TABLE OF CONTENTS
MINUTES OF THE 369TH ACRS MEETING
JANUARY 10-11, 1991

Removed - FOIA EX(6)4

R501
0/1

APPENDICES
MINUTES OF THE 369TH ACRS MEETING
JANUARY 10-11, 1991

the amount of radioactivity in the spent fuel elements in the event they are shipped offsite. The impact of this extended onsite storage is to reduce the environmental effect of transporting uranium fuel elements to and from the DBNPS.

The net effect of these changes from the original assumptions in the FES is that fewer fuel elements will be shipped into the plant during its proposed extended lifetime and fewer fission products will be shipped out. The proposed extension of the operating license should not affect this conclusion.

With regard to normal plant operation, the licensee complies with the NRC guidance and requirements for keeping radiation exposure "as low as is reasonably achievable" (ALARA) for occupational exposures and for radioactivity in effluents. Technical Specifications are in place to ensure continued compliance with these requirements during any additional years of facility operations.

Nonradiological Impacts

With regard to the nonradiological impacts, the proposed extension of the Facility Operating License will not cause a significant increase in the nonradiological impacts and will not change any conclusions reached by the staff in the FES. Therefore, the staff concludes that there are no significant nonradiological environmental impacts associated with the proposed amendment.

The Notice of Consideration of Issuance of Amendment and Opportunity for Hearing in connection with this action was published in the **Federal Register** on November 29, 1990 (55 FR 49582). No request for hearing or petition for leave to intervene was filed following this notice.

Alternative to the Proposed Action

Since the Commission concluded that the environmental effects of the proposed action are not significant, any alternative with equal or greater environmental impacts need not be evaluated.

The principal alternative would be to deny the requested amendment. This would not reduce the environmental impacts attributable to this facility. However, it would result in an adverse economic impact on the service area of the Davis-Besse facility and northern Ohio in the time frame of March 24, 2011, to April 22, 2017, which is the proposed extension period.

Alternative Use of Resources

This action does not involve the use of any resources not previously considered in the Final Environmental Statements related to operation of the Davis-Besse Facility.

Agencies and Persons Consulted

The NRC staff reviewed the licensee's request and did not consult other agencies or persons.

Finding of No Significant Impact

The Commission has determined not to prepare an environmental impact statement for the proposed license amendment. Based upon the foregoing environmental assessment, we conclude that the proposed action will not have a significant effect on the quality of the human environment.

For further details with respect to this action, see the application for amendment dated May 31, 1990, and the supplement dated December 17, 1990, which are available for public inspection at the Commission's Public Document Room, 2120 L Street, NW., Washington, DC and at the University of Toledo Library, Documents Department, 2801 Bancroft Avenue, Toledo, Ohio 43606.

Dated at Rockville, Maryland, this 21st day of December 1990.

For the Nuclear Regulatory Commission.

John N. Hannon,

Director, Project Directorate III-3, Division of Reactor Projects III/IV/V, Office of Nuclear Reactor Regulation.

[FR Doc. 90-30356 Filed 12-26-90; 8:45am]

BILLING CODE 7590-01-M

Advisory Committee on Reactor Safeguards; Meeting Agenda

In accordance with the purposes of sections 29 and 182b. of the Atomic Energy Act (42 U.S.C. 2039, 2232b), the Advisory Committee on Reactor Safeguards will hold a meeting on January 10-12, 1991, in room P-110, 7920 Norfolk Avenue, Bethesda, Maryland. Notice of this meeting was published in the Federal Register on November 21, 1990.

Thursday, January 10, 1991, Room P-110, 7920 Norfolk Avenue, Bethesda, Md.

8:30 a.m.-8:45 a.m.: Chairman's Remarks (Open). The ACRS Chairman will make opening remarks and comment briefly regarding items of current interest.

8:45 a.m.-10:15 a.m.: Proposed Final Rule 10 CFR part 55, Fitness for Duty Requirements for Licensed Operators (Open). The Committee will be briefed by and hold discussions with representatives of the NRC staff regarding this proposed final rule, including resolution of comments received during the public comment period. Proposed ACRS comments and recommendations will be discussed as appropriate.

10:30 a.m.-12:30 p.m.: Proposed Resolution of GSI-29, Bolting Degradation or Failures in Nuclear Power Plants (Open). The ACRS Members will review and comment on proposed resolution of Generic Safety Issue 29, "Bolting Degradation or Failures in Nuclear Power Plants." Representatives of the NRC staff and the nuclear industry will participate, as appropriate.

1:30 p.m.-2:45 p.m.: Meeting with Director, NRC Office of Nuclear Regulatory Research (Open/Closed). A briefing by and discussion with the Director, Office of Nuclear Regulatory Research, NRC, will be held regarding the impact of budgeting decisions on the NRC safety research program and activities of the Office of Nuclear Regulatory Research.

Portions of this session will be closed as necessary to discuss information the premature release of which would be likely to significantly frustrate the NRC in its ability to perform its statutory function.

3:00 p.m.-4: p.m.: Nuclear Power Plant Operating Experience and Events (Open). The Committee will hear and discuss a report by representatives of the NRC staff regarding operating experience and events at nuclear power plants including a scram which occurred at the Quad Cities Nuclear Station, Unit 2 during performance of a special turbine test.

4:00 p.m.-5:30 p.m.: Certification of Standardized Nuclear Power Plant Designs (Tentative) (Open). A briefing by and discussion with representatives of the nuclear industry will be held regarding comments on the level of design detail proposed by the NRC staff for certification of standardized nuclear power plant designs (SECY-90-377). Representatives of the NRC staff will participate as appropriate. The members will discuss proposed comments and recommendations to the NRC as appropriate.

5:30 p.m.-6:00 p.m.: Preparation of ACRS Reports (Open/Closed). The Committee will discuss proposed reports to the NRC regarding containment design criteria for future nuclear plants and to the U.S. Congress on the NRC research program and budgetary impacts.

Portions of this session will be closed as necessary to discuss information the premature release of which would be likely to significantly frustrate the NRC in its ability to perform its statutory function.

Friday, January 11, 1991

8:30 a.m.–8:30 a.m.: Proposed Revision of 10 CFR part 20, Standards for Protection Against Radiation (Open). A briefing by and discussion with representatives of the NRC staff will be held regarding the proposed revision of 10 CFR part 20 as reflected in SECY–90–387.

9:45 a.m.–10:45 a.m.: Licensing Requirements for Large Irradiators (Open). A briefing by and discussion with representatives of the NRC staff will be held regarding radiation safety and licensing requirements for use of large irradiation facilities using radioactive materials.

10:45 a.m.–11:30 a.m.: ACRS Future Activities (Open). The Committee will discuss anticipated ACRS subcommittee activities and items proposed for consideration by the full Committee.

11:30 a.m.–12:00 Noon: ACRS Subcommittee Activities (Open). The Committee will hear and discuss the status of designated subcommittee activities regarding assigned duties, including a report on thermal-hydraulic phenomena related to the interfacing systems loss-of-coolant accidents.

1:00 p.m.–4:30 p.m.: Preparation of ACRS Reports (Open/Closed). The Committee will disucuss proposed ACRS reports regarding items considered during this meeting, including a report to the U.S. Congress on the NRC safety research program and budgetary impacts.

Portions of this session will be closed as necessary to discuss information the premature release of which would be likely to significantly frustrate the NRC in its ability to perform its statutory function.

4:30 p.m.–5:00 p.m.: Appointment of ACRS Members (Open/Closed). A report will be presented regarding the status of nominations for candidates proposed for appointment to the Committee.

Portions of the session will be closed as necessary to discuss information the release of which would represent a clearly unwarranted invasion of personal privacy.

5:00 p.m.–5:30 p.m.: ACRS Activities (Open). The Committee will discuss a proposed revision of the ACRS Bylaws and related administrative issues as appropriate.

8:30 a.m.–12:30 p.m.: Preparation of ACRS Reports (Open/Closed). The Committee willl discuss proposed ACRS reports regarding items considered during this meeting, including a report to the U.S. Congress on the NRC safety research program and budgetary impacts and items which were not completed at previous meetings as time and availability of information permit.

Portions of this session will be closed as necessary to discuss information the premature release of which would be likely to significantly frustrate the NRC in its ability to perform its statutory function.

Procedures for the conduct of and participation in ACRS meetings were published in the Federal Register on October 2, 1990 (55 FR 40249). In accordance with these procedures, oral or written statements may be presented by members of the public, recordings will be permitted only during those open portions of the meeting when a transcript is being kept, and questions may be asked only by members of the Committee, its consultants, and staff. Persons desiring to make oral statements should notify the ACRS Executive Director as far in advance as practicable so that appropriate arrangements can be made to allow the necessary time during the meeting for such statements. Use of still, motion picture and television cameras during this meeting may be limited to selected portions of the meeting as determined by the Chairman. Information regarding the time to be set aside for this purpose may be obtained by a prepaid telephone call to the ACRS Executive Director, Mr. Raymond F. Fraley, prior to the meeting. In view of the possibility that the schedule for ACRS meetings may be adjusted by the Chairman as necessary to facilitate the conduct of the meeting, persons planning to attend should check with the ACRS Executive Director if such rescheduling would result in major inconvenience.

I have determined in accordance with subsection 10(d) Pub. L. 92–463 that it is necessary to close portions of this meeting noted above to discuss information the release of which would represent an unwarranted invasion of personal privacy (5 U.S.C. 552b(c)(6)) and information the premature release of which would be likely to significantly frustrate the NRC in the performance of its statutory function (5 U.S.C. 552b(c)(9)(B)).

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 can be obtained by a prepaid telephone call to the ACRS Executive Director, Mr. Raymond F. Fraley (telephone 301/492–8049), between 8:00 a.m. and 4:30 p.m.

Dated: December 21, 1990.

John C. Hoyle,

Advisory Committee Management Officer.

[FR Doc. 90–30321 Filed 12–26–90; 8:45 am]

BILLING CODE 7590–01–M

[Docket No. 50–322]

Long Island Lighting Co., Shoreham Nuclear Power Station, Unit 1; Issuance of Director's Decision

Notice is hereby given that the Director, Office of Nuclear Reactor Regulation, has issued a Decision regarding three Petitions filed requesting action with regard to the Shoreham Nuclear Power Station, Unit 1.

On July 14, 1989, James P. McGranery, Jr., filed a Petition on behalf of the Shoreham-Wading River Central School District (School District) with the Executive Director for Operations for the Nuclear Regulatory Commission requesting that certain actions be taken. That Petition was supplemented by submittals dated July 19 and July 21, 1989. By Petition dated July 26, 1989, Mr. McGranery, on behalf of Scientists and Engineers for Secure Energy, Inc. (SE2), requested that the same action be taken on the same bases as that which he requested on behalf of the School District. On July 31, 1989, and January 23, April 5, May 4, November 14, and November 29, 1990, additional supplements to the Petitions filed by the School District and SE2 were submitted. Briefly summarized, the Petitions requested that certain immediately effective orders be issued to the Long Island Lighting Company (LILCO), including a temporary, immediately effective order to cease and desist from all activities related to the defueling and destaffing of the facility and return to the *"status quo ante,"* pending further consideration by the Nuclear Regulatory Commission (Commission); and that other action be taken, including announcing the Commission's intention to fine the licensee a substantial amount per day, and issuing a Notice of Violation and proposed civil penalty and a remedial action plan. Briefly summarized, the bases set forth for the Petitions were that: (1) There are potentially hazardous conditions arising from unreviewed safety questions, violations of the licensee's full-power operating license, and unreviewed environmental questions; and (2) that LILCO is undertaking a course of action that will willfully avoid the full and effective Commission consideration of the environmental consequences of licensee action and that it is contrary to

UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, D. C. 20555

January 4, 1991 (Revised)

SCHEDULE AND OUTLINE FOR DISCUSSION
369TH ACRS MEETING
JANUARY 10-12, 1991

Thursday, January 10, 1991, Room, P-110, 7920 Norfolk Avenue, Bethesda, Md.

1) 8:30 - 8:45 A.M. Opening Remarks by ACRS Chairman (Open)
- 1.1) Opening Statement (DAW/GRQ)
- 1.2) Items of current interest (DAW/RFF)

2) 8:45 - 10:15 A.M. Proposed Final Rule 10 C.F.R. Part 55, Fitness for Duty Requirements for Licensed Operators (Open)
TAB 2-------
- 2.1) Comments by ACRS subcommittee chairman (DAW/HA).
- 2.2) Briefing by and discussion with representatives of the NRC staff

10:15 - 10:30 A.M. BREAK

3) 10:30 - 12:00 P.M. Proposed Resolution of GSI-29, Bolting Degradation or Failures in Nuclear Power Plants (Open)
TAB 3-------
- 3.1) Comments by ACRS subcommittee chairman (PGS/EGI)
- 3.2) Meeting with representatives of the NRC staff and the nuclear industry as appropriate

12:00 - 1:30 P.M. LUNCH

4) 1:30 - 2:45 P.M. Meeting with Director, NRC Office of Nuclear Regulatory Research (Open)/Closed)
TAB 4-------
- 4.1) Comments by ACRS subcommittee chairman (IC/SD)
- 4.2) Meeting with Director, NRC Office of Nuclear Regulatory Research, to discuss items of current interest, including the impact of budgeting decisions on the NRC safety research program

(Portions of this session will be closed as necessary to discuss information the premature release of which would be likely

to significantly frustrate the NRC in the performance of its statutory function.)

2:45 - 3:00 P.M. BREAK

5) 3:00 - 4:00 P.M. Nuclear Power Plant Operating Experience and Events (Open)

TAB 5-------

5.1) Comments by ACRS subcommittee chairman (JCC/PAB)

5.2) Briefing by and discussion with representatives of the NRC staff regarding recent operating experience and events at nuclear power plants, including a scram which occurred on October 27, 1990, at the Quad Cities Nuclear Station, Unit 2, during performance of a special turbine test and a December 12, 1990 event at the R.E. Ginna Power Station that involved inadvertent deactivation of ESF actuation systems

6) 4:00 - 6:00 P.M. Preparation of ACRS Reports (Open/Closed)

6.1) Discuss proposed ACRS reports regarding:

6.1-1) Containment Design Criteria for Future Nuclear Plants (DAW/MDH)

6.1-2) NRC Safety Research Program for CY-1992 (IC/SD)

(Note: Portions of this session will be closed as necessary to discuss information the premature release of which would be likely to significantly frustrate the NRC in the performance of its statutory function.)

Friday, January 11, 1991, Room P-110, 7920 Norfolk Avenue, Bethesda, Md.

7) 8:30 - 9:30 A.M. Proposed Revision of 10 C.F.R. Part 20, Standards for Protection Against Radiation (Open)

TAB 7-------

7.1) Comments by ACRS subcommittee chairman (JCC/EGI)

7.2) Briefing by and discussions with representatives of the NRC staff regarding the proposed final version of this rule per SECY-90-387

9:30 - 9:45 A.M. Break

8) 9:45 - 10:45 A.M. Licensing Requirements for Large Irradiation Facilities (Open)

TAB 8-------

8.1) Comments by ACRS subcommittee chairman (JCC/EGI)

8.2) Briefing by and discussion with representatives of the NRC staff regarding safety and licensing requirements at large irradiation facilities using radioactive materials

9) 10:45 - 11:30 A.M. Future Activities (Open)

TAB---------- 9.1) Discuss anticipated subcommittee activities (RPS/GRQ)

TAB---------- 9.2) Discuss items proposed for consideration by the full Committee (DAW/RPS)

10) 11:30 - 12:00 Noon ACRS Subcommittee Activities (Open)

TAB 10-------

10.1) Report of subcommittee meeting on December 12, 1990 regarding interfacing systems LOCA (IC/PAB)

12:00 - 1:00 P.M. LUNCH

11) 1:00 - 4:30 P.M. Preparation of ACRS Reports (Open/Closed)
(2:45-3:00 - Break)

11.1) Discuss proposed ACRS reports regarding:

11.1-1) Containment Design Criteria for Future Nuclear Plants (DAW/MDH)

11.1-2) NRC Safety Research Program for CY-1992 (IC/SD)

11.1-3) Proposed Resolution of GSI-29, Bolting Degradation or Failures (PGS/EGI)

(Note: Portions of this session will be closed as necessary to discuss information the premature release of which would be likely to significantly frustrate the NRC in the performance of its statutory function.)

Adjourned 3:45 p.m. Fri, Jan. 11, 1991

12) 4:30 - 5:00 P.M. Appointment of ACRS Members (Open/Closed)

12.1) Discuss the qualifications of persons nominated for appointment as members of the ACRS (DAW/MFL)

(Note: Portions of this session will be closed as necessary to discuss information

the release of which would represent a clearly unwarranted invasion of personal privacy.)

13) 5:00 - 5:30 P.M. ACRS Activities (Open)
13.1) Discuss proposed revision of ACRS Bylaws (HWL/RFF)

Saturday, January 12, 1991, Room P-110, 7920 Norfolk Avenue, Bethesda, Md.

14) 8:30 - 12:30 P.M. Preparation of ACRS Reports (Open/Closed)
14.1) Continue preparation of ACRS reports to the NRC and discuss items which were not completed at previous meetings as time and availability of information permit.
(Note: Portions of this session will be closed as necessary to discuss information the premature release of which would be likely to significantly frustrate the NRC in the performance of its statutory function.)

CERTIFIED

MINUTES OF THE 369TH ACRS MEETING
JANUARY 10-11, 1991

The 369th meeting of the Advisory Committee on Reactor Safeguards (ACRS) was held at Room P-110, 7920 Norfolk Avenue, Bethesda, Md., on January 10-11, 1991. The purpose of this meeting was to discuss and take appropriate actions on the items listed in the attached agenda. The entire meeting was open to public attendance, with the exception of portions that dealt with discussion of the qualifications of candidates for appointment to the ACRS and the impacts of the FY 1992 budget reduction proposed by the Office of Management and Budget (OMB) on the NRC research contracts.

A transcript of selected portions of the meeting was kept and is available in the NRC Public Document Room. (Copies of the transcript are available for purchase from Ann Riley & Associates, Ltd., 1612 K Street, N.W., Washington, D.C. 20006.)

ATTENDEES

ACRS Members: D. Ward (Chairman), P. Shewmon (Vice-Chairman), J. C. Carroll, I. Catton, W. Kerr, H. W. Lewis, C. Michelson, J. E. Wilkins, and C. J. Wylie.

I. Chairman's Report

[NOTE: Mr. R. F. Fraley was the Designated Federal Official for this portion of the meeting.]

Mr. Ward, the full Committee Chairman, convened the meeting at 8:30 a.m. with a brief summary of the planned meeting schedule and the provisions under which the discussions were to be held. He stated that the Committee had received neither written comments nor requests for time to make oral statements from members of the public.

Items of Current Interest

Mr. Ward stated that the following items are of current interest:

- Commissioner Remick informed Mr. Fraley that the August 14, 1990 ACRS report to the Commission on Level of Detail Required for Design Certification Under Part 52 was of great interest to the Commission, timely, and very helpful.

  The Nuclear Management and Resources Council (NUMARC) briefed the Commission recently on the level of design detail issue. The Commission has not yet taken any action on this matter.

- In SECY-90-406, "Quarterly Report on Emerging Technical Concerns," dated December 17, 1990, the staff has identified one issue as an emerging technical concern. During the staff's continuing review of the Electric Power Research Institute (EPRI) Requirements Document for Advanced Passive Reactors, the staff observed that many systems traditionally considered to be safety systems have been changed to nonsafety systems in that document. Examples of traditional safety systems that are now considered as nonsafety systems include: the high- and low-pressure emergency core cooling injection systems, and the onsite AC power system. Based on its preliminary review, the staff believes that certain nonsafety systems (e.g., onsite AC power) would contribute significantly in ensuring plant safety. The staff plans to perform a study to address this issue.

Mr. Ward suggested that the Improved Light Water Reactors Subcommittee consider this issue during its review of the EPRI Requirements Document for Advanced Passive Plants.

II. **Proposed Final Rule, 10 CFR Part 55, Fitness for Duty Requirements for Licensed Operators**

[NOTE: Mr. H. Alderman was the Designated Federal Official for this portion of the meeting.]

Mr. Ward, Chairman of the Human Factors Subcommittee, said that the Committee was briefed on this topic on December 12, 1989 prior to issuance of the proposed rule for public comment. At that time, the ACRS commented that it was reasonable to issue the proposed rule for public comment. Also, the ACRS requested a briefing by the staff when the public comment period was over. Mr. Ward noted that, in general, the public comments on this rule were negative. During this session, the staff will brief the Committee on the public comments and the associated staff's responses. He said that today's briefing was for information only and the staff did not expect an ACRS report.

Discussion of Public Comments and Associated Staff Responses - Mr. D. Lange, NRR

Mr. Lange, Office of Nuclear Reactor Regulation (NRR), said that the staff had received 39 public comments: one overall comment from NUMARC, 25 comments from utilities and contractors, 7 from individual licensed operators, 4 from employee organizations, and 2 from universities.

Mr. Lange stated that, as a result of the public comments, the staff does not plan to make substantial changes to the proposed

rule, other than clarification of the language in certain areas, and some of the background information and statements of consideration.

Mr. Lange stated that the proposed final version of the rule will be submitted to the Division Director by the first week of February, and to the EDO by the end of February. After the EDO eview, it would be forwarded to the Commission. He estimated that the final rule would be published in late March or early April 1991. He noted that the ACRS would receive the proposed final rulemaking package at the same time as the Division Director.

Mr. Lange stated that the public comments fall into the following categories:

- The proposed rule is unnecessary.

  A majority of the commenters felt that the rule was not necessary, and that the existing regulations were sufficient to take enforcement action, if needed. The existing rules make it clear that the operators must comply with the Facility Part 26 Program related to fitness for duty.

  In response to the above comment, Mr. Lange stated that the Commission directed the staff to develop this rule to emphasize operators' responsibilities to comply with the fitness-for-duty requirements and to inform them clearly what enforcement actions would be taken if they violate these requirements.

  Mr. Carroll asked if rulemaking was the only way to accomplish the above-mentioned purpose. Mr. Lange replied that the staff looked at other ways to accomplish this. However, the Commission directed the staff to go with the rulemaking to inform the operators that it is a condition of their license that they must comply with the fitness-for-duty requirements.

  In response to a question from Dr. Wilkins, Mr. Lange said that the staff had not taken any action as a result of the above comment.

- The proposed rule singles out the operators and it will have a detrimental effect on their morale.

  In response, Mr. Lange stated that the proposed rule emphasizes to licensed operators that their license is a privilege, not a right, and that refusal to participate in Part 26 fitness-for-duty requirements program can lead to enforcement and/or licensing action. The staff does not plan to make any changes to the proposed rule.

- The requirement in the rule that medical personnel be available 24 hrs/day to make judgments about prescription and over-the-counter drugs is an unnecessary burden.

  In response, Mr. Lange stated that medical personnel are not required 24 hrs/day for prescription and over-the-counter drug evaluation. The staff's intent is that the operators follow the Part 26 Program for notifying supervisory personnel about the use of legal drugs.

  The staff plans to make changes to the wording of the rule to clarify the staff's intent.

- The basis or need for the proposed rule is not clearly justified.

  In response, Mr. Lange stated that the need for the proposed rule has been explained already in response to comments under Category I.

  The staff does not plan to make any changes to the rule as a result of the above comment.

- The treatment of the operators who do not report medicine use is not made clear in the proposed rule.

  Mr. Lange stated that written policies and procedures designed to meet the general performance objectives and specific requirements of Part 26 will be adhered to in this case.

  The staff plans to make the necessary changes to the proposed rule to clarify the staff's intent on this matter.

- Formal drug testing programs should not be required for non-power reactors (NPRs).

  Mr. Lange stated that formal drug testing programs are not required for NPR personnel per Part 26 program or the proposed 10 CFR Part 55. NPR licensees are required to participate only in the program that they have established.

  The staff does not plan to make any changes to the proposed rule as a result of this comment.

- Medical Review Officers do not exist at NPR facilities.

  Mr. Lange said that there are no requirements in either Part 26 or the proposed 10 CFR Part 55 that NPR facilities have medical review officers.

The staff does not plan to make any changes to the proposed rule as a result of this comment.

Dr. Wilkins asked about the language "confirmed positive test for drugs." Mr. Lange replied that it was a test followed by an interview and judgment by a medical review officer. The Committee discussed the time interval between testing and the interview with the medical review officer. This turns out to be a number of days after the test. A number of Committee members expressed doubt that the medical officer could determine anything after this time interval.

Dr. Kerr asked if any positive comments were received on the proposed rule. Mr. Lange stated that some commenters said they did not have any problems with the rule.

In response to questions from the Committee regarding the qualifications of the medical review officer, Mr. Lange said that the medical review officer had to be an M.D. who is familiar with program. Mr. Carroll said the problem with the Part 55 program is that the doctors really do not understand the duties of a licensed operator.

NUMARC Comments - Mr. R. Enkeboll, NUMARC

Mr. Enkeboll provided NUMARC's comments on the proposed 10 CFR Part 55:

- The proposed 10 CFR Part 55 is unnecessary for the reasons delineated below.
- 10 CFR Part 26 adequately covers fitness-for-duty requirements for all plant personnel with unescorted access, including licensed operators. Introducing another rule -- proposed 10 CFR Part 55 -- will result in confusion and complications.
- The proposed rule undercuts industry efforts to achieve an atmosphere of trust that supports professionalism.
- It singles out the operators. Consequently, the morale of this very important group of employees may be adversely affected.
- Existing NRC regulations specify clearly that licenses can be revoked or suspended for willful violation or failure to observe any NRC regulations. Hence, a new rule is unnecessary to inform the industry that violations of the fitness-for-

duty requirements could result in revocation or suspension of a license.

- The document developed by the Institute of Nuclear Power Operations (INPO) entitled "Principles for Enhancing Professionalism of Nuclear Personnel" has been adopted by the industry since 1989 to encourage professionalism from all personnel.

Dr. Shewmon asked why NUMARC believes that implementation of the proposed 10 CFR Part 55 would inhibit the enhancement of professionalism. Mr. Enkeboll stated that the proposed rule singles out the licensed operators. Existing 10 CFR Part 26 clearly specifies that all plant personnel with unescorted access, including licensed operators, should meet the fitness for duty requirements. Singling out the operators will have a detrimental effect on their morale and on enhancement of professionalism. In his opinion, the proposed rule will not make a single improvement; it is merely a regulatory overburden.

Mr. Wylie asked whether NUMARC envisions additional inspections and monitoring as a result of the proposed 10 CFR Part 55. Mr. Enkeboll stated that, based on his experience, he believes that issuance of a new rule normally results in additional inspections and monitoring because of variances in interpreting the rule by different NRC personnel.

In response to a question from Mr. Wylie whether all utilities have uniform programs to implement the requirements of 10 CFR Part 26, Mr. Enkeboll stated that all utilities cover all of the requirements of Part 26. Some utilities even go beyond and cover more than is required in 10 CFR Part 26.

The Committee did not take any action on this matter at this meeting. Mr. Ward and Mr. Carroll agreed to look at the public comments on the proposed 10 CFR Part 55 along with the NUMARC position on this matter and recommend a course of action to the full Committee during the February 1991 ACRS meeting.

III. Proposed Resolution of GSI 29, Bolting Degradation or Failure in Nuclear Power Plants

[NOTE: Mr. E. Igne was the Designated Federal Official for this portion of the meeting.]

Dr. Shewmon, Chairman of the Materials and Metallurgy Subcommittee, stated that a Subcommittee meeting was held on January 9, 1991 to discuss this matter. There has been a variety of safety-related bolting failures in the past. EPRI has provided documents that

describe a bolting integrity program and NUMARC has recommend d that the utilities implement such a program in their nuclear power plants.

Dr. Shewmon said that although RES and NRR agree that NUREG-1339, "Resolution of Generic Safety Issue 29: Bolting Degradation or Failure in Nuclear Plants," provides a basis for the resolution of GSI-29, they do not seem to agree on a specific method for implementing the proposed resolution. RES proposes to issue an "Information Only" Generic Letter recommending that the licensees implement the EPRI-proposed bolting integrity program, followed by the development of a new Standard Review Plan Section by NRR on "Safety-Related Bolting" for future plants. However, NRR proposes to issue a Generic Letter under 10 CFR 50.54(f) requiring that the licensees implement a bolting integrity program.

Dr. Shewmon stated that the Committee may provide comments on this matter during this meeting or defer them to about mid-summer 1991 when the NRR, RES, Office of General Counsel (OGC), and the Committee to Review Generic Requirements (CRGR) have agreed on a specific method for implementing the proposed resolution of this generic issue.

Introductory Remarks and Overview - Mr. R. Baer, RES

Mr. Baer, RES, stated that the scope of GSI-29 includes all safety-related bolting including those in the reactor coolant pressure boundary. Bolting failures have been occurring for quite some time, and he expects them to continue. NRC has from time to time required actions by licensees on bolting degradation problems judged to be significant. Catastrophic failures have not occurred in nuclear power plants due to bolting problems, but risk analysis performed by NRR assumed that occurrence of such failures is possible. Mr. Baer stated that a decision is pending as to whether to close GSI-29 by issuing an "Information Only" Generic Letter that would suggest that licensees implement a bolting integrity program, or by issuing a 10 CFR 50.54(f) Generic Letter that would require that licensees implement a bolting integrity program in their plants.

The industry-recommended bolting integrity program is delineated in the EPRI Report NP-5769, Vols. 1 and 2, "Good Bolting Practices." The staff agrees with the industry-proposed bolting integrity program with certain qualifications and exceptions as described in NUREG-1339.

EPRI has proposed in the bolting program a leak-before-break (LBB) concept to ensure bolted closure integrity. Since a bolted joint and a welded joint contain similarities (i.e., material selection, design, pre-service and in-service inspections, and manufacturing/

construction controls), the staff is in substantial agreement with the application of EPRI's LBB concept on bolted closure.

Mr. Michelson stated that he does not believe the LBB concept should be used in resolving bolted closure issues and that he would pursue this matter further after the ASME Section XI Code Committee has acted on this matter.

NRR Position on GSI-29 - Dr. J. Davis, NRR

Dr. Davis, NRR, discussed briefly the safety significance of bolting degradation or failure:

- Degraded, loose, or missing bolts may result in system failure.
- Bolting with manufacturing defects may cause failure of systems.
- About 10 percent of counterfeit bolts do not meet the specification requirements. Use of such bolts may result in system failures.
- Severe general corrosion of bolts caused by a leak could result in "unzippering."

Dr. Davis said that in view of the safety significance associated with degradation or failure of bolting in nuclear power plants, NRR proposes to issue a Generic Letter under 10 CFR 50.54(f) requiring that the licensees implement a bolting integrity program similar to that suggested in the EPRI Report NP-5769, Vols. 1 and 2. The NRR-proposed schedule for the preparation and issuance of the Generic Letter is as follows:

- Preparation of draft Generic Letter - February 1, 1991
- Issuance of Generic Letter - May 1, 1991
- Review of industry responses - September 1, 1991

Dr. Davis said that based on the review of the industry responses to the Generic Letter, the need for future action will be determined.

The Committee provided a letter to the EDO on this matter as discussed in Section VIII of this document.

IV. **Meeting with the RES Director**

[NOTE: Mr. S. Duraiswamy was the Designated Federal Official for this portion of the meeting.]

Dr. Catton, Chairman of the Safety Research Program Subcommittee, stated that the purpose of this portion of the meeting was to hold discussions with Mr. Beckjord, RES Director, on items of mutual interest dealing with the NRC Safety Research Program and budget. He noted that a portion of this session dealing with the discussion of the impacts of the FY 1992 budget reduction proposed by the OMB on the NRC research contracts will be closed to the public. He suggested that, based on the information gathered during this session, the Committee may wish to decide whether it wants to include any specific comments and recommendations in its annual report to the Congress on the FY 1992 NRC Safety Research Program and budget.

Presentation by Mr. Beckjord, RES

Mr. Beckjord, Director of RES, briefed the Committee regarding the following:

- Impacts of the FY 1991 Budget Reduction by the Congress

  Mr. Beckjord stated that, in order to accommodate the $10 million reduction by the Congress to the overall NRC budget for FY 1991, the NRC Safety Research Program support budget was reduced by $2.1 million, from $94 million to $91.9 million. The distribution of this reduction to various research programs and the associated impacts are given below.

  - Integrity of Reactor Components

    The funding for this program has been reduced by $0.55 million, from $27.78 million to $27.23 million. This reduction will:

    -- Reduce the groundmotion data provided by the regional seismic network.

    -- Delay the United States Geological Survey (USGS)-contracted groundmotion and paleoseismic research.

  - Preventing Damage to Reactor Cores

    This program has been reduced by $0.875 million, from $22.55 million to $21.675 million. This reduction will:

-- Preclude participation in the Transient Reactor Accident Management program to be conducted in the German Upper Plenum Test Facility (UPTF).

-- Eliminate analysis of experiments associated with reactor coolant system thermal-hydraulic phenomena performed in the French BETHSY facility.

-- Reduce NRC support to the International Code Assessment (ICAP) Program by approximately 50 percent.

-- Delay by at least a year the development of a centralized human factors data system that would provide information on a broad range of human factors topics worked on by the NRC and other government agencies.

Mr. Ward asked whether the NRC would be able to gain access to data from the experiments in the BETHSY facility by not participating in the performance of analyses of those experiments. Dr. Sheron, RES, stated that the impact in not providing the French with analyses of a couple of experiments will be very little and will not have significant consequences.

Dr. Catton asked about the nature of the relationship between the French and the NRC. Mr. Beckjord stated that it has been very good. The NRC has been participating in the French PHEBUS program and the French have been participating in the NRC Severe Accident Research Program. The French personnel are very free in discussing their experimental data with the NRC.

Stating that the French have developed some sophisticated thermal-hydrauiic codes, Dr. Catton asked whether the NRC has access to those codes. Mr. Beckjord stated that the French have access to the severe accident codes developed by the NRC. However, he does not believe that the NRC has access to the French thermal-hydraulic codes.

Dr. Catton suggested that RES try to get the French thermal-hydraulic codes.

Stating that the December 1990 Nuclear Engineering and Design magazine contains a description of the French Nuclear Reactor Thermal Hydraulic Program, Dr. Catton suggested that the RES staff take a look at that article. Mr. Beckjord agreed to do so.

- Reactor Containment Performance

  The funding for this program has been reduced by $0.545 million, from $17.875 million to $17.33 million. This reduction will:

  -- Stretch out major experimental programs on core-melt phenomena, including pressure vessel failure in support of the Severe Accident Program.

  -- Delay the development of information needed to support a Commission decision on the acceptability of depressurization as an accident management strategy.

  -- Delay contribution to the French PHEBUS Fission Product Program.

Mr. Beckjord stated that the overall impacts of the $2.1 million reduction on the FY 1991 Safety Research Program are not dramatic. This reduction was accomplished by merely deferring certain research efforts, and without eliminating any research program.

- Advanced Reactor Research

  Mr. Beckjord stated that, as recommended by the Nuclear Safety Research Review Committee (NSRRC), RES plans to initiate research in the advanced reactors area. The Advanced Reactors Research Program will be included as a separate category in the next budget request as well as in the NRC's Five Year Plan document. The responsibilities of the "Advanced Reactors and Generic Issues" Branch in RES are being redefined so that it will have the primary responsibility for coordinating the Advanced Reactors Research Program. Mr. Beckjord stated that the proposed activities under the Advanced Reactors Research Program include:

  - Modification of PRA methods to account for unique passive design features.

  - Evaluation of unique thermal-hydraulic issues such as steam binding in gravity lines and depressurization systems.

  - Assessment of the performance and reliability of passive safety systems.

  - Development of the technical basis for regulatory guidance on advanced digital displays and computers for control.

- Evaluation of the application of the leak-before-break criteria to advanced reactors.

- Evaluation of reactor pressure vessel materials for 60-year service life.

- Definition of operating bases earthquake for advanced reactors.

Mr. Beckjord stated that they plan to perform certain integral system tests that have been mutually agreed upon by RES and NRR. They are looking for a university as a means of performing such tests.

Dr. Sheron stated that he visited the North Carolina State University to look at its test facility. It has a one-ninth scale loop of the Prairie Island Westinghouse reactor that was funded by the Carolina Power and Light Company and Duke Power Company. RES submitted a request to the North Carolina State University in June 1990 for using its facility. So far, they have not received a proposal from that university.

In response to a question from Dr. Kerr, Dr. Sheron stated that the North Carolina State University facility cannot be used for advanced reactor tests until certain modifications are made. Mr. Beckjord stated that they could use that facility as a model to design one or two facilities specifically applicable to investigate advanced reactor issues.

Dr. Sheron stated that RES is in the process of developing a Request for Proposal (RFP) for a small-scale integral loop facility to perform integral systems tests to support the Westinghouse AP-600 design. RES expects to issue this RFP within two months.

Mr. Carroll asked why the NRC, instead of Westinghouse, should be doing the above-mentioned tests. Mr. Beckjord stated that RES discussed this matter with the Westinghouse personnel and they felt that the integral systems tests were not necessary. Further, the NSRRC recommended that the NRC be doing such tests.

Mr. Carroll asked whether the Federal Aviation Administration performs tests and other research work in the development of a new aircraft. Mr. Beckjord stated that the whole issue of "who should do what" has not yet been settled. They plan to hold further negotiations with the vendors to obtain some funding support for this program.

Mr. Carroll commented that the U.S. vendors have been evading their responsibilities to do necessary work for their own product

development and to demonstrate that their products are reliable. In his opinion, the NRC has been giving them opportunity to continue this sort of game. Mr. Beckjord stated that he agrees that the vendors should have some involvement. The whole issue has not yet been settled. They plan to hold discussions with the vendors on this matter. He stated that he would keep the Committee abreast of further developments on this issue, including the outcome of the NRC negotiations with the vendors.

Stating that the passive cooling used on some of the advanced reactors may lead to some complicated fluid mechanics, Dr. Catton asked whether RES plans to perform any experimental work on this issue. Mr. Beckjord said yes.

Stating that the ECCS design is based on an arbitrarily sized LOCA, Mr. Michelson asked whether RES has any effort directed towards possibly redefining the size of the LOCA. Dr. Shao stated that they don't have any plan to do such work and he believes it would be a difficult task.

Mr. Michelson suggested that RES initiate a research effort to consider a redefinition of the size of the LOCA and to determine whether the ECCS design is realistic. Mr. Beckjord agreed to consider this suggestion.

- NSRRC Report

  Mr. Beckjord stated that in response to a suggestion by the ACRS in its April 11, 1990 report to the Commission on the NRC Safety Research Program and Budget, the NSRRC was requested to review and advise on the research strategy and content of the research program. The NSRRC reviewed this matter and documented its results in a report entitled "Report on the U.S. Nuclear Regulatory Commission's Research Strategy from the Nuclear Safety Research Review Committee," dated December 21, 1990. Mr. Beckjord said that the NSRRC made numerous recommendations and RES plans to incorporate them, as appropriate.

  Since the ACRS members decided to read the NSRRC report, Mr. Beckjord did not provide details of the NSRRC's recommendations.

- Scope of the Aging Research Program

  Mr. Beckjord discussed briefly the contributions of Aging research to the regulatory process and current and near-term activities planned under the Aging program. He said that major emphasis is placed on reactor pressure vessel annealing with the expectation that it will be a significant issue in

the license renewal process. NRC plans to send four people to the Soviet Union to observe annealing of the Soviet VVER-440 plant reactor vessel. He mentioned that the work on the TMI-2 samples will be completed by the end of 1991.

In response to several questions from Dr. Shewmon, Mr. Beckjord committed to keep the ACRS apprised of the results of the evaluation of the TMI-2 samples.

- Severe Accident Research

Mr. Beckjord said that emphasis is placed currently on the following issues in the severe accident area:

- Core melt.
- Revised Source Term.
- Direct Containment Heating.
- Issues specific to various containment types (e.g., Mark I containment liner integrity, fuel-coolant interactions in Mark II containment cavities and downcomers).

- Human Factors

Mr. Beckjord stated that the scope of the Human Factors Research Program includes the following:

- Assessment of human-system interfaces, including advanced control systems and computer-controlled displays.
- Measurement of the influence of organizational factors on human performance and plant risk.
- Incorporation of human and hardware reliability into risk assessment.
- Measurement of personnel performance.

Mr. Michelson asked whether RES has any effort to evaluate the performance of advanced control systems and computer-controlled displays at elevated room temperatures. Dr. Shao, RES, stated that they plan to look into this issue.

In response to a question from Mr. Michelson, Mr. Minners stated that they are in the process of prioritizing three generic issues in the fire protection area and that he would provide a list of those generic issues to the Committee at a later date.

Dr. Wilkins asked for Mr. Beckjord's opinion on Dr. Lewis' concerns that the NRC appears not to be doing its statistical work properly. Mr. Beckjord stated that RES has about two competent statisticians

to perform statistical analyses as needed. He is aware of the concerns expressed by Dr. Lewis in relation to the proposed resolution of Generic Issue B-56, "Diesel Generator Reliability," and he does not disagree with the points raised by Dr. Lewis. He said that the analysis for Generic Issue B-56 is being redone by those who performed the original analysis. Upon completion, he will send the information to the ACRS.

V. **Nuclear Power Plant Operating Experience and Events**

[NOTE: Mr. P. Boehnert was the Designated Federal Official for this portion of the meeting.]

Mr. Carroll, Chairman of the Plant Operations Subcommittee, introduced this topic to the Committee. Prior to the staff's briefing, Mr. Carroll noted receipt of a letter addressed to Mr. Rossi, NRR, from a Mr. Babbin. Mr. Babbin congratulated Mr. Rossi for consistently issuing high-caliber NRC Information Notices.

Mr. A. Chaffee, NRR, said that NRR would brief the Committee on two recent operating events that occurred at Quad Cities, Unit 2 and Ginna, Unit 1.

Reactor Scram on Intermediate Range Monitor Signal from Hot Shutdown at Quad Cities, Unit 2 - Mr B. Kaufer, AEOD

Mr. Kaufer, a member of the Office for Analysis and Evaluation of Operational Data (AEOD) Team sent to the Quad Cities plant to review the human factors aspects of this event, provided the highlights of this event:

- The licensee was attempting to perform a special test (turbine torsional resonance test). After deciding to abort the test, the reactor scrammed on a hi-hi intermediate range monitor signal. NRR considered the safety significance to be minor, due to the protection afforded by the reactor protection system (RPS).

- Cause of the event was given as operator error; however, a number of "contributing factors" were cited, including:

  - Low level of task awareness.
  - Incomplete training.
  - Poor communications.
  - Insufficient command and control.
  - Ineffective procedures.
  - Ineffective utilization of operational experience.

- Details of the event were noted. The test regimen required four changes in power level over a period of several hours spanning two control room shifts. During the performance of the test, the following problems were noted: plant was under a 24-hour LCO to complete reinerting of the drywell or shutdown; some of the control rods were "hot" (high-worth) which slowed the power reduction process. Prior to the scram, the operator drove the reactor subcritical in an effort to control pressure, as instructed.

In response to Mr. Carroll, Mr. Kaufer said the information on the hot rods was not effectively communicated to the shift personnel (third shift) who caused the scram.

In response to another question from Mr. Carroll, Mr. Kaufer said that at the time of the scram it was not clear just what the state of the reactor was. What was clear was that the operator did not realize the core was subcritical or slightly critical when he later started pulling rods, again in an effort to maintain constant pressure.

Dr. Kerr opined that the root cause of this event is organizational error, not operator error as stated above. He said this event has a chilling analogy to the Chernobyl accident, citing the following similar precursors:

- The test was not analyzed.
- The test had been previously started and aborted (two days earlier); the plant personnel were under a lot of pressure to rush the test to completion.
- The test was run on the back shift.
- The test was again unsuccessful and shutdown was begun.
- Some necessary plant equipment was unavailable.

While acknowledging that the above points were true, Mr. Rossi indicated that the important difference here was that no protection systems were overridden by the operators, as was done at the Chernobyl plant. Mr. Rossi also agreed that the blame for this event is spread throughout the organization.

The licensee, Commonwealth Edison Company, has taken a number of corrective actions including: the addition of another senior reactor operator in the control room for each shift, remedial training for all operating personnel, revisions to procedures and operator training, and a survey of all cognizant personnel to ensure their ability to practically apply reactor theory to operational situations at low power. Additionally, the licensee has committed to not deliberately operate the plant in hot standby.

The NRC staff intends to issue an Information Notice recounting the lessons of this event.

In response to questions from Dr. Kerr and Mr. Carroll, Mr. Greenman, Region III, noted that the licensee has a program in place to ensure that the lessons learned at one plant are incorporated into such programs at all of their plants.

Loss of Automatic and Manual Actuation of Engineered Safety Features System while at Power at Ginna, Unit 1, December 12, 1990 - Mr. N. Fields, NRR

Mr. Fields, NRR, stated that, while attempting to replace a failed relay card, the engineered safety features actuation system (ESFAS) was disabled for ~20 minutes. The cause of the event was due to use of an inadequate maintenance procedure.

Specific details of the event include:

- During startup (~3% power), a spurious "under voltage trip" signal was received on one of the two buses served by emergency diesel generator (EDG) "A". EDG "A" started but did not load, since the signal was spurious. A failed relay card had caused the false signal.

- In order to replace the failed relay card, the under voltage cabinet was to be deenergized. This was to be accomplished by transferring the ESFAS bus power supply to the operating EDG "A".

- A work request was prepared to perform the above tasks. The request was subjected to both a nontechnical and technical review, prior to its submittal to the control room foreman. The foreman questioned the propriety of a step that called for the opening of two DC switches. He was assured, however, that the procedure had been thoroughly reviewed.

- When the DC switches were opened, a "safeguard DC failure" alarm sounded. An oncoming shift supervisor questioned the alarm and was told it resulted from exercising of the above procedure. Given this, the response procedures for the alarm were not pursued.

- The normal supply breakers were briefly opened to allow the EDG to load to the bus. Deenergizing these breakers resulted in a plant scram due to loss of the nuclear instrumentation intermediate-range channel. Following the trip, the oncoming supervisor pursued the "DC failure" alarm; it was then realized that the ESFAS had been disabled for ~ 20 minutes.

Mr. Field stated that results of the investigation revealed that the procedure employed was intended for use only during cold shutdown. The following human errors were identified for this event:

- Failure to recognize that the procedure was inappropriate for use at power.
- Failure of the foreman to pursue his initial misgivings about the opening of the DC switches.
- Failure of the Plant Operating Review Committee to recognize the inadequacy of the procedure.

Dr. Wilkins asked what more the control room foreman could have done in this situation. The NRR staff stated that the foreman could have consulted with the control room supervisor and could have had the test halted.

Licensee corrective actions for this event include:

- A thorough review of the process related to the development and approval of procedures.
- Enhanced training.
- Conduct of a so-called human factors enhancement system evaluation used by INPO to determine event root cause(s).

VI. Proposed Revision to 10 CFR Part 20, "Standards for Protection Against Radiation" - Dr. D. A. Cool, RES

[NOTE: Mr. E. Igne was the Designated Federal Official for this portion of the meeting.]

Dr. Cool, RES, presented an overview of the proposed final revision to 10 CFR Part 20. He stated that several new Regulatory Guides will be developed and some existing Regulatory Guides will be revised to provide guidance to the industry for implementing the rule. The final implementation date of this rule is scheduled for January 1, 1993 for NRC licensees and January 1, 1994 for Agreement States. The revised 10 CFR Part 20:

- Places greater emphasis on numerical risks.
- Adopts "effective dose concept."
- Uses the sum of internal and external doses to prescribe total effective occupational dose limits.

- Places greater equality in treatment of external and internal doses.

- Provides explicit limit on doses to public and to embryo/fetus.

In response to a question from Dr. Shewmon on the influence of radiation on male sperm and its effect on the offspring, Dr. Cool stated that they are aware of the study on this issue and are keeping abreast of it.

Dr. Cool stated that the revised Part 20 dose limits are more stringent than those in the current Part 20. For example, the occupational exposure limit prescribed in the current Part 20 is 17 rems per year (12 rems per year external dose plus 5 rems per year internal dose); the revised Part 20 specifies 5 rems per year (sum of external and internal doses). Likewise, the public exposure limit in the current Part 20 is 0.5 rem per year while the limit in the revised Part 20 is 0.1 rem per year. These dose values are over and above the value of background exposure. It was stated that the revised rule permits flexibility in methods used for assessing internal dose and dose/exposure relationships.

Dr. Cool stated that planned special exposures (PSEs) permit doses to workers under special circumstances to exceed the routine annual limits. Annual and liretime PSE limits are 5 rems and 25 rems, respectively.

Occupational exposure dose limits for minors (less than 18 years of age) are limited to 10 percent of the limits for adult workers. Concentration and intake limits for minors are also 10 percent of those allowed for adult workers. Dose limits for the embryo/fetus of a pregnant woman over the entire period of gestation is 0.5 rem delivered at a fairly uniform rate over the entire gestation period and not to be delivered in a few large doses.

Dr. Cool stated that the current Part 20 requires that licensees make every reasonable effort to maintain exposures as low as is reasonably achievable (ALARA). Under the revised Part 20, each licensee shall use, to the extent practicable, procedures and engineering controls to ensure that doses are ALARA.

This was an information briefing and the Committee did not take any action on this matter.

VII. Licensing Requirements for Large Irradiation Facilities

[NOTE: Mr. E. Igne was the Designated Federal Official for this portion of the meeting.]

Mr. Carroll, Chairman of the Occupational and Environmental Protection Systems Subcommittee, stated that during the December 1990 ACRS meeting, the Committee expressed an interest in hearing a briefing on large irradiators. Accordingly, Mr. Stephen A. McGuire, Radiation Protection and Health Effects Branch, RES, would brief the Committee on large-gamma irradiators.

Presentation by RES on Large Gamma Irradiators - Mr. S. A. McGuire, RES

Mr. McGuire, RES, stated that a proposed rule, 10 CFR Part 36, "Licenses and Radiation Safety Requirements for Large Irradiators," was published on December 4, 1990, for a 90-day public comment period. He noted that a public meeting to discuss the proposed rule will be held in Rockville, Md., on February 12-13, 1991.

The major issues in Mr. McGuire's presentation are summarized below:

- The 10 CFR Part 36 definition for a large irradiator was given as an irradiator that could expose a person to a dose of 500 Rads in one hour at a distance of one meter.

- The four major types of irradiators are:

  - Panoramic, wet-source storage
  - Panoramic, dry-source storage
  - Underwater
  - Self-enclosed.

- The most common large-gamma irradiator source used is Cobalt 60, and for large commercial applications it would usually be between ½ million and 15 million curies.

- Currently, the most common uses of irradiators are for:

  - Sterilization of medical products (85% of all uses).

  - Inducement of chemical changes such as polymerization.

  - Irradiation of food for pest or insect removal. Food irradiation was stated as still under development in the United States but is currently in use in Europe, India, China, and the United Kingdom.

- The number of irradiators of the large commercial production type in the United States was given as 38, of which 14 were licensed by the NRC and the remaining 24 were licensed by Agreement States.

- The most significant potential radiation hazard is an overexposure to a person who could, in a matter of seconds, receive a lethal exposure if he or she entered a room while the source was exposed.

  The second most significant potential hazard was stated as being a leaking source in which surface corrosion of the source and/or capsule failure would allow contaminates into the surrounding shield water.

- Examples of overexposure to personnel at production facilities including incidents outside the United States which resulted in fatalities include:

  - 1974, New Jersey, short exposure - nonfatal
  - 1977, New Jersey, short exposure - nonfatal
  - 1975, Italy, food irradiator - fatal
  - 1982, Norway, maintenance worker - fatal
  - 1989, El-Salvador, operator - fatal
  - 1990, Israel, operator - fatal

- The Access Control Requirements specified in the proposed 10 CFR Part 36, as summarized below, are expected to provide a remedy for commercial overexposure accidents:

  - Provide a door or physical barrier.

  - Include provisions for automatic source retraction if the room door is opened or a person enters.

  - Provide a single key for door opening and source operation.

  - Install backup devices to alarm and lower sources.

  - Install source position indicator.

  - Install radiation monitor in the source room.

  - Take radiation survey upon room entry.

- The precautions against leaking sources include prevention (in which performance specifications for sealed sources, double encapsulation, pool water purity control, and source shrouds are required), detection, and containment.

Mr. Ward asked whether radiation leakage has ever occurred due to defects in shielding. Mr. Baggett, RES, stated that since the 1940's he has never seen a concrete shielding crack resulting in external radiation exposures.

Mr. Michelson asked whether the regulations require independent systems or separate redundant power supplies for safety interlocks such as source retraction. Mr. Baggett stated that the regulations do not delineate those requirements; however, an NRC Regulatory Guide explains the need for such safety features. He stated also that the room doors have physical bolt locks that hold them shut until power is restored to the facility, and that upon loss of power, the pneumatically positioned sources reinsert under the force of gravity.

In response to a question from Mr. Carroll regarding pool liner integrity, Mr. McGuire stated that the source pool design is not like that for spent fuel pools with standoff liners but have simple steel liners. Mr. Baggett explained further that the source pool liner integrity is checked indirectly by daily monitoring of the pool water inventory and radioactive concentrates via the pool water demineralizing system.

This was an information briefing and the Committee did not take any action on this matter.

VIII. Executive Session

A. Report to the Congress

- Annual ACRS Report to the Congress on the NRC Safety Research Program (Report to J. Danforth Quayle, President of the Senate, and Thomas S. Foley, Speaker of the House, dated January 15, 1991)

  The Committee completed its report to the Congress on the NRC Safety Research Program as required by Section 29 of the Atomic Energy Act of 1954, as amended by Section 5 of Public Law 95-209. The Committee transmitted to the Congress several of its reports to the Commission related to various elements of the NRC Safety Research Program.

  The Committee stated that it expects to continue to review various elements of the NRC Safety Research Program and provide reports to the Commission as warranted.

B. **Letter to the EDO**

- Proposed Resolution of Generic Safety Issue 29, "Bolting Degradation or Failure in Nuclear Power Plants" (Letter to James M. Taylor, EDO, dated January 14, 1991)

The Committee agreed with the NRC staff that NUREG-1339, "Resolution of Generic Safety Issue 29: Bolting Degradation or Failure in Nuclear Power Plants," provides a satisfactory basis for the proposed resolution of Generic Safety Issue 29. Since the NRC staff has not yet agreed on the method of implementation for the resolution of this Generic Issue, the Committee deferred its final comment on this matter until the staff has decided on a specific method of implementation.

C. **Memorandum by an Individual ACRS Member**

- Comments on Draft Regulatory Guides 7001 and 7002 (Memorandum from P. G. Shewmon, ACRS member, for L. C. Shao, Office of Nuclear Regulatory Research, dated January 11, 1991)

The Committee decided not to review or comment on the following Regulatory Guides, but offered no objection to Dr. Shewmon's proposal to provide comments on these Guides as an individual member of the ACRS:

- Draft Regulatory Guide, DG-7001, "Fracture Toughness Criteria for Ferritic Steel Shipping Cask Containment Vessels with a Maximum Wall Thickness of Four Inches (0.1m)"

- Draft Regulatory Guide, DG-7002, "Fracture Toughness Criteria for Ferritic Steel Shipping Cask Containment Vessels with a Wall Thickness Greater than Four Inches (0.1m)"

Dr. Shewmon, as an individual member of the ACRS, provided several comments on the technical adequacy of these Guides.

C. **Subcommittee Reports**

1. Thermal-Hydraulic Phenomena Subcommittee - Interfacing Systems LOCA

[NOTE: Mr. P. Boehnert was the Designated Federal Official for this portion of the meeting.]

Dr. Catton, Chairman of the Thermal Hydraulic Phenomena Subcommittee, briefed the Committee regarding the December 12, 1990 meeting of the Thermal Hydraulic Phenomena Subcommittee that was held to review the status of the NRC staff's program on interfacing systems loss-of-coolant accidents (ISLOCA). Key points noted by Dr. Catton include the following:

- The NRC staff has reached a preliminary conclusion that the ISLOCA risk is less than that initially perceived when this program was begun last year. The staff may conclude the program by issuing an Information Notice and holding meetings with representatives of the industry.

- Several points noted during the discussion of the ISLOCA plant studies performed by the Idaho National Engineering Laboratory (INEL), NRC contractor, include:

  - INEL's modeling of the environmental effects of a leak/break on adjacent equipment is suspect. This is due to the assumption that the effects of the break are confined to the immediate area (room, enclosure, etc.), which the Subcommittee considered to be an unlikely scenario.

  - For the modeling of human factors, INEL chose a human error rate of 10^{-5}. Dr. Catton felt that this number is too low.

  - The codes (NAAC[illegible] RELAP5/MOD 2.5) used for the analysis work suffer from a lack of fully traceable documentation.

  - Based on the results of the plant studies, Dr. Kerr said that the use of so-called symptom-based procedures may not be sufficient to address an ISLOCA event.

  - Dr. Catton felt that the procedure used by INEL to determine the pressure in the pipe that might result in a (pipe) break was somewhat arbitrary. He believes, instead, that the contractor should have relied on the data obtained from the EPRI valve tests.

  - While the above studies show that the overall ISLOCA core damage frequencies (CDFs) are comparable to CDFs calculated in previous PRAs, the risk contributors have changed. For the INEL results,

the dominant risk contributors tend to be human factors; previous PRAs show the dominant risk contributors to be hardware-related.

Mr. Burdick, RES, clarified a point noted above regarding the human error rate assumed by INEL in their analyses. He indicated that the 10^{-5} rate was used by INEL as a lower bound on the accrued human error probability. [**Note:** In subsequent conversation with Mr. Burdick, he indicated that the specifics of the human error methodology used by INEL will be clarified in the final version of the Plant Studies reports.]

2. **Auxiliary and Secondary Systems Subcommittee - Site Visit to St. Lucie Nuclear Power Plant**

[NOTE: Mr. E. Igne was the Designated Federal Official for this portion of the meeting.]

Dr. Catton, Chairman of the Auxiliary and Secondary Systems Subcommittee, provided a brief report of the December 13, 1990 site visit to the St. Lucie Nuclear Power Plant. He was accompanied by Mr. Michelson, Dr. Quintiera, ACRS consultant, and Mr. Rotella, the cognizant ACRS staff engineer. The purpose of the visit was to look at the fire protection and mitigation features at the St. Lucie Nuclear Power Plant.

Dr. Catton stated that, although the St. Lucie plant has over 1700 fire detectors which alarm in the control room, most of the fires that have occurred at this plant were identified by fire watch personnel.

Dr. Catton said that the plant was very clean and appeared to have little material to burn in open areas. The St. Lucie Plant personnel responsible for implementation of the fire protection program were extremely fire-prevention conscientious.

E. **Summary/List of Follow-Up Matters**

- In its January 15, 1991 letter to the EDO related to the proposed resolution of Generic Safety Issue 29, "Bolting Degradation or Failure in Nuclear Power Plants," the Committee members stated that they withhold final comment on this issue until the staff has decided on a method for implementing the resolution of this Generic Safety Issue. (Mr. Igne has the follow-up action on this matter.)

- The NRC staff agreed to submit the proposed final version of 10 CFR Part 55, "Fitness for Duty Requirements for Licensed Operators" for ACRS consideration during March or April 1991. (Mr. Alderman has the follow-up action on this matter.)

- The Committee suggested that Mr. Ward prepare another draft of the proposed report to the Commission on the Containment Design Criteria for Future Plants, incorporating the comments and recommendations provided by the Committee members, and submit it to the full Committee for consideration during the February 7-9, 1991 ACRS meeting. (Mr. Houston has the follow-up action on this matter.)

- The Committee members agreed to invite the NRR staff to the February 7-9, 1991 ACRS meeting to brief the Committee regarding the status of the staff's review of the original EPRI-ALWR Requirements Document and on the staff's plans to review the EPRI "roll-up" document on requirements for evolutionary and passive nuclear plants. (Dr. El-Zeftawy has the follow-up action on this matter.)

- Mr. Ward and Mr. Carroll agreed to look at the public comments on the proposed 10 CFR Part 55, "Fitness for Duty Requirements for Licensed Operators," along with the NUMARC position on this matter and recommend a course of action to the full Committee for consideration during the February 7-9, 1991 ACRS meeting. (Mr. Alderman has the follow-up action on this matter.)

- Mr. Fraley informed the Committee that the Commissioners have agreed to meet with the Committee on March 7, 1991 between 1:30 and 3:00 p.m.. They have identified Containment Design Criteria for Future Plants as one of the items for discussion. (Mr. Fraley has the follow-up action on this matter.)

- Mr. Carroll requested that the ACRS staff prepare a White Paper discussing the following:

  - Examples of issues for which the staff has difficulty in deciding explicitly the method of implementation (e.g., Information Notices, Generic Letters, Bulletins, endorsement of Industry Standards, etc.) for regulatory actions.

- Mechanisms available to the staff to implement the regulatory actions and to ensure that industry initiatives endorsed by the staff are carried out properly and uniformly.

(Mr. Quittschreiber has the follow-up action on this matter.)

- Stating that the ECCS design is based on an arbitrarily sized LOCA, Mr. Michelson suggested that RES initiate a research effort to consider a redefinition of the size of the LOCA and to determine whether the ECCS design is realistic. Mr. Beckjord, RES, agreed to consider this suggestion. (Mr. Igne has the follow-up action on this matter.)

- Mr. Beckjord, RES, committed to keep the Committee abreast of further developments regarding the separate small-scale integral systems test facility specifically designed to investigate advanced reactor issues, as well as the extent of industry contribution to such a facility. (Dr. El-Zeftawy has the follow-up action on this matter.)

- The Committee agreed that the Safety Philosophy, Technology, and Criteria Subcommittee should review SECY-90-405, "Formulation of a Large Release Definition and Supporting Rationale," and recommend a course of action to the full Committee for consideration during the February 7-9, 1991 ACRS meeting. NOTE: A Subcommittee meeting has been scheduled for February 5, 1991 to discuss this matter. (Mr. Houston has the follow-up action on this matter.)

- The Committee agreed that the Maintenance Practices and Procedures Subcommittee should review the proposed Maintenance Rule Package and recommend a course of action to the full Committee for consideration during the April 11-13, 1991 ACRS meeting. NOTE: A Subcommittee meeting has been scheduled for April 10, 1991 to discuss this matter. (Mr. Alderman has the follow-up action on this matter.)

- Citing a December 27, 1990 memorandum from Mr. Boehnert for Mr. Carroll that provides information on the NRC staff's efforts to develop a risk-based cause codes and on Performance Indicators, Dr. Kerr proposed that the Committee hear a briefing by the staff during the February 7-9, 1991 ACRS meeting on the status of the Performance Indicators Program and also on the staff's

Performance Indicators Program and also on the staff's efforts related to the development of cause codes. The Committee agreed to schedule such a briefing. NOTE: This item has been deferred to the March 7-9, 1991 ACRS meeting. (Mr. Boehnert has the follow-up action on this matter.)

- With reference to a December 20, 1990 letter from Mr. Hodges, NRC Region I, to the Baltimore Gas and Electric Company, regarding "NRC Region I - Utility Symposium/ Workshop on Engineering's Role in Plant Support," Dr. Kerr suggested that the Committee hear more about this matter and also find out whether other NRC Regional Offices have similar plans. The Committee agreed that the Regional Programs Subcommittee should start holding a series of meetings with the NRC Regional Offices, starting in the Spring of 1991, and discuss the issue raised by Dr. Kerr during those meetings. (Mr. Boehnert has the follow-up action on this matter.)

- In view of the difficulties being experienced by the staff in implementing the provisions of Regulatory Guide 1.97, "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident," Dr. Kerr proposed that the Committee hear a briefing by the staff about the status of implementation of Regulatory Guide 1.97, and the associated problems. The Committee agreed to schedule such a briefing during the February 7-9, 1991 ACRS meeting. (Dr. El-Zeftawy has the follow-up action on this matter.)

- With reference to a July 3, 1990 letter from Mr. Gallo, NRR, to the Philadelphia Electric Company, regarding the Transient Response Implementing Plan (TRIP) Procedures Inspection Report related to the Limerick plant, Dr Kerr suggested that the Committee discuss the TRIP procedures with the staff. The Committee decided that the Instrumentation and Control Systems Subcommittee should discuss this matter with the staff and recommend a course of action to the full Committee for consideration. (Dr. El-Zeftawy has the follow-up action on this matter.)

- With reference to an event report related to deficiencies identified during an electrical distribution system functional inspection at the Point Beach Nuclear Plant, Units 1 and 2, Dr. Kerr requested that the ACRS staff gather information on the electrical distribution system functional inspection program. After reviewing the information, Dr. Kerr will recommend a course of action

to the full Committee for consideration. (Dr. El-Zeftawy has the follow-up action on this matter.)

- Mr. Michelson requested that the staff keep him informed of any future use of leak-before-break (LBB) strategy (such as that proposed in EPRI Report 5769, Vol. 1) for resolving particular bolted closure integrity issues. He expressed interest in pursuing the appropriateness of the application of LBB concept to bolted closure issues after the ASME Section XI Code Committee has acted on this matter. (Mr. Igne has the follow-up action on this matter.)

F. **Future Activities**

1. **Future Agenda**

The Committee agreed to a tentative schedule for the 370th, February 7-9, 1991, ACRS meeting as contained in Appendix II.

2. **Future Subcommittee Activities**

A list of future ACRS subcommittee meetings was distributed to the Committee members (Appendix III).

The meeting was adjourned at 3:45 p.m., Friday, January 11, 1991.

APPENDICES
MINUTES OF THE 369TH ACRS MEETING
JANUARY 10-11, 1991

I. Attendees

II. Future Agenda

III. Future Subcommittee Activities

IV. List of Documents Provided to the Committee

APPENDIX I
MINUTES OF THE 369TH ACRS MEETING
ATTENDEES

THURSDAY, JANUARY 10, 1991

Public Attendees

John W. Ross, Jr., BG&E Co.
R. E. Enkeboll, NUMARC
M. A. Guarini, SERCH/Bechtel
Margo Barron, NUS/LIS
John Trotter, EPRI
Lynn Connor, The NRC Calendar
R. N. Whitesel, NUMARC
Bill Pearce, Consultant
Claudia Guild, Winston & Strawn
Stephen Additon, TENERA
George Wrobel, RG&E
Joe Widay, RG&E

NRC Attendees

D. Lange, NRR
N. Hunemuller, NRR
S. Turel, RES
B. Hughes, R I
G. McPeek, NRR
J. Roe, NRR
J. Telford, RES
H. Pastis, NRR
E. Greenman, NRR
E. Beckjord, RES
J. Davis, NRR
C. Y. Cheng, NRR
M. Taylor, OEDO
R. E. Johnson, RES
F. Cherny, RES
T. Y. Chang, RES
S. Magruder, NRR
R. Baer, RES
R. Meyer, RES
J. Heltemes, RES
A. Burda, RES
R. Bosnak, RES
B. Morris, RES
L. Shotkin, RES
R. Smith, OEDO
N. Fields, NRR
D. Fischer, NRR
B. Kaufer, AEOD
G. Lanik, AEOD
C. Rossi, NRR
R. Barrett, NRR
L. Olshan, NRR
G. Smith, NRR
A. R. Johnson, NRR
T. Novak, AEOD
H. Bailey, NRR
J. Rosenthal, AEOD
L. Soffer, RES
B. Hardin, RES
G. Trager, AEOD

FRIDAY, JANUARY 11, 1991

Public Attendees

Margo Barron, NUS/LIS
Patrick Harris, SERCH Lic./Bechtel
Jay Maisler, NUMARC

NRC Attendees

D. Cool, RES
H. Peterson, Jr.,RES
A. Roecklein, RES
S. McGuire, RES
M. Weber, OCM/KC
H. Larson, ACNW
C. Jones, EDO
G. Pangburn, EDO
F. Costanzi, RES
S. Baggett, NMSS
M. Taylor, OEDO
G. Burdick, RES

APPENDIX II
MINUTES OF THE 369TH ACRS MEETING
JANUARY 10-11, 1991
FUTURE AGENDA

Tentative Schedule for the 370th ACRS Meeting, February 7-9, 1991

- Containment Design Requirements (Open) - The members will continue preparation of a proposed report to the NRC on the containment design criteria for future plants.

- EPRI-ALWR Requirements Document (Open) - Briefing by and discussion with representatives of the NRC staff on the status of their review of the EPRI-ALWR Requirements Document and on staff plans to review the EPRI "roll-up" document on requirements for evolutionary and passive nuclear power plants.

- Individual Plant Examination for External Events (IPEEE) Program (Open) - Review and comment on the NRC staff's proposed revised Supplement 4 to Generic Letter 88-20, Severe Accident Vulnerabilities Due to External Events and its supporting guidance document, NUREG-1407. Representatives of the NRC staff and the nuclear industry will participate, as appropriate.

- Primary Systems Integrity (Open) - Briefing by representatives of the NRC staff regarding test results on the stability/instability of flawed pipes.

- Fitness for Duty Requirements for Licensed Operators (Open) - The members will discuss proposed NRC requirements for fitness for duty for licensed operators.

- Future ACRS Activities (Open) - Discuss anticipated Subcommittee activities and items proposed for consideration by the full Committee.

- ACRS Subcommittee Activities (Open/Closed) - Briefings and discussion regarding the status of assigned ACRS Subcommittee activities. Portions of this session will be closed as necessary to discuss proprietary information related to the matters being discussed.

- ACRS Activities (Open) - Discuss administrative issues related to the conduct of ACRS activities including proposed revision of the ACRS Bylaws.

- Appointment of New Members (Closed) - Discuss the qualifications of candidates proposed for appointment to the Committee.

- Formulation of a Large Release Definition and Supporting Rationale (Open) - Review and report on proposed formulation of a large release definition and supporting rationale, SECY-90-405.

- Spent Fuel Storage (Open) - Review and report on proposed Standard Review Plan for dry metallic spent fuel storage casks. Representatives of the NRC staff and the nuclear industry will participate, as appropriate.

- Training and Qualification of Civilian Nuclear Plant Personnel (Open) - Review and report on proposed rulemaking regarding training and qualification of civilian nuclear power plant personnel. Representatives of the NRC staff and the nuclear industry will participate, as appropriate. (NOTE: This item has been deferred to the March 7-9, 1991 ACRS meeting due to the unavailability of the necessary documents.)

- Performance Indicator Program (Open) - Briefing by representatives of the NRC staff regarding the status of the NRC Performance Indicator Program. (NOTE: This item has been deferred to the March 1991 ACRS meeting.)

- Implementation of Regulatory Guide 1.97, "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident" (Open) - Briefing by representatives of the NRC staff regarding the status of the implementation of Regulatory Guide 1.97, and associated problems.

- Miscellaneous (Open) - Discuss matters that were not completed during previous meetings as time and availability of information permit.

APPENDIX III
MINUTES OF THE 369TH ACRS MEETING
JANUARY 10-11, 1991
FUTURE ACRS SUBCOMMITTEE MEETINGS

ACRS FULL COMMITTEE & SUBCOMMITTEE MEETINGS

January 10, 1991

TVA Plant Licensing and Restart, January 24, 1991, Amberley Suite Hotel, Huntsville, AL - **POSTPONED TO MARCH 5, 1991.** Site visit is tentatively scheduled for March 4, 1991.

Defueling/Fuel Pool Storage, January 29, 1991, 7920 Norfolk Avenue, Bethesda, MD (Alderman), 8:30 a.m. - 12:00 Noon, Room P-110. The Subcommittee will discuss the proposed standard review plan for reviewing safety analysis reports for dry metallic spent fuel storage casks. Attendance by the following is anticipated, and reservations have been made at the hotels indicated for the night of January 28:

Dr. Kerr	NONE	Mr. Ward	HYATT
Dr. Siess	HOLIDAY INN	Mr. Wylie	HYATT

Human Factors, January 29, 1991, 7920 Norfolk Avenue, Bethesda, MD (Alderman), 1:00 p.m. - 5:00 p.m., Room P-110. The Subcommittee will discuss a proposed rule on training and qualification of civilian nuclear power plant personnel. Attendance by the following is anticipated, and reservations have been made at the hotels indicated for the night of January 28:

Mr. Ward	HYATT	Mr. Wylie	HYATT
Mr. Michelson	DAYS INN	Dr. Wilkins	HOLIDAY INN

Reliability Assurance (Open/Closed) , February 5, 1991, 7920 Norfolk Avenue, Bethesda, MD (Igne), 8:30 a.m., Room P-110. The Subcommittee will discuss the reliability of safety related solid state devices used in nuclear power plants. Portions of this meeting will be closed to discuss proprietary information. Attendance by the following is anticipated, and reservations have been made at the hotels indicated for the night of February 4:

Mr. Wylie	HOLIDAY INN	Mr. Michelson	DAYS INN (CONGR)
Mr. Carroll	HOLIDAY INN	Mr. Ward	HYATT

Safety Philosophy, Technology, and Criteria, February 5, 1991, 7920 Norfolk Avenue, Bethesda, MD (Houston), 3:00 p.m., Room P-110. The Subcommittee will review the proposed SECY-91-405, "Formulation of a Large Release Definition and Supporting Rationale." Attendance by the following is anticipated, and reservations have been made at the hotels indicated for the night of February 4:

Mr. Ward	HYATT	Mr. Michelson	DAYS INN (CONGR)
Dr. Kerr	NONE	Mr. Wylie	HOLIDAY INN

Joint Computers in Nuclear Power Plant Operations and Instrumentation and Control Systems (Open/Closed), February 6, 1991, 7920 Norfolk Avenue, Bethesda, MD (Rotella/El-Zeftawy), 8:30 a.m., Room P-110. The Subcommittees will discuss the use of computer solid-state control logic (software) in nuclear power plant operations. Portions of this meeting will be closed to discuss proprietary information. Attendance by the following is anticipated, and reservations have been made at the hotels indicated for the night of February 5:

Dr. Lewis	EMBASSY	Dr. Wilkins	HOLIDAY INN
Dr. Kerr	NONE	Mr. Wylie	HOLIDAY INN
Mr. Carroll	HOLIDAY INN	Mr. Davis	NONE
Dr. Catton	HYATT	Dr. Lipinski	NONE
Mr. Michelson	DAYS INN (CONGR)		

370th ACRS Meeting, February 7-9, 1991, Bethesda, MD, Room P-110. Items are tentatively scheduled:

A. Containment Design Requirements (Open) - The members will continue preparation of a proposed report to the NRC for incorporation of criteria to accommodate severe accidents into containment design criteria for future plants.

B. EPRI-ALWR Requirements Document (Open) - Briefing by and discussion with representatives of the NRC staff on the status of their review of the EPRI-ALWR Requirements Document and on staff plans to review the EPRI "roll-up" document on requirements for evolutionary and passive nuclear power plants.

C. Individual Plant Examination for External Events (IPEEE) Program (Open) - Review and comment on the NRC staff's proposed revised Supplement 4 to Generic Letter 88-20, Severe Accident Vulnerabilities Due to External Events and its supporting guidance document, NUREG-1407. Representatives of the NRC staff and the nuclear industry will participate, as appropriate.

D. Primary Systems Integrity (Open/Closed) - Briefing by representatives of the NRC staff regarding test results on the stability/instability of flawed pipes. Portions of this session will be closed as necessary to discuss information provided in confidence by a foreign source.

E. Fitness for Duty Requirements for Licensed Operators (Open) - The members will discuss proposed NRC requirements for fitness for duty for licensed operators.

F. Future ACRS Activities (Open) - Discuss anticipated Subcommittee activities and items proposed for consideration by the full Committee.

G. ACRS Subcommittee Activities (Open/Closed) - Briefings and discussion regarding the status of assigned ACRS Subcommittee activities. Portions of this session will be closed as necessary to discuss proprietary information and/or security information related to the matters being discussed.

H. ACRS Activities (Open) - Discuss administrative issues related to the conduct of ACRS activities including proposed revision of the ACRS Bylaws.

I. Appointment of New Members (Closed) - Discuss the qualifications of candidates proposed for appointment to the Committee.

J. Formulation of a Large Release Definition and Supporting Rationale (Open) - Review and report on proposed formulation of a large release definition and supporting rationale, SECY-90-405.

K. Spent Fuel Storage (Open) - Review and report on proposed Standard Review Plan for dry metallic spent fuel storage casks. Representatives of the NRC staff and the nuclear industry will participate, as appropriate.

L. Training and Qualification of Civilian Nuclear Plant Personnel (Open) - Review and report on proposed rulemaking regarding training and qualification of civilian nuclear power plant personnel. Representatives of the NRC staff and the nuclear industry will participate, as appropriate.

M. Performance Indicator Program (Open) - Briefing by representatives of the NRC staff regarding the status of the NRC Performance Indicator Program.

N. Implementation of Regulatory Guide 1.97, "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident" (Open) - Briefing by representatives of the NRC staff regarding the status of the implementation of Regulatory Guide 1.97 and associated problems.

O. Miscellaneous (Open) - Discuss matters that were not completed during previous meetings as time and availability of information permit.

Improved Light Water Reactors, February 12, 1991, 7920 Norfolk Avenue, Bethesda, MD (El-Zeftawy), 8:30 a.m., Room P-110. The Subcommittee will review the NRC staff's Draft Safety Evaluation Report corresponding to Chapters 6-13 of the EPRI-ALWR Requirements Document for the Evolutionary Designs. Attendance by the following is anticipated, and reservations have been made at the hotels indicated for the night of February 11:

Mr. Wylie	HOLIDAY INN	Dr. Siess (tent.)	HOLIDAY INN
Dr. Catton	HYATT	Mr. Ward	HYATT
Mr. Michelson	DAYS INN (CONGR)		

TVA Plant Licensing and Restart, March 5, 1991, location of the meeting to be decided (Houston/Quittschreiber), 8:30 a.m. The Subcommittee will review the planned restart of Browns Ferry, Unit 2. Site visit is tentatively planned for March 4, 1991. Attendance by the following is anticipated:

Mr. Wylie	Mr. Michelson
Mr. Carroll	Mr. Ward
Dr. Kerr (tent.)	Dr. Wilkins (tent.)

Advanced Pressurized Water Reactors, March 6, 1991, 7920 Norfolk Avenue, Bethesda, MD (Rotella), 8:30 a.m., Room P-110. The Subcommittee will discuss the use of the NUPLEX 80+ Computerized Control System, and seismic methodologies (tentative), for the CE System 80+ standard plant. Attendance by the following is anticipated, and reservations have been made at the hotels indicated for the night of March 5:

Mr. Carroll	HOLIDAY INN	Mr. Michelson	DAYS INN
Dr. Catton	HYATT	Dr. Shewmon	NONE
Dr. Kerr	NONE	Mr. Wylie	HYATT
Dr. Siess (tent.)	HOLIDAY INN		

371st ACRS Meeting, March 7-9, 1991, Bethesda, MD, Room P-110.

Maintenance Practices and Procedures, April 10, 1991, 7920 Norfolk Avenue, Bethesda, MD, (Alderman), 8:30 a.m., Room P-110. The Subcommittee will discuss the maintenance rule package. Attendance by the following is anticipated, and reservations have been made at the hotels indicated for the night of April 9:

Mr. Carroll	HOLIDAY INN	Mr. Ward	HYATT
Mr. Michelson	DAYS INN	Mr. Wylie	HOLIDAY INN

372nd ACRS Meeting, April 11-13, 1991, Bethesda, MD, Room P-110.

Thermal Hydraulic Phenomena, Date to be determined (March tentative), Bethesda, MD. The Subcommittee will review the status of the NRC research program to demonstrate the code scaling, applicability, and uncertainty methodology for the case of a small-break LOCA calculation on a B&W plant. Attendance by the following is anticipated:

Dr. Catton	Mr. Wylie
Dr. Kerr	Dr. Plesset
Mr. Michelson	Mr. Schrock
Mr. Ward	Dr. Sullivan
Dr. Wilkins	

Joint Plant Operations and Probabilistic Risk Assessment, Date to be determined (April, tentative), Bethesda, MD (Boehnert/Houston). The Subcommittees will review the NRC staff's Action Plan to evaluate the risk from nuclear power plant shutdown operations. Attendance by the following is anticipated:

Mr. Carroll
Dr. Lewis
Dr. Kerr
Mr. Michelson
Dr. Siess
Mr. Ward
Dr. Wilkins
Mr. Wylie

Advanced Boiling Water Reactors, Date to be determined (March/April, tentative), Bethesda, MD (El-Zeftawy). The Subcommittee will review the GE/ABWR design detail and layout. Attendance by the following is anticipated:

Mr. Michelson
Mr. Carroll
Dr. Catton
Mr. Kerr
Dr. Shewmon
Mr. Ward
Mr. Wylie
Mr. Costner

Joint Thermal Hydraulic Phenomena and Severe Accidents, Date to be determined (April), Bethesda, MD (Boehnert/Houston). The Subcommittees will discuss the issue of NRC computer codes and their documentation. Attendance by the following is anticipated:

Dr. Catton
Dr. Kerr
Dr. Shewmon
Dr. Siess
Mr. Ward
Dr. Wilkins
Mr. Wylie
Dr. Corradini
Mr. Davis
Dr. Lee
Dr. Plesset
Dr. Schrock
Mr. Sullivan

Joint Thermal Hydraulic Phenomena and Core Performance, Date to be determined (April/May, tentative), Bethesda, MD (Boehnert/Houston). The Subcommittees will continue their review of the issues pertaining to BWR core power stability. Attendance by the following is anticipated:

Dr. Catton
Dr. Kerr
Mr. Michelson
Dr. Shewmon
Dr. Wilkins
Mr. Wylie
Dr. Lee
Mr. Lipinski
Dr. Plesset
Mr. Schrock
Dr. Sullivan

Joint Regulatory Activities and Containment Systems, Date to be determined, Bethesda, MD (Duraiswamy/Houston). The Subcommittees will review the proposed final revision to Appendix J to 10 CFR Part 50, "Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors," and an associated Regulatory Guide. Attendance by the following is anticipated:

Dr. Siess
Mr. Ward
Mr. Carroll
Dr. Catton
Dr. Kerr
Dr. Lewis
Mr. Michelson
Mr. Wylie

Severe Accidents, Date to be determined, Bethesda, MD (Houston). The Subcommittee will discuss elements of the Severe Accident Research Program. Attendance by the following is anticipated:

Dr. Kerr
Dr. Catton
Dr. Shewmon
Dr. Siess
Mr. Ward
Dr. Corradini
Mr. Davis
Dr. Lee

Joint Advanced Boiling Water Reactors and Advanced Pressurized Water Reactors, Date to be determined, Bethesda, MD (El-Zeftawy/Rotella). The Subcommittees will perform a comparison between the Licensing Review Basis documents for the GE/ABWR and CE/System 30+ designs. Attendance by the following is anticipated:

Mr. Michelson
Mr. Carroll
Dr. Catton
Dr. Kerr
Dr. Shewmon
Mr. Ward
Dr. Wilkins
Mr. Wylie
Mr. Costner
Dr. Okrent

Instrumentation and Control Systems, Date to be determined, Bethesda, MD (El-Zeftawy). The Subcommittee will discuss EPRI's reactor set-point analysis methodology for future plants. Attendance by the following is anticipated:

Dr. Kerr
Mr. Carroll
Dr. Lewis
Mr. Michelson
Mr. Wylie
Mr. Lipinski
Mr. Oaks

Improved Light Water Reactors, Date to be determined, Bethesda, MD (El-Zeftawy). The Subcommittee will discuss adoption of the (N+2) concept for future plants. Attendance by the following is anticipated:

Mr. Wylie
Dr. Catton
Mr. Michelson
Mr. Ward
Dr. Siess
Dr. Okrent

APPENDIX IV
MINUTES OF THE 369TH ACRS MEETING
JANUARY 10-11, 1991
LIST OF DOCUMENTS PROVIDED TO THE COMMITTEE

MEETING NOTEBOOK

FITNESS FOR DUTY REQUIREMENTS FOR LICENSED OPERATORS

- Tentative Schedule
- Status Report
- Synopsis of Public Comments
- SECY-90-054, dated February 16, 1990, Subject: Proposed Revision of 10 CFR Part 55 to Require Compliance with Fitness-for-Duty Programs and Conforming Modification to Commission's Enforcement Policy with enclosure:
  - Notice of Proposed Rulemaking- INTERNAL COMMITTEE USE ONLY
- ACRS Report to Chairman Carr dated December 20, 1989, Subject: Proposed Amendment to 10 CFR Part 55, Operators' Licenses, to Include "Fitness-for-Duty" Penalties
- Presentation materials provided during the meeting

PROPOSED RESOLUTION OF GSI-29, "BOLTING DEGRADATION OR FAILURE IN NUCLEAR POWER PLANTS"

- Tentative Schedule
- Status Report
- Memorandum from [illegible] Miners, RES, to R. Fraley, ACRS, dated December 4, 1990, Subject: Proposed Resolution of GSI-29, "Bolting Degradation of Failure in Nuclear Power Plants" with attachment:
  - Memorandum from C. Heltemes for F. Gillespie, NRR and S. Treby, OGC, dated August 28, 1990, transmitting Proposed CRGR Package - INTERNAL COMMITTEE USE ONLY
- Presentation materials provided during the meeting

MEETING WITH DIRECTOR, NRC OFFICE OF RESEARCH

- Presentation Schedule
- Project Status Report - INTERNAL COMMITTEE USE ONLY
- INTERNAL COMMITTEE USE ONLY Memorandum from J. Taylor, EDO, to Chairman Carr, dated December 17, 1990, Subject: FY 1991 Appropriation Reduction, with attachments
  - Att. I - Summary of FY 1991 Appropriation Reduction
  - Att. II- Impact of FY 1991 Appropriation Reduction
- List of NRC Nuclear Safety Research Review Committee (NSRRC) Members
- Memorandum from E. Beckjord, RES, to Multiple addressees, NRC, dated December 27, 1990, Subject: NSRRC Report on Essential Research with attachment: - INTERNAL COMMITTEE USE ONLY)
  - David Morrison, Chairman, NSRRC, to E. Beckjord, NRC, dated 21 December 1990, forwarding:
    - Report on the U.S. NRC's Research Strategy from the Nuclear Safety Research Review Committee, December 21, 1990 - INTERNAL COMMITTEE USE ONLY
- Presentation materials provided during the meeting.

BRIEFING ON REACTOR OPERATING EXPERIENCE AND EVENTS

- Status Report
- Excerpt from P. Boehnert, ACRS, memorandum "Weekly Operating Reactor Operating Experience and Events" regarding Quad Cities (Event Date: 10/27/90)
- Memorandum for T. Novak, AEOD, from J. Rosenthal, AEOD, dated December 28, 1990, Subject: Human Factors Study Report - Quad Cities 2 (10/27/90)
- Presentation materials provided during the meeting.

BRIEFING ON PROPOSED FINAL VERSION OF 10 CFR PART 20, STANDARD FOR PROTECTION AGAINST RADIATION

- Tentative Schedule
- Project Status Report with Attachments: SRM?
  - Att. I - Memorandum from S. Chilk, SECY, to J. Taylor, EDO, W. Parler, OGC, dated July 30, 1990, Subject: SECY-89-267/SECY-88-315/SECY-90-237 - Revision of 10 CFR Part 20 - Standards for Protection Against Radiation
- SECY-90-387 dated November 26, 1990, Subject, Transmittal of Revised Part 20 with Enclosure A, modified Federal Register Notice - INTERNAL COMMITTEE USE ONLY
- Presentation materials provided during the meeting.

BRIEFING ON LICENSING REQUIREMENTS FOR LARGE IRRADIATORS

- Tentative Schedule
- Project Status Report
- Proposed Federal Register Notice on Proposed Rule on "Licenses and Radiation Safety Requirements for Large Irradiators" for public comment.
- Presentation materials provided during the meeting

LIST OF ACRS FULL COMMITTEE & SUBCOMMITTEE MEETINGS

REPORT OF THE DECEMBER 12, 1990 THERMAL HYDRAULIC PHENOMENA SUBCOMMITTEE MEETING REGARDING NRC PROGRAM ON INTERFACING SYSTEMS LOCA

- Project Status Report with attachment:
  - Working Copy of Summary/Minutes of subject meeting - INTERNAL COMMITTEE USE ONLY
- ACRS letter to J. Taylor, EDO, dated January 18, 1990, Subject: Resolution of the Interfacing Systems LOCA Issue
- Presentation materials provided during the meeting

HANDOUTS

FUTURE ACRS ACTIVITIES, 370TH ACRS MEETING, FEBRUARY 7-9, 1991

- Memorandum from R. Savio, Asst. Executive Director, ACRS to ACRS Members, dated January 8, 1991, Subject: Future ACRS Activities - 370th ACRS Meeting, February 7-9, 1991 with attachments

ACRS BYLAWS - PROPOSED REVISION

- Memorandum from R. Fraley, ACRS, to ACRS Members, dated January 9, 1991, Subject: ACRS Bylaws - Proposed Revision with Attachments - INTERNAL COMMITTEE USE ONLY

OTHER DOCUMENTS

- NRC GPA Press Release No. S-31-90, Speech by Commissioner Forrest J. Remick at Pennsylvania State University, October 10, 1990, "Non-Power Reactors - Progress and Opportunities"

- Memorandum from R. Fraley, ACRS, to ACRS Members, dated January 9, 1991, Subject: Radiobiological Effects - forwarding article "Some Scientists Say Concern Over Radon is Overblown by E.P.A.," *New York Times*, January 8, 1991