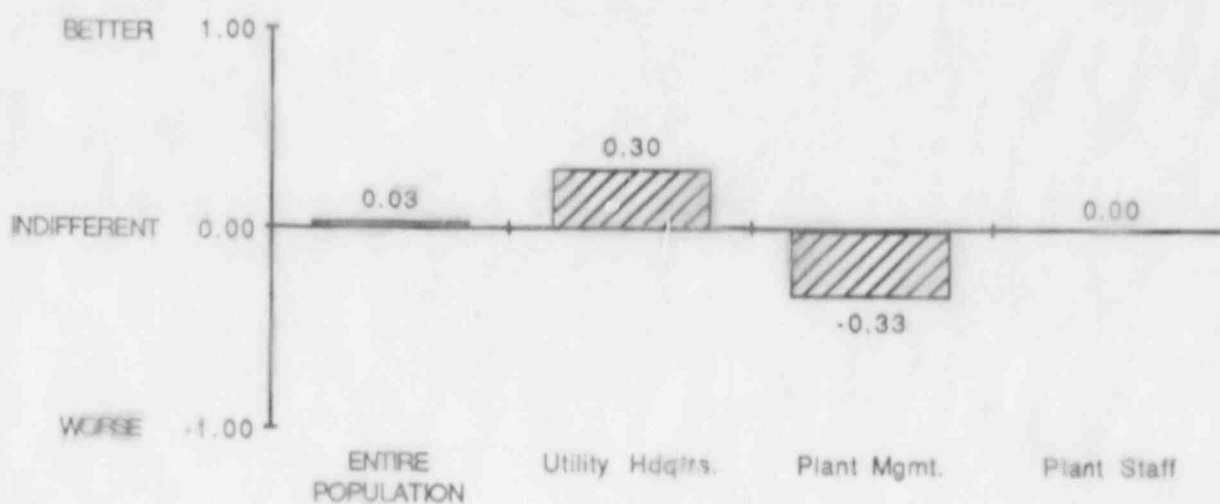
FIGURE 13. Reduce Narrative*



Note: The means are listed above the bars for each category of respondent.
*This was not a specific protocol question for NRC staff.

Figure 13 clearly shows that industry respondents, especially plant staff, are opposed to reducing the narrative in NRC information documents. They want more data on the problem and solutions to the problem. Industry respondents feel it would be much worse if the narrative was cut back in NRC documents.

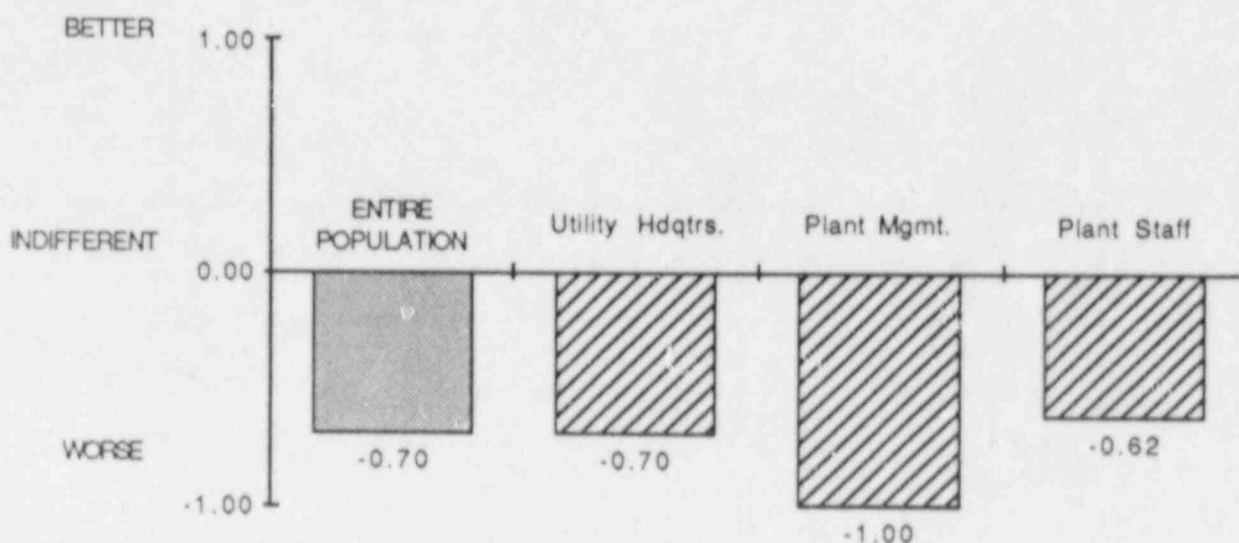
FIGURE 14. Use Coded System for Characterizing and Summarizing Information*



Note: The means are listed above the bars for each category of respondent.
 *This was not a specific protocol question for NRC staff.

Figure 14 shows that respondents at utility headquarters favor a coded system for characterizing and summarizing information, but plant management opposes this change and plant staff is indifferent. Plant staff are indifferent probably because they already receive pre-screened NRC documents.

FIGURE 15. Eliminate Detailed Discussion of Actions at Other Plants*

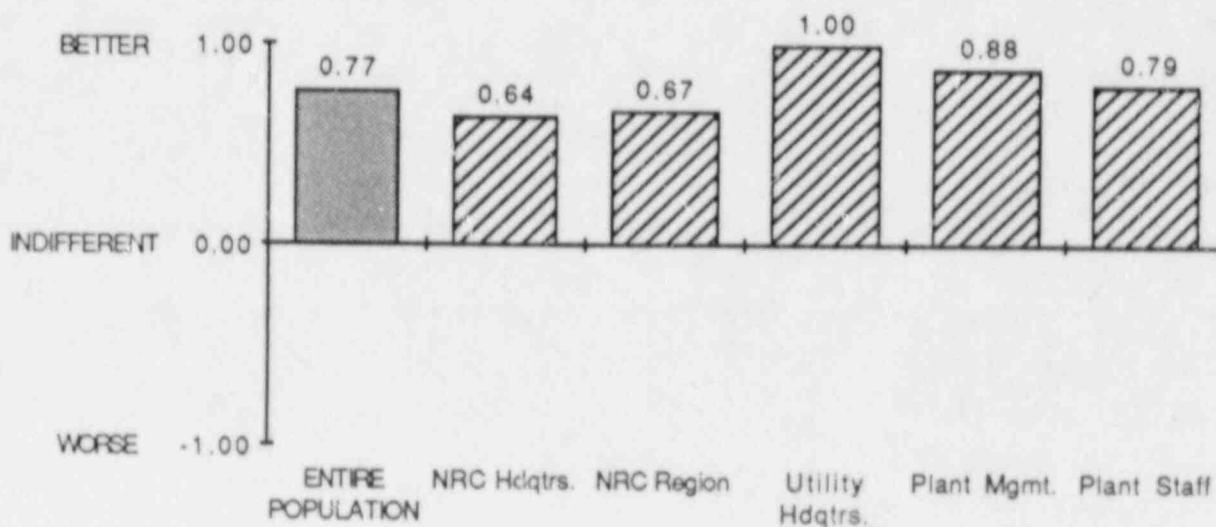


Note: The means are listed above the bars for each category of respondent.

*This was not a specific protocol question for NRC staff.

Figure 15 shows that industry respondents strongly oppose eliminating detailed discussion of action taken to resolve problems at other plants. The open-ended remarks from licensee personnel also call for more detail in NRC documents rather than less. Industry especially want more detail about what the problems and solutions are to other NPPs.

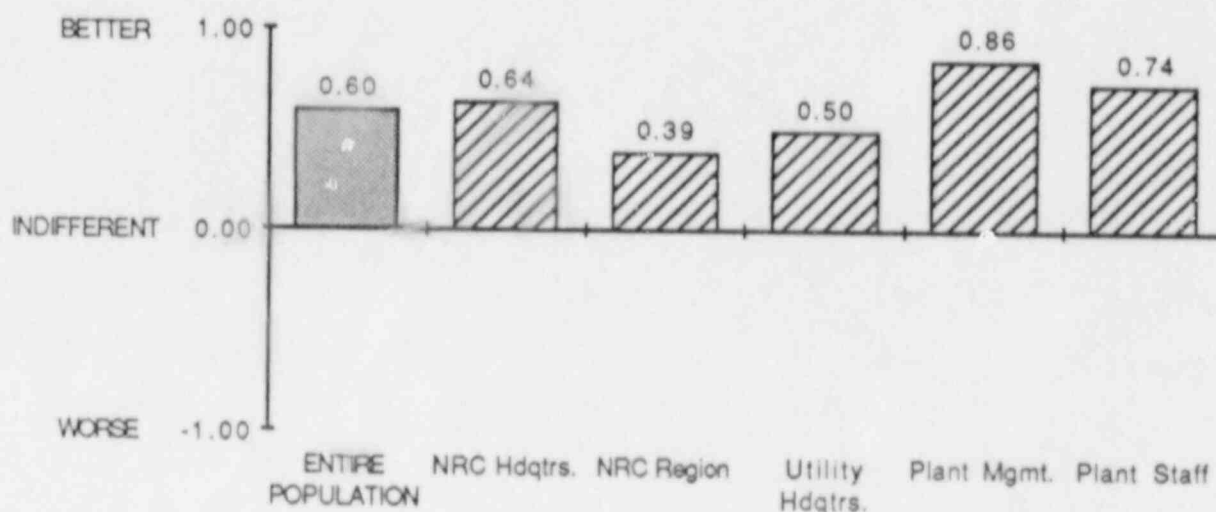
FIGURE 16. Hold Workshops with Utilities on Selected Safety Issues



Note: The means are listed above the bars for each category of respondent.

NRC and industry respondents strongly favor holding workshops with utilities on selected safety issues to improve communications and safety performance, as shown in Figure 16. All respondents want to improve informal, non-adversarial communications between NRC and licensees and advocate periodic workshops to achieve that goal.

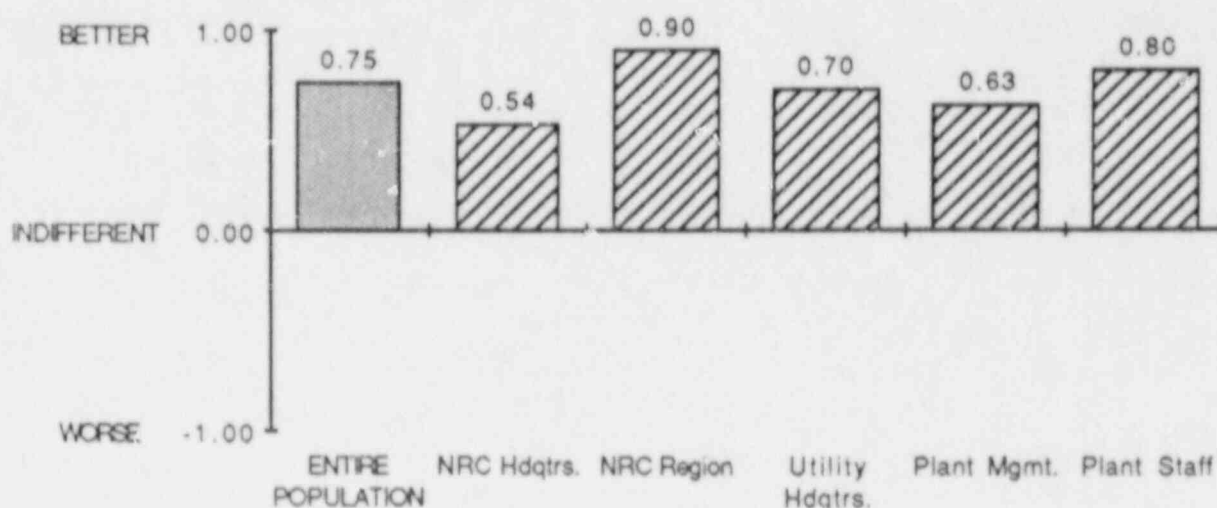
FIGURE 17. Provide a Generic Communications Index (GCI) of NRC Bulletins and Information Notices to Licensees



Note: The means are listed above the bars for each category of respondent.

All respondents strongly prefer providing a Generic Communications Index of NRC bulletins and information notices to licensees, as shown by the high mean scores in Figure 17. The GCI was also strongly supported by open-ended comments in the interviews. Plant management feels it would make their search for relevant documents much easier when they are attempting to assess the applicability of bulletins and information notices to their NPPs.

FIGURE 18. Expand Automated Information Systems with GCI



Note: The means are listed above the bars for each category of respondent.

All respondents strongly support the idea of expanding an automated information system for NRC documents with an automated Generic Communications Index, as shown by the data analysis in Figure 18. Most respondents would like to see automated distribution of NRC documents to the industry with the GCI on line for easy retrieval and analysis.

- Establish an early informal warning system so that licensees can think about a problem before a formal communication is received.
- Prioritize and categorize documents for safety significance.
- Hold workshops and improve informal communications with NRC.
- Reduce number of NRC documents.

Plant Management

- Establish prioritization/classification of NRC documents by safety significance.
- Improve timeliness by getting information (issue rather than requirements) to licensees as soon as possible.
- Provide utility with rationale for NRC decisions.
- Hold workshops that focus on management and human factors associated with safety significant problems.
- Put NRC documents on line with the Generic Communications Index.

Plant Staff

- Improve timeliness of all NRC documents.
- Hold more workshops in a non-adversarial environment and improve communication between industry and NRC.
- Improve categorization of notices and bulletins regarding safety significance.
- Reduce the number of NRC documents.
- Improve guidelines for industry action in information notices.

3.3.2 Conclusions

Several conclusions can be drawn from the interviews with NRC and licensee personnel. Many utility and NRC respondents felt that there are too few NRC bulletins. Generally bulletins are considered to be of high quality with good level of technical detail. Respondents had mixed feeling about the timeliness of bulletins. Some industry respondents said there should be a preliminary issues document on the safety issues in forthcoming bulletins (or bulletins under consideration) mailed to the licensees to give them an idea about what may come from NRC.

A majority of respondents said that there are too many NRC information notices. According to industry respondents, information notices seem to be used as "backdoor regulation" through the inspection process. Industry respondents felt that if NRC inspects for information notice safety issues, they become de facto regulations. The status of information notices is confusing to many respondents. Some information notices are of such importance to safety that they should be published as bulletins according to many industry and NRC regional respondents. Although clearly stated in NRC policy, many respondents felt that information notices have an ambiguous status: what are the actions to be taken by licensees and what are NRC's expectations of the licensees? Respondents felt there should be a better way of classifying and screening information notices. The non-commercial nuclear power plant information notices should be screened out by NRC. Most respondents felt that information notices could include better discussions of NRC expectations and of what action could be taken. NRC could improve its system of classification of safety significant problems for the information notices. One idea that was offered was to color code safety significant problems in a manner similar to the coding done by INPO.

Industry respondents generally said that there should be no change in NRC generic letters. They felt that the current system is working well. The Power Reactor Events (PRE) Report does not have wide support or use, but the publication is often employed in training exercises.

Licensees appear to have good distribution, tracking and follow-up systems from bulletins, information notices, and generic letters although the system characteristics vary widely. Many respondents said that NRC could improve its system of dissemination of documents. Many respondents complained of not getting bulletins and information notices until one or two weeks after they were officially published. Some NRC Resident Inspectors (RIs) complained of not getting the bulletins and information notices at all. When RIs are asked questions by the licensees about what they mean and they do not have a copy, it presents problems. Some respondents recommended expansion of the number of figures and drawings in bulletins and information notices, and most suggested not cutting back on the narrative in the documents. Many reported that if anything, the documents need more detail; they do not need to be shorter. Licensee respondents appeared to like the examples in the documents, and in general, they find that the description of problems and solutions used by others most useful.

Most respondents felt that the best and most desired NRC communication is prompt, detailed, and comprehensive descriptions of significant events or safety concerns. Trends and patterns analyses and other summary information that address the operating experience collectively are also desired. These are most useful for information, training, and other purposes. Descriptions which are brief and which contain no assessments

of significance are not widely used. Documents that require extensive analysis are also not widely used.

Utilities and plants do not want the bulletins, information notices, and generic letters replaced by one document. They generally reported that they like the system the way it is right now. Licensee respondents and NRC personnel want improved informal communication with each other. For the most part, licensees would also like to see more two-way communication through workshops on selected safety issues.

The majority of respondents advocated development of the Generic Communications Index (GCI) (see Appendix B for discussion of the GCI). They felt that the GCI should be expanded and automated (but not with INPO's Nuclear Network). Industry respondents felt that it could be on INPO's system but should not be integrated because it might limit the free exchange of information if NRC had access. The informal communication network would be significantly hindered. Respondents were generally impressed with INPO's communications systems, especially Nuclear Network. Many called for better coordination between NRC and INPO. Finally, NRC and INPO communications are often seen as duplicative causing confusion and waste of resources.

4.0 RECOMMENDATIONS

The analysis of NRC documents and responses from NRC and licensee personnel provided the basis for the following recommendations to improve NRC generic communication of NPP operating experience:

- (1) Clarify NRC expectations of licensee and of NRC regional staff regarding use, tracking, and action on information notices.

Industry respondents, particularly at the corporate level, are concerned with the inconsistent message regarding information notices; officially there are no requirements connected with them, but in fact NRC follows up on industry programs. The AEOD Report recommended development of a new Inspection Module for follow up of licensee operating experience feedback programs. Regional NRC staff find the mandate of resident inspectors (RIs) with regard to notices unclear. The responsibilities of RIs in follow-up of INs need to be specified; a new Inspection Module could serve that purpose; in addition, improving the timeliness of Temporary Instructions (TIs) to Resident Inspectors would facilitate their follow-up role.

- (2) Reduce the number of information notices by raising the threshold of safety significance for them and by making them bulletins when warranted.

There is general agreement that the volume of notices is very high and a reduction would be desirable. This is consistent with AEOD findings. The regional staff as well as industry find coping with the volume difficult. Some NRC staff as well as industry respondents indicated some notices really should be bulletins. While there was considerable support for raising the safety threshold of notices as a way to reduce volume, there was concern among regional staff that not disseminating information on any potential problem could lead to later criticism if incidents were to occur.

Notices have been increasing at both ends of the safety impact continuum. Since very high volume can be counterproductive in achieving concerted industry attention and action to each issue, a process for setting the threshold for bulletins and information notices or identifying safety priority is needed to avoid dilution of resources and to focus attention on the most pressing issues.

- (3) Provide more information on the safety significance of the issues and on appropriate response program in NRC generic communications.

Industry respondents indicated that more specific advice on acceptable ways to respond to specific issues would be very helpful. This is consistent with AEOD's recommendation which calls for more NRC guidance to industry on the process of operating experience assessment. While a more explicit safety prioritization system was considered desirable by many respondents, there was concern, particularly among regional NRC staff, that any formal process would be time consuming and very difficult to implement. Industry is very positive about the current use of examples from other plants and the detailed narrative in the documents. They find the NRC, at times, does not provide a technical contact who can provide assistance beyond what is written in the document. While a formal safety priority system is not recommended, some indication of relative significance in the narrative would be useful. In addition, an indication of the appropriateness of the approaches of other plants discussed would indicate directions acceptable to the NRC while still allowing individual licensee discretion in determining their own course of action.

- (4) Contact utilities earlier regarding issues to be addressed by bulletins and information notices.

Utilities and plants suggested that some type of informal "early warning system" of issues in progress would help them begin to think about their approaches in advance of the official document. An informal contact alerting utilities to an upcoming issue can initiate industry attention to the safety concern.

- (5) Expand informal channels of communication among NRC headquarters, NRC regions, and licensees.

The AEOD analysis recommended expanded discussions with industry on ways to improve operating experience review activities. There was general support for this idea through increased use of workshops on selected issues. Many industry respondents found informal contacts as most useful, particularly with regional staff and Resident Inspectors. Workshops provide a channel for discussing approaches and providing advice in a less official forum than the written document mechanism. Because regional staff are a major contact source for licensees, NRC headquarters needs to focus more attention on keeping regional staff informed of issues in the document development process.

- (6) Do not make major revisions in existing NRC generic communication formats; do not consolidate bulletins, information notices, and generic letters into one information document and continue to publish Power Reactor Events Report and Licensee Events Report.

The AEOD Report recommended consolidation of all operating experience information into one document and termination of the separate PRE and LER compilation publications. The majority of industry and regional NRC respondents disagree with this recommendation. They find the three distinct information documents useful and serving specific purposes. These information documents are identifiable and meaningful to industry. There is limited use and limited knowledge of PRE at the utility and plant level, however those using the document, primarily training managers, find it of high quality and effective for their programs. Very few respondents recommended eliminating the LER publication. Although the PRE Report has a narrow use, it is an important one because of the role of the training manager in communicating new safety information at the plant operations level. Also, there is widespread support for improving the documents by increasing the use of visual aids (e.g., figures and diagrams) where appropriate.

- (7) Develop an electronic communication network for NRC information documents and incorporate the Generic Communications Index (GCI) into such a system.

There was strong industry support for an easy access computer based on-line system to receive documents and to obtain related information through the categorized index of GCI. The AEOD report also recommended consideration of an electronic communication system. NRC staff was also generally favorable to the use of such a system. Expansion of the system to include other documents (such as a NUREG index) was also supported by most respondents. A computerized on-line system would improve access to documents and could assist in coordination of related materials when coupled with an expanded GCI.

APPENDIX A

NRC AND INDUSTRY PROTOCOLS

Position Title: _____

INTERVIEW PROTOCOL

NRC STAFF

A recent analysis by AEOD staff (AEOD/S602) indicated that operating experience information provided by the NRC to licensees is being used only to a limited extent at many plants. Based on issues raised in this report, I and E has undertaken this project in order to identify specific ways to improve the effectiveness of communications from NRC to utilities and plants, focusing on I and E Bulletins and Notices. We will be conducting site visits to one utility and an associated plant in each region to determine how the NRC information is processed and used and to elicit suggestions for improvement. We are also conducting interviews with key NRC staff, both in the regions and at headquarters. Thus, we are interested in your perspectives on areas that could be improved and mechanisms that potentially could be developed for such improvement.

No new regulatory requirements are anticipated for utilities as a result of this study. All responses are confidential; reporting of results will be in aggregate form only.

Definition of communication: a system for sending and receiving messages; the exchange of messages.

1. From your experience, what are some of the best types of communications (e.g., Bulletins, Notices, Generic Letters) to the utilities?
2. From your experience, what are some of the worst types of communications to the utilities?
3. Based on your experience, how serious a problem do you think inadequate licensee attention to NRC information documents is?

(PROBE)

Very serious, somewhat serious, minor problem, not a problem at all.

4. From your experience, what are the greatest difficulties you think licensees face in effectively responding to each of these three types of NRC documents?

(PROBES)

- a. Licensees receive too many to give sufficient attention to each one.
- b. The information is not detailed enough to assess relevance and appropriate action.

- c. Licensees do not get the information to the right people at the plant level.
- d. Plants are not provided with enough resources from parent utility to act on information.
- e. Documents are poorly written and consequently, lack clarity.

Other:

5. What areas need the greatest attention by NRC to improve the effectiveness of these documents?

(PROBES)

- a. The importance of the safety issues addressed in the documents?
- b. Type of information provided (specify e.g., accuracy, level of detail, priority, applicability)
- c. Integration of information from NRC, INPO, Vendors, etc.? (overlap across sources)
- d. Timeliness of notification?
- e. Formatting/writing of the documents?
- f. Monitoring and assessment of actions taken by plants in response to information documents?
- g. Coordination and cooperation between NRC headquarters and regional staff in:
 - preparing documents?
 - monitoring licensee activities?

Other:

6. What mechanisms would you suggest for more effective monitoring and assessment of utility programs for review of and response to safety information?

(PROBES)

Changes to current inspection system? (e.g., formulation of more detailed routine inspection guidance, determining plant specific applicability of notices, use of special inspection teams, more emphasis in SALP assessments?)

7. We are interested in your ideas on ways to make the information provided by the NRC more useful. We'd like your reaction to some specific suggestions for changing the current system.

- a. Consolidate the types of documents provided to utilities to reduce the different kinds of documents sent to utilities.
 - Replace bulletins, notices, generic letters with one NRC information document.
 - Discontinue Power Reactor Events Report.
 - Other ways to consolidate?
- b. The NRC is currently developing a Generic Communications Index (GCI) (to be published as NUREG/CR-4690) to be able to access bulletins and notices more easily (show categorization plan). Would this be useful to you at the regional office?
- c. Expand NRC Generic Communications Index (GCI) (to be published as NUREG/CR-4690) to include Generic Letters in same data base.
- d. Provide additional NRC screening of information within document to ease efficient use by utilities. Screen for:
 - Level of safety significance
 - Specify plants to which applies
 - Listing of licensee personnel categories for whom information is most relevant
 - Listing of applicable categories in GCI

Other:

- e. Expand automated information systems (e.g., electronic mail) for earlier dissemination of information and improved integration of information sources.
 - Make GCI available on line
 - Add indexed NUREG data base to GCI
 - Add GCI to INPO Nuclear Network?
- f. Change writing/formatting (specify how)
- g. Hold workshops with utilities
 - On selected safety issues

- On maintaining effective review and response process.

Other:

8. Do you have any specific suggestions for actions that NRC might take in coordination with others (such as INPO, vendors to improve the communication system?
9. What do you think are the characteristics of a good utility communications programs? (Mention communication process stages as a probe.)

(PROBES)

Who is involved in program, extent of automation, management oversight, etc.

10. What are the two or three most important things the NRC could do that you think would lead to utilities making more effective use of NRC information documents?

Thank you for your time and thoughts on how NRC can improve its communications to the industry.

I wish to reaffirm that all your responses are confidential and the reporting of them will be in aggregate form only.

INTERVIEW PROTOCOL

INDUSTRY

The purpose of this project is to identify specific ways to improve the effectiveness of communications from NRC to utilities and plants, focusing on I and E Bulletins and Notices and NRR Generic Letters. We will be conducting site visits to one utility and an associated plant in each region to determine how the NRC information is processed and used and to elicit suggestions for improvement. We are interested in your perspectives on areas that could be improved and mechanisms that potentially could be developed for such improvement. We will be discussing with you:

- (1) your assessment of NRC communications on safety issues, covering the content, format and process used;
- (2) potential methods to improve communications; and
- (3) how these communications are used at your utility and plant.

PART 1. GENERAL ASSESSMENT OF NRC COMMUNICATION EXPERIENCE

1. What would you say are the best types of NRC communications to the utilities?

(PROBE)

For example, Bulletins, Notices, Generic Letters, AEOD reports.

Why?

2. What are the worst types? Why?

We'd like you to briefly look over this list of bulletins, notices, and generic letters to remind you of the issues covered in the past 2 years. (Hand list of bulletins, notices and generic letters for past two years to interviewee. Ask each question about bulletins, notices, generic letters.)

(Hand interviewee card)

3. Looking over the recent bulletins, how often do they cover top priority safety problems?

Notices?

Generic letters?

4. To what extent are the issues covered relevant to your plant?

Notices?

Generic letters?

5. Can the relevance of bulletins to your plant be determined by the information provided by the NRC?

Notices?

Generic letters?

6. Are the descriptions in bulletins of actions taken by other plants helpful in your determination of whether and what kind of action is appropriate for your plant?

Notices?

Generic letters?

7. Do bulletins cover issues in a timely manner?

Notices?

Generic letters?

8. Are there too many bulletins annually for a plant to give sufficient attention to each one?

Notices?

Generic letters?

9. How frequently are the issues covered by NRC bulletins also covered by other sources?

Notices?

Generic letters?

Here is a figure showing several potential sources of information (hand Figure 1).

10. From your experience, which are the 3 to 4 most useful types of information for the safe operation of your plant?

What makes this source effective?

(Probes, confidentiality, ease of access, time available, quality of technical content, direct relevance to plant)

- 11a. Considering the full range of types of information potentially available (see Figure 1), are there any, in your opinion, that could be eliminated without a loss of important safety information?

Yes _____

No _____

- 11b. If yes, which ones?

12a. Are you aware of any generic issues important to plant safety that have not been addressed by the NRC?

Yes _____ No _____

12b. If yes, what are they?

13. If a specific occurrence (e.g., continued early wearing out of an equipment part) at one of your plants might have generic relevance, how would you get this information to others in the industry?

14. In your experience, what are the major strengths of the NRC information system?

(Probes: issues covered, timeliness, thoroughness of information, etc.)

15. In your experience, what are the major weaknesses of the NRC information system?

(Probes: classification system--some bulletins should be notices, vice versa, lack of confidentiality of responses, issues covered, timeliness, thoroughness of information, etc.)

PART II. METHODS TO IMPROVE COMMUNICATIONS

We are interested in your ideas on ways to make the information provided by NRC more useful. We'd like your reaction to some specific suggestions for changing the current system.

(Hand interviewee response card #2)

1. Consolidate the types of documents provided to utilities.

(a) Replace bulletins, notices, generic letters with one NRC information document

What would be gained (lost) from this change?

(b) Discontinue Power Reactor Events Report

What would be gained (lost) from this change?

2. NRC is currently developing a Generic Communications Index (GCI) (to be published as NUREG/CR-4690) to be able to access bulletins and notices more easily. (Show categorization plan)

(a) What is your reaction to the proposed categorization scheme?

(Probe: appropriateness of categories, usefulness of indexed information)

(b) Expand to include generic letters in same data base

What would be gained (lost) from this change?

3. Provide additional NRC screening of information within document.
 - (a) Level of safety significance
What would be gained (lost) from this change?
 - (b) Generic concern vs. manufacturer dependent
What would be gained (lost) from this change?
 - (c) Listing of personnel information is most relevant for
What would be gained (lost) from this change?
 - (d) Listing of categories applies to on GCI
What would be gained (lost) from this change?
4. Expand automated information systems.
 - (a) Make GCI available on line
What would be gained (lost) from this change?
 - (b) Add indexed NUREG data base to GCI
What would be gained (lost) from this change?
 - (c) Add GCI to INPO Nuclear Network?
What would be gained (lost) from this change?
5. Change writing/formatting.
 - (a) Expand use of figures, diagrams
What would be gained (lost) from this change?
 - (b) Reduce narrative
What would be gained (lost) from this change?
 - (c) Use coded system for characterizing and summarizing information (i.e., style similar to NUREG-0020 [Greybook])
What would be gained (lost) from this change?
 - (d) Replace standard explanation paragraph of notice/bulletin with short action phrases: e.g., "no response to NRC required"
What would be gained (lost) from this change?

- (e) Replace narrative with outline format regarding issue, presentation of past experience and actions at other plants

What would be gained (lost) from this change?

- (f) Eliminate detailed discussion of actions at other plants

What would be gained (lost) from this change?

6. Hold workshops with utilities.

- (a) On selected safety issues

What would be gained (lost) from this change?

- (b) On maintaining effective review and response process

What would be gained (lost) from this change?

- (c) Other topics? (specify)

7. Are there any specific suggestions you have for improving NRC information documents?

8. Are there any specific suggestions you have for improving the process NRC uses for providing you with safety information?

9. Are there additional ways in which NRC could coordinate activities with INPO to improve the communication system?

10. Are there techniques used by other industry information sources such as INPO or commercial information services that the NRC could use to improve communications?

(Probe how other sources are evaluated - whether better, and if so, what makes them more useful?)

11. What would be the most effective way for NRC to be kept informed of your use of information in bulletins, notices, and generic letters and actions your utility has undertaken based on this information?

12. What, in your opinion, are the two or three most important things the NRC could do to help utilities:

APPENDIX B

GENERIC COMMUNICATIONS INDEX

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GENERIC COMMUNICATIONS INDEX

The NRC Generic Communications Index (GCI) contains the printed index of all bulletins, information notices, and circulars from 1971, when such documentation started, to 1986. The NRC plans to update this document periodically. The GCI consists of records, which are single line or row entries, or twenty fields, or columns. A particular field contains the same type of information for all documents. Included are fields for the document identity type (IEB, IEC, or IEIN), year, serial number, revision or supplement number, title, and NRC technical contact, plus two fields each for general system or topic, specific component or topic, cause or defect, potential effect, and remarks. There are three fields to list vendors involved. The list of the categories used for each field is presented on the following page. A list of vendor names that are included in the index also follows. An example of the list of vendors included in Generic Communications Index for 1971 thru 1986 Communications and the categorization subject list for Generic Communications Index (GCI) is included.

LIST OF VENDORS INCLUDED IN GENERIC COMMUNICATIONS INDEX
1971 thru 1986 Communications

A THRU CP	Ca THRU Ga	Ga THRU L	M THRU R	S THRU Y
AECL	Capitol Pipe & Steel	Gamma Pipeliner	MN Mining & Mfg (DM)	SOR, Inc.
ASCO	Chem-Nuclear Corp	Geiger-Muller	Malcolm Foundry	SPEC-2T
	Chicago Bridge & Iron	General Motors	Marathon	S. T. Seemicon
Acurex Aerotherm	Chris-Craft	Golden Gate Forge	Marvin Engineering	Sargent & Greenleaf
Adams and Westlake	Colt Industries	Gould, Inc.	McDonnell-Millen Co.	Schutte & Koerting
Agestat	Combustion Engrg.	Gould-Brown Boveri	Mine Safety Appli.	Scott
Allie Chalmers	Coesip	Gould-Shawmut	Mission Mfg. Co.	Scott Aviation
Alloy Steel Products	Con-Chem, Inc.	Greer Hydraulics	Mitsubishi	Shelwell Services
Amer. Atomics Corp.	Conex		Mobil Oil	Sodeco
Amerace Corp	Consolidated Pipe	Hamwell-Dahl	Morrison-Knudson	Solidstate Controls
American Air Filter	Cooper-Bessemer	Harvard Tyler Pump		States
Amep	Coratomic, Inc.	Henry Pratt Company	NAMCO Controls	States Company
Anaconda	Cornell-Duebiller	Hexcel/MCI	Nordberg	Stone & Webster
Anchor Darling	Corner & Lada, Inc.	Heyer-Scholte	Nortec Corp	Sun Shipyard Corp
Anderson Greenwood	Crane	Hilti	Nuclear Data, Inc.	Survivair
Anker-Wolth	Crosby Valve	Hollinsworth		Swagelok
Assoc Piping & Engr	Cummins	Honeywell	Oxonite Co.	Systems Control
Atomic Energy of Can	Cutler-Hammer	Hydro-Line Mfg Co		
Atwood & Morrill			PAL	TAC
Auburn Steel Company	D.G. O'Brien Co.	ITE	Pacific Pump	Target Rock
Automatic Sprinkler	DIS/ADLPIPE, Inc.	ITE/Siemens-Allis	Pacific Scientific	Terry Turbine
Automatic Switch Co.	Darling	ITT Barton	Pacific Valves, Inc.	Thomas & Betts
Automation Ind.	Dow Chemical Corp	ITT Cannon	Page Company	Torrington Co.
	Bravo Corp	ITT General Controls	Panalar	Transamerica DeLaval
BBC Brown Boveri	Bresser-Consolidated	ITT Grinnell	Panasonic	Tube Turns
Babcock & Wilcox	DuPont	Indstrl Process Engr	Parker-Hannifin	Tube-Line Corp
Bahnsen Co.	Duer Spring	Ingersoll-Rand	Parkwell Labs.	
Barton		Inryco	Paul Monroe Hyd	U. S. Steel
Beau Products	E-Systems, Inc.	Interstate Stl.Sply.	Fearless Pump	UESC
Bechtel	EG&G	Intl Nuclear Safegd	Phoenix Steel Corp.	
Beloit Power Systems	ELMA Engineering		Picker/HMS	V.W.R. Scientific
Bendix	Eberline Instrument	J.T.Baker Chemical	Pittsburg Testing Lb	Valcor Engineering
Bergen-Paterson	Electrical Products		Pratt Company	Velan Engineering
Bethlehem Stl. Corp.	Electro Motive, GMC	Kay-Ray, Inc.	Presray	Velan Valve Corp
Bettis	Exide	Kerr-McGee	Pullean Hg ins	Viking Corporation
Bingham-Willamette		Kineametric		
Biomarine Corp.	Fairbanks Morse	Kulka	R. A. Miller Company	M-K-M Division
Biomarine Industries	Familian Northwest		Radionics, Inc.	Walworth Company
Boeing Company	Fisher Controls Co.	LNQ Inc.	Ray Miller, L. L.	Western Piping
Borg-Warner	Forboro	Liberty Equipment	Raychem	Westinghouse
Brown Boveri	Furmanite	Limitorque	Reliance Electric	William Powell Co.
Bunker Ramo		Lisa, Inc.	Reinord	Wisc. Prot. Coatings
Bussan	GE	Loctite Corp.	Riley-Brzrd, Inc.	Woodward Governor
Byron Jackson	G. H. Pettis Co.	Louis Allis	Robertshaw Controls	
	GNB Batteries, Inc.	Luxfer USA Ltd.	Rockbestos Co.	Varway
C & D, Div. of ELTRA	GPE		Rockwell	Young Radiator
C&D	GTE Sylvania		Rockwell (acnl.)	Youngstown Welding
C.P.Clare	Gamma Industries		Rockwell-Edward	
			Rosemount	
			Rotork	

CATEGORIZATION SUBJECT LIST
FOR
GENERIC COMMUNICATIONS INDEX (GCI)

GENERAL SYSTEM OR TOPIC	SPECIFIC COMPONENT OR TOPIC	CAUSE OR DEFECT	POTENTIAL EFFECT
FOUNDATIONS	SOIL/ROCK	DESIGN	INOPERABLE SAFETY FUNCTION
STRUCTURES, CONTAINMENT	CONCRETE/MASONRY	MANUFACTURING	COMMON MODE FAILURE
STRUCTURES, OTHER	STEEL/TENDONS	CONSTRUCTION	DEGRADED SAFETY SYSTEM
---	STRUCTURAL, OTHER	INSTALLATION	---
REACTOR	---	MAINTENANCE	CAUSE ACCIDENT
REACTIVITY CONTROL	FUEL AND ASSEMBLIES	PROCEDURAL	PERSONNEL HAZARD
REACTOR COOLANT	CONTROL RODS AND DRIVES	TRAINING	OUTAGE
---	REACTOR INTERNALS	PERSONNEL ERROR	DAMAGED EQUIPMENT
DECAY HEAT REMOVAL	---	MISCONDUCT OR FRAUD	NONCOMPLIANCE
AUXILIARY FEEDWATER	TURBINES	CORROSION OR CRACKING	---
ECCS	PUMPS	AGING	RAD RELEASE
CONTAINMENT	STEAM GENERATORS	---	RAD EXP-PUBLIC
---	PIPING	MULTIPLE (MORE THAN 2)	RAD EXP-OCCUPATIONAL
POWER CONVERSION	WELDS	OTHER	---
FIRE PROTECTION	BOLTING		MULTIPLE (MORE THAN 2)
---	DIESEL ENGINES		OTHER
COOLING WATER	MECHANICAL, OTHER		
PNEUMATIC	---		
HVAC	SNUBBERS, MECHANICAL		
INSTRUMENTATION AND CONTROL	SNUBBERS, HYDRAULIC		
REACTOR TRIP	SUPPORTS, OTHER		
ELECTRIC POWER	---		
---	VALVES, MAIN STEAM ISO		
RADWASTE	VALVES, CHECK		
RAD PROT-REACTOR	VALVES, RELIEF		
RAD PROT-NON REACTOR	VALVES, OTHER		
---	ACTUATORS, AIR		
CHEMISTRY	ACTUATORS, MOTOR		
EQUIPMENT QUALIFICATION	ACTUATORS, SOLENOID		
OPERATIONS	ACTUATORS, OTHER		
QUALITY ASSURANCE	---		
ADMINISTRATIVE	ELECTRICAL GENERATORS		
REG GUIDANCE	WIRING AND CABLE		
EMERGENCY PREP	CIRCUIT BREAKERS		
---	RELAYS		
MULTIPLE (more than 2)	SWITCHES		
OTHER	ELECTRICAL, OTHER		

	RAD REGS AND PROGRAM		
	RAD PROTECTIVE EQUIPMENT		
	RAD MONITORING		
	SEALED SOURCES		
	SHIPPING PACKAGES		
	TESTING		
	MULTIPLE (MORE THAN 2)		
	OTHER		
	NA (Not Applicable)		

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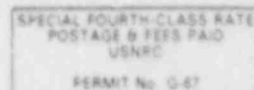
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