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Program Description

January 1982

Significant Event Evaluation and Information Network (SEE-IN)

INPO

SIGNIFICANT EVENT EVALUATION AND INFORMATION NETWORK (SEE-IN)

PROGRAM DESCRIPTION

INSTITUTE OF NUCLEAR POWER OPERATIONS

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ORDERING INFORMATION

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FOREWORD

INPO operates the Significant Event Evaluation and Information Network (SEE-IN) to provide utilities with information and recommendations based upon industry operating experience. Proper use of such experience is one of the basic keys to maintaining high standards of nuclear safety and plant reliability. This document discusses the basis and scope of SEE-IN and is intended to guide utilities in their efforts to use SEE-IN reports effectively as part of their overall operational experience assessment programs.

SEE-IN PROGRAM DESCRIPTION

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SECTION 1

1. INTRODUCTION

1.1 BACKGROUND

Since the early days of power plant operations, utilities and manufacturers have attempted to share what has been learned from plant operating experience. As power plant technology becomes more complex and more demanding, the need for sharing operating experience continues to grow and become more important. The financial and safety benefits of avoiding problems already encountered and resolved dwarfs the costs and extra effort required for utilities to keep each other informed.

Significant gains are yet to be mad in such areas as the consolidation and improvement of plant experience data files, the systematic analysis of plant events, and the rapid communication of lessons learned to the power plants. The accident that occurred at Three Mile Island Unit 2 (TMI-2) on March 28, 1979 demonstrated that a more structured system is needed to ensure a cumulative nuclear plant learning process.

A short time after the TMI-2 accident, 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. In early 1980, shortly after its formation, the Institute of Nuclear Power Operations (INPO) joined NSAC in the development and implementation of the program. As part of several transfers of responsibility between INPO and NSAC in 1981, INPO is now the manager of this program. The program has been named

"Significant Event Evaluation and Information Network" (SEE-IN). It is a network in the sense that it involves INPO, the nuclear utilities, NSAC, the nuclear steam supply system vendors, and the architect/engineers.

The objective of SEE-IN is to ensure that the cumulative learning process from operating experience works well and that the lessons learned are reported in a timely manner to improve both plant safety and availability. This objective is met by systematically screening all available nuclear plant event information, identifying and evaluating the important or significant events, and communicating the results to the utilities and applicable equipment designers and manufacturers. A graphical presentation of SEE-IN is presented in Figure 1.

1.2 SEE-IN SCOPE

The functional approach to SEE-IN is an eight-step process, outlined in Table 1. While INPO has the program management function, no single organization is responsible for performing all of these functions; rather, the responsibility is spread among all the key participants in the network.

The principal 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 plants. INPO has a broader charter to screen all nuclear plant events. It is essential for these organizations to interface and supplement each other in the screening process if maximum efficiency is to be realized. The INPO program can be instrumental in assisting the utilities in the screening of other utility operating experience.

The primary data used as input to the screening process are Licensee Event Reports (LERs). These reports are submitted in accordance with Nuclear Regulatory Commission (NRC) requirements. In addition, many other sources of operating experience data can be reviewed. The majority of these other sources are described in Appendix A. In some cases, the event reports submitted by the utilities do not contain enough information to make a decision on an event's significance. In such cases, it is necessary for INPO to contact the utility involved for supplemental information. Often this information is contained in utility-furnished Plant Incident Reports (PIRs). The mechanisms for accessing this supplemental information are a key part of the SEE-IN framework and will be discussed in later sections.

Once a significant event has been identified from the screening process, a Significant Event Report (SER) is transmitted to the utilities and other participants on NUCLEAR NOTEPAD, and an action analysis is initiated. The purpose of the action analysis is to investigate the event in some detail and develop and evaluate practical remedies. It may be discovered that no further action is required or that it is only necessary to make certain organizations aware of the event.

For those events requiring further 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 recommendations are functional in nature, and it is up to the individual utilities to assess the applicability and the specific remedial actions required.

The implementation of recommended remedial actions is the responsibility of the utility. Implementation may include changes to plant procedures, equipment design changes, and/or changes to operator training programs.

The two final steps in the SEE-IN process are 1) feedback and evaluation of actions taken as a result of information provided from the action analysis and 2) periodic assessment of the process effectiveness by INPO.

1.3 ORGANIZATION AND PROGRAM DESCRIPTION

The eight steps described in the previous section and in Table 1 comprise the basic SEE-IN scope. Further details on the supporting organizations and methodologies are presented as follows:

- Section 2, INPO Program Operation, discusses INPO's support of SEE-IN and describes the details of event data processing and evaluation and results dissemination.

- Section 3, Utility Program Operations, discusses NRC requirements for operating experience review by the individual utilities and outlines the functioning of utility review programs and their interface with the total SEE-IN program.

- Appendix A, Sources of Data on Operating Experience, provides a short description of each of these sources. Appendix B, NUCLEAR NOTEPAD, provides a description of the computer-aided communications system utilized in the SEE-IN program.

TABLE 1

SEE-IN FUNCTIONS

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

2. Screen events for significance and transmit Significant Event Reports (SERs) via NUCLEAR NOTEPAD. (utilities and INPO, with vendor input

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 implications, 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 - 8. (INPO)

Significant Events Evaluation and Information Network (SEE-IN)

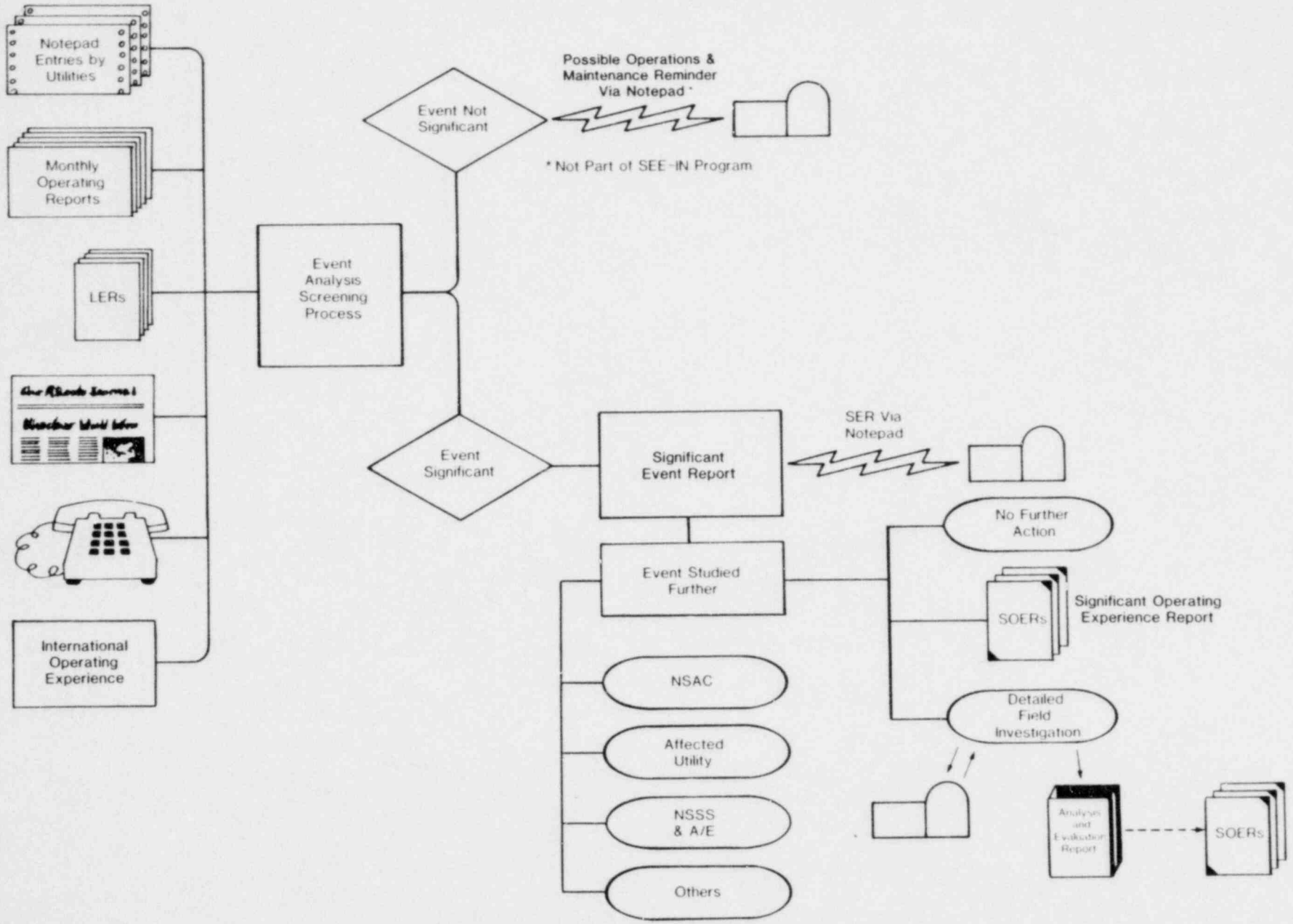


FIGURE 1

SECTION 2

2. INPO PROGRAM OPERATION

This section describes INPO's commitment to SEE-IN. INPO reviews plant operating experience data from a number of points of view: hardware components and systems, plant procedures, human factors, personnel training, and management systems.

2.1 DATA INPUT

Many sources of data are utilized in the SEE-IN program. While Licensee Event Reports (LERs) provide most of the input information regarding plant events, other sources are available, such as internal utility reports, NUCLEAR NOTEPAD, vendor information, and government documents. Additionally, supplemental information is solicited from the utilities and others to clarify and augment the other data inputs.

2.1.1 Data Bases

Current LERs and operating reports are mailed concurrently to INPO and the NRC by participating utilities. This process allows a timely screening process by avoiding delays associated with NRC processing and dissemination through its public document room.

INPO maintains a historical file of LER abstracts on an in-house computer. The Nuclear Plant Reliability Data System (NPRDS), listed in Appendix A, is also maintained on the INPO computer. Other miscellaneous industry sources, such as reports, letters, etc., related to nuclear plants are maintained by INPO on the computer and on microfilm. All data is thus readily available for document searches.

2.1.2 Utility Contact System (SEE-IN Contact)

Beyond the above formal 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 on plant events from INPO. The majority of such communications are handled over the telephone or via a special computerized communications network called NUCLEAR NOTEPAD (described in Appendix B). NUCLEAR NOTEPAD is managed by INPO to promote and facilitate better communications with and among the utilities.

The names and telephone numbers of plant technical contacts are maintained in a special file on NUCLEAR NOTEPAD for easy access.

Files are maintained by INPO on all nuclear utilities and contain names and telephone numbers of all designated contacts, telecopier numbers, status of nuclear units (i.e., operating, under construction, or planned), NSSS vendor(s), and other information. The files are used as a contact/mailing list directory. Each utility is requested to notify INPO of any changes to this information.

All nuclear utilities are requested to report promptly, in NUCLEAR NOTEPAD's Operating Plant Experience Activity, any important events that occur at their units. This system serves to inform INPO of the problem at an early stage and helps to eliminate rumors and second-guessing by the rest of the industry.

In cases where INPO learns of an important plant event not reported on NUCLEAR NOTEPAD, the first step will be to contact immediately the SEE-IN coordinator at the affected utility and request information on the event. INPO will request the affected utility to make an entry describing the event in NUCLEAR NOTEPAD's Operating Plant Experience Activity. If the utility does not intend to provide such a notice, INPO will request permission to put a preliminary notice of the event on NUCLEAR NOTEPAD.

2.2 SCREENING PROCESS OBJECTIVES

The objective of the screening process is to identify those plant events that justify further action on the part of the utilities to avoid repetition of such events. Avoiding such repetition has direct benefits to improve plant safety, reduce financial exposure from outages and from either real or postulated reductions in margins of plant safety. Events that become candidates for action analysis (i.e., products of the screening process) are termed significant.

2.2.1 Screening Methodology

The event screening sheet shown in Figure 2 contains criteria that is used for judging the significance of a particular plant event. The criteria are designed to identify the characteristics of an event, e.g., multiple failures, common cause failures, etc., that make it a candidate for action analysis, i.e., make it significant. INPO utilizes the screening sheet as a guide in assessing the significance of plant events.

Three categories of criteria are shown on the screening sheet -- significant, conditionally significant, and not significant.

Events that fall into the significant category will automatically undergo action analysis. Within the significant category is a special classification: significant by others. This encompasses those events that are significant but are being or have been adequately addressed by mechanisms other than the SEE-IN program. These other mechanisms may include vendor bulletins, NRC actions, etc. By policy, INPO minimizes duplication of such efforts.

Events that fall into the conditionally significant category will require further assessment by the reviewer to determine if they are significant. One of the factors examined includes assessment of the event in other plants. Another factor is the degree to which the type of event is "generic." This means it occurs even with different details of design or procedures.

After screening, some events are considered not significant.

This "yes, maybe, no" approach serves to isolate the readily recognized extremes (i.e., significant or not significant) that either clearly warrant some type of action or that can be returned to the database with no further action. This system also serves to structure or classify the "maybes" by associating with each such event the conditional criterion that caused it to be

retained. This identifies the remaining unresolved issue and aids in deciding the significance of the event.

The INPO reviewers are experienced technical persons who are familiar with the specific plant equipment and systems involved and who can recognize the unusual circumstances of an event that may warrant detailed evaluation or be of urgent interest to other operating plants. The screening sheet cannot replace engineering judgement or special insights by a knowledgeable reviewer. It may, however, serve to organize the reviewer's thoughts and provide a consistent standard against which to measure events.

The significance of an event cannot always be inferred directly from the event report; even relatively straightforward events sometimes allude to important but obscure safety implications. Contact with the utility, the reactor supplier, or the architect/engineer and/or thorough review of available design information may reveal a far more complex situation than is indicated by the event report. It will often be obvious that supplemental information is required; in other cases, it may be a matter of the reviewer's intuition. The primary sources of supplementary data are identified in the previous section.

LERs designated not significant during the initial review are screened again by a second independent reviewer. Consequently, reports of these events are screened twice. Both the initial reviewer and the second reviewer must

designate the LER not significant in order for the LER processing to be completed. If this is not the case, further processing is conducted.

2.2.2 LER Tracking System

INPO utilizes a Licensee Event Report Tracking System (LERTS) to track the status of LER screening. The system is maintained on an in-house computer. The system process has the following general descript on.

Upon receipt from the originating utility, the LER is given a unique designator and copied. The original is microfilmed and microfiched in a monthly batch and then filed in hard copy for general use. The copy made upon receipt of the original is forwarded immediately to a predesignated reviewer for screening.

All LERs entered into the tracking system are automatically assigned a significance of Initial Review (IR). Based upon the reviewers' action, the LERs are then designated Significant (S), Significant by Others (SO), Conditionally Significant (CS), or Not Significant (NS). This information is then entered into the tracking system. LERs designated NS then proceed to second review. Conditionally Significant LERs are given additional analysis and then redesignated S, SO, or NS as appropriate. Action taken by INPO on LERs designated S or taken by others on LERs designated SO is recorded and maintained in the tracking system. The system also contains applicable dates; consequently, analysis of processing time for various categories of LERs can be developed.

NOTE: Even though most events are dispositioned as Not Significant, some of them involve operations or maintenance items that may be of generic interest. While it is not part of the SEE-IN program, INPO does identify some of these items and prepares Operations & Maintenance Reminders regarding them. These reminders are transmitted via NUCLEAR NOTEPAD to all members and participants.

2.3 ACTION ANALYSIS

The action analysis is distinct from the screening process and includes a more in-depth evaluation. The input to the analysis is the significant event identified in the screening along with any other information fundamental to understanding of the event. The output is a clear description of the event or underlying problem, reasons why it is considered an action item, and most important, what actions should be considered by the power plants as a result of the event. Of the estimated 3-4 percent of plant events that reach the action analysis stage, not all will result in recommendations to the utilities for further action. If action by utilities is required, INPO's recommendations may affect components, systems, procedures, training, operations, maintenance, etc.

In many cases, an event will not warrant further action as an isolated occurrence, but becomes important in combination with several similar occurrences. Trending analysis can be used to recognize patterns of recurrence among events that make the event type or underlying problem an action item. The historical event files described in Section 2.1.1 will be necessary for trending analysis. The perspectives the reviewer gains

on event recurrence after screening a number of events will be an indicator of the need to perform such trending.

A part of the action analysis will entail investigating other work in progress or planned (e.g., by EPRI, NRC, utilities, owners groups, vendors, etc.) concerning the event under consideration. If the work is considered adequate, no further action on the event may be necessary; otherwise, supplemental action may be recommended. In such cases, a category of Significant by Others (SO) is assigned to the LER. Other efforts, which may be included in the action analysis, include plant visits and/or literature reviews to gain a deeper understanding of a particular event.

The affected utility and INPO will be responsible for action analysis of significant events. The affected utility's involvement in the action analysis may take some or all of the following forms: 1) in-house preparation of an analysis report for dissemination to the industry; 2) the loan of personnel to INPO to assist in the event analysis; or 3) review and comment on the analysis report prepared by INPO. NSSS vendor, A/E, and other contractor support will be used as necessary to perform the analyses.

The results of the action analyses on significant events will normally be disseminated to the utilities in the form of a Significant Operating Experience Report (SOER). In some cases, comprehensive technical reports will be prepared on significant events and will be disseminated in addition to the SOER.

The standard SOER contains: 1) the event report reference (i.e., the LER or other sources documenting the

event), 2) a summary description of the event, 3) a statement of why the event is considered significant, and 4) any generic recommendations developed as a result of the analysis. Each SOER is color-coded to indicate the INPO suggested priority of review -- red (immediate attention), yellow (prompt attention), and green (normal attention).

The SOER has been designed to be concise and to convey only the essential points that the utilities should consider in addressing a particular problem. Technical reports that might be prepared in addition to the SOER will also be distributed.

The action analysis process is summarized in Figure 3.

2.4 DETAILED FIELD INVESTIGATIONS

Events occur in nuclear power plants that can reveal important opportunities for safety or reliability improvements. When these major events occur, INPO conducts a field investigation of the event and promotes follow-up on long-term solutions to problems that may be identified. These investigations will normally be joint efforts involving the affected utility, INPO, NSAC, and other appropriate support personnel.

Upon an indication that such an event has occurred at a nuclear plant, INPO will contact the utility involved to begin making arrangements to visit the plant and work with the utility staff on the evaluation. Depending on the circumstances involved, a list of plant data that the events analysis team will likely need and specific questions that they would like to address will be provided to the utility before the visit. During the plant visit the analysis team will talk to plant personnel about the event; acquire the event data (e.g.,

stripcharts, computer printouts, logs, etc.), procedures, and design data needed to evaluate the event; and begin to formulate a rough outline for the report that will be written on the event. The plant visit will usually take from 2-5 days.

After the INPO analysis team returns home, contact with the plant staff will continue as necessary to coordinate the report writing and to obtain additional information. Once the technical report on the event has been completed, comments will be exchanged and resolved among INPO, the utility, and the NSSS vendor before any further distribution of the report is made.

When the report is ready for publication, it will be printed and distributed by INPO to the industry. When appropriate, SOERs will also be prepared and issued in addition to the technical report.

2.5 RESULTS DISSEMINATION AND FOLLOW-UP

The results from the screening and analysis of plant events are disseminated to personnel designated by each utility to receive the information.

The significant events identified from the screening process are entered initially as SERs into NUCLEAR NOTEPAD's INPO Significant Event Reports activity. This provides early notification of such events, and utilities are encouraged to comment on the events at an early point in the analysis effort. The SERs are compiled on a quarterly basis and mailed in hard copy to the utilities.

The preparation and dissemination of technical reports and SOERs are described in the previous section.

INPO prepares semi-annual reports summarizing the trends or patterns seen in the plant events reported over the period. These reports provide a perspective on the total population of events and not just the few percent that are considered significant.

Follow-up on the disposition of SOERs by the utilities is a part of the INPO utility evaluation function. This follow-up is necessary in order to provide INPO with feedback on the effectiveness of reports and to ensure that the reports are being utilized in the most appropriate manner.

UNIT: _____
DOCKET NO.: _____
LER NO.: _____
EVENT DATE: _____
NSS: _____

EVENT DESCRIPTION

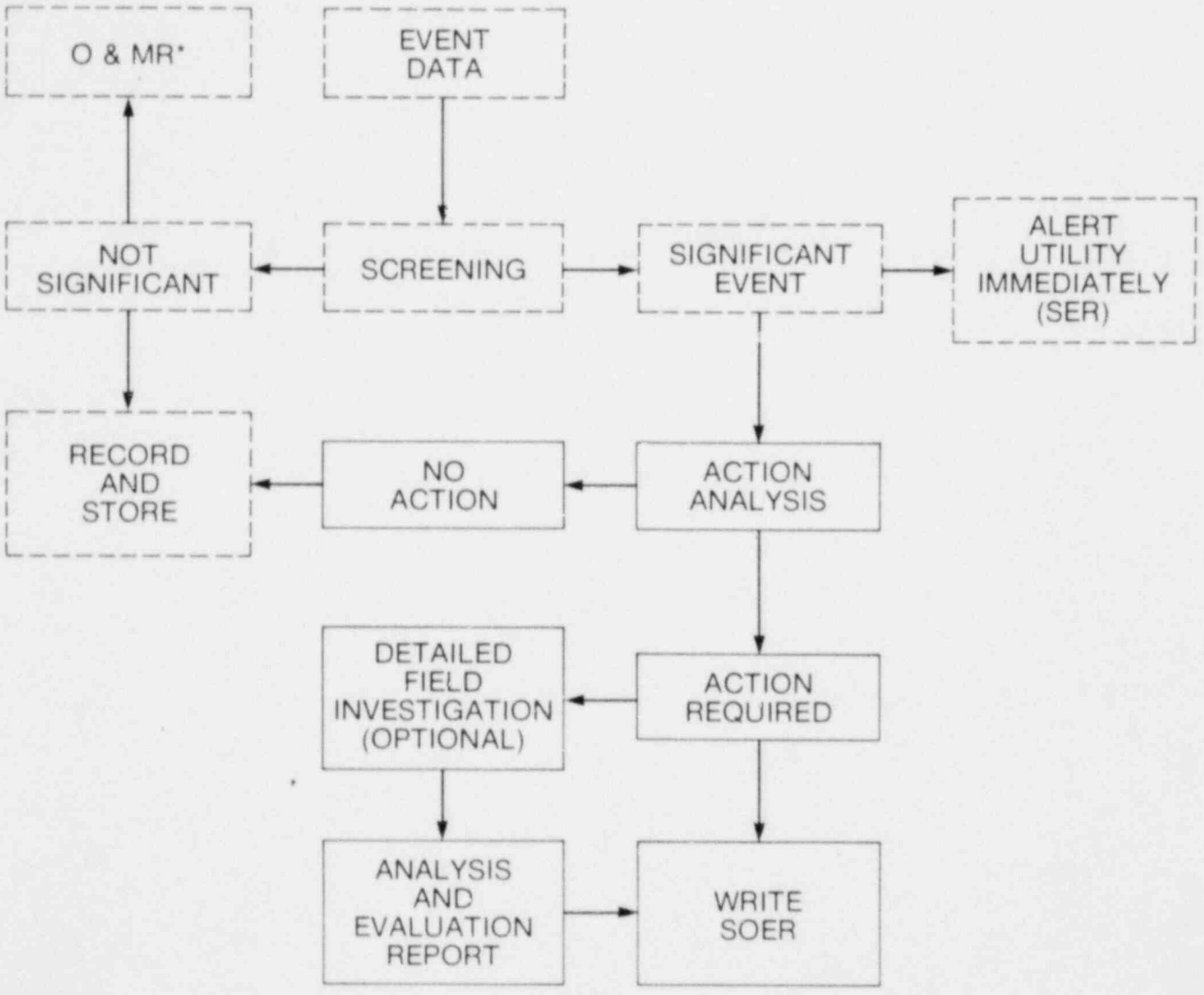
SIGNIFICANT	CONDITIONALLY SIGNIFICANT	NOT SIGNIFICANT
____ S1. Two or more failures occur in redundant systems during the same event.	____ C1. A single failure occurs in a non-redundant system. o Does the failure violate primary, secondary, or containment pressure boundary? o Does the failure lead to a major plant transient (e.g., overcooling, loss of heat sink, LOCA, etc.)?	____ N1. A single failure occurs in a redundant system.
____ S2. Two or more failures due to a common cause occur during the same event.	____ C2. Two apparently unrelated failures occur during the same event. o Are the failures common cause or mode? o Did one failure lead to the occurrence of other failure?	____ N2. Non-critical degradations of boundaries occur (packing leaks, seal leaks, tube leaks, etc.).
____ S3. Three or more failures occur that would have easily escaped detection by testing or examination.	____ C3. A problem result in an off-site radiation release or personnel exposure. o Is the amount of radiation unusually high? o Did the release or exposure occur under unusual circumstances?	____ N3. Personnel errors and procedural deficiencies are committed that do not result from a fundamental misunderstanding.
____ S4. Component failures occur during the same event.	____ C4. A design or manufacturing deficiency is identified as the cause of a failure or potential failure. o Is the deficiency an obvious, describable hardware defect?	____ N4. Seismic deficiencies occur (pipe hangers, snubbers, etc.).
____ S5. An event proceeds in a way significantly different from what would be expected.	____ C5. A problem results in a long outage or major equipment damage. o Did the problem cause a unit outage of 10 days or longer? o Did the problem require replacement or extensive repairs to major equipment (e.g., steam generator, turbine, reactor coolant pump, etc.)?	____ N5. Components operate out of specifications (set point drift, out of tolerance, minor performance degradations, etc.)
____ S6. An event or operating condition occurs that is not enveloped by the plant design bases.	____ C6. An ESF actuation occurs during an event. o Did the actuation involve any unusual circumstances?	____ N6. Non-radiological environmental events occur.
____ S7. An event occurs which could have been a greater threat to plant safety with different plant conditions, the advent of another credible occurrence, or a different progression of occurrences.	____ C7. A particular occurrence is recognized as having a significant recurrence rate. o Is the recurrence rate higher than would be expected? o Is the recurrence rate increasing?	____ N7. Other (explain)
____ S8. Administrative, procedural or operational errors are committed that resulted from a fundamental misunderstanding of plant performance or safety requirements.	____ C8. Other (explain).	____ Z. Downgraded from Conditionally Significant.
____ S9. Other (explain)		
____ Y. Upgraded from Conditionally Significant.		
____ SO. SIGNIFICANT BY OTHERS: Although significant for one of the above reasons, the significance of the event has been adequately addressed by another organization and has been appropriately disseminated, e.g., via IE Bulletin or vendor report.		

COMMENTS:

CONTACT _____

Action Analysis Process

Figure 3



*Not part of SEE-IN Program

3. UTILITY PROGRAM OPERATIONS

Nuclear utility operating experience review programs will be most effective if they are designed to interface with and be supplemented by SEE-IN. Mutual support between the utilities and INPO is the most effective way to maximize the effectiveness of SEE-IN and to minimize unnecessary redundant efforts among these organizations. As noted in the earlier sections of this document, INPO can reduce some of the event screening burden on the utilities by screening significant events from similar plants, and the utilities can, in turn, provide supplemental information on request to assist the INPO reviewers. The utilities can also provide the results of their screening as additional input to the INPO efforts.

This section discusses present NRC requirements for operating experience review and the suggested functional interface between utility programs and SEE-IN.

3.1 NRC REQUIREMENTS

The NRC's Clarification of TMI Action Plan Requirements (NUREG 0737, Item I.C.5) requires that each licensee "shall prepare procedures to assure that operating information pertinent to plant safety originating both within and outside the utility organization is continually supplied to operators and other personnel and is incorporated into training and retraining programs." (A copy of Item I.C.5, including positions 1 through 7, is shown in Table 2.)

For the purposes of satisfying Item I.C.5, the significant element of SEE-IN is the operating experience screening effort conducted by INPO. Since INPO reviews the operating experience of all plants, utilities may effectively use the results of evaluations of operating

experience at other plants. With appropriate internal dissemination and action, this will contribute significantly to meeting the general requirement of I.C.5 for feedback of operating information.

SEE-IN contributes to meeting the requirements detailed in Item I.C.5, NUREG 0737 (See Table 2). Positions one, two, and three of I.C.5 deal with matters internal to the utility, although some reference to the interface with SEE-IN is probably needed in the individual utility procedures that address these requirements.

Position four mandates the prompt dissemination of important information in advance of and apart from routine training and retraining programs. SEE-IN supports this requirement in two ways. Significant events identified during our screening process are entered initially on NUCLEAR NOTEPAD to provide early notification of such events to all utilities. Additionally, SOERs are sent to utilities after further analysis of the event.

SOERs are color-coded to indicate suggested priority. INPO's rigorous screening and action analysis procedures and the color-coding of SOERs were designed to address the concerns that prompted position five, the control of extraneous and unimportant information.

With respect to position six, INPO has taken a number of steps to avoid the dissemination of conflicting or contradictory information. First, the early posting on NUCLEAR NOTEPAD of significant events identified during the screening process not only provides early notification but also affords the utilities an opportunity to comment on these events and point out any discrepancies. Next, our action analysis procedures include

work by the NRC, NSSS vendors, EPRI, or others dealing with the event in question. In addition, our action analysis efforts involve the affected utility, NSSS vendors, and other contractors as necessary during the conduct of these analyses and the preparation and review of associated reports. Finally, the quality and diversity of our personnel engaged in the screening and analysis efforts helps to ensure the comprehensiveness and accuracy of information provided by SEE-IN. Despite these steps, conflicts or contradictions may arise occasionally. In these cases, INPO will work to resolve those conflicts or contradictions and support their resolution as quickly as possible.

Position seven requires that utilities perform periodic internal audits of program effectiveness. Even though INPO may review the utility programs to evaluate and act upon operating experience as part of the periodic evaluations of plants, utilities should not take credit for that review for the purpose of satisfying position seven.

3.2 UTILITY PROGRAM INTERFACE WITH SEE-IN

INPO recommends the designation of a technical (SEE-IN) contact at each utility. The person responsible for the utility's (or plant's) operating plant experience review program is the focal point for interface between the utility and INPO on SEE-IN-related matters. This individual should be very familiar with both the purposes and mechanics of SEE-IN. SEE-IN documents such as SERs and SOERs should come directly to this individual from INPO or should be expeditiously routed to this individual by the INPO point of contact. INPO looks to the SEE-IN contact as the principal coordinator for all utility/INPO SEE-IN matters.

3.2.1 Utility Program For Industry Events

In order to minimize the volume of operating experience information that must be reviewed in depth, utility operating experience evaluation programs should include information from a minimum of sources--principally the utility's own plants, its equipment suppliers, the NRC, and SEE-IN. Information from other sources is usually redundant and is seldom as timely or as detailed as that from the sources indicated. Nevertheless, exceptions can exist, and no single source of information should be ruled out entirely. It is the function of the screening process to eliminate insignificant, redundant, or irrelevant information.

The screening of industry events (if undertaken in addition to SEE-IN participation) should be performed by a multi-disciplined plant or headquarters group with sufficient plant knowledge and experience to recognize the applicability and potential significance of generic or specific events. For SEE-IN products, the significance has been identified by INPO and should be confirmed by a utility's own analysts. The screening group should additionally determine the applicability of the SERs or, in the case of SOERs, the applicability of INPO's recommendations. This applicability is not always obvious; INPO cannot prepare special reports for each plant. Accordingly, the screening group must perform a thoughtful and searching review of SEE-IN documents to ensure that important, but perhaps subtle, levels of applicability are not overlooked.

Items determined to be applicable should undergo additional analysis to determine the action necessary. Care must be taken to ensure that the group performing this analysis includes all the disciplines concerned with the event. A second review of the results of this analysis should be made periodically to ensure that actions taken are appropriate.

The utility program for industry events should also include some means of establishing priorities for analyses and resulting actions and a means of tracking industry event reports from receipt through ultimate disposition.

3.2.2 Utility Program For In-House Events

A written program covering the review and evaluation of in-house events should be in effect. This program should include the following key elements:

- o a means of event identification and classification for initiating review and evaluation
- o a means of providing prompt notification to other utilities of significant events with generic implications, e.g., NUCLEAR NOTEPAD
- o rigorous investigation and review to determine root cause, significance, generic implications, and necessary corrective action
- o review of investigation results and corrective action by appropriate plant management personnel

- a second review by a multi-disciplined group independent of plant management

- a method for recommending, implementing, and tracking corrective actions to ensure timely completion.

The utility program should ensure that the evaluation of in-house events and the determination, review, and approval of corrective actions are performed by experienced technical personnel and according to priorities consistent with the relative importance of the event. The relative importance of events should also be used to ensure that evaluation results are disseminated to plant personnel in a timely manner without inundating them with a large volume of information that might obscure the lessons to be learned from the more significant events. The program should ensure that personnel do not receive conflicting or contradictory information. Additionally, the effectiveness of the program should be evaluated periodically to identify needed improvements.

TABLE 2

ITEM I.C.5, NUREG-0737

I.C.5 PROCEDURES FOR FEEDBACK OF OPERATING EXPERIENCE TO PLANT STAFF

Position

In accordance with Task Action Plan I.C.5, Procedures for Feedback of Operating Experience to Plant Staff (NUREG-0660), each applicant for an operating license (or licensee) shall prepare procedures to assure that operating information pertinent to plant safety originating both within and outside the utility organization is continually supplied to operators and other personnel and is incorporated into training and retraining programs. These procedures shall:

(1) Clearly identify organizational responsibilities for review of operating experience, the feedback of pertinent information to operators and other personnel, and the incorporation of such information into training and retraining programs;

(2) Identify the administrative and technical review steps necessary in translating recommendations by the operating experience assessment group into plant actions (e.g., changes to procedures, operating orders);

(3) Identify the recipients of various categories of information from operating experience (i.e., supervisory personnel, shift technical advisors, operators, maintenance personnel, health physics technicians) or otherwise provide means through which such information can be readily related to the job functions of the recipients;

(4) Provide means to assure that affected personnel become aware of and understand information of sufficient

importance that should not wait for emphasis through routine training and retraining programs;

(5) Assure that plant personnel do not routinely receive extraneous and unimportant information on operating experience in such volume that it would obscure priority information or otherwise detract from overall job performance and proficiency;

(6) Provide suitable checks to assure that conflicting or contradictory information is not conveyed to operators and other personnel until resolution is reached; and,

(7) Provide periodic internal audit to assure that the feedback program functions effectively at all levels.

APPENDIX A

SOURCES OF DATA ON OPERATING EXPERIENCE

A. UTILITY REPORTS

1. LICENSEE EVENT REPORTS (LERs)

Approximately 5000 LERs are reported each year by power plant licensees, of which about 20 percent require prompt notification (within 24 hours of the event); the rest require 30-day notification. Reporting requirements are included in the plant Technical Specifications and the NRC's regulations. The number of LERs has increased from 900 in 1973 to 4900 in 1981. This increase is principally due both to the Standardized Technical Specifications, which have established more stringent reporting requirements, and to the increases in operating power plants during that period.

2. MONTHLY OPERATING UNIT STATUS REPORTS (INFORMATION ON OUTAGES AND POWER REDUCTIONS)

Each power plant licensee prepares a monthly summary of the previous month's experience, containing power production data and outage information, as well as a summary narrative of significant operating information that includes the occurrence of operational transients and safety-related maintenance activities.

3. 10 CFR 50.59 (REPORTS ON CHANGES TO FACILITY)

At least once annually, all power plant licensees must report on changes made to safety-related systems. Many of these changes do not require prior NRC approval, since they do not represent an "unreviewed safety question," as defined in 10 CFR 50.59.

4. GENERATING AVAILABILITY DATA SYSTEM (GADS)
Power plants report unit outage data and availability statistics to this industry-sponsored data system. GADS is managed by the National Electric Reliability Council.

5. NUCLEAR PLANT RELIABILITY DATA SYSTEM (NPRDS)
Power plant licensees participate in the NPRDS, reporting both engineering data and failure information.

6. SEMI-ANNUAL EFFLUENT REPORTS
Licensees submit periodic reports on effluent releases (including meteorological information) so that dose commitment levels to the public can be estimated.

7. RADIATION EXPOSURE REPORTS
Licensees submit annual reports of occupational radiation exposure and reports of overexposure, as they occur, in accordance with 10 CFR 20.

8. STARTUP TEST REPORTS
Power plant licensees issue startup tests reports, which contain information on the initial approach to power, and reports for succeeding startups when significant changes to the core are made.

9. 10 CFR 50.55 (e) REPORTS (CONSTRUCTION DEFICIENCIES)
Power plant licensees are required to report construction deficiencies under 10 CFR 50.55 (e). About 100 reports per year are issued.

10. MISCELLANEOUS REPORTS
a. responses to bulletins
b. responses to NRR generic letters
c. internal reports of plant events

B. NRC REPORTS

1. INSPECTION REPORTS

The NRC's Office of Inspection and Enforcement (IE) reports the results of all inspections of licensee activities during construction and operation. These reports contain data concerning items of noncompliance (violations, infractions, and deficiencies) and the results of reviews of operating logs and follow-up on licensee reports (such as LERs). These reports may also contain information on operational events that are not documented elsewhere.

2. DAILY REPORTS AND PRELIMINARY NOTIFICATIONS

Each of the IE regional offices prepares a daily report that includes initial reports of events of potential safety concern. IE also prepares Preliminary Notifications of events which are believed to be potentially significant or of high public interest.

3. IE BULLETINS, CIRCULARS AND INFORMATION NOTICES

IE utilizes Bulletins, Circulars and Information Notices to inform licensees regarding problems of potential generic significance, in order to obtain further information from licensees or to require specific licensee actions in response to identified concerns.

4. AEOD REPORTS

Reports prepared by the NRC Office of Analysis and Evaluation of Operational Data.

5. INTRA-OFFICE MEMORANDA AND GENERIC LETTERS

NRC's Division of Operating Reactors (DOR) issues operating experience and information memoranda to other divisions within NRC suggesting changes or additions to the Standard Review Plan. Memoranda also flow in the reverse direction when the Division of Systems Safety

(DSS) believes it has identified a potential problem with operating plants. In addition, NRC issues generic letters to licensees to obtain operational information or to feed back needed design changes.

6. WEEKLY INFORMATION REPORTS
   A report of key events regarding the NRC.

7. TECHNICAL REPORTS
   NRC issues technical reports based on operating experience.

C. FOREIGN INFORMATON

1. EXCHANGE AGREEMENTS
   NRC has agreements with many foreign governments involving the exchange of operating data and information. Periodic reports, similar to the LER reports, are received from most of these countries. Some have requested and exchanged complete computer data tapes. Special reports, both informal and formal, are made regarding more significant items.

2. UTILITY REPORTS
   INPO's International Participants prepare operating experience reports that can be utilized in the SEE-IN program.

D. MISCELLANEOUS SOURCES

1. 10 CFR 21 REPORTS
   Licensees and their suppliers are required to report safety deficiencies under 10 CFR 21. IE maintains a computer-based file and is responsible for follow-up on these reports.

2. NRC STAFF-INDUSTRY MEETINGS

Meetings of NRC staff, the nuclear industry (suppliers) and architect/engineer firms are held to discuss both topical reports and particular safety concerns. Operating data can be presented at these meetings.

3. SUPPLIER DOCUMENTS

Vendors issue bulletins, letters, and operating plant status reports that may contain safety information.

4. NUCLEAR SAFETY INFORMATION CENTER (NSIC)

The Oak Ridge National Laboratory (ORNL) manages the NSIC primarily for the NRC. The ORNL computerized system contains abstracts of most of the LER data, as well as summaries of reports, books, and papers on various aspects of nuclear power plants.

APPENDIX B
NUCLEAR NOTEPAD

NUCLEAR NOTEPAD is the marketing name for a computerized message exchange system. Messages are not only transmitted via the telephone system, but are stored and can be retrieved at any time by the receiver. The message information is stored on a computer in San Bruno, California. Many NUCLEAR NOTEPAD exchange networks are in existence; the nuclear industry uses NUCLEAR NOTEPAD. INPO is funding and managing NUCLEAR NOTEPAD to increase the efficiency of communication among the following organizations: all U.S. utilities, utilities that are INPO International Participants, EPRI, NSAC, INPO, NSSS vendors, and architect/engineers. To access NUCLEAR NOTEPAD, one needs three things: a standard computer terminal (video or paper display), an acoustic coupler/modem for telephone hookup, and a telephone. Most utilities already have all of these items.

The NUCLEAR NOTEPAD user can send information to a group of recipients using the "entry" function or can limit the transmission to one designated recipient using the "note" function. The security of the information stored in the computer is guaranteed by several layers of protection. A user needs to know the local telephone number that will get him into a nationwide communications network; a password is necessary to go from this network into NUCLEAR NOTEPAD. The user has to supply the name of the NUCLEAR NOTEPAD account he wants to enter; a second password is required to enter the account. Once logged into the account, the user has to give his name, which must have been stored in the computer's memory by the INPO NUCLEAR NOTEPAD manager, and yet a third password, stored in memory since the user invented it upon his first log-in. This individual password is known only to the user.

Many NUCLEAR NOTEPAD accounts are active today. Listed below are the NUCLEAR NOTEPAD accounts presently available to appropriate individuals in the community:

1. INPO SIGNIFICANT EVENT REPORTS*
2. HOTLINE FOR REAL OR SIMULATED SITE EMERGENCIES*
3. EMERGENCY PLANNER INFORMATION EXCHANGE
4. RADIOLOGICAL PROTECTION
5. OPERATIONS & MAINTENANCE INFORMATION EXCHANGE
6. INPO OPERATIONS & MAINTENANCE REMINDERS**
7. PREOPERATIONAL TESTING INFORMATION EXCHANGE
8. CONTROL ROOM DESIGN REVIEW
9. NUCLEAR QUALITY ASSURANCE INFORMATION EXCHANGE
10. NUCLEAR RECORDS MANAGEMENT
11. OPERATING PLANT EXPERIENCES*
12. TMI-2 RECOVERY PROGRAM UPDATE
13. OWNERS GROUPS
14. EXCHANGE OF MISCELLANEOUS INFORMATION
15. MEETING ANNOUNCEMENTS & SUMMARIES
16. INTERNATIONAL COORDINATION EXCHANGE
17. NPRDS INFORMATION

Each utility is represented typically by two or three people from licensing, design, and operations. One of the major activities dealing with the SEE-IN program is the account that links the designated utility SEE-IN contacts with NSAC and INPO staff.

* This NUCLEAR NOTEPAD activity should be accessed daily to ensure complete SEE-IN participation.

** Though not part of SEE-IN, the O&MR activity contains valuable information from operating history and therefore should be considered for daily access.

NUCLEAR NOTEPAD is the major communications link for the SEE-IN program. Utilities are using the system to communicate information on major events to NSAC, INPO, other utilities, and others in the industry. The results of SEE-IN are placed on NUCLEAR NOTEPAD. Supplemental information is being requested by INPO from the utilities via the NUCLEAR NOTEPAD. All significant events are posted on NUCLEAR NOTEPAD as they are identified.

INPO is partially supported by assistance from the Tennessee Valley Authority (TVA), a Federal agency. Under Title VI of the Civil Rights Act of 1964 and applicable TVA regulations, no person shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under this program. If you feel you have been excluded from participation in, denied the benefits of, or otherwise subjected to discrimination under this program on the grounds of race, color, or national origin, you or your representative, have the right to file a written complaint with TVA not later than 90 days from the day of the alleged discrimination. The complaint should be sent to Tennessee Valley Authority, Office of Equal Employment Opportunity, 400 Commerce Avenue, EPB 14, Knoxville, Tennessee 37902. The applicable TVA regulations appear in Part 1302 of Title 18 of the Code of Federal Regulations. A copy of the regulations may be obtained on request by writing TVA at the address given above.

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