

CERTIFIED

ACRS. 2325

PDR 082885

CERTIFIED MINUTES
DATE ISSUED: 8/12/85

MINUTES OF THE
JUNE 17, 1985 MEETING OF THE ACRS
SUBCOMMITTEE ON AIR SYSTEMS
WASHINGTON, D.C.

Purpose:

The ACRS Subcommittee on Air Systems met on June 17, 1985 at 1717 H Street, N.W., Washington D.C. 20555 in Room 1046. The purpose of the meeting was to discuss two NRC reports: NUREG/CR-4191, "Survey of Licensee Control Room Habitability Practices" (prepared by ANL-West, Consultants to the NRC/NRR Staff), and NUREG/CR-3551, "Safety Implications Associated with In-Plant Pressurized Gas Storage and Distribution systems in Nuclear Power Plants" (prepared by ORNL, Consultants to the NRC/AEOD Staff). Both the Consultants to the NRC Staff and the Staff made presentations on the results of the control room survey.

Notice of the meeting, published in the Federal Register on Friday, May 31, 1985, is reproduced and shown as Attachment A. The schedule for the meeting is Attachment B. Sign-in sheets of meeting attendees are contained in Attachment C. Attachment D contains a list of meeting handouts kept with the office copy of these minutes. The entire meeting was open to the public. Mr. John Schiffgens was the assigned ACRS Staff member for the meeting.

Attendees:

ACRS

D. W. Moeller, Chairman Subc.
J. C. Mark, Member
D. A. Powers, Consultant
D. Underhill, Consultant
J. D. Schiffgens, Staff
J. P. Kotra, Fellow

Others

L. Connor, DSA
L. S. Watson, Bechtel

NRC Staff

D. R. Muller, NRR/DSI
W. P. Gammill, NRR/DSI
J. J. Hayes, NRR/DSI
R. Ornstein, AEOD/ROAB
K. V. Seyfrit, AEOD/ROAB
R. J. McConnell, C:ANL-W
J. W. Driscoll, C:ANL-W
J. F. Boland, C:ANL-W
J. R. Buchanan, C:ORNL
R. H. Guymon, C:ORNL
G. Rivenbark, NRR/DL
R. Hernan, NRR

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Meeting Highlights, Agreements, and Requests:

Opening Statements - D. Moeller

Mr. Moeller discussed briefly the meeting schedule and objectives. Mr. Gammill said that in addition to the scheduled presentations, the Staff would be briefing the Subcommittee on the recent inadvertent actuation of the control room air filter deluge system at Hatch, Unit 1.

Mr. Moeller brought up a letter from Mr. Donoghue of the NRC to GPU Nuclear concerning Oyster Creek control room habitability. He expressed interest in the control room habitability license review process, and asked specifically a) if clothing, goggles, etc. are taken into account when determining whether an individual is complying with the skin dose requirements, and b) whether natural phenomena are considered as a source of hazardous materials releases offsite. Mr. Gammill said that these reviews are done by the Accident Evaluation Branch, and that he was not familiar with them in detail.

Introduction - W. Gammill

Mr. Gammill made an introductory presentation outlining the history of the Staff's ongoing work on control room habitability. He said that the "Control Room Habitability Working Group Report" which was reviewed by the Subcommittee last November will be published as NUREG/CR-1129. The Staff's assessment of control room habitability practices, which parallels the ANL West report NUREG/CR-4191 (to be discussed at this meeting), will be published as a Supplement to NUREG/CR-1129.

With regard to the Subcommittee's often expressed concern about what happens if both trains of the control room ventilation system are lost, the Staff has been informed by a licensee, Comanche Peak, that they are planning to conduct a test where they will shut down all ventilation and measure the rate of temperature rise in the instrument cabinets, as well as the usual operator working areas of the control room. They have invited an NRC observer. Furthermore, the Staff has a new contract with ANL-West to investigate generic issues identified in the original control room habitability study, and loss of both trains of the ventilation system is among them.

Mr. Mark asked if the problem with dampers such as those at Byron is a matter of poor design or poor

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construction. Mr. Gammill said that it is probably a matter of design and is probably generic. The Staff currently plans to expand its survey of control room habitability practices to 12 plants. These visits, part of a planned 3-year study (to extend through fiscal 1987), will probably be tied in with plant inspections. For example, they will be looking at control room purge rates, the potential for steam intrusion, and the use of carpeting with its potential for introducing toxic gases during a fire.

Mr. Gammill mentioned some areas where progress has been slower than they would like: a) They have encountered delays in revising Regulatory Guide 1.52; b) They still have far to go in implementing a systems approach to the review of control room habitability systems; c) Their implementation of independent verification techniques is unsatisfactory; and d) The development of new control room habitability environmental criteria has not been completed.

Survey of Licensed Control Room Habitability Practices -
R. McConnell, J. Driscoll, and J. Boland

Mr. McConnell of ANL-West began discussion of NUREG/CR-4191 by saying that they took a rather broad systems-type approach so that the survey covered things like the safety analysis that led to the design of the control room, control room operation, and surveillance tests. Mr. Mark asked if there are any important differences between BWR and PWR control room problems. Mr. McConnell said that he did not think so, but that the three plants they visited were all PWRs. Future work will include BWRs. Mr. Hayes said that control room physical characteristics were more architect-engineer dependent than vendor dependent (e.g., Commonwealth Edison's BWR control rooms are quite similar to its PWR control rooms). Mr. McConnell said that the plants they looked at had different A-Es and identified Plant A as an NTOL, Plant B as having received its operating license in the early 1980s, and Plant C as having been licensed since the early 1970s.

Mr. McConnell pointed out that GDC 19 provides the regulatory basis for control room design and remote shutdown capability. With regard to the control room, GDC 19 states the following: "A control room shall be provided from which actions can be taken to operate the nuclear power unit safely under normal conditions and to maintain it in a safe condition under accident conditions, including loss-of-coolant accidents. Adequate radiation protection shall be provided to

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permit access and occupancy of the control room under accident conditions without personnel receiving radiation exposures in excess of 5 rem whole body, or its equivalent to any part of the body, for the duration of the accident." They concluded, based on the safety analyses, that all plants met this criterion. The duration of the accident for all plants was specified as 30-days, and iodine was the controlling parameter for the accident. All 3 plants had basically the same source term, although the leakage paths varied.

Mr. McConnell showed pictures of part of the control panel, specifically, the control monitoring panel for the heating and ventilation system, at each of the plants to demonstrate the increase in complexity of the panel (in terms of valves, switches, annunciators, etc.) within a newer plant. It was not clear to them that the newer systems were superior. He also compared the emergency air filter unit in Plant A (6000 cfm) with that in Plant C (2000 cfm). The unit in Plant A was typical of what one should have in a containment building where high moisture and high iodine concentrations might be encountered. They considered the unit in Plant C sufficient for a control room, where the relative humidity is not very important at the relatively low iodine concentrations expected. Mr. Gammill suggested that this is the result of applying Regulatory Guide 1.52 blindly to the control room environment.

Mr. McConnell also discussed their findings with regard to technical specifications in terms of accident analyses and surveillance tests, i.e., did the tech. specs. call for things that are required for the licensee to be within the envelope of the safety analysis? The relationship seemed best understood at Plant A. They also looked at operational and pre-operational testing. They didn't find any problems with pre-operational testing, i.e., in terms of showing that the system would function.

The Hatch Incident - G. Rivenbark

The meeting schedule was interrupted for Mr. Rivenbark of the NRC Staff to brief the Subcommittee on a systems interaction event at Hatch Unit 1. The air conditioning and ventilation system at Hatch is immediately above the control room. The plant was operating at full power when a crane passing over the control room, which is between the turbine rooms for Units 1 and 2, struck and broke a hydraulic line that keeps the deluge valves for the control room charcoal adsorption system

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closed. The pressure bled off and the deluge valves opened.

The drain lines in the filter boxes were plugged causing the water to fill the plenum and overflow into the return air duct from the control room. Operators saw water dripping through the air conditioning duct into panels which house some recently installed analog transmitter trip system equipment. The water dripping into the panel somehow caused an SRV to open. The reactor was manually scrammed. The feedwater pump recovered the reactor water level, and the SRV subsequently closed without operator action.

Mr. Gammill mentioned that at a workshop recently, the topic of inadvertent actuation of deluge valves in ventilation ducts, which is apparently a common problem, was discussed. The insurance underwriters require these deluge systems. It was pointed out that when the deluge system is actuated, the charcoal filter is flooded and damaged even if the drain is not plugged. In any case, the need for a deluge system in a control room ventilation duct seemed questionable.

Survey of Licensee Control Room Habitability Practices
(Continued) - R. McConnell, J. Driscoll, and J. Boland

Mr. Driscoll began his presentation by pointing out that there were many more maintenance procedures for Plant A than for either Plants B or C. A main concern in maintenance is accessibility to the components. Each plant had numerous obstacles that would hinder maintenance activities. In Plant A, the ESF filter train was in an area above the main control room, an area difficult to reach with no good path for removing the charcoal filter. In Plant B, seismic constraints made it difficult to obtain air flow measurements. In Plant C, there were metal storage cabinets and a power panel placed in front of access doors to the filter units. The presence of the power panel would not allow the housing doors to be completely opened.

Mr. Driscoll said that while in standby, the ESF filters should be isolated. They found on the order of 10 percent normal flow through these filters even under standby conditions. If they were to paint in the area, they would poison the filters and not know it, thinking that the filters were isolated. Mr. Moeller pointed out that there are many LERs on paint contaminated charcoal.

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The remote shutdown panel was examined from the standpoint of whether it would be able to perform its required function. Plant C relied most on telephone communication with areas away from the panel, but they all seemed to be largely control points or communication centers. Plants A and B had smoke purge systems, Plant C did not. From the remote panels there was no way to tell if the control rooms had been purged of smoke.

At this point, Mr. Moeller distributed two ACRS memoranda to the Subcommittee for background information: J. F. Kohns to J. B. McCreless, "Report on ACRS Initiatives on the Subject of Control Room Habitability" (May 4, 1984); and S. Seth to C. Michelson, "Adverse Interactions of Fire Protection System Actuation and Risk Reduction due to Proposed Modifications" (September 24, 1984).

Mr. Soland began his presentation with a discussion of configuration control (i.e., documentation of what is currently in the plant) and updated FSARs. They found that the control room HVAC systems in the plants visited did not agree with their respective FSARs. They found that there was not a common understanding among departments of a plant (such as Engineering, Operations, and Maintenance) of what was in the plant, and how it worked. Good configuration control is particularly important to safe operation, and in making plant modifications.

Mr. Roland said that NRC criteria for control room habitability systems are scattered in a variety of NRC documents, the consolidation and interpretation of which is difficult, if not impossible, as evidenced by the designs and operations found in the field. Without more specific guidance than GDC 19, an applicant or licensee is at the mercy of Staff interpretation of intent. In the case of the control room filtration or habitability system, the interpretation is expressed in a 1974 paper (by Murphy and Campe) that was presented at an Air Cleaning Conference, not in a Regulatory Guide. There is no indication that anybody who is accountable for decision-making within the NRC has reviewed it or approved it. Why was 5-rem picked for GDC 19 (Mr. Muller pointed out that Part 100 allows the public 25-rem whole body or 300-rem thyroid)? Why was an accident duration of 30-days assumed in the Murphy-Campe paper? Interpretations have evolved, but no decisions have been made, no common understanding among the principals (NRC Staff, utilities, and contractors) has been reached. Mr. Muller said that, at

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this time, the Staff is not revisiting the general design criteria.

Mr. Boland said that he did not know of any sort of systems analysis that shows the relationship between the function of the control room habitability systems and public safety. Mr. Hayes commented that PNL did a fault tree analysis on Control Room Habitability for Waterford and that the report was made available to the ACRS.

Mr. Boland said that there is no required instrumentation in the control room to monitor the dose operators are receiving during an accident; no instrument monitors the air being breathed by the people as a function of time.

When designing the ventilation system for a control room, the A-E works to Regulatory Guide 1.52. The result, according to Mr. Boland, is that the applicant gets much more than he needs, including problems (e.g., the Hatch event described above). He recommended that a specific criteria for the control room habitability system be published along with the basis for it.

Mr. Underhill pointed out that the two documents being discussed by the Subcommittee at this meeting provided conflicting guidance concerning acceptable levels of hazardous chemicals in the control room environment. For example, NUREG/CR-3551 states that 5-ppm chlorine in air is considered noxious, while NUREG/CR-4191 lists the toxicity limit for chlorine at 15-ppm. He thought that the basis for each set limit should be agreed on and published. With regard to acetaldehyde, for example, the limit would almost certainly be sensory irritation. For asphyxiants such as nitrogen and helium, the limit would be best expressed in terms of oxygen level, i.e., as long as you are above 14 percent oxygen you are safe.

Mr. Moeller asked if the Staff would take into account the use of potassium iodide tablets (which can be 99 percent effective in blocking the thyroid if taken at the proper time) by operators during an accident in evaluating the thyroid dose. Mr. Hayes said he thought they would have to consider it, but that the NRC had not resolved that question yet.

Preview of Supplement to NUREG/CR-1129 - J. Hayes

Mr. Hayes said that the Staff participated in each of the visits to the plants in the ANL-West survey, but

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that the Staff's conclusions (which are not yet final) are somewhat different because they have a different perspective. He said that the Staff's conclusions can be summarized into two main areas: A. Control Room Systems, Components, Operations, Procedures, and Technical Specifications, and B. NRC Practices and Policies, and Licensee Practices.

With regard to area A, the Staff's conclusions and recommendations are as follows:

1. Loss of ventilation and loss of air conditioning events, which have occurred at operating reactors, should be studied and their possible contribution to the degradation of plant safety should be evaluated.
2. Changes to the action statements and surveillance requirements of technical specifications should be made as needed to ensure that specifications for the control room heating, ventilation, and air conditioning systems provide for functioning as designed.
3. In-place leak testing of isolation dampers should be performed and system operating flow paths should be verified by licensees.
4. All NRC related control room habitability criteria and their bases should be incorporated into one document to assist the NRC Staff, the applicants, and licensees in understanding the bases for operating requirements.
5. The capability of the remote shutdown facilities to bring the plants to cold shutdown need to be demonstrated.

With regard to area B, the Staff's conclusions and recommendations are:

1. The advantages of current control room designs are not immediately evident. Although present control room designs have become more complex, they do not necessarily afford the control room operators better protection than the older, simpler, designs.
2. The present system of issuing a construction permit prior to final design has led to frequent ad hoc changes in design with concomitant cluttering of equipment in the control room envelope and difficulty in maintaining this equipment.

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3. Some licensees are making improper 10 CFR 50.59 evaluations.
4. For many plants, the updated FSAR does not reflect present control room operating schemes.

Pressurized Gas Storage and Distribution Systems - R.
Guymon

Mr. Moeller asked how many plants were visited as part of this evaluation. Mr. Guymon responded that 3 plants had been visited, all of which were PWRs. Mr. Moeller asked if any consideration had been given to plans to use hydrogen for water chemistry control in BWRs. Mr. Seyfrit said that such plans came along after this work was initiated, but that they may want to look at that sometime in the future.

Mr. Guymon said that they selected 10 gases for consideration: Compressed Air, used for instrument air and closing valves; Acetylene, used for cutting and welding; Carbon dioxide, used for fire protection and purging undesirable gases from equipment; Chlorine, used for water treatment; Halon, used for fire protection; Hydrogen, used for windage loss in generators; Nitrogen, used for purging equipment and containment; Oxygen used for cutting and welding and also for the recombiners; Propane, used for in-plant vehicles; and Sulfur hexafluoride, used as an electrical insulator in large breakers. All are potentially hazardous due to stored energy. Many have other hazard potentials (e.g., fire, toxicity, and asphyxiation). Stored fission gases were not considered.

Mr. Guymon said that they looked for unrecognized safety problems, and used industrial codes such as the CGA, ASME, OSHA and DOT codes for guidance. All hazards are addressed by industry codes and standards. They considered the gas handling, storage, and distribution practices and procedures from the time the gas enters the plant until it becomes part of some process. The study a) reviewed potential failure modes in the utilization of gases, b) collected data from past gas system failures in nuclear, fossil, and other industrial activities, c) evaluated the adequacy of typical nuclear plant designs and procedures for handling pressurized gases, d) assessed the potential for gas system failure to induce other failures in nuclear plants, and e) recommended improvements to reduce hazards to nuclear plant personnel and equipment.

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Mr. Guymon said that they found cylinder storage and handling very acceptable in the three plants visited except where construction was going on. Identification of gas lines and tanks was considered inadequate in all three plants. They identified three major potential problem areas: 1) vulnerability of safety equipment to portable gas cylinder missiles; 2) plant vulnerability to an explosion and/or fire from a large hydrogen release; and 3) explosions resulting from inadequate identification of gas lines and tanks. They concluded that systems involved in the handling of compressed gases at nuclear power plants are not always designed and operated in accordance with accepted codes and regulations.

With regard to the major potential problem areas, Mr. Guymon presented the following recommendations: 1) Allow cylinders in critical areas only if (a) An analysis indicates that portable gas cylinder missiles would not damage safety equipment to the extent that its functions were compromised, or (b) procedures are developed to protect the cylinders and prevent them from becoming missiles; 2) Install excess flow valves (i.e., they close when excess flow is detected) in all hydrogen lines entering or near safety system equipment areas and revise standard review plan 9.5.1 to require this addition; and 3) Require that all plants meet ANSI Standard A13.1, a scheme for identification of piping systems, 1981.

Mr. Seyfrit said that AEOD had forwarded these recommendations to NRR for action. The Subcommittee decided that a follow-up report from NRR on implementation would be desirable. It noted that a change in the Standard Review Plan would have no effect on operating plants.

Future Meetings:

No date was set for the next Subcommittee Meeting. The ACRS is scheduled to discuss Control Room Habitability Practices during the 303rd ACRS meeting, July 11-13, 1985.

NOTE: A complete transcript of the meeting is on file in the NRC Public Document Room at 1717 H St., N.W., Washington, D.C., or can be obtained from ANN RILEY & ASSOCIATES, Court Reporters, 1625 I St., N.W., Suite 921, Washington, D.C. 20006.
[Telephone (202) 293-3950]

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distributed prior to the expiration of the thirty-day period.

DATE: All comments must be received by the Legal Services Corporation within 30 days from the date of publication of this notice.

FOR FURTHER INFORMATION CONTACT: Beverly Bunn, Legal Services Corporation, Office of Field Services, 733 Fifteenth Street, NW., Washington, D.C. 20005, (202) 272-4351.

SUPPLEMENTARY INFORMATION: Grants are awarded pursuant to the Legal Services Corporation's announcement of availability of funds. Announcement of funding availability was made at the following times: (1) For the implementation of law school civil clinical programs to improve the quality of legal services to elderly persons (Federal Register, p. 11469, March 21, 1985), (2) for the development of source materials on laws affecting elderly persons (Federal Register, p. 12665, March 29, 1985) and (3) for the development of plans to encourage the private bar to provide higher quality paid services and to expand pro bono programs (Federal Register, p. 13431, April 4, 1985).

The Legal Services Corporation intends these grants to increase and improve the quality of legal services to elderly poor persons presently unserved or underserved. Additionally, funded programs should sensitize and educate the present bar and future lawyers to the legal needs of the elderly.

John C. Meyer,

Associate Director, Office of Field Services.
[FR Doc. 85-13194 Filed 5-30-85; 8:45 am]

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NUCLEAR REGULATORY COMMISSION

Advisory Committee on Reactor Safeguards, Subcommittee on Air Systems; Meeting

The ACRS Subcommittee on Air Systems will hold a meeting on June 17, 1985, Room 1046, 1717 H Street, NW, Washington, DC.

The entire meeting will be open to public attendance.

The agenda for subject meeting shall be as follows:

Monday, June 17, 1985-8:30 a.m. until the conclusion of business

The Subcommittee will review the NRC Staff's Supplement to the Control Room Habitability Working Group Report—June 1984. This Supplement is to discuss the Staff's survey of NTOL and OR control rooms. Also, the Subcommittee will review the Staff's final report on "Safety Implications

Associated with In-Plant Pressurized Gas Storage and Distribution Systems in Nuclear Power Plants."

Oral statements may be presented by members of the public with concurrence of the Subcommittee Chairman; written statements will be accepted and made available to the Committee. 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 ACRS staff members as far in advance as practicable so that appropriate arrangements can be made.

During the initial portion of the meeting, the Subcommittee, along with any of its consultants who may be present, may exchange preliminary views regarding matters to be considered during the balance of the meeting.

The Subcommittee will then hear presentations by and hold discussions with representatives of the NRC Staff, its consultants, and other interested persons regarding this review.

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 ACRS staff member, Mr. John Schiffgens (telephone 202/634-1414) between 8:15 a.m. and 5:00 p.m., EDT. Persons planning to attend this meeting are urged to contact the above named individual one or two days before the scheduled meeting to be advised of any changes in schedule, etc., which may have occurred.

Dated: May 21, 1985.

Morton W. Libarkin,

Assistant Executive Director for Project Review.

[FR Doc. 85-13100 Filed 5-30-85; 8:45 am]

BILLING CODE 7550-01-01

Advisory Committee on Reactor Safeguards, Subcommittee on Human Factors; Meeting

The ACRS Subcommittee on Human Factors will hold a meeting on June 20, 1985, Room 1046, 1717 H Street, NW, Washington, DC.

The entire meeting will be open to public attendance.

The agenda for the subject meeting shall be as follows:

Thursday, June 20, 1985-8:30 a.m. until the conclusion of business

The Subcommittee will identify real and/or perceived problems with the

operator requalification process, decide on an appropriate action plan to resolve them, and make the necessary recommendations to the Committee.

Oral statements may be presented by members of the public with the concurrence of the Subcommittee Chairman; written statements will be accepted and made available to the Committee. 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 ACRS staff member named below as far in advance as is practicable so that appropriate arrangements can be made.

During the initial portion of the meeting, the Subcommittee, along with any of its consultants who may be present, may exchange preliminary views regarding matters to be considered during the balance of the meeting.

The Subcommittee will then hear presentations by and hold discussions with representatives of the NRC Staff, its consultants, and other interested persons regarding this review.

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 ACRS staff member, Mr. John Schiffgens (telephone 202/634-1414) between 8:15 a.m. and 5:00 p.m., EDT. Persons planning to attend this meeting are urged to contact the above named individual one or two days before the scheduled meeting to be advised of any changes in schedule, etc., which may have occurred.

Dated: May 22, 1985.

Morton W. Libarkin,

Assistant Executive Director for Project Review.

[FR Doc. 85-13095 Filed 5-30-85; 8:45 am]

BILLING CODE 7550-01-01

Advisory Committee on Reactor Safeguards, Subcommittees on Human Factors and Maintenance Practices and Procedures; Meeting

The ACRS Subcommittees on Human Factors and Maintenance Practices and Procedures will hold a combined meeting on June 18, 1985, Room 1046, 1717 H Street, NW, Washington, DC.

The entire meeting will be open to public attendance.

ATTACHMENT A

June 4, 1985

PROPOSED SCHEDULE FOR THE JUNE 17, 1985
MEETING OF THE ACRS SUBCOMMITTEE ON
AIR SYSTEMS

8:30am	Opening Statements	D. Moeller	10 min
8:40	Survey of Licensee Control Room Habitability Practices: * Review of NUREG/CR -4191 (prepared by ANL-West)	R. McConnell	90
10:10	- Break -		20
10:30	* Preview of NUREG/CR - (prepared by NRC Staff)	J. Hayes	90
12:00	- Lunch -		60
1:00pm	Pressurized Gas Storage and Distribution Systems: Review of NUREG/CR -3551 (prepared by ORNL)	R. Guymon	120
3:00	- Break -		15
3:15	Closing Statements	D. Moeller	15
3:30	Executive Session		90
5:00	- Adjourn -		

ATTACHMENT B

ACRS SUBCOMMITTEE MEETING ON AIR SYSTEMSLOCATION ROOM 1046DATE JUNE 17, 1985ATTENDANCE LIST

PLEASE PRINT:

NAME	AFFILIATION
DANIEL R MULLER	NRR/DSI
W. P. GAMMILL	NRR/DSI
J. J. HAYES JR	NRR/DSI
R. J. McCONNELL	ARGONNE NAT'L LAB.
John W. DRISCOLL	ARGONNE NAT'L LAB.
JAMES F. POLAND	ARGONNE NAT'L LAB.
L S Watson	Bechtel / SEARCH
L. Connor	DSA
Philip H. H. H. H. H.	ORNL
Hal Ornstein	AEOD/RCAB
KARL V. SEYFERT	AEOD/RCAB
JOEL K. BUCHANAN	ORNL
Donald W. Underhill	ACRS/Consultant
D. W. H. H. H.	Encl. Chm.
C. H. H. H.	Aluminum
J. H. H. H.	Aluminum
D. A. H. H.	Consultant

ATTACHMENT C

ATTACHMENT D
HANDOUTS
JUNE 17, 1985 MEETING OF ACRS AIR SYSTEMS SUBCOMMITTEE

1. Control Room Habitability Practices with Control Panel Pictures
- R. McConnell
2. Memo to T. McCreless, Asst. Exec. Dir., ACRS from J. Kotra, ACRS Fellow, Subj: Report on ACRS Initiatives on the Subject of Control Room Habitability, dated May 6, 1985
3. Memo to C. Michelson, ACRS Member from Dr. S. Seth, ACRS Senior Fellow, Subj: Adverse Interactions of Fire Protection System Actuation and Risk Reduction Due to Proposed Modifications dated Sept. 24, 1984
4. Hatch Unit 1 - Stuck Open Safety Relief Valve of May 15, 1985 -
G. Rivenbark
5. NRC Staff Presentation on Survey of License Control Room Habitability Practices