

CERTIFIED

NOTES OF THE ACRS SUBCOMMITTEE MEETING
ON REACTOR OPERATIONS
SEPTEMBER 29, 1982
WASHINGTON, DC

DATE ISSUED: DEC. 15, 1982

The ACRS Reactor Operations Subcommittee met at 1717 H Street, N.W., Washington, D. C. in Room 1046 on September 29, 1982. The meeting had several purposes including:

1. A discussion of recent operational events concerning low-temperature overpressurization. Topics included the current status of overpressure mitigation systems and procedures to be used to avoid such events. Recent events at Turkey Point, Unit 4 and North Anna Unit 1 served as examples to focus the discussion. Possible consequences of such events and current Staff efforts to alleviate concerns were covered.
2. A discussion of the concern raised during the August 1982 ACRS meeting over suppression pool or containment sump water contamination with potential adverse effects on post-accident cooling pumps.
3. A discussion with Frederick Forscher, QA Section, Division of Engineering and Quality Assurance, IE, on his personal feelings toward improvements in QA policy and accreditation of licensees' QA programs.

Notice of this meeting was published in the Federal Register on Monday, September 20, 1982. The Federal Register Notice is Attachment A. A copy of the schedule of presentations is shown in Attachment B. The attendee list is Attachment C. A complete set of presentation slides and meeting handout material is on file in the ACRS office. Attachment D is a list of meeting slides and handouts, as well as supplemental material. Richard Major was the Designated Federal Employee for this meeting. The entire meeting was open to the public.

DESIGNATED ORIGINAL

Certified By

BJR

PWR Low-Temperature Overpressure Protection (LTOPS) - T. Marsh, NRR

The PWR topic of low-temperature overpressurization events first became highlighted in late 1975 as a result of LER review experience. The concern was designated a generic activity A-26 with specific task action plans to lead the issue towards resolution. NUREG-0224 describes the resolution of Task A-26 and summarizes the situation at that time (late 1978).

It was stressed that low-temperature overpressurization concerns are separate from the concern of pressurized thermal shock (PTS). Low-temperature overpressure events in general are isothermal events. They begin when the reactor system is low in temperature and pressure. There is no thermal shock. The link between the two transients is the fact that vessel integrity is of concern.

Although prevention against low-temperature overpressure events has been strengthened, there are still occasional challenges to the mitigation systems since corrective measures were instituted. Challenges have declined because of increased operator attention, design features and improved operating procedures. The program instigated during 1977-1978 has made a significant improvement in avoiding low-temperature overpressurization events. Before 1978 there were on the order of 30 overpressure events. Since the present program began only one low-temperature overpressure event (the event at TP-4) has exceeded Appendix G limits; however, there have been numerous challenges (~ 10) to the overpressure protection systems. Primary

reactor coolant systems are most susceptible to low-temperature overpressurization events when they are in a water solid condition. Reactor coolant systems are taken water solid as an operational convenience and, in some modes of operation, as a necessity for some plant evolutions. Hydrostatic system tests and venting the primary system (to reduce system O_2 content in order to meet system chemistry limits for stainless steel components) are examples of reasons for going water solid.

The point was made that Westinghouse and Combustion Engineering plants generally operate water solid in the number of plant evolutions during operation. B&W plants do not operate nearly as frequently in the water solid mode as the other PWR plants. B&W uses a nitrogen blanket over the pressurizer during certain operational modes to avoid a water solid reactor coolant system.

Prior to 1977, Westinghouse plants were operating about two weeks per year, overall, in a water solid mode. Currently, only two or three days per year total of water solid operation is necessary as a result of initiatives since 1978. Some of the causes of low-temperature overpressurization events included the loss of letdown flow while charging the system, inadvertent safety injection signals and, in one case, an accumulator injection during RCS solid conditions. It appears that the total elimination of reactor coolant system water solid conditions is not a viable option.

Water solid reactor coolant system operation can be minimized but not eliminated. During the course of discussions, it was brought out that systems which could prevent overpressurization events are not safety grade. Neither is the overpressurization prevent function single-failure-proof. However, the mitigation functions of the overpressurization protection systems are double-trained. The Staff concentrated on minimizing to the extent possible plant water solid operations and improving mitigation aspects.

Low-temperature overpressurization system (LTOPS) criteria were discussed. The main goal of the LTOPS criteria was to reduce the frequency of overpressurization events by a defense in-depth approach. By defense in-depth, a combination of procedures, training, mitigation systems, and technical specifications are used to prevent low-temperature overpressure events. In 1978, short-term measures to prevent cold overpressure events included: a review of operating procedures, alerting operators, minimizing the time the RCS is water solid, and conducting briefings and training for operators. Examples of long-term measures to prevent LTOPS events included: providing positive mitigation of postulated events and providing long-term administrative measures such as technical specification limits and alarms. The Staff noted that today's performance following corrective measures appears satisfactory compared to the pre-1978 performance.

Criteria for LTOPS mitigation systems were discussed. The systems must be redundant and single failure proof. Given a single failure, no operator

action for ten minutes must be acceptable. The overpressure mitigation system must be alarmed so that an operator will recognize when to enable the system. The Subcommittee noted that current technical specification conditions allow one train of overpressure mitigation systems to be out of service even when the plant is in a water solid condition. The Staff noted that technical specifications and the requirements for dual system operability are being reviewed. The Subcommittee expressed concern over technical specifications which permit one train of the overpressure mitigation system to be out of service during a limited time interval in which it could be called on to mitigate an overpressure event. It was also noted that there was no requirement to test the one inservice train of the OMS while the other train is out of service.

All operating PWRs have low-temperature overpressurization protection systems in operation. A few operating plants still have their systems under staff review, and exemptions are granted in some cases during the first cycle of operation.

Description of Recent Operational Experience With Cold Overpressurization Events at Turkey Point Unit 4 and North Anna Unit 1 - C. Julian, NRC, Reg. II

Two events, one occurring on November 28, 1981 and one occurring on November 29, 1981--two hours after the first event--resulted in overpressurization of the Turkey Point Unit 4 reactor coolant system. These were the only cases of overpressurization events at a plant since the institution of corrective measures in 1978. The events were caused by two violations of plant technical specification. In both cases, one of the two overpressure mitigating system trains was out of service for calibration (this is permissible under current technical specifications).

The second channel was presumed to be operable. The first violation was the result of improper alignment of instrument root valves. Procedures did not include a verification of valve alignment prior to plant startup. The improper alignment prevented the OMS from sensing the overpressure condition and performing its mitigation function. The second violation was the result of inadequate functional testing of the OMS in that the summator circuitry (which compares reactor coolant system pressure to temperature and regulates relief valve set points) was not tested. This resulted in a failure to discover the OMS (the one train in service) was inoperable. Each of these transients lasted approximately two minutes from start to finish. Facility procedures have been upgraded to correct the problems discovered at Turkey Point 4.

The Staff is considering technical specification changes which would limit the times a single train or both trains of the overpressure mitigation system can be out of service during plant operational evolutions. Subsequent investigations by Westinghouse revealed that even though a low-temperature overpressure event had taken place there was no damage to the pressure vessel. The owners of Turkey Point 4 also had Teledyne independently assess the Westinghouse materials conclusion. Teledyne concurred that the pressure vessel sustained no damage. NRC's Region II and NRR concur with the results of both analyses. It was also pointed out that facility procedures at Turkey Point have been corrected to include the instrument root valve inspection on valve lineup checks.

Inoperability of North Anna Unit 1 Overpressure Protection System on
May 22, 1982 - C. Julian, NRC, Region II

The incident at North Anna Unit 1 resulted in the loss of the overpressurization protection system (OPS) driving force (nitrogen pressure) used to open the power-operated relief valves (PORV), the relieving mechanism in the OPS. Excessive leakage from the nitrogen supply system used to open one of the PORVs caused the first PORV to become inoperative. The second PORV became inoperable because a nitrogen supply isolation valve was closed as a result of personnel error. Administrative errors were also a contributing factor in that the nitrogen reservoir isolation valve was omitted from the system diagram. Formal written procedures or valve line-up sheets had not been provided to the operators (although OPS is taught in operator training classes). The system was totally out of service for 2 hours and 45 minutes during a time when the system is required by technical specifications. Corrected drawings, better valve labels, additional training and procedures are the actions taken to prevent a recurrence. An improved nitrogen supply will also be added. Related problems on North Anna 2 were corrected at the same time as the Unit 1 correction was implemented.

Turkey Point 4 Overpressurization Events - Abnormal Occurrence Reporting
Activities - J. Crook, NRC/AEOD

The Subcommittee was briefed on the process by which the Turkey Point 4 overpressure events were analyzed. The process and chronology involved in making this incident reportable as an abnormal occurrence were reviewed. The incident was under study for several months. As studies continued, the significance of the event became more apparent until it was reported to Congress as an abnormal occurrence in the summer of 1982.

Generic Actions Taken by IE - W. Mills, NRC, IE

The process by which operating events are screened was reviewed. The first initial generic action taken by IE in the Turkey Point 4 event was the issuance of an information notice on the overpressurization of the reactor coolant system. Information Notice 82-17 was issued concerning the Turkey Point event in June of 1982; information on the North Anna event was also included in this Information Notice. Following the issuance of the information notice, IE conducted an LER search to identify any other problems in low-temperature overpressure protection and related generic concerns that might be identified based on operating experience. The results of the LER search indicated that the rate of occurrence of overpressure events has decreased greatly. The events at Turkey Point 4 are the only reported instances since 1978. Current IE actions include ongoing reactor events analysis where overpressure problems and overpressure mitigation system performance are being studied. IE also plans to update the information notice and present current findings at that time from both NRR's studies and IE's LER studies. Overall, IE believed operating experience had been promptly evaluated, the frequency of overpressure events has been greatly reduced, and LER search findings will be factored into ongoing actions by NRR, AEOL and the updated information notice.

Summary of NRR LTOPS Actions - T. Marsh, NRC/NRR

NRR summarized their presentation by noting:

- . LTOPS program is successfully minimizing low-temperature overpressurization events, and mitigating those unavoidable events.
- . Continual feedback of operating experience is part of the LTOPS program.

- . Technical specifications should be complete and consistent with the original SER to ensure adequate system, surveillance and reporting requirements.
- . Licensees should periodically upgrade their LTOPS system setpoints to ensure continued reactor vessel protection, as irradiation alters the Appendix G vessel materials properties.
- . Technical specifications concerning OMS train availability when the system is required, and testing the operable train when one system is out of service will receive additional attention.

Quality Assurance Policy - F. Forscher, NRC/IE

Dr. F. Forscher of the Office of IE presented his personal views on quality assurance (QA). QA was labeled an essential management tool, but not a substitute for good management. QA was defined as the multidisciplinary system of management controls that comprises all those planned and systematic actions necessary to provide adequate confidence that agreed-upon requirements are met. The agreed-upon requirements to which QA is applied are management decisions ranging from design objectives to mission objectives. There was discussion on what should be included in the definition of quality assurance; some interpretations of the scope of quality assurance were broader than others.

Accreditation by NRC of licensee's quality assurance programs was put forward as a means to improve the reliability of QA programs. A proposed accreditation process modeled after the practice of the ASME in administering the Boiler and Pressure Vessel Code was suggested. Mr. Ebersole suggested a formalized system be considered where maintenance is performed by pre-qualified personnel. Mr. D. Ward noted that one problem in the QA area seems to be that QA has tended to force a certain style of management on utilities by insisting

on conformance to a particular style, rather than actual good management. Mr. Ward stressed that it was important to remember that the industry should be after quality and the reliability of a safe and efficient operation, and not some arbitrary conformance to a certain management style.

E. Jordan, Director of the Division of Engineering and Quality Assurance, IE, explained that IE has a number of initiatives underway for improving quality assurance. IE's initiatives are aimed at design and construction of nuclear power plants. NRC will try to determine what qualities make one particular program good or bad. NRC is also exploring the possibility of obtaining the authority to designate inspectors (someone in the utility organization or contract organization) as specially qualified. IE initiatives in the are expanding from design and construction to operation.

During the course of the discussion, the idea was proposed that quality assurance also encompasses items such as systems interactions. The integration of various aspects of the design of a plant should form a part of quality assurance.

Post-Accident Water Contamination - A. Serkiz, NRC/NRR

The Staff presented the preliminary results of Unresolved Safety Issue A-43. A-43 dealt with challenges to post-accident cooling as a result of coolant blockage by insulation debris and challenges to pump operation by air ingestion and particulate debris. Other possible effects on post-accident pump performance include the effects of paint chips, precipitates, dirt and housekeeping items. Specific areas addressed regarding insulation debris and particulates included:

1. The fact that some plants use calcium silicate insulations. This insulation will absorb water and break apart. It will be transported to pumps as particulates or sludge mass.
2. Fibrous insulations such as mineral wool and fiberglass will migrate at low velocities if shredded. They pose the possibility of blocking screens where they are intercepted.
3. Material which is small enough to pass through some screens will not pose a pumping problem.
4. Material and particulates which pass through the screens can block cyclone separators used on pumps. Newer installations do not use these separators; manufacturers recommend against their use.

The evaluation of the types of pumps in operation concluded they resist erosion and corrosion (similar pumps are used to pump slurries). The bearing design of RHR and CSS pumps (those studied in the report were limited to pumps in use at PWR facilities) is such that loss of seal coolant (as a result of debris blockage) will not result in the catastrophic failure of the pump, although some seal leakage will occur. The implementation stage of Task A-43 will occur in the spring of 1983. In some cases, it is possible that replacement of present insulation may be necessary. Details of A-43 are contained in NUREG/CR-2792 which provides more details on the pump evaluations.

The meeting was adjourned at 4:10 p.m.

NOTE: A complete transcript of the meeting is available in the NRC's Public Document Room at 1717 H St., N.W., Washington, DC, 20555, or can be obtained at cost from Alderson Reporting, 400 Virginia Ave., S.W., Washington, D.C. (202) 554-2345.

Major

Guard Panel. The mailing address is: NACOA, 3300 Whitehaven Street, NW., (Suite 438, Page Building No. 1), Washington, D.C. 20235.

Dated: September 13, 1982.

Steven N. Anastasio,

Executive Director.

(FR Doc. 82-25806 Filed 9-17-82; 8:45 am)

BILLING CODE 3510-12-M

NATIONAL FOUNDATION FOR THE ARTS AND THE HUMANITIES

Dance Advisory Panel; Meeting

Pursuant to Section 10(a)(2) of the Federal Advisory Committee Act (Pub. L. 92-463), as amended, notice is hereby given that a meeting of the Dance Advisory Panel to the National Council on the Arts will be held on October 4-6, 1982, from 9:00 a.m.-5:30 p.m. in room 1422 of the Columbia Plaza Office Building, 2401 E Street, NW., Washington, D.C. 20506.

A portion of this meeting will be open to the public on October 4, 1982 from 1:00 p.m.-5:30 p.m.; October 5, 1982 from 9:00 a.m.-5:30 p.m.; and on October 6, 1982 from 9:00 a.m.-3:30 p.m. to discuss guidelines and policy issues.

The remaining sessions of this meeting on October 4, 1982 from 9:00 a.m.-1:00 p.m. and on October 6, 1982 from 3:30 p.m.-5:30 p.m. are for the purpose of Panel review, discussion, evaluation, and recommendation on applications for financial assistance under the National Foundation on the Arts and the Humanities Act of 1965, as amended, including discussion of information given in confidence to the agency by grant applicants. In accordance with the determination of the Chairman published in the *Federal Register* of February 13, 1980, these sessions will be closed to the public pursuant to subsections (c) (4), (6) and 9(b) of section 552b of Title 5, United States Code.

Further information with reference to this meeting can be obtained from Mr. John H. Clark, Advisory Committee Management Officer, National Endowment for the Arts, Washington, D.C. 20506, or call (202) 634-6070.

John H. Clark,

Director, Office of Council and Panel Operations, National Endowment for the Arts.

September 13, 1982.

(FR Doc. 82-25706 Filed 9-17-82; 8:45 am)

BILLING CODE 7537-01-M

NUCLEAR REGULATORY COMMISSION

Advisory Committee on Reactor Safeguards, Subcommittee on Clinch River Breeder Reactor, Working Group on Systems Integration and Instrumentation Control; Correction

The ACRS Subcommittee title has been corrected re meeting of the Clinch River Breeder Reactor (CRBR) Working Group on Systems Integration and Instrumentation Control scheduled for September 30, 1982, Room 1046, 1717 H Street, NW., Washington, D.C. The Subcommittee will discuss the CRBR plant protection and instrument and control systems.

All other items regarding this meeting remain the same as announced in the *Federal Register* published Monday, September 13, 1982 (47 FR 40260).

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 cognizant Designated Federal Employee, Dr. Richard Savio (telephone 202/634-3267) between 8:15 a.m. and 5:00 p.m., EDT.

Dated: September 14, 1982.

Samuel J. Chilk,

Acting Advisory Committee Management Officer.

(FR Doc. 82-25772 Filed 9-17-82; 8:45 am)

BILLING CODE 7590-01-M

Advisory Committee on Reactor Safeguards, Subcommittee on Reactor Operations; Agenda Changes

The ACRS Subcommittee on Reactor Operations scheduled for September 29, 1982, Room 1046, 1717 H Street, NW., Washington, DC agenda items have been changed as noted below:

The Subcommittee plans to discuss: (a) The pressure transients during shutdown at Turkey Point Unit 4 and other related incidents with the Staffs of the Offices of Analysis and Evaluation of Operational Data, Nuclear Reactor Regulation, Inspection and Enforcement, and Region II; (b) discussion of Quality Assurance Policy; Accreditation of Licensee's Quality Assurance Program; and (c) discussion of suppression pool or containment sump water contamination with potential adverse effects on post-accident cooling pumps.

All other items regarding this meeting remain the same as announced in the *Federal Register* published Monday,

September 13, 1982 (47 FR 40259).

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 cognizant Designated Federal Employee, Mr. Richard K. Major (telephone 202/634-1414) between 8:15 a.m. and 5:00 p.m., EDT.

Dated: September 14, 1982.

Samuel J. Chilk,

Acting Advisory Committee Management Officer.

(FR Doc. 82-25771 Filed 9-17-82; 8:45 am)

BILLING CODE 7590-01-M

[Docket No. 50-184]

Availability of Final Environmental Statement for National Bureau of Standards Reactor

Notice is hereby given that a Final Environmental Statement (NUREG-0877) has been prepared by the Commission's Office of Nuclear Reactor Regulation related to the license renewal and power increase for the National Bureau of Standards (NBS) research reactor. This reactor is located on the 576-acre NBS site near Gaithersburg in Montgomery County, Maryland about 20 miles northwest of the center of Washington, D.C.

The Final Environmental Statement is also being made available at the State Clearinghouse, Department of State Planning, 301 West Preston Street, Baltimore, Maryland 21201.

The notice of availability of the Draft Environmental Statement (DES) and request for comments was published in the *Federal Register* on February 25, 1982 (47 FR 8273). The comments received from Federal, State and local agencies, and interested members of the public have been included as appendices to the Final Environmental Statement.

Copies of the Final Environmental Statement (NUREG-0877) may be purchased at current rates from the National Technical Information Service, Department of Commerce, 5238 Port Royal Road, Springfield, Virginia 22161, and from the Sales Office, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555.

Dated at Bethesda, Maryland, this 13th day of September 1982.

ATTACHMENT A

TENTATIVE SCHEDULE FOR THE
SEPTEMBER 29, 1982
ACRS REACTOR OPERATIONS SUBCOMMITTEE MEETING
WASHINGTON, D.C.

8:30 a.m. - 8:45 a.m.

I. Introduction

J. Ebersole

- Purpose and goals of the meeting
- Outline of the day's schedule

8:45 a.m. - 12:30 p.m.

II. Discussion of Cold Overpressure Events

- a. Introduction (J. Crooks, AEOD; R. Lewis, Reg. II,
T. Marsn, NRR; W. Mills, IE)
- b. History of cold overpressure events prior to the
addition of overpressure mitigation systems.
(Nature of the concern, brief description of
consequences of cold overpressure events, analysis
of effects to vessel, QA on analysis)
- c. Decision to add overpressure mitigation system:
Discussion of types in use. Description of systems
features, out-of-service monitoring (NRR lead)
 1. Westinghouse
 2. CE
 3. B&W
- d. Recent Events: Problems After Installation of OMS.
Description of Events (Region leads)
 1. Turkey Point Unit 4 Events, Nov. 28 & 29, 1981
 2. Situation at North Anna
 3. Other examples (a list)

**** 10:30 a.m. ****

BREAK

- e. Analysis of Event and Corrective Measures Applied
(Region leads)
 1. Information Notice (Region)
 2. Abnormal Occurrence Report (AEOD)

f. Generalized Implications to Other Operating PWRs

1. Generalized discussion of corrective measures (Tech. Spec. Changes; increased management attention.) (NRR & Region lead; input by others.)
 2. Other interactions: low-pressure OMS interfering with high-pressure relief function (IE)
 3. Attention to plant systems by licensees (all)
- g. General Wrap-Up and Discussion by Subcommittee and Participants. Additional Staff Effort.
Is Committee support needed for future actions?

12:30 p.m. **** LUNCH **** ONE HOUR

- 1:30 - 2:30 p.m. III. Suppression Pool or Containment Sump Water Contamination with Potential Adverse Effects on Post-Accident Cooling Pumps (A. Serkiz, NRR)
- a. Introduction, Residual Heat Removal Systems and Containment Spray System Descriptions
 - b. Mechanical Details of RHR and CS Pumps
 - c. Data on Anticipated Debris Through Pumps (Differences between earlier plants vs. later plants)
 - d. Conclusions on Debris Ingestion

- 2:30 - 3:30 p.m. IV. QA Policy; Accreditation of Licensee's QA Program (F. Forsch
RES)
- a. QA expanded to plant equipment other than safety-related - Ideas on a graded (different levels) approach to QA.
 - b. QA in PRA; How to ensure quality of peer reviews.
 - c. QA in Computer Software
 - d. Accreditation of Licensee's QA Program (construction and operation)

- 3:30 - 4:00 p.m. V. Subcommittee Discussion: Points to be Reported to the Full Committee - Additional Action Necessary.

4:00 p.m. ADJOURN

ATTENDEES
ACRS SUBCOMMITTEE ON REACTOR OPERATIONS
SEPTEMBER 29, 1982

Attendees:

ACRS

J. Ebersole
D. Ward
F. Remick
P. Shewmon
J. Ray (Part time)
D. Moeller (Part time)
I. Catton, Consultant
F. Binford "
R. Major, ACRS Staff
J. MacEvoy, ACRS Fellow
J. Preston, ACRS Fellow

NRC

L. B. Marsh
P. N. Randall
J. Crooks
C. A. Julian
R. Lewis
W. Lanning
D. McDonald
A. Serkiz
F. Forscher
E. Jordan
F. Witt
W. Mills

Others

Post Newsweek Stations, Inc.

B. Schlegel
F. Giles
T. Walkers

WIT

J. Peterson
G. Weiss
S. Janes
J. Hoffman

W. Swift - Creare
W. Bennett - Bechtel
R. Ross - B&W
R. Borsum - B&W
O. Williams - Nutech Engineers
G. Harkness - Westinghouse
W. Klein - FP&L
S. Verdini - FP&L
J. Berga - EPRI
G. Riepe - EBASCO

J. Beach, Anderson Reporting

ATTACHMENT C

ACRS REACTOR OPERATIONS SUBCOMMITTEE MEEETING
SEPTEMBER 29, 1982

LIST OF HANDOUT MATERIAL AND SUPPLEMENTAL MATERIAL RECEIVED BY THE SUBCOMMITTEE

1. PWR Vugraphs from T. Marsh entitled "PWR - LOW TEMPERATURE OVERPRESSURE PROTECTION (LTOPS)" - 17 slides
2. Slides from C. Julian entitled "Overpressurization of Turkey Point Unit 4 Reactor Coolant System on November 28 and 29, 1981" - 18 pages.
3. Vugraphs and Handout Material from C. Julian entitled "Inoperability of North Anna Unit 1 Overpressure Protection System on May 22, 1982" - 20 pages.
4. Slides from J. Crooks entitled "Turkey Point 4 Overpressurization Events, Abnormal Occurrence Reporting Activity" - 4 slides.
5. Slides from W. Mills entitled "Generic Actions Taken by IE" - 7 slides.
6. Handout from F. Forscher, MEMORANDUM FOR: Chairman Palladino from Frederick Forscher, Quality Assurance Section, Human Factors Branch, Division of Facility Operations, Office of Nuclear Regulatory Research, SUBJECT: QA POLICY, dated June 18, 1982
7. Handout material from F. Forscher, MEMORANDUM FOR: Chairman Palladino from Frederick Forscher, Quality Assurance Section, Human Factors Branch, Division of Facility Operations, Office of Nuclear Regulatory Research, SUBJECT: QA POLICY; ACCREDITATION OF LICENSEES QA PROGRAM, dated Aug. 19, 1981.
8. Slides from A. Serkiz, "Post-Accident Water Contamination," - 8 slides.
9. Slides by Walt Swift, "RHR AND CSS PUMP DATA," - 7 slides.
10. Slides used by Frank Witt, "Paint Review," - 6 slides.

Additional background material made available by F. Forscher during the meeting of September 29, 1982:

1. Report to the Congress by the Comptroller General of the United States, "The Nuclear Regulatory Commission Needs to Aggressively Monitor and Independently Evaluate Nuclear Power Plant Construction," dated September 7, 1978.
2. Copy of SECY-82-352, "ASSURANCE OF QUALITY," dated August 20, 1982.
3. Copy of Staff Report to the President's Commission on: "The Accident at Three Mile Island," Report of the Technical Assessment Task Force, Vol. IV. (Vol. IV deals, in part, with Quality Assurance.)