

CERTIFIED

6/16/85

ACRS-2321
PDR 080585

DATE ISSUED: 6/16/85

SUMMARY/MINUTES
ACRS SUBCOMMITTEE MEETING ON
THE REGULATORY ACTIVITIES
JUNE 4, 1985
WASHINGTON, D.C.

INTRODUCTION

The ACRS Subcommittee on the Regulatory Activities held a meeting on Tuesday, June 4, 1985 at 1717 H Street, N.W., Washington, D.C., to discuss certain proposed Regulatory Guides and Regulations. The entire meeting was open to public attendance. Mr. Sam Duraiswamy was the cognizant ACRS Staff for the meeting. A tentative presentation schedule for the meeting is included in Attachment A. A list of documents submitted to the Subcommittee is included in Attachment B.

ATTENDEES

ACRS: C. P. Siess (Subcommittee Chairman), W. Kerr,
C. Michelson, G. A. Reed, and C. J. Wylie

S. Duraiswamy, Cognizant ACRS Staff

Principal

NRC Speakers: F. Gillespie, A. Hintze, G. Arndt, and J. Burns

Public Speakers: Z. Reytblatt, Warren Wilson College
M. Lenhart, Boston Edison

EXECUTIVE SESSION

Dr. Siess, the Subcommittee Chairman, convened the meeting at 8:45 a.m., and stated that the purpose of the meeting was to discuss the following:

- Appropriateness of the NRC Staff's current practice of using Standard Review Plan (SRP) in lieu of Regulatory Guides.
- Proposed Regulatory Guide (Task No. IC 127-5), "Criteria for Programmable Digital Computer Systems Software in Safety-Related Systems of Nuclear Power Plants" (Post Comment).

8508090550 850616
PDR ACRS
2321

PDR

DESIGNATED ORIGINAL

Certified By

BPR

- Proposed Revisions to Appendix J of 10 CFR Part 50, "Leak Tests for Primary and Secondary Containments of Light-Water-Cooled Nuclear Power Plants" (Pre Comment).
- Proposed Regulatory Guide (Task No. MS 021-5), "Containment System Leakage Testing" (Pre Comment).

Dr. Siess said that the Subcommittee had received no written comments from members of the public. It had received requests from Dr. Reytblatt (Warren Wilson College) and Ms. Lenhart (Boston Edison) for time to make oral statements on Appendix J and the associated Regulatory Guide.

USE OF THE SRP IN LIEU OF REGULATORY GUIDES - MR. GILLESPIE

Mr. Gillespie discussed briefly the reasons for replacing some of the existing Regulatory Guides with the SRP. There are several Regulatory Guides that contain deficient and obsolete information. Since the guidance in these Guides does not reflect the current state-of-the-art, they are not even used in the licensing process. Revisions to such guides have been long overdue. However, as a result of severe budget constraints, they do not have enough resources to update these Guides. Since the SRP has been updated periodically, a decision was made within the Office of Nuclear Regulatory Research to withdraw those Guides that contain wrong and out-dated information and replace them with appropriate sections of the SRP.

Dr. Siess asked how many of the existing Division 1 Guides are expected to be withdrawn. Mr. Gillespie responded that there are about 151 Guides in Division 1. They plan to perform an in-depth review to determine which of these Guides need to be recalled. He believes that about 35 percent of these Guides may be withdrawn as a result of this in-depth review process.

Although the Subcommittee did not take a definitive position on this issue, it felt that the SRP was never intended to be anything but an internal NRC document; now, trying to use it as a controlling document without the benefit of the public and ACRS review does not seem to be a good idea.

Dr. Siess said that the ACRS needs to discuss this issue with the Executive Director for Operations and get his perspective.

PROPOSED REGULATORY GUIDE (TASK NO. IC 127-5), "CRITERIA FOR PROGRAMMABLE DIGITAL COMPUTER SYSTEMS SOFTWARE IN SAFETY-RELATED SYSTEMS OF NUCLEAR POWER PLANTS" - MR. HINTZE

This Guide describes a method acceptable to the NRC Staff for designing, verifying, and integrating software into the digital computer systems used in the operation of nuclear power plants. It endorses, without exceptions, the provisions of the industry Standard ANSI/IEEE-ANS-7.4.3.2-1982, "Applicable Criteria for Programmable Digital Computer Systems in Safety Systems of Nuclear Power Plants."

This Guide was reviewed by the Regulatory Activities Subcommittee during a meeting held on December 8, 1981. It was issued for public comment in March 1983. The current version of this Guide reflects consideration of public comments.

Dr. Kerr commented that this Guide does not give adequate guidance for use in validating computer software. He suggested that the Staff develop further guidance.

Dr. Siess asked whether there would be additional industry Standards or Regulatory Guides in this area to provide more guidance. Mr. Sullivan responded that there are several other Standards (such as, Software Reliability Measurements, Software Quality Assurance Guide, Software Verification Plan) being developed by the Computer Society with input

from the IEEE Nuclear Power Engineering Committee. The Staff has been monitoring the development of these Standards very closely to determine which, if any, of these should be endorsed by new Regulatory Guides.

With regard to the statement in the last paragraph of the Discussion Section, which states: "It should also be noted that the Staff encourages the application of advanced technology, such as programmable digital computers, in the operation of nuclear power plants, where such advanced technology serves to enhance safety," Dr. Siess commented that this statement describes the NRC Staff's policy on the use of digital computers and he does not believe that it is appropriate to express such a policy in this Guide.

The Staff stated that the above statement was included in this Guide as recommended by the Committee to Review Generic Requirements (CRGR).

After further discussion, the Subcommittee decided that the above statement seems to be related more to the use of digital computers than to the software itself. Therefore, it would be more appropriate to include such a statement in the Regulatory Guide dealing with the hardware portion of digital computers.

Mr. Michelson asked whether there are any Guides being developed to provide guidance on the hardware portion. Mr. Hintze stated that they have another Guide (Task No. IC 609-5, Criteria for Power, Instrumentation, and Control Portions of Safety Systems) which provides guidance on the development of digital computer systems hardware and is expected to be sent to the ACRS for review in the near future.

Dr. Siess suggested that the Guide dealing with the hardware portion of the digital computers be referred to the Subcommittee on Electrical Systems for review.

The Subcommittee suggested some editorial changes, provided guidance for clarification in certain areas, and indicated that it would submit this Guide to the full Committee during the June 6-8, 1985 meeting recommending concurrence in the regulatory position.

PROPOSED REVISIONS TO APPENDIX J OF 10 CFR PART 50, "LEAK RATE TESTS FOR PRIMARY AND SECONDARY CONTAINMENTS OF LIGHT-WATER-COOLED NUCLEAR POWER PLANTS" - MR. ARNDT

Appendix J of 10 CFR Part 50 identifies general requirements and acceptance criteria for preoperational and subsequent periodic leak testing. The existing Appendix J requires that all Type A tests should be conducted in accordance with the ANSI N45.4-1972 Standard, "Leakage-Rate Testing of Containment Structures for Nuclear Reactors." This Standard had been revised to reflect the current state-of-the-art in the leak-testing technology and reissued as ANSI/ANS 56.8-1981, "Containment System Leakage Testing Requirements." As a result, Appendix J requirements now in effect refer to an outdated Standard. Consequently, the NRC Staff has decided to revise the existing Appendix J to make it compatible with the provisions of the revised industry Standard, to incorporate various internal/external comments received since 1973, and to simplify the text to a more "plain english" text. The proposed revision is being justified on the basis of being a licensing improvement rather than on a risk reduction/cost benefit basis.

A previous version (Draft D5) of the proposed revisions to Appendix J was reviewed by the Regulatory Activities Subcommittee during its June 12, 1984 meeting. During its June 14-16, 1984 meeting, the ACRS stated that it had no objection to issue the proposed revisions to Appendix J to public comment. Since June 1984, several changes have been made as a result of additional inter-office review. Consequently, the revised version has been resubmitted to the ACRS for another review prior to its issuance for public comment.

Dr. Arndt reviewed briefly the major differences between the existing and the proposed Appendix J (Attachment C, pages 1-5).

Dr. Arndt said that during the June 3, 1985 CRGR meeting, a question was raised as to whether the revision to Appendix J is appropriate at this time or it should be deferred for a short period of time and reconsidered in light of the research on severe accidents and source terms.

Dr. Siess commented that he does not believe that a revision to Appendix J reflecting the results of the research on severe accidents and source terms could be done in less than two or three years. In his opinion, the proposed revisions should be issued for public comment at this time. He suggested that it would be helpful if the Staff solicited comments from the industry as to whether the currently proposed interim revision to Appendix J would be beneficial.

Dr. Kerr asked on what basis the frequency for conducting Type A test was chosen. Dr. Arndt responded that he was not sure of the reason for selecting this frequency.

Dr. Kerr suggested that it would be helpful if the Staff tried to find out the rationale for the Type A test frequency so as to determine whether it is still appropriate. Dr. Arndt responded that a similar type of question was also raised by CRGR and he believes that it would be a good idea to look at this issue to determine whether there is a good rationale for the Type A test frequency.

Mr. Michelson commented that there are certain plants which use pneumatic (inflatable) seals in personnel accesses and the retention capability of these seals depend on the retention of the air pressure to these seals. If the air pressure is lost, the seal will loose its retention capability and there will be a large leakage. He asked why

this issue is not addressed in the proposed Appendix J. Mr. Burns responded that the Staff will take a look at this issue.

Mr. Wylie commented that in pages 6 of the comparative Draft (s), under Type B testing, the Staff seems to imply that electrical penetrations use flexible metal seal assemblies; to his knowledge, they do not use such assemblies.

With regard to the statement in page 10 of the Comparative Draft(s) which states that "continuous leakage monitoring systems must not be operated and pressurized during Type A tests," Mr. Wylie commented that it is not practical to apply this requirements to electrical penetrations because they are generally canned penetrations filled with gas.

The Staff responded that they will consider the comments provided by Mr. Wylie.

The Subcommittee suggested some editorial changes, provided guidance for clarification in certain areas and indicated that it would submit the proposed revision to Appendix J to the full Committee during the June 6-8, 1985 meeting with the recommendation that the ACRS concur in the Staff's proposal to issue this item for public comment.

PROPOSED REGULATORY GUIDE (TASK NO. MS 021-5), "CONTAINMENT SYSTEM LEAKAGE TESTING" (PRE COMMENT) - DR. ARNDT

This Guide describes a method acceptable to the NRC Staff for complying with the NRC regulations associated with the containment leak rate testing. It endorses, with certain exceptions, the ANSI/ANS 56.8-1981 Standard, "Containment System Leakage Testing Requirements".

Dr. Arndt stated that there are 21 regulatory positions in this Guide including two that were included as a result of previous public comments on the containment leak testing criteria; most of them are exceptions to the ANSI/ANS 56.8-1981 Standard. He said that the Standard is being revised and he expects that the revised Standard will incorporate a major portion of the material in the proposed Guide.

After further discussion, the Subcommittee suggested some editorial changes, provided guidance for clarification in certain areas, and indicated that it would submit this Guide to the full Committee during the June 6-8, 1985 ACRS meeting recommending that the ACRS concur in the Staff's proposal to issue this Guide for public comment.

ORAL STATEMENTS BY DR. REYTLATT

Some of the comments provided by Dr. Reytblatt on the proposed Appendix J and the associated Guide are given below:

- Appendix J

- He believes that the proposed revisions to Appendix J are long overdue and should be issued for public comment as soon as possible.
- Paragraph V.A (page 13, Appendix J, Draft E4) relating to Type A, B, and C Test Details should be revised to require that the leak test methods, procedures, etc., must be selected from the methodologies duly endorsed by the NRC.

- Proposed Regulatory Guide, MS 021-5

- He strongly objects to the issuance of this Guide for public comment at this time, because it infringes on proprietary documents.

- This Guide does not provide guidance for determining weight coefficients.
- The technical adequacy of all the regulatory positions in this Guide should be discussed in detail at a forum (not at an ACRS forum) prior to issuing this Guide for public comment.

ORAL STATEMENTS BY MS. LENHART

Ms. Lenhart from the Boston Edison Company sought clarification from the NRC Staff regarding certain provisions of the proposed Appendix J.

Dr. Siess thanked all participants and adjourned the meeting at 3:15pm.

NOTE: Additional meeting details can be obtained from a transcript of this meeting available in the NRC Public Document Room, 1717 H Street, N.W., Washington, D.C., or can be purchased from Ann Riley & Associates, Ltd., 1625 I Street, N.W., Suite 921, Washington, DC 20006, (202) 293-3950.

5/29/85

TENTATIVE PRESENTATION SCHEDULE

ACRS SUBCOMMITTEE MEETING ON
THE REGULATORY ACTIVITIES
JUNE 4, 1985

ACRS Contact: Sam Duraiswamy
634-3267

I. Executive Session	C. P. Siess	8:45 am - 9:00 am
II. Use of Standard Review Plan in Lieu of Regulatory Guides	F. Gillespie	9:00 am - 9:30 am
III. Proposed Regulatory Guide (Task No. IC 127-5), "Criteria for Programmable Digital Computer Systems Software in Safety-Related Systems of Nuclear Power Plants" (Post Comment)	A. Hintze	9:30 am - 10:30 am
*** Break ***		10:30 am - 10:45 am
IV. Proposed Revisions to Appendix J to 10 CFR Part 50, "Leak Tests for Primary and Secondary Containments of Light- Water-Cooled Nuclear Power Plants" (Pre Comment)	G. Arndt	10:45 am - 12:30 pm
*** Lunch ***		12:30 pm - 1:30 pm
V. Proposed Regulatory Guide (Task No. MS 021-5), "Containment System Leak- age Testing" (Pre Comment)	G. Arndt	1:30 pm - 3:00 pm
VI. Public Comments (if any)		3:00 pm - 3:30 pm
VII. Subcommittee Remarks		3:30 pm - 3:45 pm
Adjourn		3:45 pm

ATTACHMENT A

LIST OF DOCUMENTS SUBMITTED TO THE
REGULATORY ACTIVITIES SUBCOMMITTEE
JUNE 4, 1985

1. Memorandum from R. Fraley to ACRS Members, "NRC Staff Use of the Standard Review Plan in Lieu of Regulatory Guides," dated March 19, 1985.
2. Memorandum from E. Igne to P. Shewmon, "Withdrawal of Regulatory Guides 1.46 and 1.48," dated April 4, 1985.
3. Memorandum from C. P. Siess to S. Duraiswamy, dated March 27, 1985, transmitting a memorandum from V. Stello to H. Denton related to Regulatory Guide 1.114, Revision 2.
4. Proposed Regulatory Guide (Task No. IC 127-5), "Criteria for Programmable Digital Computed Systems Software in Safety-Related Systems of Nuclear Power Plants."
5. Portion of the Minutes of the December 8, 1981 Regulatory Activities Subcommittee meeting.
6. Proposed Revisions to Appendix J to 10 CFR Part 50 together with Associated Documents.
7. Proposed Regulatory Guide (Task No. MS 021-5), "Containment System Leakage Testing."
8. Portion of the Minutes of the June 12, 1984 Regulatory Activities Meeting.

TEST REQUIREMENTS
EXISTING & PROPOSED RULE

TYPE A TEST

ENTIRE CONTAINMENT SYSTEM, IN POST-LOCA CONFIGURATION, PRESSURISED
EVERY 3 TO 4 YEARS.

B & C TESTS USUALLY PRECEDE TYPE A TEST.

TYPE B TEST

CONTAINMENT PENETRATIONS PRESSURIZED EVERY TWO YEARS OR LESS

TYPE C TEST

CONTAINMENT ISOLATION VALVES PRESSURIZED AT LEAST EVERY TWO YEARS.

ATTACHMENT C

C-1

MAJOR CHANGES

1. LEVEL OF DETAIL

LIMIT CONTENT TO GENERAL TEST CRITERIA: LEAVE DETAILS TO REGULATORY GUIDE

2. EDITORIAL

EXPANDED TABLE OF CONTENTS + DEFINITIONS: TEST REVISED TO CONFORM TO "PLAIN ENGLISH" OBJECTIVES.

3. INTERPRETATIONS

CHANGES MADE TO RESOLVE PAST INTERPRETIVE QUESTIONS (E. G., DEFINITIONS OF "CONTAINMENT ISOLATION VALVE" AND "TYPE A TEST FAILURES").

115
MAJOR CHANGES (CONTINUED)

4. GREATER FLEXIBILITY

PROVISIONS ADDED THROUGHOUT AND IN GENERAL IN PARA. VII.A.

5. TYPE A TEST PRESSURE

REDUCED PRESSURE OPTION DELETED.

6. TYPE A TEST FREQUENCY

KEYED TO PREOP TEST DATE, RATHER THAN DATE OF COMMERCIAL OPERATION.

7. TYPE A TEST DURATION

DELETED, SINCE IT IS A FUNCTION OF THE STATE OF TESTING TECHNOLOGY AND LEVEL OF CONFIDENCE IN IT. CONSENSUS TECHNICAL BASIS BEING DEVELOPED.

25

MAJOR CHANGES (CONTINUED)

8. TYPE A TEST "AS IS" CLARIFICATION

"AS FOUND"/"AS LEFT" LEAKAGE DETERMINATION AND REPORTING
RE-EMPHASIZED, PER 1/11/82 MEMO MATTSON TO SNIEZEK.

9. TYPE A TEST ALLOWABLE LEAKAGE RATE PRORATING

"AS FOUND" LEAKAGE LIMIT CHANGED FROM $0.75L_A$ TO $1.0L_A$.

"AS LEFT" LEAKAGE LIMIT KEPT AT $0.75L_A$.

10. QUANTIFICATION OF ALLOWABLE LEAK RATES

NO CHANGE IN APPENDIX J; STILL PROVINCE OF TECHNICAL
SPECIFICATIONS.

APPENDIX J BASED ON CURRENT TECH SPEC VALUES.

MAJOR CHANGES (CONTINUED)

11. REFOCUSING OF CORRECTIVE ACTIONS

WHEN SPECIFIC PROBLEM AREAS ARE IDENTIFIED, CORRECTIVE ACTIONS ARE REDIRECTED TO THEM RATHER THAN TO A TYPE A RETESTING PROGRAM AS IS NOW DONE.