Nuclear
Utility
Task
Action
Committee

nutac

ON GENERIC LETTER 83-28, SECTION 2.2.2

Vendor Equipment Technical Information Program

February, 1984

FINAL DRAFT

GENERIC LETTER 83-28

SECTION 2.2.2

Draft Report

Developed By

Nuclear Utility Task Action Committee

for

Generic Letter 83-28, Section 2.2.2

February 9, 1984

Publications produced by a Nuclear Utility Task Action Committee (NUTAC) represent a consensus of the utilities participating in the NUTAC. These publications are not intended to be interpreted as industry standards. Instead, the publications are offered as suggested guidance with the understanding that individual utilities are not obligated to use the suggested guidance.

This publication has been produced by the NUTAC on Generic Letter 83-28, Section 2.2.2., with the support of the Institute of Nuclear Power Operations (INPO). The officers of this NUTAC were Chairman Edward P. Griffing and Vice Chairman Walter E. Andrews.

Utilities that participated in this NUTAC include the following:

Alabama Power Company
American Electric Power Service Corporation
Arizona Public Service Company
Arkansas Power & Light Company
Baltimore Gas and Electric Company
Boston Edison Company
Carolina Power & Light Company
Cincinnati Gas & Electric Company
Cleveland Electric Illuminating Company
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The Toledo Edison Company
Union Electric Company
Vermont Yankee Nuclear Power Corporation
Virginia Electric and Power Company
Washington Public Power Supply System
Wisconsin Electric Power Company
Wisconsin Public Service Corporation
Yankee Atomic Electric Company

EXECUTIVE SUMMARY

This report was prepared by the Nuclear Utility Task Action Committee (NUTAC) on Generic Letter 83-28 "Required Actions Based on Generic Implications of Salem ATWS Events," Section 2.2.2. It describes the Vendor Equipment Technical Information Program (VETIP) developed by the NUTAC in response to the concerns on vendor information and interface addressed in Section 2.2.2 of the generic letter. VETIP is a program that enhances information exchange and evaluation among utilities constructing or operating nuclear power plants and provides for more effective vendor interface.

The NUTAC was comprised of representatives of 56 utilities that are members of the Institute of Nuclear Power Operations (INPO). Staff support for the NUTAC was provided by INPO. This report unanimously presents the final conclusions of the NUTAC and is provided to assist individual utilities in developing specific programs to meet the intent of the generic letter.

Generic Letter 83-28 was developed following investigations by the NRC on the Salem events. As a result of these investigations, the NRC determined that better control and utilization of information regarding safety related components might have helped to prevent these events. The NUTAC identified a program to better ensure that plant personnel have timely access to such information.

The NUTAC efforts were guided by the recognition that individual utilities have the greatest experience with and are most cognizant of the application of safety-related equipment. Vendor involvement with such equipment is generally greatest during construction and initial operation of the plant. Vendors are not familiar with the surveillance or maintenance histories, nor with the application of the equipment or its environment. This type of information is most readily available at the plant level within individual utilities.

Based on this recognition, the NUTAC investigated the mechanisms currently available to facilitate information exchange among utilities. The NUTAC identified four activities that currently address information about

safety-related components. These are routine utility/vendor and utility/regulator interchange, and the SEE-IN and NPRDS programs managed by INPO.

It was the assessment of the NUTAC that these existing activities, if properly integrated and implemented, would provide a framework for an overall program to ensure effective communication of safety related information among all utilities. Accordingly, the program developed to accomplish this goal (VETIP) utilizes the existing efforts as elements of a more comprehensive program.

The VETIP combines these existing programs, incorporating enhancements, with a coordinated program within each utility. A key element of the VETIP is the development by each utility of an active internal program to contribute information to the NPRDS and SEE-IN programs and to utilize the results of these programs.

The effectiveness of the VETIP will be determined by the level of utility participation in these programs. To implement the VETIP, each utility should assess the type of information currently being provided to NPRDS and SEE-IN and expand the scope of reporting if appropriate. Additionally, each utility should evaluate current administrative controls for reporting information and for disseminating the results of the NPRDS and SEE-IN programs to the plant level. These administrative controls may require modification to ensure that effective coordination is established. Concurrent with these efforts, enhancements will be made to both NPRDS and SEE-IN by INPO within its present institutional objectives.

The VETIP has been developed to ensure that nuclear utilities have prompt access to and effective handling of safety-related equipment technical information. In addition, it is responsive to the intent of Generic Letter 83-28 Section 2.2.2. Further details are provided in the body of this report.

FOREWORD

On February 22 and 25, 1983, during startups of the Salem Unit 1 plant, both reactor trip breakers (Westinghouse model DB-50) failed to open on an automatic trip signal. As a consequence, the Nuclear Regulatory Commission (NRC) formed an investigating task force to determine the factual information pertinent to the management and administrative controls that should have ensured proper operation of the trip breakers. The findings and conclusions of the task force are documented in NUREG-0977, "NRC Fact Finding Task Force Report on the ATWS Events at the Salem Nuclear Generating Station, Unit 1, on February 22 and 25, 1983". A second task force determined the extent to which these investigative findings were generic in nature. The NRC subsequently issued NUREG-1000, "Generic Implications of ATWS Events at the Salem Nuclear Power Plant" and Generic Letter 83-28, "Required Actions Based on Generic Implications of Salem ATWS Events."

On September 1, 1983, a group of utility representatives met at the offices of the Institute of Nuclear Power Operations (INPO) to discuss the establishment of an ad hoc utility group to address issues relative to the NRC Generic Letter 83-28, Section 2.2.2. The representatives decided that such a group could provide direction that would be of generic benefit to the utilities and consequently formed the Nuclear Utility Task Action Committee (NUTAC) on Generic Letter 83-28, Section 2.2.2. The specific charter for the NUTAC (Appendix A) was adopted, and the target date for completion of activities was established as February 1984.

TABLE OF CONTENTS

1. INTRODUCTION

The objective of Generic Letter 83-28, Section 2.2.2 (Appendix D), is to improve the safety and reliability of nuclear power generating stations by ensuring that the utilities are provided with significant and timely technical information concerning reliability of safety-related components. In a typical nuclear station, hundreds of vendors supply the thousands of components that perform safety-related functions. The variations in vintage and design of plants ensure that although common applications of specific components may exist, there are an equal or greater number of unique applications. To attain the objective in a cost-effective and efficient manner, this NUTAC has developed the program outlined in this document. This positive program has been found to be the most realistic approach to attain the objective.

The Vendor Equipment Technical Information Program (VETIP) described in this document establishes a more formal interaction among the major organizations involved with commercial nuclear power generation. The goal of the interaction is to improve the quality and availability of equipment technical information for use by the utilities. The major components of the VETIP are an information transfer system and a centralized evaluation of industry experiences.

This document provides the unanimous NUTAC position on the guidelines for an effective technical information program. The determination of each individual utility to support and utilize these guidelines is the key to the effectiveness of this program for the industry as a whole. The program does not require the use of nor prescribe standard administrative procedures, but it allows the use of plant-specific procedures compatible with the utility's internal organization and needs. However, the recommendations in this document provide the basis for a uniform industry response to NRC questions and requirements relative to a technical information program. This program will be beneficial to the utilities and, at the same time, it will be responsive to Section 2.2.2 of the NRC Generic Letter 83-28.

2. ACRONYMS AND DEFINITIONS

2.1 Acronyms

A/E	- Architect-Engineer
AEOD	- Office of the Analysis and Evaluation of Operational Data
ATWS	- Anticipated Transient Without Scram
CFR	- Code of Federal Regulations
EPRI	- Electric Power Research Institute
ETI	- Equipment Technical Information
IEB, IEN	- Inspection and Enforcement Bulletins and Notices, issued by the NRC
IEEE	- Institute of Electrical and Electronics Engineering
INPO	- Institute of Nuclear Power Operations
LER	- Licensee Event Report, issued by a utility
MOR	- Monthly Operating Report
NPRDS	- Nuclear Plant Reliability Data System
NRC	- Nuclear Regulatory Commission
NSAC	- Nuclear Safety Analysis Center
NSSS	- Nuclear Steam Supply System
NUTAC	- Nuclear Utility Task Action Committee
O&MR	- Operations and Maintenance Reminder
PRA	- Probabilistic Risk Assessment
QA	- Quality Assurance
SEE-IN	- Significant Event Evaluation and Information Network
SER	- Significant Event Report
SOER	- Significant Operating Experience Report
VETIP	- Vendor Equipment Technical Information Program

2.2 Definitions

Component - A component is a mechanical or electrical assembly (including instruments) of interconnected parts that constitute an identifiable device or piece of equipment. Examples of electrical components include a drawout circuit breaker, a circuit card, instruments, or other subassemblies of a larger device that meet this definition. Examples of mechanical components include valves, piping, pumps and pressure vessels, and associated prime movers and/or operators.

Equipment Technical Information (ETI) - For the purposes of this report, this term includes, as a minimum, the following documentation:

- o vendor-supplied engineering and technical information (drawings, manuals, etc.) and changes thereto
- o equipment qualification data (provided by the equipment vendor or qualification lab)
- o industry-developed information, including utility and NRC-originated information (NPRDS, SER, IEB, IEN, etc.)

NUCLEAR NETWORK - An information service provided through INPO. (NUCLEAR NETWORK replaced NUCLEAR NOTEPAD.)

NUREG - Guidance documents issued by the NRC.

Safety-Related - Safety-related structures, systems, and components are those relied upon to remain functional during and following design basis events to ensure (1) the integrity of the reactor coolant pressure boundary, (2) the capability to shut down the reactor and maintain it in a safe shutdown condition, and (3) the capability to prevent or mitigate the consequences of accidents that could result in potential off-site exposures comparable to the guidelines of 10 CFR Part 100.

Vendor - For the purposes of this report, this term is used to identify the manufacturer of the component concerned and/or those who provide the related equipment technical information.

3. VENDOR EQUIPMENT TECHNICAL INFORMATION PROGRAM (VETIP) DESCRIPTION

The VETIP includes interactions among the major organizations involved with commercial nuclear power generation. As illustrated in Figure 1, a utility exchanges safety-related equipment information with vendors, NRC, INPO and other utilities via reports, bulletins, notices, newsletters, and meetings. The purpose of these information exchanges is to share equipment technical information to improve the safety and reliability of nuclear power generating stations. The NUTAC concluded that the lack of information is not a problem, but that the various information systems available are not integrated properly. The purpose of VETIP is to ensure that current information and data will be available to those personnel responsible for developing and maintaining plant instructions and procedures. These information systems and programs currently exist and are capable of identifying to the industry precursors that could lead to a Salem-type event. VETIP is an industry-controlled and mainly hardware-oriented program that does not rely on vendor action, other than the NSSS supplier, to provide information to utilities. Instead, VETIP provides information developed by industry experience through SERs and SOERs to the vendor for comment before it is circulated to the utilities concerned.

The majority of information provided by vendors is commercial in nature. This usually is provided voluntarily by the vendor, but does little to improve the safety or reliability of existing equipment.

A vendor-oriented program to provide information that would improve the safety and reliability of existing equipment relies on the vendor having an internal program to develop the information. Such programs typically are not in existence. Following design and qualification testing, vendors normally do not continue extensive testing or engineering programs in anticipation of equipment problems. Subsequent failures discovered during operations require several steps to complete the information feedback loop. For example, when a problem occurs and a local vendor representative provides a solution, he would have to provide that information to the vendor headquarters. Then, the headquarters would need a tracking program to identify a trend and subsequently a program to provide the information to the industry. In addition, the vendor often is not in the

best position to analyze the failure. The vendor is not always aware of the component's application and environment nor its maintenance and surveillance history.

The VETIP recognizes that the utility user is in a unique position. The utility user alone has immediate access to the maintenance and surveillance history of the equipment. The utility, not the manufacturer, knows the component's actual application and environment. The utility is the primary source of information on the failure, and the utility has the greatest need for the solution. As such, the utility is the central organizer in any approach to the solution, whether or not the manufacturer gets involved. The utility is in the position to know of the failure analysis and its solution at the earliest possible time. The utility can then disseminate the information to other utilities, with an indication of its significance and urgency.

By sharing the operating history, problems, and solutions within the nuclear industry, independent of any normal vendor contacts, the other users will be informed in a much more timely and uniform way. In this way, the distribution of information is controlled entirely by the nuclear utility industry. The programs which comprise the VETIP are currently in existence. The recommended enhancements contained within this report are suggested ways to improve the current use and application of these existing programs.

3.1 Existing Programs

The existing systems and programs included in the VETIP are the Nuclear Plant Reliability Data System (NPRDS) and the Significant Event Evaluation and Information Network (SEE-IN), both managed by INPO. Also, the VETIP includes existing programs that the utilities now conduct with vendors and other sources of ETI, particularly the NSSS vendor interaction programs and the NRC reporting programs that disseminate significant failure information. Utility-vendor interaction is further enhanced by the INPO supplier participant practices. Through participation in this program, NSSS vendors and A/E firms are working toward greater participation in the NPRDS and SEE-IN programs.

3.1.1 Nuclear Plant Reliability Data System (NPRDS)

NPRDS is an industrywide system managed by INPO for monitoring the performance of selected systems and components at nuclear power plants. INPO member utilities have agreed to participate in the program. U.S. plants in commercial operation (except for six atypical, early vintage units) supply basic engineering information and subsequent failure data on the selected systems and components (typically six to seven thousand components from some 30 systems per unit). The value of NPRDS lies in the ready availability of this data base to operation and engineering groups for a broad range of applications. The criteria used to determine the scope of NPRDS reports are as follows:

- o systems and components that provide functions necessary for accident mitigation
- o systems and components for which loss of function can initiate a significant plant transient

Uniform scoping and reporting criteria are set forth in the Nuclear Plant Reliability Data System (NPRDS) Reportable System and Component Scope Manual (INPO 83-020) and in the Reporting Procedures Manual for the Nuclear Plant Reliability Data System.

To support the benefits that can be obtained from NPRDS usage, utilities submit three kinds of information to the NPRDS data base: engineering/test information, failure reports, and operating history. The engineering/test record on a component contains information necessary to identify the component and its application, such as manufacturer, model number, operating environment, size, horsepower, and test frequencies. The information is submitted when the component is placed in service and is stored in the data base. If that component fails to perform as intended, a report is submitted containing a description of the failure mode and cause, the failure's effect on plant operations, corrective actions taken, and other

information necessary to assess the failure. On a quarterly basis, utilities submit information on the number of hours the plant is in different modes of operation. This information is used in conjunction with the engineering and failure reports to generate failure statistics for systems and components.

The data is retrievable from a computer, and the engineering and failure information can be combined in various ways. A search of the failure records can identify problems experienced with components in other plants and the corrective actions taken. There are several hundred searches of the data base in a typical month. Following are some example uses of the data base:

Utility and Plant Staffs

- o accessing comprehensive equipment history files to support maintenance planning and repair
- o avoidance of forced or prolonged outages by identifying other plants with similar or identical equipment that may have spares for a possible loan
- o determination of spare parts stocking, based on industry mean time between failures
- o comparison of component failure rates at a given plant with the industry average failure rates

Design Groups

- o identification of common failure modes and causes
- o selection of vendors based on component application and performance
- o identification of component wearout and aging patterns
- o studies of component performance as a function of operating characteristics, such as test frequency and operating environment
- o input to plant availability improvement programs

Operating Experience Reviewers

- o identification of significant failure modes affecting safety or availability
- o trending of component failure rates
- o development of failure probability estimates for use in fault tree analyses (reliability or PRA studies)

NPRDS data is available to users through various quarterly and annual summary reports and through on-line access of the data from a computer terminal.

3.1.2 Significant Event Evaluation and Information Network (SEE-IN)
Since the early days of nuclear power plant operations, utilities and manufacturers have attempted to share what has been learned from plant operating experience. As nuclear technology becomes more complex and more demanding, the need for sharing operating experience continues to grow and becomes more important. The safety benefits of avoiding problems already encountered and resolved more than justifies the costs and extra effort required for utilities to keep each other informed. The Nuclear Safety Analysis Center (NSAC), with the support of its utility advisory group, began developing a program to share information learned from analyzing nuclear plant experiences. Shortly after its formation in late 1979, the Institute of Nuclear Power Operations (INPO) joined NSAC in the development and implementation of the program. The program has been named "Significant Event Evaluation and Information Network" (SEE-IN). In 1981, the management of the SEE-IN program became the sole responsibility of INPO.

Objective

The objective of SEE-IN is to ensure that the cumulative learning process from operating and maintenance experience is effective and that the lessons learned are reported in a timely manner to improve plant safety, reliability, and availability. This objective is met by screening available nuclear

plant event information systematically, identifying and evaluating the important or significant events, and communicating the results to the utilities and appropriate designers and manufacturers.

Scope

The functional approach to SEE-IN is an eight-step process outlined in Appendix C. While INPO has the program management function, no single organization is responsible for performing all of these functions; rather, the responsibility is spread among key participants in the network. The principle organizations involved in the initial screening of plant event data are the utilities and INPO. Each nuclear utility has an in-house program to screen events that occur in its nuclear plant(s). INPO has a broader charter to screen all nuclear plant events. The sources of input to the screening process include NPRDS, NUCLEAR NETWORK, NRC-mandated reports, IEBs, IENs, etc. The provision to control the data normally is governed by agreements between INPO and the supplying organization (e.g., utilities, NRC, NSSS vendors, international participants, etc.). When a significant event or trend has been identified from the screening process, a Significant Event Report (SER) is prepared by INPO and transmitted to the utilities and other participants on NUCLEAR NETWORK. This event then undergoes an action analysis by INPO. The purpose of the action analysis is to investigate the event or trend in more detail and to develop and evaluate practical remedies. For events requiring utility action, the results of the action analysis are communicated to the utilities, normally in the form of a Significant Operating Experience Report (SOER). In these instances, recommendations are made to resolve the underlying problems. The implementation of applicable recommended remedial actions is the responsibility of the individual utility. Implementation may include changes in plant procedures, equipment design, and/or operator training programs. The two final steps in the SEE-IN process are (1)

feedback and evaluation of actions taken by the utilities as a result of information provided through SEE-IN and (2) periodic assessment of the process effectiveness by INPO.

The SEE-IN program provides copies of draft SERs and SOERs to the affected vendors for review. Vendor comments are considered in preparation of final SEE-IN reports. Once finalized, the reports are sent to the utilities.

The SEE-IN program includes a cross-reference capability to identify SERs, SOERs, LERs, etc. which report component problems that could cause a significant event. This cross-reference facilitates utility review of the component's prior history before using that component in a safety-related application.

Program Operation

Plant operating experience data is reviewed from several perspectives including design, component and system performance, plant procedures, human factors, personnel training, maintenance and testing practices, and management systems to identify significant events and trends.

Formal Review Sources

A formal review is conducted on NRC information notices, bulletins, AEOD reports, event-related generic letters, etc. A formal review also is conducted on industry-prepared information (including those required by NRC) such as LERs, monthly operating reports, NRC event-related reports, NSSS technical bulletins, NPRDS data, NUCLEAR NETWORK operating experience entries, international operating experience reports, construction deficiency reports, safety defect reports, and trends identified as significant in the INPO NPRDS and LER data bases. The formal review includes a dual, independent screening process. The review status is documented and tracked by computer.

Other sources of operating experience information are used by the SEE-IN program on an ad hoc basis as reference or supplemental material but do not receive a formal review. The sources include such items as NRC NUREG documents, EPRI and NSAC reports, and other industry reports or data concerned with plant operating experience. The INPO process for screening is shown in Figure 2.

Utility Contact (SEE-IN)

In addition to the formal and reference information sources, another vital information source is direct contact with power plant technical personnel on an ad hoc basis. Each utility designates a SEE-IN contact to respond to questions from INPO on plant events. The majority of such communications is handled over the telephone or via NUCLEAR NETWORK. Files are maintained by INPO on nuclear utilities and contain names and telephone numbers of designated contacts, telecopier numbers, status of nuclear units (i.e., operating, under construction or planned) and NSSS vendor(s).

3.1.3 Interaction With Vendors

In the interest of operating the plant safely and efficiently, the utility-vendor contact is essential. To accomplish this goal, utilities already interact with various vendors.

The contractual obligations for furnishing equipment and software (manuals, drawings, etc.) are fulfilled upon acceptance at the plant site. Interaction between utilities and vendors due to deficiencies may be brought about by the reporting requirements of 10CFR21 and 10CFR50.55(e). The continuing contract with vendors for warranty obligations or maintenance work are two examples of active interaction after an initial purchase. In addition, much of the interaction with the vendors during plant life is initiated in response to

significant failures, to failure trends experienced at the plant, to spare parts procurement, or to subsequent purchase orders of new equipment.

The interaction with the NSSS vendor, who typically supplies a large portion of the safety-related plant equipment, is generally more active than with the other vendors. There are existing channels through which the NSSS suppliers disseminate information of interest to their client utilities. These include the following:

- In regular meetings, NSSS representatives outline recent developments and maintenance/design recommendations. Any special concerns of the utility can be addressed in follow-up correspondence with the NSSS supplier's service department.

- Bulletins or advisories from the NSSS supplier's service department alert client utilities to special problems experienced by similar plants. Typically included in this correspondence are a description of the problem and the corrective actions taken to resolve it. Recommendations for preventive actions or for particular cautions to be considered by the utility usually are included.

- Owners groups provide an additional forum for the exchange of information that may be of generic interest to member utilities. For example, problems in the design or operation of a system or component may be shared with the group and potential resolutions identified. The owners groups' efforts often are directed at seeking improvements or anticipating problems rather than being only reactive in nature. Improvements in availability or testing and maintenance procedures are examples of positive results that have come about through owners groups activities. The NSSS supplier makes his broadly-based knowledge available to the group for the specialized evaluations that may be required.

3.1.4 Regulatory Reporting Requirements

Other existing sources of information are the documents that result from the NRC's reporting requirements. These documents include 10CFR21 reports, 10CFR50.55(e) reports, Licensee Event Reports, and NRC Inspection & Enforcement (IE) Bulletins and Information Notices. 10CFR21 specifies reporting requirements relating to component or system deficiencies that may create a substantial safety hazard. This reporting provides the nuclear utility industry notification of significant noncompliances and defects identified by other utilities, architect-engineers, constructors, vendors, and manufacturers associated with nuclear facilities.

10CFR50.55(e) requires that the holder of a construction permit notify the NRC of each deficiency found in design and construction, which were it to remain uncorrected, could affect the safe operation of the nuclear power plant adversely.

10CFR50.73 requires the holder of an operating license for a nuclear power plant to submit a Licensee Event Report (LER) for events described in 50.73(a)(2). These LERs are incorporated into the INPO LER data base which provides information to identify and isolate precursor events and identify emerging trends or patterns of potential safety significance.

The NRC Office of Inspection and Enforcement (IE) issues various documents, including bulletins and information notices, to inform licensees and construction permit holders of significant concerns that may result from the NRC evaluation of reports, as required by 10CFR21.21, 50.55(e), and

50.73. These documents provide the nuclear utilities with information on events and concerns that are considered significant by the NRC.

3.2 Recommended Enhancements to Existing Programs

The following are recommended enhancements to the existing programs. INPO and the NPRDS Users Group should investigate the feasibility of these recommendations. If found feasible, an implementation program should be developed.

3.2.1 Enhancements to NPRDS

- The present definition of component in NPRDS (extracted from IEEE 603-1980) is more applicable to electrical components. The definition should be improved to describe mechanical components better.

- The present failure reporting guidance needs improvement in the following areas:
  - -- Guidance is needed to provide better information for analyzing the role of piece parts as a factor in causing component failures.

  - -- The guidance should be revised to indicate that utilities should supply information when inadequate vendor information is identified as a causal or contributing factor in a failure. The guidance should provide users of the data base the ability to readily retrieve those failures involving inadequate vendor information (example, key word sorting, coding).

  - -- Present failure reports are often sketchy in providing details of the failure analysis conducted by utilities. The guidance should emphasize the importance of providing more complete results of failure analysis when one is conducted. Although detailed failure analyses are not always conducted for every failure,

when they are conducted they should be provided in NPRDS failure reports. In this way, the SEE-IN program and other utilities can derive more benefit from the work of each utility.

- Utilities should develop internal methods to ensure that their NPRDS reports are clear and complete and that the program guidance is followed appropriately.

- For some failures it may not be possible for utilities to provide a complete failure description within the time frames for reporting to NPRDS. Utilities should still submit preliminary failure reports within the established time frame. Utilities should revise these reports when the necessary information is available. However, the present system does not provide methods for utilities to indicate that reports will be revised later. NPRDS should be modified to permit each utility to readily identify which of their reports still requires follow-up information. Utilities should report a failure event promptly and include an initial analysis. Detailed and complete information should be provided in a timely manner once final analysis has been completed.

- The present scope of NPRDS reporting may not meet all the needs of individual utilities for monitoring the reliability of their own safety-related components. Each utility that decides that additional systems and components should be added to their basic scope of NPRDS systems and components should request that INPO accept these systems. INPO will consider these requests, identify the additional resource requirements needed to handle these requests, and notify utilities when it is able to accept additional information.

3.2.2 Enhancements to SEE-IN

- o Reports should be generated for potential failures caused by faulty or missing vendor-supplied information or other ETI. The VETIP recognizes that the utility will uncover errors in ETI (e.g., during review of the information, writing of instructions, testing, etc.) before anyone else. It is recommended that ETI faults be reported over NUCLEAR NETWORK for review by INPO under the SEE-IN program.

- o The SEE-IN program should be broadened by INPO to improve the ability to trend NPRDS data. Present methods of trending are largely qualitative and subjective in nature. They depend largely on the ability of analysts to recognize the need to look for degrading or unacceptable system and component reliability. INPO should develop methods to use NPRDS in a more quantitative fashion to detect trend problems. This enhancement is presently under development by INPO.

3.3 Summary Example

One problem that led to the Salem event was that the information contained in the NSSS vendor technical bulletin (issued in 1974) was not processed appropriately and therefore not incorporated into plant procedures. If the systems which comprise the VETIP were functional in the early 1970s, this oversight probably would not have occurred or would have been rectified. Westinghouse had prepared the technical bulletin based on a precursor event that occurred at another nuclear unit. This type of precursor event would have required that an LER be written and submitted to the NRC. At the same time, an NPRDS failure report would have been submitted to the INPO data base. INPO also would have reviewed the Westinghouse technical bulletin and the LER. The current criteria for significance screening used by INPO personnel identify this type event as a significant single failure. It is highly likely that an SER would have been generated by INPO and disseminated to utilities via NUCLEAR NETWORK.

Utilities would have reviewed the SER through their Operating Experience Report review programs.

In addition, utilities would have had an ongoing program with their NSSS vendors to obtain ETI. Utilities would have had systems in place to track and process this information. Therefore, there are two pathways which would have ensured this type of information was received and evaluated by the utility:

- o NPRDS/SEE-IN (SERs, SOERs)
- o NSSS vendor technical bulletins

The utility's VETIP procedures would have assessed this information and effected positive action to correct the failed component.

4. IMPLEMENTATION OF VETIP

4.1 Responsibilities For Implementation

4.1.1 Utility Implementation Responsibilities

4.1.1.A Existing Programs

- o NSSS Vendor Contact

  Each utility should have with its NSSS supplier, a program in place to obtain technical information. This program consists of a technical bulletin system and necessary direct contact with the NSSS supplier.

- o NPRDS/SEE-IN

  Each utility should indicate or reaffirm its active participation in the NPRDS and SEE-IN programs. The utility should supply the necessary basic information and should report failures and problems on a timely basis. Adequate internal controls should be in place to ensure that this activity is timely, consistent, and controlled and should include incorporation of future revisions to these programs.

- o Other Vendors

  Each utility should continue to seek assistance and ETI from other safety-related equipment vendors when the utility's evaluation of an equipment or ETI problem concludes that such direct interaction is necessary or would be beneficial. These problems and those of lesser significance will continue to be reported by means of the NPRDS and/or the SEE-IN programs.

o Internal Handling of Equipment Technical Information

The utility should process incoming ETI so the objectives noted below are achieved.

-- Administrative procedures should provide control of incoming ETI whether it arrives directly from the vendor or from other industry or regulatory sources (i.e., NUCLEAR NETWORK, NPRDS, SEE-IN, NRC bulletins, etc.), so it receives the appropriate engineering/technical review, evaluation, and distribution for the following:

- prompt warnings to key personnel

- timely incorporation into maintenance or operating procedures, equipment data/purchasing records, and training programs

- future procedure review and revision cycles

- notification on NUCLEAR NETWORK of significant ETI

The incorporation of such safety-related information (or changes) remains within the scope of the utility's review and approval requirements.

-- The administrative program should require that maintenance or operating procedures cite appropriate ETI in the reference section of the procedure.

-- Within the performance section of the procedure, appropriate ETI should be incorporated and approved in the engineering, technical and quality review of the safety-related procedure.

o Internal Handling of Vendor Services
The vendor, contractor or technical representative who will perform safety-related services should be an approved/qualified supplier of such nuclear safety-related services. Furthermore, the services should be specified in the procurement documentation so that, depending on the circumstances, a combination of the following controls are established:

The service is performed using utility procedures that have been approved after a technical and quality review cycle typical for other utility service, maintenance, repair, or operating procedures.

-OR-

The service is performed using the vendor, contractor or technical representative procedures that have been reviewed and approved in accordance with utility procurement program, QA program, and administrative review program so that their documents are processed and approved in a manner equivalent to the utility procedures concerning similar activities.

-AND-

The activity will be performed under the cognizance of the utility QA/QC program.

-OR-

The activity will be performed under the cognizance of the vendor, contractor or technical representative QA/QC program that has been reviewed separately and approved in accordance with the utility QA program. In addition, during the performance of the service, the utility QA program will monitor the effectiveness of their performance and compliance with its approved program by suitable surveillance, inspection and audit.

In addition to the above, ETI provided in conjunction with performance of vendor services should be handled as described above.

4.1.1.B Enhanced Programs

- NPRDS

  Each utility should incorporate the enhancements to the NPRDS recommended in Section 3.2. This could involve revisions to existing administrative programs or procedures. It also could require revised training or other actions needed to ensure a meaningful and effective implementation of the NPRDS program enhancements.

- SEE-IN

  Each utility should incorporate the enhancements to the SEE-IN program recommended in Section 3.2. As in the NPRDS program, this could involve revisions to existing administrative programs or procedures or to training or other activities so

the data reported to the SEE-IN program is complete and detailed enough to support the system enhancements being undertaken by INPO.

4.1.2 INPO Implementation Responsibilities

- o Existing Programs
  The NUTAC determined that present NPRDS/SEE-IN programs, properly used, currently provide an adequate framework for the effective exchange of information.

- o Enhanced Programs
  INPO should implement the enhancements of the NPRDS and SEE-IN programs (noted in Section 3.2) to augment this VETIP.

4.2 Schedule for Implementation

4.2.1 Existing Programs

Utilities that find that their existing internal program and procedures do not support those outlined in Sections 3.1 and 4.1.1.A above should make the necessary timely revisions as part of the established review and updating cycle for such documentation. A specific schedule should be established by the individual utility with a target date for full implementation by 1/1/85.

4.2.2 Enhancements to Existing Programs

4.2.2.A INPO should work with the NPRDS users group with the goal of establishing schedules by July 1, 1984, for implementation of the enhancements of the NPRDS program.

4.2.2.B Utilities should incorporate the enhancements to the NPRDS and SEE-IN programs, recommended in Section 3.2 and 4.1.1.B above into their internal program and procedures on a timely basis.

4.2.2.C Schedules should be established which are consistent with an overall goal to implement the recommended enhancements to both programs by January 1, 1986.

VETIP BLOCK DIAGRAM

2/9/87

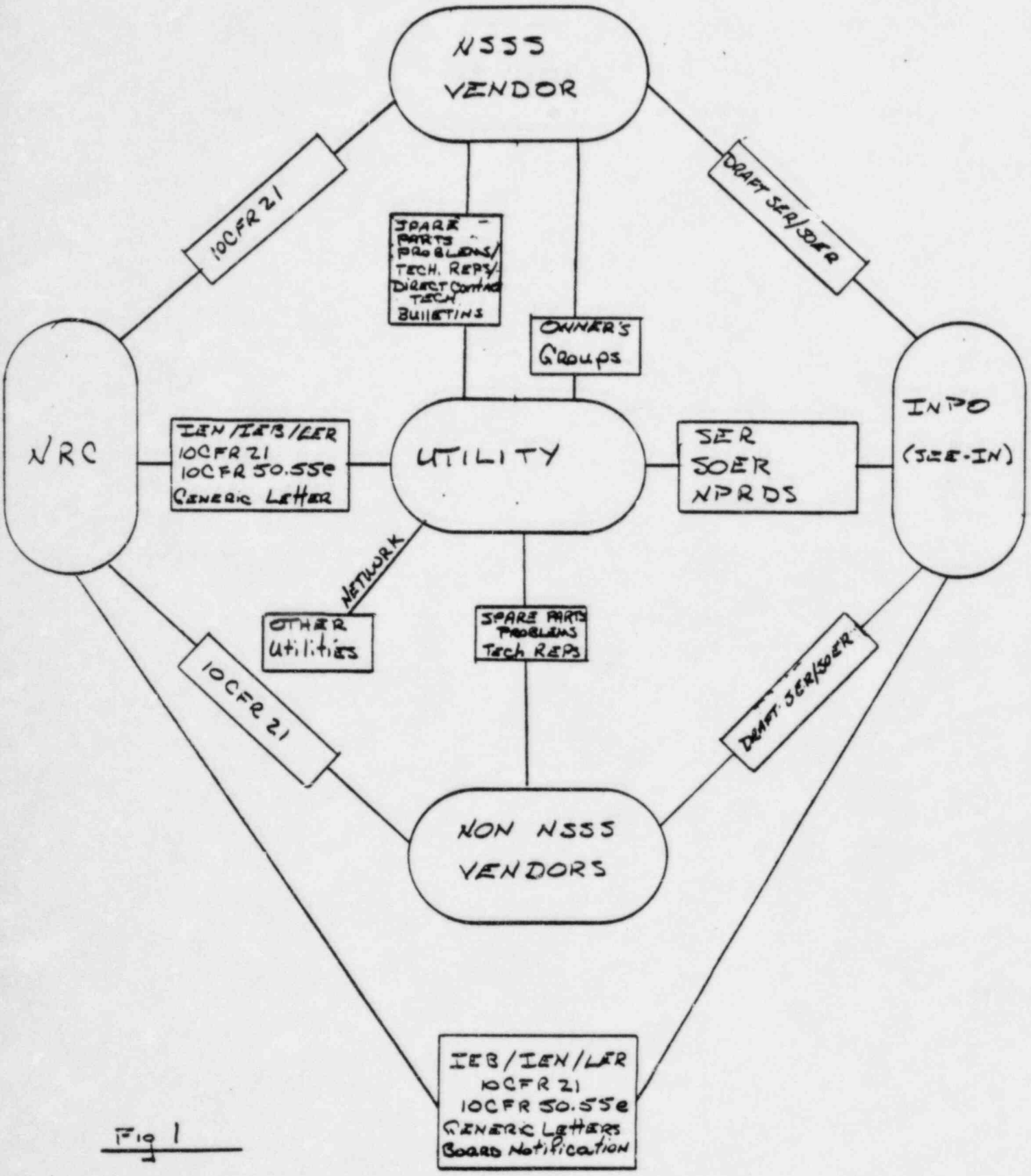
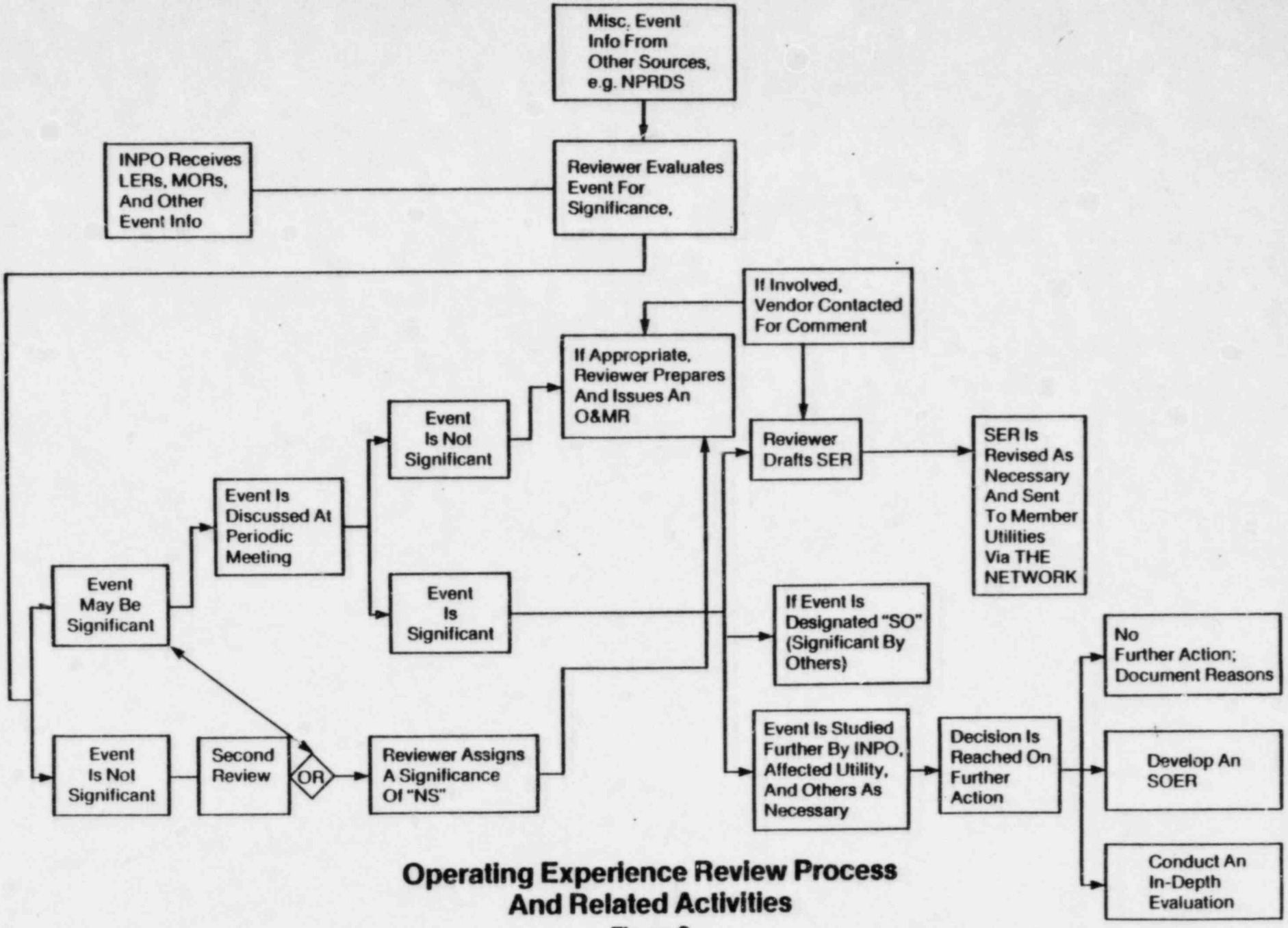


Fig 1



Operating Experience Review Process And Related Activities

Figure 2

APPENDIX A

SPECIFIC CHARTER FOR
NUCLEAR UTILITY TASK ACTION COMMITTEE
ON GENERIC LETTER 83-28,
SECTION 2.2.2

APPENDIX A

SPECIFIC CHARTER FOR
NUCLEAR UTILITY TASK ACTION COMMITTEE
ON GENERIC LETTER 83-28,
SECTION 2.2.2

This Nuclear Utility Task Action Committee (NUTAC) has been established by a group of utility representatives who have recognized a need for nuclear industry guidance on Generic Letter 83-28, Section 2.2.2. The establishmen of this NUTAC has been in accordance with the general charter overning the organization and operation of a NUTAC, as approved by the Institute of Nuclear Power Operations (INPO) Board of Directors. This NUTAC is committed to compliance with this specific charter, its bylaws, and the general charter. This charter has been reviewed and approved by the chairman of the Analysis and Engineering Division Industry Review Group and the president of INPO, and the president of INPO authorizes staff support for this NUTAC.

This committee has adopted the following objective to ensure fulfillment of the goal of achieving industry consensus and guidance on Generic Letter 83-28, Section 2.2.2.

- development of guidance for use by utilities in response to Generic Letter 83-28, Section 2.2.2

To ensure that this objective results in products that are of generic benefit to the utilities, voting membership on this committee is limited to permanent employees of U.S. nuclear utilities. The chairman and vice chairman of this committee will be permanent employees of U. S. nuclear utilities and will be elected by the NUTAC from a list of candidates approved by the chairman of the sponsoring IRG. To further ensure that this NUTAC provides products that are of generic benefit to utilities, the NUTAC chairman will maintain close liaison with the sponsoring INPO Industry Review Group.

Additionally, this NUTAC should establish liaison with other recognized industry groups, such as AIF, ANS, EEI, EPRI, and NSSS owners groups and will maintain communication on this industry initiative with the NRC, as appropriate.

Approved: Edward P. Griffing 9/1/83 R B McDonald 9/21/83
Chairman, NUTAC Date Chairman, IRG Date

Walter E. Cadman 9/1/83 E B Wilkinson 9/21/83
Vice Chairman, NUTAC Date President, INPO Date

APPENDIX B

LIST OF REFERENCES

APPENDIX B

List of References

1. NRC Generic Letter 83-28 dated July 8, 1983
Required Actions Based on Generic Implications of Salem ATWS Events

2. NUREG 0977 - NRC Fact-Finding Task Force Report on the ATWS Events at Salem Nuclear Generating Station Unit 1 on February 22 and 25, 1983

3. NUREG 1000 - Generic Implications of ATWS Events at the Salem Nuclear Power Plant

4. Significant Event Evaluation and Information Network (SEE-IN) Program Description (INPO 83-001)

5. Nuclear Plant Reliability Data System (NPRDS) Reportable System and Component Scope Manual (INPO 83-020)

6. Reporting Procedures Manual for the Nuclear Plant Reliability Data System

7. 10CFR21 - Reporting of Defects and Noncompliance

8. 10CFR50 - Domestic Licensing of Production and Utilization Facilities

9. IEEE 603-1980 - Standard Criteria for Safety Systems for Nuclear Generating Stations

APPENDIX C

SEE-IN FUNCTIONS

APPENDIX C

SEE-IN Functions

1. Provide basic report of plant event. (utilities)

2. Screen events for significance and transmit Significant Event Reports (SERs) via NUCLEAR NETWORK. (utilities and INPO with vendor input solicited when specific product is identified)

3. Provide backup data on contributing factors and probable causes and consequences. (utilities and vendors)

4. Perform action analysis on significant events to evaluate possible options for short-term remedies and feasible long-term solutions that might be implemented. (utilities, INPO, and vendors)

5. Disseminate information, along with an alert of potential implication, to the utilities. (INPO)

6. Evaluate the information and implement remedies as appropriate. (utilities)

7. Provide feedback on implementation actions. (utilities and INPO)

8. Evaluate periodically the effectiveness of the process, including steps 1-7 above. (INPO)