

ACRS-2913
PDR 3/25/94

CERTIFIED

CERTIFIED BY
P. Davis 11/30/93

SUMMARY/MINUTES OF THE ACRS SUBCOMMITTEE MEETING
ON INDIVIDUAL PLANT EXAMINATIONS
NOVEMBER 18, 1993
BETHESDA, MARYLAND

PURPOSE

The ACRS Subcommittee on Individual Plant Examinations held a meeting in P-110, Phillips Building, Bethesda, Maryland on November 18, 1993. The purpose of this meeting was to discuss the status of the following programs: Individual Plant Examinations (IPes), Individual Plant Examination for External Events (IPEEE), and Accident Management Guidelines (AMGs). Copies of the meeting agenda and selected slides from the presentations are attached. The meeting began at 8:30 am and adjourned at 3:00 pm, and was held entirely in open session. No written comments or requests for time to make oral statements were received from members of the public. The principal attendees were as follows:

ATTENDEES

ACRS

- P. Davis, Chairman
- I. Catton, Member
- T. Kress, Member
- C. Michelson, Member
- R. Seale, Member
- W. Shack, Member
- D. Ward, Consultant
- D. Houston, Cognizant Staff
Engineer

NRC STAFF

- C. Ader, RES
- J. Flack, RES
- M. Drouin, RES
- J. Chen, RES
- J. Murphy, RES
- E. Chow, RES
- H. Pastis, NRR
- J. Schiffgens, NRR
- R. Hernan, NRR
- B. Palla, NRR
- J. O'Brien, NRR

INDUSTRY

- D. Modeen, NUMARC
- L. Walsh, NAESCO

Attendees from the public included representatives of Bechtel, Defense Nuclear Facility Safety Board, GAO, NUS and B&W. A complete listing of those attendees who signed in is available in the office files.

DESIGNATED ORIGINAL

9403300148 931130
PDR ACRS
2913 PDR

Certified By

EMB

R501
0/1

DISCUSSIONChairman's Opening Remarks - P. Davis (ACRS)

In his opening remarks, Mr. Davis indicated that he had reviewed a number of the submitted IPEs and that he was encouraged by what he had seen. He expressed his feeling that the utilities had taken the IPE task seriously and that the quality of the submittals had been fairly good. He indicated that there were some concerns about the depth of the staff's review of the IPEs and about the resolution of generic safety issues (GSIs) via the IPE/IPEEE process. He noted that these concerns would be addressed during the presentations. He further noted that the conditional containment failure probabilities given in the reports varied considerably and asked the staff to provide some discussion about these variations.

NRC Staff Presentations on IPEs/IPEEEIntroduction - C. Ader (RES)

Mr. Charles Ader (RES) indicated that the staff would try to convey some sense of what type of review the IPEs were given and what the licensees are doing. He further indicated that the staff would describe the database program being carried out by a contractor to extract information for the IPEs and to analyze this data across groups of plants for insights. Lastly, he noted that there seemed to be some confusion about the generic issue resolution process in regard to the IPE/IPEEE programs and that he hoped that a better understanding of the resolution process would be reached by his presentation.

IPE Discussion - J. Flack (RES)

Dr. John Flack (RES) discussed the background for the IPE program (Generic Letter 88-20), an update of the activities, and some preliminary review findings and general observations. Originally, all IPE submittals were expected by the end of FY 1992. So far, 63 of a total of 78 or 80% of the submittals have been received and the last of the submittals are not expected until mid- to late-1994. Dr. Flack described the Step 1 and Step 2 (optional) review process performed by review teams on each submittal. To date, 35 IPE reviews have been initiated and 12 have been completed. In this group, four Step 2 reviews have been initiated and 2 have been completed. The staff hopes to finish all of the IPE reviews by December 1995. He emphasized that the focus of the staff's review of an IPE is toward assessing whether the IPE meets the objectives of GL 88-20 and not whether the detailed findings of the IPE are correct. The review is mostly an assessment for completeness against the guidance given in NUREG-1335.

Dr. Flack discussed some preliminary findings and general observations that had been identified in the 12 completed reviews. The most dominant accident initiators for both PWRs and BWRs were Loss of Off-Site Power (LOSP) and Transients. LOCAs were high contributors for PWRs and ATWS events were high for BWRs. In each category, a wide range of values could be found. In the course of discussing general observations, Dr. Flack presented information on important assumptions, definition of vulnerability (as developed by the licensee), plant improvements and the long-term benefits expected from these studies. In closing, he indicated that the benefits had exceeded the staff's expectations and that most licensees planned to utilize their IPEs as "Living" PRAs.

IPE Database Structure and Insights - M. Drouin (RES)

Ms. Mary Drouin (RES) discussed the objectives and structure of the IPE Database Program being performed at Brookhaven National Laboratory (BNL). From each IPE, BNL will store the following information: plant design, core damage frequency and containment performance. BNL will not review the IPE information prior to data entry but will assume that the data provided is correct. Ms. Drouin stated that only plant systems are being addressed in the IPEs, not components or hardware. For each system, the database will indicate dependencies, success paths, accident sequences, strategies and associated containment failure characteristics.

Ms. Drouin indicated that data from half of the expected IPEs would be entered into the database by December 1993. This would include 33 PWRs and 17 BWRs and would represent all of the containment types. The database is being expanded to include IPEEE information. In closing, M. Drouin discussed some sample queries that could be performed once the database is in place. She further indicated that an insights study would be completed using the first 50 plants and that a draft report on this matter would be available in the Summer 1994.

Individual Plant Examination of External Events (IPEEE) - J. Chen (RES)

Mr. John Chen (RES) provided background and an update on the IPEEE program. He discussed the two approaches that are deemed acceptable for seismic analysis: seismic PRA or seismic margins methodology, the latter using either the hazard curves developed by EPRI or LLNL (NRC) with the enhancements detailed in NUREG-1407. He further indicated that the LLNL hazard curves have been revised in NUREG-1488 and that this report is now out for public comments. In this revision, the EPRI and LLNL curves are much closer to each other but not identical. For the seismic analysis, 44 plants have

proposed using PRA methodology while 49 plants will use either the LLNL or EPRI seismic margins approach.

Mr. Chen also discussed the two approaches approved for the analysis of internal fires: Level I Fire PRA or EPRI's Fire Induced Vulnerability Evaluation (FIVE). He indicated the following issues had been identified for study: (1) seismic/fire interactions, (2) effect of fire suppressants on safety equipment, and (3) control system interactions. For the IPEEE, 61 plants have proposed doing a Level I Fire PRA and 50 plants will utilize FIVE.

In closing, Mr. Chen noted that 4 IPEEEs have been submitted to date with the bulk of submittals expected in FY 1995. From the four submittals received to date, the staff will utilize the review results to revise their review guidance document for the rest of the submittals.

Resolution of Generic Issues via IPE/IPEEE - C. Ader (RES)

Mr. Charles Ader (RES) discussed the topic of generic issue resolution in regard to the IPE/IPEEE process. He noted that only USI-45 is required to be addressed as part of the IPEs but that licensees were given the option to propose resolution of other generic issues based on their IPE. In regard to the IPEEE, he stated that USI-45 and GSI-131 and 57 were required to be addressed in the study. He indicated that the staff recognized other USIs and GSIs to be resolved by the IPE/IPEEE process if it could be assumed that a licensee would reasonably address the issue during the performance of their IPE/IPEEE. He further indicated that most of the generic issues were of low safety significance to begin with and that the IPEs/IPEEEs offered a way to resolve the issues. Finally, he stated that the resolution of the issues will be in the documents that are forwarded to the EDO and provided for ACRS review. This resolution will ultimately appear in NUREG-0933.

Presentations on Accident Management Guidance

Status of NRR Accident Management Activities - R. Palla (NRR)

Mr. Robert Palla (NRR) discussed the background and chronology of the Accident Management (A/M) program. He indicated that most of the development activities had been subsumed by an Industry Initiative under the direction of NUMARC, EPRI and the utility Owner's Groups. He described the staff's review process for the documents that industry is developing and indicated that the intent to issue a generic letter on this matter had been dropped.

Overview of Industry Activities in Severe Accident Management -
L. Walsh (NAESCo) and D. Modeen (NUMARC)

Mr. Larry Walsh (Chairman, NUMARC Working Group) and Mr. David Modeen (NUMARC) discussed the background and industrial perspective of severe accident management guidelines (SAMG). The major activities involved the following:

- o Methods for Evaluating Severe Accident Capabilities - NUMARC/EPRI/SAROS (April 1992)
- o A/M Technical Basis Reports, Volumes 1 and 2, EPRI (September 1991)
- o Owner's Group SAMG - PWR Reports (June-August 1993), BWR Report (December 1993)
- o Guidance on Training/Decisionmaking - NUMARC/INPO (December 1993)

The SAMGs define a severe accident as one that results in catastrophic fuel rod failure, core degradation and fission product release into the reactor vessel, containment or the environment. Thus, SAMGs are directed toward plant actions beyond the normal emergency operating procedures (EOPs) and will require plant operators to take actions outside their normal way of thinking. In the SAMGs for PWRs, once severe accident space is entered, the control of the plant is turned over to the Technical Support Center rather than left in the hands of the SROs in the control room. Since the SROs have a secondary responsibility in this case, severe accidents are not considered as part of the initial or requalification examinations for licensed operators nor are they to be modelled in the plant reference simulators.

Mr. Walsh indicated that INPO would be responsible for identifying training attributes for personnel with severe accident management functions. These persons, evaluators and decision makers, must possess the necessary skills in decision making and should have an awareness and understanding of severe accident considerations. The normal plant operators must be aware of the status of plant systems and equipment and must be instructed to take whatever action is asked even if it is contrary to their usual way of thinking.

Mr. Modeen indicated that the NUMARC Board of Directors would vote on the SAMG position in March 1994. If passed, technology workshops would be held during May/June 1994 and a final SAMG report would be issued in December 1994. Licensees would then complete their capabilities assessment and provide enhancements by July 1997.

Subcommittee Comments, Concerns and Requests

During the meeting, Subcommittee Members and Consultants expressed various comments and concerns as follows (random order):

- (1) Mr. Davis requested a copy of the FitzPatrick staff evaluation report (SER). This is the first SER issued for a Step 2 IPE review.
- (2) Dr. Kress asked about the consistency of the methodology used in the IPEs. Dr. Flack indicated that most everyone used the EPRI MAAP code except for a few BWRs where BWR SAR was applied.
- (3) Mr. Michelson expressed concerns about: how the RWC system was modelled in the BWR analysis, what were the assumptions made for pipe breaks and system interactions, and how fire doors were treated for challenges other than fire. Dr. Flack indicated that it was not the purpose of the staff's review to determine the accuracy of the IPE but rather, only the completeness.
- (4) Dr. Catton asked the staff if they or their contractor were aware of a reliability study performed on an auxiliary feed-water system by different teams at ISPRA. The teams had the same system input but their results varied by a factor of 30. Dr. Catton was requested to provide a reference for this study so that the staff could share the results with their contractor.
- (5) Mr. Davis asked that copies of NUREG-1488, "Revised Livermore Seismic Hazard Estimates for 69 Nuclear Power Plant Sites East of the Rocky Mountains" (now out for comment), be obtained and provided to the Members and Consultants.
- (6) Mr. Ward asked if there would be an attempt to identify the important factors related to containment performance from the Level 2 and 3 IPEs. Dr. Kress indicated that the conditional containment failure probability might vary by a factor of 10 due to the amount of zirconium in the core. Dr. Flack stated that any such factors had not been identified in the IPEs to date.

FUTURE ACRS ACTION

The Subcommittee agreed to have a presentation at the Full Committee Meeting in December 1993 to address the following topics: (1) Overview and Status of the IPE Program, (2) Overview of the Data Collection Program, and (3) Discussion of the Resolution of Generic Issues by the IPE/IPEEE Process. The Subcommittee also expressed a desire to have another meeting on this matter within the next six months.

ACTIONS, AGREEMENTS AND COMMITMENTS

The actions, agreements and commitments that resulted from this meeting are discussed above and are as follows:

- (1) The staff will provide a copy of the FitzPatrick Step 2 SER. Copies will be distributed to all Members and Consultants.
- (2) Copies of NUREG-1488 regarding LLNL seismic hazard estimates will be obtained and provided to all Members and Consultants.
- (3) Dr. Catton will provide a reference for the ISPRA studies.
- (4) The staff provided copies of the draft IPE Review Guidance Document for distribution to Members and Consultants.
- (5) A presentation for the Full Committee meeting in December 1993 was agreed upon and focused on the IPE program.

DOCUMENTS

There were no specific review documents for this meeting.

Note: Additional meeting details can be obtained from a transcript of this meeting available in the NRC Public Document Room, 2120 L Street, N.W., Washington, D.C. 20006, (202) 634-3273, or can be purchased from Ann Riley & Associates, 1612 K Street, N.W., Suite 300, Washington, D.C. 20006, (202) 293-3950

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
INDIVIDUAL PLANT EXAMINATIONS SUBCOMMITTEE MEETING
NOVEMBER 18, 1993
BETHESDA, MARYLAND
ROOM P-110

- TENTATIVE AGENDA -

<u>Thursday, November 18, 1993</u>	<u>TIME</u>
A. Subcommittee Chairman's Opening Remarks - P. Davis	8:30 am
B. Introductory Comments - Charles Ader (RES)	8:35 am
C. Discussion of IPE Program - John Flack (RES)	8:40 am
***** BREAK *****	10:10 am
D. BNL Data Collection Program - Mary Drouin (RES)	10:25 am
E. Overview of IPEEE Program - John Chen (RES)	11:05 am
F. Discussion of the Resolution Process for Generic Issues Using IPE/IPEEE - Charles Ader (RES) **	12:00 (noon)
***** LUNCH *****	12:15 pm
G. Overview of NRC Staff Activities in Accident Management Program - Bob Palla (NRR)	1:15 pm
H. Overview of Industry Activities in Accident Management Program - Larry Walsh (NAESCo) Dave Modeen (NUMARC)	1:45 pm
I. Subcommittee Discussion and Planning for Future Meetings	2:50 pm
J. Adjourn	3:00 pm

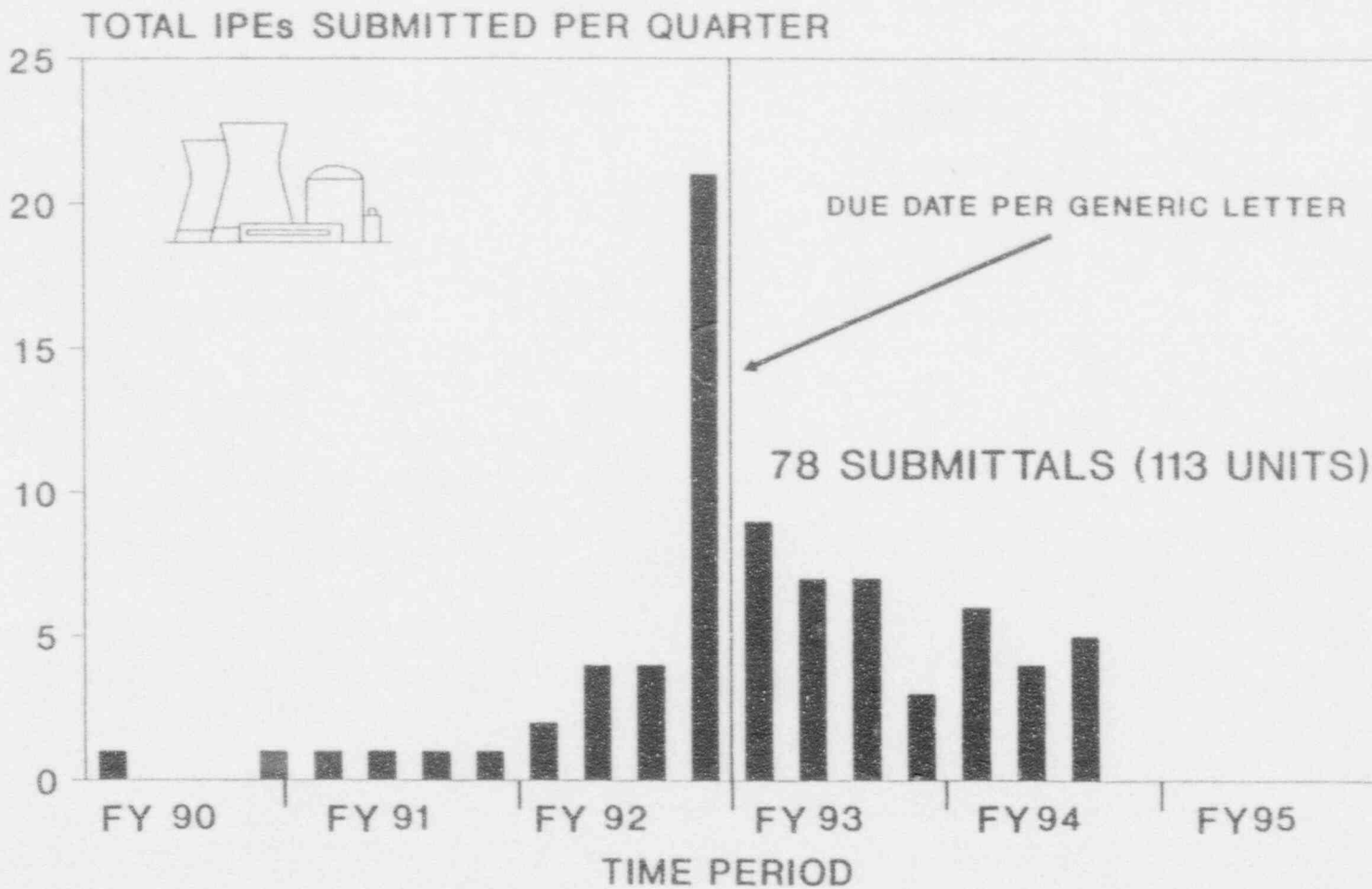
** No planned presentation on this matter. Topic to be discussed to determine the nature of the ACRS concerns.

Individual Plant Examination (IPE) Overview and Status

Advisory Committee on Reactor Safeguards
IPE Subcommittee
November 18, 1993

Presented by: Dr. John H. Flack
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission

IPE SUBMITTAL SCHEDULE (Current Status)

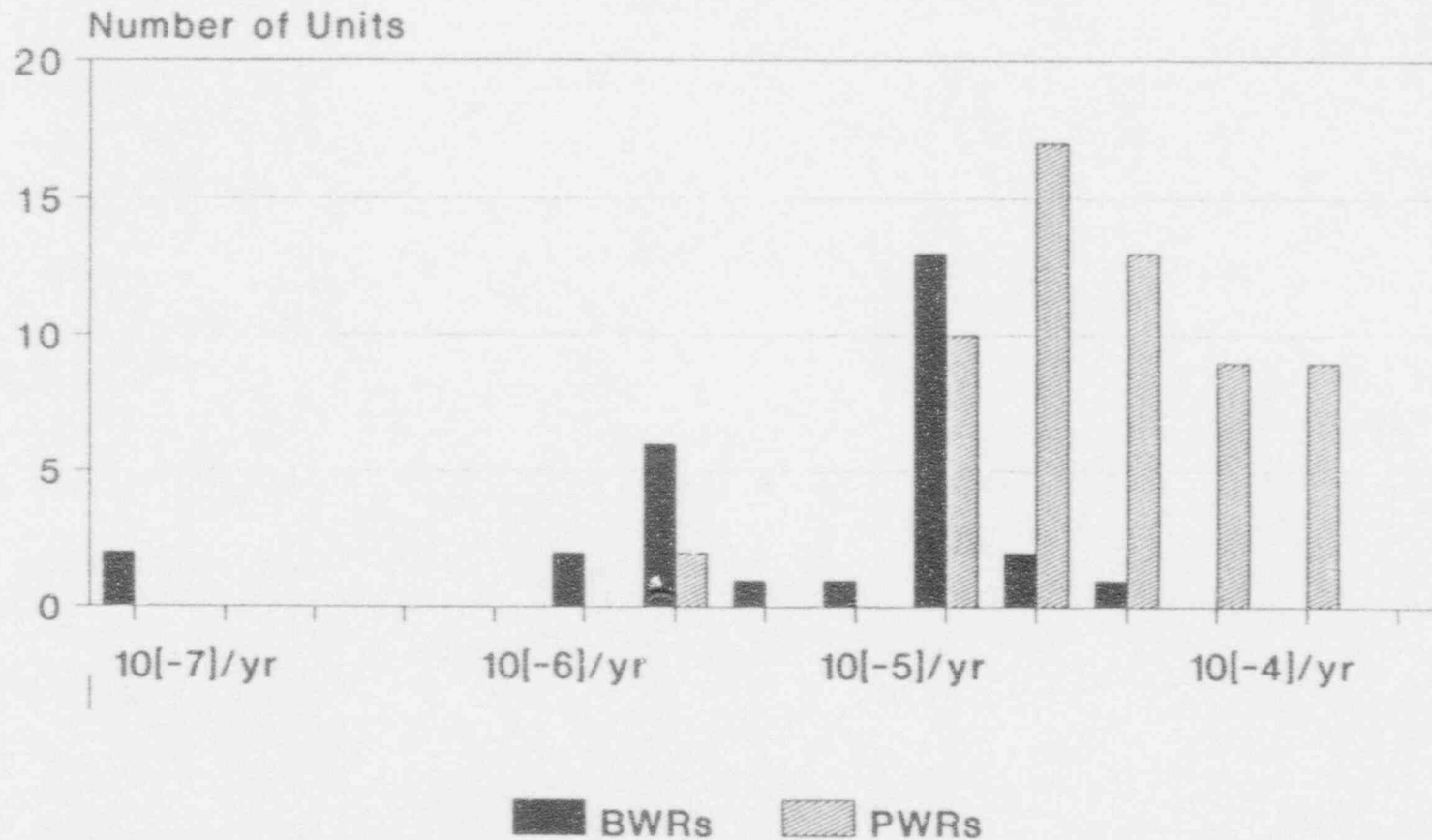


Review Status

- 63 of 78 Submittals Received (80%)
- 35 IPE Reviews Initiated
 - 31 Step 1
 - 4 Step 2
- 12 Reviews Completed
 - 10 Step 1
 - 2 Step 2
- Completion Target 12/95

CORE DAMAGE FREQUENCY

Internal Events



80% of Units, 10/14/93

Vulnerability

DEFINITION:

- o Global - Accident Sequences
- o Specific - Numerical Criteria
- o Cost/Benefit - Process

SOURCES OF POTENTIAL VULNERABILITY:

- o System Dependencies
- o Environmental Effects

Licensee Plant Improvements (Safety Enhancements)

- Utilize Fire Water for:
 - Equipment Cooling
 - Containment/Core Cooling
- Implement System/Unit X-Ties
- Protect Against Internal Flood
- Add Alternate AC Power Supplies
- Upgrade DC Power Supplies

Plant Improvements (Continued)

- Provide Makeup to RWST
- Enhance RCP Seal Cooling
- Enhance Room Cooling Capability
- Reduce Asymmetries
- Add Diversity to DHR Capability

General Observations

- Benefits Exceeded Expectations
- Evolution of "Living" PRAs
- Complex Studies, Simple Insights
- Assumptions Important to Findings
- Many Enhancement Opportunities
- Potential Future Applications

***IPE DATABASE STRUCTURE
AND INSIGHTS***

M. T. DROUIN

***U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF RESEARCH
DIVISION OF SAFETY ISSUES RESOLUTION
SEVERE ACCIDENT ISSUES BRANCH***

***PRESENTED TO
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS***

NOVEMBER 18, 1993

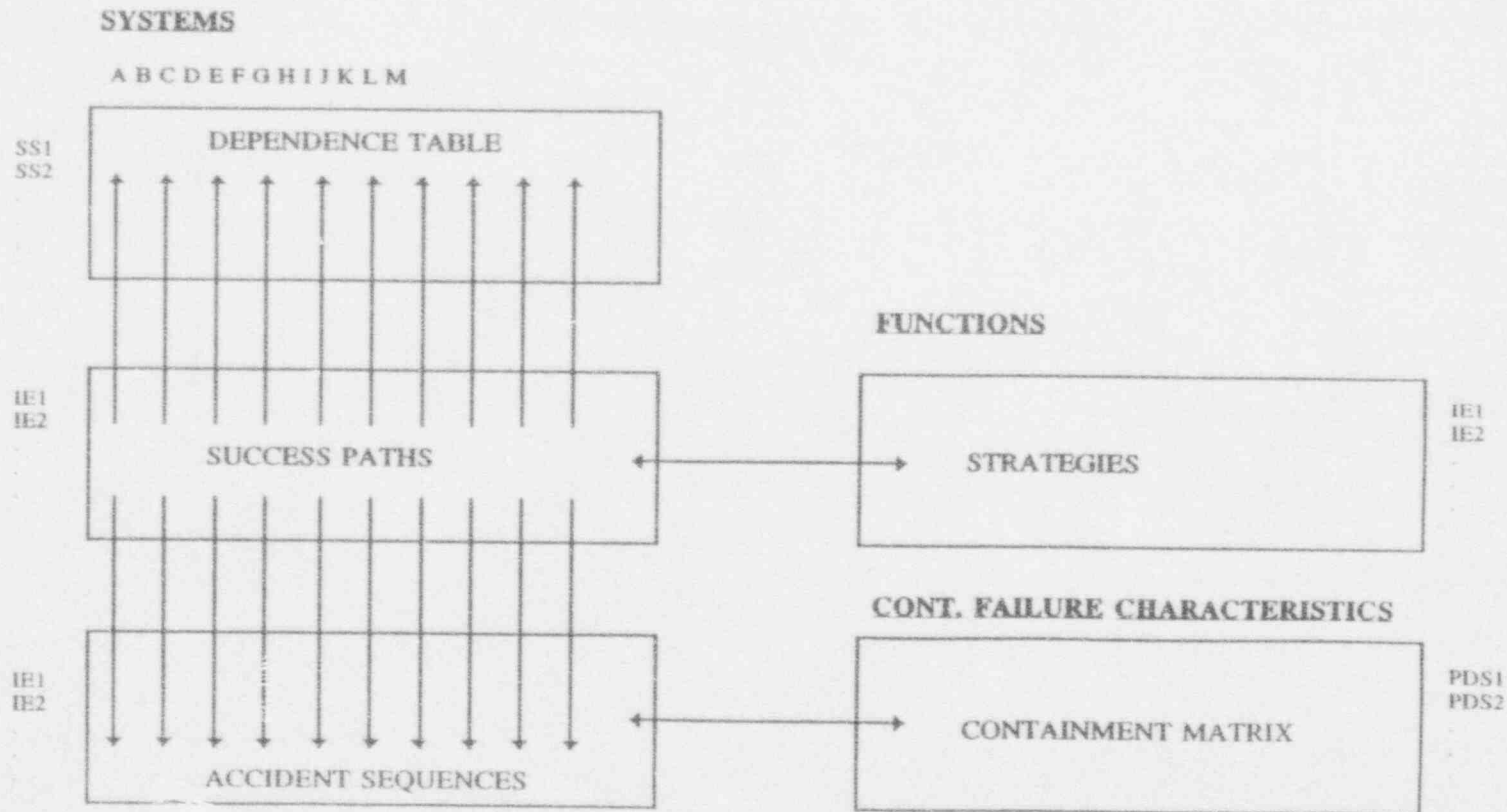
***OBJECTIVE OF THE DATABASE
REQUIRES CERTAIN QUESTIONS
TO BE ANSWERED***

- **How Do Plant Features Factor Into the Core Damage Frequency And Containment Performance?**
- **If Two Plants In Basically Same Class Have Markedly Different Core Damage Frequencies Or Containment Performances, What Is Responsible?**
- **If A Class Of Plants Seems To Share A Particular Contributor To Risk, What Plant Features Are Responsible?**

***TO MEET THE REQUIRED OBJECTIVES,
CERTAIN INFORMATION NEEDS TO BE
EXTRACTED FROM EACH IPE***

- **System Information**
 - Front-line
 - Support
- **Dependence Information**
 - Front-line dependencies
 - Support dependencies
- **Sequence Information**
 - Success Paths
 - Failure Paths
 - Causes
 - Frequencies
- **Success Criteria Information**
 - Functional Strategies For Core Damage Prevention
- **Mapping From Core Damage Plant Damage State To Releases**
 - PDS Parameters
 - Containment Matrix
 - Level 2 Analysis Parameters
 - Source Term

BASIC STRUCTURE INCLUDES CROSS-TIE OF INFORMATION FILES AND PLANTS



EXAMPLE INFORMATION ENTERED FOR BWR SYSTEM FIELD OR RECORD

FUNCTION	SYSTEM	PLANT-SPECIFIC NOMENCLATURE	NUMBER OF TRAINS			NOTES/SOURCE
			NO.		OTHER FUNCTION UNIT CROSS-TIE	
REACTIVITY CONTROL	RPS					
	ARI					
	SLC					
	CRDS					
	RECIRC					
PRESSURE BOUNDARY INTEGRITY						
HIGH PRESSURE INJECTION						
.						
.						
.						

EXAMPLE INFORMATION ENTERED FOR DEPENDENCE FIELD OR RECORD

ACRONYM OF SUPPORTING SYSTEM	FUNCTIONS													NOTES/COMMENTS		
	FUNCTION A				FUNCTION B				FUNCTION C							
	1	2	3	4	5	6	7	8	9	10	11	12	13			

ENTRIES --

- A = Absolute (Failure of System 2 Causes Failure of System 1)**
- P = Primary (Failure of System 2 Causes Failure of System 1 Unless Backup Is Brought Into Play)**
- S = Secondary (System 2 is a Backup to Some Primary Support of System 1)**
- D = Partial (Failure of System 2 Increase the Probability of Failure of System 1)**

EXAMPLE INFORMATION ENTERED FOR SEQUENCE FIELD OR RECORD

#	SEQUENCE	PDS	CDF	IE	LOST SUPPORTS	FAILED FUNCTIONS	CAUSES	ATTRIBUTES	FUNCTIONS/SYSTEMS	NOTES

ENTRIES --

- IE** = S1, S2, S3, A, V, Tloop, Trx, Ttt, Tatws, Tuhs, Trecirc,
- LOST SUPPORTS** = AC, ACBU1, ..., DC, EAC, HVAC, NSW,
- FAILED FUNCTIONS** = RCS-BOR, RCS-INT, RCS-DEP, HPI, HPR LPI
- CAUSES** = IFL, FIRE, CCF
- ATTRIBUTES** = ATWS, BYPASS, TIL, SBO, HUM

STATUS AND SCHEDULE OF IPE/IPEEE INSIGHTS PROGRAM

- **IPE Database Will Have 50 IPEs By December (All Reactor And Containment Types — 17 BWRs and 33 PWRs)**
- **Currently Developing Program Assumptions For Contractor Assistance**
- **Initial Draft Report Based On The 50 IPEs Summer 1994**
- **Revised Report Based on All IPEs 1995**
- **Revised Report To Include First Set Of IPEEEs 1996**
- **Final Report Issuance 1998**

AN OVERVIEW OF THE
INDIVIDUAL PLANT EXAMINATION
OF EXTERNAL EVENTS
(IPEEE) PROGRAM

JOHN T. CHEN (301-492-3919)
SEVERE ACCIDENT ISSUES BRANCH
OFFICE OF NUCLEAR REGULATORY RESEARCH
U.S. NUCLEAR REGULATORY COMMISSION

IDENTIFICATION OF EXTERNAL EVENTS
FOR INCLUSION IN THE IPEEE

EXTERNAL EVENTS ARE THOSE WHOSE CAUSE IS EXTERNAL TO THE SYSTEMS, COMPONENT OR STRUCTURE BOUNDARY

- SEISMIC EVENTS
- INTERNAL FIRES
- HIGH WINDS AND TORNADOES
- EXTERNAL FLOODS
- TRANSPORTATION AND NEARBY FACILITY ACCIDENTS
- INTERNAL FLOODS (PART OF IPE)
- LIGHTNING
- SEVERE TEMPERATURE TRANSIENTS (EXTREME HEAT, EXTREME COLD)
- SEVERE WEATHER STORMS
- EXTERNAL FIRES (FOREST FIRES, GRASS FIRES)
- EXTRATERRESTRIAL ACTIVITY (METEORITE STRIKES, SATELLITE FALLS)
- VOLCANIC ACTIVITY

IPEEE METHODS OF EXAMINATION

THE FOLLOWING APPROACHES ARE ACCEPTABLE FOR THE IPEEE:

SEISMIC EVENTS

- A SEISMIC PRA (LEVEL I PLUS CONTAINMENT PERFORMANCE) WITH ENHANCEMENTS DISCUSSED IN NUREG-1407
- A SEISMIC MARGINS METHODOLOGY (SMM), EITHER EPRI'S OR NRC'S, WITH ENHANCEMENTS AS DISCUSSED IN NUREG-1407

IPEEE METHODS OF EXAMINATION
(CONTINUED)

INTERNAL FIRES

- A LEVEL I FIRE PRA PLUS A CONTAINMENT ANALYSIS AS DISCUSSED IN NUREG-1407. WALKDOWN PROCEDURES SHOULD ADDRESS THOSE ISSUES IDENTIFIED IN THE FIRE RISK SCOPING STUDY.

- EPRI'S FIVE METHOD

ISSUES IDENTIFIED IN THE FIRE RISK SCOPING STUDY - (1) SEISMIC/FIRE INTERACTIONS, (2) EFFECT OF FIRE SUPPRESSANTS ON SAFETY EQUIPMENT, AND (3) CONTROL SYSTEM INTERACTIONS SHOULD BE ADDRESSED.

LICENSEES' SUBMITTAL PLANS

- METHODOLOGY SELECTION

- . SEISMIC PRA - 44 PLANTS,
 NRC SMM - 5 PLANTS,
 EPRI SMM - 44 PLANTS,
 OTHER - 18 PLANTS

- . FIRES PRA - 61 PLANTS,
 FIVE - 50 PLANTS

- . HWFOs NUREG-1407 - 98 PLANTS,
 OTHER-13 PLANTS

- SUBMITTAL SCHEDULE

- . FY 93 4
- . FY 94 13
- . FY 95 35
- . FY 96 16
- . FY 97 7

RESOLUTION OF GENERIC ISSUES VS. IPE/IPEEE

- o GUIDANCE FOR PERFORMING IPES ISSUED IN 1988 (GL 88-20) AND 1989 (NUREG-1335).
- o LICENSEES REQUIRED TO ADDRESS USI A-45, "SHUTDOWN DECAY HEAT REMOVAL REQUIREMENTS" AS PART OF IPE.
- o LICENSEES NOT REQUIRED TO ADDRESS OTHER GENERIC ISSUES IN THEIR IPES, ALTHOUGH THEY WERE GIVEN THE OPTION TO PROPOSE RESOLUTION TO OTHER GENERIC ISSUES.
- o HOWEVER, AS PART OF THEIR IPES, LICENSEES DO LOOK AT A NUMBER OF AREAS RELATED TO RECENT GENERIC ISSUE CONCERNS.
- o GENERIC ISSUE RESOLUTION AND PRIORITIZATION PROCESS RECOGNIZES THIS ONGOING ACTIVITY AND ALSO RECOGNIZES THE REVIEW PROCESS FOR THE IPES.

RESOLUTION OF GENERIC ISSUES VS. IPE/IPEEE
(CONT.)

- o IPEEE GUIDANCE ISSUED IN 1991 (GL 88-20, SUPPLEMENT 4 AND NUREG-1407).
- o IPEEE SPECICALLY ADDRESSES USI A-45 (EXTERNAL EVENTS PORTION) AND GI-131.
- o LICENSEES SPECIFICALLY REQUESTED TO ADDRESS ISSUES RESULTING FROM THE SANDIA FIRE RISK SCOPING STUDY (NUREG/CR-5088). THIS WAS RECOGNIZED IN RESOLUTION OF GI-57.
- o RECENT PRIORITIZATIONS RECOGNIZED THAT RELATED ISSUES ARE BEING ADDRESSED AS PART OF IPEEE. NO IN-DEPTH REVIEW OF ISSUES PLANNED BEYOND THE OVERALL REVIEW OF THE IPEEE.

NRR STAFF PRESENTATION TO THE ACRS

SUBJECT: Status of NRR Accident Management Activities

DATE: November 18, 1993

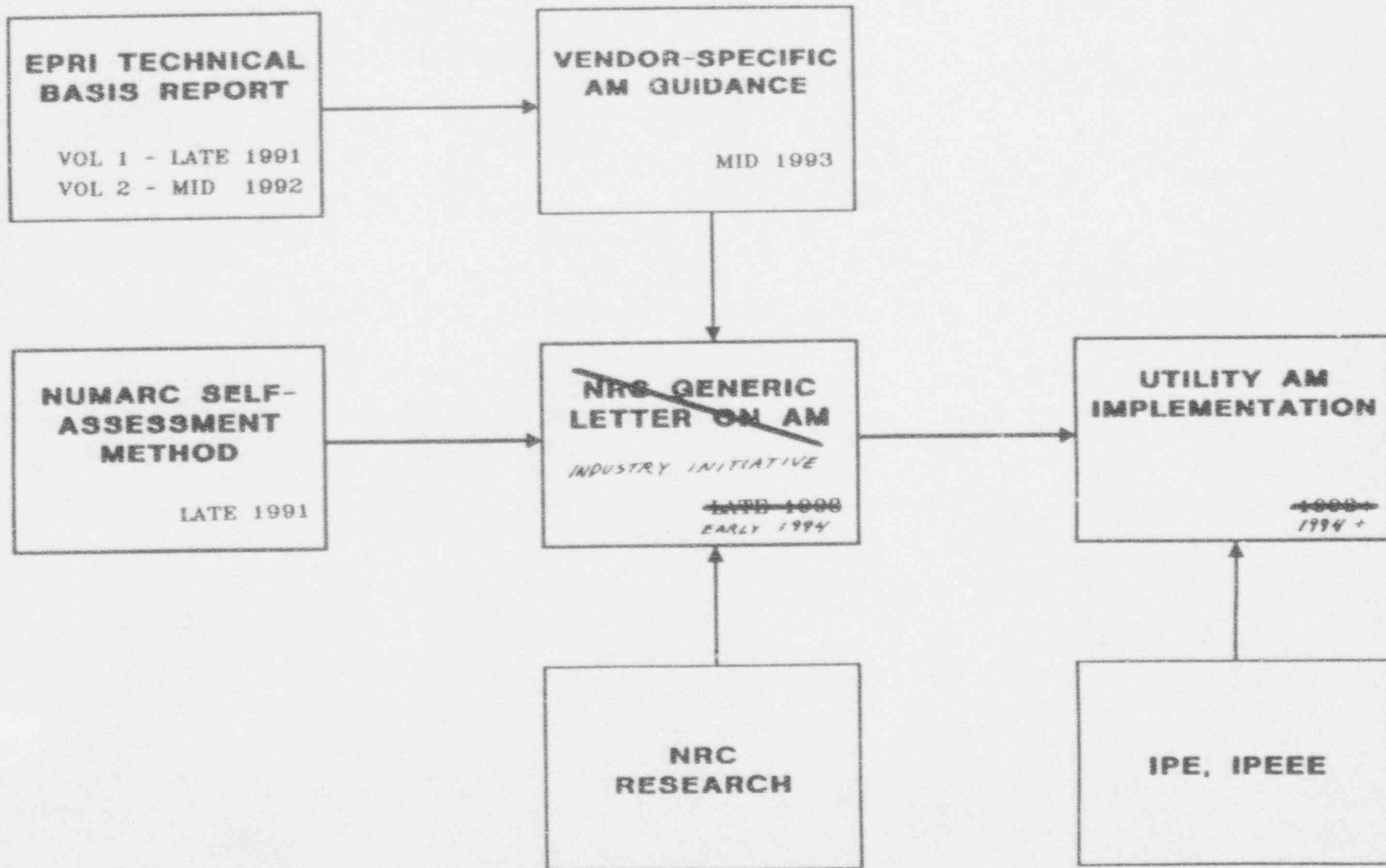
PRESENTER: Robert L. Palla

PRESENTER'S TITLE/BRANCH/DIV: Sr. Reliability & Risk Analyst
Risk Applications Branch
Div. of Radiation Protection and
Emergency Preparedness

PRESENTER'S NRC TEL. NO.: 504-1095

SUBCOMMITTEE: Individual Plant Examinations
Severe Accidents

OVERVIEW OF INDUSTRY AND NRC ACTIVITIES ON ACCIDENT MANAGEMENT



STATUS OF MAJOR ACTIVITIES

<u>PRODUCT</u>	<u>STATUS/SCHEDULE</u>
Methods for evaluation of capabilities	Complete
- NUMARC/EPRI process	NUMARC Report 92-01, April 1992
- INEL process (revised)	NUREG/CR-6009, August 1992
EPRI "Technical Basis Report"	Complete (EPRI Report TR-101869)
- Volume 1	submitted Sept 1991
- Volume 2	no industry plans to submit
Owners Group SAMG (draft)	Partially Complete
- PWR Owners Groups	submitted June-Aug 1993
- BWROG	expected by end CY 1993
Guidance on Training/Decisionmaking	Partially Complete
- Task Analysis	1st quarter CY 1993
- Revised INPO Guideline	expected by end CY 1993

REMAINING STAFF ACTIONS

- Review industry products
 - Owners Group SAMG
 - INPO guideline for training and decisionmaking

- Review industry initiative on accident management
 - objectives versus NRC expectations
 - methods for assessing and exercising capabilities
 - further guidance on specific elements of A/M
 - strategies/procedures
 - training
 - computational aids
 - instrumentation
 - decisionmaking

- Develop preliminary A/M Inspection Guidance

**OVERVIEW OF INDUSTRY
ACTIVITIES IN SEVERE ACCIDENT
MANAGEMENT (SAM)**

BY

**DAVID MODEEN, NUMARC
202-872-1280**

**LARRY WALSH, NAESCo
603-474-9521 ext. 3347**

TO

ACRSIPE SUBCOMMITTEE

**NOVEMBER 18, 1993
BETHESDA, MD**

BACKGROUND

- Considerable focus already exists on accident prevention
 - Emergency and Abnormal Operating Procedures (EOPs and AOPs)
 - Training programs (including plant reference simulators)
 - Safety Parameter Display Systems
- Considerable focus already exists to implement public protective action recommendations
 - Emergency plan support organizations, response plans and pre-staged resources
 - Periodic, large scale exercises and mini-drills

MAJOR PRODUCTS

- NSSS owners groups guidance
 - Incorporate vendor specific considerations and information for applying possible strategies identified in the EPRI SAMG TBR and other documents
 - Assist INPO and utilities in developing severe accident training materials
- Institute for Nuclear Power Operations (INPO)
 - Identify training attributes for personnel with severe accident management responsibilities
 - Consider need for enhancing existing decision making process and any factors unique to severe accident conditions
 - Identify methods to exercise SAMG

FORMAL INDUSTRY POSITION STRUCTURE

- Formal, binding on all NUMARC members
 - High level utility action statement to perform an assessment and adopt any improvements deemed necessary
 - Completion date of July 1, 1997
- Revise NUMARC 91-04 to reflect flexible nature of the guidance
 - Formal position in foreward
 - General description of relevant SAM “elements” and self-evaluation in Sec. 5
 - Maintains utility flexibility in response to the formal position
 - Reference associated industry guidance documents
 - Already contains definitions of key terms

FORMAL INDUSTRY POSITION BASIC BUILDING BLOCKS

- Expected Licensee Action
 - Utilize a systematic approach toward assessing existing SAM capabilities
 - Integrate insights with those from IPE and Owners group-specific SAMG
 - PRIMARY: from core damage through achievement of a stable condition, if possible
 - SECONDARY: enhance capabilities to prevent core damage (from IPE insights)
 - Identify target date to NRC staff for completion of assessment and implementation of any enhancements
 - Perform self evaluation in lieu of NRC staff inspection of SAM capabilities

FORMAL INDUSTRY POSITION ASSESSMENT OF RESOURCE IMPACT ON UTILITIES

- SAMG development and upkeep
 - Strategies
 - Computational Aids
 - Information Needs
- Integration with emergency plan
 - Command & control
 - CR, TSC and OSC interface
- Training
 - Lesson plan development
 - Table top or walk-through drills
 - Personnel
 - » Operations crew
 - » Technical support staff
 - » Decision Maker

FORMAL INDUSTRY POSITION SUMMARY & SCHEDULE

- NUMARC Board of Directors vote on position on March 2, 1994
- Technology transfer workshops: May/Jun 94
 - Expectations and resource estimates
 - Training material development
 - Mini-drills and self-evaluation
 - Partially open to NRC staff
- Complete *final* guidance: 4th qtr 94
 - Owners Groups SAMG packages
 - INPO and Owners Groups training recommendations and associated materials
 - Utility SAMG mini-drill and self-evaluation suggestions
- Complete capabilities assessment and enhancements: July 97