

CERTIFIED

7/30/79

ISSUE DATE: 6/25/79

MINUTES OF THE ACRS SUBCOMMITTEE MEETING ON
RELIABILITY AND PROBABILISTIC ASSESSMENT
WASHINGTON, DC
JUNE 2, 1979

ACRS-16413

On June 2, 1979, the ACRS Subcommittee on Reliability and Probabilistic Assessment met in Washington, DC to discuss procedures being developed to ensure the proper and effective use of risk assessment theory, methods, data development, and statistical analysis by the Staff, to discuss the 1979 review and evaluation of the NRC safety research program, and to discuss the reliability of BWR piping with regards to the frequency of appearance of stress corrosion cracking. Notice of this meeting appeared in the Federal Register on Friday, May 18, 1979 (Attachment A). There were no requests for oral or written statements from members of the public. A copy of Nuclear Power and Safety (Norway) was given to the Subcommittee by ULF TVETEN, I.F.A., who was responsible for Chapter 5, "Accident Risk," and is on file in the ACRS Office. A complete set of slides and hand-outs is attached to the Office Copy of these minutes. The meeting schedule is Attachment B, and the list of attendees is Attachment C.

Mr. Serpan of the NRC's Metallurgy and Materials Research Branch gave a brief overview of Piping Reliability Research Programs Related to BWR Stress Corrosion Cracking. He reviewed the FY 1979 programs which are underway or soon will be. These programs included a program to explore incipient IGSCC detection in BWR piping underway at Dresden 2. In FY 1980, a program is planned to begin development of improved, real-time UT flaw detection aimed at stress corrosion cracking. Plans for FY 1981 call for the initiation of confirmatory research on SCC in BWR piping.

Mr. Serpan noted that the focus of research has been on PWR piping, since the study group report of 1975 indicated that stress corrosion cracks were not a serious safety problem. He noted fracture mechanics stability evaluations of cracked 28-inch pipe which indicated that there will be a leak before a break. He felt it was unlikely that a catastrophic rupture would occur in large diameter piping.

Mr. Serpan again noted that programs dealing with the reliability of piping systems are very PWR oriented. They include studies on the mechanism and probability of pipe failures and on large LOCAs induced by seismic crack growth. Mr. Serpan discussed the cold leg integrity evaluation, its purpose is to determine if the safety margin against a large break in a PWR cold leg,

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during the 40-year plant life, is large enough to make the postulation of a break overly conservative.

Confirmatory Research on SCC in BWR Piping is scheduled to begin in FY 80 or 81. These studies will include:

- .Effect of actual BWR stresses and thermal loading on IGSCC.
- .Study of Service Piping for Residual Stresses and Low Temperature Sensitization.
- .Validation of GE Stress Rule.
- .Validation of Improvement Practices as IHSI (Induction Heating Stress Improvement).
- .Improvement and Validation of NDE for IGSCC.

Dr. Okrent noted that he did not agree with the conclusions reached in NUREG-0531 (the pipe crack study group report). He expressed the thought that the introduction of cracks into piping inevitably introduces some hazard.

Procedures to Ensure the Proper and Effective Use of Risk Assessment Theory, Methods, Data Development and Statistical Analysis by the Staff

Mr. Riehm of the Program Support Staff of NRR begin with a presentation on the use of risk assessment. He noted that a response on the use of risk assessment was due to the Commission by the end of June. However, due to the incident at Three Mile Island and the shut down of some plants due to their piping seismic design, the effort was several weeks behind. At the present time there was not a representative draft of the NRR Staff's position available.

The purpose of the task was described. First it is to develop procedures to ensure expanded use of risk assessment theory is proper and effective. He

stated that this task was a result of the Commission policy statement of January 18, 1979. The policy statement was precipitated by the Risk Assessment Review Group Report which in turn was a result of WASH-1400.

Mr. Riehm noted that guidance was needed by the Staff in the use of event/fault trees, the data base and statistical methods, consequence models, the use of relative vs. absolute probabilities, methodology development and peer review. Mr. Levine noted that since 1974 when the draft of WASH-1400 was released there has been a growing want on the part of the Staff to use the techniques of risk assessment. However, until there is wide spread and adequate training the use of risk assessment should not be encouraged. There are many subtleties involved in its use. Mr. Levine noted that when making predictions both relative and absolute probabilities studies should be done. However, the limitations associated with both predictions should be clearly understood. The best judgment would take into account both relative and absolute probability predictions. Mr. Riehm also noted that the Staff is very concerned that the procedures for use of risk assessment by the Staff have a proper peer review to avoid the need of an elaborate defense later.

Mr. Riehm noted that the Staff must strike a balance between too much control over the use of risk assessment which may inhibit the expanded use and too little control which may lead to inadvertant misuse and loss of credibility. Such as system needs to be accomplished in such a way that the Staff does not have to spend resources continually defending their actions.

Currently there have been discussions between NRR, RES, OSD, and MPA to exchange views on this subject. There has not been a document developed which represents a combined position, yet the schedule is still to develop procedures by June 30, 1979.

Dr. Okrent suggested that the Staff consider how the review process could be hurt by not using probabilistic methodology at all. Even a limited use of risk assessment may be preferable to no use at all.

Discussion of Draft Document from RES, "Detailed Guidance for the NRC Staff on Use of Quantitative Risk Assessment Techniques in Regulatory Decision-making."

Dr. Budnitz discussed the draft document he wrote on the use of quantitative risk assessment techniques. He noted the document does not have input from NRR or I&E which would be desirable in the finished product.

Mr. Levine noted that more sophisticated models are required to analyze phenomena such as earthquakes and floods where the data base is small. The sophistication is required to extrapolate beyond the data base in a meaningful way. It is realized that their use involves some risk of error, but their use also increases the amount of knowledge available in the decision making process.

Mr. Budnitz noted that without guidance on the use of risk assessment there may be cases where the Staff is reluctant to use these techniques to the extent the Lewis Committee thought they should.

In response to questions, Mr. Levine thought that the Staff was not yet to the point of setting a particular criterion for reliability of a specific plant system. The examples of the kinds of applications which are possible are discussed in the draft report (pages 6-8).

Dr. Budnitz again noted that the Lewis Report stated the techniques are of greatest value in their application where the data base is strong. When the data base is weak, the methodology can still be used if used with wisdom recognizing limitations. Where there is no data base it can still be used to delineate areas of investigation.

Dr. Budnitz spoke to the importance of peer review. He noted that the final responsibility for a peer review of a contractor's piece of work rests with the contractor.

Dr. Okrent questioned why the methodology hadn't been used to identify situations of potential interest. He suggested the path of degraded situations be followed to learn where improvements can be made. Improvements may be desirable based on either a high probability of the event occurring or because the consequences of the event appeared awkward. A conclusion could be reached to take some action even though the single failure criterion was met.

Dr. Okrent said that the subcommittee report to the full ACRS would note the incomplete state of the Staff's development of an opinion. He suggested the Committee note its interest in this subject when they meet with the Commission during the June ACRS meeting. Finally as more information or positions are developed on this topic he requested the Committee have an opportunity to look at the information, and perhaps comment on it.

WASH-1400 Insights on Critical Contributors To Risk - W. Vesely

Dr. Vesely presented a few slides on using some of the WASH-1400 insights and risk analyses techniques. He offered insights to widen the extent of the single failure criterion. He noted the importance of any event to risk is determined by three basic factors:

1. The probability of occurrence of the event
2. The Safety System (or Systems) affected by the event, and
3. The event tree sequence (or sequences) associated with the event.

Dr. Vesely noted there were numerous contributors, in WASH-1400, not covered by the single failure criterion which add risk contributions as high or higher than single active component failures. Some of these include human errors, common cause failures, test and maintenance downtimes, nontestable components, and certain passive components.

Dr. Vesely noted that for licensing, the results and insights from the risk analyses can be translated into deterministic criteria and guidelines. Contributors to system downtime due to test and maintenance can be translated into maximum allowable component downtimes for tech. specs. Contributions due to human error can be translated into procedural or design requirements. Contributions due to other factors can be translated into specific requirements depending on the originating cases.

To identify significant risk contributors in plants event trees can be constructed to determine key accident sequences and key systems for a set of similar plants. System logic models can be constructed to consider specific factors contributing to system failures within accident sequences. Significant risk contributors can be identified utilizing failure rate data system logic models, and defined accident sequences.

Dr. Vesely noted that in some cases it may be unnecessary to construct large detailed fault trees. System logic models which are constructed to consider component failure can be of various forms and relatively simple, such as system schematics, and simplified block diagrams.

Afternoon Session

Dr. McGrath of the Probabilistic Analysis Staff presented his groups' FY-81 plans to the Subcommittee. Dr. McGrath listed three items which had a large influence over the direction of the FY 81 budget. First there was an increase in the support given to licensing. The example of ranking generic safety items was cited. The issuance of the Risk Assessment Review Group Report and the Commission's Policy statement guided the 1981 budget planning. The final item which will be reflected in the FY-81 budget will be the implications resulting from the Three Mile Island incident.

The FY-81 work management structure is broken down into nine areas. The total budget requested for FY-81 is \$10.4M. The nine areas of work management structure are:

1. Methodology and Software development which includes the development of flood methodology for accident risk, and fire risk.
2. Reactor systems and accident process analysis includes core melt sensitivity work.
3. Licensing support and methodology application includes the PAS review of the standard review plan, and transportation accidents.
4. The nuclear fuel cycle risk program is primarily devoted to high-level waste management.
5. Reliability and human error data analysis is the work which is being done to improve the PAS data base, such as common cause failure, human error data, and component failure rate data.
6. Acceptable risk criteria is an exploratory program that is investigating the area of acceptable risk and trying to determine whether there are ways to establish quantitative risk policy.
7. Improvements to the reactor safety study will deal with studies on the implications of the RSS.
8. The training program deals with promoting a familiarity with risk assessment techniques and their use among the Staff.

9. Operational safety data analysis will look into evaluations primarily using LER data and the NPDRS.

This current budget is based on supporting ongoing programs, and funding new projects which are required. The FY-81 budget is now set at \$10.1M which almost doubles the \$5.7M budget for FY-80.

Program Areas in Fuel Cycle Risk Assessment - M. Cullingford

The programs in this area are broken down into waste management and operational and facility risk assessment. The funding is predominately in the waste management area for FY-81. The operational and facility risk assessment budget is half of that proposed for waste management. He noted the projects are designed to look at the important contributors to risk, to identify data voids, the ranking of data needs, and provide models useful in the licensing process.

The major program in this area is methodology development for risk assessment of radioactive waste isolation. The FY 81 cost is expected to be \$450K. The objectives are to examine the long-term risk from radioactive waste isolation in deep geologic formations. This program will attempt to demonstrate the methodology by application to a hypothetical reference repository in bedded salt. A third objective is to provide insights on the important processes and mechanisms which govern transfer of radionuclides to humans and thus guide the formation of licensing decisions. The first phase of this program is nearly complete and defined a reference repository system. The work was performed by the USGS.

A second phase of this program will identify system properties important to long-term safety, identify data deficiencies, and identify sources and magnitudes of uncertainties. In a later phase the program will be extended

to consider emplacement media other than bedded salt. The last phase of study will develop model improvements and site specific licensing tools. Products expected from this program include NUREG reports on model development, sensitivity analyses, a transport model, and statistical methods for treating uncertainties. It is also hoped that models with user manuals can be produced as standard calculational and licensing tools. It is hoped to be able to demonstrate the risk methodology by application to the reference site.

A risk methodology for spent fuel isolation alternatives program is underway, FY-81 costs are projected at \$355K. The program began this year and is currently exploring fuel spacing, and possible disruptive features that would have to be addressed. Products expected from this program include: a report on a reference spent fuel repository, identifying data research needs, identification of properties important to long-term safety, and attempting to do some risk assessment.

A scenario assessment for the waste repository program is estimated to require \$260K in FY-81. The aim of this program is to screen various scenarios as to their relative importance, efficiently, and not use a lot of computer time, which could result in man-years of effort.

A dynamic simulation of waste/rock processes will cost \$100K in FY-81. It will attempt to examine mechanisms such as heat increasing the fracturing rate of rock, and increasing the intrusion of water and subsequent solutioning of waste. This is being performed by the USGS.

A radioactive waste gas program is estimated to cost \$140K in FY-81. Its objective is to identify the least risk alternative for management of gaseous C^{14} , I^{129} , and Kr^{85} from fuel cycle facilities.

A program on decontamination alternatives is expected to cost \$150K in FY-81. This program is a result of the recent TMI-2 accident. Its objective will be to develop a method of choosing optimal decontamination plans.

R. Blond (PAS) - Consequence Modeling For Reactor Accidents

The objective of this work is to extend the methodologies and techniques used in the reactor safety study to make them more site specific. The funding level is expected to be \$132K in FY-79, \$200K in FY-80, and \$240K in FY-81. Goals include the development of a preliminary site specific dispersion model for radioactive material. Then an evaluation of the preliminary model will be performed, along with a peer review. The following year (1980) will include refinements to the model. Plume rise and building wake models will be developed and evaluated. In 1981 using sensitivity information, and response modeling techniques PAS will attempt to bound the uncertainty in the model. Risk calculation comparisons will also be done in 1981 to study the impact of the model on specific sites.

An improved health effects models program will reevaluate and update consequence model health effects for early fatalities and latent cancer fatalities. Funding will be \$100K in FY 1980 and \$200K in FY 1981. The program will establish an advisory health effects group to recommend short-term confirmatory research needs and determine appropriate health effects improvements for RSS models.

Reactor and Licensing Applications of Probabilistic Analysis - FY-81 Planning: G. Edison, Systems Engineering Section

The work is broken down into four areas: the application of reactor safety methods, systems analysis of reactor operating experience, providing direct licensing support, and mixtures of other items. The funding totals for this program include 1,907K in FY-79, 1,590K in FY-80, and 3,080K in FY-81.

The objectives of the application of reactor safety study methods, the largest of the program areas, will identify potential accident sequences and provide engineering insights for risk contributors such as core melt, severe nonmelt damage, and Class 3 through 8 accidents. A second objective is to provide risk-based guidance in the areas of operation, testing, inspection and accident recovery. Dr. Okrent noted that his personal opinion was that less emphasis should be given to Class 3 through 8 accidents and more emphasis be given to Class 9 accidents. He suggested some re-thinking of this program aspect with NRR. Mr. Edison noted the basis for the program area was the TMI interim letters of the ACRS and the Risk Assessment Review Group recommendations. Program area benefits include: dominant risk contributors identified to NRR in LWR designs, development of personnel trained in probabilistic analysis of reactor systems, and provides basis to NRR/OSD for consistency in NEPA and safety reviews. Program areas which have not begun yet include:

- identify operations actions to NRR and I&E for mitigation of various accidents
- identify plant conditions and potential inadvertant operator/maintenance adverse actions to NRR and I&E

- provide success path options for NRR (or others) in Recovery from Serious Accidents.
- identify inspection activities of highest risk significance for use by I&E.

Mr. Edison mentioned that follow-on programs at four plants regarding the methods applications program are becoming available. Dr. Okrent requested copies of even preliminary results of these programs as soon as possible. He also requested information on studies concerning floods.

The second program area, systems analysis of reactor operating experience has two objectives. One is to provide generic safety information for operating reactors. The second is to identify accident sequence precursors in operating reactors. The first area will be an overview of essential safety features information from operating plants. The second area would actively analyze the reactor experience from a systems perspective to try to categorize events, and develop frequencies of precursors. It is expected these programs will provide a design overview. It is also hoped this program will provide a greatly improved basis for identifying potential safety problems to NRR. It is envisioned that this system will catalogue basic design features of operating reactors so that the number of reactors effected by a particular decision would be easily at hand. When a work scope is available, it was requested that it be provided to the ACRS.

Dr. Okrent noted that he was interested in hearing about the Staff's investigation of the incidence of pipe cracking in BWRs and its possible significance to the reliability of systems that would be required if cracks were to progress into leaks of various sizes. He noted that the Subcommittee was interested in a probabilistic look at this subject.

Mr. Hazelton of NRR noted that there has never been a case of BWR pipe cracking that has required any action from an ESF system. He noted that, in general, NRR concurred with the conclusion of the pipe crack study group (NUREG-0531) which concluded there was no safety significance from stress corrosion cracking. Dr. Hanauer mentioned that he was the task manager for the Task Action Plan A-42 which will deal with BWR pipe cracks.

Dr. Okrent said it would be of interest to get data which gives the probability of flaws of different sizes per reactor year. Mr. Hazelton noted there was some information which might relate to Dr. Okrent's request and there was some EPRI data as well, but was unsure if it would be of any use.

A third phase to the reactor licensing application of probabilistic analysis, is to provide direct licensing support to NRR, I&E, and other offices. The objectives are to rank, evaluate, and resolve safety issues on the basis of risk. This program will also determine relative values of regulatory review units on a risk basis and compare it with resource impacts. Finally, the assistance provided to NRR is aimed at reviewing selected safety systems, providing basis for licensing review, and reducing the amendment backlog.

Finally, Mr. Edison noted a small dollar amount will be spent on studies to balance risk to public vs. risk to plant personnel from changes in inspection, testing, and maintenance, and on reactor safety study improvements.

Program Areas in Data and Methodology - W. Vesely

This program deals with component failure rate analysis, human error rate analysis, and common cause analysis. The methodology will deal with fire and flood modeling, systems reliability modeling, risk evaluations of data, variability and uncertainty analyses, and evaluation of operational safety data.

He noted the objective of the component failure rate analyses is to estimate component failure rates for risk and reliability utilizations. Data will be from three sources: LERs, NPRDS, and plant logs. The funding will be \$500K in FY 80 and \$525K in FY 81.

The human error rate analysis has as its objective to estimate and evaluate human error rates in normal operation. Funding for FY 80 is \$425K and for FY 81 is \$525K. The data sources are LERs and inplant records.

Common cause analysis will estimate common cause failure probabilities and analyze behaviors. The funding in FY 80 is \$150K and in FY 81 is \$225K. Models will be developed to statistically and formally analyze common cause failures based on LER-type descriptions.

Fire and flood modeling will evaluate impacts of fires and floods on nuclear power plant risks. Funding for FY 80 is \$390K and \$390K for FY 81.

Dr. Okrent noted it would be of interest to have the appropriate Subcommittee review NRC contract awarding procedures.

Systems reliability modeling's objective is to extend system reliability models to handle operational contributions and time-dependencies. FY 80 funding is \$300K. The funding for FY 81 will be \$550K. Areas of investigation include evaluations of limiting conditions for operation, which will address

allowed downtime for a given component. Also to be considered are failures of components to continue operation and the reliability of software developed.

A program for the risk evaluation of data will construct models and perform analyses to evaluate risk implications of LERs and NPRDS. Funding levels for FY 80 and FY 81 are both set at \$500K.

A variability and uncertainty analysis will describe data variabilities and uncertainties and relation to causes. Funding for FY 80 and FY 81 will be respectively \$150K and \$225K. It will look into whether plant-to-plant variabilities or manufacturing variabilities dominate. In more variation is being observed in LERs and NPRDS than WASH-1400 predicted.

The evaluation of operational safety data is being funded at \$675K in FY 80 and \$900K in FY 81. The program will extend the construction of event trees for plants having the highest failure frequencies and fault trees for critical systems for plants having highest failure frequencies. Actual evaluation would be performed under this task and not be limited to just developing the methodology.

Simulators to Study Human Factors - M. Cullingford

The objective of this program is to try and get useful information from the recording and continual repetition capabilities of the simulator. Mr. Cullingford noted that such a program may generate some predictive powers for a simulator.

Follow-Up Items

A number of items requested by the Subcommittee have been provided by Dr. Vesely. These items are listed in Attachment D to these minutes. Copies of the listed reports are available at the ACRS Office.

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NOTE: For additional details, a complete transcript of the meeting is available in the NRC Public Document Room, 1717 H Street, NW, Washington, DC 20555, or from Ace-Federal Reporters, Inc., 444 North Capitol Street, NW, Washington, DC.

Signed at Washington, D.C. this 4th day of May 1979.

Harry J. Gilman,

Supervisory International Economist, Office of Foreign Economic Research.

[FR Doc. 79-15615 Filed 5-17-79; 8:45 am]

BILLING CODE 4510-29-01

NATIONAL SCIENCE FOUNDATION

Ad Hoc Oversight Subcommittee for Low Temperature Physics; Meeting

In accordance with the Federal Advisory Committee Act, Pub. L. 92-463, as amended, the National Science Foundation announces the following meeting:

Name: Ad Hoc Oversight Subcommittee for Low Temperature Physics, Condensed Matter Advisory Subcommittee, Advisory Committee for Materials Research.

Date and time: June 7 and 8, 1979—9 a.m.—5 p.m. each day.

Place: Room 421, National Science Foundation, 1800 G Street, N.W., Washington, D.C. 20550.

Type of meeting: Closed both days, 9 a.m.—5 p.m.

Contact person: Dr. Herbert S. Bennett, Director, Division of Materials Research, Room 408, National Science Foundation, Washington, D.C., Telephone (202) 632-7412.

Purpose of subcommittee: To provide advice and recommendations concerning support for research in Low Temperature Physics.

Agenda: Thursday, June 7, 1979—9 a.m. to 5 p.m.—closed. Review and comparison of declined proposals (and supporting documentation) with successful awards (including review of peer review materials and other privileged materials).

Friday, June 8, 1979—9 a.m. to 5 p.m.—closed. 9 a.m.—Further discussions of declined proposals and awards.

12 noon—Lunch.

1 p.m.—Preparation of report on subcommittee findings and recommendations.

Reasons for closing: The Subcommittee will be reviewing grants and declination jackets which contain the names of applicant institutions and principal investigators and privileged information contained in declined proposals. This session will also include a review of the peer review documentation pertaining to applicants. These matters are within exemptions (4) and (8) of 5 U.S.C. 552(c), Government in the Sunshine Act.

Authority to close meeting: This determination was made by the Director, NSF, pursuant to provisions of Section 10(d) of Pub. L. 92-463.

M. Rebecca Winkler,

Committee Management Coordinator.

May 15, 1979.

[FR Doc. 79-15615 Filed 5-17-79; 8:45 am]

BILLING CODE 7555-01-01

Subcommittee on Neurobiology; Meeting

In accordance with the Federal Advisory Committee Act, as amended, Pub. L. 92-463, the National Science Foundation announces the following meeting:

Name: Subcommittee on Neurobiology of the Advisory Committee for Behavioral and Neural Sciences.

Date and time: June 4, 5, and 6, 1979: 9 a.m. to 5 p.m. each day.

Place: Room 338, National Science Foundation, 1800 G Street, NW., Washington, D.C.

Type of meeting: Closed.

Contact person: Dr. Janet Trubatch, Program Director, Neurobiology Program, Room 320, National Science Foundation, Washington, D.C. 20550, telephone 202/634-4036.

Purpose of subcommittee: To provide advice and recommendations concerning support for research in Neurobiology.

Agenda: To review and evaluate research proposals as part of the selection process for awards.

Reason for closing: The proposals being reviewed include information of a proprietary or confidential nature, including technical information; financial data, such as salaries; and personal information concerning individuals associated with the proposals. These matters are within exemptions (4) and (8) of 5 U.S.C. 552(c), Government in the Sunshine Act.

Authority to close meeting: This determination was made by the Committee Management Officer pursuant to provisions of Section 10(d) of Pub. L. 92-463. The Committee Management Officer was delegated the authority to make such determinations by the Acting Director, NSF, on February 18.

M. Rebecca Winkler,

Committee Management Coordinator.

May 15, 1979.

[FR Doc. 79-15616 Filed 5-17-79; 8:45 am]

BILLING CODE 7555-01-01

NUCLEAR REGULATORY COMMISSION

Advisory Committee on Reactor Safeguards, Subcommittee on Reliability and Probabilistic Assessment; Meeting

The ACRS Subcommittee on Reliability and Probabilistic Assessment will hold an open meeting on June 2, 1979 in Room 1048, 1717 H St., NW, Washington, DC 20555 to discuss the 1979 Review and Evaluation of the NRC Safety Research Program.

In accordance with the procedures outlined in the Federal Register on October 4, 1978 (43 FR 45928), oral or written statements may be presented by members of the public, recordings will

be permitted only during those portions of the meeting when a transcript is being kept, and questions may be asked only by members of the Subcommittee, its consultants, and Staff. Persons desiring to make oral statements should notify the Designated Federal Employee as far in advance as practicable so that appropriate arrangements can be made to allow the necessary time during the meeting for such statements.

The agenda for subject meeting shall be as follows:

Saturday, June 2, 1979—8:30 a.m. until the conclusion of business.

The Subcommittee will meet in Executive Session with any of its consultants who may be present, and with representatives of the NRC Staff and their consultants, to explore and exchange their preliminary opinions regarding matters which should be considered during the meeting and to formulate a report and recommendation to the full Committee.

At the conclusion of the Executive Session, the Subcommittee will hear presentations by and hold discussions with representatives of the NRC Staff and their consultants, pertinent to this review. The Subcommittee may then caucus to determine whether the matters identified in the initial session have been adequately covered and whether the project is ready for review by the full Committee.

Further information regarding topics to be discussed, whether the meeting has been cancelled or rescheduled, the chairman's ruling on requests for the opportunity to present oral statements and the time allotted therefor can be obtained by a prepaid telephone call to the Designated Federal Employee for this meeting, Mr. Richard K. Major, (telephone 202/634-1414) between 8:15 a.m. and 5:00 p.m., EDT.

Background information concerning items to be considered at this meeting can be found in documents on file and available for public inspection at the NRC Public Document Room, 1717 H St., NW, Washington, DC 20555.

Dated: May 10, 1979.

John C. Hoyle,

Advisory Committee, Management Officer.

[FR Doc. 79-15123 Filed 5-17-79; 8:45 am]

BILLING CODE 7590-01-01

[Docket No. 50-358 OL]

Cincinnati Gas & Electric Co. et al; Evidentiary Hearing

Before the Atomic Safety and Licensing Board; in the matter of Cincinnati Gas and Electric Co., et al., (William H. Zimmer Nuclear Station).

Please take notice that, in accordance with the Licensing Board's Orders of April 6 and May 11, 1979, an evidentiary

POOR ORIGINAL

ATTACHMENT A

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ACRS SUBCOMMITTEE
ON
RELIABILITY & PROBABILISTIC ASSESSMENT

June 2, 1979

- 8:30 A. M. I. Discussion of Detailed Procedures to Ensure the Proper and Effective Use of Risk Assessment Theory, Methods, Data Development and Statistical Analysis by the Staff.
- 12:00 Noon ***** LUNCH *****
- 1:00 II. The 1979 Review and Evaluation of the NRC Safety Research Program.
1. FAS: '81 Budget Information
 2. Related Technical Assistance Programs
 3. Supplemental research budget for the added research following the TMI Accident.
- 4:00 III. Discuss the Reliability of BWR piping with regards to the frequency of Appearance of Stress Corrosion cracking.
- Examples: - Pipe Crack Experience at Duane Arnold
- Frequency of challenges to E. S. F. & estimate of the reliability of requirements on E. S. F.
 - Can operator error aggravate stress corrosion cracking problem.
- 5:00 P. M. ADJOURN

ATTACHMENT B

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ATTENDANCE LIST

ACRS SUBCOMMITTEE MEETING ON RELIABILITY AND PROBABILISTIC ASSESSMENT
WASHINGTON, DC
JUNE 2, 1979

ACRS

D. Okrent, Chairman
W. Kerr
J. C. Mark
R. Major, Designated Federal Employee

EPRI

R. Leyse

BECHTEL CORP.

F. Rowsome

NRC STAFF

P. Riehm
G. Edison
W. Vesely
M. Cullingford
S. Levine
S. Hanauer
R. Budnitz
P. McGrath
R. DiSalvo
R. Blond

PUBLIC
PUBLIC

U. Tveten, IFA/Norway

ATTACHMENT C

1372 265



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

JUN 7 1979

MEMORANDUM FOR: Richard K. Major
Advisory Committee on Reactor Safeguards

FROM: William E. Vesely
Probabilistic Analysis Staff
Office of Nuclear Regulatory Research

SUBJECT: TRANSMITTAL OF DOCUMENTATION

The following documents are being forwarded to supplement my presentation given to the ACRS RPA Subcommittee on June 3, 1979:

1. Discussion of NPRDS problems and why data is to be re-analyzed,
2. System analyses accomplished for NRR by PAS Methodology Section,
3. Draft reports of component failure analyses using LER's,
4. Flood program status reports,
5. In-plant data collection program and progress report,
6. SAI reports used as exhibits for LCO RFP,
7. Progress Report on Fire Risk Systems Analysis project, and
8. Paper on Nuclear Plant Fire Incident Data submitted for publication in Nuclear Safety.

Bill Vesely

William E. Vesely
Probabilistic Analysis Staff
Office of Nuclear Regulatory Research

Attachments: As Stated

cc w/o attachments: P. McGrath

ATTACHMENT D

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